付　属　資　料

1. 討議議事録（R/D)、協議議事録（M/M）
2. 事前調査団概要（第１次、第２次）
3. 事前調査団ミニッツ（第１次、第２次）
4. メキシコ水行政年表
5. 全国水質モニタリングプログラム（和訳）
6. メキシコの水質基準
7. 調査団からの申し入れに対するメキシコ側からの回答
8. 収集資料リスト

RECORD OF DISCUSSIONS
BETWEEN THE RESIDENT REPRESENTATIVE OF JICA MEXICO OFFICE AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE UNITED MEXICAN STATES ON JAPANESE TECHNICAL COOPERATION FOR COASTAL WATER QUALITY MONITROING NETWORK PROJECT

The Resident Representative of the Japan International Cooperation Agency (hereinafter referred to as "JICA") in Mexico exchanged views and had a series of discussions with the Mexican authorities concerned with respect to desirable measures to be taken by JICA and the Government of Mexico for the successful implementation of the technical cooperation project concerning the Coastal Water Quality Monitoring Network.

As a result of the discussions, and in accordance with the provisions of the Agreement on Technical Cooperation between the Government of Japan and the Government of the United Mexican States, signed in Tokyo on December 02nd, 1986 (hereinafter referred to as "the Agreement"), JICA and Mexican authorities concerned agreed on the matters referred to in the document attached hereto.

Done in duplicate in Spanish and English languages, each text being equally authentic. In case of any divergence of interpretation, the English text shall prevail.

Mexico, D.F., November 17, 2006

By the Mexican Government

Mr. Kenichiro Kawaji
Resident Representative
Japan International Cooperation Agency
Mexico Office

Dr. Jorge Ibarra Salazar
General Director of Technical and Scientific Cooperation
Secretariat of Foreign Affairs

Dr. Felipe J. Arreguín Cortés
Deputy Director General (Technical area)
National Water Commission (CONAGUA)
Secretariat of Environment and Natural Resources

Ing. César Herrera Tóledo
Deputy Director General (Planning area)
National Water Commission (CONAGUA)
Secretariat of Environment and Natural Resources

Ing. Luis Rafael Renero Amparán
Northern Gulf Regional Director
National Water Commission (CONAGUA)
Secretariat of Environment and Natural Resources

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND THE GOVERNMENT OF MEXICAN UNITED STATES

1. The Government of Mexico will implement the Coastal Water Quality Monitoring Network Project (hereinafter referred to as "the Project") in cooperation with JICA.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provisions of Article III of the Agreement, JICA, as the executing agency for technical cooperation by the Government of JAPAN, will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS
   JICA will provide the services of the Japanese experts as listed in Annex II. The provision of Article IX of the Agreement will be applied to the above-mentioned experts.

2. PROVISION OF MACHINERY AND EQUIPMENT
   JICA will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III. The provision of Article VIII-1 of the Agreement will be applied to the Equipment.

3. TRAINING OF MEXICAN PERSONNEL IN JAPAN
   JICA will receive the Mexican personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF UNITED MEXICAN STATES

1. The Government of Mexico will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through

full and active involvement in the Project by all related authorities, beneficiary groups and institutions.

2. The Government of Mexico will ensure that the technologies and knowledge acquired by the Mexican nationals as a result of the Japanese technical cooperation will contribute to the sustainable development of Mexico.

3. In accordance with the provisions of Article V and VI of the Agreement, the Government of Mexico will grant in Mexico privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families.

4. In accordance with the provisions of Article VIII of the Agreement, the Government of Mexico will take the measures necessary to receive and use the Equipment provided by JICA under II-2 above and equipment, machinery and materials carried in by the Japanese experts referred to in II-1 above.

5. In accordance with the laws and regulations in force in Mexico, the Government of Mexico will take necessary measures to cover the cost of value-added tax (IVA) and delivery in Mexico for the Equipment provided through JICA, and to supply or replace at its own expense machinery, equipment, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under II-2 above.

6. The Government of Mexico will take necessary measures to ensure that the knowledge and experience acquired by the Mexican personnel from technical training in Japan will be utilized effectively in the implementation of the Project.

7. In accordance with the provision of Article V-(b) of the Agreement, the Government of Mexico will provide the services of Mexican counterpart personnel and administrative personnel as listed in Annex IV.

8. In accordance with the provision of Article V-(a) of the Agreement, the Government of Mexico will provide the buildings and facilities as listed in Annex V.

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

IV. ADMINISTRATION OF THE PROJECT

1. Deputy Director General (Technical area), as the Project Director, will bear overall responsibility for the administration and implementation of the Project.

2. General Manager of Manager's Office of Water Quality and Sanitation, as the Project Manager, will be responsible for the managerial matters of the Project.

3. Deputy Manager of Technical Area of Northern Gulf Regional Office, as the Deputy Project Manager, will be responsible for the technical matters of the Project.

4. The Japanese Chief Adviser will provide necessary recommendations and advice to the Project Director and the Project Manager on any matters pertaining to the implementation of the Project.

5. The Japanese experts will give necessary technical guidance and advice to Mexican counterpart personnel on technical matters pertaining to the implementation of the Project.

6. For the effective and successful implementation of technical cooperation for the Project, a Joint Coordinating Committee (hereinafter referred to as "JCC") will be established. The function and composition of JCC are described in Annex VI.

