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Plan of activity	Targets of attainment	Progress of activities	Results	Achievements	Reasons if planned targets were not satisfied	Next plan of activity
1-1 ANAM Lab. scientists prepare methodology of analysis for each parameter, necessary equipment and reagents by themselves through the instruction of experts.	1) Identify existing analytical methodology based on reviewing of legislation 2) Identify existing analytical methodology based on international legislation (EPA, JIS, etc) 3) Prepare the list of necessary equipments and reagents in order to do the water quality analysis according to the identified methodologies	Identified existing analytical methodology and legislation as present bases, necessary equipments in the laboratory were prepared as planned.	Inventory (register) of equipments including reagents Maintenance book for major equipments and gases	3 Prospect of completion	Renovation for 1st and 2nd floor of the laboratory will be completed by the end of September, and draft chamber for exhaust will be installed during project period. Management system of the laboratory including maintenance of materials and reagents is in the process of establishment through action program.	
1-2 ANAM Lab. scientists practice maintenance of equipments in order to carry out proper management of the laboratory. by themselves through the instruction of experts.	1) Prepare the inventory of equipment and reagents 2) Prepare the manual for maintenance of equipment 3) Execute maintenance of equipments	Prepared the inventory of equipments including reagents Manual for maintenance of equipment were prepared for AAS, GC, Spectrophotometer. Maintenance has been executing through daily instruction and training by experts.	Inventory (register) of equipments including reagents Maintenance book for major equipments and gases	3 Prospect of completion	One of the reason why the sampling manual is not prepared yet, regulation of water quality monitoring for natural water is not established yet. Procedures for sampling water such as quantity, storage, and pretreatment) are executed properly based on guideline of wastewater monitoring. Sampling points, frequency of sampling and sampling time, those are determined according to capacity of the laboratory, shall be reconsidered after accumulation of data.	
2-1 ANAM Lab. scientists practice the basic knowledge of water sampling techniques (methods, places, timing, number of sampling etc.) by themselves through the instruction of experts.	1) Prepare sampling manual through reviewing of existing sampling method and legislation	Water quality monitoring for rivers has been executing as planned according to established semiannual program since 2005. Water quality monitoring for lakes and sea has been implemented from May of 2006. Waste water compliance monitoring program will be executed after completion of project.	Program of monitoring for natural water and annual reports of water quality monitoring.	3 Prospect of completion	Monitoring program for waste water, executing in other program in DINAPROCA, is still in the process of preparation.	Request a prompt execution of waste water monitoring.
2-2 ANAM Lab. scientists experience the practical monitoring for natural water and effluents.	1) Prepare annual water quality monitoring and wastewater compliance monitoring program 2) Execute the water quality monitoring and wastewater compliance monitoring program	Analysis for heavy metals and pesticides has been executing based on training program. Waste training programs (in Japan, in Chile) by JCFP, by experts) has been executing as scheduled.	Reports of training	3 Prospect of completion	Since voluntary training is not executing properly because of lack in the laboratory, concentration of the programmed training made up it. Training for wastewater treatment and groundwater pollution are not necessary considering situation of the laboratory	Recommend to carry out voluntary training after training program
2-3 ANAM Lab. scientists learn theory, use of equipment applications, etc., for metal analysis, pesticides and organic compounds analysis, analysis of basic water quality factors, bacteriology and aquatic biology through the instruction of experts.	1) Plan trainings 2) Execute trainings	Creation of SOPs for each type of analysis that has been made mostly, is proceeding with a systematic way according to JCFP (CENMA in Chile). Elaborated reports in accordance with knowledge and experience of analytical method through training.	Reports based on JCFP Reports based on training program Standardized Operational Procedure of Analysis (SOPs) for 15 parameters.	3 Prospect of completion	Since elaboration of SOPs has been made by Laboratory personnel, from the view point of necessity of strategic plan for acquisition of ISO 17025, that takes an enormous amount of work, it may be difficult to execute this subject in the project.	
2-4 ANAM Lab scientists make standardized operation procedures (SOPs) for each type of analysis	1) Prepare annual work plan and create SOP's for each type of analysis 2) Hold a evaluation meeting	Technical seminar has been held as planned in the period of training by Japanese experts and experts from Chile. The xy coordinates of water quality monitoring points has been planned in GIS map correctly. The xy coordinates of pollution sources has been created in the other project. Water quality monitoring database has been created with excel file. Water quality monitoring annual report in 2002-2003 has been elaborated, successive reports in 2004 and 2005 has been made in the project period. The project has been implemented on HP from June of 2005, and data of water quality monitoring has been disclosed from October of 2005 gradually.	Manuals of presentation in each technical seminar. Water quality monitoring map with GIS Water quality database (Excel file) Water quality monitoring annual report in 2002-2003 and 2004-2005 with CD	3 Prospect of completion	There is no delay of activities in this matter.	
2-5 ANAM Lab. scientists hold technical seminars for water quality monitoring to the related governmental institutes and laboratories in Pajarito.	1) Prepare annual work plan for technical seminar 2) Execute technical seminar			3 Prospect of completion		
3-1 ANAM Lab. scientists make annual report of water quality monitoring activities from the Lab.	1) Identify status of existing water quality monitoring maps and data 2) Obtain the xy coordinates for monitoring points and point pollution sources 3) Create water quality monitoring maps for sampling sites and point pollution sources on GIS 4) Create water quality monitoring database 5) Prepare water quality annual reports		Manuals of presentation in each technical seminar. Water quality monitoring map with GIS Water quality database (Excel file) Water quality monitoring annual report in 2002-2003 and 2004-2005 with CD	3 Prospect of completion		
3-2 ANAM Lab. scientists open the monitoring data of water quality and present activities and information of ANAM Lab. to the public through HP of ANAM.	1) Create contents of HP based on database for water quality and present activities and information of ANAM Lab. to the public through HP of ANAM.		<a href="http://www.anam.gob.cl/Protemoc/index.html">http://www.anam.gob.cl/Protemoc/index.html</a>	3 Prospect of completion	Because of limited staffs to be in charge of HP construction, it takes a time for improvement of contents of the project. Necessity for opening of the data of water quality to the public.	
<p>*Achievements* shall be divided into 4 grades such as "4. Completion (already completed)", "3. Prospect of completion (prospected completion by the end of project period)", "2. Problem to be solved (not prospected completion by the end of project period)" and "1. Not be active". In the case except 4, the reason fill in the column of "Reasons if planned targets were not satisfied", and prospect of completion fill in the column of "next activity plan" and necessary measurement for achievement. Note: Required information in this table is not to know the contents of the study but to verify actual and concrete activities of the project. Fill the progress of activities by experts and counterpart personnel and result of activities such as reports in the column.</p>						

### Project Design Matrix, PDM-1.0

Project Title: WATER QUALITY MONITORING TECHNIQUES PROJECT  
 Project Location: Panama, Republic of Panama

Organization: National Authority of the Environment (Autoridad Nacional del Ambiente - ANAM)  
 Project Period: Oct. 8, 2003 - Oct. 7, 2006

Created on Oct. 8, 2003

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Overall Goal</b>                      The management for the observance and accomplishment of the wastewater standards in the Republic of Panama is strengthened</p>	<ol style="list-style-type: none"> <li>1. The number of supervised factories which have to fulfill the Wastewater standards in Panama, is increased by more than 30%</li> <li>2. More numbers of factories (at least 50) fulfill the wastewater standards.</li> <li>3. The number of corrected Wastewater standards and ordinances by ANAM (DINAPROCA) based on the monitoring information from the analytical Lab</li> </ol>	<ul style="list-style-type: none"> <li>• Annual Report of the environmental management of ANAM</li> </ul>	<ol style="list-style-type: none"> <li>1. The government of Panama keeps and promotes the national policy of the environment in order to supervise the fulfillment of actual regulations.</li> </ol>
<p><b>Project Purpose</b>                      The accurate monitoring information about waste water (industrial, residential) and natural water (rivers, lakes, and seas) in the Province of Panama is provided by the ANAM analytical Lab.</p>	<ol style="list-style-type: none"> <li>1. The number of monitored rivers in Panama province increases (from 10 to 16).</li> <li>2. The number of physico-chemical analysis is increased (up to required No. 21 by the water quality standards).</li> <li>3. The number of monitored lakes and seas in the national parks is increased (from 0 to 2 each)</li> <li>4. The water quality data is published on the HP and the Environmental White Paper of ANAM</li> </ol>	<ul style="list-style-type: none"> <li>• Published water quality monitoring reports</li> <li>• ANAM Home Page</li> <li>• ANAM environmental white paper (environmental report)</li> </ul>	<ol style="list-style-type: none"> <li>1. The government of Panama in charge keeps and promotes the national policy of the environment in order to supervise the fulfillment of actual regulations.</li> </ol>
<p><b>Outputs</b>                      1. ANAM Lab scientistis can make sampling by themselves for waste and natural water.                      2. ANAM Lab scientistis can make water quality analysis by themselves.                      3. More and trustable data base about the natural water and wastewater is built up.                      4. The training system about water quality, environmental education and water analysis techniques for the related institutions are established in the Lab.</p>	<ol style="list-style-type: none"> <li>1-1. The number of sampling carried out</li> <li>1-2. The number of sampling site carried out</li> <li>2-1. The number of possible factors carried out for analysis</li> <li>2-2. Accuracy of analysis data carried out</li> <li>3-1. The number of analysis made for each factor</li> <li>3-2. The number of analytical data about water quality</li> <li>4-1. The number of trainings carried out</li> <li>4-2. The number of attendance for the training and of the attended institutions.</li> <li>4-3. A level of understanding of the attendance for the training.</li> </ol>	<ul style="list-style-type: none"> <li>• Water sampling reports</li> <li>• Final report of the C/P trainees in Japan, and of third country experts indicating the results of the training work and evaluation for the C/P trainees in Panama.</li> <li>• Water quality monitoring reports from ANAM Laboratory, and ANAM HP</li> <li>• Attendance list of trainings, and the result of questionnaires</li> </ul>	<ol style="list-style-type: none"> <li>1. No changes for the role and the function of the ANAM Lab in the national policy of environment</li> </ol>
<p><b>Activities</b>                      1-1. The basic knowledge of water- sampling techniques (methods, places, timing, number of sampling etc.) are instructed to ANAM Laboratory scientistis.                      1-2. Laboratory scientistis experience the practical samplings.                      2-1. ANAM Laboratory scientistis are instructed in theory, use of equipment, applications, etc., for Metal Analysis, Pesticides and organic compounds analysis, analysis of basic water quality factors, Bacteriology.                      2-2. ANAM Lab. scientistis make procedures manual for each type of analysis.                      2-3. Laboratory scientistis make a skill improvement program in analytical chemistry and carry it out by themselves in order to improve their analytical techniques.                      3-1. Maps of sampling sites for water quality monitoring are made.                      3-2. Laboratory scientistis are instructed in data analysis of water quality.                      3-3. Laboratory scientistis establish a system to analyze the water samples of rivers,</p>	<p><b>Inputs</b>  <b>Japan side:</b>                      1-1. Dispatch of Experts : 1 long term : 3 years, and more than 4 short term ( in the fields of chemical analysis, bacteriology, water biology, etc.) from Japan                      1-2. Dispatch of 2 third country Experts, at least, for pesticides and metal analysis.                      1-3. Training in Japan (2-3 persons per year), and in third countries (Chile, etc.)                      1-4. Equipments:                      Necessary laboratory equipment and glassware                      Vehicle, boat, sampling equipments                      Acquisition of software and equipment for the database</p>		<ol style="list-style-type: none"> <li>1. Stable supply of budget to continue the water resources monitoring during project period.</li> <li>2. Stable placement of the trained counterparts in ANAM Lab</li> </ol>

<p>lakes, seas, and industrial wastewater, for required water quality factors.</p> <p>3-4. The database available to the public and published in the HP of ANAM, and then a suggestion is made for readjustment of water quality standards, the law etc.</p> <p>4-1. Train the specialist from the ANAM Environment Education Department to improve his/her skills for methodology of presentations.</p> <p>4-2. Draw up programs and curricula of training about presentation methodology to ANAM scientists with the specialist's advice.</p> <p>4-3. Laboratory scientists give training of environmental analysis and of environmental education to other related institutions, such as MINSA(Ministry of Health), IDAAN, Universities, SENACYT, etc.</p>	<p><b>Panama side :</b></p> <p>2-1. Operational facilities (buildings, etc.) for the Lab with surveillance</p> <p>2-2. Necessary operational costs for equipments and reagents</p> <p>2-3. Technical counterparts for every expert</p> <p>2-4. Coordination with computer and database section of ANAM</p> <p>2-5. Administrative staffs (secretary and drivers etc.) and operational cost for water, electricity communications, fuel, etc.</p>	<p><b>Preconditions</b></p> <p>1. Fulfillment of Lab facilities such as internet, telecommunication, training room, septic tank etc. before execution of the project</p>
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### Project Design Matrix, PDM-2.0

Project Title: WATER QUALITY MONITORING TECHNIQUES PROJECT  
 Project Location: Panama, Republic of Panama

Organization: National Authority of the Environment (Autoridad Nacional del Ambiente - ANAM)  
 Project Period: Oct. 8, 2003 - Oct. 7, 2006

Modified on 1 Jan. 2005

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Overall Goal</b>                      The management for the observance and accomplishment of the wastewater standards in the Republic of Panama is strengthened</p>	<p>1. The number of supervised factories which have to fulfill the Wastewater standards in Panama, is increased by more than 30%                      2. More numbers of factories (at least 50) fulfill the wastewater standards.                      3. The number of corrected Wastewater standards and ordinances by ANAM (DINAPROCA) based on the monitoring information from the analytical Lab</p>	<p>• Annual Report of the environmental management of ANAM</p>	<p>1. The government of Panama keeps and promotes the national policy of the environment in order to supervise the fulfillment of actual regulations.</p>
<p><b>Project Purpose</b>                      The accurate monitoring information about waste water (industrial, residential) and natural water (rivers, lakes, and seas) in the Province of Panama is provided by the ANAM analytical Lab.</p>	<p>1. The number of monitored rivers in Panama province increases (from 10 to 16).                      2. The number of physico-chemical analysis is increased (up to required No. 21 by the water quality standards).                      3. The number of monitored lakes and seas in the national parks is increased (from 0 to 2 each)                      4. The water quality data is published on the HP and the Environmental White Paper of ANAM</p>	<p>• Published water quality monitoring reports                      • ANAM Home Page                      • ANAM environmental white paper (environmental report)</p>	<p>1. The government of Panama in charge keeps and promotes the national policy of the environment in order to supervise the fulfillment of actual regulations.</p>
<p><b>Outputs</b>                      1. Necessary equipments for water quality analysis and compliance monitoring can be supplied and operated definitely in the ANAM Lab.                      2. ANAM Lab scientists can make water quality monitoring and analysis by themselves for natural water and wastewater in accordance with environmental standards.                      3. Monitoring results provided by ANAM Lab scientists can be opened to the public through the publication and on the HP of ANAM.</p>	<p>1-1. The number of equipments and specifications                      1-2. The frequency of operation of supplied equipments                      2-1. The number of sampling carried out                      2-2. The number of sampling site carried out                      2-3. The number of parameters carried out                      2-4. The number of analysis carried out                      2-5. The number of analytical procedures for each parameters                      2-6. The number of trainings and seminars carried out                      3-1. The contents of HP of ANAM, and the number of data on HP                      3-2. The number of monitoring report on water quality monitoring assisted by ANAM laboratory.</p>	<p>• Inventory of equipments                      • Water sampling reports                      • Final report of the C/P trainees in Japan, and of third country experts indicating the results of the training work and evaluation for the C/P trainees in Panama.                      • Water quality monitoring reports from ANAM Laboratory, and ANAM HP                      • Attendance list of trainings, and the result of questionnaires</p>	<p>1. No changes for the role and the function of the ANAM Lab in the national policy of environment</p>
<p><b>Activities</b>                      1-1. ANAM Lab. scientists prepare methodology of analysis for each parameter, necessary equipments and reagents by themselves through the instruction of experts.                      1-2. ANAM Lab. scientists practice maintenance of equipments in order to carry out proper management of the laboratory, by themselves through the instruction of experts.                      2-1. ANAM Laboratory scientists practice the basic knowledge of water sampling techniques (methods, places, timing, number of sampling site etc.) by themselves through the instruction of experts.                      2-2. ANAM Lab. scientists experience the practical monitoring for natural water and effluents.                      2-3. ANAM Lab scientists learn theory, use of equipment, applications, etc., for metal analysis, pesticides and organic compounds analysis, analysis of basic water</p>	<p><b>Inputs</b>                      Japan side:                      1-1. Dispatch of Experts : 1 long term : 3 years, and more than 4 short term ( in the fields of chemical analysis, bacteriology, water biology, etc.) from Japan                      1-2. Dispatch of 2 third country Experts, at least, for pesticides and metal analysis.                      1-3. Training in Japan (2-3 persons per year), and in third countries (Chile, etc.)                      1-4. Equipments:                      Necessary laboratory equipment and glassware                      Vehicle, boat, sampling equipments                      Acquisition of software and equipment for the database</p>		<p>1. Stable supply of budget to continue the water resources monitoring during project period.                      2. Stable placement of the trained counterparts in ANAM Lab</p>

<p>quality factors, bacteriology and aquatic biology through the instruction of experts.</p> <p>2-4. ANAM Lab scientists make standardized operation procedures (SOPs) for each type of analysis</p> <p>2-5. ANAM Lab. scientists hold technical seminars for water quality monitoring to the related governmental institutes and laboratories in Panama.</p> <p>3-1. ANAM Lab. scientists make annual report of water quality monitoring activities from the Lab.</p> <p>3-2. ANAM Lab. scientists open the monitoring data of water quality and present activities and information of ANAM Lab. to the public through HP of ANAM</p>	<p><b>Panama side :</b></p> <p>2-1. Operational facilities (buildings, etc.) for the Lab with surveillance</p> <p>2-2. Necessary operational costs for equipments and reagents</p> <p>2-3. Technical counterparts for every expert</p> <p>2-4. Coordination with computer and database section of ANAM</p> <p>2-5. Administrative staffs (secretary and drivers etc.) and operational cost for water, electricity communications, fuel, etc.</p>	<p>Preconditions</p> <p>I. Fulfillment of Lab facilities such as internet, telecommunication, training room, septic tank etc. before execution of the project</p>
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## Project Design Matrix, PDM-2.1

Project Title: WATER QUALITY MONITORING TECHNIQUES PROJECT Executing Organization: National Authority of the Environment (Autoridad Nacional del Ambiente - ANAM)  
 Project Location: Panama, Republic of Panama Target group: Technical staff in ANAM Project Period: Oct. 8. 2003 - Oct. 7. 2006

