

5. 討議議事録(M/D)

(1) 基本設計調査時

**MINUTES OF DISCUSSIONS  
ON THE BASIC DESIGN STUDY  
ON THE PROJECT FOR  
SUPPLY OF EQUIPMENT FOR  
REGIONAL ENVIRONMENTAL MONITORING NETWORK (Phase II)  
IN THE ARAB REPUBLIC OF EGYPT**

In response to a request from the Government of the Arab Republic of Egypt (hereinafter referred to as "Egypt"), the Government of Japan has decided to conduct a Basic Design Study on the Project for Supply of Equipment for Regional Environmental Monitoring Network (Phase II) (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

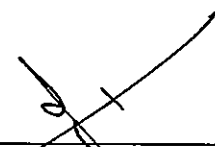
JICA sent to Egypt the Basic Design Study Team (hereinafter referred to as "the Team"), headed by Mr. Norio Shimomura, Managing Director, Office of Technical Cooperation and Examination, Grant Aid Management Department, JICA, and is scheduled to stay in the country from April 7 to May 4, 2002.

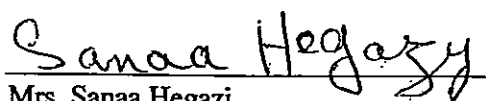
The Team held discussions with the officials concerned of the Government of Egypt, and conducted a field survey at the project sites.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Cairo, 16 April, 2002

  
\_\_\_\_\_  
Mr. Norio Shimomura  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency  
Japan

  
\_\_\_\_\_  
Dr. Ibrahim Abdel Gelil  
Chief Executive Officer  
Egyptian Environmental Affairs Agency  
The Arab Republic of Egypt

  
Witnessed by : Mrs. Sanaa Hegazi  
Under Secretary,  
Asia & Australia, International Cooperation Department,  
Ministry of Foreign Affairs  
The Arab Republic of Egypt

## ATTACHMENT

### 1. Project Title

The title of the Project is "The Project for Supply of Equipment for the Regional Environmental Monitoring Network (Phase II)".

### 2. Objective

The objective of the Project is to establish the Regional Environmental Monitoring Network in Egypt in order for monitoring and promotion of the environmental protection through procurement of materials and equipment necessary for laboratories in respective Regional Branch Offices (hereinafter referred to as "RBOs").

### 3. Project Sites

The Project sites requested by the Egyptian side are as follows which are shown in annex-1.

- Assuit Regional Branch Office (AST RBO)
- Aswan Regional Branch Office (ASW RBO)
- Hurghada Regional Branch Office (HGD RBO)
- Cairo Central Center (CCC)
- Greater Cairo Regional Branch Office (GC RBO)
- Alexandria Regional Branch Office (ALX RBO)
- Tanta Regional Branch Office (TNT RBO)
- Mansura Regional Branch Office (MSR RBO)
- Suez Regional Branch Office (SEZ RBO)

### 4. Responsible and Implementing Agencies

The responsible and implementing organization of the Project is the Egyptian Environmental Affairs Agency (hereinafter referred to as "EEAA").

The organization chart of the Agency is shown in annex-2.

### 5. Items Requested by the Government of Egypt

After discussions with the Team, the Egyptian side requested the items shown in annex-3. Items of the equipment and materials were rated in order of priority for necessity considering such factors as activity of each laboratory at the respective RBOs and operation and maintenance. The rating is as follows:

- Priority A: Considered to be essential for the Project
- Priority B: Careful examination of necessity is needed

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Priority C: Low priority

Both sides confirmed that the appropriateness of the request shall be assessed according to the results of further studies and analysis in Japan.

Criteria for selection of equipment are shown in annex-4.

6. Japan's Grant Aid System

- (1) The Egyptian side has understood Japan's Grant Aid system explained by the Team as described in annex-5.
- (2) The Egyptian side will take necessary measures, as described in annex-5 and annex-6, for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

7. Schedule of the Study

- (1) The consultants of the Team will proceed to carry out further studies in Egypt until May 4, 2002.
- (2) Based on the Minutes of Discussions and technical examination of the study results, JICA will prepare a draft report in English and dispatch a mission to Egypt in order to explain its contents around July 2002.
- (3) If the contents of the draft report are accepted in principle by the Egyptian side, JICA will complete the final report and send it to the Egyptian side around August 2002.

8. Other Relevant Issues

The following issues were discussed and confirmed by both sides.

(1) Regional Environmental Monitoring Network for environmental protection

Both sides agreed the importance of effective utilization of monitored/ analyzed data provided by RBO's laboratories for national environmental protection activities.

The Egyptian side explained the situation of regional environmental monitoring network as follows:

According to the Environmental Policy that is under examination for Cabinet approval, the Government of Egypt is to decentralize the environmental administration.

RBO's laboratories' function at the moment, to conduct point source monitoring as well as ambient monitoring in certain extent, is to be strengthened in the decentralization process.

In this context, importance of networking among RBOs and EEAA headquarters is increasing.

CCC is also to be strengthened and expected

--- to be a training center for environmental technology

--- to be a reference laboratory

--- to provide technical support for RBO's laboratories, including maintenance of equipment.

--- to manage quality assurance and quality control (QA/QC)

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(2) Staffing plan for the new RBO's laboratories

The Egyptian side assured the Team all the necessary staff for the new RBOs (ASW-RBO, AST-RBO, HGD-RBO) were to be assigned in time. Number and qualification of staff for each laboratory are shown in annex-7.

The Egyptian side fully understood the importance of the staff training and assured the Team to take necessary measures. EEAA provides necessary training program for new staff through CCC. CCC will be responsible for planning, implementation and follow-up of the training.

In relation to staff training, the Egyptian side strongly requested the Japanese side to consider technical assistance for the new 3 RBOs. The Team will report this request to the Japanese authorities concerned.

(3) Budgetary arrangement for operation and maintenance

The Egyptian side assured the Team to allocate sufficient budget necessary for the operation and maintenance for RBO's laboratories.

(4) Construction schedule of buildings for the new RBOs

The Egyptian side assured the Team to complete the construction of buildings for the new RBOs. As for Assuit and Aswan, construction will be completed by the end of June 2002 and for Hurghada, the end of August 2002.

Both sides agreed that it is necessary to hurry the construction work in Hurghada and monthly progress of the construction work should be reported to JICA Egypt Office by EEAA.

The schedule for construction of the new 3 RBOs is shown in annex-8.

(5) Environmental considerations

The Egyptian side ensured that an adequate disposal of the laboratory wastes such as hazardous liquid and solid substances should be maintained by applying a sound waste management practice and/or installing an appropriate treatment facility as required, so that any adverse environmental impact due to the operation of the laboratories must be avoided.

(6) Technical guidance services ("Soft component")

The Egyptian side requested the technical guidance by the Japanese side for operation and maintenance of the equipment to be included in the Project in order to ensure the sustainability.

(7) Safety and security

The Egyptian side agreed that necessary measures are taken for the safety and security of the Japanese nationals involved in the Project.