V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by the Mexican side and JICA, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

VI. CLAIMS AGAINST JAPANESE EXPERTS

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

In accordance with the Technical Cooperation Agreement between both countries, the Japanese experts oversee and attend the Mexican regulations and laws.

VII. MUTUAL CONSULTATION

There will be mutual consultation between the Government of Mexico and JICA on any major issues arising from, or in connection with this Attached Document.

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

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

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be three (3) years starting from the date when the expert team arrives in 2007.

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

ANNEX I MASTER PLAN

The Project will be implemented in accordance with the Master Plan as follows.

1. Title of the Project

Coastal Water Quality Monitoring Network Project

2. Overall goal

The capacity of CONAGUA for monitoring and control for the coastal water is augmented.

3. Project purpose

The reference functions of CONAGUA on the coastal water monitoring are strengthened.

4. Outputs

1. The capabilities of coastal water monitoring in the Northern Gulf Regional Office are strengthened.
2. The capabilities of coastal water monitoring in the Manager's Office of Sanitation and Water Quality are strengthened.
3. The Quality Assurance and Quality Control (QA/QC) system of coastal water monitoring is improved.
4. National Reference Laboratory and Northern Gulf Regional Laboratory's training functions on coastal water monitoring are strengthened.

5. Activities

1-1. To integrate the existing coastal monitoring guidelines (JICA and others) into uniform standard guidelines.

1-2. To review the existing coastal monitoring plan based on the new standard guideline and develop a new monitoring plan in the Northern Gulf Region.

1-3. To prepare the standard operation procedures (draft NMX) for saline water and sediment sampling and analysis methods after reviewing the present work.

1-4. To consolidate the sampling skills of saline water and sediment.

1-5. To consolidate analytical skills of the basic parameters in saline water and sediment, and those for data quality assurance.

1-6. To interpret monitoring data for site evaluation.

1-7. To conduct sampling and chemical analysis of water and sediment based on the standardized operation procedures.

2-1. To integrate the existing coastal monitoring guidelines (JICA and others) into uniform standard guidelines.

2-2. To review the existing regional monitoring plans based on the standard guidelines for coastal monitoring

and to give necessary approval.

2-3. To apply the methods to measure the basic parameters and selected toxic pollutants in saline water and sediment, and those for data quality assurance.

2-4. To prepare the standard operation procedures (draft NMX) for saline water and sediment analysis methods.

2-5. To interpret monitoring data for site evaluation.

2-6. To conduct chemical analysis of saline water and sediment based on the standard operation procedures.

3-1. To prepare the QA/QC system appropriate to the coastal water monitoring after reviewing the present QA/QC operation in Northern Gulf Regional Laboratory.

3-2. To review the past monitoring data based on the newly developed QA/QC system.

3-3. To integrate the newly developed QA/QC system into the existing QA/QC system for the national water monitoring network.

3-4. To apply the integrated QA/QC system for the fresh water and saline water monitoring.

4-1. To develop a training master plan for coastal water monitoring after studying the existing training programs and training needs.

4-2. To develop an annual training program based on the training master plan.

4-3. To prepare training materials based on the annual training program.

4-4. To conduct trial trainings with the materials.

4-5. To revise the materials and the annual training program as required after reviewing the trial trainings.

4-6. To conduct the trainings for regional laboratory staff based on the revised training program.

ANNEX II LIST OF JAPANESE EXPERT

Fields to be covered by the Japanese experts are as follows:

1. Chief advisor
2. Monitoring planning
3. Interpretation of monitoring data
4. Saline water sampling
5. Basic parameters analysis
6. Inorganic substance analysis
7. Organic substance analysis
8. Sediment analysis
9. Quality assurance and quality control
10. Coordinator

ANNEX III LIST OF MACHINERY AND EQUIPMENT

Fields to be covered by the provision of equipment are as follows:

1. Equipment for the Sampling
2. Glassware for Chemical Analysis Training

ANNEX IV LIST OF MEXICAN COUNTERPART AND ADMINISTRATIVE PERSONNEL

1. Project administrative management counterpart

(1) Project Director

Felipe I. Arreguín Cortés	Deputy Director General (Technical area), CONAGUA

(2) Project Manager

Enrique Mejía Maravilla	General Manager of Manager's Office of Water Quality and Sanitation

(3) Deputy Project Manager

Enrique Lopez Perez	Deputy Manager of Technical Area, Northern Gulf Regional Office, CONAGUA

2. Technical Counterpart

(1) CONAGUA Central and National Reference Laboratory

Jesús García Cabrera	Deputy Manager of National Laboratories and Monitoring Networks
To be assigned	Head of the Department of the National Monitoring Network
To be assigned	Head of the Department of the National Laboratory Network
Margarita Lobato Calleros	Head of the National Reference Laboratory, CONAGUA
Martha Leticia Otero López	Hydraulic Specialist, Department of the National Monitoring Network
Martha Zamudio Díaz	Hydraulic Specialist, Department of the National Monitoring Network
Alicia Vázquez Martínez	Hydraulic Specialist, Department of the National Monitoring Network
Graciela Martínez Serratos	Hydraulic Specialist, Department of the National Monitoring Network
Javier Viramontes Navarro	Technician, Department of the National Monitoring Network
Martha Bustamante Herrera	Hydraulic Specialist, National Reference Laboratory
Norma Lilia Heiras Rentería	Hydraulic Specialist, National Reference Laboratory
Guadalupe Machado Osuna	Hydraulic Specialist, National Reference Laboratory
Valia Maritza Goytia Leal	Hydraulic Specialist, National Reference Laboratory
Martin Castro Juárez	Technician, National Reference Laboratory
Sebastián Pérez Rodríguez	Technician, National Reference Laboratory