Modified on 21 Jan. 2006

NARRATIVE SUMMARY	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><b>Overall Goal</b> The management for the observance and accomplishment of the wastewater standards in the Republic of Panama is strengthened</p> <p><b>Project Purpose</b> The accurate monitoring information about waste water (industrial, residential) and natural water (rivers, lakes, and seas) in the Province of Panama is provided by the ANAM analytical Lab.</p>	<p>1. The number of supervised factories which have to fulfill the Wastewater standards in Panama, is increased by more than 30%</p> <p>2. More numbers of factories (at least 50) fulfill the wastewater standards.</p> <p>3. The number of corrected Wastewater standards and ordinances by ANAM (DINAPROCA) based on the monitoring information from the analytical Lab</p> <p>1. The number of monitored rivers in Panama province increases (from 10 to 16).</p> <p>2. The number of physico-chemical analysis is increased (up to required No. 21 by the water quality standards).</p> <p>3. The number of monitored lake and seas in the national parks is increased (from 0 to 1 for lake, and from 0 to 2 for sea)</p> <p>4. The water quality data is published on the HP and the Environmental White Paper of ANAM (in Official Publications)</p>	<ul style="list-style-type: none"> <li>• Annual Report of the environmental management of ANAM</li> <li>• Published water quality monitoring reports</li> <li>• ANAM Home Page</li> <li>• ANAM environmental white paper (environmental report)</li> </ul>	<p>1. The government of Panama keeps and promotes the national policy of the environment in order to supervise the fulfillment of actual regulations.</p> <p>1. The government of Panama in charge keeps and promotes the national policy of the environment in order to supervise the fulfillment of actual regulations.</p>
<p><b>Outputs</b></p> <p>1. Necessary equipments for water quality analysis and compliance monitoring can be supplied and operated definitely in the ANAM Lab.</p> <p>2. ANAM Lab scientists can make water quality monitoring and analysis by themselves for natural water and wastewater in accordance with environmental standards.</p> <p>3. Monitoring results provided by ANAM Lab scientists can be opened to the public through the publication and on the HP of ANAM.</p>	<p>1-1. The number of equipments and specifications</p> <p>1-2. The frequency of operation of supplied equipments</p> <p>2-1. The number of sampling carried out</p> <p>2-2. The number of sampling site carried out</p> <p>2-3. The number of parameters carried out</p> <p>2-4. The number of analysis carried out</p> <p>2-5. The number of analytical procedures for each parameters</p> <p>2-6. The number of trainings and seminars carried out</p> <p>3-1. The contents of HP of ANAM, and the number of data on HP</p> <p>3-2. The number of monitoring report on water quality monitoring assisted by ANAM laboratory.</p>	<ul style="list-style-type: none"> <li>• Inventory of equipments</li> <li>• Water sampling reports</li> <li>• Final report of the CP trainees in Japan, and of third country experts indicating the results of the training work and evaluation for the CP trainees in Panama.</li> <li>• Water quality monitoring reports from ANAM Laboratory, and ANAM HP</li> <li>• Attendance list of trainings, and the result of questionnaires</li> </ul>	<p>1. No changes for the role and the function of the ANAM Lab in the national policy of environment</p>

<p><b>Activities</b></p> <p>1-1. ANAM Lab. scientists prepare methodology of analysis for each parameter, necessary equipments and reagents by themselves through the instruction of experts.</p> <p>1-2. ANAM Lab. scientists practice maintenance of equipments in order to carry out proper management of the laboratory. by themselves through the instruction of experts.</p> <p>2-1. ANAM Laboratory scientists practice the basic knowledge of water sampling techniques (methods, places, timing, number of sampling site etc.) by themselves through the instruction of experts.</p> <p>2-2. ANAM Lab. scientists experience the practical monitoring for natural water and effluents.</p> <p>2-3. ANAM Lab scientists learn theory, use of equipment, applications, etc., for metal analysis, pesticides and organic compounds analysis, analysis of basic water quality factors, bacteriology and aquatic biology through the instruction of experts.</p> <p>2-4. ANAM Lab scientists complete a series of technical materials about operation procedures in each types of the analysis learned on the Project (10 selected parameters)</p> <p>2-5. ANAM Lab. scientists hold technical seminars for water quality monitoring to the related governmental institutes and laboratories in Panama.</p> <p>3-1. ANAM Lab. scientists make annual report of water quality monitoring activities from the Lab. 3-2. ANAM Lab. scientists open the monitoring data of water quality and present activities and information of ANAM Lab. to the public through HP of ANAM</p>	<p><b>Inputs</b></p> <p><b>Japan side:</b></p> <p>1-1. Dispatch of Experts :  1 long term : 3 years, and more than 4 short term ( in the fields of chemical analysis, bacteriology, water biology, etc.) from Japan</p> <p>1-2. Dispatch of 2 third country Experts, at least, for pesticides and metal analysis.  1-3. Training in Japan (2-3 persons per year), and in third countries (Chile)</p> <p>1-4. Equipments:  Necessary laboratory equipment and glassware  Vehicle, boat, sampling equipments  Acquisition of software and equipment for the database</p> <p><b>Panama side:</b></p> <p>2-1. Operational facilities (buildings, etc.) for the Lab with surveillance  2-2. Necessary operational costs for equipments and reagents  2-3. Technical counterparts for every expert  2-4. Coordination with computer and database section of ANAM  2-5. Administrative staffs (secretary and drivers etc.) and operational cost for water, electricity communications, fuel, etc.</p>	<p>1. Stable supply of budget to continue the water resources monitoring during project period.</p> <p>2. Stable placement of the trained counterparts in ANAM Lab</p>
		<p><b>Preconditions</b></p> <p>1. Fulfillment of Lab facilities such as internet, telecommunication, training room, septic tank etc. before execution of the project</p>



Appendix-III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 1.0

8-Oct-03

Activities (Japanese Fiscal Year)	2003				2004				2005				2006	
	III	IV	I	II	III	IV	I	II	III	IV	I	II	I	II
<b>Entire Period of the Project</b>														
<b>1. ANAM Lab scientists can make sampling by themselves for waste and natural water.</b>														
1-1. The basic knowledge of water-sampling techniques (methods, places, timing, number of sampling etc.) are instructed to ANAM Laboratory scientists														
1-2. Laboratory scientists experience the practical samplings														
<b>2. ANAM Lab scientists can make water quality analysis by themselves.</b>														
2-1. ANAM Lab scientist are instructed in theory, use of equipment, applications, etc., for Metal Analysis, Pesticides and organic compounds analysis, analysis of basic water quality factors, Bacteriology														
2-2. ANAM Lab scientist make procedures manual for each type of analysis														
2-3. Laboratory scientists make a skill improvement program in analytical chemistry and carry it out by themselves in order to improve their analytical techniques														
<b>3. More and trustable data base about the natural water and wastewater is built up.</b>														
3-1. Maps of sampling sites for water quality monitoring are made														
3-2. Laboratory scientists are instructed in data analysis of water quality														
3-3. Laboratory scientists establish a system to analyze the water samples of rivers, lakes, seas, and industrial wastewater, for required water quality factors														
3-4. The database available to the public and published in the HP of ANAM, and then a suggestion is made for readjustment of water quality standards, the law etc.														
<b>4. The training system about water quality, environmental education and water analysis techniques for the related Institutions are established in the L</b>														
4-1. Train the specialist from the ANAM Environmental Education Department to improve his/her skills for methodology of presentations														
4-2. Draw up programs and curricula of training about teaching methodology to ANAM scientists														
4-3. Laboratory scientists give training of environmental analysis and of environmental education to other related Institutions, such as MINSA (Ministry of Health), IDAAN, Universities, SENACYT, etc.														

Appendix-III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 2.0

Activities	Intended results	Calendar year				Persons in charge	Coordination	Input/Observations
		2003	2004	2005	2006			
0 Project management, consolidation, and discussion of the results								
(1)Scheduling						Manager/Chief advisor		
1)Prepare annual operational plans	3 annual operational plans					Manager/Chief advisor		
(2)Monitoring and evaluation						Manager/Chief advisor		
1)Monitoring	2 monitoring reports					Manager/Chief advisor		
2)Intermediate evaluation	Intermediate evaluation report					Manager/Chief advisor		
3)Final evaluation	Final evaluation report					Manager/Chief advisor		
(3)Joint Coordination Committee						Manager/Chief advisor		
1)Hold Joint Coordination Committee meetings	4 sets of meeting minutes from the Joint Coordination Committee					Manager/Chief advisor	DINEPA, DINEORA, FOMENTO, IDAAN, MINSA, MEF and other pertinent organizations	
(4)Consolidation and dissemination of the results						Manager/Chief advisor		
1)Hold workshops for governmental and non-governmental related to the promotion of the observance and accomplishment of the wastewater standards based on the Project achievements	2 workshops					Manager/Chief advisor	DINEPA, DINEORA, FOMENTO, IDAAN, MINSA, MEF and other pertinent organizations	
(5)Development of the necessary infrastructure for the Project activities						Manager/Chief advisor		
1)Prepare the Project base office	The Project base is operating in ANAM analytical Lab.					Manager/Chief advisor		
2)Improve necessary equipments and operational facilities	Provision of equipment and installation					Manager/Chief advisor		
1 Necessary equipments for water quality analysis and compliance monitoring can be supplied and operated definitely by ANAM Laboratory								
(1) ANAM Lab scientist prepare methodology of analysis of each parameter, necessary equipments and reagents by themselves through the instruction of experts						Manager/Chief advisor		
1) Identify existing analytical methodology based on reviewing of legislation	1 evaluation report					Lab. Staff/Expert		Mr. Sawaki
2) Identify existing analytical methodology based on international legislation (EPA, JIS, etc)	1 evaluation report					Lab. Staff/Expert		Mrs. Julia
3) Prepare the list of necessary equipments and reagents in order to do the water quality analysis according to the identified methodologies	1 document with the necessary equipments and reagents revised per year					Manager/Expert/Chief advisor		Mrs. Julia
(2) ANAM Lab. scientist practice maintenance of equipments in order to carry out proper management of the laboratory by themselves through the instruction of experts						Manager/Chief advisor		
1) Prepare the inventory of equipment and reagents	1 equipment inventory revised per year					Lab. Staff/Expert		Mr. Yau
2) Prepare the manual for the maintenance of equipment	1 equipment maintenance manual revised per year					Lab. Staff/Expert		Mr. Yau
3) Execute the maintenance of equipments	3 maintenance reports					Manager/Expert/Chief advisor		Mr. Yau

**Appendix-III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 2.0**

Activities	Calendar year					Persons in charge	Coordination	Input/Observations
	2003	2004	2005	2006	2006			
2 ANAM Lab scientist can make water quality monitoring and analysis by themselves for natural water and wastewater in accordance with environmental standards						Manager/Chief advisor		
(1)ANAM Laboratory scientists practice the basic knowledge of water-sampling (monitoring) techniques (methods, places, timing, number of sampling site etc.) by themselves through the instruction of experts.						Lab. Staff/Expert		Mr. Sawaki
(2)ANAM Lab. scientists experience the practical monitoring for natural water and wastewater						Manager/Chief advisor		
1) Prepare annual water quality monitoring and wastewater compliance monitoring program						Lab. Staff/Expert		Mr. Fabian
2) Execute the water quality monitoring and wastewater compliance monitoring program						Lab. Staff/Expert		All Lab staff
(3) ANAM Lab scientists learn theory, use of equipment, applications, etc., for metal analysis, pesticides and organic compounds analysis, analysis of basic water quality factors, bacteriology and aquatic biology through the instruction of experts						Manager/Chief advisor		
1) Plan trainings						Manager/Chief advisor		
2) Execute trainings						Lab. Staff/Expert		Mr. Yau
a. Water quality monitoring (sampling)						Lab. Staff/Expert		Mrs. Julia
b. Chemical analysis with data processing						Lab. Staff/Expert		Mr. Fabian
c. Metal analysis (AAS)						Lab. Staff/Expert		Mr. Tejada
d. Pesticide analysis (GC-MS)						Lab. Staff/Expert		Mrs. Julia
e. Bacteriology and Aquatic biology						Lab. Staff/Expert		Mrs. Julia Ms. Yahaira
f. Industrial wastewater treatment						Lab. Staff/Expert		Mr. Guillermo
g. Marine pollution protection						Lab. Staff/Expert		
h. Groundwater pollution						Lab. Staff/Expert		
3) Hold an evaluation meeting						Manager/Chief advisor		
(4) ANAM Lab scientists make standardized operation procedures (SOPs) for each type of analysis						Manager/Chief advisor		
1) Prepare annual work plan and create SOPs for each type of analysis						Manager/Chief advisor		
a. Water quality monitoring (sampling) techniques						Lab. Staff/Expert		Mr. Yau
b. Chemical analysis with data processing						Lab. Staff/Expert		Mrs. Julia
c. Metal analysis (AAS)						Lab. Staff/Expert		Mr. Fabian
d. Pesticide analysis (GC-MS)						Lab. Staff/Expert		Mr. Tejada
e. Bacteriology and Aquatic biology						Lab. Staff/Expert		Mrs. Julia
2) Hold a evaluation meeting						Manager/Chief advisor		
(5) ANAM Lab. scientists hold technical seminars for water quality monitoring to the related governmental institutes and laboratories in Panama						Manager/Chief advisor		
1) Prepare annual work plan for technical seminar						Manager/Chief advisor		
2) Execute technical seminar						Lab. Staff/Expert		Mr. Yau
a. Water quality monitoring (sampling)						Lab. Staff/Expert		Mrs. Julia
b. Chemical analysis with data processing						Lab. Staff/Expert		Mr. Fabian
c. Metal analysis (AAS)						Lab. Staff/Expert		Mr. Tejada
d. Pesticide analysis (GC-MS)						Lab. Staff/Expert		Mrs. Julia
e. Bacteriology and Aquatic biology						Manager/Chief advisor		
3) Hold a evaluation meeting						Manager/Chief advisor		

**Appendix-III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 2.0**

Activities	Intended results	Calendar year					Persons in charge	Coordination	Input/Observations
		2003	2004	2005	2006				
<p>3 Monitoring results provided by ANAM Lab scientists can be opened to the public through the publication and on the HP of ANAM.</p> <p>(1) ANAM Lab scientist make annual report of water quality monitoring activities from the Laboratory</p>									
1) Identify status of existing water quality monitoring maps and data	1 evaluation report with work plan						Manager/Chief advisor	National Direction for Environmental Quality Protection (DINAPROCA),	Following sampling points based on RID will be included into created maps
2) Obtain the x-y coordinates for monitoring points and point pollution sources	Generated digital data						Manager/Chief advisor	National Direction for Environmental Impact Assessment (DINEORA) and other pertinent organizations	- 3 monitoring points for 16 rivers in Panama Province
3) Create water quality monitoring maps for sampling sites and points pollution sources on GIS	Digital maps for sampling points and point pollution sources						Manager/Chief advisor	*Database will be subconstructed using MS-Access.	- 2 in Panama Bay Province
4) Create water quality monitoring database	Digital database						Manager/Chief advisor		- 2 in Lakes in Panama Province
5) Prepare water quality annual reports	1 annual report						Manager/Chief advisor		
<p>(2) ANAM Lab scientist open the monitoring data of water quality and present activities and information of ANAM Lab. to the public through the HP of ANAM</p>									
1) Create contents of HP based on database for opening to the public	Contents of HP						Manager/Chief advisor		

**Appendix- III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 2.1**

Activities	Intended results	Calendar year				Persons in charge	Coordination	Input/Observations
		2003	2004	2005	2006			
0 Project management, consolidation, and discussion of the results								
(1) Scheduling								
1) Prepare annual operational plans	3 annual operational plans					Manager/Chief advisor		
2) Monitoring and evaluation						Manager/Chief advisor		
1) Monitoring	2 monitoring reports					Manager/Chief advisor		
2) Intermediate evaluation	Intermediate evaluation report					Manager/Chief advisor		
3) Final evaluation	Final evaluation report					Manager/Chief advisor		
(3) Joint Coordination Committee								
1) Hold Joint Coordination Committee meetings	4 sets of meeting minutes from the Joint Coordination Committee					Manager/Chief advisor	DINEPA, DINEORA, FOMENTO, IDAAN, MINSA, MEF and other pertinent organizations	
(4) Consolidation and dissemination of the results								
1) Hold workshops for governmental and non-governmental related to the promotion of the observance and accomplishment of the wastewater standards based on the Project achievements	2 workshops					Manager/Chief advisor	DINEPA, DINEORA, FOMENTO, IDAAN, MINSA, MEF and other pertinent organizations	
(5) Development of the necessary infrastructure for the Project activities								
1) Prepare the Project base office	The Project base is operating in ANAM analytical Lab.					Manager/Chief advisor		
2) Improve necessary equipments and operational facilities	Provision of equipment and installation					Manager/Chief advisor		
1 Necessary equipments for water quality analysis and compliance monitoring can be supplied and operated definitely by ANAM Laboratory								
(1) ANAM Lab scientist prepare methodology of analysis of each parameter, necessary equipments and reagents by themselves through the instruction of experts								
1) Identify existing analytical methodology based on reviewing of legislation	1 evaluation report					Manager/Chief advisor		Mr. Sawaki
2) Identify existing analytical methodology based on international legislation (EPA, JIS, etc)	1 evaluation report					Lab. Staff/Expert		Mrs. Julia
3) Prepare the list of necessary equipments and reagents in order to do the water quality analysis according to the identified methodologies	1 document with the necessary equipments and reagents revised per year					Manager/Expert/Chief advisor		Mrs. Julia
(2) ANAM Lab. scientist practice maintenance of equipments in order to carry out proper management of the laboratory by themselves through the instruction of experts								
1) Prepare the inventory of equipment and reagents	1 equipment inventory revised per year					Manager/Chief advisor		Mr. Yau
2) Prepare the manual for the maintenance of equipment	1 equipment maintenance manual revised per year					Lab. Staff/Expert		Mr. Yau
3) Execute the maintenance of equipments	3 maintenance reports					Manager/Expert/Chief advisor		Mr. Yau