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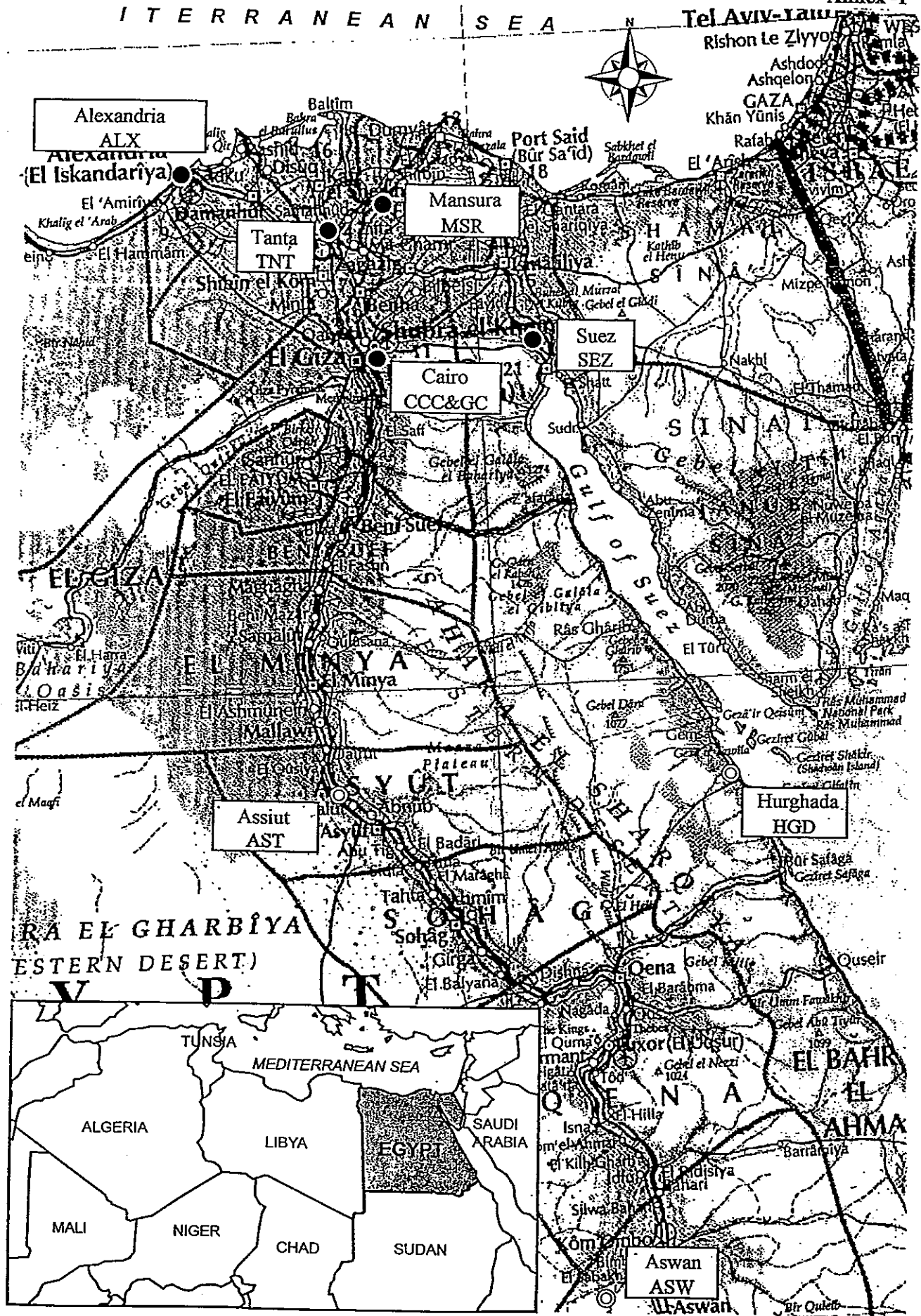
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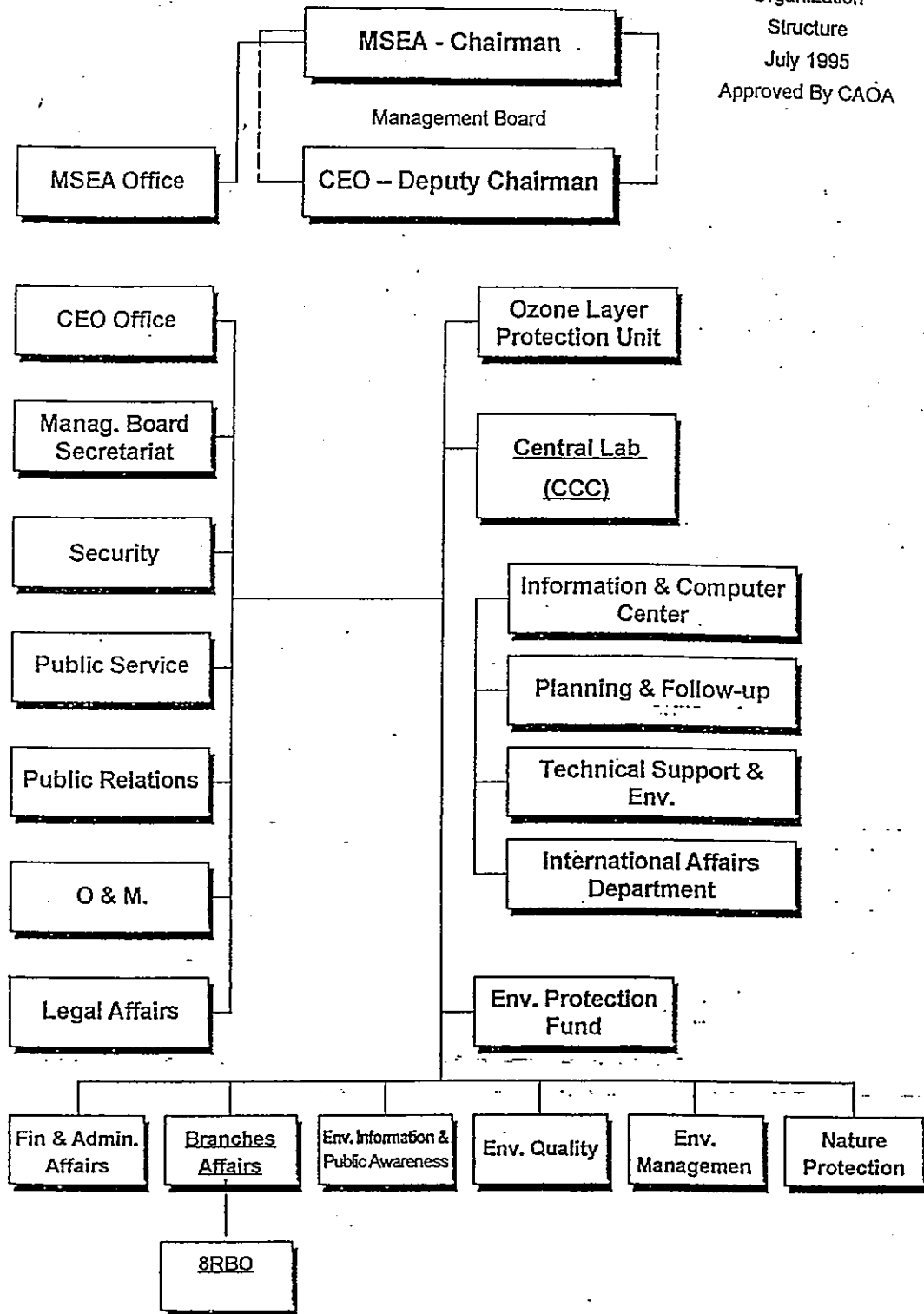
Project Location Map

0 100 200 km

● Existing RBO ⊙ New RBO

# EEAA Organization Structure

Cabinet  
Presidency  
EEAA  
Organization  
Structure  
July 1995  
Approved By CAO/A



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Requested Equipment for New 3RBOs from Egyptian Side

Annex 3

Code No.	Equipment Name	New RBOs			Remarks
		ASY	ASW	HRG	
<b>C. Common Analytical Equipment</b>					
C-3 & 4	A.A.S Flameless type with flame compartment	A	A	A	
C-6	UV/VIS Spectrophotometer (Double Beam)	A	A	A	
C-12	Ion Chromatograph	A	A	A	
C-13	Stereoscopic Microscope	A	A	A	
C-14	Microscope	A	A	A	
C-15	Handy Type pH Meter	A	A	A	
C-16	Laboratory pH Meter	A	A	A	
C-18	Mercury Analyzer	A	A	A	
C-19	Glass Wares Set	A	A	A	
C-20	Reagents (w/Standard Samples)	A	A	A	
<b>G. General Laboratory Equipment</b>					
G-1	Semi-Micro Analysis Balance	A	A	A	
G-2	Micro Analysis Balance	A	A	A	
G-4	Tabletop Type Centrifuge	A	A	A	
G-6	Muffle Furnace (for Organic)	A	A	A	
G-8	Constant Temperature Oven	A	A	A	
G-9	Middle Temperature Oven	A	A	A	
G-11	Oven for Glass Wares(Dryer)	A	A	A	
G-12	Autoclave (Vertical Type)	A	A	A	
G-13	Incubator	A	A	A	
G-14	Low Temperature Incubator	A	A	A	
G-15	Rotary Evaporator	A	A	A	
G-20	Shaker (Middle)	A	A	A	
G-23	Mixer	A	A	A	
G-24	High Speed Homogenizer	A	A	A	
G-25	Hot Plate (Small)	A	A	A	
G-26	Magnetic Stirrer (w/Hop Plate)	A	A	A	
G-27	Multy Magnetic Stirrer	A	A	A	
G-28	Constant Temperature Water Bath	A	A	A	
G-32	Water Bath	A	A	A	
G-33	Cooling Unit	A	A	A	
G-34	Ultrasonic Cleaner	A	A	A	
G-37	Ultrasonic Pipette Cleaner	A	A	A	
G-38	Ion Exchanger	A	A	A	
G-39	Water Distillation Unit	A	A	A	
G-40	Clean Bench	A	A	A	
G-41	Draft Chamber w/Gas Cleaning Device	A	A	A	
G-42	Draft Chamber	A	A	A	
G-43	AC Stabilizer	A	A	A	
G-46	Refrigerator	A	A	A	
G-47	Freezer	A	A	A	
G-48	Ice Maker (Cube Ice)	A	A	A	
G-49	Copy Machine	A	A	A	
G-50	Monitoring Car	A	A	A	
G-51	Tool Set	A	A	A	
G-53	Locker for Reagents	A	A	A	
G-55	Balance (6kg)	A	A	A	
G-56	Infrared Heater	A	A	A	
G-57	Colony Counter	A	A	A	
G-58	Personal Computer (Arabic/English)	A	A	A	

資料-14

\*Note A: To be Essential, B: Further Examination, C: Low Priority  
Request All sites 1 / 3

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Requested Equipment for New 3RBOs from Egyptian Side