(2) CONAGUA Northern Gulf Regional Office

Luis Manuel Camacho Martínez	Head of the Water Quality and Environmental Impact Project, Northern Gulf Regional Office
Francisca Robledo Muñiz	Head of the Northern Gulf Regional Laboratory
Mónica Miguel Gil	Hydraulic Specialist, Northern Gulf Regional Office
Liliana Longoria Bolán	Hydraulic Specialist, Northern Gulf Regional Office
Luis Vázquez Ochoa	Technician, Northern Gulf Regional Office
Carlos Alberto Rojas Flores	Technician, Northern Gulf Regional Office
Luz María Hernández Escobedo	Technician, Northern Gulf Regional Office
María Natividad Cervantes Morales	Technician, Northern Gulf Regional Office
Francisco Sergio Nieto Treviño	Technician, Northern Gulf Regional Office
Eusebio González Del Angel	Technician, Northern Gulf Regional Office
Emelia Rivera Sánchez	Technician, Northern Gulf Regional Office
Héctor Armando Hernández Zúniga	Technician, Northern Gulf Regional Office

(3) CONAGUA International Cooperation

José María de la Torre Wolf	Deputy Manager of International Cooperation
Guillermo Gutiérrez Gómez	Head of Department of International Cooperation

ANNEX V LIST OF BUILDINGS AND FACILITIES

1. Buildings and facilities necessary for the implementation of the Project
2. Office space and necessary facilities in the buildings of the Project for Japanese experts and meetings
3. Facilities and services such as electricity, gas, water supply, telephone, internet access and furniture necessary for the Project activities
4. Other facilities mutually agreed upon as necessary

ANNEX VI JOINT COORDINATING COMMITTEE

The Joint Coordinating Committee, which consists of both the Mexican and the Japanese sides, will be established for the smooth and effective implementation of the Project.

1. Functions

The Joint Coordinating Committee will meet at least once a year or whenever the necessity arises, in order to fulfill the following functions:

(1) To formulate the annual operational work plan of the Project based on the Tentative Schedule of Implementation within the framework of the "Record of Discussions" (R/D).

(2) To review the results of the annual operational work plan and the overall progress of the Project.

(3) To exchange views on major issue arising from or in connection with implementation of the Project.

2. Composition

(1) Chairperson

- Deputy Director General (Technical area) of CONAGUA (Project Director)

(2) Members

1) Mexican side

- General Director of Technical and Scientific Cooperation, Secretariat of Foreign Affairs
- A representative from SEMARNAT
- General Manager of Manager's Office of Water Quality and Sanitation (Project Manager)
- Deputy Manager of National Laboratories and Monitoring Networks, CONAGUA
- Deputy Manager of International Cooperation, CONAGUA
- Head of the Department of the National Monitoring Network, CONAGUA
- Head of the Department of the National Laboratory Network, CONAGUA
- Head of the Department of International Cooperation, CONAGUA
- Head of the National Reference Laboratory, CONAGUA
- Deputy Manager of Technical Area, Northern Gulf Regional Office, CONAGUA (Deputy Project Manager)
- Head of the Water Quality and Environmental Impact Project, Northern Gulf Regional Office, CONAGUA

2) Japanese side

- Japanese Experts
- Representatives of JICA Mexico Office
- Members of JICA study team, to be dispatched when necessary

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

MINUTES OF MEETING

BETWEEN THE RESIDENT REPRESENTATIVE OF JICA MEXICO OFFICE AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF MEXICO ON JAPANESE TECHNICAL COOPERATION FOR COASTAL WATER QUALITY MONITORING NETWORK PROJECT

The Japan International Cooperation Agency (hereinafter referred to as "JICA") had a series of discussions thorough Resident Representative of JICA in Mexico with the Mexican authorities concerned on the formation of the Japanese technical cooperation project concerning the Coastal Water Quality Monitoring Network Project (hereinafter referred to as "the Project").

As a result of the discussions, the Mexican and Japanese side agreed to summarize the matters referred to in the document attached hereto as a supplement to the Record of Discussions (hereinafter referred to as "R/D").

Done in duplicate in Spanish and English languages, each text shall be equally authentic. In case of any divergence of interpretation, the English text shall prevail.

Mexico, D.F., November 17, 2006

By the Mexican Government

Mr. Kenichiro Kawaji
Resident Representative
Japan International Cooperation Agency
Mexico Office

Dr. Jorge Ibarra Salazar
General Director of Technical and Scientific Cooperation
Secretariat of Foreign Affairs

Dr. Felipe I. Arreguín Cortés
Deputy Director General (Technical area)
National Water Commission (CONAGUA)
Secretariat of Environment and Natural Resources

Ing. César Herrera Tóledo
Deputy Director General (Planning area)
National Water Commission (CONAGUA)
Secretariat of Environment and Natural Resources

Ing. Luis Rafael Renero Amparán
Northern Gulf Regional Director
National Water Commission (CONAGUA)
Secretariat of Environment and Natural Resources

ATTACHED DOCUMENT

I. PROJECT DESIGN MATRIX (PDM) and Plan of Operation (PO)

The Japanese side explained that PDM was to be introduced for the efficient and effective management and evaluation of the Project. Both sides agreed to adopt on PDM to the Project as shown in the ANNEX I. Tentative Plan of Operation based on PDM is shown in the ANNEX II. The PDM will be finalized in the first Joint Coordinating Committee which is to be held shortly after the commencement of the Project.