Appendix-III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 2.1

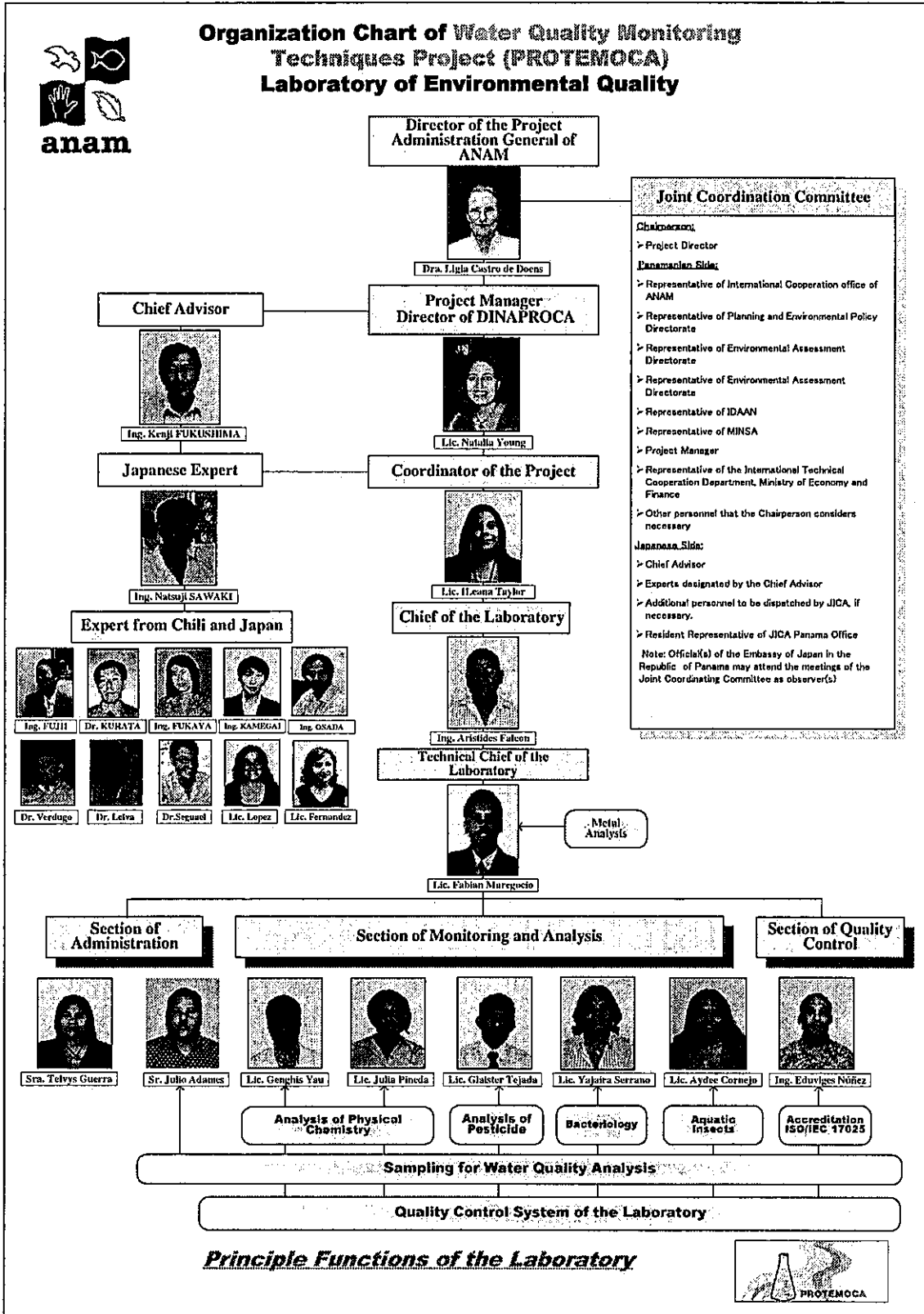
Activities	Intended results	Calendar year					Persons in charge	Coordination	Input/Observations
		2003	2004	2005	2006				
2 ANAM Lab scientist can make water quality monitoring and analysis by themselves for natural water and wastewater in accordance with environmental standards									
(1) ANAM Laboratory scientists practice the basic knowledge of water-sampling (monitoring) techniques (methods, places, timing, number of sampling site etc.) by themselves through the instruction of experts.									
1) Prepare sampling manual through reviewing of existing sampling method and legislation	1) sampling manual						Manager/Chief advisor		Mr. Sawaki
(2) ANAM Lab. scientists experience the practical monitoring for natural water and wastewater									
1) Prepare annual water quality monitoring and wastewater compliance monitoring program	1 plan revised per year						Lab. Staff/Expert		Mr. Fabian
2) Execute the water quality monitoring and wastewater compliance monitoring program	4 annual water quality monitoring and compliance reports						Lab. Staff/Expert		All Lab staff
(3) ANAM Lab scientists learn theory, use of equipment, applications, etc., for metal analysis, pesticides and organic compounds analysis, analysis of basic water quality factors, bacteriology and aquatic biology through the instruction of experts									
1) Plan trainings	1 plan per year						Manager/Chief advisor		
2) Execute trainings							Lab. Staff/Expert		
a. Water quality monitoring (sampling)	Training report for each						Lab. Staff/Expert		Mr. Yau
b. Chemical analysis with data processing	Training report for each						Lab. Staff/Expert		Mrs. Julia
c. Metal analysis (AAS)	Training report for each						Lab. Staff/Expert		Mr. Fabian
d. Pesticide analysis (GC-MS)	Training report for each						Lab. Staff/Expert		Mr. Tejada Mrs. Julia
e. Bacteriology and Aquatic biology	Training report for each						Lab. Staff/Expert		Mrs. Julia Ms. Yahaiza
f. Industrial wastewater treatment	Training report for each						Lab. Staff/Expert		Mr. Guillermo
g. Marine pollution protection	Training report for each						Lab. Staff/Expert		
h. Groundwater pollution	Training report for each						Lab. Staff/Expert		
3) Hold an evaluation meeting	Evaluation report for each training						Manager/Chief advisor		
(4) ANAM Lab scientists complete a series of technical materials about operation procedures in each types of the analysis learned on the Project.									
1) Prepare annual work plan and create SOP's for each type of analysis	1 plan per year						Manager/Chief advisor		
a. Water quality monitoring (sampling) techniques	1 SOP's revised per year						Lab. Staff/Expert		Mr. Yau Mrs. Julia
b. Chemical analysis with data processing	1 SOP's revised per year						Lab. Staff/Expert		Mr. Yau Mrs. Julia
c. Metal analysis (AAS)	1 SOP's revised per year						Lab. Staff/Expert		Mr. Fabian
d. Pesticide analysis (GC-MS)	1 SOP's revised per year						Lab. Staff/Expert		Mr. Tejada
e. Bacteriology and Aquatic biology	1 SOP's revised per year						Lab. Staff/Expert		Mrs. Julia
2) Hold a evaluation meeting	1 evaluation report per year						Manager/Chief advisor		
(5) ANAM Lab. scientists hold technical seminars for water quality monitoring to the related governmental institutes and laboratories in Panama									
1) Prepare annual work plan for technical seminar	1 plan per year						Manager/Chief advisor		
2) Execute technical seminar							Manager/Chief advisor		
a. Water quality monitoring (sampling)	Seminar will be held with training by expert document about presentation						Lab. Staff/Expert		Mr. Yau Mrs. Julia
b. Chemical analysis with data processing	document about presentation						Lab. Staff/Expert		Mr. Yau Mrs. Julia
c. Metal analysis (AAS)	document about presentation						Lab. Staff/Expert		Mr. Fabian
d. Pesticide analysis (GC-MS)	document about presentation						Lab. Staff/Expert		Mr. Tejada
e. Bacteriology and Aquatic biology	document about presentation						Lab. Staff/Expert		Mrs. Julia Ms. Yahaiza
3) Hold a evaluation meeting	1 evaluation report per year						Manager/Chief advisor		

**Appendix-III Plan of Operation (PO) for the Water Quality Monitoring Technique Project for PDM 2.1**

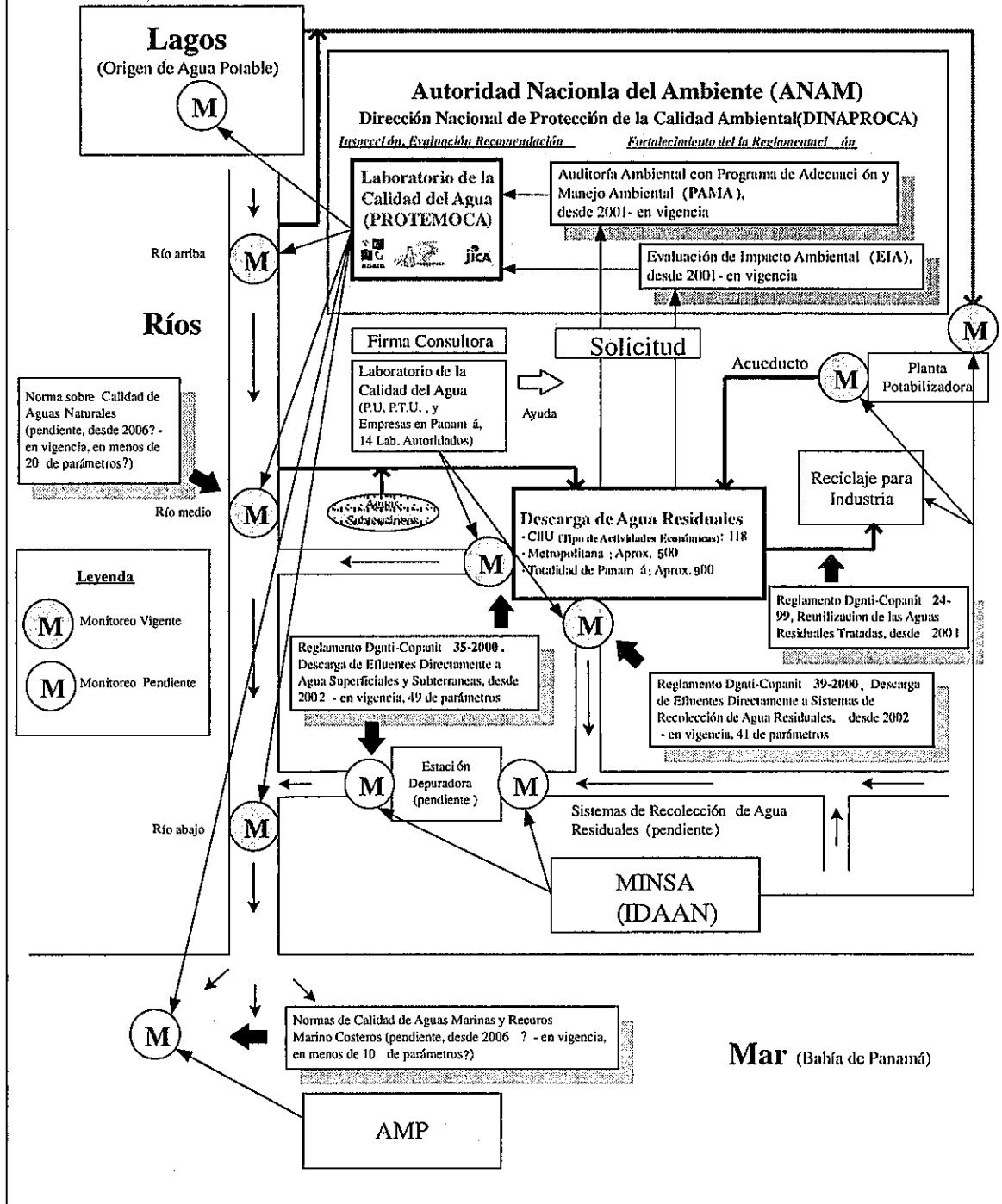
Activities	Intended results	Calendar year					Persons in charge	Coordination	Input/Observations
		2003	2004	2005	2006				
3 Monitoring results provided by ANAM Lab scientists can be opened to the public through the publication and on the HP of ANAM. (1) ANAM Lab scientist make annual report of water quality monitoring activities from the Laboratory									
1) Identify status of existing water quality monitoring maps and data	1 evaluation report with work plan						Manager/Chief advisor	National Direction for Environmental Quality Protection (DINAPROCA),	Following sampling points based on RD will be included into created maps
2) Obtain the x-y coordinates for monitoring points and point pollution sources	Generated digital data						Manager/Chief advisor	National Direction for Environmental Impact Assessment (DINEORA) and other pertinent organizations	- 3 monitoring points for 16 rivers in Panama Province
3) Create water quality monitoring maps for sampling sites and points pollution sources on GIS	Digital maps for sampling points and point pollution sources						Manager/Chief advisor	*Database will be subconstructed using MS-Access.	- 2 in Panama Bay - 2 in Lakes in Panama Province
4) Create water quality monitoring database	Digital database						Manager/Chief advisor		
5) Prepare water quality annual reports	1 annual report						Manager/Chief advisor		
(2) ANAM Lab scientist open the monitoring data of water quality and present activities and information of ANAM Lab. to the public through the HP of ANAM									
1) Create contents of HP based on database for opening to the public	Contents of HP						Manager/Lab.Staff/Chief advisor		



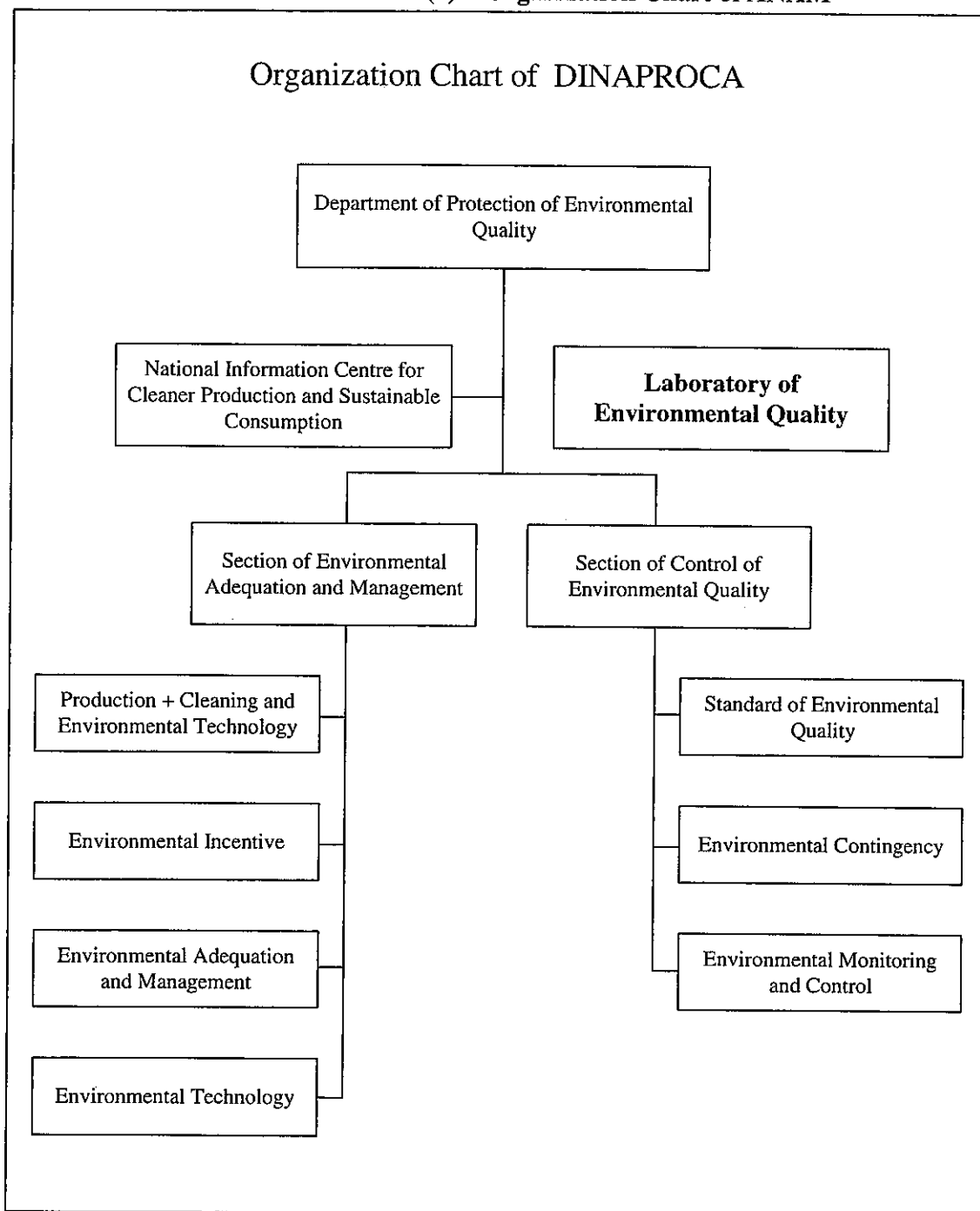
APPENDIX IV-1-(1) Organization Chart for Implementation of the PROTEMOCA



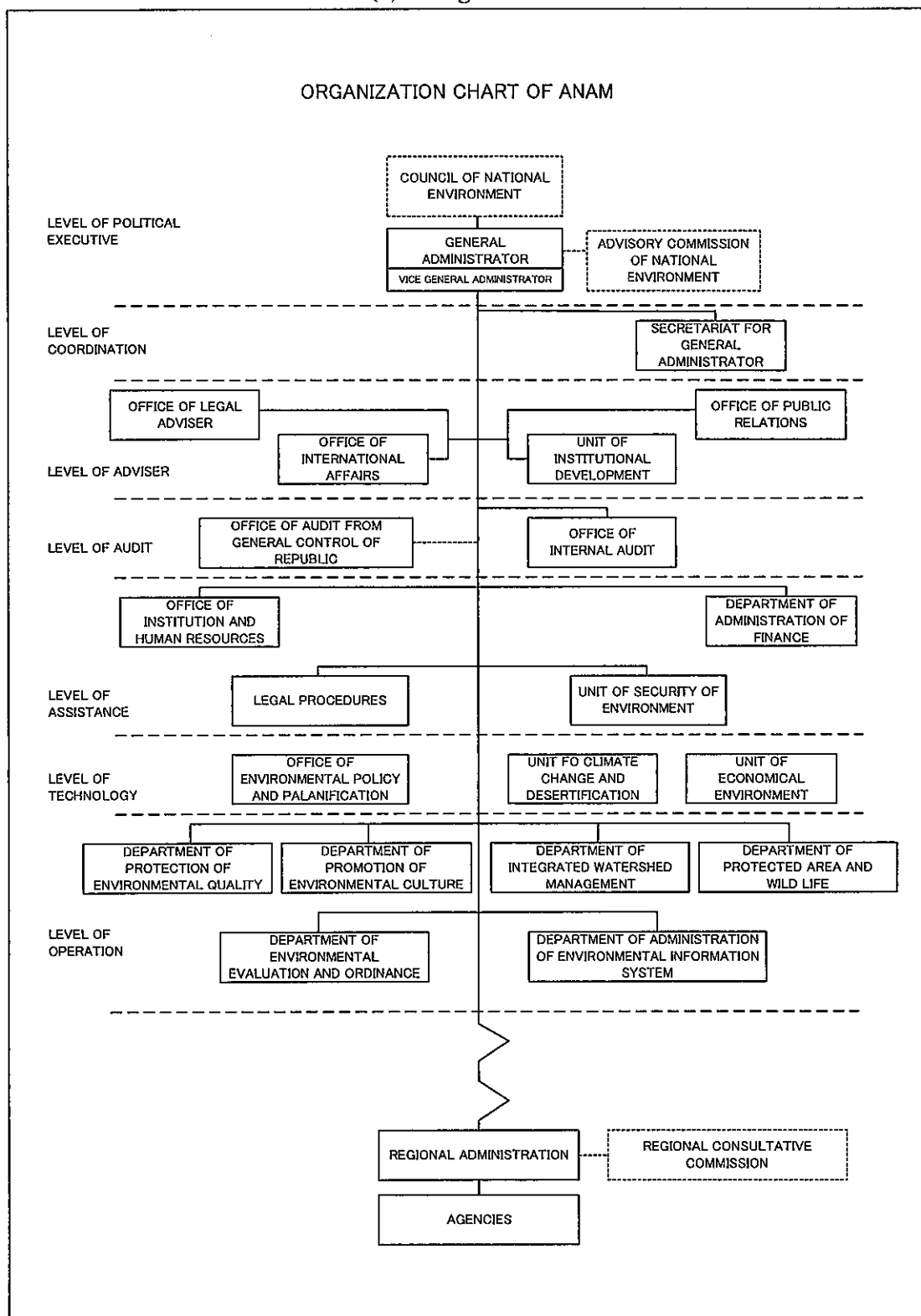
## Medidas de la Contaminación del Agua en Panamá (Diagrama del Área Metropolitana de Panamá)



