Attachment 2: Minutes of Meeting for the Technical Committee Meeting

Minutes of Meeting
On
The 1st Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 23rd February 2005

Eng. Imad Hassoun
Deputy Minister,
Ministry of Local Administration and Environment

Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

The 1st technical committee (T/C) was started by an opening statement by the Deputy Minister of Local Administration and Environment (MOLAE), Eng. Imad Hassoun mentioning the outline of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Then, the JICA Expert Team presented the outline of the Project including the equipment and other instruments to be provided by the Japan International Cooperation Agency (JICA) to the technical committee members listed Per ANNEX-1.

The followings are the issues discussed and commented upon in the 1st T/C meeting.

(1) Director of the Directorate for Environmental Affaires (DFEA) in Homs, Ch. Solayman Kalo, submitted a staff list to be assigned to the Project and a layout plan of the laboratory. He commented that the equipment to be provided should be selected considering the local needs of each directorate. The staff of the DFEA in Homs could be a trainer to other DFEAs because of its high analysis capability if JICA provides additional equipment. In Homs, analysis needs of hydrocarbon and fluoride are essential, but this is not included in the Project even though he requested to the Preparatory Missions from the JICA headquarters. He questioned its reasons.
The JICA Syria, Mr. Naoki Takechi answered that it was decided considering the current capacity and total balance of all DFEAs, and he suggested that the Project is one of the assistances from JICA and the further assistance could be considered in another project based on the output of the Project. The JICA Expert Team additionally proposed that such kinds of specific technical issues should be discussed in the Working Group of T/C for preparation of a new project proposal.

(2) Director of the Public Awareness Department in the General Commission for Environmental Affaires (GCEA), Mr. Abdulrazzak Safrjalani, commented that the public awareness activities should be promoted in close cooperation with GCEA and DEFAs. The JICA Expert Team agreed the comments and requested to GCEA for their aggressive participation.

(3) Director of DFEA in Damascus Countryside, Mr. Thaer Daif, questioned same issues as of Homs by stressing specific conditions of pollution sources in the Governorate of Damascus Countryside such as the existence of more than 20,000 factories, and the location of the Adra Industrial Zone. He requested to JICA to provide equipment same of the DFEA in Damascus. He also expressed some complaints about a lack of enough information to the DFEA in Damascus Countryside related to the Project. The JICA Expert Team repeated the same answer to the DFEA in Homs, and suggested that there could be a lot of possibility to use the necessary equipment in the DFEA in Damascus because of shorter distance to bring samples, and such kind of effective usage is to be considered among DFEAs.

(4) The JICA Expert Team wondered whether the DFEA in Damascus Countryside has enough staff

I. H

to deal with the monitoring activities. In addition, the JICA Syria, Mr. Naoki Takechi commented that even the equipment to be provide by JICA will require additional operation and maintenance (O/M) cost to DFEA though some will be covered by JICA only in the first year. If the DFEA in Damascus Countryside has enough capability to procure such equipment by himself, the JICA Expert Team will be able to assist and support for effective use of them in the Project.
The Director of DFEA in Damascus Countryside replied that it was ready requested to GCEA and MOLAE through the regular administrative procedure.

(5) Director of DFEA in Idleb, Mr. Mahmould Taleb, questioned that what kind of background will be required for the counterpart in charge for the data management, and whether the chief of laboratory must be in full time for the Project. The JICA Expert Team replied that the person in charge for data management will be required some chemical background and knowledge, and the chief will not always be a fulltime if he has an assistant under his management.

(6) Deputy Director of the DFEA in Sweida, Mr. Refa'at Khodr, informed that the Alroun dam in the Governorate is suffering from water pollution by pesticides which might cause cancer diseases according to the report by the Ministry of Irrigation published one month ago. He repeated the necessity to provide equipment considering specific background of each Governorate. He expressed great thanks to JICA about the Project because it could be useful to identify the evidence for taking countermeasures against environmental pollution and resource degradation.

(7) Director of the Water Safety Department in GCEA, Ms. Reem Abd Rabbo, noted that the coliform is one of the most important indices to check safety of potable water, so the biological analysis of water quality should be more emphasized in the Project. She questioned that how the Project will cope with the quality assurance and quality control (QA/QC) matter. The JICA Expert Team replied that the Project includes both an internal QA/QC by cross checking and so on, and an external QA/QC by introducing regular check from other authorized laboratories such as the Atomic Energy Commission (AEC) and the Science and Environmental Research Center (SERC).

(8) Director of the Environmental Impact Assessment (EIA) in GCEA, Ms. Manal Sakka, mentioned that some laboratories of DFEAs planned to be moved to new places though the JICA Expert Team explained its necessary space. The JICA Expert Team answered that it was ready informed from several DFEAs, so a tentative use of the current laboratories should be taken into account for the time being.

(9) Director of the DFEA in Homs, Ch. Solayman Kalo, questioned a general procedure to change and/or modify the contents of the Project component. The JICA Expert Team replied that this kind of requests should be discussed with DFEAs and GCEA through T/C at first, and then its discussion results should be reported to St/C with proposals for making final decision.

J. H

ANNEX-1

List of Attendants

Syrian Side

Name	Position	Organization
Mr.Imad Hassoun	Deputy Minister	MOLAE
Mr.Hamzeh Soliman	Director of Environment	DFEA Quneitra
Ms.Reham Shaheen	Director of Environment	DFEA Deir ez Zor
Mr.Bassam Khair bek	Director of Environment	DFEA Damascus
Mr.Mahmoud Taleb	Director of Environment	DFEA Idleb
Mr.Ali Jwaied	Director of Environment	DFEA Hama
Ms.Shams Aljasem	Director of Environment	DFEA Al Rakka
Mr.Hasan Marjan	Director of Environment	DFEA Tartus
Mr.Solayman Kalo	Director of Environment	DFEA Homs
Mr.Thaer Daif	Director of Environment	DFEA Damascus Countryside
Ms.Fatema Hariri	Director of Environment	DFEA Dara'a
Mr.Maher Khair	Staff	DFEA Al Sweida
Mr.Refa'at Khodr	Deputy Director	DFEA Al Sweida
Mr.Aysar Beniameen	Staff	DFEA Hasakeh
Mr.Mohamad Ameen Al-Khalaf	Staff	DFEA Deir ez Zor
Mr.Ahmad Khsara	Head of Air Safety Dept.	GCEA
Ms.Wareif Yazgi	Staff	GCEA
Ms.Reem Aed Raboh	Director of Water Safety	GCEA
Ms.Manal Sakka	Director of EIA	GCEA
Mr.Abdulrazzak Safrjalani	Director of Public Awareness	GCEA
Mr.Ahmad Mohamad	Director of International Relations	GCEA

Japanese Side

Name	Position	Organization
Mr. Naoki Takechi	Project Formulation Advisor	JICA Syria Office
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Dr. Ryunan Matsue	Water Quality (Basic Analysis)	JICA Expert Team
Mr.Mohammed Aldoubosh	Interpreter	JICA Expert Team

J. H

The Capacity Development of Environmental Monitoring at Directorates for Environmental Affaires in Governorates

Agenda for the 1st Technical Committee

1. Date:

- **Feb. 23 (Wed), 09:00-11:30: at meeting room in the Administration Development Center**

2. Agenda

1. Opening Statement **(by the Deputy Minister of MOLAE)**	**09:00-09:05**
2. Remarks **(by the JICA Syria Office)**	**09:05-09:10**
3. Presentation: Technical Matters **(by the JICA Expert Team)**	**09:10-10:00**

1) **Presentation of the Project**
2) **Confirmation of basic water quality analysis parameters,** chemical and biological water analysis parameters and air quality analysis parameters
3) **Equipment and instrument supplied**
4) **Confirmation of the measures to be taken by Syria side**
5) **Layout of laboratory in Damascus DFEA and other DFEAs**
6) **Confirmation of the assignment of laboratory chief in each DFEA, and the staffs' name who will take part in the training course.**

4. Q and A	**10:00-11:00**

End

J.H

Minutes of Meeting
On
The 2nd Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 26 May 2005

Dr. Akram S. Al-Khouri
General Director
General Commission for Environmental Affaires

Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

The 2nd technical committee (T/C) was held on 26th May, 2005 at the Administration Development Center. All T/C members attended and the following members were absent: Ms. Reem Aed Raboh Director of Water Safety in the General Commission for Environmental Affaires (GCEA), Ms. Lama Ahmad Director of the Directorate for Environmental Affaires (DFEA) in Lattakia, Mr. Samir Hamzeh from GCEA, and Ms. Fathia Mohammad from GCEA. It was started by an opening statement by the Chairman of T/C, Dr. Akram S. Al-Khouri, the General Director of GCEA mentioning current progress of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Dr. Akram S. Al-Khouri also requested the attendants sending qualified trainees to the training courses to be held by the JICA Expert Team. Then, Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation, going through the coming steps of the Project in detail referring the following 6 technical items.

1. Counterparts (C/P) and Project Design Matrix (PDM)
2. Training Program of the Basic Environmental Monitoring Course
3. Preparation of Lab of DFEA and Installation of Equipment
4. Profile and Carrier Development of C/P Personnel
5. Usage of News Letter "Humat Beia"
6. Items for Working Group Activities

After the series of discussion, the Chairman of T/C, Dr. Akram S. Al-Khouri, made closing remarks of the 2nd T/C. Then, a video film about "Lessons on Environment in Japan" was displayed for the attendants.

An attendant list and the agenda of the 2nd T/C are attached per ANNEX-1 and ANNEX-2, respectively.

The followings are the issues discussed and commented upon in the 2nd T/C meeting.

(1) The JICA Expert Team, Mr. Yoichi Iwai, questioned the preparatory work conditions of laboratory of the Directorate for Environmental Affaires (DFEA) in Damascus, Damascus Countryside, Aleppo, Tartous, and Deir ez Zor. The 5 Directors of Damascus, Damascus Countryside, Aleppo, Tartous, and Deir ez Zor DFEAs answered that construction works of the laboratory have been almost completed and these will be ready for use at the end of May 2005.

(2) The JICA Expert Team, Mr. Yoichi Iwai, requested the Directorate for Environmental Affaires (DFEA) in Damascus to nominate 4 counterparts (one for Chemical and Biological Analysis, two for Air Quality, and one for Data Management). The Director of DFEA in Damascus, Mr. Bassam Khairbek, answered that he will inform the name of counterparts to the JICA Expert Team because it was already decided.

(3) The Director of DFEA in Hasakeh, Ms. Raeifa Esper, requested a training work related to data management because her staff did not have any experience. The JICA Expert Team, Mr. Yoichi Iwai, replied that another training course focused on the data management will be held for the counterparts in charge for data management by the JICA Expert Team.

(4) The Director of DFEA in Hasakeh, Ms. Raeifa Esper, mentioned that an achievement evaluation of the counterparts should be conducted by the JICA Expert Team at first, in order to learn evaluation method. The General Director of GCEA, Dr. Akram S. Al-Khouri, answered that the evaluation in the Project should be carried out by the directors of DFEAs primary, because it is not a test which some will pass and others fail but a tool to measure the achievement level of personal skills in dealing with equipment and capability what extent of the counterpart was developed and improved. The JICA Expert Team, Mr. Yoichi Iwai, additionally commented that the director is a position to watch attitude and performance of the counterpart daily, and the JICA Expert Team will support the directors when it is required.

(5) Director of the Directorate of Environmental Impact Assessment (EIA) in GCEA, Ms. Manal Sakka, questioned whether the interim evaluation is planned in the Project. The JICA Expert Team, Mr. Yoichi Iwai, answered that the evaluation is planned to be conducted by monthly and yearly during the Project period, and it should be continued even after the termination of the Project. The General Director of GCEA, Dr. Akram S. Al-Khouri, answered to the question that there will be an integrated evaluation for the Project done by GCEA, DFEAs, and the JICA Expert Team.

(6) The Director of DFEA in Tartous, Mr. Hasan Marjan, questioned whether the 3-days field training could not be enough for analysis training of 14 water quality substances. The JICA Expert Team, Mr. Yoichi Iwai, replied that the training program presented is up to the end of July 2005, and further training should be planned from August considering its results. The General Director of GCEA, Dr. Akram S. Al-Khouri, additionally explained that this is what we mean by evaluation checking acquired skills during the training.

(7) Concerning to the question mentioned above, the Director of DFEA in Homs, Mr. Suleiman Kalo, commented that it is enough for the counterparts of DFEA in Homs due to their sophisticated experiences. The JICA Expert Team, Mr. Yoichi Iwai, referred the different situation of laboratory analysis in each DFEA, and requested for dispatching trainers to the Project. The Director of DFEA in Homs answered that DFEA in Homs has contributed to GCEA in training activities such as mobile lab training.