II. LIST OF MACHINERY AND EQUIPMENT

Fields to be covered by the provision of equipment are as follows. The details of the provision of equipments such as concrete types, specifications and numbers etc. will be discussed between JICA expert team and the Mexican side based on the results of the preparatory study conducted in August 2006. The official request forms for provision of the equipment will be submitted by CONAGUA.

Fields to be covered by the provision of equipment:

(1) Equipments for Saline Water and Sediment Sampling

(2) Glassware for Chemical Analysis Training

III. TRAINING IN JAPAN

The training in Japan will be planned based on the following consideration;

(1) To be of the complimentary nature which could serve to consolidate the intent of the Project purpose.

(2) To investigate how the monitoring points are determined and the monitoring is put into practice in coastal areas in Japan, in particular, at the risk of marine pollution.

(3) To investigate how the laboratory management is implemented in Japan.

(4) To investigate how the coastal water monitoring is reflected on the environmental administration in Japan.

ANNEX I PROJECT DESIGN MATRIX (PDM)

ANNEX II TENTATIVE PLAN OF OPERATION (PO)

ANNEX I **PROJECT DESINGN MATRIX (PDM) 3 pages**

ANNEX I PROJECT DESIGN MATRIX (PDM) Version 0.1

Project Title: Coastal Water Quality Monitoring Network Project

Duration: 3 years

Ver. 0.1
Creation Date: Oct 26, 2006

Target Area:
Whole Area of United Mexican States

Target Group:
CONAGUA Manager's Office of Sanitation and Water Quality, and Northern Gulf Regional Office

Narrative Summary	Objective Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal The capacity of CONAGUA for monitoring and control for the coastal water is augmented.	1. QA/QC system is applied in 11 regional laboratories. 2. Coastal water monitoring results are released in the National Water Statistics in Mexico. 3. NMX (Mexican Norms) for coastal water analysis methods are established. 4. Prioritized control areas are identified and designated based on the monitoring data.	1. ISO17025 acreditation of 11 regional laboratories 2. The National Water Statistics in Mexico 3. NMX (Mexican Norms) 4. CONAGUA annual report	
Project Purpose The reference functions of CONAGUA on the coastal water monitoring are strengthened.	1. Three kinds of standard operation procedures (such as for sampling, basic (16) and toxic parameters(11)) of saline water and sediment analysis are authorized by General Director of CONAGUA. 2. The authorized standard operation procedures are introduced in 11 regional laboratories.	1. Official document (Oficio) signed by General Director of CONAGUA 2. CONAGUA annual report	Subject to NMX committe approval
Output 1.The capabilities of coastal water monitoring in the Northern Gulf Regional Office are strengthened.	**Indicators** 1. Coastal water monitoring plan prepared based on the new guidelines. 2. A standard operation procedure for sampling, and 16 standard operation procedures for basic parameters in saline water and sediment. 3. Results of reference materials analysis are within the control limits.	Monitoring Plan SOPs Analysis Report	No critical organizational change of CONAGUA.
2.The capabilities of coastal water monitoring in the Manager's Office of Sanitation and Water Quality are strengthened.	1. Regional coastal water monitoring plan prepared based on the new guidelines. 2. Standard operation procedures for 7 harmful parameters and for 4 toxic organic pollutants in saline water and sediment. 3. Results of reference materials analysis are within the control limits.	Monitoring Plan SOPs Analysis Report	
3.The Quality Assuarance and Quality Control (QA/QC) system of coastal water monitoring is improved.	1. A proficiency test is carried out between Northern Gulf Regional Laboratory and National Reference Laboratory at least once a year. 2. Data analysis report from the QA/QC program is issued twice a year.	Proficiency test report. Data analysis report	
4.National Reference Laboratory and Northern Gulf Regional Laboratory's training functions on coastal water monitoring are strengthened.	At least 3 training courses (such as for sampling, basic and toxic parameters) are conducted based on an annual training plan.	Training records	