APPENDIX IV-2-(1) Organization Chart of ANAM



## APPENDIX IV-2-(2) Organization Chart of ANAM



### APPENDIX IV-3 Composition of Joint Coordination Committee of PROTEMOCA

ROLE AND POSITION		NAME	ACTUAL ROLE AND POSITION	INSTITUTION
Chairperson	Project Director or his/her representative	Dra. Ligia Castro	General Administration of ANAM, and Director of the Project	National Authority of the Environment (ANAM)
Panamanian Side	1) Representative of International Cooperation office of ANAM	Licda. Zoila Aquino	Director of International Cooperation	National Authority of the Environment (ANAM)
Panamanian Side	2) Representative of Planning and Environmental Policy Directorate	Licdo. Roberto de la Cruz	Director of Environmental Policy and Planification	National Authority of the Environment (ANAM)
Panamanian Side	3) Representative of Environmental Assessment Directorate	Ing. Bolívar Zambrano	Director of Environmental Impact Assessment	National Authority of the Environment (ANAM)
Panamanian Side	4) Representative of Environmental Education Directorate	Licda. Lourdes Lozano	Director of Environmental Education (Promotion of Environmental Culture)	National Authority of the Environment (ANAM)
Panamanian Side	5) Representative of IDAAN	Ing. Catalina Guerra	Chief of Department of Wastewater Quality and Treatment	Institution of Water Supply and Drainage (IDAAN)
Panamanian Side	6) Representative of MINSa	Dra. Maria Inés Esquivel	Vice General Director	Ministry of Health (MINSa)
Panamanian Side	7) Project Manager	Licda. Natalia Young	Project Manager and Director of Protection of Environmental Quality (DINAPROCA)	National Authority of the Environment (ANAM)
Panamanian Side	8) Representative of the International Technical Cooperation Department, Ministry of Economy and Finance	Dra. Carmen Guevara	Chief of the International Technical Cooperation Department, Ministry of	Ministry of Economy and Finance (MEF)
Panamanian Side	9) Other personnel that the Chairperson considers necessary	Licda. Dora Wagner	Director of Administration of Finance	National Authority of the Environment (ANAM)
Panamanian Side	9) Other personnel that the Chairperson considers necessary	Ing. Hilda Candanedo	Director of Natural Patrimony	National Authority of the Environment (ANAM)
Japanese Side	1) Chief Adviser	Ing. Kenji Fukushima	Chief Adviser	Japan International Cooperation Agency (JICA)
Japanese Side	2) Expert(s) designated by Chief Adviser			
Japanese Side	3) Additional personnel to be dispatched by JICA, if necessary			
Japanese Side	4) Resident Representative of JICA Panama Office	Licdo. Naoki Kai	Resident Representative of JICA Panama Office	Japan International Cooperation Agency (JICA)

Note: Official(s) of the Embassy of Japan in the Republic of Panama may attend the meetings of the Joint Coordinating Committee as observer(s)

APPENDIX-V Inputs of the Project

V-1 Dispatch of Japanese Experts and the Third Country Experts

<b>Name of Expert</b>	<b>Theme of Guidance</b>	<b>Dispatched Period</b>	<b>Post before Dispatch</b>
Nobu OTOWA	Water Quality Monitoring Technique	Mar. 28, 2001 – Mar. 28, 2004	Consultant personal
Kenji FUKUSHIMA	Chief Adviser	Mar. 15, 2004 - Feb. 7, 2005 Apr. 6, 2005 - Oct. 7, 2005 Nov. 12, 2005 - Mar.11, 2006 Apr.14, 2006 - Oct.7, 2006	OYO International Corporation
Natsuji SAWAKI	Water Quality Monitoring Technique	Mar. 30, 2004 – Oct.7, 2006t	Association of Kaigai - Kyouryoku
Hiroko FUJII	Bacteriological Analysis	Feb. 29, 2004 - Mar. 27, 2004	Corporation of Wastewater Treatment of Japan
Takayoshi KURATA	Aquatic Biology	Sep. 9, 2004 - Oct.18, 2004	Kokusai-Kogyo Corporation
Tomoko FUKAYA	Analysis of Hazardous Chemical Substances (Pesticide)	Nov. 10, 2004 - Dec. 20, 2004	OYO Internacional Corporation
Yasuko KAMEGAI	Heavy Metal Analysis	Aug. 11, 2005 - Oct. 7, 2005	Kokusai-Kogyo Corporation
Takayoshi KURATA	Measurement of Marine Water Pollution	June. 9, 2006 – June. 29, 2006	Kokusai-Kogyo Corporation
<u>The 3<sup>rd</sup> Country Expert (Chili)</u>			
Ruben Verdugo	Heavy Metal Analysis	Oct. 13, 2003 - Nov. 7, 2003	CENMA, Chile
Katia Calderon	Pesticide Analysis	Nov. 17, 2003 - Dec. 19, 2003	CENMA, Chile
<u>Japan Chile Partnership Program (JCPP)</u>			
Ruben Verdugo	Evaluation Method of Chemical Analysis	Aug. 30, 2004 - Sep. 22, 2004	CENMA, Chile
Manuel A. Leiva-Guzmán	Quality Control of Laboratory	Feb. 19, 2006 – Feb. 25, 2006	CENMA, Chile
Rodrigo Seguel A.	Quality Control of Laboratory	Feb. 19, 2006 – Feb. 25, 2006	CENMA, Chile
Marly Lopez	Quality Control of Laboratory	Feb. 19, 2006 – Feb. 25, 2006	CENMA, Chile
Ingrid Fernandez	Quality Control of Laboratory	Jul. 2, 2006 – Jul. 8, 2006	CENMA, Chile
	Anaysis of Coliform	Jul. 2, 2006 – Jul. 8, 2006	CENMA, Chile

APPENDIX-V-2 Acceptance of Counterpart Personnel in Japan in Japan and Chile

Natalia Young	Feb. 1, 2006 - Feb. 17, 2006	Environmenta l Policy and Environmenta l Management System	Health and Environmental Institute of Fukuoka City	Project Manager, Director of Department of Protection of Environmental Quality (DINAPROCA)	The same as the left
Glaister Tejada	Sep. 14, 2003 - Dec. 8, 2003	Pesticide Analysis	Health and Environmental Institute of Fukuoka City	Laboratory personal belonging to Department of Protection of Environmental Quality in ANAM	The same as the left
Genghis Kan Yau	Sep. 23, 2003 - Nov. 22, 2003  Jul. 10, 2005 - Jul. 31, 2005	Monitoring Technique  Method of Chemical Analysis	Environmental Investigation and Training Center of Ministry of Environment  JCPP, CENMA in Chile	Laboratory personal belonging to Department of Protection of Environmental Quality in ANAM	The same as the left
Fabian Maregocio	Nov. 8, 2003 - Dec. 23, 2003  Dec. 5, 2004 - Dec. 11, 2004  Oct. 16, 2005 - Oct. 29, 2005  May. 28, 2006 - Jun. 10, 2006	Heavy Metal Analysis  Meeting of JCPP  Heavy Metal Analysis  Quality Control of Laboratory	Health and Environmental Institute of Fukuoka City  JCPP, CENMA in Chile  JCPP, CENMA in Chile  JCPP, CENMA in Chile	Laboratory personal belonging to Department of Protection of Environmental Quality in ANAM	The same as the left
Julia Pineda	Sep. 19, 2004 - Nov. 22, 2004	Monitoring of Water Environment (Group Training, J04-00688)	Environmental Investigation and Training Center of Ministry of Environment	Laboratory personal belonging to Department of Protection of Environmental Quality in ANAM	The same as the left
Yajaira Serrano	Oct. 4, 2005 - Dec. 2, 2005  Apr. 24, 2006 - May. 6, 2006	Aquatic Biology  Bacteriology	Health and Environmental Institute of Fukuoka City /Core Lab in OYO Corporation, etc.  JCPP, CENMA in Chile	Laboratory personal belonging to Department of Protection of Environmental Quality in ANAM	The same as the left
Eduviges Núñez	Jun. 19, 2005 - Jul. 2, 2005	Quality Control of Analytical Laboratory	JCPP, CENMA in Chile	Laboratory personal belonging to Department of Protection of Environmental Quality in ANAM	The same as the left



**AP-V -3 Provision of Equipment form Japanese Side**

**(1) List of the equipment and the present state**

No	Date of purchase	Name of the equipment	Model	Maker	Price (B/.)	use for	use at	use or not	In case "out of use", since when, and why?
060	March 2004	Colony Counter	DC-3	ABC Labo	1,122.73	Project	Laboratory	in use	Missing since March 2004.
061	March, 2004	Glass Filter Holder		Millipore	1,685.82	Project	Laboratory	in use	
062	March 2004	Digital Camera	Stylus410	Olimpus	346.50	Project	Laboratory	out of use	
063	March, 2004	Computer	PCDELL Optiplex	Dell	2,163.00	Project	Laboratory	in use	
064	March, 2004	Computer	PCDELL Optiplex	Dell	2,163.00	Project	Laboratory	in use	
065	March, 2004	Computer	PCDELL Optiplex	Dell	2,163.00	Project	Laboratory	in use	
066	March, 2004	Project Car	PRADO	TOYOTA	35,880.00	Project	Laboratory	in use	
067	March, 2004	Mass Detector	G1777A	Agilent	61,981.32	Project	Laboratory	in use	
084	March, 2004	Fine Pipette	Finepipette	Thermo	275.60	Project	Laboratory	in use	
085	March, 2004	Manifold Filter		Pall	925.00	Project	Laboratory	in use	
086	March, 2004	Filter holder		Knotes	190.50	Project	Laboratory	In use	
087	March, 2004	Thermometer	Certified	Ertico	218.00	Project	Laboratory	In use	
092	March, 2004	Fume Hood with Blower	CEX180X	C4	8,125.00	Project	Laboratory	out of use	Available to use after renovation of the Lab.
093	March, 2004	Desiccator		Pyrex	476.00	Project	Laboratory	in use	
094	March, 2004	Desiccator		Thonmas	987.20	Project	Laboratory	in use	
095	March, 2004	Calibration Weight Set		Thermolyne	844.20	Project	Laboratory	in use	
096	March, 2004	Glass Filter Holder		Millipore	2,280.80	Project	Laboratory	in use	
097	March, 2004	Hot Plate	1065	Barnstead	2,484.00	Project	Laboratory	in use	
098	March, 2004	Incubator	1927	VWR	4,750.00	Project	Laboratory	in use	
099	March, 2004	Multi Water Analyzer	U21	Horiba	7,400.00	Project	Laboratory	out of use	
100	March, 2004	Sox let Extraction			3,250.00	Project	Laboratory	in use	
101	March, 2004	pH Meter	720APlus	Orion	1,950.00	Project	Laboratory	in use	
102	March, 2004	Oxygen Meter	862A	Thermo Orion	1,980.00	Project	Laboratory	in use	
103	March, 2004	Oxygen Meter	Oxi340iset	WTW	2,870.00	Project	Laboratory	in use	
104	March, 2004	Digital Pipette	EDP plus Pipete	Rainin	1,600.00	Project	Laboratory	in use	
105	March, 2004	Spectrophotometer	DR2500	Hach	2,953.00	Project	Laboratory	in use	
106	March, 2004	Cabinet	For Acid Reagent		1,350.00	Project	Laboratory	in use	
107	March, 2004	pH-EC Meter	D54-E	Horiba	1,071.80	Project	Laboratory	in use	
108	March, 2004	Turbidimeter	2100P	Hach	1,080.00	Project	Laboratory	in use	
109	March, 2004	pH Meter	D52-E	Horiba	552.00	Project	Laboratory	in use	
110	March,	Glass Filter Holder	Coliform	Hach	1,587.00	Project	Laboratory	in use	Failure since May 2006.

111	2004 March, 2004	Icubator	Precision	Lab Mechanics	2,600.00	Project	Laboratory	in use	
112	March, 2004	Circulating Bath	M33	Thermo Neslab	4,595.00	Project	Laboratory	in use	
113	March, 2004	Incubator for BOD	Portable Incubator	Hach	1,147.50	Project	Laboratory	in use	
114	March, 2004	Ultrasonic Cleaner	8510	Barnsonic	2,662.20	Project	Laboratory	in use	
116	March, 2004	Digital Reactor Block	DRB200	Hach	722.25	Project	Laboratory	in use	
117	March, 2004	Boat	23ft Marinar40		10,299.00	Project	Laboratory	in use	
118	March, 2004	Security system			22,626.90	Project	Laboratory	in use	
119	March, 2004	Air Conditioner	LS T242AAL	LG	994.00	Project	Laboratory	in use	
120	March, 2004	Air Conditioner	LS T242AAL	LG	994.00	Project	Laboratory	in use	
121	March, 2004	Water Sampler	2.2L	Wildco	688.00	Project	Laboratory	in use	
122	March, 2004	Pump	DOA-P104 -A	Gast	885.00	Project	Laboratory	in use	
123	March, 2004	Oven	Precision	Lab Mechanics	1,845.00	Project	Laboratory	in use	
125	March, 2004	West water treatment plant			4,421.88	Project	Laboratory	in use	
126	March, 2004	Accessories of Computer			730.00	Project	Laboratory	in use	
127	March, 2004	Telephone		Panasonic	371.98	Project	Laboratory	in use	
128	March, 2004	Digital Camera	Cybershot DSU-U60	Sony	309.97	Project	Laboratory	in use	
129	March, 2004	Digital Camera	Cybershot DSU-U60	Sony	309.97	Project	Laboratory	in use	
130	March, 2004	Computer		Soltech	1,098.00	Project	Laboratory	in use	
131	March,, 2004	Air Conditioner	LS T242AAL	LG	1,054.00	Project	Laboratory	in use	
132	March, 2004	Air Conditioner	LS T242AAL	LG	994.00	Project	Laboratory	in use	
133	March, 2004	Laptop Computer	Thinkpad- X40	IBM	3,272.73	Project	Laboratory	in use	
135	July, 2004	Microscope	Diamond #5420	Konus	395.00	Project	Laboratory	in use	
136	September, 2004	Telephone with Facsimile	KX-FL511	Panasonic	298.97	Project	Laboratory	in use	
137	September, 2004	Server Net	25mmx25 mm 0.5		374.55	Project	Laboratory	in use	
138	September, 2004	Mud Sampler			1,489.09	Project	Laboratory	in use	
139	September, 2004	Microscope	Neouresco pe Fabre	Nikon	452.73	Project	Laboratory	in use	
140	September, 2004	Plankton Net	NXX13		270.91	Project	Laboratory	in use	
141	September, 2004	Digital Leakage Meter	GO2030		631.82	Project	Laboratory	in use	
143	November, 2004	Sample Concentrator			4,370.63	Project	Laboratory	in use	
145	November, 2004	Manifold System	GL-SPE Manifold sisitem	GLScience	2,690.91	Project	Laboratory	in use	
150	December, 2004	Motor	HP75	Mariner	1,700.00	Project	Laboratory	out of use	stolen in Oct. 2005
151	January, 2005	Analytical Balance	BBL31 210g	Boeco	2,040.00	Project	Laboratory	in use	
152	January, 2005	Water Aspirador	WP25	Oakton	1,986.74	Project	Laboratory	in use	
154	January, 2005	Manifold System		Supelco	1,731.32	Project	Laboratory	in use	

155	2005 March, 2005	Circulating Bath		Poly Science	3,347.44	Project	Laboratory	in use	
156	March, 2005	Pump	Diaphragm Pump	Air Cadet	301.34	Project	Laboratory	in use	
162	January, 2005	Computer	D220	Dell	1,560.00	Project	Laboratory	in use	
163	March, 2005	Refrigerator	RF-1910	Sankey	453.09	Project	Laboratory	in use	
164	March, 2005	LAN card	G1369Lan Interface	Agilent	1,008.89	Project	Laboratory	in use	
165	March, 2005	Desk for Laboratory			480.00	Project	Laboratory	in use	
166	March, 2005	Neutralizing Appatus	TPH-2	Cemco	8,880.07	Project	Laboratory	out of use	Use after renovation of the Lab.
169	March, 2005	Balst Burner	PM2D WC	Bethlchem Apparatos	2,515.71	Project	Laboratory	in use	
170	March, 2005	Air Condicioner	LGS 242HG	LG	994.00	Project	Laboratory	in use	
171	March, 2005	Spectrophotometer	UV-2500	Shimadzu	17,166.00	Project	Laboratory	in use	
172	March, 2005	Pelistic Sipper	Tipol- UV2500	Shimadzu	2,833.00	Project	Laboratory	in use	
173	March, 2005	Analitical Balance	AB204S	Mettler Toledo	2,091.48	Project	Laboratory	in use	
175	March, 2005	Auto Sampler	7683B	Agilent	5,487.53	Project	Laboratory	in use	
176	March, 2005	Try kit			6,241.43	Project	Laboratory	in use	
177	March, 2005	Automatic Pipetter	PortableXP	Pipet-aid	375.96	Project	Laboratory	in use	
178	March, 2005	Plateform Shaker	MAXQ 2000	Barnstead Lab-line	2,621.63	Project	Laboratory	in use	
179	March, 2005	Accessores of Plateform Shaker	Plataforms for3518 Shaker	Barnstead Lab-line	760.81	Project	Laboratory	in use	
180	March, 2005	Cabinet	Storage Cabinet	Justrite	850.00	Project	Laboratory	in use	
181	March, 2005	Tote Statdisp		Barnstead	460.00	Project	Laboratory	in use	
182	March, 2005	Automatic Still Adaptar KIT		Barnstead	215.00	Project	Laboratory	in use	
183	March, 2005	Automatic collection sistem		Barnstead	2,250.00	Project	Laboratory	in use	
184	March, 2005	Desk for Fume hood		Daigger	890.00	Project	Laboratory	in use	
185	March, 2005	Exhaust connection kit		Daigger	499.00	Project	Laboratory	in use	
186	March, 2005	Fume Hood		Daigger	3,990.00	Project	Laboratory	in use	
187	March, 2005	Remete Blower Kit		Daigger	2,156.40	Project	Laboratory	out of use	
188	March, 2005	Refrigerator	DGM-23	VWR	4,095.70	Project	Laboratory	in use	
189	March, 2005	Desk for Balance	31Hx36Wx 24D	VWR	695.00	Project	Laboratory	in use	
192	September, 2005	Head Space Sampler	G1888A	Agilent	29,072.27	Project	Laboratory	in use	
193	September, 2005	Gas Chromatograph	GC6890N	Agilent	34,946.01	Project	Laboratory	in use	
195	November, 2005	Mercury Analyzer	RA915+	Lumex	35,912.50	Project	Laboratory	in use	
197	March, 2006	Desk			925.00	Project	Laboratory	in use	
198	March, 2006	Board for Fume Hood			650.00	Project	Laboratory	in use	
201	March, 2006	Stereoscope	Diamond #5424	Konus	1,538.00	Project	Laboratory	in use	
202	March,	Column cutter		Agilent	364.64	Project	Laboratory	in use	