ANNEX-1

List of Attendants

Syrian Side

Name	Position	Organization
Dr. Akram Khouri	General Director	GCEA
Ms.Manal Sakka	Director of EIA	GCEA
Mr.Abdulrazzak Safrjalani	Director of Public Awareness	GCEA
Mr.Ahmad Khsara	Head of Air Safety Dept.	GCEA
Dr.Yasin Mo'alla	Staff	GCEA
Mr. Shaka Al-Soleman	Staff	GCEA
Mr.Bassam Khairbek	Director of Environment	DFEA Damascus
Mr.Thaer Daif	Director of Environment	DFEA Damascus Countryside
Mr.Saeid Naffous	Director of Environment	DFEA Aleppo
Mr.Suleiman Kalo	Director of Environment	DFEA Homs
Mr.Ali Jwaied	Director of Environment	DFEA Hama
Mr.Mohammed Ameen Al-Khalaf	Staff of Environment	DFEA Deir ez Zor
Mr.Mahmoud Taleb	Director of Environment	DFEA Idleb
Ms.Raeifa Esper	Director of Environment	DFEA Hasakeh
Ms.Shams Aljasem	Director of Environment	DFEA Rakka
Dr. Motasem Abed	Director of Environment	DFEA Sweida
Ms.Fatema Hariri	Director of Environment	DFEA Dara'a
Mr.Hasan Marjan	Director of Environment	DFEA Tartous
Mr.Hamzeh Soliman	Director of Environment	DFEA Quneitra

Japanese Side

Name	Position	Organization
Ms. Reiko Funaba	Assistant Resident Representative	JICA Syria Office
Dr. Bachar Ibrahim	Advisor	JICA Syria Office
Mr. Rouand Sido	Program Officer	JICA Syria Office
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Dr. Ryunan Matsue	Water Quality (Basic Analysis)	JICA Expert Team
Mr. Shunsuke Sato	Water Quality (Chemical and Biological Analysis)	JICA Expert Team
Mr. Kazuyuki Sato	Environmental Education	JICA Expert Team
Mr.Mohammed Aldoubosh	Interpreter	JICA Expert Team
Ms.Nada Kat	Interpreter	JICA Expert Team

The Capacity Development of Environmental Monitoring at Directorates for Environmental Affaires in Governorates

Agenda for the 2nd Technical Committee

1. Date:

- May. 26 (Thu), 10:30-12:30: at the Administration Center of MOLAE

2. Agenda

1. Opening (by the General Director of GCEA)	10:30-10:40
2. Presentation (by the JICA Expert Team) 1) Counterparts and Project Design Matrix 2) Training Program of Basic Environmental Monitoring Course 3) Preparation of Laboratory of DFEA and Installation of the Equipment 4) Profile and Carrier Development of C/P Personnel 5) Usage of News Letter "Humat Beia" 6) Items for WG Activities	10:40-11:30
3. Discussion	11:30-12:30
4. Closing Remarks (by the General Director of GCEA)	12:30-12:35
5. Preparation of draft M/M (by the JICA Expert Team)	12:40-
3. Lunch	12:40-13:30

End

Minutes of Meeting
On
The 3rd Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 4 August 2005

Dr. Akram S. Al-Khouri
General Director
General Commission for Environmental Affaires

Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

The 3rd Technical Committee (T/C) for the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project) was held on 4th August, 2005 at the Meeting Room in the General Commission for Environmental Affaires (GCEA). It was started by an opening statement by Dr. Yasin Moa'alla, Director of the Directorate of Laboratories in GCEA. Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation, going through the coming steps of the Project referring the following 6 technical items.

1. Review of the Basic Environmental Monitoring Training
2. Next Training Program
3. Study Tour to the Egyptian Environmental Affaires Agency (EEAA) in Egypt
4. Preparation of Budget for the Project in the Next Year
5. News Letter "Humat Beia"
6. Others (Equipment)

After the series of discussion, the General Director of GCEA, Dr. Akram S. Al-Khouri, made closing remarks of the 3rd T/C. Then, copies of the News Letter "Humat Beia" were handed to GCEA and the Directors of Directorate for Environmental Affaiers (DFEAs) by the JICA Expert Team (GCEA, DFEAs of Damascus, Homes, and Aleppo were 150 copies, and other DFEAs were 100 copies in each).

An attendant list and the agenda of the 3rd T/C are attached per ANNEX-1 and ANNEX-2, respectively.

The followings are the issues discussed and commented upon in the 3rd T/C meeting.

(1) The JICA Expert Team, Mr. Yoichi Iwai, reviewed the current training, and confirmed that GCEA and all directors recognized and shared problems and difficulties concerning to the Project. The General Director of GCEA, Dr. Akram S. Al-Khouri, additionally mentioned that the problems related to staff, budget, and allowance of the Project were all internal matters to be solved by the Syrian side. The GCEA and directors attended agreed to continue further efforts for solving problems and difficulties mentioned above in cooperation with the JICA Expert Team.

(2) The JICA Expert Team, Mr. Yoichi Iwai, handed the attendant lists of the Basic Lecture Training and the Follow-up Training, and informed the names were not participated the Follow-up Training. Then, Mr. Yoichi Iwai requested the directors to inform the reasons of absence of them to the JICA Expert Team, especially the counterparts in charge for the basic water quality analysis. The directors attended agreed to inform the reasons to the JICA Expert Team.

(3) The JICA Expert Team, Mr. Yoichi Iwai, proposed the next training program which consists of a follow-up training in each DFEA, a trouble shooting on equipment and its usage, and a study tour to Egypt. The T/C members attended agreed the next training program proposed by the JICA Expert Team.

(4) The JICA Expert Team, Mr. Yoichi Iwai, proposed the special T/C meeting would be held in DFEA in Damascus on 22nd August, 2005 for discussion and agreement about a procurement specification related to air and water quality equipment to be procured in 2006. The GCEA and 3 DFEAs (Damascus, Homs, and Aloppo) agreed, and requested to the JICA Expert Team to prepare the procurement specification through discussion with the staff of GCEA and DFEAs.

(5) The Director of DFEA in Damascus Countryside, Mr. Thaer Al-Daif, claimed to the JICA Expert Team that JICA did not answer the matter of shifting central laboratory from DFEA in Damascus to DFEA in Damascus Countryside requested to the JICA Syria, Mr. Nagasawa, by the Governor of Damascus Countryside on 4th May, 2005. Mr. Thaer Al-Daif also mentioned that DFEA in Damascus Countryside sent a letter concerning to this matter to the Ministry of Local Administration and Environment (MOLAE) through GCEA, and it would be sent to the JICA Syria through the State Planning Commission (SPC). The JICA Expert Team, Mr. Yoichi Iwai, replied that the JICA Expert Team was not in a position to answer this matter, and nobody could answer to this claim in this meeting because of absence of the members from the JICA Syria.

(6) In this connection, the Director of DFEA in Homs, Mr. Suleiman Kalo, commented that DFEA in Homs should be the central laboratory because of its sophisticated capability of environmental monitoring and of urgent needs based on actual conditions of environmental pollution in Homs Governorate. In addition, the Assistant Director of DFEA in Damascus, Ms. Wadia'a Jeha Khouri, commented that Damascus and Damascus Countryside Governorates could be merged as the Metropolitan Damascus in near future. The JICA Expert Team, Mr. Yoichi Iwai, suggested that this matter must be discussed and agreed among concerned agencies in the Syrian side in advance, and then it should be proposed to the T/C and the Steering Committee (St/C) meeting because this issue should require a change of the Record of Discussion (R/D) agreed between the Syrian side and JICA on September 9, 2004.

(7) The Director of DFEA in Rakka, Ms. Shamsa Al-Jasem, questioned whether each DFEA was currently required to prepare its own environmental monitoring plan. The JICA Expert Team, Mr. Yoichi Iwai, replied that a monitoring plan which the JICA Expert Team currently mentioned was only for tentative use for practical training of water quality analysis.

(8) The Director of DFEA in Damascus Countryside, Mr. Thaer Al-Daif, suggested that a result of the pollution survey to be started soon should be prepared by using GIS. The JICA Expert Team, Mr. Yoichi Iwai, replied that GIS would not be used in the pollution source survey due to the licensing difficulties in Syria to use GIS.

(9) The Director of DFEA in Homs, Mr. Suleiman Kalo, requested a training concerning to more sophisticated analysis skills such as selection of analysis parameters, neutralization and so on, to the JICA Expert Team. The JICA Expert Team, Mr. Yoichi Iwai, agreed to include such technical skills in the next training program considering an actual progress of analysis capability of the counterpart personnel.

ANNEX-1

List of Attendants

Syrian Side

Name	Position	Organization
Dr. Akram Khouri	General Director	GCEA
Ms.Manal Sakka	Director of EIA	GCEA
Dr.Yasin Moa'alla	Director of Laboratories	GCEA
Ms. Wadia'a Jeha Khouri	Assistant Director of Directorate	DFEA Damascus
Mr.Thaer Daif	Director of DFEA	DFEA Damascus Countryside
Mr.Saeid Naffous	Director of DFEA	DFEA Aleppo
Mr.Suleiman Kalo	Director of DFEA	DFEA Homs
Mr.Ali Jwaied	Director of DFEA	DFEA Hama
Ms. Lama Ahmad	Director of DFEA	DFEA Lattakia
Mr.Mahmoud Taleb	Director of DFEA	DFEA Idleb
Ms.Raeifa Esper	Director of DFEA	DFEA Hasakeh
Ms.Shams Aljasem	Director of DFEA	DFEA Rakka
Ms.Omay'mah Al-Sha'ar	Staff of Environment	DFEA Sweida
Ms.Fatema Hariri	Director of DFEA	DFEA Dara'a
Mr.Hasan Marjan	Director of DFEA	DFEA Tartous
Mr.Hamzeh Soliman	Director of DFEA	DFEA Quneitra

Japanese Side

Name	Position	Organization
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Mr. Shunsuke Sato	Water Quality (Chemical and Biological Analysis)	JICA Expert Team
Mr.Mohammed Aldoubosh	Interpreter	JICA Expert Team
Ms.Nada Kat	Interpreter	JICA Expert Team

ANNEX-2

The Capacity Development of Environmental Monitoring at Directorates for Environmental Affaires in Governorates

Agenda for the 3rd Technical Committee

1. Date:

- Aug. 4 (Thr), 11:00-13:00: at the Meeting Room in GCEA

2. Objectives

1) Review and Feedback of the Training
2) Discussion on Issues Concerned

3. Agenda

1. Opening **11:00-11:10**
(by the General Director of GCEA)

2. Presentation **11:10-11:50**
(by the JICA Expert Team)
1) Review of the Basic Environmental Monitoring Training
2) Next Training Program of the Environmental Monitoring
3) Study Tour to the Environmental Monitoring Training Center in the Arab Republic of Egypt
4) Preparation of Budget for the Project in the next Year
5) Preparation of News Letter "Humat Beia"

3. Discussion **11:50-12:30**

4. Closing Remarks **12:30-12:40**
(by the General Director of GCEA)

5. Preparation of draft M/M **12:40-**
(by the JICA Expert Team)

End

Minutes of Meeting
On
The 4th Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 22 August 2005

Dr. Akram S. Al-Khouri
General Director
General Commission for Environmental Affaires

Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

The 4th Technical Committee (T/C) for the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project) was held on 22nd August, 2005 at the Meeting Room in the Directorate for Environmental Affaires (DFEA) in Damascus. The principal objective of the 4th T/C is to discuss the draft technical specifications for the equipment to be procured in 2005 and to get agreement with the General Commission for Environmental Affaires (GCEA), DFEAs concerned, and the JICA Expert Team.

At fist, the Director of Laboratories in GCEA, Dr. Yasin Moa'lla, announced that the Director of DFEA in Homs was ready agreed the draft technical specifications prepared by the JICA Expert Team through discussions with the staff members of DFEAs concerned. After the series of discussion, the T/C members and the JICA Expert Team attended to the 4th T/C, reached to the agreement on the draft technical specifications.

An attendant list of the 4th T/C and the technical specifications prepared by the JICA Expert Team are attached per ANNEX-1 and ANNEX-2

The followings are the issues discussed in the 4th T/C meeting.

(1) The Director of DFEA in Aleppo, Mr. Saeid Naffous, agreed the draft technical specifications, and requested to include equipment for chemical and biological analysis, noise, oil and grease, and pesticides in a procurement list for DFEA in Aloppo, if possible. The JICA Expert Team, Mr. Yoichi Iwai, replied that these technical specifications were prepared based on the Record of Discussion (R/D) agreed between the Syrian side and JICA on September 9, 2004. Therefore, the equipment mentioned by Mr. Saeid Naffous can not be included in the procurement list at this moment. Mr. Yoichi Iwai suggested that any request for further assistance from JICA not described in R/D should be discussed and agreed in the Steering Committee (St/C) of the Project at first. Mr. Saeid Naffous understood this answer.

(2) The Director of DFEA in Aleppo, Mr. Saeid Naffous, also requested to the JICA Expert Team to provide enough amount of reagents having wider measurement range. The JICA Expert Team, Mr. Yoichi Iwai, agreed to provide the reagents requested considering effective range and expiry period.

(3) The Director of DFEA in Aleppo, Mr. Saeid Naffous, questioned about necessity of protective wear to handle a net radiometer. The JICA Expert Team, Mr. Yoichi Iwai, answered that it was not necessary because the net radiometer was only for measurement of sunshine radiation not for radioactive substance.

(4) The Director of DFEA in Damascus, Mr. Bassam Khairbek, expressed no objections to the draft technical specifications. Mr. Bassam Khairbek informed a plan of networking of air quality monitoring in Damascus DFEA to the T/C members. The JICA Expert Team, Mr. Yoichi Iwai, suggested that the networking of air quality monitoring in Damascus DFEA should be compatible those in Homs and Aloppo DFEAs because JICA would supply same equipment for air quality monitoring.

(5) The JICA Expert Team, Mr. Shunsuke Sato, supplementary explained that only refrigerators in the list are for 14 DFEAs.

(6) The Deputy Director of DFEA in Damascus, Ms. Wadia'a Jeha Khouri, questioned to the JICA Expert Team whether the equipment to be provided by JICA in the Project could cover all parameters designated in air (21 parameters) and water (38 parameters) exhausted/discharge standards in Syria. The JICA Expert Team, Mr. Shunsuke Sato, answered that almost all parameters could be analyzed by the equipment to be provided by JICA only except for 5 parameters in air quality (H2S, C, SiF4, HCl, CH2O) and for 3 parameters in water quality (Phenol, HC, Chlorine).

(7) The Deputy Director of DFEA in Damascus, Ms. Wadia'a Jeha Khouri, commented that all environmental monitoring data should be sent and managed by GCEA in MOLAE by the network in future. She also questioned about maintenance of the equipment. The JICA Expert Team, Mr. Shunsuke Sato, replied that the suppliers should guarantee in the first year but a periodic maintenance and calibration should be carried out by the staff members of each laboratory.

(8) The Staff of DFEA in Damascus, Ms. Mouna Taifour and Ms. Entesar Yanes, asked to the JICA Syria about possibility of assistance for installation of wastewater treatment facilities. The Project Formulation Advisor in JICA Syria, Ms. Yumiko Honda, answered that JICA plans to prepare the Master Plan Study for Sewerage System in Syria, so such request would be considered in accordance with this Master Plan.