Activity	Input	
	Japanese Side	Mexican Side
1-1. To integrate the existing coastal monitoring guidelines (JICA and others) into uniform standard guidelines.		
1-2. To review the existing coastal monitoring plan based on the new standard guideline and develop a new monitoring plan in the Northern Gulf Reigion.	Fields to be covered by the Japanese experts 1. Chief advisor 2. Monitoring planning 3. Interpretation of monitoring data 4. Saline water sampling 5. Basic parameters analysis 6. Inorganic substance analysis 7. Organic substance analysis 8. Sediment analysis 9. Quality assurance and quality control 10. Coordinator	Counterpart Personnels Buildings and Facilities Local Costs
1-3. To prepare the standard operation procedures (draft NMX) for saline water and sediment sampling and analysis methods after reviewing the present work.		
1-4. To consolidate the sampling skills of saline water and sediment.		
1-5. To consolidate analytical skills of the basic parameters in saline water and sediment, and those for data quality assurance.	Fields to be covered by the provision of equipment: 1. Equipments for Saline Water and Sediment Sampling 2. Glassware for Chemical Analysis Training	
1-6. To interpret monitoring data for site evaluation.	Training in Japan	
1-7. To conduct sampling and chemical analysis of water and sediment based on the standardized operation procedures.		
2-1. To integrate the existing coastal monitoring guidelines (JICA and others) into uniform standard guidelines.*		
2-2. To review the existing regional monitoring plans based on the standard guidelines for coastal monitoring and to give necessary approval.		
2-3. To apply the methods to measure the basic parameters and selected toxic pollutants in saline water and sediment, and those for data quality assurance.**		
2-4. To prepare the standard operation procedures (draft NMX) for saline water and sediment analysis methods.		
2-5. To interpret monitoring data for site evaluation.		
2-6. To conduct chemical analysis of saline water and sediment based on the standard operation procedures.		

3-1. To prepare the QA/QC system appropriate to the coastal water monitoring after reviewing the present QA/QC operation in Northern Gulf Regional Laboratory. 3-2. To review the past monitoring data based on the newly developed QA/QC system. 3-3. To integrate the newly developed QA/QC system into the existing QA/QC system for the national water monitoring network.** 3-4. To apply the integrated QA/QC system for the fresh water and saline water monitoring.		**Preconditions** Items committed by the Letter No. BOO.05-1409 (17 OCT, 2006) 1. Enough budget for the implementation of the project, such as for equipments and local costs, etc. 2. Assignment of enough number of qualified personnel.
4-1. To develop a training master plan for coastal water monitoring after studying the existing training programs and training needs. 4-2. To develop an annual training program based on the training master plan. 4-3. To prepare training materials based on the annual training program. 4-4. To conduct trial trainings with the materials. 4-5. To revise the materials and the annual training program as required after reviewing the trial trainings. 4-6. To conduct the trainings for regional laboratory staff based on the revised training program.		

ANNEX II TENTATIVE PLAN OF OPERATION (PO)

ANNEX II TENTATIVE PLAN OF OPERATION (PO)

Ver. Oct 26, 2006

Expected Outputs	Activities	Schedule: 1st Year 1	2	3	4	2nd Year 1	2	3	4	3rd Year 1	2	3	4
0. Preparation	To prepare for the cooperation activities												
1.The capabilities of coastal water monitoring in the Northern Gulf Regional Office are strengthened.	1-1. To integrate the existing coastal monitoring guidelines (JICA and others) into uniform standard guidelines.												
	1-2. To review the existing coastal monitoring plan based on the new standard guideline and develop a new monitoring plan in the Northern Gulf Reigion.												
	1-3. To prepare the standard operation procedures (draft NMX) for saline water and sediment sampling and analysis methods after reviewing the present work.												
	1-4. To consolidate the sampling skills of saline water and sediment.												
	1-5. To consolidate analytical skills of the basic parameters in saline water and sediment, and those for data quality assurance.												
	1-6. To interpret monitoring data for site evaluation.												
	1-7. To conduct sampling and chemical analysis of water and sediment based on the standardized operation procedures.					⟷				⟷			
2.The capabilities of coastal water monitoring in the Manager's Office of Sanitation and Water Quality are strengthened.	2-1. To integrate the existing coastal monitoring guidelines (JICA and others) into uniform standard guidelines.*												
	2-2. To review the existing regional monitoring plans based on the standard guidelines for coastal monitoring and to give necessary approval.												
	2-3. To apply the methods to measure the basic parameters and selected toxic pollutants in saline water and sediment, and those for data quality assurance.**												
	2-4. To prepare the standard operation procedures (draft NMX) for saline water and sediment analysis methods.												
	2-5. To interpret monitoring data for site evaluation.												
	2-6. To conduct chemical analysis of saline water and sediment based on the standard operation procedures.							⟷		⟷			
3.The Quality Assuarance and Quality Control (QA/QC) system of coastal water monitoring is improved.	3-1. To prepare the QA/QC system appropriate to the coastal water monitoring after reviewing the present QA/QC operation in Northern Gulf Regional Laboratory.												
	3-2. To review the past monitoring data based on the newly developed QA/QC system.												
	3-3. To integrate the newly developed QA/QC system into the existing QA/QC system for the national water monitoring network.**												
	3-4. To apply the integrated QA/QC system for the fresh water and saline water monitoring.							⟷		⟷			
4.National Reference Laboratory and Northern Gulf Regional Laboratory's training functions on coastal water monitoring are strengthened.	4-1. To develop a training master plan for coastal water monitoring after studying the existing training programs and training needs.												
	4-2. To develop an annual training program based on the training master plan.												
	4-3. To prepare training materials based on the annual training program.												
	4-4. To conduct trial trainings with the materials.												
	4-5. To revise the materials and the annual training program as required after reviewing the trial trainings.												
	4-6. To conduct the trainings for regional laboratory staff based on the revised training program.											⟷	

* Joint training with the Northern Gulf Regional Office

** The first training is jointly conducted with North Gulf Regional Laboratory

⟷ indicates activities which are done by mexican sides as rutine works.