204	2006 March, 2006	Flow Meter	ADM-1000	ADM	785.62	Project	Laboratory	in use
205	2006 March, 2006	Computer	HPCompaq DC5100	HP	1,175.00	Project	Laboratory	in use
206	2006 March, 2006	Computer	HPCompaq DC5100	HP	1,175.00	Project	Laboratory	in use
207	2006 March, 2006	Software	Microsoft Office	Microsoft	280.00	Project	Laboratory	in use
208	2006 March, 2006	Software	Microsoft Office	Microsoft	280.00	Project	Laboratory	in use
211	2006 July, 2006	Software	Sufer8		920.00	Project	Laboratory	in use
212	2006 July, 2006	Deep meter	SM-5A	Sppedtech	280.00	Project	Laboratory	in use
213	2006 July, 2006	Deep meter	SM-5A	SpeedTech	280.00	Project	Laboratory	in use
215	2006 August, 2006	Desk			1,229.76	Project	Laboratory	in use
216	2006 August, 2006	Digital Reactor Block	DRB200	Hach	1,149.72	Project	Laboratory	in use

Total 421,942.52

APPENDIX-V-4 Expenses for Project Operation

(1) Actual Local Cost by JICA(From October of 2003 to July of 2006)

Item	Cost (B/.)
Employment of staff (1Secretary)	2,038.38
Insurance for personal	248.39
Temporary employment driver	236.00
Rental car	232.00
Rental boat	225.00
Fuel	630.96
Others (Gases, Stationery and Office equipments, etc)	162,548.23
Maintenance	3,353.44
Travel allowance in Chile(CENMA) (8 personals)	7,080.00
Ticket of airplane to Chile(CENMA) (8 personals)	7,138.00
Travel allowance in Panama (ANAM)(4 personals)	3,900.00
Ticket of airplane to Panama (ANAM)(4 personals)	4,003.20
Insurance for Chilean Experts (4 personals)	200.00
Meeting of Joint coordination committee	2,740.98
<b>Total</b>	<b>194,574.58</b>

(2)Investment of Panamanian part

(1)Actual Local Cost by ANAM(From October of 2003 to July of 2006)

Items	Cost (B/.)
Salary for the staff*	212,114.00
7Technicians,1 Secretary, 1 Coordinator, 1 Driver and 1 Support Personnel	
Fuel	7,318.76
Insurance of project car	2,233.86
Telephone	2,388.48
Electricity	48,058.60
Water Supply	7,716.13
Equipments for Laboratory	25,472.50
Motor of boat	4,250.00
Reagents	2,094.53
Stationery and Office equipments	2,590.86
Maintenance	6,305.00
Foods	71.58
Infrastructure (Remodeling 1st floor)**	55,000.00
Infrastructure (Remodeling 2nd floor now)	40,000.00
<b>Total</b>	<b>415,614.30</b>

Note: For year 2006, ANAM Budgets for the Water Quality Monitoring Techniques Project is B/.120,950.00 and actually, more than 50 requests for purchase of equipment, reagents, and building's repair are in process.

※Above-mentioned salary is calculated in the following ways.

- 1) 50 % of the whole salary for the coordinator
- 2) 100% of the whole salary for all the Laboratory staff

※※ Before Project





## APPENDIX VI-1 Analytic Capacity of the ANAM Laboratory (August, 2006)

Nº	Parámetros		Expresión	Unidad	Límite máximo permitido en Reglamentos			Capacidad del Laboratorio de ANAM			Métodos	Maquinarias	
	Español	Inglés			35-2000 Efluentes Líquidos	39-2000 Aguas Residuales	XX-200X Agua Naturales (pendiente)	2003 (15)	2004 (27)	2005 (33)			Guía del Análisis (15)
<b>A. Indicadores fisicoquímicos</b>													
1	pH	pH	pH	Unidad	5.5-9.0	5.5-9.0	?	✓	✓	✓		AWWA SM 4500 H+B	
2	Temperatura	Temperature	°C	Unidad	± 3°C de la T.N.	± 3°C de la T.N.	?	✓	✓	✓		AWWA SM 2550 B	
3	Cloro residual	Residual chlorine	Cl	mg/l	1.5	1.5						AWWA SM 4500 Cl B	Titration
4	Cloruros	Chlorides	Cl <sub>2</sub>	mg	400	400						AWWA SM 4500 Cl C	Titration
5	Sulfatos	Sulfates	SO <sub>4</sub> <sup>2-</sup>	mg/l	1000	1000		✓	✓	✓		AWWA SM 4500 SO <sub>4</sub> <sup>2-</sup> E	Titration
6	Turbiedad	Turbidity	NTU	NTU	30	-		✓	✓	✓		AWWA SM 2510 B	Turbidimeter
7	Sulfuros	Sulfides	S <sup>2-</sup>	mg/l	1	5						AWWA SM 4500S <sup>2-</sup> ?	Spectrophotometer
8	Fluoruros	Fluorides	F	mg/l	1.5	1.5						AWWA SM 4500 F ?	Spectrophotometer
9	Cianuro total	Total cyanide	CN	mg/l	0.2	1	?					AWWA SM 4500 CN C ?	Spectrophotometer
10	Olor	Odor	-	-	No perceptible	No perceptible						AWWA SM 2150	
11	Oxígeno disuelto	Dissolved Oxygen	OD	mg/l	-	-	?	✓	✓	✓		AWWA SM 4500 OC	Titration
12	Conductividad eléctrica	Electric conductivity	EC	µm/cm	-	2000		✓	✓	✓		AWWA SM 2510 B	Conductivity meter
<b>B. Residuos</b>													
1	Sólido sedimentables	Settleable solids	S.SED	mg/l	15	20		✓	✓	✓		AWWA SM 2540F	Cono de Inoff / Aer drying
2	Sólido suspendidos	Suspended solids	SS	mg/l	35	300	?	✓	✓	✓	✓	AWWA SM 2540D	Oven/Filteration
3	Sólido totales disueltos	Total dissolved solids	S.T.D.	mg/l	500	1000		✓	✓	✓		AWWA SM 2540C	Oven white porcelain dish
4	Sólidos totales	Total solids	TS	mg/l	-	1500							
<b>C. Nutrientes</b>													
1	Nitralos	Nitralos	NO <sub>3</sub> <sup>-</sup>	mg/l	6	10		✓	✓	✓	✓?	AWWA SM 4500NO <sub>3</sub> <sup>-</sup> B	Spectrophotometer
2	Nitrógeno amoniacal	Ammonium nitrogen	NH <sub>4</sub> -N	mg/l	3	80						AWWA SM 4500 NH <sub>4</sub> C ?	Titration
3	Nitrógeno orgánico total	Total organic nitrogen	N	mg/l	10	-						AWWA SM 4500 N Org ?	Spectrophotometer
4	Nitrógeno total	Total nitrogen	N	mg/l	-	100	?						
5	Detergentes	Detergents	-	mg/l	1	2						AWWA SM-5540C ?	Spectrophotometer
6	Espuma detergente o surfactant	Detergent or surfactant foam	PE	mm	7	7							
7	Fósforo total	Total phosphorus	P	mg/l	5	10	?					AWWA SM 4500 P ?	Spectrophotometer
8	Fosfatos	Phosphorus	PO <sub>4</sub> <sup>-</sup>	-	-	-		✓	✓	✓	✓?	HACH	Spectrophotometer
<b>D. Indicadores Bioquímicos</b>													
1	Demanda Bioquímica de Oxígeno	Biochemical oxygen demand	DBO <sub>5</sub>	mg/l	35	1.25-2.50 <sup>A</sup>	?	✓	✓	✓	✓	AWWA SM5210B	Titration
2	Demanda Química de Oxígeno	Chemical oxygen demand	DQO	Mg O <sub>2</sub> /l	100	700	?	✓	✓	✓	✓	AWWA SM 5220B	Spectrophotometer
3	Carbono total orgánico	Total Organic Carbon	TOC	mg/l	-	-							
<b>E. Indicadores microbiológico</b>													
1	Coliforme totales	Total coliforms	Coli.Total	NMP/100	1000	1000000	?	✓	✓	✓	✓	Sust Definido	
2	Coliforme fecales	F. Coliform	Foli.Fec.	NMP/100	-	-		✓	✓	✓	✓	Sustrato Definido	
<b>F. Indicadores Orgánicos</b>													
1	Hidrocarburos totales	Total hydrocarbons	-	mg/l	5	20						AWWA SM 5520 F ?	
2	Compuestos Fenólicos	Phenol compounds	Phenols	mg/l	0.5	0.5						AWWA SM5530C ?	Spectrophotometer
3	Pentacloroeno	Pentachlorophenol	C <sub>5</sub> OHCl <sub>5</sub>	mg/l	0.009	-						?	GC-MSD
4	Crasas y aceite	Oil and grease	A y G	mg/l	20	150						AWWA SM 5250	Soxhlet extractor
5	Mercaptanos	Mercaptans	-	mg/l	0.02	0.02						?	GC-FPD
6	Tolueno	Toluene	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	mg/l	0.7	-						?	
7	Xileno	Xylene	C <sub>6</sub> H <sub>4</sub> (C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	mg/l	0.05	-						?	
8	Tricloroetano	Trichloroethane	HC <sub>2</sub> Cl <sub>3</sub>	mg/l	0.04	-	?					?	GC-ECD o GC-MSD
9	Triclorometano	Trichloromethane	CHCl <sub>3</sub>	mg/l	0.02	-	?					?	
10	Organoclorados	Organ chlorine	-	mg/l	1.5	2						?	
<b>G. Metales</b>													
1	Calcio	Calcium	Ca	mg	1000	150			✓	✓		AWWA SM 3111B o 3111D	
2	Sodio	Sodium	Na	%	35	35						AWWA SM 3111B	AAS Flame
3	Zinc	Zinc	Zn	mg/l	3	5				✓	✓	AWWA SM 3111D o 3113B	
4	Manganeso	Manganese	Mn	mg/l	0.3	-				✓	✓	AWWA SM 3111B o 3113B	
5	Cobre	Copper	Cu	mg/l	1	3				✓	✓	AWWA SM 3111B o 3113B	
6	Hierro totales	Total iron	Fe	mg/l	5	5				✓	✓	AWWA SM 3111B o 3113B	AAS Flame o G-Furnace
7	Cadmio	Cadmium	Cd	mg/l	0.01	0.5	?			✓	✓	AWWA SM 3111B o 3113B	
8	Arsénico	Arsenic	As	mg	0.5	0.5	?			✓	✓	AWWA SM 3113B o 3114B ?	
9	Aluminio	Aluminum	Al	mg/l	5	5				✓	✓	AWWA SM 3111D o 3113B	
10	Plomo	Lead	Pb	mg/l	0.05	1	?			✓	✓	AWWA SM 3111B	AAS Flame
11	Cromo total	Total chromium	Cr <sub>6</sub>	mg/l	5	10				✓	✓	AWWA SM 3111B o 3113B	AAS Flame o G-Furnace
12	Cromo hexavalente	Hexavalent chromium	Cr <sup>6+</sup>	mg/l	0.05	-	?			✓	✓	HACH ?	Spectrophotometer
13	Mercurio	Mercury	Hg	mg/l	0.001	0.02	?					AWWA SM 3112B ?	AAS Hydride/cold vapor
14	Boron	Boron	B	mg/l	0.75	-						?	ICP
15	Molibdeno	Molybdenum	Mo	mg/l	2.5	-						AWWA SM 3111D o 3113B ?	
16	Niquel	Nickel	Ni	mg/l	0.2	4				✓	✓	AWWA SM 3111B o 3113B	AAS Flame o G-Furnace
17	Selenio	Selenium	Se	mg/l	0.01	-	?				✓	AWWA SM 3113B o 3114B.C	
18	Estano	Tin	Sn	mg/l	-	7							
<b>H. Plaguicidas</b>													
1	P. clorados	r-HCH	-	µg/l	Indeterminando	Indeterminando	Indeterminando						GC-ECD o GC-MSD
2		Heptachlor	-	µg/l									
3		Endrin	-	µg/l									
4		DDT	-	µg/l									
5		Endosulfan	-	µg/l									
6		Malation	-	µg/l									
7	Carbamatos	Fenitrothion	-	µg/l	Indeterminando	Indeterminando	Indeterminando						EPA
8		Molinate	-	µg/l									
9		Benomyl	-	µg/l									
10		Carbaryl	-	µg/l									
11		Carbendazim	-	µg/l									
12		Carbofuran	-	µg/l									
13	Otros	Bulachlor	-	µg/l	Indeterminando	Indeterminando	Indeterminando						GC-ECD o GC-MSD
14		Chlorothalonil	-	µg/l									
15		Chlorpyrifos	-	µg/l									
16		Isoprotholane	-	µg/l									
17		B-Haplachlorepoxido	-	µg/l									
18		Methoxychlor	-	µg/l									
19	Metaxil	-	µg/l										
20	Oxadiazon	-	µg/l										
21	Terbutylazine	-	µg/l										

\* DQO/DBO5

(SM) Standards methods for the Examination of water and wastewater in AWWA

APPENDIX-VI-2 Periodical Monitoring for Water Quality Monitoring Technique Project

Category	Place	Number (Number of Monitoring Point)	Project Period																		
			2002		2003		2004				2005				2006						
			Rain	Dry	Rain	Dry	Rain		Dry		Rain		Dry		Rain						
River (17)	West of Panama (6)	Caimito (3)	6/17		10/13		6/4	8/4	10/22		1/21				11/16	2/1	3/30	6/8			
		Aguacate (3)			10/16										11/23	2/7	4/4	6/14			
		Cario Quebrado (3)									3/16	5/3			11/8	2/9	3/30	7/12			
		Capira (3)			10/14		6/4								11/22	2/16		6/20			
		Chame (3)	6/18		10/13		6/3														
		Perequete (3)	11/13	11/13												11/22	2/16		6/20		
	Panama Metropolitan (7)	Curundu (3)	11/13	3/18	10/21		5/12	8/14	10/22		1/21			5/4	8/3	10/13		4/11	7/12		
		Matasnillo (3)	11/13	3/18	10/21	4/27	8/9	9/20	10/26		2/24			8/4	10/13		4/11	6/30			
		Rio Abajo (3)	11/14	3/19			5/14	6/21	10/22		1/21			6/15	9/6	11/15	3/15	4/18	7/5		
		Juan Diaz (3)	12/11	3/20	10/22		5/26	8/19	9/23	12/29	1/21	2/15	4/26		9/8	11/9	3/8	4/19	7/4		
		Matices Hernandez (3)				4/18	5/18	8/16	10/6		2/15	4/27			8/26	10/13	3/16	4/18	7/12		
		Cardenas (3)													8/29	11/15	2/3	4/27	6/6		
		Tapia (3)					9/7	9/23	1/27		3/3	4/28			9/7	10/20	3/14		5/31		
		Tocmen (3)					9/21	10/27			3/3	4/28			8/26	11/1	2/7	3/22	6/28		
	East of Panama (3)	Pacora				4/1								5/5		12/1	2/9	4/20	7/10		
		Ipeti		7/30	11/6									7/12							
		Bayano		7/29	11/5									7/13							
Sea (4)	Bahía de Panamá (4)	No.1																5/9	6/14		
		No.2																	5/9	6/14	
		No.3																		5/10	6/15
		No.4																		5/10	6/15
Lake (1)	Las Cumbres (1)	5																	5/16	6/13	

Dry season: from January to April Rainy season: from May to December

 PROTEMOCA  
 Other Project



APPENDIX-VI-4-1 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2004 (Date: 23/05/2005)

Classification	Name of Task	Request from	Period	Category of Task*		Person in charge
				Category of Task*	Person in charge	
Monitoring and Analysis	Monitoreo de los ríos de la Prov. De Bocas del Toro	CBMA* /DINAPROCA	Del 13-15 de Enero 2004	A, B	Lic. Genghis Kan Yau (A) Lic. Julia Pineda (A)	
Monitoring and Analysis	Muestreo y Análisis los ríos Antón, Chico, Zaratí, Coclé del Sur, Río Grande de la prov. DE Coclé.	CBMA* /DINAPROCA	26-29 de Enero de 2004	A,B,C	Todo personas en Lab. (B) Lic. Fabian Maregocio (A) Lic. Julia Pineda (B,C) Lic. Genghis Kan Yau (B)	
Monitoring and Analysis	Monitoreo del río Chiriquí Viejo en Tierras altas y sus Quebradas cercanas al mismo.	DINAPROCA/ FUNDICCEP	23-25 de Agosto	A,B,C	Lic. Glaister Tejada (A,B,C) Lic. Julia Pineda (B) Lic. Yajaira Serrano (B) Lic. Genghis Kan Yau (B)	
Monitoring and Analysis	Muestreo y Análisis de aguas residuales de la Empresa Panamá á Power	PANAMA /DINAPROCA	2 de Abril 2004		Lic. Glaister Tejada Lic. Genghis Kan Yau	
Monitoring and Analysis	Muestreo y Análisis de las aguas residuales de AES Panamá	PANAMA CENTRO		A,B	Lic. Genghis Kan Yau (A) Lic. Julia Pineda (B)	
Monitoring and Analysis	Muestreo y análisis del Río Abajo para el caso AES Panamá.	DINAPROCA/ FISCALIA		A,B	Lic. Yajaira Serrano A.(B) Lic. Genghis Kan Yau (A) Lic. Julia Pineda (B)	
Monitoring and Analysis	Muestreo y Análisis de Aguas Residuales de Inmobiliaria Mamoni, Hospital de Chepo y Qda. Sta. Isabel	DINAPROCA/ FISCALIA		B,C	Lic. Genghis Kan Yau (A) Lic. Julia Pineda (B,C)	
Monitoring and Analysis	Monitoreo de las Aguas adyacentes al Melia Para la empresa Jungel Films.	DINAPROCA/ COLON	22 de Enero y el 10 de Marzo de 2004	A,B,C	Lic. Genghis Kan Yau (A,B,C) Lic. Julia Pineda (A,B,C) Lic. Glaister Tejada (C)	
Monitoring and Analysis	Monitoreo de las aguas del río Arenal y áreas de Playa Diablo Sherman Colón	DINAPROCA/ COLON	11-23 de Nov. 2004	A,C	Lic. Yajaira Serrano (A) Lic. Glaister Tejada (C)	
Monitoring and Analysis	Inundaciones	PANAMA ESTE	17-23 de Septiembre de 2004	A,B,C	Lic. Genghis Kan Yau (A,B,C) Lic. Yajaira Serrano (A,B,C) Lic. Glaister Tejada (C)	
Monitoring and Analysis	Muestreo y Análisis de ríos xxx	DARIEN				
Monitoring and Analysis	Monitoreo de los 18 puntos del Río La Villa	LOS SANTOS	Del 8-10 de Nov de 2004	A,B	Lic. Genghis Kan Yau (A) Lic. Yajaira Serrano (B)	
Monitoring and Analysis	Muestreo y Análisis del Río Sta. María	VERAGUAS	Mazo, Junio, Septiembre, Diciembre de 2004	A,B,C	Lic. Genghis Kan Yau (B,C) Lic. Julia Pineda (B,C) Lic. Glaister Tejada (A) Lic. Yajaira Serrano (B,C)	
Monitoring and Analysis	Muestreo y Análisis del Río Oganf	SAN BLAS/ DINAPROCA	15-16 de Abril de 2004	A,B,C	Lic. Glaister Tejada (A) Lic. Genghis Kan Yau (B,C) Lic. Julia Pineda (B,C)	
Regulation of Water Quality	Monitoreo del río Pacora por Denuncias	DINAPROCA	Abril - 2004	A, B	Lic. Glaister Tejada (A) Lic. Genghis Kan Yau (B) Lic. Julia Pineda (B)	
Regulation of Water Quality	Evaluación de las caracterizaciones de las descargas de Efluentes Líquidos de la Empresas a nivel Nacional	DINAPROCA/ CARACTERIZACION	Todo el año 2004	C,D	Lic. Glaister Tejada (C,D) Lic. Genghis Kan Yau (C,D) Lic. Julia Pineda (C,D) Lic. Fabian Maregocio (C,D)	
Regulation of Water Quality	Evaluación de Auditoría y PAMA	DINAPROCA	Mayo-Octubre Y Dic. de 2004	C,D,E	Lic. Glaister Tejada (C,D,E)	