(9) The Director of Laboratories in GCEA, Dr.Yasin Moa'alla, commented that GCEA was on a way introducing a mobile laboratory to each DFEA, and it would be able to analyze oil and grease, and other chemical substances. Then, Dr.Yasin Moa'alla requested to the T/C members for fully use of the equipment provided by JICA and the mobile laboratory provided by GCEA.

ANNEX-1

List of Attendants

Syrian Side

Name	Position
Dr. Yasin Moa'lla	Director of Directorate of Laboratories, GCEA
Mr. Ahmad Khsara	Head of Air Safety Dept.
Mr. Bassam Khairbek	Director of Damascus DFEA
Mr. Saeid Naffous	Director of Aleppo DFEA
Ms. Wadia'a Jeha Khouri	Deputy Director of Damascus DFEA
Mr. Khaled Kassem	Chief of Laboratory, Damascus DFEA
Ms. Mouna Taifour	Staff of Water Safety Division,, Damascus DFEA
Ms. Entesar Yanes	Staff of Chemical Safety Division, Damascus DFEA
Mr. Nidal Khouri	Staff, Damascus DFEA
Mr. Samer Mokbel	Staff of the Laboratory, Damascus DFEA
Mr. Nawaf Alddara	Staff, Damascus DFEA
Ms. Reem Sadr Eddin	Staff of Laboratory, Damascus DFEA
Ms. Omaima Younes	Head of Air Safety Division, Damascus DFEA

Japanese Side

Name	Position
Ms. Yumiko Honda	JICA Syria Office
Mr. Yoichi Iwai	Chief Advisor, JICA Expert Team
Mr. Shunsuke Sato	Member, JICA Expert Team
Ms. Nada Kat	Interpreter, JICA Expert Team
Mr. Mohammed Aldoubosh	Interpreter, JICA Expert Team

JICA EXPERT TEAM

The Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic

NIPPON KOEI CO., LTD.

To: Dr. Akram S. Al-Khouri
General Director,
General Commission of Environmental Affairs

CC: Director of DFEA in Damascus,
Director of DFEA in Homs,
Director of DFEA in Aleppo
JICA Syria

Telephone : 963-11-446 4796 (Damascus) 81-3 (5276) 3930 (Tokyo)
Facsimile:963-11-446 4796 (Damascus) 81-3 (5276) 2656 (Tokyo)
E-mail : semp@scs-net.org (Damascus)
int.e@gx.n-koei.co.jp (Tokyo)

Your ref. Our ref. EMGJ 002 Date: *August 11, 2005*

Dear Dr. Al-Khouri,

It is our pleasure to inform you the draft specifications for the 2nd year's equipment procurement of air and water quality sampling and analysis. The draft specifications attached in this letter are prepared through discussions with the directors and staff members of the Damascus, Homs and Aleppo DFEA.

In this connection, you are kindly requested to check and confirm the draft specifications, and please inform us when you have some comments and suggestions in the draft specifications before August 21st, 2005.

We would like to have the 4th technical committee on August 22nd, 2005 at the Damascus DFEA in order to agree and confirm the specifications for the 2nd year's equipment procurement.

Thank you for your kind cooperation.

Truly Yours,

Yoichi Iwai
Team Leader

JICA Expert Team

فريق خبراء جايكا

تطوير القدرات في المراقبة البيئية في مديريات شؤون البيئة في المحافظات

شركة نيبون كويي المتحدة

إلى: الدكتور أكرم الخوري
المدير العام
الهيئة العامة لشؤون البيئة

نسخة إلى: مدير شؤون البيئة في دمشق
مدير شؤون البيئة في حمص
مدير شؤون البيئة في حلب
مكتب جايكا في سوريا

هاتف: 4796 446-11-963 (دمشق) 3930 (5276) 3-81 (طوكيو)
فاكس:4796 446-11-963 (دمشق) 2656 (5276) 3-81 (طوكيو)
بريد الكتروني: semp@scs-net.org (دمشق)
Int.e@gx.n-koei.co.jp (طوكيو)

إشارة كتابكم إشارة كتابنا : EMGJ 002 تاريخ: 11 آب، 2005

السيد الدكتور الخوري،

يسرنا أن نعلمكم عن مسودة المواصفات لشراء أجهزة السنة الثانية لاعتيان وتحليل جودة الهواء والماء. لقد تم إعداد مسودة المواصفات المرفقة بهذه الرسالة من خلال المناقشات التي تمت مع مدراء وموظفي شؤون البيئة في دمشق وحمص وحلب.

نرجو أن يتم التحقق والتأكد من مسودة المواصفات وإعلامنا عن ملاحظاتكم واقتراحاتكم حولها وذلك قبل 21 آب 2005.

نود أن يتم عقد الاجتماع الرابع للجنة الفنية في 22 آب 2005، في مديرية شؤون البيئة في دمشق للموافقة والتأكيد على مواصفات الأجهزة المزمع شرائها في السنة الثانية .

نشكر لكم تعاونكم.

يويتشي إيواي
رئيس الفريق

فريق خبراء جايكا

TECHNICAL SPECIFICATIONS
(DRAFT)

[Air Quality Analysis Equipment for Three Cities (Damascus, Homs, Aleppo)]

11 August, 2005

JICA Expert Team

Equipment List for Air Quality Analysis

Package	Item No.	Apparatus Name	QTY
1	Air Quality Analysis Equipment and Instrument		
	1-1	High Volume Air Sampler	12
	1-2	Low Volume Air Sampler	12
	1-3	Handy Sampler	12
2	Meteorological instrument		9
	2-1	Wind Direction & Speed Meter	9
	2-2	Thermometer / Hygrometer	9
	2-3	Solar radiation meter	9
	2-4	Asman ventilation psychrometer	3
3	Laboratory Equipment		
	3-1	Micro Balance (Electronic Analytical Balance)	3
	3-2	Refrigerator	5
	3-3	Auto-dry desiccators	3
	3-4	Locker for reagents	5
	3-5	UV/VIS Spectrometer (single beam)	3
4	Glassware for air quality analysis DFEA (Damascus, Homs, Aleppo)		3
5	Reagent for air quality analysis		3
6	Simple Sampler for air quality monitoring		360

Syrian Arab Republic: Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate" — Package 1 (1/3)

No.	Name of Equipment	Specification	Model No.	Q'ty DAM	Q'ty HOM	Q'ty ALP	Q'ty Total	Price Unit US$	Price Total US$
1	Air Quality Analysis Equipment and Instrument								
1-1	High Volume Air Sampler	Usage: Collection of TSP and PM-10		4	4	4	12		
		1. CONDITION							
		(1) Electricity : 220 V ,50Hz							
		2. COMPOSITION							
		(1) Main unit : 1 unit							
		3. SPECIFICATIONS							
		(1) Type : Open face (all-weather type)							
		: Particle size selective sampling							
		(switchable between TSP and PM10)							
		(2) Dust separation : No separation							
		(3) Suction flow rate							
		1) flow rate : Approx. 1000 liter/min.							
		2) Accuracy : < ± 2% of integrated flow rate							
		(4) Flow rate detection : Hot wire system or equivalent							
		(5) Suction pressure : Max. 200 hPa							
		(6) Filter size : Approx. 203(W)x253(D)mm or approx. φ150 mm							
		(7) Filter exchanger : Manual							
		(8) Indication function(digital) : Date & time indicator,							
		: Instantaneous flow rate indicator,							
		: Integrated flow rate indicator,							
		: Timer operation							
		(9) Power interruption measure : Automatic restoration (time memory)							
		(10) Working temperature range. -10～40℃							
		4. ACCESSORIES							
		(1) Manufacturer's Standard Accessories : 1 set							
		5. SPARE PARTS & CONSUMABLE							
		(1) Quartz fiber filter : 25 sheets × 8 case							
		(2) Spare parts kit for 1 year : 1 set							
		(including following parts)							
		1) Carbon brush : 2 pcs							
		2) Fuse : 2 pcs							

Syrian Arab Republic: Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate" — Package 1 (2/3)

No.	Name of Equipment	Specification	Model No.	Q'ty DAM	Q'ty HOM	Q'ty ALP	Q'ty Total	Price Unit US$	Price Total US$
1-2	Low Volume Air Sampler	Usage: Collection of PM-10		4	4	4	12		
		1. CONDITION							
		(1) Electricity : 220 V ,50Hz							
		2. COMPOSITION							
		(1) Main unit : 1 unit							
		(2) Suction pump : 1 pc							
		(3) Flow meter : 1 pc							
		3. SPECIFICATIONS							
		(1) Particle size classification : Gravitational separation or equivalent							
		(2) Main unit							
		1) Filter size : Approx. φ47mm							
		2) Filter holder : Exchangeable							
		(3) Filter exchanger : Manual							
		(4) Suction pump							
		1) Suction flow rate : 20 liter/min. or more							
		(5) Suction pressure : Max. 280 hPa							
		(6) Flow meter							
		1) Accuracy : < ± 2% of integrated flow rate							
		(7) Working temperature range : -10～40℃							
		4. ACCESSORIES							
		(1) Manufacturer's Standard Accessories : 1 set							
		5. SPARE PARTS & CONSUMABLE							
		(1) Glass fiber filter : 100 sheets × 2 case							
		(Low gas absorption type)							
		(2) Spare parts for 1 year : 1 set							

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"

(1/6)

No. IV	Name of Glassware Glassware	Specification	Q'ty DAM	Q'ty Air HOM	Q'ty Air ALP	Total	Price Unit US$	Price Total US$
1	Whole Pipettes	Glass, 1 ml; Tolerance: ±0.007 ml or better	3	3	3	14		
		Glass, 2 ml; Tolerance: ±0.010 ml or better	3	3	3	19		
		Glass, 5 ml; Tolerance: ±0.015 ml or better	5	5	5	30		
		Glass, 10 ml; Tolerance: ±0.020 ml or better	5	5	5	30		
		Glass, 20 ml; Tolerance: ±0.030 ml or better	3	3	3	19		
		Glass, 50 ml; Tolerance: ±0.050 ml or better	2	2	2	10		
		Glass, 100 ml; Tolerance: ±0.080 ml or better	2	2	2	10		
2	Graduated pipettes	Glass, 1 ml; Graduation: 0.01 ml; Tolerance: ±0.007 ml or better	2	2	2	10		
		Glass, 5 ml Graduation: 0.05 ml; Tolerance: ±0.030 ml or better	3	3	3	17		
		Glass, 10 ml Graduation: 0.1 ml; Tolerance: ±0.050 ml or better	4	4	4	22		
3	Pipette Fillers (Rubber Pippeter)	Applicable pipette's capacity: not more than 2mL	1	1	1	6		
		Capacity: 25mL	2	2	2	9		
4	Porcelain mortar	Size: φ180mm	1	1	1	5		
5	Beakers	50 ml, Glass, Color: clear; Graduation: 10 ml or smaller	2	3	3	26		
		100 ml, Glass, Color: clear; Graduation: 25 ml or smaller	10	10	10	50		
		200 ml, Glass, Color: clear; Graduation: 50 ml or smaller	10	10	10	50		
		300 ml, Glass, Color: clear; Graduation: 50 ml or smaller	2	2	2	21		
		500 ml, Glass, Color: clear; Graduation: 50 ml or smaller	5	5	5	25		
		1000 ml, Glass, Color: clear; Graduation: 100 ml or smaller	2	2	2	11		
		2000 ml, Glass, Color: clear; Graduation: 200 ml or smaller	1	1	1	6		
6	Volumetric Flasks	25 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.04 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	18		
		50 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.06 mL or better, Accessory (standard ground joint and poly stopper)	2	4	4	22		
		100 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper)	10	10	10	42		
		200 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	18		
		500 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	11		
		1000 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	1	1	1	6		
7	Volumetric Flasks	Borosilicate glass, A class, Color: amber, 25 ml , Tolerance: ±0.04 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	14		
		Borosilicate glass, A class, Color: amber, 50 ml , Tolerance: ±0.06 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	14		
		Borosilicate glass, A class, Color: amber, 100 ml , Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper)	6	6	6	26		
		Borosilicate glass, A class, Color: amber, 200 ml , Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	14		
		Borosilicate glass, A class, Color: amber, 500 ml , Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper)	2	2	2	11		
		Borosilicate glass, A class, Color: amber, 1000 ml , Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	1	1	1	6		
8	Round bottom Flasks	200 ml, Glass, Color: clear, Short neck	0	0	0	20		
		300 ml, Glass, Color: clear, Short neck	0	0	0	20		
9	Kjeldahl Flasks	100 ml, Glass, Color: clear; Short neck	0	0	0	5		
		200 ml, Glass, Color: clear; Short neck	0	0	0	10		
		300 ml, Glass, Color: clear; Short neck	0	0	0	10		
		500 ml, Glass, Color: clear; Short neck	0	0	0	5		

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"

(2/6)