2．事前調査団概要（第１次、第２次）

１．　調査団派遣の経緯と目的

メキシコ国は、約 10,000ｋｍ以上の海岸線を有し、沿岸部には約 100 箇所のラグーンが存在しており、沿岸域は水産や観光等の重要な自然資源となっている。また、国家開発計画のなかでも沿岸部は将来的な開発に向けた重要拠点として位置付けられている。しかし、沿岸部は生活排水や工業排水等の影響を受け、水質汚染が進んできている。このような状況のもと、CONAGUA は世界銀行の資金援助の元に水管理近代化プロジェクト（PROMMA）を立上げ、その中で水質モニタリングに係る資機材、情報ネットワーク整備を進めているが、その対象は水資源管理を目的とした河川、湖沼及び地下水に限られている。

このような背景にあって、JICA 開発調査「沿岸部水質環境モニタリング計画調査」が 1999 年～2000 年に実施され、メキシコ湾岸の都市タンピコにある CONAGUA 湾岸北部地域事務所をパイロットサイトとして、沿岸水質の調査分析に係る技術移転が行われ、沿岸水質モニタリングに係る将来的な提言がなされた。その後、CONAGUA ではタンピコ分析所を中心とした沿岸水質モニタリング制度の確立に向けた取り組みが試みられているが、その能力・自立発展性には限りがあるため更なる技術協力プロジェクト「沿岸水質モニタリングネットワーク計画」が要請されたものである。

2005 年 8 月に実施された第一次事前調査結果では、特に妥当性とインパクトの項目において更なる追加調査が必要とされたため、2006 年 8 月に第二次事前調査団を、第一次事前調査の結果と 2006 年 3 月より派遣中のパイプライン専門家の調査結果を踏まえ、本件技術協力プロジェクトの内容を詳細に検討し、具体的協力内容を決定することを目的に派遣することとなった。また、第二次事前調査団は、メキシコ事務所主導にて作成されている JICA 戦略的プログラム「水質モニタリングネットワークプログラム」案の改善に課題的見地から貢献することも目的としている。

２．　調査団の構成

2-1 第一次事前調査

(1)	団長／総括	田中　研一	JICA 国際協力専門員
(2)	沿岸水質モニタリング	宮崎　一	兵庫県健康環境科学研究センター 主任研究員
(3)	協力企画	小島　弘之	JICA 地球環境部第２グループ 公害対策第２チーム　特別嘱託
(4)	水質モニタリング/プロジェクト計画	大井　裕之	イー・アンド・イー　ソリューションズ 環境第一事業部　グローバル環境グループ

リーダー

2-2 第二次事前調査

(1) 団長／総括	岩崎　英二	JICA 地球環境部 環境管理第 2T チーム長
(2) 環境管理	千原　大海	JICA 国際協力専門員
(3) 協力企画	濱口　勝匡	JICA 地球環境部 環境管理第 2 チーム
(4) 水質汚濁対策	古川園　龍蔵	国際開発アソシエイツ
(5) 海水モニタリング	水野　輝海	テクノ中部
(6) ﾊﾟｲﾌﾟﾗｲﾝ専門家	小島　弘之	CONAGUA

3．　調査日程

3-1 第一次事前調査

日順	行程
8/1(月)	移動：成田－メキシコシティ(経由：バンクーバー)
8/2(火)	AM: 世界銀行現地事務所表敬・意見交換、JICA 事務所訪問 PM: 日本大使館表敬、メキシコ外務省表敬
8/3(水)	AM: CONAGUA 本部計画総局訪問・情報収集 PM: CONAGUA 中央分析所での聞き取り調査 移動（メキシコシティータンピコ)
8/4(木)	AM: CONAGUA 北部沿岸地域分析所での聞き取り・情報収集・調査 PM: CONAGUA 北部沿岸地域分析所ラボ視察調査、 沿岸水質サンプリングポイント現地踏査
8/5(金)	AM: CONAGUA 北部沿岸地域分析所での聞き取り・情報収集・調査 PM: 沿岸水質サンプリングポイント現地踏査 CONAGUA 北部沿岸地域タンピコ事務所訪問
8/6(土)	AM: タンピコ市周辺現地調査（飛行機により上空から） PM: CONAGUA ラボ職員によるサンプリングデモ視察（現場にて）
8/7(日)	移動：（タンピコーメキシコシティ）
8/8(月)	AM: SEMARNAT への表敬訪問 PM: CONAGUA 本部水質衛生局での聞き取り調査
8/9(火)	AM: ミニッツ案の作成 PM: CONAGUA 本部水質衛生局においてミニッツ案の協議 終日：CONAGUA メリダ地域分析所の訪問調査（宮崎、大井）
8/10(水)	AM: ミニッツ協議、