APPENDIX-VI-4-1 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2004 (Date: 23/05/2005)

\*Proyecto de Corredor Biológico  
Mesoamericano del Atlántico Panamericano

Category of Task\*

A: sampling B: analysis C: elaboration of report  
D: revision or comment to report E: others

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Regulation of Water Quality	Testigo ante la Corte Suprema de Justicia caso Coca Cola, S.A.	DINAPROCA/ FISCALIA		E	Lic. Glaister Tejada (E)
Evaluation of reports	Evaluación de los Reportes de Calidad de Dragados	DINAPROCA /PANAMA C.	Todo el año 2004	C,D,E	Lic. Julia Pineda (C,D,E)
Evaluation of reports	Evaluación de la empresa Glaxo S.B	DINAPROCA	Mayo 2004	C	Lic. Julia Pineda (C)
Evaluation of reports	Evaluación y Seguimiento a los Lab. Autorizados	DINAPROCA	Todo el año 2004	C,D,E	Lic. Julia Pineda (C,D,E)
Training	Capacitación a los laboratorios autorizados y a las empresas en relación a la "Homologación de Trabajos de Campo en la Caracterización de Aguas Residuales Industriales" realizado en la UTP	DINAPROCA	11 de Agosto de 2004	E	Lic. Glaister Tejada (E) Lic. Julia Pineda (E)
Training	Capacitación y Retroalimentación a los laboratorios Satélites	DINAPROCA/ Proyecto AGACE	Todo el año 2004	E	Lic. Julia Pineda (E)
Training	Representante de ANAM ante el Consejo Nacional de Acreditación (MICI).	DINAPROCA	Todo el año 2004	C,D,E	Lic. Julia Pineda (C,D,E)
Training	Asignación a Honduras Proyecto AGACE	DINAPROCA	Diciembre 2004	E	Lic. Yajaira Serrano (E)
Training	Asignación a El Salvador " Desechos Sólidos Municipales"	DINAPROCA	Agosto 2004		Lic. Yajaira Serrano
Training	Capacitación a los estudiantes de la Universidad Tecnológica de Panamá	UTP	2 meses	A,B,C	Lic. Julia Pineda (A,B,C) Lic. Genghis Kan Yau (A,B,C)
Establishment of Regulation	Elaboración de los indicadores Ambientales	DINAPROCA	Septiembre	C	Lic. Glaister Tejada (C)
Training	Participación Directa en l Capacitación de Filtración de Membrana para la determinación de Coliformes con la Experta Japonesa Fuyi Yuoko, Muestreo y Análisis.	PROTEMOCA	Marzo de 2004	B,C	Lic. Julia Pineda (B,C)
Training	Entrenamiento Teórico Práctico en Insectos Acuáticos Dr. Murata Takayoshi	PROTEMOCA	Oct.-Nov	B,C	Lic. Yajaira Serrano (B,C)
Training	Exposición de la Capacitación de Insectos Acuáticos.	PROTEMOCA	Nov-Oct	B,C	Lic. Fabian Maregocio (B,C)
Training	Entrenamiento Teórico Práctico en GC-MS Sra. Fukaya	PROTEMOCA	Nov-Oct	B,C	Lic. Fabian Maregocio (B,C)
Training	Exposición de la Capacitación de GC-MS	PROTEMOCA	Septiembre	B,C	Lic. Genghis Kan Yau (B,C)
Training	Entrenamiento Teórico Práctico en evaluación de datos del calidad del agua Dr. Ruben Verdugo	PROTEMOCA	Septiembre	B,C	Lic. Genghis Kan Yau (B,C)
Training	Exposición de la Capacitación	PROTEMOCA	Septiembre	B,C	Lic. Genghis Kan Yau
Training	Exposición de los Temas de Capacitación en Japón 2003-2004	PROTEMOCA	Nov	E	Lic. Glaister Tejada Lic. Fabian Maregocio Lic. Julia Pineda Lic. Yajaira Serrano
Training	Viaje a Japón capacitación en Monitoreo de Calidad de Agua.	PROTEMOCA	19 de Sep hasta el 22 de Nov.	A,B,C,D,E	Lic. Julia Pineda (A,B,C,D,E)
Monitoring and Analysis	Monitoreo y Análisis de los Ríos en el área metropolitana (Sta. María Curundu, Marasmillo, Río Abajo, Juan Díaz, Matias Herd, Tocumen, Tapia)	PROTEMOCA	Todo el año	A,B,C	Lic. Genghis Kan Yau Lic. Glaister Tejada Lic. Fabian Maregocio Lic. Julia Pineda Lic. Yajaira Serrano



APPENDIX VI-4-2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2005 (Date: 31/12/2005)

\*Proyecto de Caudal Biológico  
 Mesonitrato del Adianto Panamericano  
 A: sampling B: analysis C: elaboration of report  
 D: revision or consent to report E: others

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Monitoring and Analysis	Monitoreo del río Torti	DINAPROCA	02-02-05	A,B,C	Lic. Glaister, Yhajaira, Julia
Monitoring and Analysis	Monitoreo del río Sta. María	VERAGUAS/DI NAPROCA /	10-03-05 al 11-03-05	A,B,C	Lic. Yau
Monitoring and Analysis	Costa de Playa Diablo, desembocadura del Río Arenal	DINAPROCA	20-03-05 al 25-03-05	A,B,C,D	Lic. Glaister, Yhajaira, Julia, Yau
Monitoring and Analysis	Monitoreo de los ríos Río Chiriquí Viejo y Quedas Cercanas	FUNDICCEP	14-04-05	A,B,C	Lic. Yau, Yhajaira, Julia
Monitoring and Analysis	Monitoreo de los ríos de Bocas del Toro (5)	CBMA* /DINAPROCA	15-05-05 al 18-05-05	A,B,C	Yau, Yhajaira, Julia
Monitoring and Analysis	Monitoreo de los ríos de Chiriquí (6)	CBMA* /DINAPROCA	23-05-05 al 27-05-05	A,B,C	Yau, Yhajaira, Julia
Monitoring and Analysis	Monitoreo de los ríos de Darién (3)	CBMA* /DINAPROCA	31-05-05 al 02-06-05	A,B,C	Yau, Yhajaira, Julia
Monitoring and Analysis	Monitoreo de los ríos de Coclé (5)	CBMA* /DINAPROCA	07-06-05 al 10-06-05	A,B,C	Yau, Yhajaira, Julia
Monitoring and Analysis	Monitoreo de los ríos de Colón (4)	CBMA* /DINAPROCA	26-06-05 al 30-06-05	A,B,C	Lic. Yau, Julia, Yhajaira, Glaister
Monitoring and Analysis	Monitoreo de los ríos Bayano e Ipetí	CBMA* /DINAPROCA	12-07-05 al 13-07-05	A,B,C	Yau, Julia, Yhajaira
Monitoring and Analysis	Análisis y muestreo de Agua Domestica Veracruz	DINAPROCA	12-07-05	A,B,	Yau, Julia, Yhajaira
Monitoring and Analysis	Fiscalización de Glaxo Kline B.	DINAPROCA/P AMA	01-08-05	A,B,	Yau, Julia, Yhajaira
Monitoring and Analysis	Monitoreo de los ríos de Kuna Yala (1)	DINAPROCA/C BMA	03-08-05	A,B,C	Yau, Julia, Yhajaira
Monitoring and Analysis	Monitoreo de los ríos de la Comarca Ngobe	DINAPROCA/C BMA	03-08-05 al 04-08-05	A,B,C	Yau, Julia, Yhajaira
Monitoring and Analysis	Monitoreo del río La Villa (18 puntos)	LOS SANTOS/DINA	22-08-05 al 25-08-05	A,B,C	Yau, Julia, Yhajaira
Monitoring and Analysis	Muestreo de Descargas de Ingenio Santa Rosa-Fiscalización	DINAPROCA/P AMA	24-08-05	A,B,C	Yau, Julia, Yhajaira
Monitoring and Analysis	Fiscalización de Fortuna	DINAPROCA/P AMA	26-10-05	A,B,	Yau, Julia, Eduviges
Monitoring and Analysis	Fiscalización de CALYISA	DINAPROCA/P AMA	01-11-05	A,B,	Yau, Julia, Eduviges
Monitoring and Analysis	Monitoreo de Los Santos	DINAPROCA	29-11-05 al 2- 12-05	A,B,C	Yau, Julia, Eduviges
Monitoring and Analysis	Monitoreo de los ríos Río Chiriquí Viejo y Quedas Cercanas	PROTEMOCA	20-12-05	A,B,C	Lic. Glaister
Regulation of Water Quality (Complaint)	Contaminación Nombre de Dios (COLON)	DINAPROCA	17 enero 2005	E	Lic. Yau





APPENDIX VI-4-2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2005 (Date: 31/12/2005)

\*Proyecto de Corredor Biológico  
 Mesamericano del Atlántico Panamericano  
 Categoriya of task:  
 A: sampling B: analysis C: elaboration of report  
 D: revision or consent to report E: others

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Training	Entrenamiento Cuarto Práctico sobre metales experta japoneses Ing. Yasuko Kamegai	PROTEMOCA	28-09-05	A,B,C	Fabian
Training	A Laboratorios de Universidades y del Estado sobre Analisis de Metales Pesados 2 Metodología de Espectofotometría de Absorción Atomica por Llama, Horno de Grafito y	PROTEMOCA	3-10-05		Fabian
Training	Capacitación en calidad de Agua e Insectos Acuáticos en la ciudad Fukuoka y otras ciudades de Japón	PROTEMOCA	28-10-05		Yajaira
Investigation	Reconocimiento de los puntos a muestrear de la Bahía de Panamá	PROTEMOCA	21-08-05		Yau, Yajaira
Evaluation of reports	Reunion Evaluación (Reunión del comité conjunto)	PROTEMOCA	28-7-05		
Evaluation of reports	Compendio de muestreo, análisis y resultados	PROTEMOCA	11-05 - 12-05		
	Monitoreo del río Pacora	PROTEMOCA	14-01-05	A,B	
	Monitoreo de los ríos Juan Díaz, Curundu y Cairmito	PROTEMOCA	21-01-05	A,B	Lic. Julia, Yau, Yajaira
	Monitoreo de los ríos Río Abajo, Matasnillo	PROTEMOCA	16-02-05	A,B	Lic. Glaister, Yhajaira, Julia
	Monitoreo de los ríos Río Tocumen, Matias Hernd	PROTEMOCA	21-02-05	A,B	Lic. Glaister, Yhajaira, Julia
	Monitoreo de los ríos Río Tapia	PROTEMOCA	12-04-05	A,B	Lic. Yau, Yhajaira, Julia
	Monitoreo del río Juan Díaz,	PROTEMOCA	26-04-05	A,B	Lic. Yau, Yhajaira, Julia
	Monitoreo de río Matias Herd	PROTEMOCA	27-04-05	A,B	Lic., Yau, Yhajaira, Julia
	Monitoreo del Río Tocumen	PROTEMOCA	28-04-05	A,B	Lic., Yau, Yhajaira, Julia
	Monitoreo del Río Caño Quebrado	PROTEMOCA	03-05-05	A,B	Lic., Yau, Yhajaira, Julia
	Monitoreo del Río Curundu	PROTEMOCA	04-05-05	A,B	Yau, Yhajaira, Julia
	Monitoreo del río Pacora	PROTEMOCA	05-05-05	A,B	Yau, Yhajaira, Julia
	Monitoreo del río Río Abajo	PROTEMOCA	15-06-05	A,B	Yau, Yhajaira, Julia
	Monitoreo del Río Curundu, Matasnillo	PROTEMOCA	05-08-05	A,B	Yau, Julia, Yhajaira
	Monitoreo del Río Tocumen	PROTEMOCA	25-08-05	A,B	Yau, Julia, Yhajaira
	Monitoreo del Río Matias Hernández	PROTEMOCA	26-08-05	A,B	Yau, Julia, Yhajaira
	Monitoreo del Río Cardenas	PROTEMOCA	30-08-05	A,B	Yau, Julia, Yhajaira
	Monitoreo del Río Cairmito	PROTEMOCA	01-09-05	A,B	Yau, Julia, Eduviges
	Monitoreo del Río Abajo	PROTEMOCA	06-09-05	A,B	Yajaira, Yau, Julia, Eduviges
	Monitoreo de Tapia	PROTEMOCA	07-09-05	A,B	Yau, Julia, Eduviges
	Monitoreo de Juan Díaz	PROTEMOCA	08-09-05	A,B	Yajaira, Yau, Julia, Eduviges
	Monitoreo del Río Capira	PROTEMOCA	15-09-05	A,B	Yau, Julia, Eduviges
	Monitoreo de Caño Quebrado	PROTEMOCA	19-09-05	A,B	Yau, Julia, Eduviges
	Monitoreo de Perequite	PROTEMOCA	20-09-05	A,B	Yau, Julia, Eduviges
	Monitoreo de Pacora	PROTEMOCA	21-09-05	A,B	Yau, Julia, Eduviges
	Monitoreo de los ríos Matias Herdez, Matasnillo, Curundu	PROTEMOCA	13-10-05	A,B	Yau, Julia, Eduviges
	Monitoreo del río Tapia	PROTEMOCA	20-10-05	A,B	Yau, Julia, Eduviges
	Monitoreo del río Tocumen	PROTEMOCA	02-11-05	A,B	Yau, Julia, Eduviges
	Monitoreo del río Río Abjo y Cardenas	PROTEMOCA	15-11-05	A,B	Yau, Julia, Eduviges

Monitoring and Analysis

APPENDIX VI-4-2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2005 (Date: 31/12/2005)

\*Proyecto de Corredor Biológico  
 Mesoamericano del Atlántico Pacífico  
 A: sampling B: analysis C: elaboration of report  
 D: revision of content to report E: others

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
	Monitoreo de Caño Quebrado	PROTEMOCA	08-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo de río Caimito	PROTEMOCA	16-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo del río Juan Díaz	PROTEMOCA	09-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo del río Perequete	PROTEMOCA	20-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo de Caño Quebrado	PROTEMOCA	08-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo del río Aguacate	PROTEMOCA	24-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo del río Capira	PROTEMOCA	22-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo del río Juan Díaz	PROTEMOCA	09-11-05	A,B,	Yau, Julia, Eduvigis
	Monitoreo del Río Pacora	PROTEMOCA	30-11-05	A,B,	Yau, Julia, Eduvigis

APPENDIX VI-4-2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2006 (Date: 30/6/2006)

Categoría de tarea\*  
 A: muestreo B: análisis C: elaboración de informe  
 D: revisión o comentario de informe E: Otro

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Monitoring and Analysis	Monitoreo de los ríos de Veraguas	DINAPROCA	20-04-06 al 24-04-06	A,B,C	Lic. Yau
Monitoring and Analysis	Monitoreo de los ríos de Chiriquí (6)	DINAPROCA	20-25 /03/06	A,B,C,D	Lic. Yhajaia, Julia, Yau, Ediviges
Monitoring and Analysis	Monitoreo de los ríos de Cocle (5)	DINAPROCA	07-06-05 al 10-06-05	A,B,C	Yau, Yhajaia, Julia
Monitoring and Analysis	Monitoreo de los ríos de Colón (4)	DINAPROCA	27-03-06 al 31-03-06	A,B,C	Lic. Yau, Julia, Yhajaia, Glaister
Monitoring and Analysis	Monitoreo de los ríos Bayano e Ipetí	DINAPROCA	03-05-06 al 06-05-06	A,B,C	Yau, Julia, Yhajaia
Monitoring and Analysis	Monitoreo de los ríos de Kuna Yala (1)	DINAPROCA	06-02-06-08-02-06	A,B,C	Yau, Julia, Yhajaia
Monitoring and Analysis	Monitoreo de los ríos de la Comarca Ngobe	DINAPROCA	12-03-06 al 17-03-06	A,B,C	Yau, Julia, Yhajaia
Monitoring and Analysis	Monitoreo del río La Villa (18 puntos)	DINAPROCA	13-02-06 al 17-02-06	A,B,C,D	Yau, Julia, Yhajaia
Monitoring and Analysis	Monitoreo de Los Santos	DINAPROCA	05-03-06 al 10-03-06	A,B,C	Fabian, Yau, Julia, Ediviges, Yajaia
Monitoring and Analysis	Darien, Bocas del Toro	DINAPROCA	Septiembre 2006		
Regulation of Water Quality (Complaint)	Las Lomas, Chorrera	DINAPROCA	03 marzo 2006	E	Aristides
Regulation of Water Quality (Complaint)	Coloración Roja en el río Matasnillo	DINAPROCA	07/04/06	C	Yau
Regulation of Water Quality (Complaint)	Contaminación Juan Díaz, Polos	DINAPROCA	17 febrero de 2006		Fabian
Regulation of Water Quality (Complaint)	Posible Derrame de Hidrocarburo en la Bahía de Panamá	DINAPROCA	Junio - 2006	E	Fabian
Regulation of Water Quality (Complaint)	Posible Derrame de sustancia Desconocida en la Desembocadura del Río La Villa	DINAPROCA	26 abril 2006	E	Glaister
Regulation of Water Quality (Complaint)	Derrame de Aceite en Albrook	DINAPROCA	2006	E	Ing. Ediviges
Regulation of Water Quality (Complaint)	Contaminación Montaña de Peces río Chilibrillo	DINAPROCA	2006 C,D,E		Aristides
Regulation of Water Quality (Complaint)	Verificación de los puntos de Descarga de Empresas Melo, S.A.	DINAPROCA	06 de Julio 2006	C,D	Fabian / Adice
Regulation of Water Quality (Complaint)	Evaluación, Actualización de Los Registros de caracterización de las Empresas	DINAPROCA	18-05-06--05-06-06	A,B,C	Lic. Julia, Ediviges
Regulation of Water Quality (Complaint)		DINAPROCA	2006	B,C,D,E	Glaister Ediviges, Julia.