No. IV	Name of Glassware Glassware	Specification	Q'ty DAM	Q'ty Air HOM	Q'ty Air ALP	Total	Price Unit US$	Price Total US$
10	Pear shape Flasks	50 ml, Glass, Color: clear; Short neck	0	0	0	10		
		100 ml, Glass, Color: clear; Short neck	0	0	0	10		
		250 ml, Glass, Color: clear; Short neck	0	0	0	10		
11-1	Erlenmeyer Flasks	100 ml, Borosilicate glass, color: clear	5	5	5	35		
		200 ml, Borosilicate glass, color: clear	5	5	5	35		
		300 ml, Borosilicate glass, color: clear	5	5	5	25		
		500 ml, Borosilicate glass, color: clear	2	2	2	16		
		1000 ml, Borosilicate glass, color: clear	1	1	1	7		
11-2	Erlenmeyer Flasks with Ground Joints	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	30		
		200 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	30		
		300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	25		
		500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	2	2	2	16		
12	Graduated Cylinders	50 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better	2	2	2	11		
		100 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better	2	2	2	14		
		200 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	2	2	2	11		
		500 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better	2	2	2	11		
		1000 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	1	1	1	5		
13	Komagome Pipe (Spoit)	1 ml	2	2	2	16		
		2 ml	2	2	2	16		
		3 ml	2	2	2	16		
		5 ml	5	5	5	35		
		10 ml	5	5	5	30		
14	Watch Dish	φ70mm	2	2	2	16		
		φ90mm	2	2	2	16		
		φ120mm	2	2	2	16		
		φ150mm	2	2	2	11		
		φ180mm	2	2	2	11		
15	Separatory funnels	φ100ml, glass	0	0	0	10		
		φ200ml, glass	0	0	0	10		
		φ300ml, glass	0	0	0	10		
		φ500ml, glass	0	0	0	5		
16	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	Capacity: 500 ml, Type of raiser tube: leek-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polypropylene	3	3	3	19		
		Capacity: 1000 ml, Type of raiser tube: leek-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polypropylene	3	3	3	19		
17	Beaker with handle	Capacity: 1000 ml, Polypropylene	1	1	1	6		
18	Automatic burret	Automatic burret 25 ml w/1L. Reservoir, Color: clear	0	0	0	2		
		Automatic burret 50 ml w/2L. Reservoir, Color: clear	0	0	0	2		
		Automatic burret 50 ml w/2L. Reservoir, Color: amber	0	0	0	2		
19	Rubber of two ball reams	Injection of air, general use	0	0	0	2		
20	Test Tube with stopper	Test tube, 18(dia.) x 180 (L) mm $16, 100 pcs/case	1	1	1	4		
21	Stainless Spoon	Stainless Spoon (middle size: 180 mm)5pc/box	1	1	1	5		
22	Funnels	Soda-lime glass, Angle: 60°, with short stem, φ70 mm	5	5	5	30		
		Soda-lime glass, Angle: 60°, with short stem, φ100 mm	5	5	5	25		

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate" (3/6)

No.	Name of Glassware	Specification	Qty			Total	Price	
			Air				Unit	Total
IV	Glassware		DAM	HOM	ALP		US$	US$
23	Glass rods	Glass rods, 1500 (L) x 5(dia.)mm	2	2	2	10		
		Glass rods, 1500 (L) x 8(dia.)mm	2	2	2	8		
24	Glass tube	Glass tube, 1500 (L) x φ6×φ8mm	2	2	2	10		
25	Stoppcock	Stoppcok, φ6×φ8mm, Fluoroplastic (PTFE) or equivalent, Temperature resistant: −200 to+260℃ or more	1	1	1	5		
26	Pincheok	Pincheok (Size M), Stainless steel	5	5	5	30		
27	Screw Cock	Screw Cock (Size M), Stainless steel	5	5	5	30		
28	Stopwatch	Manual rolling	1	1	1	4		
29	-							
30	Micro pipet	2～20 μl	1	1	1	4		
		10～100 μl	1	1	1	4		
31	Chip for micro pipet	0.5～10 μl, 1000 pcs/package	1	1	1	5		
		2～200 μl, 1000 pcs/package	1	1	1	5		
32	Flow meter	Float type flow meter with needle valve, 0.05～0.5 L/min, Accuacy: FS±3%	1	1	1	4		
		Float type flow meter with needle valve, 0.2～2.5 L/min, Accuacy: FS±3%	1	1	1	4		
33	Heating mantles	4-Place heeters, Applied capacity of flask: 300ml	0	0	0	1		
34	Fat extractor (soxhlet)	Soxhlet extraction apparatus, 300ml type, SPC joints	0	0	0	5		
35	Thermometer	Mercury type cylinder shape thermometer, -20～100℃	2	2	2	8		
36	Beaker tongs	Tongs for flask	1	1	1	6		
37	Lab jack	Lab jack, 150×150mm, Range of expansion and contraction: 75～245 mm, An upper and lower board is made of the stainless steel.	1	1	1	7		
38	Unit stand	Support stand set: 1 m×1 m, Assembly stick (stainless pipe)	1	1	1	5		
		Support stand set: 1.5 m×1 m, Assembly stick (stainless pipe)	0	0	0	1		
		Support stand set: 2.0 m×1 m, Assembly stick (stainless pipe)	0	0	0	1		
39	Cork borer	Cork borer sets saw-shaped edge (No. of borers, 12)	1	1	1	4		
40	Muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: φ7mm～13mm,	10	10	10	50		
41	Jumbo muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: φ13mm～21mm,	5	5	5	25		
42	Clamps	Open diameter: 5～50 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 304	5	5	5	25		
		Open diameter: 5～80 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 305	5	5	5	25		
43	Tweezers	Odontology department tweezers	2	2	2	16		
44	Vacuum hose	Vacuum hose φ8×φ21mm (5 m/ Unit)	1	1	1	6		
45	Rubber tube	Rubber tube φ6×φ13mm (10 m/ Unit)	1	1	1	5		
46	Silicon rubber tube	Silicon rubber tube 'φ6×φ8mm, (10m/ Unit)	1	1	1	4		
		Silicon rubber tube 'φ6×φ10mm, (10m/ Unit)	1	1	1	4		
		Silicon rubber tube 'φ8×φ10mm, (10m/ Unit)	1	1	1	4		
47	Micro line tube	OD φ2.29 mm (5 m)	0	0	0	3		
48	Tube joint	Straight, Glass, φ6 × φ8 mm, (10 pcs/ case)	1	1	1	4		
		T type, Glass, φ6 × φ8 mm, (10 pcs/ case)	1	1	1	4		
		Y type, Glass, φ6 × φ8 mm, (10 pcs/ case)	1	1	1	4		
49	Support for test tubes	for 18(dia.) x 180 (L) test tube, Number of partitions: 5×10	1	1	1	5		
50	Stopper (silicon rubber)	φ15mm	2	2	2	16		
		φ20mm	2	2	2	16		
		φ25mm	2	2	2	16		
		φ30mm	2	2	2	11		
		φ35mm	2	2	2	11		
		φ40mm	2	2	2	11		

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate" (4/6)

No.	Name of Glassware	Specification	Qty			Total	Price	
			Air				Unit	Total
IV	Glassware		DAM	HOM	ALP		US$	US$
51	Octagon rotator	Teflon coating, φ6.5 × 20 mm	5	5	5	25		
		Teflon coating, φ7.5 × 25 mm	5	5	5	25		
		Teflon coating, φ7.5 × 30 mm	5	5	5	25		
		Teflon coating, φ10 × 40 mm	5	5	5	25		
52	Rotator taking out stick	Teflon coating, φ3.0 × 250 mm	1	1	1	4		
		Teflon coating, φ8.0 × 310 mm	1	1	1	4		
53	Weighing Paper	Weighing Paper 500pcs/box, Large (Size: approx. 120 x 120 mm)	1	1	1	5		
		Weighing Paper 500pcs/box, Small (Size: approx. 90 x 90 mm)	1	1	1	5		
54	–	–						
55	Vacuum Pump	Capacity: More than 27 liter/min., Ultimate vacuum: Approx. 5 x 10-3 mmHg, Motor: More than 0.25 HP, No. of stages: Two, Suction tube: Two, approx. 1m each, Other provision: Suitable pressure gauge	1	1	1	4		
56	Circulating aspirators	Capacity: More than 12～15 liter/min., Aspirators: 2 pcs, Water tank: Polypropylene, Suction entrance: 2 pcs(φ11.5 mm), Outside size: Approx. 360(W)×260 (D)×390(H) mm	0	0	0	1		
57	Micro-syringe	Micro-syringe: 10 μL	0	0	0	1		
58	Glass fiber filter paper*1	φ47 mm, 100 pcs (Low gas absorption type)	2	2	2	6		
59	Quartz fiber filter paper*1	8"×10", 25 pcs	8	8	8	24		
60	Membrane filter	0.45μm, φ47 mm, 100 pcs	2	2	2	16		
61	pH Paper	pH paper: Roll type, 4 pcs/case	2	2	2	9		
62	Quartz wool	4～9μm, 10g	1	1	1	5		
63	Gastgt syringe	Glass, 100 ml	0	0	0	2		
64	Tweezers for cell	Type that can be strongly pinched by power of spring	1	1	1	4		
65	Pipet container	Plastics container or more fine quality, Applox. 450 (W) × 300 (D)) × 70 (H) mm	1	1	1	4		
66	Pipet support	Plastic or more fine quality, Size: Approx. 200×170×250 (H) mm, H tipe	1	1	1	4		
67	Stand for micro pipet	Number of sets of syringes : 2 pcs or more	1	1	1	4		
68	–	–						
69	Waste water container	Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 20 L, Color: White, Stopper: Two	8	8	8	32		
		Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 5 L, Color: White, Stopper: One	8	8	8	32		
70	Boiling stone	Boiling stone: 50 pcs/case	0	0	0	1		
71	Flask filtering	2000 ml, Borosilicate glass	1	1	1	4		
72	Stand for Separatory funnels	For 100 ml separatory funnels, 5 pcs set or more	0	0	0	2		
		For 200 ml separatory funnels, 5 pcs set or more	0	0	0	2		
		For 300 ml separatory funnels, 5 pcs set or more	0	0	0	2		
		For 500 ml separatory funnels, 5 pcs set or more	0	0	0	1		
73	Seal tape	Made of teflon, Applox. 10mm× 15 m	2	2	2	8		
74	Paraffin film	4" × 125 feet	2	2	2	9		
75	Wiping Tissue (Kimwipe)	Wiping Tissue (Small Size 72pack/box)	1	1	1	4		
76	Pipet cleaner	Inside size of basket: Approx. 500×φ136 mm, Material: Vinyl chloride	1	1	1	4		

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate" (5/6)

No.	Name of Glassware	Specification	Q'ty				Price	
				Air		Total	Unit	Total
IV	Glassware		DAM	HOM	ALP		US$	US$
77	Brush	For bottle washing (small: No2)	2	2	2	11		
		For bottle washing (middle: No5)	2	2	2	11		
		For bottle washing (large: No10)	2	2	2	11		
		For Pipettes	2	2	2	11		
		For burret φ30 x 951 mm	2	2	2	11		
78	Doraing Shelf (Shelf for the glass apparatus dryness)	Standard top board, Size: (W)800×(D)510×(H)1600 mm, With water receiving bat made of stainless steel., Vinyl curtain(Incombustibility), Net board (Resin coating): Mesh size 16~18 mm×2pcs ; 30~50 mm×1pc, 70~95 mm×1pc	0	0	0	1		
79	Color comparition tubes	50 ml, with white graduated, With stopping	10	10	10	40		
		100 ml, with white graduated, With stopping	10	10	10	40		
80	Tube support	For color comparition, For 100ml color comparition tube ×10 pcs	1	1	1	4		
81	Pasteur Pipette	150 mm, 1000 pcs, Borosilicate	1	1	1	4		
		230 mm, 1000 pcs, Borosilicate	1	1	1	4		
82	Teflon tube	φ4 mm×φ6 mm, 20m	1	1	1	5		
83	F Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) ream type (Applox 3.6Kw), It conforms to JIS K-0102.	0	1	0	2		
84	NH4 Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) ream type (Applox 3.6Kw), It conforms to JIS K-0102. The phenol distillation is also possible according to use.	0	0	0	1		
85	Dropping Bottle	50 ml	2	2	2	9		
		100 ml	1	1	1	5		
86	Crucible	Crucible, porcelain, 30 ml	10	10	10	40		
		Crucible, porcelain, 50ml	10	10	10	40		
87	Porcelain dish tongs	Porcelain dish tongs	1	1	1	5		
88	Jumbo crucible tongs	Jumbo crucible tongs for use with muffle furnace	0	0	0	1		
89	Standard Sieve	Applox. Φ200 mm, mesh: 2mm	1	1	1	4		
90	Weighning Bottle	Applox. φ50mm, H35mm	5	5	5	25		
91	Desiccator	Desiccator, glass, 180mm (dia.)	1	1	1	4		
92	Conical beaker	250 ml	10	10	10	50		
93	Petri dishes	50 mm diameter (presterelized)	0	0	0	100		
		120 mm diameter (presterelized)	0	0	0	10		
94	Bottle for sample collection	500 ml, Polypropylene, with screw closure, Wide-mouse bottle,	20	20	20	160		
95	Rubber Bulb for Small Pipette	Vinyl-methyl Silicon rubber for graduated pipettes (1ml)	2	2	2	16		
		Vinyl-methyl Silicon rubber for graduated pipettes (5ml)	2	2	2	21		
		Vinyl-methyl Silicon rubber for graduated pipettes (10ml)	2	2	2	16		
96	Cleaning Tissue	45 boxes of 200 tissues for wipe out glass ware, etc, Lint-free fiber, Fully absorbent, Size: approx. 115 x 215 mm	1	1	1	4		
97	Gloves	Disposable type, Seamless latex, Solvent-proof, Powdered fit both right and left hands, Size: medium, Packs of 100	0	0	0	1		
98	Goggles	Plastic, with side guard	2	2	2	8		
99	Cleaning Agent	For removing grease, oil, wax, dye residue, silicone, etc. Disinfectant action: by active chorine Dosing: 2 to 10 % in demineralized water PH-Value: approx. 9 or 8 Volume: 10 kg or more/ 1 container Cleaning agent deconex 11 universal	1	1	1	4		
100	Burret	Burret 25 ml , Color: clear	2	2	2	6		
		Burret 50 ml , Color: clear	2	2	2	6		

Package 4 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate" (6/6)

No.	Name of Glassware	Specification	Q'ty				Price	
				Air		Total	Unit	Total
IV	Glassware		DAM	HOM	ALP		US$	US$
101	Burret stand	Double holder	1	1	1	3		
102	Dust jar	Standard metrology of US (APCA) The glass cylinder: Outside diameter: φ137mm, Heit: 250mm (Inside diamet: φ127mm) Stand with prop: 400(W)×400(W)×1760(H) mm	8	8	8	24		
2	Services							
	Packing and Delivery	1) Delivery to GCEA in Damascus	1	1	1	3		
		2) Delivery to 14 DFEAs in 14 Governorate	1	1	1	3		
			1	1	1	3		
		TOTAL						
	*1 Filter paper is matched to the type of Hi-Vol and Low-Vol air sampler. Confirm it to the buyer.							