Annex 3

Code No.	Equipment Name	New RBOs			Remarks
		ASY	ASW	HRG	
G-59	Video Camera w/Video Monitor Unit	A	A	A	
G-60	Camera	A	A	A	
G-61	Over Head Project (w/Screen) and Data Show Equi	A	A	A	
<b>W. Water Quality Monitoring Equipment</b>					
W-1	Total Organic Carbon Analyzer	A	A	A	
W-2	Handy Type DO Meter	A	A	A	
W-3	Laboratory Type DO Meter	A	A	A	
W-4&5	Total Nitrogen/Total Phosphate Analyzer	A	A	A	
W-6&7	Tint Meter/Turbidity Meter	A	A	A	
W-8	Handy Type Conductivity/Temp. Meter	A	A	A	
W-9	Conductivity Meter/TDS	A	A	A	
W-10	Salt Meter (Na Ion Meter)	A	A	A	
W-11A	Water Sampler(Hydro Type)	A	A	A	
W-11B	Water Sampler(Pettenkoehrer Type)	A	A	A	
W-13	Ekman Barge Grab Sampler	A	A	A	
W-14	Plankton Net	-	-	A	
W-15	Distillation Apparatus(for CN,NH4,F)	A	A	A	
W-16	Oil Content Meter	A	A	A	
W-18	BOD Analyzing Apparatus(Incubator)	A	A	A	
W-19	COD Analyzing Apparatus w/Closed Reflux (Cr)	A	A	A	
W-22	Waste Water Treatment Equipment	A	A	A	
W-23	Portable Waste Water Chest (90L)	A	A	A	
W-24	Portable Waste Water Chest (50L)	A	A	A	
W-26	Water Quality Analysis (Temp,pH,Conductivity,Turbidity and DO)	A	A	A	
W-29	Water Proof Camera	-	-	A	
W-30	Automatic Titrator	A	A	A	
W-31	Ion Analyzer w/Electrode Set	A	A	A	
W-32	Portable Water Quality Test Kit	A	A	A	
W-33	Vacuum Filter w/Manifold	A	A	A	
<b>A. Air Quality Monitoring Equipment</b>					
A-1	Mobile Unit				
A-1A	SO2 Monitor(UV Fluorescence Method)	A	A	-	
A-1B	Nox Monitor(Chemiluminescence Method)	A	A	-	
A-1C	CO Monitor (Non-dispersive IR Method)	A	A	-	
A-1D	Ozone Monitor (UV Absorption Method)	A	A	-	
A-1E	Hydrocarbon Monitor(FID-GC Method)	A	A	-	
A-1F	Dust Monitor (Beta-ray Absorption)	A	A	-	
A-1G/II	Combined Wind Vane and Anemometer	A	A	-	
A-1H	Thermo-hygrometer	A	A	-	
A-1J	Solar Radiation Meter	A	A	-	
A-1K	Data Logger	A	A	-	
A-1L	Standard Voltage Regulator	A	A	-	
A-1M	Chassis Cabin	A	A	-	
A-3	Portable Black Fume Monitor	A	A	A	
A-4	Orsat Analyzer	A	A	A	
A-5	Wet Type Gas Collector	A	A	A	
A-6	Gas Detector Pump w/Detection Tubes	A	A	A	
A-7	Zero Gas Generator	A	A	-	
A-8	Span Gas Dilutor	A	A	-	
A-9	Stack Gas Sampler (for Dust)	A	A	A	

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\*Note A: To be Essential, B: Further Examination, C: Low Priority  
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Requested Equipment for New 3RBOs from Egyptian Side

Annex 3

Code No.	Equipment Name	New RBOs			Remarks
		ASY	ASW	HRG	
A-10A	Portable Stack Gas Sampler (for SOx)	A	A	A	
A-10B	Portable Stack Gas Sampler (for NOx)	A	A	A	
A-11	Gas Meter	A	A	A	
A-12	Rotor Meter	A	A	A	
A-13	Mass Flow Meter	A	A	A	
A-15	Auto-Dry Desicator	A	A	A	
A-17	Portable HC/CO Analyzer for Stack Gas	A	A	A	
A-18	Portable Auto. SOx Analyzer for Stack Gas	A	A	A	
A-19	Portable Auto. NOx Analyzer for Stack Gas	A	A	A	
A-20	High-volume Air Sampler	A	A	A	
A-21	Low-volume Air Sampler	A	A	A	
A-22	Deposit Gauge	A	A	A	
A-23	Andersen Air Sampler	A	A	A	
A-25	Standard Gas w/Cylinder & Regulator	A	A	-	
A-26	Air Bacteria Sampler (2-stage)	A	A	A	
A-28	Ambient Air Analyzer	A	A	A	
	Total Dust Meter	A	A	A	
	PM 10 Meter (Portable)	A	A	A	
<b>M. Marine Survey Equipment</b>					
M-1	Mobile Laboratory	-	-	C	
M-2	Boat for Monitoring/Sampling	-	-	A	Within 10m in length
M-3	Ocean Observation Buoy, Land Based Station for Data Collection and Analysis	-	-	C	
M-4	Remotely Operated Vessel (ROV)	-	-	C	
M-5	Tide Gauge	-	-	A	
M-6	Echo-sounder	-	-	A	
M-7	Under Water Video Digital Camera	-	-	A	
M-8	Under Water Light Meter	-	-	A	
M-9	Geographical Position System with Handled Unit & USP/PDA Adapter & Different GPS Receiver And Recorder	-	-	A	
M-10	Binoculars	-	-	A	
M-11	Fish Finder	-	-	A	
M-12	Marine Radio w/built in Hailer	-	-	A	
M-13	Handled VHF Radio	-	-	A	
M-14	Zoo Plankton Counting Tray	-	-	A	

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\*Note A: To be Essential, B: Further Examination, C: Low Priority  
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Annex 3

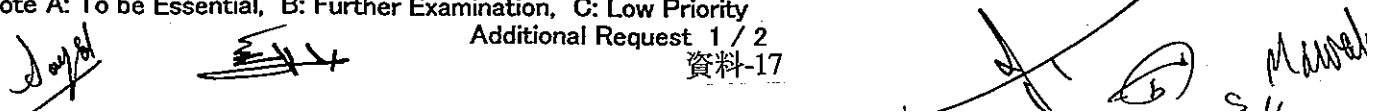
**Requested Additional Equipment for Existing Laboratories from Egyptian Side**

Code No.	Equipment Name	Rank of Additional Equipment for Existing RBOs						Remarks
		ALX	TNT	MSR	SEZ	GC	CCC	
<b>C. Common Analytical Equipment</b>								
C-1	X-Ray Fluorescence Spectrophotometer	C					B	
C-2	FT-IR spectrometer	C					B	
C-4	A.A.S (Flame Attachment Unit)	B	B	B	B	B	B	Attachment
C-6	UV/VIS Spectrophotometer						B	
C-7	Gas Chromatograph Mass Spectrometer (GC-MS)	C	C		C			
C-8	FID/FPD Gas Chromatograph		B	B	B	B	B	
C-9	FID/FPD Gas Chromatograph				C			
	ECD/FPD Gas Chromatograph		B					
C-11	High Performance Liquid Chromatograph (HPLC)				C			
C-12	Ion Chromatograph	B	B	B	B	B		
C-15	Handy Type pH Meter			B				
C-19	Glass Wares Set	B			B	B		
C-20	Reagents (w/Standard Samples)	B						
	Spare Parts for Equipment							
	1. pH Electrode for Handy/Laboratoy Type pH Meter	B		B		B		
	2. DO Electrode for Handy/Laboratoy Type DO Meter	B						
	3. Lamp for UV/VIS Spectrophotometer	B						
	4. Hollow Cathode Lamp for A.A.S	B						Cr, Cd, Zn
	5. Sample Cell for Turbidity Meter	B						
	6. Filter and Ion Exchanger	B						
	7. Ceramic Plate for Furnace	B						
	8. Mantle Heater for COD Analysis					B		
	9. Outer Container for Hg Analyzer	B						
	10. NH4 Electrode for Ion Meter	B						
	11. X-ray Detector for HPLC						B	
<b>G. General Laboratory Equipment</b>								
G-1	Analytical Balance (0 - 210 g, 4 decimals)			B	B	B		
G-16	Centrifuging Type Test Tube Evapo	B			C		B	
G-17	Test Tubu Evapo	B			C		B	
G-21	Shaker (Middle)	B			C		B	
G-60	Digital Camera					B		
	Lyophilizer						C	
	Texture Analyzer						C	
	Polymerase Chain Reaction (PCR)						C	
	Viscosity Meter						B	
<b>W. Water Quality Monitoring Equipment</b>								
W-1	Total Organic Carbon Analyzer			B	B			
W-32	Portable Water Quality Test Kit				B			
W-19	COD Reactor	B						
	Solidwaste Sampler						B	
	Soil Sampler						B	
<b>A. Air Quality Monitoring Equipment</b>								
A-1G/	Combined Wind Vane and Anemomeer	B						
A-4	Orsat Analyzer				B			
A-12	Flow Meter				B			
A-20	High-volume Air Sampler	B	B	B	B			
A-21	Low-volume Air Sampler	B			B			
A-28	Ambient Air Analyzer	B			B	B		
	Flow Injection for MIRAN			B				
	Analysis Unit for Portable Analyzer (NOx,SOx, HC, etc)	B	B	B		B		

\*Note A: To be Essential, B: Further Examination, C: Low Priority

Additional Request 1 / 2

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Annex 3

Requested Additional Equipment for Existing Laboratories from Egyptian Side

Code No.	Equipment Name	Rank of Additional Equipment for Existing RBOs						Remarks
		ALX	TNT	MSR	SEZ	GC	CCC	
	Ambient Temp./Humidity Meter	B		B				
	Indoor Ambient Air Gas Detector (ppb)					B		
	Noise Meter	C				B		
	Digital Compass	B						
	GPS Unit	B						
	Spare Parts for Equipment							
	Metal Fittings for Orzaf Analyzer	B						
	Detective Tubes for Ambient Gas	B						
	Thermometer for Stack Gas Analyzer	B						
	Spare Part for Wet Gas Sampler				B			
<b>M. Marine Survey Equipment</b>								
	Sieve Shaker "RO-Tap"	C						
	Sieve Set for Granulometry	C						
	Petroleum Hydrocarbon Sampler	B						
	Water Sampler (Bandon-type)	B						
	"Go-fic" Water Sampler with Teflon Coating Inside	B						
	Messenger for Sampler	B						
	Spectrofluoro Meter (Dual Beam, Scanning Type)	B						
	Forrel Scale for Water Color Comparison	B						
	Freeze-Dryer	B						
	Rubber Stoppers (Various Size, Glass and Teflon)	B						
	Plastic Spatulas	B						

\*Note A: To be Essential, B: Further Examination, C: Low Priority  
 Additional Request 2 / 2  
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**Criteria for selection of equipment**

1. EEAA's capability of managing the Project
2. financial viability of the Project
3. competence of personnel in technical and administrative aspects
4. enough space and utilities for installation
5. budgetary allocation of the Japanese side
6. absence of duplication with other donors
7. capability for operation and maintenance

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## JAPAN'S GRANT AID

## 1. Japan's Grant Aid System

## (1) Grant Aid Procedures

- 1) Japan's Grant Aid Program is executed through the following procedures.
  - Application (Request made by a recipient country)
  - Study (Basic Design Study conducted by JICA)
  - Appraisal & Approval (Appraisal by the Government of Japan and Approval by the Cabinet)
  - Determination of the implementation  
(The Notes exchanged between the Governments of Japan and the recipient country)
  - Implementation (Implementation of the Project)
  
- 2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Programme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

## (2) Basic Design Study

## 1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- i) Confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- ii) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic points of view;
- iii) Confirmation of items agreed on by both parties concerning the basic concept of the Project;
- iv) Preparation of a basic design of the Project; and
- v) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even through they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses a registered consulting firm. JICA selects a firm based on proposals submitted by interested firms. The firm selected carries out a Basic Design Study and writes a report, based upon terms of reference set by JICA.