APPENDIX VI-4-2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2006 (Date: 30/6/2006)

Categoría de tarea\*

A: muestreo B: análisis C: elaboración de informe  
D: revista o comentario de informe E: Otro

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Verification of Effluents	Empresa Unión FENOSA (Chiquilá, Veracruz)	DINAPROCA	24-28/04/06	Lic. YAU	
Verification of Effluents	Empresa CONSTRUCTE	DINAPROCA			Lic. Glaister Ing. Edwignes
Verification of Effluents	Empresa Sea Deli Fish	DINAPROCA	2006/6/21		Ing. Edwignes
Project	Aspectos biocológicos de la entomofauna acuática en los ríos del Parque Nacional Altos de Campaña	PROTEMOCA DINAPROCA	2006	A,B,C,D,E	AIDEE
Project	Caract. de Calidad del agua en los ríos que drenan en el bosque de Manglar de la Región de Chiame hasta Cajura	PROTEMOCA DINAPROCA	2006		Y. YAU, E.D.G.J.A
Project	Uso actual del Suelo en la Sub-cuenca del Río Gutuncillo y su influencia sobre las comunidades de macroinvertebrados acuáticos. (SENACYT-MIBIO-James Cook University-ANAM)	PROTEMOCA DINAPROCA	2006		
International Committee	Comisión Técnica de Plaguicidas	DINAPROCA	2005-2006	A,B,C	Glaister
Conference	Comité Nacional De Acreditación/ Revisión del Informe del Equipo Evaluador	DINAPROCA	2006		
Conference	Reunión con los labo autorizados y MCI Prorroga a la autorización	DINAPROCA	2005/6/06		
Consultation	Aguas Recreativas, Aguas Residuales de Cafetales	DINAPROCA	2005-2006	B,C,D,E	Glaister
Consultation	Olores Molestos.	DINAPROCA	2005-2006	B,C,D,E	Fabian
Consultation	Aguas Marinas y Costeras	DINAPROCA	2005-2006	B,C,D,E	Yajaira
Consultation	Red de Diseño de Monitoreo de Calidad de Agua de Camito y Chiriquí	DINAPROCA	2006	B,C,D,E	Yajaira
Training	Investigación en tema determinado (tesis) (P( Miguel Castillo, Miguel, Leonel, Mayani y Melissa)	PROTEMOCA DINAPROCA	2006	A,B,C,D,E	
Training	Presentación del Proyecto de Técnicas de Evaluación de la Cont en Lago Las Cumbres	PROTEMOCA DINAPROCA	2006	A,B,C,D,E	Aidee, Glaister Yajaira
Training	Investigación en tema determinado (tesis) UP	PROTEMOCA	2006	A,B,C,D,E	Aidee
Training	Macroinvertebrado acuáticos como bioindicadores de la calidad del agua	DINAPROCA			
Training	Investigación en tema determinado (tesis) UP	PROTEMOCA	2006		
Training	Técnicas de evaluación de la contaminación del agua en el Cerrito, Santiago de Chile, Análisis Microbiológico de Aguas	DINAPROCA	04-05-06	C	Yajaira
Training	Conna, Santiago de Chile, Validación de Métodos Normalizados	PROTEMOCA	Junio06	B,C	Fabian
Training	Procedimiento de Registro por Equivalencia, Hotel Riande Continental	PROTEMOCA	Julio06	B,C	Glaister
Training	CONEP Planes de Adecuación y Manejo Ambiental.	PROTEMOCA	Marzo06	E	Yajaira
Training	Análisis de Contaminación Marina Dr. Murata Takayoshi	PROTEMOCA	Junio06	A,B,C.	Yajaira

APPENDIX VI-4-2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2006 (Date: 30/6/2006)

Categoría de tarea\*  
 A: muestreo B: analysis C: elaboración de informe  
 D: revista o comentario de informe E: Otro

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Training	Capacitación sobre la Norma ISO/17025 y Auditoría	DINAPROCA	Febrero, Junio 2006		Todos
Practice for Professional	Julio Arosemena UP Determinación De Metales	PROTEMOCA DINAPROCA	2006		
Practice for Professional	José Garrido UP	PROTEMOCA DINAPROCA	2005--2006	E	Lic. Yajaira Serrano
Elaboration of the Report	Compendio Informe 2004-2005	PROTEMOCA DINAPROCA			Yajaira, Yau, Julia, Edwignes Glaister, Pabian
	Monitoreo del río Pasora	PROTEMOCA	09-02-06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo de los ríos Juan Díaz	PROTEMOCA	08-03-06	A,B,C,D,E	Lic. Julia, Yau, Yajaira
	Monitoreo del Río Capira	PROTEMOCA	16/02/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo de Perequete	PROTEMOCA	16/02/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo del Río Cardenas	PROTEMOCA	03/02/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo de los ríos Río Abajo	PROTEMOCA	15/03/06	A,B,C,D,E	Lic. Glaister, Yhajaira, Julia
	Monitoreo de los ríos Río Tocumen	PROTEMOCA	07/02/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo del río Matías Hernd	PROTEMOCA	16-03-06	A,B,C,D,E	Lic. Glaister, Yhajaira, Julia
	Monitoreo de los ríos Río Tapia	PROTEMOCA	14/03/06	A,B,C,D,E	Lic. Yau, Yhajaira, Julia
	Monitoreo del Río Matasmillo	PROTEMOCA	11/04/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo del Río Caño Quebrado	PROTEMOCA	09/03/06	A,B,C,D,E	Lic. , Yau, Yhajaira, Julia
	Monitoreo del río Aguacate	PROTEMOCA	08/02/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo del Río Caimito	PROTEMOCA	01/02/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo del Río Curundú	PROTEMOCA	NIR	A,B,C,D,E	Yajaira, Yau, Julia, Edwignes
	Monitoreo de los ríos Juan Díaz	PROTEMOCA	19-04-06	A,B,C,D,E	Lic. Yau, Yhajaira, Julia
	Monitoreo de río Matías Hernandez	PROTEMOCA	18-04-06	A,B,C,D,E	Lic., Yau, Yhajaira, Julia
	Monitoreo del Río Tocumen	PROTEMOCA	22-03-06	A,B,C,D,E	Lic., Yau, Yhajaira, Julia
	Monitoreo del río Pasora	PROTEMOCA	20-04-06	A,B,C,D,E	Yau, Yhajaira, Julia
	Monitoreo del río Río Abajo	PROTEMOCA	18-04-06	A,B,C,D,E	Yau, Yhajaira, Julia
	Monitoreo del Río Cardenas	PROTEMOCA	27-04-06	A,B,C,D,E	Yau, Julia
	Monitoreo de Caño Quebrado	PROTEMOCA	30/03/06	A,B,C,D,E	Yau, Yhajaira, Julia
	Monitoreo del Río Matasmillo	PROTEMOCA	05-05-06	A,B,C,D,E	Yau, Julia
	Monitoreo del Río Capira	PROTEMOCA	03-05-06	A,B,C,D,E	Yau, Julia
	Monitoreo de Perequete	PROTEMOCA	03-05-06	A,B,C,D,E	Yau, Julia
	Monitoreo de Tapia	PROTEMOCA	31-05-06	A,B,C,D,E	Yau, Julia, Yhajaira
	Monitoreo del Río Caimito	PROTEMOCA	30/03/06	A,B,C,D,E	Yau, Julia, Edwignes

Sampling and Analysis

APPENDIX VI-4.2 List of Tasks and Services in the Laboratory of Environmental Quality of ANAM in 2006 (Date: 30/6/2006)

Categorías de tareas\*  
 A: muestreo B: análisis C: elaboración de informe  
 D: revisión o comentario de informe E: Otro

Classification	Name of Task	Request from	Period	Category of Task*	Person in charge
Evaluation of Water Quality using Bioindicator of Aquatic Insects about principle rivers in the Panama City Area	Monitoreo del Río Curundu	PROTEMOCA	11/04/06	A,B,C,D,E	Yajaira, Yau, Julia, Edwiviges
	Monitoreo del río Aguacate	PROTEMOCA	04-04-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del Río Matías Hernández	PROTEMOCA	12-07-06	A,B,C,D,E	Yajaira, Yau, Julia, Edwiviges
	Monitoreo de Pacora	PROTEMOCA	07-07-06	A,B,C,D,E	Yajaira, Yau, Julia, Edwiviges
	Monitoreo de los ríos Matasnillo	PROTEMOCA	30-06-06	A,B,C,D,E	Yajaira, Yau, Julia, Edwiviges
	Monitoreo del río Tapia	PROTEMOCA		A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del río Tocumen	PROTEMOCA	27-06-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del río Río Abajo	PROTEMOCA	06-07-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del Río Cardenas	PROTEMOCA	06/06/06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo de río Calmito	PROTEMOCA	08-06-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del río Perereque	PROTEMOCA	20-06-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo de Caño Quebrado	PROTEMOCA	12-07-06	A,B,C,D,E	
	Monitoreo del río Aguacate	PROTEMOCA	14/06/06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del río Capira	PROTEMOCA	20-06-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del río Juan Díaz	PROTEMOCA	04-07-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del Río Curunhu	PROTEMOCA	12-07-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo del Río Pacora	PROTEMOCA	10-07-06	A,B,C,D,E	Yau, Julia, Edwiviges
	Monitoreo de la Bahía de Panamá	PROTEMOCA	20-30 /06/06	A,B,C,D,E	Yau, Edwiviges, Glaiter, Yajaira
	Monitoreo del río Juan Díaz	PROTEMOCA	08/03/06--	A,B,C,D	Alídee
	Monitoreo del río Río Abajo	DINAPROCA	04/07/06	A,B,C,D	Alídee
Monitoreo del Río Matías Hernández	PROTEMOCA	15/03/06--	A,B,C,D	Alídee	
Monitoreo del Río Matías Hernández	DINAPROCA	06/07/06	A,B,C,D	Alídee	
Monitoreo del río Tocumen	PROTEMOCA	16/03/06--	A,B,C,D	Alídee	
Monitoreo del Río Pacora	DINAPROCA	12/07/06	A,B,C,D	Alídee	
Monitoreo del Río Pacora	DINAPROCA	2006/3/22	A,B,C,D	Alídee	
Monitoreo del Río Pacora	PROTEMOCA	20/04/06--	A,B,C,D	Alídee	
Monitoreo del Río Cardenas	DINAPROCA	07/07/06	A,B,C,D	Alídee	
Monitoreo del río Perereque	PROTEMOCA	27/04/06--	A,B,C,D	Alídee	
Monitoreo del río Perereque	DINAPROCA	06/06/06	A,B,C,D	Alídee	
Monitoreo del río Capira	PROTEMOCA	03/05/06--	A,B,C,D	Alídee	
Monitoreo del río Curundu	DINAPROCA	20/06/06	A,B,C,D	Alídee	
Monitoreo de los ríos Matasnillo	PROTEMOCA	03/05/06--	A,B,C,D	Alídee	
Monitoreo de los ríos Matasnillo	DINAPROCA	20/06/06	A,B,C,D	Alídee	

**APPENDIX-VI-5 Summary of Technical Seminar for PROTEMOCA**

<b>Title</b>	<b>Date, Place and Number of Participants</b>	<b>Time</b>	<b>Theme</b>	<b>Name</b>
1st Technical Seminar	Fecha: 22 de Marzo, 2004 Lugar: Instalaciones de la ANAM, Albrook, Edificio 804, Planta Baja, Videoteca Número de Participantes: ?	10:00 – 12:00	Análisis Bacteriológico en Panama	Ing. Yuuko Fujii, Química Experta, Agencia de Cooperación Internacional del Japón
2nd Technical Seminar	Fecha: 17 de Septiembre, 2004 Lugar: Laboratorio de Calidad del Agua en ANAM Número de Participantes: 22	9:00 – 9:40	Aseguramiento de la Calidad de la Información en los laboratorios de Análisis Ambientales	Magister Rubén Berdugo, CENMA, Chile
		9:40 – 10:20	Monitoreo y Técnicas de Análisis en Calidad del Agua	Licenciado Genghis Yau, Químico del Laboratorio de Calidad del Agua de la ANAM
		10:20 – 10:50	Receso	Todos
		10:50 – 11:20	Bases Fundamentales para Análisis de Metales	Licenciado Fabián Maregocio, Químico del Laboratorio de Calidad del Agua de la ANAM
		11:20 – 11:40	Introducción a la Biología del Agua	Dr. Kurata Takayoshi, Biológico Acuático Experto, Agencia de Cooperación Internacional del Japón
		11:40 – 12:00	Discusión General	Todos
3rd Technical Seminar	Fecha: 20 de Septiembre, 2004 Lugar: Laboratorio de Calidad del Agua en ANAM Número de Participantes: 15	9:00 – 9:20	Palabras de Bienvenida y presentación de los expositores	Lic. Glaister Tejada, Químico del Laboratorio de Calidad del Agua de la ANAM
		9:20 – 9:30	Objetivo del Entrenamiento	Ing. Kenji Fukushima, Jefe Asesor del Proyecto, Agencia de Cooperación Internacional del Japón
		9:30 – 10:30	Introducción "Insectos Acuáticos como Indicadores de contaminación de las aguas de los ríos". "Técnicas de Monitoreo de Biología de Agua" Experiencias en Japón	Dr. Kurata Takayoshi, Biológico Acuático Experto, Agencia de Cooperación Internacional del Japón
		10:30 – 10:40	Receso	Todos
		10:40 – 11:30	Presentación de los ríos que serán monitoreados, del equipo con el que cuenta el Laboratorio de Calidad de Agua y del Programa del	Lic. Yajaira Serrano, Biológica del Laboratorio de Calidad del Agua de la ANAM
		11:30 – 12:00	Preguntas y respuestas	Todos
		12:00	Clausura	
4th Technical Seminar	Fecha: 14 de Octubre, 2004 Lugar: Laboratorio de Calidad del Agua en ANAM Número de Participantes: 22	10:00 – 10:10	Palabras de Bienvenida	Ing. Kenji Fukushima, Jefe Asesor del Proyecto, Agencia de Cooperación Internacional del Japón
		10:10 – 11:00	Presentación e Interpretación de los resultados preliminares del Taller	Dr. Kurata Takayoshi, Biológico Acuático Experto, Agencia de Cooperación Internacional del Japón
		11:10 – 11:20	Receso	Todos
		11:20 – 11:40	Comparación de la Metodología Utilizada en el Programa de Maestría de Entomología de la Universidad de Panamá	Dra. Yolanda Agulla, Directora Maestría Entomología, Universidad de Panamá
		11:40 – 12:00	Preguntas y respuestas	Todos
		12:00	Clausura	
5th Technical Seminar	Fecha: 14 de Diciembre, 2004 Lugar: Laboratorio de Calidad del Agua en ANAM Número de Participantes: 20	09:00 - 09:15	Inscripción de los participantes	Todos
		09:15 - 09:30	Palabras de Bienvenida por la Directora Nacional de Protección a la Calidad Ambiental	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
		09:30 - 09:45	Palabras por la Agencia de Cooperación Internacional del Japón (JICA)	Ing. Kenji Fukushima, Jefe Asesor del Proyecto, Agencia de Cooperación Internacional del Japón
		09:45 - 10:05	Aseguramiento de Calidad en el Laboratorio	Lic. Julia Pineda, Jefa Encargada del Laboratorio
		10:05 - 10:20	Implementación de la Metodología para Análisis de Aceites y Grasas	Yariela Cedeño, Estudiante Practicante de la Escuela de Química de la UP
		10:20 - 10:40	Receso – Coffee Break	Todos
		10:45 - 11:00	Entrenamiento en Análisis de Plaguicidas en Aguas Superficiales por Cromatografía de Gases	Lic. Glaister Tejada, Químico del Laboratorio de Calidad del Agua de la ANAM
		11:00 - 11:20	Plaguicidas, Experiencia en Japón	Ing. Sawaki Natsuji, Químico Experto, Agencia de Cooperación Internacional del Japón
		11:20 – 12:20	Análisis de Sustancias Químicas Peligrosas	Mag. Tomoko Fukaya, Química Experta, Agencia de Cooperación Internacional del Japón
		12:20 - 12:30	Preguntas, Respuestas y Recomendaciones	Todos
		12:30	Clausura	

**APPENDIX-VI-5 Summary of Technical Seminar for PROTEMOCA**

Title	Date, Place and Number of Participants	Time	Theme	Name
6th Technical Seminar	Fecha: 3 de Octubre, 2005 Lugar: Instalaciones de la ANAM, Albrook, Edificio 804, Planta Baja, Videoteca Número de Participantes: 28	09:00 - 09:15	Inscripción de los participantes	Todos
		09:15 - 09:30	Palabras de Bienvenida por la Directora Nacional de Protección a la Calidad Ambiental	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
		09:30 - 09:40	Palabras por la Agencia de Cooperación Internacional del Japón (JICA)	Ing. Kenji Fukushima, Jefe Asesor del Proyecto, Agencia de Cooperación Internacional del Japón
		09:40 - 10:10	La Gerencia para el Análisis Trasas (Estudio de caso de Metales Pesados)	Ing. Yasuko Kamegai, Química Experta, Agencia de Cooperación Internacional del Japón
		10:10 - 10:45	Resultados de Entrtamiento en Metales Pesados	Lic Fabián Maregocio, Químico Jefe del Laboratorio de Calidad Ambiental de la ANAM
		10:45 - 10:55	Preguntas, Respuestas y Recomendaciones	Todos
		10:55 - 11:10	Receso - Coffee Break	Todos
		11:10 - 11:25	Validación de Metodos de Análisis (DBO5, S.S AyG)	Lic. Genghis Kan Yau, Químico del Laboratorio de Calidad Ambiental de la ANAM
		11:25 - 11:40	Implementación de la Norma ISO-17025, en el Laboratorio de Calidad Ambiental	Ing. Eduvigis Núñez S, Encargado del Aseguramiento de la Calidad, Laboratorio de Calidad Ambiental de la ANAM
		11:40 - 11:55	Guía para Redondear los Números en los Resultados de los Análisis	Ing. Natsuji Sawaki, Químico Experto, Agencia de Cooperación Internacional del Japón
		11:55 - 12:10	Preguntas, Respuestas y Recomendaciones	Todos
		12:10	Clausura	
7th Technical Seminar	Fecha: 6 de Junio de 2006 Lugar: Instalaciones de la ANAM, Albrook, Edificio 804, Planta Baja, Videoteca Número de Participantes: 19	09:00 - 09:10	Presentación de los participantes en la Reunión	Moderadora: Lic. Yajaira Serrano, Especialista de la Sección de Microbiología del Laboratorio de Calidad Ambiental
		09:10 - 09:20	Palabras de Bienvenida por la Directora Nacional de Protección a la Calidad Ambiental	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
		09:20 - 09:30	Palabras sobre PROTEMOCA por la Agencia de Cooperación Internacional del Japón (JICA)	Ing. Kenji Fukushima, Jefe Asesor del Proyecto
		09:30 - 9:50	Presentación de las Actividades del Laboratorio de Calidad Ambiental	Lic. Glaister Tejada, Especialista de la Sección de Cromatografía del Laboratorio de Calidad Ambiental,
		09:50 - 10:30	Proyecto Técnicas de Monitoreo de la Calidad del Agua en el Lago Las Cumbres: Antecedentes, Objetivos, Metodología, Resultados Esperados, Beneficiarios.	Dr. Belgis Chlat, Zambrano, Investigador Asesor/Universidad de Panamá Biol. Aydeé Cornejo-Remice M.Sc., Sección de Invertebrados Acuáticos, Laboratorio de Calidad
		10:30 - 10:45	Palabras por parte de la Junta Comunal de Alcalde Díaz	Dr. Quibian Pannay, Honorable Representante J.C. Alcalde Díaz
		10:45 - 11:00	Palabras por parte de la Compañía Martínez S. A., administradores del Lago Las Cumbres	Sra. Ana Posse Martínez, Gerente General Compañía Martínez S.A.
		11:00 - 11:15	Palabras por parte de la Asociación Amigos del Lago Las Cumbres	Lic. Ruby de Varcacia, Presidenta de la Asociación Amigos del Lago Las Cumbres
		11:15 - 11:30	Preguntas, recomendaciones, sugerencias	Todos
		11:30	Clausura- Refrigerio	Todos
8th Technical Seminar	Fecha: 23 de Junio de 2006 Lugar: Auditorio Bernardo Lombardo Aula A-11, Universidad de Panamá Número de Participantes: 27	09:00- 09:15	Inscripción de los participantes	Todos
		09:15 - 09:30	Palabras de Bienvenida por la Directora Nacional de Protección a la Calidad Ambiental	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
		09:30 - 09:40	Palabras por la Agencia de Cooperación Internacional del Japón	Ing. Kenji Fukushima, Jefe Asesor del Proyecto
		09:40 - 09:50	Objetivos de la Capacitación "Medidas de Contaminación Marina en Panamá"	Lic Yajaira Serrano, Laboratorio de Calidad Ambiental de la ANAM
		09:50 - 10:50	Resultados de la Visita del Experto Japonés Dr. Kurata Takayoshi "Medidas de Contaminación Marina en Panamá"	Dr. Kurata Takayoshi, Experto Japonés
		10:50 - 11:15	Preguntas y respuestas	Todos
		11:15 - 11:30	Refrigerio Coffe Break	Todos