Package 5 Reagent for air quality analysis

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"

No.	Name of Equipment		Specification Grade	Specification Amount	Usage	Q'ty DAM	Q'ty HOM	Q'ty ALP	Q'ty Total	Price Unit US$	Price Total US$
V	Reagent for air quality analysis										
1	Acetic acid	(CH_3COOH)	G	500ml	NO2	3	3	3	9		
2	Sulfanilic acid	($H_2NC_6H_4SO_3H$)	G	100g	NO2	1	1	1	3		
3	*N*-(1-Naphthyl) ethylenediamine dihydrochloride For NOx analysis (C10H7NHCH2CH2NH2·2H2O)		–	25g	NO2	1	1	1	3		
4	Potassium permanganate For NOx analysis	($KMnO_4$)	–	25g	NO2	2	2	2	6		
5	Sulfuric acid	(H_2SO_4)	G	500g	NO2, F	4	4	4	12		
6	Sodium nitrite	($NaNO_2$)	G	100g	NO2	1	1	1	3		
7	Chloroform, certified	($CHCl_3$)	UGR	500ml	NO2	1	1	1	3		
8	Barium hydroxide octahydrat	($Ba(OH)_2 \cdot 8H_2O$)	G	500g	NO2	1	1	1	3		
9	Triethanol amine	($N(CH_2CH_2OH)_3$)	G	500ml	NO2	1	1	1	3		
10	Sodium azide	(NaN_3)	G	100g	SO2	1	1	1	3		
11	Pararosanilin hydrochloride	((NH2C6H4)2CLC6H4)·NH·HCL)	G	25g	SO2	1	1	1	3		
12	Hydroclolic acid	(HCL)	G	500ml	SO2	1	1	1	3		
13	Formaldehyde		G	250ml	SO2	1	1	1	3		
14	Sodium hydrogen sulfite	($NaHSO_4$)	G	25g	SO2	1	1	1	3		
15	Iodine (0.1 N)		–	500ml	SO2,Ox	1	1	1	3		
16	Sodium sulfate	(Na_2SO_4)	G	500g	SO2	1	1	1	3		
17	Mercury (II) chloride	($HgCL_2$)	G	500g	SO2	1	1	1	3		
18	Sodium chloride	(NaCL)	G	500g	SO2	1	1	1	3		
19	Glycerin	($HOCH_2CHOHCH_2OH$)	G	500g	SO2	2	2	2	6		
20	Starch, soluble	($\{(C_6H_{10}O_5)n\}$)	1	500g	SO2,Ox	1	1	1	3		
21	Mercury (II) iodide, red	(HgI_2)	G	25g	SO2	1	1	1	3		
22	Sodium thiosulfate pentahydrate	($Na_2S_2O_3 \cdot 5H_2O$)	Semi-G	500g	SO2,Ox	1	1	1	3		
23	Potassium iodate	(KIO_3)	G	25g	SO2	1	1	1	3		
24	Potassium iodide	(KI)	G	500g	SO2	1	1	1	3		
25	Hydrochloric acid (1 N)	(1N-HCL)	G	500mL	SO2	1	1	1	3		
26	Sodium fluorid	(NaF)	G	500g	F	3	3	0	6		
27	Lanthanum nitrate hexahydrate	(La(NO3)3 · 6H2O)	Semi-G	25g	F	1	1	0	2		
28	Alizarin complexone dihidrate, indicator grade (C19H15 NO8·2H2O)		–	1g	F	2	2	0	4		
29	Silicon dioxide	(SiO2)	G	500g	F	1	1	0	2		
30	Phosphoric acid	(H3PO4)	G	500ml	F	1	1	0	2		
31	Phenolphthalein	(C20H14O4)	G	25g	F	1	1	0	2		
32	Perchloric acid	(HCLO4)	G	500g	F	1	1	0	2		

Package 5 Reagent for air quality analysis

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"

No.	Name of Equipment		Specification Grade	Specification Amount	Usage	Q'ty DAM	Q'ty HOM	Q'ty ALP	Q'ty Total	Price Unit US$	Price Total US$
33	Sodium hydroxide, pellets	(NaOH)	G	500g	F	2	2	0	4		
34	Ammonia solution, 28～30%	(NH_4OH)	G	500ml	F	1	1	0	2		
35	Ammonium acetate, >98%	(CH_3COONH_4)	Semi-G	500g	F	1	1	0	2		
36	Sodium acetate, trihydrate	($CH_3COONa \cdot 3H_2O$)	G	500g	F	1	1	0	2		
37	Acetone	(CH_3COCH_3)	G	500ml	F	4	4	0	8		
38	Potassium dihydrogenephosphat, for Ox analisis	(KH_2PO_4)	–	500g	Ox	1	1	0	2		
39	Disodium hydrogen phosphate-12 water	($Na_2HPO_4 \cdot 12H_2O$)	G	500g	Ox	1	1	0	2		
40	Potassium iodide	(KI)	G	500g	Ox	1	1	0	2		
41	Iodine	(I)	G	25g	Ox, SO2	1	1	0	2		
42	Nessler's reagent		–	500ml	NH3	1	1	1	3		
43	Methylene blue		G	25g	H2S	1	1	1	3		
				TOTAL							

Package 6 Simple Sampler for air quality monitoring

Syrian Arab Republic Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates of Environmental Affairs in Governorate" (1/1)

No	Name of Vehicle	Specification	Q'ty DAM	Q'ty HOM	Q'ty ALP	Q'ty Total	Price Unit US$	Price Total US$
VI	Simple Sampler for air quality monitoring							
1	Simple Sampler	Usage: Collection of NO2, NOx, SO2 gas elements	120	110	130	360		
		1. COMPOSITION						
		(1) Main unit : 1 unit						
		(2) Rain prevention container : 1 pc						
		2. CONDITION						
		3. SPECIFICATIONS						
		(1) Main unit (Filter holder)						
		1) Gas sampling method : Molecular diffusion method						
		2) Number of set filters : 2 Filters						
		3) Material : Teflon or equivalent						
		(2) Rain prevention container						
		4. ACCESSORIES						
		(1) Manufacturer's Standard Accessories : 1 set						
		(2) Rain prevention container : 1 pc						
		5. SPARE PARTS & CONSUMABLE						
		(1) Filter to be pregnated with absorbent liquid						
		1) For NO2, SO2 : 20 sheets × 90 sets	1	1	1	3		
		2) For NOx : 20 sheets × 45 sets	1	1	1	3		
		TOTAL						

TECHNICAL SPECIFICATIONS
(DRAFT)

[Water Quality Analysis Equipment for DFEA of Damascus] (Chemical & Biological Analysis)

11 August, 2005

JICA Expert Team

Equipment List for Water Quality Analysis (Chemical & Biological Water Analysis)
for DFEA of Damascus

Package	Item No.	Equipment/Apparatus	Q'ty
1	Laboratory Equipment		
	1-011	UV/VIS spectrophotometer	1
	1-012	Reagent for UV/VIS spectrophotometer	5 kinds
	1-021	Micro analysis balance	1
	1-031	Balance (6kg)	1
	1-041	Water Quality Analyzer	1
	1-042	Electrode for pH	1
	1-043	Electrode for EC	1
	1-044	Electrode for NO_3^-	1
	1-045	Electrode for Cl^-	1
	1-046	Electrode for F^-	1
	1-047	Electrode for S^{2-}	1
	1-048	Electrode for CN^-	1
	1-051	Turbidimeter	1
	1-061	Draft chamber with water/gas cleaning device	1
	1-062	Draft chamber	1
	1-071	Refrigerator	14
	1-081	Locker for reagent	4
	1-091	Water Purifier	1
	1-101	Ultrasonic cleaner	1
	1-111	Middle temperature oven	1
	1-121	Muffle furnace	1
	1-131	Autoclave (vertical type)	1
	1-141	Centrifuge	1
	1-151	Shaker	1
	1-161	Hot plate	2
	1-171	Multi magnetic stirrer	2
	1-181	Rotary evaporator	1
	1-191	Constant temperature water bath	2
	1-201	Vaccume filtration unit	1
	1-211	Auto-dry decliccator	1
	1-221	Water sampler	1
	1-231	Colony counter	1
	1-241	Laboratory DO meter	1
	1-251	Oil content analyzer	1
	1-261	Solvent for Oil content analyzer	10
	1-271	Solvent recovery unit	1
2	Glasswares for water quality analysis		See Table G
		Pipettes, beakers, flasks, cylinders, funnels, bottles etc.	
3	Reagent for water quality analysis		See Table R

No.	Name of Equipment	Specification	Model No.	Q'ty	Price Unit US$	Price Total US$
1	Water Quality Analysis Equipment and Instrument (Chemical and Biological Analysis)					
1-011	UV/VIS spectrophotometer	Usage: Determination of concentration of PO43-, NH3-N, Surfactant, Chromium in water 1. CONDITION (1) Electricity : 220 V ,50Hz 2. COMPOSITION (1) Main unit : 1 unit 3. SPECIFICATIONS (1) Type: UV/VIS Spectrophotometer (2) Spectrum bandwidth : 5 nm or equivalent (3) Wavelength range : 190.0 - 1,100 nm or equivalent (4) Wavelength accuracy : ±1.0 nm or equivalent (5) Wavelength repeatability : ±0.3 nm or equivalent (6) Stray light : less than 0.05% or equivalent (7) Measurement method : Single beam measurement (8) Photometric range: Absorbance : -0.3 - 3.0 Abs; Transmittance: 0.0 - 200% or equivalent (9) Light source : 20W Halogen lamp (long-life 2,000 hours), Deuterium lamp (socket type). Auto adjustment for maximum sensitivity (10) Monochromator : Incorporates aberration-correcting concave blazed holographic grating (11) Detector : Silicon photodiode (12) Display : 6 inch LCD (320X240dot) with CFD (English) (13) Software for spectrophotometer : Program-Pack for water quality measurement (1 set) (14) Accessories : Standard (1 set) (15) Spareparts & Consumables : Standard for 1 year		1		
1-012	Reagent for UV/VIS spectrophotometer	Usage: Determination of concentration of PO_4^{3-}, NH_3-N, Surfactant, Cr(VI), Total Cr in water. Used for UV/VIS spectrophotometer above mentioned. 1. Kind and Quantity of Reagents: 1) Reagent for -PO4: 33 sets, 2) Reagent for -NH4: 33 sets, 3) Reagent for surfactant (anion surfactant): 20 sets, 4) Reagent for hexavalent chromium (Cr(VI)): 20 sets, 5) Reagent for total chromium (T-Cr): 33 sets		5 kinds		
1-021	Micro analysis balance	Weighing capacity (minimum reading): Max. 210g (0.1mg), 80g (approx.) (0.01mg) (2 range)		1		
1-031	Balance (6kg)	Electric balance. Should cover the maximum weighing capacity: 6kg, Minimum weighing capacity: 1g		1		

No.	Name of Equipment	Specification	Model No.	Q'ty	Price Unit US$	Price Total US$
1-041	Water Quality Analyzer	Usage: Measurement for pH, EC, NO3-, Cl-, F-, S2-		1		
		Type: Laboratory type water quality analyzer by using electrodes				
		1. CONDITION				
		(1) Electricity 220 V ,50Hz				
		2. COMPOSITION				
		(1) Main unit 1 unit				
		(2) Electrode : See below				
		3. SPECIFICATIONS				
		(1) Disply : Color LCD with navigation feature				
		(2) Measurement method Electrode method				
		(3) Measurement range pH0.000 - 14.000, EC(Cell constant 1000m-1) 0.0μS/cm - 1999μS/cm, Ion 0.0μ - 999g/L				
		(4) Repeatability: pH (±0.001pH±1digit), Ion (±0.5%F.S±1digit), EC (±0.5%±1digit)				
		4. ACCESSORIES				
		(1) Manufacturer's Standard Accessories 1 set				
		5. SPARE PARTS & CONSUMABLE				
		(1) Standard for 1 year				
1-042	Electrode for pH	Electrode for Water Quality Analyzer for measuring pH Glass electrode		1		
1-043	Electrode for EC	Electrode for Water Quality Analyzer for measuring EC Immersion type		1		
1-044	Electrode for NO_3-	Electrode for Water Quality Analyzer for measuring NO_3		1		
1-045	Electrode for Cl-	Electrode for Water Quality Analyzer for measuring Cl		1		
1-046	Electrode for F-	Electrode for Water Quality Analyzer for measuring F Combination type		1		
1-047	Electrode for S2-	Electrode for Water Quality Analyzer for measuring Sulfide-S		1		
1-048	Electrode for CN	Electrode for Water Quality Analyzer for measuring CN		1		
1-051	Turbidimeter	Type: Laboratory type Turbidity meter		1		
		1. SPECIFICATIONS				
		(1) Range: 0 - 19.99, 0 - 199.9 NTU				
		2. ACCESSORIES and SPAREPARTS				
		(1) Standard accessories				
		(2) Spare set of 6 sample cells				
		(4) Serial printer with cable and main adapter				
		(5) Primary turbidity standard 5.0 NTU (120ml) 1 bottle, Primary standard 60.0 NTU (120ml) 1bottle or equivalent.				
1-061	Draft chamber with water/gas cleaning device	Type : Draft chamber with gas cleaning device (scrubber)		1		
		1. COMPOSITION				
		(1) Main unit : 1 set				
		(2) Gas cleaning device				
		(3) Duct and fan for the Draft chamber				
		2. SPECIFICATIONS				
		(1) Dimension (approx.) 1200W(Max.) x 750D x 2000H				
		(2) Exhaust air: approx. 10m3/min				
		(3) Material: Steel with chemical resistant coating				
1-062	Draft chamber	Type : Standard type (without gas cleaning device)		1		
		1. COMPOSITION				
		(1) Main unit : 1 set				
		(2) Duct and fan for the Draft chamber				
		2. SPECIFICATIONS				
		(1) Dimension (approx.) 1200W(Max.) x 750D x 2000H				
		(2) Exhaust air: approx. 10m3/min				
		(3) Material: Steel with chemical resistant coating				