	世界銀行担当者とのプロジェクト内容の意見交換 PM: ミニッツ署名
8/11(木)	AM: 日本大使館報告、JICA 事務所報告 PM: CONAGUA 本部水質衛生局での世銀との連携協力の枠組み協議
8/12(金)	移動：メキシコシティーバンクーバーー成田（田中、小島） メキシコシティーロサンゼルスー関空（宮崎） CONAGUA 本部水質衛生局での聞き取り(大井)
8/13(土)	夕刻：成田着 資料整理（大井）
8/14(日)	移動：メキシコシティータンピコ
8/15(月)	CONAGUA 北部沿岸地域分析所での聞き取り・情報収集・調査
8/16(火)	タマウリパス大学ラボラトリー（タンピコ）での聞き取り調査 CONAGUA 北部沿岸地域分析所での聞き取り・情報収集・調査
8/17(水)	CONAGUA 北部沿岸地域分析所での聞き取り・情報収集・調査 移動：タンピコーメキシコシティ
8/18(木)	CONAGUA 中央分析所での聞き取り調査
8/19(金)	JICA 事務所報告
8/20(土)	移動：メキシコシティーロサンゼルス ロサンゼルスー成田
8/21(日)	夕刻：成田着

3-2 第二次事前調査

日順	月日	曜日	時間	日程
1	8月14日	月		岩崎、千原、濱口、古川園、水野、小島
			17:25	成田発(JL012)
			19:00	メキシコシティ着
2	8月15日	火	10:00	JICA 事務所打合せ
			15:00	SEMARNAT 国際部表敬
			16:30	CONAGUA 国際協力局表敬
3	8月16日	水	10:00	PROFEPA 協議
			13:00	CONAGUA 衛生水質部協議
4	8月17日	木	10:35	ﾒｷｼｺｼﾃｨ発(MX750)
			11:30	ﾀﾝﾋﾟｺ着
			PM	北部湾岸地域事務所にて協議

5	8月18日	金	09:00	BASF（石油化学メーカー）訪問		
			12:00	北部湾岸地域事務所にて協議		
6	8月19日	土		岩崎、水野、小島	古川園	千原、濱口
			10:00	サンプリングサイト訪問	PEMEX訪問	M/M案作成
			15:00	団内会議		
			18:45	ﾀﾝﾋﾟｺ発(MX745)		
			19:45	ｼﾃｨ着		
7	8月20日	日		岩崎、水野、小島	千原、濱口、古川園	
				12:40 ｼﾃｨ発(AM531)	報告書作成	
				14:25 ﾒﾘﾀﾞ着	M/M案、PDM案作成	
8	8月21日	月		10:00 メリダ地域事務所／分析所訪問	千原、古川園	濱口
				19:15 ﾒﾘﾀﾞ発(AM526)	10:00 バルサス地域事務所／分析所訪問	M/M案、PDM案作成
				21:10 ｼﾃｨ着		
9	8月22日	火	09:00	世界銀行		
			11:00	CONAGUA衛生水質部とのM/M協議		
			15:30	CONAGUA衛生水質部とのPDMについての協議		
10	8月23日	水	10:00	CONAGUA衛生水質部とのM/M協議		
				CONAGUA衛生水質部とのPOについての協議		
11	8月24日	木	10:00	CONAGUA衛生水質部とのM/M協議		
			16:30	M/M署名		
12	8月25日	金		岩崎、千原、濱口、小島	古川園、水野	
				CENICA協議（3R関連）	IMTA訪問	
13	8月26日	土		岩崎、千原	濱口	古川園、水野
				09:40 ﾒｷｼｺｼﾃｨ発(AM646) LA経由成田へ	15:08 ﾒｷｼｺｼﾃｨ発(CM211)パナマへ	報告書作成
14	8月27日	日		1740 成田着JL065		
15	8月28日	月		古川園	水野、小島	
				SEMARAT環境促進規範局訪問 CONAGUA技術局審査部訪問	北部湾岸地域事務所訪問調査	
16	8月29日	火		保健省国家衛生リスク防止委員会訪問	北部湾岸地域事務所訪問調査	

				CONAGUA 水管理局訪問		
17	8月30日	水		環境庁訪問 SEMARNAT 沿岸環境・連邦海洋地域管理局訪問	08:30 ﾀﾝﾋﾟｺ発(6A104) 10:55 ｸﾘｱｶﾝ着(6A102) 北部太平洋地域事務所訪問	
18	8月31日	木		Pemex 環境部訪問 海軍省訪問 JICA 事務所報告 漁業庁訪問	北部太平洋地域事務所訪問	
19	9月1日	金		1015 ﾒｷｼｺｼﾃｨ発(JL011)	北部太平洋地域事務所訪問	
20	9月2日	土		1650 成田着	09:40 ｸﾘｱｶﾝ発(AM2200) 09:50 ｴﾙﾓｼｰｼﾞｮ着	
21	9月3日	日			報告書作成	
22	9月4日	月			北西部地域事務所訪問	
23	9月5日	火			北西部地域事務所訪問 16:20 ｴﾙﾓｼｰｼﾞｮ発(6A411)	
24	9月6日	水			CONAGUA 衛生水質部で調査 JICA 事務所報告	
25	9月7日	木			水野 0815 ﾒｷｼｺｼﾃｨ発(MX900) 1000 LA 着 1315 LA 発(JL061)	小島 専門家活動を継続
26	9月8日	金			1635 成田着	同上

4. 主要面会者一覧

4-1 第一次事前調査団

メキシコ側

・National Water Commission (CONAGUA), Central Office and National Reference Laboratory

Felipe I. Arreguín Cortés　Deputy Director General (Technical area)

César Herrera Toledo　Deputy Director General (Planning area)