The consultant firm used for the Study is recommended by JICA to the recipient country to also work in the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be prepared.

(3) Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grant" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

6) Undertakings required to the Government of the recipient country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the followings:

i) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction;

ii) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the site;

iii) To secure buildings prior to the procurement in case the installation of the equipment;

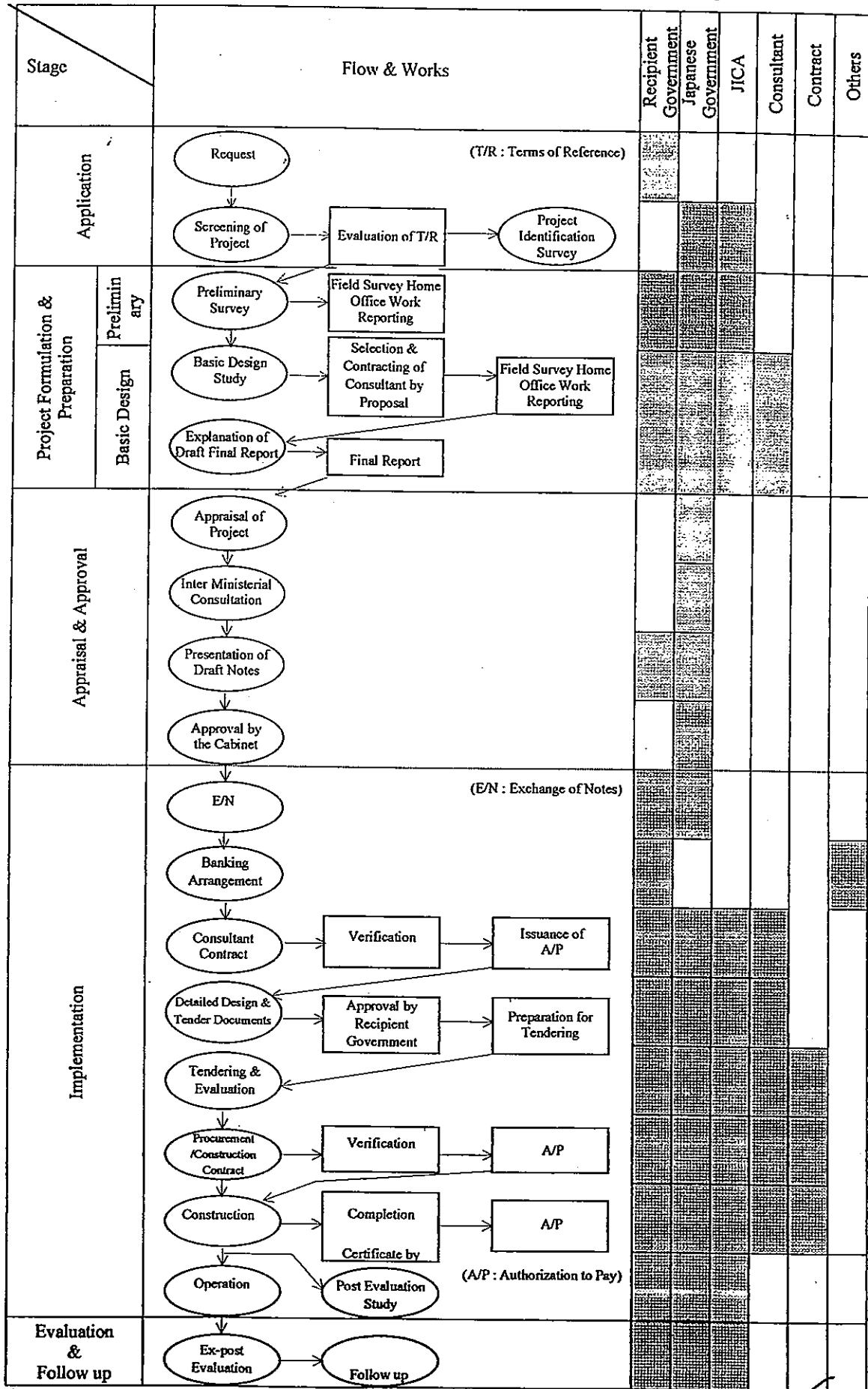
- iv) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid;
- v) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts;
- vi) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;
- vii) "Proper Use"  
The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.
- viii) "Re-export"  
The products purchased under the Grant Aid shall not be re-exported from the recipient country.
- ix) Banking Arrangement (B/A)
  - a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.
  - b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority.

## 2. Grant Aid Procedure

(1) Flowchart of Japan's Grant Aid Procedures  
Refer to Attachment 1.

(2) Major Undertaking to be taken by Each Government  
Refer to Attachment 2.

FLOW CHART OF JAPAN'S GRANT AID PROCEDURES



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## Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Government of Egypt
1	To secure land if necessary		●
2	To construct facilities at each proposed site		●
3	To supply equipment and materials for the regional environmental monitoring network		
	1) Supply and installation of monitoring equipment for the new RBO's laboratories	●	
	2) Supply and installation of additional monitoring equipment for CCC and existing RBO's laboratories, if necessary	●	
4	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
5	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
6	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		●
7	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract.		●
8	To maintain and use properly and effectively the equipment provided under the Grant Aid.		●
9	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment.		●

**Necessary measures to be taken by the Egyptian side**

1. To provide data and information necessary for the Project.
2. To complete the relocation and/or removal of existing equipment, facilities and civil works required prior to the installation and settings of equipment
3. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental items required for the Project.
4. To allocate enough budget for operation and maintenance timely and sufficiently.
5. To allocate enough staff for operation and maintenance of equipment
6. To procure required parts for maintenance timely and sufficiently.

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## Staffing Plan for New RBOs Laboratories (Aswan, Assuit and Hurghada)

### 1. Aswan and Assuit

#### (1) Title and number of the staff for each RBO's laboratory

- Laboratory Manager: 1
- Air quality senior chemist: 1
- Air quality chemist: 2
- Air quality technician: 2
- Water quality senior chemist: 1
- Water quality chemist: 2
- Water quality technician: 2

#### (2) Qualification

##### a. Laboratory Manager

- preferably master degree of science
- more than 10-15 years experience in environmental analysis and monitoring activities at laboratory

##### b. Senior Chemist

- Bachelor's degree of science, preferably the field of chemistry
- at least 5-6 years experience in environmental analysis and monitoring activities at laboratory

##### c. Chemist

- bachelor's degree of science

##### d. Technician

- 2 year in technical institute after high school

### 2. Hurghada

#### (1) Title and number of the staff for RBO's laboratory

- Laboratory Manager: 1
- Air quality senior chemist: 1
- Air quality chemist: 1
- Air quality technician: 1
- Water quality senior chemist: 2
- Water quality chemist: 3
- Water quality technician: 3

#### (2) Qualification

##### a. Laboratory Manager

- preferably master degree of science
- more than 10-15 years experience in environmental analysis and monitoring activities at laboratory

##### b. Senior Chemist

- Bachelor's degree of science, preferably the field of chemistry or marine biology
- at least 5-6 years experience in environmental analysis and monitoring activities at laboratory

##### c. Chemist

- bachelor's degree of science, preferably the field of marine biology

##### d. Technician

- 2 year in technical institute after high school



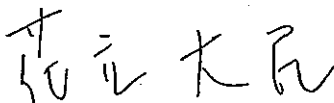
(2) 基本設計概略説明調査時

MINUTES OF DISCUSSIONS  
ON THE BASIC DESIGN STUDY  
ON THE PROJECT FOR  
SUPPLY OF EQUIPMENT FOR  
REGIONAL ENVIRONMENTAL MONITORING NETWORK (Phase II)  
IN THE ARAB REPUBLIC OF EGYPT  
(EXPLANATION OF DRAFT REPORT)

In April through May 2002, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on THE PROJECT FOR SUPPLY OF EQUIPMENT FOR REGIONAL ENVIRONMENTAL MONITORING NETWORK (Phase II) (hereinafter referred to as "the Project") to the Arab Republic of Egypt (hereinafter referred to as "Egypt"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

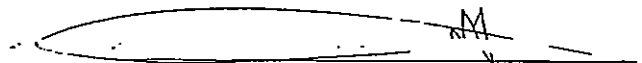
In order to explain to the Egyptian side the components of the draft report, JICA sent to Egypt the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Daimin Hanadate, JICA Egypt office, from July 29 to August 6, 2002.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

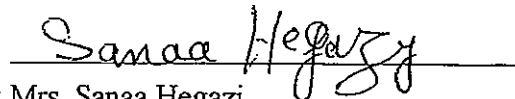


Mr. Daimin Hanadate  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency  
Japan

Cairo, August 4, 2002



Prof. Dr. Ayman F. Abou Hadid  
Chief Executive Officer  
Egyptian Environmental Affairs Agency  
The Arab Republic of Egypt



Witnessed by: Mrs. Sanaa Hegazi  
Under Secretary  
Asia & Australia, International Cooperation Department  
Ministry of Foreign Affairs  
The Arab Republic of Egypt

## ATTACHMENT

### 1. Components of the Draft Report

The Egyptian side agreed and accepted in principle the components of the draft report explained by the Team.