No.	Name of Equipment	Specification	Model No.	Q'ty	Price Unit US$	Price Total US$
1-071	Refrigerator	Usage : Preservation of samples		14		
		Type : Electric refregerator				
		1. SPECIFICATIONS				
		(1) Cold room: 0 - +10℃				
		(2) Capacity : Approx. 200 liter				
		(3) Freezer: less than minus 10℃				
1-081	Locker for reagent	Usage: Strage of reagents/chemicals		4		
		Type: Glass sliding doors (upper row), Steel sliding doors (lower row)				
		1. SPECIFICATIONS				
		(1) Dimension (approx.) 1200W x 400D x 1800H				
		(2) Material : Steel				
1-091	Water Purifier	1. CONDITION		1		
		(1) Electricity 220 V ,50Hz				
		2. COMPOSITION				
		(1) Main unit 1 unit				
		3. Type (Water purification method) : Ion exchange + Distillation				
		4. SPECIFICATIONS				
		(1) Purified water collected: Ion-exchange water and Distilled water				
		(2) Capacity: Distilled water (approx. 1.8 liter/h), Collection of Ion-exchange water (approx. 1 liter/min), Collection of distilled water (approx. 1 liter/min)				
		(3) Boiler: Super hard glass				
		(4) Condenser: Super hard glass				
		(5) Heater: Ceramics heater				
		5. ACCESSORIES and SPAREPARTS				
		Should include standard spareparts, accessaries, and consumables for 1 year. Other nesessary attachments and consumables such as connection unit, ion-exchange cartridge, filter, etc. should be fully equipped				
1-101	Ultrasonic cleaner	Usage: cleaning of glassweas		1		
		1. SPECIFICATIONS				
		(1) Output: Approx. 100W				
		(2) Capacity: Approx. 3 liter				
		2. ACCESSORIES				
		(1) Timer				
		(2) Standard accessories				
1-111	Middle temperature oven	Usage: Drying of glasswares		1		
		1. CONDITION				
		(1) Electricity : 220 V ,50Hz				
		Type: Free convection type				
		2. SPECIFICATION				
		(1) Operating temp. range: Room temp.+10℃ to 70℃				
		(2) Heater: 1.0kw (approx.)				
		(3) Dimension: approx. 700W x 550D x 800H				
		(4) Capacity: approx. 90 liter				
		(5) Operation function: Fixed temperature operation, Auto stop, Auto start, Quik auto stop				
		3. ACCESSORIES and SPAREPARTS				
		(1) Standard				

No.	Name of Equipment	Specification	Model No.	Q'ty	Price Unit US$	Price Total US$
1-121	Muffle furnace	1 CONDITION (1) Electricity : 220 V ,50Hz Type: Electric furnace 2 SPECIFICATION (1) Operating temp. range: 100 to 1150℃ or equivalent (2) Capacity liters: 3 - 4 liter (3) Heater approx. 1.5kW (4) Temp. control: PID control by microprocessor 3 ACCESSORIES (1) Standard (2) Exhaust unit, Time-up output terminal, Temp. output terminal, Sample tray, Exhaust port		1		
1-131	Autoclave (vertical type)	1 CONDITION (1) Electricity : 220 V ,50Hz Type: Automatic high pressure steam sterilizer (Vertical type) 2 SPECIFICATION (1) Temp. setting range: 105 - 123℃ (Sterilization), 150 - 180℃ (Drying) (2) Maximum opoerational pressure: 0.18MPa (3) Interior material: Stainless steel (4) Effective capacity: approx. 20 liter 3 ACCESSORIES (1) Standard		1		
1-141	Centrifuge	1 CONDITION (1) Electricity : 220 V ,50Hz Type: Table top type centrifuge 2 SPECIFICATION (1) Max. speed: 4000 - 5000 rpm (approx.) (2) Max. rcf: 3000 x g - 5000 x g (3) Type and number of Rotors and Buckets: Standard (Swing rotor, Angle rotor) 3 ACCESSORIES (1) Standard		1		
1-151	Shaker	Usage: For shaking of separation funnel 1 CONDITION (1) Electricity : 220 V ,50Hz Type: Table top type centrifuge 2 SPECIFICATION (1) Shaking method: Double sided vertical reciprocate shaking or equivalent (2) Shaking speed: approx. 20 to 300 times/min (3) Speed control: Stepless speed control by thyristor/Digital display 3 ACCESSORIES (1) Standard (2) Centrifugal tube holder, Test tube holder, Elrenmeyer flask holder, Separatory funnel holder		1		
1-161	Hot plate	Plate size: approx. 160 x 160, Heater: ≦ 1000W		2		

No.	Name of Equipment	Specification	Model No.	Q'ty	Price Unit US$	Price Total US$
1-171	Multi magnetic stirrer	10 - 12 (approx.) place multi-stirrer, without heating. Stirring capacity: 5 - 1000ml at each place ACCESSORIES Stirrer bar (25mm 20 pcs.)		2		
1-181	Rotary evaporator	1. CONDITION (1) Electricity : 220 V ,50Hz Type: Standard type 2. SPECIFICATION (1) Rotational number control range: 20 to 180 rpm or equivalent (2) Temp. range (water bath): Room temp. +5℃ to 95℃ (3) Glassware: Standard diagonal (4) Evaporating/Receiving flask: 1.0 liter (5) Bath capacity: approx. 7liter 3. ACCESSORIES & SPAREPARTS Condenser 1, Receiving flask 1 liter 1, Evaporating flask (2000ml 1, 500ml 1, 300ml 1, 200ml 1, 100ml 1)		1		
1-191	Constant temperature water bath	1. CONDITION (1) Electricity : 220 V ,50Hz 2. SPECIFICATION (1) Stirring method: Stirring by pump (2) Operating temp. range: Room temp. + 5℃ to 80℃ (3) Interior: Stailess steel (4) Temp. controller: PID control, Temp. sensor: Pt resistance thermometer (5) Temp. setting method: Digital setting (6) Heater: approx. 1.3kW (7) Tank capacity: approx. 27 liter 3. ACCESSORIES Standard accessories, rack top cover.		2		
1-201	Vaccume filtration unit	Usage: Mainly used for mensureing of SS in water 1. COMPOSITION Consist of: Bottles for sunction filtration, Bottle top filters (Buchner type), rubber stoppers with one hole, Water jet pump (Aspirator), and conection tubes. 2. SPECIFICATION (1) Type of bottle: Bottle for sunction filtration, with glass hose conection and reinforced rim (2) Materia - Bottle: Borosilicate glass - Bottle top filter: Porcelain with perforated plate - Water jet pump (aspirator): Plastic with gauge (3) Capacity of Bottles (Number) : 100ml(1), 200ml(1), 300ml(1), 500ml(1), 1000ml(1). Buchner type filter (Number): Dia.55mm(2), 70mm(2), 90mm(2), 110mm(2)		1		
1-211	Auto-dry desicator	Type: Cabinet type auto dry desicator equipped with auto dry unit with hygrometer 1. SPECIFICATION (1) Material: Plastic (2) Dimension (aaprox.): 260 x 320 x 470 (3) Inner humidity: To be controlled automatically approx. 30 to 40 %		1		

Syrian Arab Republic: "Equipment for The Project for "Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorate"					Package 1		(6/6)
No.	Name of Equipment	Specification	Model No.	Q'ty	Price Unit US$	Price Total US$
1-221	Water sampler	Usage: For collecting water sample from the desired depth of the water body Type: Hyrolt type water sampler or equivalent Capacity: 1000ml. Or equivalent		1		
1-231	Colony counter	Usage: Detection of bacterin colonies Type: For colony counting by pushbutton, needle probe, or optional marking pen 1. SPECIFICATION Accommodates petri dishes up to 150mm in diameter or equivalent. Glare free fluorescent illumination. Adjustable magnifier. Audible counting signal		1		
1-241	Laboratory DO meter	Type: Laboratory type		1		
1-251	Oil content analyzer	Usage: For the determination of the concentration of oil in water 1. CONDITION (1) Electricity 220 V ,50Hz 2. SPECIFICATION (1) Measurement method: Solvent extraction/Infrared absorptiometry method (2) Measurement range: 0 mg/liter - 200mg/liter 3. ACCESSORIES (1) Standard (2) Syringe, Beaker, etc.		1		
1-261	Solvent for Oil content analyzer	Usage: For Oil content analyzer Type of solvent: S-316 (Approx. 500ml/bottle)		10		
1-271	Solvent recovery unit	Usage: For recovery of solvent 1. COMPOSITION (1) Main unit: 1 set		1		
		TOTAL				

Table-G List of Glasswares for Laboratory in Damascus DFEA

No.	Name	Specifications	Q'ty
2) Package 2			
2 - 01	Whole Pipettes	Glass, 1 ml; Tolerance: ±0.007 ml or better	2
		Glass, 2 ml; Tolerance: ±0.010 ml or better	5
		Glass, 5 ml; Tolerance: ±0.015 ml or better	5
		Glass, 10 ml; Tolerance: ±0.020 ml or better	5
		Glass, 20 ml; Tolerance: ±0.030 ml or better	5
		Glass, 50 ml; Tolerance: ±0.050 ml or better	2
		Glass, 100 ml; Tolerance: ±0.080 ml or better	2
2 - 02	Graduated pipettes	Glass, 1 ml; Graduation: 0.01 ml; Tolerance: ±0.007 ml or better	2
		Glass, 5 ml Graduation: 0.05 ml; Tolerance: ±0.030 ml or better	2
		Glass, 10 ml Graduation: 0.1 ml; Tolerance: ±0.050 ml or better	4
2 - 03	Pipette Fillers	Applicable pipette's capacity: not more than 2mL, number of values: 3	1
		Capacity: 25mL, number of values: 3	1
2 - 04	Ceramic mortar		1
2 - 05	Graduated beakers	50 ml, Glass, Color: clear; Graduation: 10 ml or smaller	8
		100 ml, Glass, Color: clear; Graduation: 20 ml or smaller	5
		200 ml, Glass, Color: clear; Graduation: 20 ml or smaller	5
		300 ml, Glass, Color: clear; Graduation: 50 ml or smaller	8
		500 ml, Glass, Color: clear; Graduation: 50 ml or smaller	5
		1000 ml, Glass, Color: clear; Graduation: 50 ml or smaller	2
		2000 ml, Glass, Color: clear; Graduation: 50 ml or smaller	1
2 - 06	Volumetric Flasks	25 ml, Borosilicate glass, A class, Color: clear, Tolerance: ±0.04 mL or better, Accessory (standard ground joint and poly stopper)	8
		50 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.06 mL or better, Accessory (standard ground joint and poly stopper)	8
		100 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper)	5
		200 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	8
		500 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	3
		1000 ml , Borosilicate glass, A class, Color: clear, Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	1
2 - 07	Volumetric Flasks	Borosilicate glass, A class, Color: amber, 25 ml , Tolerance: ±0.04 mL or better, Accessory (standard ground joint and poly stopper)	3
		Borosilicate glass, A class, Color: amber, 50 ml , Tolerance: ±0.06 mL or better, Accessory (standard ground joint and poly stopper)	3
		Borosilicate glass, A class, Color: amber, 100 ml , Tolerance: ±0.1 mL or better, Accessory (standard ground joint and poly stopper)	4
		Borosilicate glass, A class, Color: amber, 200 ml , Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	3
		Borosilicate glass, A class, Color: amber, 500 ml , Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	1
		Borosilicate glass, A class, Color: amber, 1000 ml , Tolerance: ±0.15 mL or better, Accessory (standard ground joint and poly stopper)	1
2 - 08	Round bottom Flasks	200 ml, Glass, Color: clear, Short neck	20
		300 ml, Glass, Color: clear, Short neck	20
2 - 09	Kjeldahl Flasks	100 ml, Glass, Color: clear; Short neck	5
		200 ml, Glass, Color: clear; Short neck	10
		300 ml, Glass, Color: clear; Short neck	10
		500 ml, Glass, Color: clear; Short neck	5
2 - 10	Pear shape Flasks	50 ml, Glass, Color: clear; Short neck	10
		100 ml, Glass, Color: clear; Short neck	10
		250 ml, Glass, Color: clear; Short neck	10

No.	Name	Specifications	
			Water final
2 - 11	Erlenmeyer Flasks	100 ml, Borosilicate glass, color: clear	10
		200 ml, Borosilicate glass, color: clear	10
		300 ml, Borosilicate glass, color: clear	10
		500 ml, Borosilicate glass, color: clear	8
		1000 ml, Borosilicate glass, color: clear	2
2 - 12	Erlenmeyer Flasks with Ground Joints	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5
		200 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5
		300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5
		500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	8
2 - 13	Stopper	Fluoroplastic (PTFE) or equivalent, Temperature resistant: −200 to+260℃ or more, Joint type: standard ground joint(NS), NS size: 29/32, Grip type: Knurled grip	
2 - 14	Graduated Cylinders	50 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better	3
		100 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better	3
		200 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	3
		300 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	5
		500 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ±0.5 ml or better	3
		1000 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ±1.0 ml or better	1
2 - 15	Komagome Pipe (Spoit)	1 ml	8
		2 ml	8
		3 ml	8
		5 ml	10
		10 ml	5
2 - 16	Watch Dish	φ70mm	8
		φ90mm	8
		φ120mm	8
		φ150mm	3
		φ180mm	3
2 - 17	Separatory funnels	φ100ml, glass	10
		φ200ml, glass	10
		φ300ml, glass	10
		φ500ml, glass	5
2 - 18	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	Capacity: 500 ml, Type of raiser tube: leek-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polypropylene	5
		Capacity: 1000 ml, Type of raiser tube: leek-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polypropylene	5
2 - 19	Beaker with handle	Capacity: 1000 ml, Polypropylene	1
2 - 20	Automatic burret	Automatic burret 25 ml w/1L. Reservoir, Color: clear	2
		Automatic burret 50 ml w/2L. Reservoir, Color: clear	2
		Automatic burret 50 ml w/2L. Reservoir, Color: amber	2
2 - 21	Rubber of two ball reams	Injection of air, general use	2
2 - 22	Test Tube with stopper	Test tube, 18(dia.) x 180 (L) mm S16, 100 pcs/case	1
2 - 23	Stainless Spoon	Stainless Spoon (middle size: 180 mm)5pc/box	1
2 - 24	Glass rods	Glass rods, 1500 (L) x 5(dia.)mm	2
		Glass rods, 1500 (L) x 8(dia.)mm	1