Enrique Mejía Maravilla　General Manager of Water Quality and Sanitation

Jesús García Cabrera　Sub Manager of National Laboratories and Monitoring Network

Ignacio González Mora　Head of the Department of the National Monitoring Network
Guadalupe del Pozo Peñaloza　Head of the Department of the National Laboratory Network
Margarita Lobato CallerosHead of the National Reference Laboratory
José María de la Torre Wolf　Deputy Manager of International Cooperation
Guillermo Gutiérrez GómezHead of Department of International Cooperation

・National Water Commission (CONAGUA), Northern Gulf Regional Bureau
Evangelina Mancinas Mena Head of the Water Quality and Environmental Impact Project
Francisca Robledo Muñiz　Hydraulic Specialist

・Secretary of Foreign Affairs
Efrain del Angel Ramirez Sub Director of Programs

・Secretary of Environment and Natural Resources
Alonso Yanez Ramos　Sub Director of Special Programs

・World Bank
Ricardo Hernandez　Senior Environmental Specialist

日本側
・在メキシコ日本大使館
川崎　俊正　二等書記官

・JICA メキシコ事務所
河合　恒二　所長
安藤　孝之　次長
佐藤　一朗　所員

4-2 第二次事前調査団

SRE 外務省
Jorge Ibarra Salazar　Director General of Technical and Scientific Cooperation
Veronica Zamora Aguilar　Coordinator of Programs of Birateral Cooperation for Asia, Department of Technical and Scientific Cooperation

SEMARNAT 環境天然資源省

Roger Peniche Sala	Deputy Director of Bilateral Affairs, International Affairs Office
Sandra Denise Herrera Flores	Deputy Secretary of Environmental Promotion and Regulations
Esteban Garcia Pena	Director of Integrated Management of Coastal Environment

PROFEPA

Gerardo A. Alvarado Salinas	Director General of Inspection of Source of Contamination
Mario Barrera Bojorgez	Deputy Director of Inspection of Source of Contamination

CONAGUA 局長(副総裁)

Felipe I. Arreguin Cortes	Deputy Director General (Technical Area)
Cesar Herrera Toledo	Deputy Director General (Planning Area)

CONAGUA 計画局

Grisell Medina Laguna	Deputy Manager Financial Matters
Hector Javier Ibarroba Reyes	Deputy Manager of Nacional hydraulic Plan

CONAGUA 水管理局

Luis Miguel Rivera Chavez	Deputy Manager of Inspection

CONAGUA 国際協力局

Jose Ma. de la Torre Wolf	Deputy Manager of International Cooperation
Guillermo Gutiérrez Gómez	Head of Department of International Cooperation

CONAGUA 衛生水質部

Enrique Mejía Maravilla	General Manager of Manager's Office of Water Quality and Sanitation
Jesús García Cabrera	Deputy Manager of National Laboratories and Monitoring Network

Martha Leicia Otero Lopez	National Monitoring Network
Jesus Nunez Morales	Deputy Manager of Technical Judgement

CONAGUA 国家レファレンスラボラトリ

Margarita Lobato Calleros	Head of the National Reference Laboratory
Valia Maritza Goytia Leal	Hydraulic Specialist

CONAGUA 北部地域事務所

Enrique Lopez Perez	Deputy Manager of Technical Area
Luis Manuel Camacho	Head of the Water Quality and Environment Impact Project
Fransisca Robedo Muniz	Head of the Northern Gulf Regional Laboratory
Monica Miguel Gil	Hydraulic Specialist, Northern Gulf Regional Laboratory

その他 CONAGUA 地方事務所、州事務所

Maria Isabel Bernal Pichardo	Edo. Mexico State Office
Blanca Juventia Sanchez Tapia	Edo. Mexico State Office
Enrique Banos Gamboa	Puebla Sate Office
Guadalupe Cervantes	Puebla Sate Office
Ubaldo Flores Gorosquieta	Balsas Regional Office
Hugo Francisco Parra	Balsas Regional Office
Patricio Maya Vilchis	Balsas Regional Office
Merari Martinez Martinez	Hidalgo State Office
Rosalba Montelongo Casanova	Hidalgo State Office
Victor Romero Hernandez	Hidalgo State Office
Martha Estela Valco Gamboa	Yucatan Peninsula Regional Office
Miguel Zapata A.	Yucatan Peninsula Regional Office
Rafael Sanz Ramos	North Pacific regional Office
Jose Leonardo Garcia	North Pacific regional Office
Lilia Irene Souffle Robles	Northwest Regional Office
Francisco Montes de Oca	Northwest Regional Office

保健省国家衛生リスク防止委員会

Aljandra Martinz Garcia	Deputy Manager of Risk Management

環境庁 INE

Margarita Caso Chavez	Coordinator of Coastal and Marine Ecosystem

海軍省

Jose luis Eguileta Arias	Integrated Manager of Oceanography, hydrology and Meteorology

漁業庁 INP

Gullermo Alberto Conpean Jimenez	Director of National Fishery Institute

BASF

（石油化学メーカー、タンピコ工場）

Ignacio Estrella Rosas	Mexico EHS Hub Manager（環境保全マネージャー）

PEMEX（石油精製・環境部）

Jose Manuel Olivarez Paez	Director of Environmental Affairs

PEMEX（タンピコ市マデロ製油所）

Mario Sanchez Rodriguez	Coordinator of Operation Dept

以上