### 2. Japan's Grant Aid Scheme

The Egyptian side understands Japan's Grant Aid Scheme and will take the necessary measures, as described in **Annex-5** and **Annex-6** of the Minutes of Discussions signed by both parties on April 16, 2002.

### 3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and submit it to the Egyptian side around October 2002.

### 4. Other Relevant Issues

The following issues were discussed and confirmed by both sides.

#### (1) Construction of the buildings for the new RBOs

- 1) The Egyptian side promised to complete 40% of the construction works for the Hurghada RBO by the end of September 2002, and the entire construction works by the end of February 2003, based on the contract signed by EEAA and the contractor (**Annex-A**). EEAA will report the progress of the construction works to JICA Egypt Office on monthly basis, as agreed in the Minutes of Discussions signed on April 16, 2002.
- 2) The Egyptian side explained that the construction of the RBOs of Assuit and Aswan has been completed.

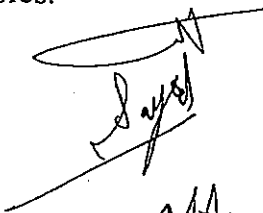
#### (2) Procurement of equipment

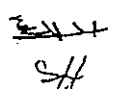
After discussions with the Team, the Egyptian side accepted the items of the equipment described in **Annex-B**.

#### (3) Procurement of consumables

- 1) The Egyptian side ensured that sufficient budget will be allocated for procurement of consumables such as spare parts, glassware and chemical reagents in order to secure proper operation and maintenance of the equipment procured under the Project.
- 2) Both sides understood and confirmed the necessity of improving the procurement system of EEAA for consumables. The Egyptian side accepted to expedite EEAA's procurement procedures to allow timely replacement/replenishment of consumables.

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3) The Egyptian side requested for special procurement arrangements for hazardous and/or nitrogen-contained chemical reagents, such as procuring them locally or shipping them separately and earlier than other chemical reagents, in order to secure timely customs clearance.

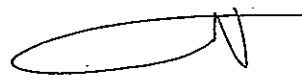
(4) Recruitment and training of the laboratory staff of the new RBOs


- 1) The Egyptian side assured the Team that all necessary staff for the new RBOs' laboratories will be assigned within two (2) months immediately after signing the contract with a Japanese trading firm. Number and qualification of staff for each laboratory are shown in Annex-7 of the Minutes of Discussions signed on April 16, 2002.
- 2) Based on the agreement stipulated in the Minutes of Discussions of April 16, 2002, EEAA will provide necessary training program for the new RBO laboratory staff through CCC, as shown in Annex-C, from within three (3) months immediately after signing the contract with a Japanese trading firm till the commencement of the technical guidance service provided by the Japanese side.
- 3) The Egyptian side agreed to continue providing necessary training to the new RBOs' staff by securing sufficient budget and trainers, in an effort to enhance skills to use and maintain the equipment procured under the Project properly and effectively.
- 4) In relation to staff training, the Egyptian side strongly requested the Japanese side to consider technical assistance for all RBOs. The Team will report this request to the Japanese authorities concerned.

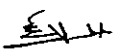
(5) Technical guidance service ("Soft Component")

- 1) The Egyptian side understood and agreed to the technical guidance service ("Soft Component") planned by the Japanese side based upon the request described in the Minutes of Discussions of April 16, 2002.
- 2) The Egyptian side agreed to take the following measures in implementing the technical guidance service:
  - to assign four (4) CCC staff members to participate in the technical training provided by the Japanese side, with a view to developing their capabilities as instructors for the RBOs' laboratories. Among the four (4) CCC staff members, two (2) will be assigned for water quality analysis and the other two (2) for air monitoring.
  - to organize the seminar at each new RBO and prepare the seminar materials under the guidance of the Japanese side.

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عقدبشأن انشاء مبنى الفرع الاقليمي لجهاز شئون البيئة بالغردقة

أنه في يوم سبب الموافق ٢٠٠٢ / ٧ / ٧

حرر هذا العقد بين كل من :-

- جهاز شئون البيئة برئاسة مجلس الوزراء ومقره ٣٠ طريق مصر حلوان الزراعي ويمثله في التوقيع على هذا العقد السيد الأستاذ الدكتور / أيمن فريد أبو حديد بصفته الرئيس التنفيذي لجهاز شئون البيئة (طرف أول)

- الشركة الوطنية للمقاولات والتوريدات - جهاز الخدمة الوطنية بوزارة الدفاع ومقرها ١٤ شارع محمود طلعت مدينة نصر بالقاهرة ويمثله في التوقيع على هذا العقد السيد العميد/ عبد الجليل العوضي محمد بصفته المفوض العام على الشركة (طرف ثان)

تمهيد

- اعمالا لأحكام قانون المناقصات والمزايدات رقم ٨٩ لسنة ١٩٩٨ ولائحته التنفيذية ونظرا لرغبة الطرف الأول في استكمال أعمال فرع جهاز شئون البيئة بالغردقة وبناء على موافقة السيد الأستاذ الدكتور وزير الدولة لشئون البيئة والمؤرخة بتاريخ ٢٠ / ٧ / ٢٠٠٢ فقد رغب الطرف الأول في التعاقد مع جهاز الخدمة الوطنية بوزارة الدفاع لاستكمال أعمال فرع جهاز شئون البيئة بالغردقة بقيمة اجمالية قدرها ٧٩٤٢٧٥

جنيها مصريا (سبعمئة واربعه وتسعون ألفا ومائتان وخمس وسبعون جنيها) وقد اتفق الطرفان بكامل أهليتهما القانونية والفعلية على ما يلي :-  
- يعتبر التمهيد السابق وعرض الطرف الثاني مكرسة الشروط والاسناد والرسومات التنفيذية ونسب الزمى للأحزاب مكرسة جزء لا يتجزأ من أحكام هذا العقد ومكملا له

البند الثاني

يلتزم الطرف الثاني باستكمال إقامة مبنى الفرع الاقليمي لجهاز شئون البيئة بالغردقة موضوع هذا العقد طبقا للشروط والمواصفات الموضحة بمكرسة الشروط والرسومات التنفيذية والعرض المقدم من الشركة وأمر الاسناد بحلول الزمى للأعمال وطبقا لتوجيهات استشارى العملية.

البند الثالثطريقة السداد:-

- يلتزم الطرف الأول بسداد قيمة الأعمال موضوع هذا العقد وقدرها ٧٩٤٢٧٥ جنيها مصريا (سبعمئة وأربعة وتسعون ألفا ومائتان وخمس وسبعون جنيها) في صورة مستخلصات دورية معتمدة من المهندس الاستشارى.

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البند الرابع

يلتزم الطرف الثاني بتنفيذ الأعمال موضوع هذا العقد خلال أربعة أشهر تبدأ من استلام الموقع خالي من العوائق

البند الخامس

يلتزم الطرف الثاني باحترام جميع القوانين واللوائح الحكومية والمحلية ذات الصلة بتنفيذ العملية بما في ذلك المستحقات طبقاً للشروط الواردة بالعطاء كما يكون مسئول عن حفظ النظام بموقع العمل وتنفيذ أوامر الطرف الأول باعتناء كل من يهمل أو يرفض التعليمات أو يحاول الغش أو يخالف الشروط المتفق عليها يلتزم الطرف الثاني أيضاً بالتخاذ كل ما يلزم لمنع الاصابات أو حوادث الوفاة أو الاضرار بممتلكات الحكومة أو الأفراد وتعتبر مسئوليته في هذه الحالة مباشرة دون تدخل من الطرف الأول.

البند السادس

يكون الطرف الثاني مسئولاً مسئولية جنائية ومدنية عن الأعمال موضوع العقد طبقاً لأحكام القانون المدني المصري .

البند السابع

تطبق أحكام القانون رقم ٨٩ لسنة ١٩٩٨ بتنظيم المناقصات والمزايدات وتسرى لائحته التنفيذية فيما لم يرد بشأنه نص خاص فيه

البند الثامن

جميع المواد المشونة من الطرف الأول والقطع والأدوات والآلات التي تكون قد استحضرت بمعرفة الطرف الثاني أو على الأرض التي يشغلها بقصد استعمالها في تنفيذ العمل يكون مسئولاً عنها وكذلك جميع الأعمال والمنشآت الوقتية الأخرى تظل كما هي ولا يجوز نقلها أو التصرف فيها الا بأذن من الطرف الأول الى أتم التسليم الابتدائي على أن تبقى في عهدة الطرف الثاني وتحت حراسته ومسئوليته وحده ولا يتحمل الطرف الأول في شأنها أية أعباء مالية أو مسئولية بسبب الضياع أو التلف أو السرقة أو غير ذلك.

البند التاسع

إذا أحل الطرف الثاني بأي التزام من الالتزامات الواردة موضوع هذا العقد طبق عليه غرامة التأخير المنصوص عليها في القانون ٨٩ لسنة ١٩٩٨ والصادرة بقرار وزير المالية رقم ١٣٦٧ لسنة ١٩٩٨ مع عدم الإخلال بحق الطرف الأول في المطالبة بالتعويض إن كان له مقتضى

البند العاشر

يلتزم طرفي العقد بأي تعديلات يدخلها مجلس الدولة عند مراجعته لهذا العقد

البند الحادى عشر

تختص محاكم مجلس الدولة بالفصل في كافة المنازعات التي قد تنشأ عن تنفيذ هذا العقد

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البند الثاني عشر

يلتزم الطرف الثاني بمجرد اتمام العمل بأن يخلى الموقع من جميع المواد والأثرية ومخلفات البناء والا كان للطرف الأول الحق بعد اخطار الطرف الثاني بخطاب موصى عليه في ازالة ذلك على حساب الطرف الثاني .