No.	Name	Specifications	
			Water final
2 - 25	Funnels	Soda-lime glass, Angle: 60°, with short stem, φ70 mm	5
		Soda-lime glass, Angle: 60°, with short stem, φ100 mm	5
2 - 26	Glass tube	Glass tube, 1500 (L) x φ6×φ8mm	2
2 - 27	Stoppcock	Stoppcok, φ6×φ8mm, Fluoroplastic (PTFE) or equivalent, Temperature resistant: −200 to+260℃ or more	1
2 - 28	Pinchcok	Pinchcok (Size M), Stainless steel	5
2 - 29	Screw Cock	Screw Cock (Size M), Stainless steel	5
2 - 30	Stopwatch	1/100 sec stopwatch, Electronic (battery)	1
2 - 31	Micro pipet	2〜20 μl	1
		10〜100 μl	1
2 - 32	Chip for micro pipet	0.5〜10 μl, 1000 pcs/package	1
		2〜200 μl, 1000 pcs/package	1
2 - 33	Flow meter	Float type flow meter with needle valve, 0.05〜0.5 L/min, Accuacy: FS±3%	1
		Float type flow meter with needle valve, 0.2〜2.5 L/min, Accuacy: FS±3%	1
2 - 34	Heating mantles	For Soxhlet extraction, 4-Place haeters (200W x 4), Applied capacity of flask	1
2 - 35	Fat extractor (soxhlet)	Soxhlet extraction apparatus, 300ml type, SPC joints	5
2 - 36	Thermometer	Mercury type cylinder shape thermometer, -20〜100℃	1
2 - 37	Beaker tongs	Tongs for flask	2
2 - 38	Lab jack	Lab jack, 150×150mm, Range of expansion and contraction: 75〜245 mm, An upper and lower board is made of the stainless steel.	2
2 - 39	Unit stand	Support stand set: 1 m×1 m, Assembly stick (stainless pipe)	1
		Support stand set: 1.5 m×1 m, Assembly stick (stainless pipe)	1
		Support stand set: 2.0 m×1 m, Assembly stick (stainless pipe)	1
2 - 40	Cork borer	Cork borer sets saw-shaped edge (No. of borers, 12)	1
2 - 41	Muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: φ7mm〜13mm,	10
2 - 42	Jumbo muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: φ13mm〜21mm,	5
2 - 43	Clamps	Open diameter: 5〜50 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS	5
		Open diameter: 5〜80 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS	5
2 - 44	Tweezers	Odontology department tweezers	8
2 - 45	Vacuum hose	Vacuum hose φ8×φ21mm (5 m/ Unit)	1
2 - 46	Rubber tube	Rubber tube φ6×φ13mm (10 m/ Unit)	1
2 - 47	Silicon rubber tube	Silicon rubber tube 'φ6×φ8mm, (10m/ Unit)	1
		Silicon rubber tube 'φ6×φ10mm, (10m/ Unit)	1
		Silicon rubber tube 'φ8×φ10mm, (10m/ Unit)	1
2 - 48	Micro line tube	OD φ2.29 mm (5 m)	3
2 - 49	Tube joint	Straight, Glass, φ6 × φ8 mm, (10 pcs/ case)	1
		T type, Glass, φ6 × φ8 mm, (10 pcs/ case)	1
		Y type, Glass, φ6 × φ8 mm, (10 pcs/ case)	1
2 - 50	Support for test tubes	for 18(dia.) x 180 (L) test tube, Number of partitions: 5×10	1
2 - 51	Stopper (silicon rubber)	φ15mm	8
		φ20mm	8
		φ25mm	8
		φ30mm	3
		φ35mm	3
		φ40mm	3
2 - 52	Octagon rotator	Teflon coating, φ6.5 × 20 mm	5
		Teflon coating, φ7.5 × 25 mm	5
		Teflon coating, φ7.5 × 30 mm	5
		Teflon coating, φ10 × 40 mm	5
2 - 53	Rotator taking out stick	Teflon coating, φ3.0 × 250 mm	1
		Teflon coating, φ8.0 × 310 mm	1
2 - 54	Weighing Paper	Weighing Paper 500pcs/box, Large (Size: approx. 120 x 120 mm)	1
		Weighing Paper 500pcs/box, Small (Size: approx. 90 x 90 mm)	1

No.	Name	Specifications	
2 - 55	Vacuum Pump	Oil sealed rotary vane vacuum pump. Ultimate vacuum: 9.3 Pa (aaprox.). Capacity: 20 -25 liter/min. (approx.). Motor: 100W (approx.). Accessories: Vacuum oil. Power supply: AC220V	1
2 - 56	Circulating aspirators	Capacity: More than 12~15 liter/min., Aspirators: 2 pcs, Water tank: Polypropylene, Suction entrance: 2 pcs(φ11.5 mm), Outside size: Approx. 360(W)×260 (D)×390(H) mm	1
2 - 57	Micro-syringe	Micro-syringe: 10 μL	1
		Micro-syringe: 50 μL	1
2 - 58	Membrane filter	0.45μm, φ47 mm, 100 pcs	8
2 - 59	pH Paper	pH paper: Roll type, 4 pcs/case	1
2 - 60	Quartz wool	4~9μm, 10g	1
2 - 61	Gastigt syringe	Glass, 100 ml	2
2 - 62	Tweezers for cell	Type that can be strongly pinched by power of spring	1
2 - 63	Pipet container	Plastics container or more fine quality, Applox. 450 (W) × 300 (D)) × 70	1
2 - 64	Pipet support	Plastic or stainless steel, Size: Approx. 200×170×250 (H) mm, H tipe	1
2 - 65	Stand for micro pipet	Number of sets of syringes : 2 pcs or more	1
2 - 66	Waste water container	Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 20 L, Color: White, Stopper: Two	4
		Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 5 L, Color: White, Stopper: One	4
2 - 67	Boiling stone	Boiling stone: 50 pcs/case	1
2 - 68	Flask filtering	1000 ml, Borosilicate glass	1
2 - 69	Stand for Separatory funnels	For 100 ml separatory funnels, 5 pcs set or more	2
		For 200 ml separatory funnels, 5 pcs set or more	2
		For 300 ml separatory funnels, 5 pcs set or more	2
		For 500 ml separatory funnels, 5 pcs set or more	1
2 - 70	Seal tape	Teflon made, Applox. 10mm× 15 m	1
2 - 71	Paraffin film	4" × 125 feet	2
2 - 72	Wiping Tissue (Kimwipe)	Wiping Tissue (Small Size 72pack/box)	1
2 - 73	Pipet cleaner	Inside size of basket: Approx. 500×φ136 mm, Material: Vinyl chloride	1
2 - 74	Brush	For bottle washing (small: No2)	3
		For bottle washing (middle: No5)	3
		For bottle washing (large: No10)	3
		For Pipettes	3
		For burret φ30 x 951 mm	3
2 - 75	Doraing Shelf (Shelf for the glass apparatus dryness)	Standard top board, Size: (W)800×(D)510×(H)1600 mm, With water receiving bat made of stainless steel., Vinyl curtain(Incombustibility), Net board (Resin coating): Mesh size 16~18 mm×2pcs ; 30~50 mm×1pc, 70~95 mm×1pc	1
2 - 76	Color comparition tubes	50 ml, with white graduated, With stopping	5
		100 ml, with white graduated, With stopping	5
2 - 77	Tube support	For color comparition, For 100ml color comparition tube ×10 pcs	1
2 - 78	Pasteur Pipette	150 mm, 1000 pcs, Borosilicate	1
		230 mm, 1000 pcs, Borosilicate	1
2 - 79	Teflon tube	φ4 mm×φ6 mm, 20m	1
2 - 80	F Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) ream type (Applox 3.6Kw), It conforms to JIS K-0102.	1
2 - 81	NH4 Ion Distillation Unit with Heater	All glass parts and heating system., Heating method: Electric heating, Three(3) ream type (Applox 3.6Kw), It conforms to JIS K-0102. The phenol distillation is also possible according to use.	1
2 - 82	Dropping Bottle	50 ml	1
		100 ml	1
2 - 83	Crucible	Crucible, porcelain, 30 ml	5
		Crucible, porcelain, 50ml	5

No.	Name	Specifications	Warranty
2 - 84	Porcelain dish tongs	Porcelain dish tongs	1
2 - 85	Jumbo crucible tongs	Jumbo crucible tongs for use with muffle furnace	1
2 - 86	Standard Sieve	Applox. Φ200 mm, mesh: 2mm	1
2 - 87	Weighning Bottle	Applox. φ50mm, H35mm	5
2 - 88	Conical beaker	250 ml	5
2 - 89	Petri dishes	50 mm diameter (presterelized)	100
		120 mm diameter (presterelized)	10
2 - 90	Bottle for sample collection	500 ml, Polypropylene, with screw closure, Wide-mouse bottle,	30
2 - 91	Rubber Bulb for Small Pipette	Vinyl-methyl Silicon rubber for graduated pipettes (1ml)	8
		Vinyl-methyl Silicon rubber for graduated pipettes (5ml)	10
		Vinyl-methyl Silicon rubber for graduated pipettes (10ml)	8
2 - 92	Cleaning Tissue	45 boxes of 200 tissues for wipe out glass ware, etc, Lint-free fiber, Fully absorbent, Size: approx. 115 x 215 mm	1
2 - 93	Gloves	Disposable type, Seamless latex, Solvent-proof, Powdered fit both right and left hands, Size: medium, Packs of 100	1
2 - 94	Goggles	Plastic, with side guard	2
2 - 96	Cleaning Agent	For removing grease, oil, wax, dye residue, silicone, etc. Disinfectant action: by active chorine Dosing: 2 to 10 % in demineralized water PH-Value: approx. 9 or 8 Volume: 10 kg or more/ 1 container Cleaning agent deconcy 11 universal	1