البند الثالث عشر

يقر الطرفان باتخاذهما العنوان الموضح بصدر هذا العقد محلا مختارا لكل منهما توجه إليه جميع المكاتبات والإنذارات وفي حالة تغيير أحد الطرفين لهذا العنوان يلتزم بإخطار الطرف الآخر بالموطن الجديد خلال أسبوع بكتاب موصى عليه بعلم الوصول ، وإلا اعتبرت جميع المكاتبات المرسله على الموطن القديم صحيحة قانونا

البند الرابع عشر

حرر هذا العقد من تاريخ تسخاضه تسلم الطرف الثاني إحداهما واحتفظ الطرف الأول بالباقي للعمل بمقتضاها

الطرف الثاني  
  
  
 (أ.د. أمين فريد أبو حديد)

المفوض العام

للشركة الوطنية للمقاولات العامة

الطرف الأول  
  
 (أ.د. أمين فريد أبو حديد)

الرئيس التنفيذي لجهاز شئون البيئة



هاتف

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Table-2.5 Plan of Equipment for New 3RBOs and Existing 6 Laboratories

ANNEX B

Note: Lean Type Number :Equipment number for existing laboratories provided by previous  
 Bold Type Number :Planning equipment number of this R/D.

Code No.	Equipment Name	Additional Equipment for Existing RBOs and CCC*						Equipment for New RBOs*			Appropriateness for each Item
		ALX	TNT	MSR	SEZ	GC	CCC	AST	ASW	HGD	
<b>C. Common Analytical Equipment</b>											
C-3	A.A.S.Flame type						1				
C-4	A.A.S.Flameless type	1	1	1	1	1	1				
C-4A	Flame Component for A.A.S	1	1	1	1	1					Necessary for expanding usage frequency of the atomic absorption spectrophotometer..
C-4B	A.A.S.Flameless type with Flame Compartment							1	1	1	Indispensable for analyzing heavy metals designated at the environmental standard..
C-5	UV/VIS Spectrophotometer (Single Beam)	1	1	1	1	1	1				
C-6	UV/VIS Spectrophotometer (Double Beam)					1	1	1	1	1	Indispensable for calorimetric analysis widely used as the fundamental equipment.
C-7	Gas Chromatograph Mass Spectrometer						1				
C-8	FID/FPD Gas Chromatograph	1					1				
C-9A	FID Gas Chromatograph	1			1		1				Necessary for monitoring the oil spill incident of the Red Sea.
C-10	ECD/FID Gas Chromatograph	1					1				
C-11	High Performance Liquid Chromatograph	1					1				
C-12	Ion Chromatograph	1	1	1	1	1	1	1	1	1	Necessary as a convenient equipment for analyzing extensive inorganic ions.
C-13	Stereoscopic Microscope	1	1	1	1	1	1	1	1	1	Necessary for biological observation.
C-14	Microscope	1				1	1	1	1	1	Necessary for identification of plankton.
C-15	Handy Type pH Meter	1	1	1	1	1	1	1	1	1	It can be measured, while the most fundamental pH within the water quality is moved, and it is the indispensable equipment.
C-16	Laboratory pH Meter	1	1	1	1	1	2	1	1	1	Indispensable for measuring of pH at the good accuracy.
C-18	Mercury Analyzer	1	1	1	1	1	1	1	1	1	Necessary for analyzing of mercury.
C-19	Glass Wares Set	1	1	1	1	1	1	1	1	1	Important item as a basic equipment for laboratory.
C-20	Reagents (with water quality test)	1	1	1	1	1	1	1	1	1	Important item as a basic equipment for laboratory.
<b>G. General Laboratory Equipment</b>											
G-1	Semi-Micro Analysis Balance-1	1	1	1	1	1	1				
G-1B	Semi-Micro Analysis Balance-2	1	1	1	1	1	1	1	1	1	Indispensable in order to measure weighing of the reagent and the suspended materials, and upper limit of the weighing should be necessary at about 200g.
G-2	Macro Analysis Balance	1	1	1	1	1	1	1	1	1	Indispensable in order to conveniently and quickly measure weighing of the reagent and samples.
G-4	Tabletop Type Centrifuge	1	1	1	1	1	1	1	1	1	Important item as a basic equipment for laboratory.
G-6	Muffle Furnace (for Organic)	1	1	1	1	1	1	1	1	1	Important item as a basic equipment for laboratory.
G-8	Constant Temperature Oven	1	1	1	1	1	1	1	1	1	Important item as a basic equipment for laboratory.
G-9	Middle Temperature Oven	1				1	1	1	1	1	Important item as a basic equipment for laboratory.
G-11	Oven for Glass Wares (Dryer)	1	1	1	1	1	2	1	1	1	Important item as a basic equipment for laboratory.
G-12	Autoclave (Vertical Type)	1	1	1	1	1	2	1	1	1	Indispensable for measuring of coliform number described in water quality standard.
G-13	Incubator	1	1	1	1	1	1	1	1	1	Indispensable for measuring of coliform number described in water quality standard.
G-14	Low Temperature Incubator	1	1	1	1	1	1	1	1	1	Indispensable for measuring of coliform number described in water quality standard.

Table-2.5 Plan of Equipment for New 3RBOs and Existing 6 Laboratories

ANNEX B

Note: Lean Type Number :Equipment number for existing laboratories provided by previous  
 Bold Type Number :Planning equipment number of this B/D.

Code No.	Equipment Name	Additional Equipment for Existing RBOs and CCC*						Equipment for New RBOs*			Appropriateness for each Item
		ALX	TNT	MSR	SEZ	GC	CCC	AST	ASW	HGD	
G-15	Rotary Evaporator	1	1	1	1	1	1				Main purpose is to use for the concentration of the organic solvent, however, gaschromatograph is not requested, so it is unnecessary at this time.
G-18	Fraction Collector	1	1	1	1	1	1				Unnecessary due to the reason of low usage frequency at the existing RBOs.
G-20	Shaker (Middle)	2	2	2	2	2	3	1	1	1	Important item as a basic equipment for laboratory.
G-22	Shaker (Reciprocal)	2	2	2	2	2	1				Unnecessary due to the reason of low usage frequency at the existing RBOs.
G-23	Mixer	1	1	1	1	1	1	2	2	2	Important item as a basic equipment of laboratory.
G-24	High Speed Homogenizer	1	1	1	1	1	1				Unnecessary due to the reason of low usage frequency at the existing RBOs.
G-25	Hot Plate (Small)	2	2	2	2	2	3	3	3	3	Indispensable for decomposition procedures of samples for heavy metal, etc..
G-26	Magnetic Stirrer (w/Hot Plate)	2	2	2	2	2	2	2	2	2	Necessary for mixing of the sample, and an important item as a basic equipment.
G-27	Multi Magnetic Stirrer w/Magnetic sets	1	1	1	1	1	2	1	1	1	Necessary for mixing of the sample, and an important item as a basic equipment.
G-28	Constant Temperature Water Bath	1	1	1	1	1	1	1	1	1	Necessary for temperature control of the sample, and an important item as a basic equipment.
G-32	Water Bath	2	2	2	2	2	1	2	2	2	Necessary for temperature control of the sample, and an important item as a basic equipment.
G-33	Cooling Unit	1	1	1	1	1	2				Unnecessary due to the low usage frequency in existing RBO.
G-34	Ultrasonic Cleaner	1	1	1	1	1	2	1	1	1	Important item as a basic equipment of laboratory.
G-37	Ultrasonic Pipette Cleaner	1	1	1	1	1	2	1	1	1	Important item as a basic equipment of laboratory.
G-38	Ion Exchanger	1	1	1	1	1		2	2	2	Important item as a basic equipment of laboratory.
G-39	Water Distillation Unit	1	1	1	1	1	2	1	1	1	Important item as a basic equipment of laboratory.
G-40	Clean Bench	1	1	1	1		1	1	1	1	Indispensable for the experiment on the microorganism.
G-41	Draft Chamber w/Gas Cleaning Device	1	1	1	1	1	1	1	1	1	Fundamental item necessary for the treatment of the noxious gas.
G-42	Draft Chamber	1	1	1	1		1	1	1	1	Fundamental item necessary for the treatment of the noxious gas.
G-43	AC Stabilizer	3	2	2	1	3	3	1	1	1	Indispensable for precise instruments such as atomic absorption spectrophotometer.
G-44	Cold Storage (Prefabricated-type)	1	1	1	1	1	1				Unnecessary equipment because of low usage condition in existing laboratories.
G-46	Refrigerator	1	1	1	1	1	1	3	3	3	Three (3) refrigerators are needed instead of the cold storage (prefabricated.type) that was not requested.
G-47	Freezer	1	1	1	1	1	1	1	1	1	Indispensable for saving of unstable reagents and samples.
G-48	Ice Maker (Cube Ice)	1	1	1	1	1	1	1	1	1	Necessary for providing ice used for keeping of water quality samples collected in the field.
G-49	Copy Machine	1	1	1	1	1	1	1	1	1	Useful equipment for the management of laboratories.
G-50	Monitoring Car	1	1	1	1	1		1	1	1	Indispensable for field sampling and observation of water/air quality for the transportation of collected sample.
G-51	Tool Set	1	1	1	1	1	1	1	1	1	Necessary for repair and adjustment of the equipment.
G-53	Locker for Reagents	1	1	1	1	1	2	3	3	3	Indispensable for stock of reagents.
G-55	Balance (6kg)	1	1	1	1	1	1	1	1	1	Indispensable for conveniently and quick use of measuring samples/reagents in order to grasp summary weight of them.
G-56	Infrared Heater-(Lamp)	1	1	1	1	1	1				Unnecessary equipment because of low usage condition in existing laboratories.
G-57	Colony Counter	1				1	1	2	2	2	Indispensable for the measurement of number of coliforms described in water quality standard.

Table-2.5 Plan of Equipment for New 3RBOs and Existing 6 Laboratories

ANNEX B

Note: Lean Type Number :Equipment number for existing laboratories provided by previous  
 Bold Type Number :Planning equipment number of this B/D.

Code No.	Equipment Name	Additional Equipment for Existing RBOs and CCC*						Equipment for New RBOs*			Appropriateness for each Item
		ALX	TNT	MSR	SEZ	GC	CCC	AST	ASW	HGD	
G-58	Personal Computer (Arabic/English)	1	1	1	1	1	1	2	2	2	Useful equipment for the management of laboratories such as the data analysis.
G-59	Video Camera w/Video Monitor Unit	1	1	1	1	1	1	1	1	1	Useful equipment for making a photograph of pollution source and situation related to samples.
G-60	Camera	1	1	1	1	1	1	1	1	1	Useful equipment for making a photograph of pollution source and situation related to samples.
G-61A	Over Head Projector w/Screen	1	1	1	1	1	1	1	1	1	Necessary in training and in the announcement of the result.
G-61B	LC Projector	1	1	1	1	1	1	1	1	1	Necessary in training and in the announcement of the result.
<b>W. Water Quality Monitoring Equipment</b>											
W-1	Total Organic Carbon Analyzer	1	1	1	1		1	1	1	1	The aqueous organic carbon can be conveniently measured, and it is useful for the estimation of the dilution degree of COD.
W-2	Handy Type DO Meter	1	1	1	1	1	2	1	1	1	DO as the most fundamental parameter within the water quality can be measured on the field, and it is the indispensable equipment.
W-3	Laboratory Type DO Meter	1	1	1	1	1		1	1	1	DO can be measured at the good accuracy, and it is the indispensable equipment.
W-4&5	Total Nitrogen/Total Phosphate Analyzer	1	1				1				Though it is useful for analyzing the large number of samples at once, it seems to be unnecessary at present. Because the sample number can not be so large and existing laboratories have not sufficiently utilized this item up to now. Hence, it is recommendable to use the flow cell added at C-6 as the attachment instead of this item in order to raise the efficiency of calorimetric analysis.
W-6&7	Tint Meter/Turbidity Meter	1	1	1	1	1	1	1	1	1	Color and turbidity within the water quality as the most fundamental parameters can be measured, and it is the indispensable equipment.
W-8	Handy Type Conductivity/Temp. Meter	1	1	1	1	1	1	1	1	1	Electro conductivity as the fundamental parameter can be measured in the field, and it is the indispensable equipment.
W-9	Conductivity Meter	1	1	1	1	1	1	1	1	1	Electro conductivity can be measured at the good accuracy, and it is the indispensable equipment.
W-10	Salt Meter (Na Ion Meter)	1	1	1	1	1	1	1	1	1	Salinity can be measured at the good accuracy, and it is the indispensable equipment.
W-11A	Water Sampler(Hydro Type)	1	1	1	1	2	2	1	1	1	Indispensable for sampling of water quality.
W-11B	Water Sampler (Pettenkoller Type)	1	1	1	1						Because sampling size of water quality is very small, and it is unnecessary.
W-11C	Water Sampler (Bandon Type)							1	1	1	Indispensable for sampling of water quality.
W-13	Ekman Barge Grab Sampler	1	1	1	1	1	2	1	1	1	Indispensable for taking samples of sediment.
W-14	Plankton Net	1			1		1			1	Indispensable for taking sample of the plankton of the seawater.
W-15	Distillation Apparatus(for CN,NH4,F)	1	1	1	1		1	1	1	1	Necessary equipment for analysis of cyanogen, ammonia, fluoride described in water quality criterion.
W-16	Oil Content Meter	1	1	1	1	1	1				Unnecessary because oil content is not regulated in Low No.4 and existing oil content meter has not been utilized well.
W-18	BOD Analyzing Apparatus(Incubator)	1	1	1	1	1		1	1	1	Indispensable for the measurement of the BOD which is an important index described at the water quality criterion.
W-19	COD Analyzing Apparatus(Cr)	1	1	1	1	1		1	1	1	Indispensable for the measurement of the COD which is an important index described in the water quality criterion.
W-22	Waste Water Treatment Equipment	1	1	1	1	1	1	1	1	1	Indispensable equipment for the wastewater treatment which comes out of the laboratory by the end of the analysis.
W-23	Portable Waste Water Chest (180L)	1				1	3				Though it is the indispensable equipment, when it deals with it by the container which stocks the waste water after it finished the analysis, the capacity is changed, since the capacity is excessive.
W-23B	Portable Waste Water Chest (90L)							2	2	2	It is the indispensable equipment, when it deals with it by the container which stocks the waste water after it finished the analysis.
W-24	Portable Waste Water Chest (50L)	3	2	2	1	3	3	2	2	2	Indispensable for the stock of wastewater before the treatment.

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Table-2.5 Plan of Equipment for New 3RBOs and Existing 6 Laboratories

ANNEX B

Note: Lean Type Number :Equipment number for existing laboratories provided by previous  
 Bold Type Number :Planning equipment number of this B/D.

Code No.	Equipment Name	Additional Equipment for Existing RBOs and CCC*						Equipment for New RBOs*			Appropriateness for each Item
		ALX	TNT	MSR	SEZ	GC	CCC	AST	ASW	HGD	
W-26	Water Quality Analysis (Temp,pH,Conductivity,Turbidity and DO)	1	1	1	1	1	1	1	1	1	It can conveniently and quickly measure the water quality in the field, and it is the useful equipment.
W-29	Water Proof Camera	1	1	1	1	1	1			1	Indispensable for the observation of aquatic lives in the coral reef which inhabit seawater.
W-30	Automatic Titrator	1	1	1	1	1	1				Though it is useful for analyzing a large number of samples, it is unnecessary because number of sample is not so large and existing laboratories have not utilized enough.
W-31	Ion Analyzer w/ Electrode Set	1	1	1	1	1	1	1	1	1	useful for measurement of the ion of water such as ammonia, cyanogen, chlorine ion and fluorine.
W-32	Portable Water Quality Test Kit	1	1	1	1	1	1	2	2	2	Necessary for measurement of the water quality in the field.
W-33	Vacuum Filter w/ Manifold	1	1	1	1	1	1	1	1	1	Indispensable for the measurement of SS.
<b>A. Air Quality Monitoring Equipment</b>											
A-1	Mobile Unit										Useful for the air monitoring of ground sources such as the factory, it often utilizes even in existing RBO, and indispensable for new RBOs except for HGD.
A-1A	SO2 Monitor (UV Fluorescence Method)	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of sulfur dioxide.
A-1B	NOx Monitor (Chemiluminescence Method)	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of carbon dioxide/monoxide.
A-1C	CO Monitor (Non-dispersive IR Method)	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of carbon monoxide.
A-1D	Ozone Monitor (UV Absorption Method)	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of ozone.
A-1E	Hydrocarbon Monitor (FID-GC Method)	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of hydrocarbon.
A-1F	Dust Monitor (Beta-ray Absorption)	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of SPM.
A-1G	Combined Wind Vane and Anemometer	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of wind velocity/direction.
A-1H	Thermo-hygrometer	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the continuous measurement of atmospheric temperature/humidity.
A-1J	Solar Radiation Meter				1	1					Necessary item equipped at A-1 for the continuous measurement of solar radiation.
A-1K	Data Logger	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the data processing.
A-1L	Standard Voltage Regulator	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the power supply.
A-1M	Chasis Cabin	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the installation of all the meters related to the mobile unit.
A-1N	Tractor	1	1	1	1	1	1	1	1		Necessary item equipped at A-1 for the traction of the mobile unit.
A-7 (A-1o)	Zero Gas Generator	1	1	1	1	1	1	1	1		Necessary item for the calibration of the zero point.
A-8 (A-1P)	Span Gas Dilutor	1	1	1	1	1	1	1	1		Necessary item for the calibration of the maximum point.
A-25 (A-1Q)	Standard Gas Cylinder w/ Regulator	1	1	1	1	1	1	1	1		Necessary item for the calibration of the gas analyzer.
A-3	Portable Black Fume Monitor	1	1	1	1	1	1	1	1	1	Necessary for the measurement in the practical use relate to the color of the smoke discharged from the chimney in the visual observation.
A-4	Orsat Analyzer	1	1	1	1	1	1				Though the concentration of carbon dioxide and oxygen in exhaust gas can be measured by this item, the effectiveness is not so large, because continuous measurement is possible by A-19 NOx analytical instrument.

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Table-2.5 Plan of Equipment for New 3RBOs and Existing 6 Laboratories

ANNEX B

Note: Lean Type Number :Equipment number for existing laboratories provided by previous  
 Bold Type Number :Planning equipment number of this B/D.