Table-R Reagent List for Laboratory in Damascus DFEA

	name	Specification	Unit	Number
3) Package 3				
3 - 1	2,2,4-Trimethyl-Pentane	(mixture of isomeres) for systhesis		
3 - 2	2,4-Dinitrophenol	α-Dinitrophenol, Use as pH indicator	25g	8
3 - 3	3', 3", 5', 5"-tetrabromo-pgenolsulfonephthalein (bromophenol blue)	Use as pH indicator (pH 3.0 - 4.6)	25g	2
3 - 4	Acetic acid CH_3COOH	Assay (acidimetric): min.96.0 %	500ml	4
3 - 5	Acetone CH_3COCH_3	Purity (GC): min 99.0%	1L	4
3 - 6	Ammonia	25% ammonia solution, Assay (acidimetric, NH3): min. 25.0 %	1L	1
3 - 7	Ammonium Iron(Ⅲ) citrate $C_6H_8O_7 \cdot xFe \cdot xH_3N$	Assay (iodometric, Fe calculated on dried substance): 17.1 - 18.9%	1kg	1
3 - 8	Ammonium sulfamate $H_2NSO_3NH_4$	Assay (acidimetric): ≧99.0%	100g	2
3 - 9	Boric acid H_3BO_3	For analysis, Assay (acidimetric): 99.8 - 100.5 %	500g	2
3 - 10	Chloro-benzene C6H5Cl	For synthesis, Assay (GC, area%): ≧99%	100ml	3
3 - 11	Chloroform $CHCl_3$	Purity (GC): 99.0-99.4%	500ml	9
3 - 12	Dichloromethane CH_2Cl_2	Purity (GC): min 99.5%	500ml	7
3 - 13	Dodecyl sulfate sodium salt $C_{12}H_{25}NaO_4S$	For biochemistry and surfactant tests, Assay (two-phase titration): ≧99.0%	250g	2
3 - 14	Ether $(C_2H_5)_2O$	Diethyl ether, Purity (GC): ≧99.7%	1L	8
3 - 15	Ethylenediaminetetraacetic acid, dipotassium salt dihydrate (EDTA·K2) $C_{10}H_{14}K_2N_2O_8 \cdot 2H_2O$	Assay (by complexometry): 99 - 101.5%	100g	4
3 - 16	Hexaammonium heptamolyddate tetra hydrate			1
3 - 17	Hydrochloric acid HCl	32% GR for analysis, Assay (acidimetric): min. 32.0%	1 L	3
3 - 18	Hydroxylamine hydrochloride $NH_2OH + HCl$	Assay (manganometric): ≧99.0 %	250g	10
3 - 19	Hydroxylamine sulfate $(HONH_3)_2SO_4$	Reducing agent, reagent for the preparation of oximes. Assay (manganometrix): mini 99%	500g	2
3 - 20	Iron(Ⅲ) chloride hexahydrate $FeCl_3 \cdot 6H_2O$	Assay (iodometric): ≥99.0%	40g	2
3 - 21	Lactose monohydrate $C_{12}H_{22}O_{11} \cdot H_2O$	Milk sugar, Use for microbiology	1 kg	1
3 - 22	L-Ascorbic acid $C_6H_{12}O_6$	Assay (iodometric): ≥98%	10g	40
3 - 23	Lead(Ⅱ) carbonate, basic $PbCO_3$	Assay (complexometric): mini99.0%	250g	1
3 - 24	Magnesium per chlorate $Mg(ClO_4)_2 * xH2O$	Drying agent (Desiccant), Hydrate (about 83% $Mg(ClO_4)_2$)	500g	2
3 - 25	Magnesium sulfate heptahydrate $MgSO4 \cdot 7H_2O$	For analysis	500g	2
3 - 26	Magnesium sulfate monohydrate			
3 - 27	Manganese(Ⅱ) sulfate monohydrate $MnSO_4 \cdot H_2O$	Assay (complexometric): 99.0 - 101.0 %	250g	5
3 - 28	Neutral red $C_{15}H_{17}ClN_4$	Indicator and microbiology, Assay (spectrophotometrically): ≧75%	100g	1
3 - 29	n-Hexadecane $C_{16}H_{34}$	Assay (GC, area%): ≧99 %	250ml	1
3 - 30	n-Hexane C_6H_{14}	For analysis, Purity ≥99.0 %	2.5L	3
3 - 31	Peptone	For microbiology	1kg	2
3 - 32	Potassium bromate $KBrO_4$	For analysis, Assay (iodometric): ≥ 99.8	250g	4
3 - 33	Potassium carbonate K_2CO_3	Assay (acidimetric, calculated on dried substance): ≧99.0 %	500g	4
3 - 34	Potassium chloride KCl	For electrolyte solutions, buffer solutions, Assay (argentometric): min. 99.5 %	500g	1
3 - 35	Potassium chromate K_2CrO_4	Assay (iodometric): ≥99.5 %	250g	4
3 - 36	Potassium cyanide KCN	Assay (argentometric): min. 97.0%	100g	1
3 - 37	Potassium dichromate $K_2Cr_2O_7$	Oxidizing agent, Assay (iodometric, cal. On dried substance): : ≥99.9 %	500g	5
3 - 38	Potassium dihydrogen phosphate KH_2PO_4	Buffer solution, pH value (20 °C): 6.98 - 7.02)	500ml	2
3 - 39	Potassium fluoride dihydrate KF	For analysis, Assay (precipitative titration): min. 99 %	250g	2
3 - 40	Potassium hydrogenphosphate			
3 - 41	Potassium hydroxide KOH	Pellets, Assay (acidimetric): min. 85 %	500g	5
3 - 42	Potassium iodide KI	Reagent for the preparation of iodine solution in iodometry, starch paper	250g	10
3 - 43	Potassium nitrate KNO_3	Reagent for oxidative dissolution of organic and inorganic samples. Assay (acidimetric): ≥99.0%	500g	1
3 - 44	Potassium permanganate $KMnO_4$	Oxidizing agent, Assay (iodometric): 99.0 - 100.5 %	250g	10
3 - 45	Selenious acid			1
3 - 46	Silicic acid $SiO_2 \cdot xH_2O$	Assay (gravimetric): ≧99 %	1 kg	1
3 - 47	Silver nitrate $AgNO_3$	Catalyst in the COD determination, Assay (argentometric): 99.8%		2
3 - 48	Silver sulfate Ag_2SO_4	Catalyst in the COD determination, Assay (argentometric): 99.5%	100g	1
3 - 49	Sodium azide NaN_3	Assay (cerimetric): ≥99.0%	100g	1
3 - 50	Sodium chloride NaCl	Assay (argentometric): ≥99.5%	500g	2
3 - 51	Sodium deoxycholate $C_{24}H_{39}NaO_4$	For microbiology	100g	2
3 - 52	Sodium deoxycholate $C_{24}H_{39}NaO_4$	For microbiology	250g	2
3 - 53	Sodium fluoride NaF	Assay (precipitative titration): min. 99%	250g	1
3 - 54	Sodium hydroxide NaOH	Assay (acidimetric): min.99 %	500g	10
3 - 55	Sodium hypochlorite	Soda bleaching lye, 6- 14% active chroline	2.5L	2
3 - 56	Sodium iodide NaI	Assay (argentometric): min.99.5%	100g	5
3 - 57	Sodium nitrate $NaNO_3$	Assay (acidimetric): ≧99.5 %	500g	1
3 - 58	Sodium oxalate $(CNaO_2)_2$	Assay (manganometric): mini.99.8%	250g	2
3 - 59	Sodium Salicylate HOC_6H_4COONa	Assay (perchloric acid titration, calculated on dried substance): ≧ 99.5 %	250g	10
3 - 60	Sodium sulfate Na_2SO_4	Anhydrous, Assay (acidimetric): ≥99.0%	500g	8
3 - 61	Sodium sulfide Na_2S	Assay (iodometric Na2S): 32.0 - 38.0 %	1kg	3
3 - 62	Sodium sulfide nonhydrate			
3 - 63	Sodium sulfite Na_2SO_3	Assay (iodometric): 98.0 - 100.5 %	500g	1
3 - 64	Sodium tetraborate decahydrate $Na_2B_4O_7 \cdot 10H_2O$	For the calibration of pH meters	25g	4
3 - 65	Sodium thiosulfate pentahydrate $Na_2S_2O_3 \cdot 5H_2O$	Assay (iodometric): 99.5 - 101.0%	500g	6
3 - 66	Stearic acid $C_{18}H_{36}O_2$	Assay (GC, area%): ≧97 %	500g	1
3 - 67	Sulfamic acid (aminosulfonic acid) H_2NSO_3H	Assay (acidimetric): ≧99.5 %	250g	5
3 - 68	Sulfuric acid H_2SO_4	98% GR for analysis, Assay (acidimetric): min. 98.0%	1L	1
3 - 69	Sulfuric acid H_2SO_4	c(H2SO4) = 0.5 mol/L (1N)	1L	1
3 - 70	Tetrachloroethylene C_2Cl_4	Purity (GC): ≥99.0%	500ml	2
3 - 71	Trans-1,2-Diaminocycrohexane-N, N, N', N'-tetraacetic acid monohydrate C14H22N2O8·H2O	For synthesis, Assay (by acidimetry): >98%	25g	4
3 - 72	α-Bromo-2,3,4,5,6-pentafluorotoluene			1

Minutes of Meeting
On
The 5th Technical Committee
For
The Capacity Development of Environmental Monitoring at Directorates
For
Environmental Affairs in Governorates in the Syrian Arab Republic

Damascus, 18 September 2005

Eng. Imad Hassoun
Deputy Minister,
Ministry of Local Administration and
Environment Affaires

Mr. Yoichi IWAI
Team Leader
The Expert Team
Japan International Cooperation Agency

The 5th technical committee (T/C) was held on 18 September, 2005 at the meeting room in the General Commission for Environmental Affaires (GCEA). It was started by an opening statement by Eng. Imad Hassoun, Deputy Minister, Ministry of Local Administration and Environment Affaires (MOLAE), mentioning current situation of the Capacity Development of Environmental Monitoring at Directorates for Environmental Affairs in Governorates in the Syrian Arab Republic (the Project). Then, Mr. Yoichi Iwai, the Team Leader of the JICA Expert Team made presentation referring the following 4 technical items.

1. Review of the Project Activities up to September 2005
2. Explanation of the Progress Report (1)
3. Technical Proposal of Networking System between GCEA and DFEAs
4. Next Training Activities and Schedule

An attendant list and the agenda of the 5th T/C are attached per ANNEX-1 and ANNEX-2, respectively.

The followings are the issues discussed and commented upon in the 5th T/C meeting.

(1) The JICA Expert Team, Mr. Yoichi Iwai, mentioned 25 copies of the Progress Report (1) in English were submitted to GCEA. Mr. Yoichi Iwai presented a technical proposal to the T/C members related to establishment of a networking system between GCEA and DFEAs prepared by GCEA. The T/C members agreed to send this technical proposal to the Steering Committee (St/C) to be held on 21 September, 2005. Also, Mr. Yoichi Iwai informed that all documents collected through the Study Tour to Egypt are set in the Directorate of Laboratories in GCEA and are available for additional copies to the T/C members and the counterpart personnel (C/P) of the Project.

(2) The Director of the Directorate for Environmental Affaires (DFEA) in Hama, Mr. Mr. Ali Jwaied, requested for more training on calibration of equipment and monitoring data interpretation, and for involvement counterparts in a seminar concerning to environmental education. The JICA Expert Team, Mr. Yoichi Iwai, replied that the training on calibration and data interpretation should be carried out in the course of the Project as described in the Project Design Matrix (PDM) of the Record of Discussion (R/D), and also referred involvement more C/Ps in seminars and workshops of the environmental education.

(3) The Director of DFEA in Hama, Mr. Mr. Ali Jwaied, requested for providing additional sampling bottles and analysis cells because some are out of use due to taking oily wastewater. The JICA Expert Team, Mr. Shunsuke Sato, answered that JICA would provide additional ones for DFEAs under the similar situations, and requested for avoiding samples heavily contaminated by oil because it could cause difficulties to reuse of bottles and cells for another

analysis. In addition, Mr. Shunsuke Sato, informed that the raw wastewater highly contaminated by oil is normally requested only for analysis of oil and grease using an oil content analyzer mainly due to its lesser values for water resources.

(4) The Director of DFEA in Hama, Mr. Mr. Ali Jwaied, commented that the wastewater from oil factories is the most troublesome pollution, so DFEA in Hama cannot help sampling such oily water. The JICA Expert Team, Mr. Yoichi Iwai, replied that the equipment provided by JICA is not suitable for direct analysis of heavily contaminated water by oil, and the wastewater treatment for oil removal by pollution sources must be considered at first. Mr. Yoichi Iwai, suggested that further discussion could be necessary for formulation of new projects among the T/C members considering regional characteristics of pollution sources in each DFEA.

(5) The Director of DFEA in Rakka, Ms. Shams Aljasem, requested more supports for data interpretation because DFEA is sometimes requested comments on water quality condition and on its suitability for specific purpose by the decision makers. Ms. Shams Aljasem also requested for providing reagents having much convenient analysis range. The JICA Expert Team, Mr. Yoichi Iwai, replied that further support for data interpretation is ready for in the Project and the JICA Expert Team will continue effort to provide more suitable reagents as much as possible.

(6) The Laboratory Chief of DFEA in Hasakh, Mr. Nawaf Othman, questioned about a method of blank correction for analysis, and requested for a manual preparation of reagent. The JICA Expert Team, Mr. Shunsuke Sato, answered that the blank correction data should be recorded in the equipment, and the JICA Expert Team will support for a manual preparation of reagent.

(7) The Director of Directorate of Public Awareness in GCEA, Dr. Nader Ghazi, questioned about detailed training contents of the environmental education. The JICA Expert Team, Mr. Yoichi Iwai, answered that the details should be prepared by C/P of the Project with support by the JICA Expert in charge for Environmental Education.

(8) The Director of DFEA in Tartous, Mr. Hasan Marjan, questioned about a starting date of guarantee period for the equipment provided by JICA. The JICA Expert Team, Mr. Shunsuke Sato, answered that the guarantee period is one year starting from the date delivered by the suppliers.

ANNEX-1

List of Attendants

Syrian Side

Name	Position	Organization
Mr. Imad Hassoun	Deputy Minister	MOLAE
Dr. Yasin Moa'lla	Director of Directorate of Laboratories	GCEA
Ms. Reem Aed Raboh	Director of Water Safety	GCEA
Dr. Nader Ghazi	Director of Public Awareness	GCEA
Ms. Fathia Mohammed	Chief of Directorate of Laboratories	GCEA
Mr. Ahmad Al-Mohammed	Deputy Director, Directorate of Laboratories	GCEA
Ms. Wareif Yazgi	Deputy Director, Directorate of EIA	GCEA
Mr. Ahmad Khsara	Head, Directorate of Air Safety	GCEA
Mr. Bassam Khairbek	Director	DFEA Damascus
Ms. Mouna Jomma	Laboratory Chief	DFEA Damascus Countryside
Mr. Madian Nasra	Deputy Director	DFEA Damascus Countryside
Mr. Ali Jwaied	Director	DFEA Hama
Mr. Mahmoud Taleb	Director	DFEA Idleb
Eng. Nawaf Othman	Laboratory Chief	DFEA Hasakeh
Ms. Shamsa Aljasem	Director	DFEA Rakka
Dr. Motasem Alabed	Director	DFEA Sewida
Ms. Fatema Hariri	Director	DFEA Dara'a
Mr. Hasan Marjan	Director	DFEA Tartous
Eng. Wael Jadeed	Staff	DFEA Lattakia
Eng. Reham Agha	Director	DFEA Deir ez Zor
Mr. Hamzeh Soliman	Director	DFEA Qunaitra

Japanese Side

Name	Position	Organization
Mr. Yoichi Iwai	Team Leader/Environmental Management	JICA Expert Team
Mr. Shunsuke Sato	Water Quality (Chemical and Biological Analysis)	JICA Expert Team
Mr.Mohammed Aldoubosh	Interpreter	JICA Expert Team
Ms.Nada Kat	Interpreter	JICA Expert Team

The Capacity Development of Environmental Monitoring at Directorates for Environmental Affaires in Governorates

Agenda for the 5th Technical Committee

1. Date:

- Sep. 18 (Sun), 11:00-12:30: at the Meeting Room in GCEA

2. Objectives

1) Review of the Project Activities up to September
2) Comments on the Progress Report (1) (Pr/R-1)
3) Discussion on the Schedule from December 2005 to February 2006

3. Agenda

1. Opening (by the Deputy Minister of MOLEA)	11:00-11:05
2. Presentation (by the JICA Expert Team) 1) Review of the Project Activities up to September 2) Comments on the Progress Report (1) (Pr/R-1) 3) Discussion on Networking System between GCEA and DFEAs 4) Discussion on the Schedule from December 2005 to February 2006	11:05-11:35
3. Discussion and Q/A	11:35-12:30
4. Preparation of draft M/M (by the JICA Expert Team)	12:30-

End