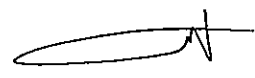
Code No.	Equipment Name	Additional Equipment for Existing RBOs and CCC*						Equipment for New RBOs*			Appropriateness for each Item
		ALX	TNT	MSR	SEZ	GC	CCC	AST	ASW	HGD	
A-5	Wet Type Gas Collector (for SO <sub>x</sub> , HCl)	1	1	1	1	1	1	1	1	1	Fundamental instrument for the sampling of sulfur oxide (SO <sub>x</sub> ) in the exhaust gas.
A-6	Gas Sampler (Detector Tube)	1	1	1	1	1	1	1	1	1	Necessary instrument set related to the measurement of the dust in exhaust gas, it is collected on the filter paper.
A-9	Stack Gas Sampler (for Dust)	1	1	1	1	1	1	1	1	1	Necessary for the measurement of exhaust gas and gas concentration in work environment.
A-10	Portable Stack Gas Sampler (for NO <sub>x</sub> )	1	1	1	1	1	1				Though it is the fundamental instrument related to the sampling of nitrogen oxide (NO <sub>x</sub> ) in exhaust gas, it is unnecessary because the continuous measurement can be done by A-19.
A-11	Gas Meter	1	1	1	1	1	1	1	1	1	Necessary for the measurement of the sampling gas quantity in exhaust gas and environmental air, it is used at A-5, A-9 and A-10.
A-12	Rotor Meter	1	1	1	1	1	1	1	1	1	Necessary for the measurement of the flow rate in the sampling of exhaust gas and environmental air, it is also used at A-5, A-9 and A-10.
A-13	Mass Flow Meter	1	1	1	1	1	1	1	1	1	Necessary for the measurement of the flow rate in the sampling of exhaust gas and environmental air, it is also used at A-5, A-9 and A-10.
A-15	Auto-Dry Desiccator	1	1	1	1	1	1	2	2	2	The necessity as filter paper or water SS sample for collector ingredient (A-9, A-20, A-21) of the dust dry.
A-17	Portable HC/CO Analyzer for Stack Gas	1	1	1	1	1	1	1	1	1	It is essential for the continuous measurement of carbon monoxide and hydrocarbon in exhaust gas.
A-18	Portable Auto. SO <sub>x</sub> Analyzer for Stack Gas	1	1	1	1	1	1	1	1	1	It is essential for the continuous measurement of sulfur dioxide in exhaust gas.
A-19	Portable Auto. NO <sub>x</sub> Analyzer for Stack Gas	1	1	1	1	1	1	1	1	1	It is essential for the continuous measurement of nitroge oxide in exhaust gas.
A-20	High-volume Air Sampler	4	1+2	1+2	1+2	4	2	3	3	2	Basic instrument for sampling of dust in the ambient air, and it indispensable for the investigation.
A-21	Low-volume Air Sampler	4	1+2	1+2	1+2	4	2	3	3	2	Basic instrument for sampling of dust in the ambient air, and it indispensable for the investigation.
A-22	Deposit Gauge	1	1	1	1	1	1				Though it is for the sampling of rain and fall dust, it is unnecessary because there is no standard in Egypt.
A-23	Andersen Air Sampler	1	1	1	1	1	1				By the instrument for the respective grain diameter collection of the particle in the environmental air, though the origin can be estimated by analyzing the sample, the use frequency is yet low even in existine RBO.
A-24	Sulfur Content Meter	1	1	1	1	1	1				Unnecessary for the inspection of sulfur content in fuel because necessity of this item is low.
A-26	Air Bacteria Sampler (2-stage)	1				1	1				It is unnecessary since it has not been utilized well in existing laboratories.
A-28	Ambient Air Analyzer	1	1	1	1	1	1	1	1	1	Necessary for the quick measurement of VOCs ( volatile organic compounds ) in roadside and work place.
A-29	Total Dust Meter (Light-scattering)							1	1	1	Indispensable for the measurement of dust concentration in work place, and expected to be high use frequency.
A-30	PM 10 Meter (Portable)							1	1	1	Indispensable for the measurement of small particulate less than 10 micron contained in dust.
A-32	Noise Meter					1					In the Cairo metropolitan area, there is a complaint of much noise, therefore, it is necessary to measure noise by this item.
<b>M. Marine Survey Equipment</b>											
M-1	Mobile Laboratory										Unnecessary since the analysis of the sample is carried out in the laboratory after the transportation to RBO.
M-2	Boat for Monitoring/Sampling									1	Indispensable for marine survey/sampling/transportation.
M-3	Ocean Observation Buoy, Land Based Station for Data Collection and Analysis										Unnecessary since it is the equipment for the marine research and it deviates from the purpose and concept related to the monitoring plan of RBO.
M-4	Remotely Operated Vessel (ROV)										Unnecessary since it is the equipment for the marine research and it deviates from the purpose and concept related to the monitoring plan of RBO.
M-5	Tide Gauge										Unnecessary since it is the equipment for the marine research and it deviates from the purpose and concept related to the monitoring plan of RBO.
M-6	Echo-sounder										Unnecessary since it is the equipment for the marine research and it deviates from the purpose and concept related to the monitoring plan of RBO.
M-7	Under Water Video Digital Camera									1	Indispensable for the observation of the situation related to the pollution/ecology/marine lives.

Table-2.5 Plan of Equipment for New 3RBOs and Existing 6 Laboratories

ANNEX B

Note: Lean Type Number :Equipment number for existing laboratories provided by previous  
 Bold Type Number :Planning equipment number of this B/D.

Code No.	Equipment Name	Additional Equipment for Existing RBOs and CCC*						Equipment for New RBOs*			Appropriateness for each Item
		ALX	TNT	MSR	SEZ	GC	CCC	AST	ASW	HGD	
M-8	Under Water Light Meter									<b>1</b>	Necessary for obtaining the important information on depth distribution of under water light in seawater.
M-9	Gerographical Position System with Handled Unit & USP/PDA Adapter & Different GPS Receiver And									<b>1</b>	Necessary for understanding of actual sampling position on the sea .
M-10	Binoculars									<b>1</b>	Basic equipment for navigation.
M-11	Fish Finder										Unnecessary since it is the equipment for the marine research and it deviates from the purpose and concept related to the monitoring plan of RBO.
M-12	Marine Radio w/built in Hailer										Sampling and survey area is limited in 2 km apart from the coast, hence, the marine radio is unnecessary.
M-13	Handled VHF Radio									<b>1</b>	Necessary for the communication between base and survey boat while the investigation.
M-14	Zoo Plankton Counting Tray									<b>1</b>	Indispensable for the measurement of the Zooplankton.



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**Proposal Of Training Plan Required  
for new RBOs ( Ast, Asw.& hur.)**

**Introduction:**

\*\* This training is required to train both chemists and technicians on several analysis and laboratory works (Environmental monitoring).

\*\* The plan training will be conducted in several stages addressing all the related topics.

**Proposal:**

**The training will include two section (Air and Water)**

\*\*The background information should be covered firstly in classroom presentations.

\*\*It is recommended that some of these presentation and practical training should be conducted by "CCC" staff under supervision of Japanese experts based on the Egyptian site request.

\*\* This training Should be divided into two parts ( theoretical and practical ):

\* First part (Theoretical):

\*\*These presentation should cover the (Water / Air) Quality Monitoring:

- \* Introduction of (air and water) pollutants.
- Sampling and preservation of samples (Air & Water).
- Colorimetric method ( $\text{CN}^-$ ,  $\text{F}^-$ ).
- \* Titration Method ( $\text{DO}$ ,  $\text{Cl}^-$ ,  $\text{SO}_4^{2-}$ ).
- Atomic absorption method. ( $\text{Cd}$ ,  $\text{pb}$ ,  $\text{Fe}$ ,....).

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Chemist: Elham Refaat

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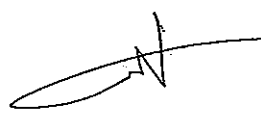

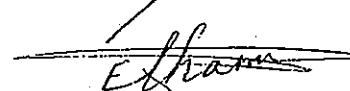
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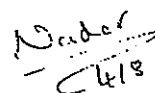
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- Microbiology Examination (coliform group, Total bacterial count ).
- Quality assurance Quality control.
- Second part (Practical for Water):
- Environmental water and wastewater analysis Training covering the environmental Egyptian law (COD, BOD, Chloride, hardness,.....etc).
- Sampling preservation and custody.
- Detection of the sampling point.
- Digestion of samples, Atomic absorption. (Cd , pb , Fe,.....).
- Microbiology Examination (Total coliform , Fecal Coliform), Total bacterial count ).
- Quality assurance Quality control.

Third part (Practical for Air):

- Ambient Air with mobile laboratory ( CO ,SOX , NOX ,HC, O<sub>3</sub>).
- Stack Emission ( SO<sub>x</sub>, NO<sub>x</sub>,CO,O<sub>2</sub>.....etc).
- Determination of Noise BY 'Sound level meter '.
- PM10.
- TSP (high volume& low volume ).
- Lead Emission.




   






Chemist: Elham Refaat

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Training Schedule for New RBOs( Ast. , Asw., Hur.)

Theoretical Training Items	period	participant
Introduction.	2 Days	(air & water)
Sampling and preservation	2Days	(air & water)
Colorimetric methods	2 Days	(air & water)
Titration methods	2 Days	(air & water)
Atomic Absorption methods	2days	(air & water)
Microbiology Examinations.	3 Days	(Water)
Quality Assurance& Quality Control	4 Days	(Air & water)

Practical Training Item	Period	Participant
*Detection of the sampling Point *Sampling and preservation	2 Days	(water)
PH, TSS,TDS,BOD, COD, Hardness ,Chloride, Sulfate, Nitrate, Florid	Two Weeks	(water)
Oil & Grease	1 Day	(water)
Digestion Samples for 'Atomic Absorption'	2 Days	(water)
* Total Coliform & Fecal Coliform * Total bacterial Count.	One Week	(water)

Practical Training Item	Period	Participant
Ambient Air Monitoring with Mobile Lab.	5-Days	Air
Stack mission	4 Days	Air
Detection of Noise with "Sound level meter"	1 Day	Air
PM10 Measurement	1Days	Air
TSP (High Volume& Low Volume)	4 Days	Air
Lead Emission	1 Days	Air

\*\* The training will be start in June 2003.

\*\* There are 34 participants from different RBOs ( Ast. , Asw. , Hur. ).

\*\* The theoretical part attendance will be in Class Room in CCC , or training room at each RBOs.

\*\* The practical part will be in the field in each RBOs (Asw, Ast, Hur)

Chemist : Elham Refaat

資料-42

Handwritten signature and date: 4/8

Handwritten signature

Handwritten signature

Handwritten signature: MA

Handwritten signature