**APPENDIX-VI-6 Summary of Joint Coordination Committee for PROTEMOCA**

Title	Date, Place and Number of Participants	Time	Theme	Name
1st Joint Coordination Committee	Fecha: 30 de Noviembre, 2004 Lugar: Hotel Riland Continental, Departamento de Banquetes, Salon Pacifico Número de Participantes: 25	08:00 - 08:30	Inscripción de los participantes	Todos
		08:30 - 08:40	Palabras de Bienvenida por la Administradora del Proyecto Técnicas de Monitoreo de la Calidad del Agua	Ing. Eduardo Reyes, Sub-Administrador General de la ANAM
		08:40 - 08:50	Palabras por la Agencia de Cooperación Internacional del Japón (JICA)	Lic. Naoki Kai, Representante Permanente de la JICA en Panamá
		08:50 - 09:05	Rol del Proyecto Técnicas de Monitoreo de la Calidad del Agua en ANAM	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
		09:05 - 09:20	Presentación de los Miembros del Comité	Todos
		09:20 - 09:35	Situación actual y Matriz de Diseño del Proyecto Técnicas de Monitoreo de la Calidad del Agua	Ing. Kenji Fukushima, Jefe Asesor del Proyecto, Agencia de Cooperación Internacional del Japón
		09:35 - 09:50	Receso - Coffee Break	Todos
		09:50 - 10:10	Creando capacidades en análisis de Plaguicidas	Lic. Glaister Tejada, Químico del Laboratorio de Calidad del Agua de la ANAM
		10:10 - 10:30	Creando capacidades en análisis de metales	Lic. Fabián Maregocio, Químico del Laboratorio de Calidad del Agua de la ANAM
		10:30 - 10:50	Creando capacidades en monitoreo de calidad del agua	Lic. Genghis Kan Yau, Químico del Laboratorio de Calidad del Agua de la ANAM
		10:50 - 11:10	Creando capacidades en monitoreo de insectos acuáticos	Lic. Yajaira Serrano, Bióloga del Laboratorio de Calidad del Agua de la ANAM
		11:10 - 11:30	Control y aseguramiento de la calidad en el monitoreo de la calidad del agua	Lic. Julia Pineda, Química del Laboratorio de Calidad del Agua de la ANAM
		11:30 - 11:45	Expectaciones Futuras	Ing. Guillermo Pugliese, Jefe del Departamento de Control de la Calidad Ambiental de la ANAM y
		11:45 - 12:15	Discusión	Todos
		12:15 - 12:25	Clausura del Evento	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
12:25 - 14:00	Clausura	Todos		
2nd Joint Coordination Committee	Fecha: 28 de Julio, 2005 Lugar: Hotel Bristol Número de Participantes: 27	8:00-8:30	Inscripción de los participantes	Todos
		8:30- 8:45	Palabras de Bienvenida por la Directora Nacional de Protección a la Calidad Ambiental y Gerente de proyecto.	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental
		8:45-9:00	Palabras por la Agencia de Cooperación Internacional del Japón (JICA)	Lic. Naoki Kai, Representante Permanente de la JICA en Panamá
		9:00-9:15	Presentación de los miembros del Comité	Todos
		9:15-9:35	Resultados obtenidos de la ejecución del Proyecto Técnica de Monitoreo de la Calidad Ambiental	Lic. Fabián Maregocio, Químico del Laboratorio de Calidad del Agua de la ANAM
		9:35-9:50	Receso - Coffee Break	Todos
		9:50-10:10	Cuestionario y explicación de tema de discusión	Ing. Kenji Fukushima, Jefe Asesor del Proyecto, Agencia de Cooperación Internacional del Japón
		10:10-10:20	Metodología para las mesas de trabajo	Dr. Belgis Chial, Profesor Investigador, Universidad de Panamá
		10:20-11:50	Discusión sobre oportunidades de mejora e identificación de necesidades básicas de cooperación para el proyecto	Miembro de Comité
		11:50-12:15	Presentación de los resultados y propuesta	Coordinadores
		12:15-12:30	Palabras de Clausura	Lic. Harley Mitchell, Jefe Asesoría Legal ANAM por la Dra Ligia Castro de Doens. Administradora General
		12:30	Clausura	Todos

**APPENDIX-VI-6 Summary of Joint Coordination Committee for PROTEMOCA**

Title	Date, Place and Number of Participants	Time	Theme	Name
3rd Joint Coordination Committee	Fecha: 20 de enero de 2006 Lugar: Crown Plaza Panamá (Antiguo Hotel Holiday Inn) Número de Participantes: 36	09:00 - 09:20	Palabra de apertura	Lic. Natalia Young - Gerente del Proyecto y Directora de Dirección Nacional de Protección de la Calidad Ambiental de la Autoridad Nacional del Ambiente Lic. Naoki Kai - Representante Residente, Oficina en Panamá - JICA
		09:20 - 10:30	Explicación de los resultados de la Evaluación Final del Proyecto evaluador	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental Lic. Kenichi Tanaka, Jefe Asesor de Experto de JICA
		10:30 - 10:45	RECESO	Todos
		10:45 - 11:30	Firma de Minutas Resumen de Evaluación (Jefe de Equipo evaluador japonés) Palabra de Administradora de ANAM	Dra. Ligia Castro de Doens - Directora de Proyecto y Administradora de la Autoridad Nacional del Ambiente Lic. Natalia Young - Gerente del Proyecto y Directora de Dirección Nacional de Protección de la Calidad Ambiental de la Autoridad Nacional del Ambiente Lic. Naoki Kai - Representante Residente, Oficina en Panamá - JICA
		11:30 - 13:00	Almuerzo	Todos
4th Joint Coordination Committee	Fecha: 1 de Septiembre, 2006 Lugar: Número de Participantes:	09:00 - 09:20	Palabra de apertura	Lic. Natalia Young - Gerente del Proyecto y Directora de Dirección Nacional de Protección de la Calidad Ambiental de la Autoridad Nacional del Ambiente Lic. Naoki Kai - Representante Residente, Oficina en Panamá - JICA
		09:20 - 10:30	Explicación de los resultados de la Evaluación Final del Proyecto evaluador	Lic. Natalia Young, Directora Nacional de Protección a la Calidad Ambiental Lic. Kenichi Tanaka, Jefe Asesor de Experto de JICA
		10:30 - 10:45	RECESO	Todos
		10:45 - 11:30	Firma de Minutas Resumen de Evaluación (Jefe de Equipo evaluador japonés) Palabra de Administradora de ANAM	Dra. Ligia Castro de Doens - Directora de Proyecto y Administradora de la Autoridad Nacional del Ambiente Lic. Natalia Young - Gerente del Proyecto y Directora de Dirección Nacional de Protección de la Calidad Ambiental de la Autoridad Nacional del Ambiente Lic. Naoki Kai - Representante Residente, Oficina en Panamá - JICA
		11:30 - 13:00	Almuerzo	Todos

## APPENDIX-VI-7 Elaborated Documents within the Project Period

### **【Brochure, News Letter】**

- Brochure of PROTEMOCA

### **【Reports】**

- The 1<sup>st</sup> Information of Water Quality Monitoring of Watershed in the Republic of Panama in 2002 - 2003  
(Primer Informe de Monitoreo de la Calidad del Agua en las Cuencas Hidrográficas de Panamá Años 2002 - 2003)
- The 2<sup>nd</sup> Information of Water Quality Monitoring of Watershed in the Republic of Panama in 2004 - 2005  
(Primer Informe de Monitoreo de la Calidad del Agua en las Cuencas Hidrográficas de Panamá Años 2002 - 2003)

### **【Manual for Laboratory】**

- Standardized Operational Procedures of Water Quality Analysis for ANAM Laboratory (SOPs : 15 parameters)
- Manual of Quality for ANAM laboratory
- Register for Chemical Reagent for ANAM Laboratory

### **【Report and Documents of C/P Training in Japan】**

- Environmental Policy and Environmental Management System (Lic. Natalia Young)
- Pesticide Analysis (Lic. Glaister Tejada)
- Water Quality Monitoring Technique (Lic. Genghis Kan Yau)
- Heavy Metal Analysis (Lic. Fabian Maregocio)
- Monitoring of Water Environment, Course of Group Training (Lic. Julia Pineda)
- Bacteriology/Aquatic Biology (Lic. Yajaira Serrano)

### **【Training Report by Short-term Expert from Japan】**

- Bacteriology (in English)
- Evaluation of Chemical Analysis (in English)
- Investigation of Aquatic Biology (in English)
- Pesticide Analysis (in English)
- Heavy Metal Analysis (in English and Spanish)
- Measurements for Marine Water Pollution (in English and Spanish)

### **【Documents of Presentation in Technical Seminar】**

- The 1<sup>st</sup> Technical Seminar of PROTEMOCA (Bacteriology)
- The 2<sup>nd</sup> Technical Seminar of PROTEMOCA (Evaluation of Chemical Analysis)
- The 3<sup>rd</sup> Technical Seminar of PROTEMOCA (Investigation of Aquatic Biology)
- The 4<sup>th</sup> Technical Seminar of PROTEMOCA (Review of Investigation of Aquatic Biology)
- The 5<sup>th</sup> Technical Seminar of PROTEMOCA (Pesticide Analysis)
- The 6<sup>th</sup> Technical Seminar of PROTEMOCA (Heavy Metal Analysis and Accuracy Control)
- The 7<sup>th</sup> Technical Seminar of PROTEMOCA (Water Quality Monitoring for Lake)
- The 8<sup>th</sup> Technical Seminar of PROTEMOCA (Measurements of Marine Water Pollution)

**【Discussion Paper of Joint Coordination Committee】**

- Presentation of the PROTEMOCA in the 1<sup>st</sup> Joint Coordination Committee
- Report of Discussion Paper and Questionnaire in the 2<sup>nd</sup> Joint Coordination Committee
- Report of Intermediate Evaluation of PROTEMOCA in the 3<sup>rd</sup> Joint Coordination Committee
- Report of Final Evaluation of PROTEMOCA in the 3<sup>rd</sup> Joint Coordination Committee

**【Training Report of Japan Chile Partnership Program 】**

- Report of JCPP by Laboratory Personal
  - Methodology of Analysis of Physical Chemistry (Lic. Genghis Kan Yau)
  - Methodology of Heavy Metal Analysis (Lic. Fabian Maregocio)
  - Methodology Analysis of Bacteriology (Lic. Yajaira Serrano)
  - Certification of ISO-17025 (Lic. Eduviges Núñez)
  - Quality Control of Analytical Laboratory (Lic. Fabian Maregocio)
- Inspection Report of ANAM laboratory by Experts from CENMA, Chili (February 2006)
- Inspection Report of ANAM laboratory by Experts from CENMA, Chili (June 2006)

**【Others】**

- Study of Hazardous Chemical Substance in Panama (Database, Subcontract)
- For Comprehension and the Future of ANAM Laboratory (Documents)
- Others, a lot of reports for environmental monitoring in DINAPROCA

## Appendix-VII Chronological Record of the Project

### Revisión Cronologica del PROTEMOCA

[ Año 2004 ]

- 17 de mar. Entrega de credenciales del Jefe Asesor, Ing. Fukushima al Administrador General encargado, Lic. Gonzalo A. Menéndez, en la oficina principal de la Autoridad Nacional del Ambiente.
- 1 de abr. Entrega de credenciales del experto Sawaki en la oficina de ANAM.
- 16 de abr. Reunión ordinaria en la oficina de ANAM.
- 23 de abr. Reunión ordinaria en la oficina de ANAM.
- 13 de mayo Visita de dos personas relacionadas de JCCP de Chile.
- 14 de mayo Reunión ordinaria en la oficina de ANAM.
- 27 de mayo Reunión general y agasajo de la jefatura de ANAM con empleados del laboratorio, experto del proyecto y encargado de JICA.
- 31 de mayo Visita del laboratorio de análisis del Instituto de Tecnología Científica (INDICASAT).
- 2 de jun. Visita del Sr. Anguizola, ex administrador general de ANAM.
- 16 de jun. Visita por parte del laboratorio de análisis de la Universidad de Panamá.
- 18 de jun. Reunión ordinaria en la oficina de ANAM.
- 23 de jun. Llegada del líder Takahashi, señores Imaki y Shima, del proyecto de tecnología de JICA denominado "PROCCAPA".
- 29 de jun. Visita de dos consejeros por el programa "CCCP" de Chile.
- 15 de jul. Distribución de folleto de proyecto y reunión sobre la compra de equipos entre los empleados del laboratorio.
- 22 de jul. Visita al cuarto de análisis químico en la Universidad Tecnológica de Panamá.
- 12 de ago. Participación al seminario de informe del medio ambiente del 2004 bajo el auspicio de ANAM y la visita del ex director Menéndez al laboratorio.
- 23-25 de ago. Participación del laboratorio de investigación de la calidad de agua por insecticida en Cerro Punta, Chiriquí (Investigación de ANAM asociada con FUNDECEP).
- 30 de ago. Visita cordial del Sr. Rubén Verdugo, experto chileno del análisis químico y su evaluación, a la oficina de JICA y a la embajada de Chile.
- 31 de ago. Fiesta de despedida del director general Bolívar Pérez en la oficina de ANAM.

- 1 de sep. Toma de posición de Dra. Ligia Castro como la nueva administradora general de ANAM, nombrada por el nuevo gobierno.
- 10 de sep. Llegada del Sr. Kurata, experto de término corto en biología acuática.
- 13 de sep. Primera reunión con el nuevo administrador general de ANAM, Dra. Ligia Castro con la presencia de JICA y PROCAPPA.
- 15 de sep. Visita al salón de entomología de la Universidad de Panamá y la sección del monitoreo de ANAM, junto con el experto Kurata.
- 17 de sep. Apertura de seminario tecnológico de la evaluación de resultado de análisis, etc., presentado por el experto chileno Rubén Verdugo y personal del labo.
- 19 de sep. Envío, por espacio de dos meses, de la Licenciada Julia Pineda al Japón para entrenamiento en grupo, del monitoreo de calidad del agua.
- 20 de sep. Apertura de seminario tecnológico de la investigación de insectos acuáticos y la metodología de evaluación, por el experto Kurata personal del laboratorio.
- 22 de sep. Investigación conjunta de seres insectos acuáticos en los ríos de la ciudad, de la Universidad de Panamá, la sección de monitoreo de ANAM y personal del laboratorio de ANAM.
- 22 de sep. Investigación de la calidad del agua inundada en la ciudad de Panamá, por la orden extraordinaria del Presidente.
- 24 de sep. La quinta reunión ordinaria (C/P, JICA y experto del proyecto).
- 27 de sep. Participación al proyecto de investigación de la contaminación de agua en la bahía de Panamá, por la Autoridad Portuaria y SENACYT (Equipos prestados).
- 29 de sep. Participación del consejero principal Fukushima y el experto Kurata al seminario de biología acuática, ofrecido por la profesora Yolanda, en el salón de entomología de la Universidad de Panamá.
- 30 de sep. Retiro del director Bolívar Pérez y toma de posición de la directora general de la calidad ambiental, Licda. Natalia Young como C/P.
- 4 de oct. Enseñanza a los alumnos de la escuela japonesa en Panamá de la investigación de los insectos acuáticos en el río Juan Díaz, como parte de la clase motivadora, con la ayuda del personal del laboratorio de ANAM.
- 6 de oct. Reunión del gerente, sub-gerente de JICA y la nueva directora general, Licda. Natalia Young en la jefatura de ANAM.
- 14 de oct. Apertura de un seminario tecnológico en el laboratorio de ANAM por el experto Kurata de la biología acuática y personal del laboratorio de ANAM  
Visita de la administradora Licda. Natalia Young al laboratorio.
- 15 de oct. Entrega de credenciales del Sr. Kurata, experto de biología acuática en las oficinas de JICA, embajada de Japón y ANAM, a su regreso al Japón.
- 31 de oct. Presentación del plan de actividades del año 2005 a la oficina de JICA en

Panamá.

- 12 de nov. Llegada del Sr. Fukaya, experto de término corto de materiales químicos peligrosos.
- 15 de nov. Visita cordial del gerente y sub-gerente de JICA, al sub-administrador Lic. Eduardo Reyes, en la jefatura de ANAM.
- 20 de nov. Regreso de la Licda. Julia Pineda, empleada del laboratorio, después del entrenamiento en grupo, de duración de dos meses en el Japón.
- 23 de nov. Filmación y entrevista en televisión y prensa, en el laboratorio de ANAM.
- 30 de nov. Apertura del comité general de PROTEMOCA, en el Hotel Continental de la ciudad de Panamá.
- 3 de dic. Participación en la reunión de seguridad y de los expertos, en la oficina de JICA.
- 5 de dic. Viaje de trabajo del personal de C/P, JICA y el consejero principal Fukushima a Chile, para coordinar el entrenamiento en un tercer país, de acuerdo al plan de JCPP.
- 11 de dic. Navegación de prueba del bote de muestreo en la bahía de Panamá, por el experto Sawaki y personal del laboratorio.
- 14 de dic. Apertura del seminario tecnológico por el Sra. Fukaya, experto de la sustancia química, en el laboratorio de ANAM.
- 15 de dic. Reporte del viaje de trabajo a Chile en la jefatura de ANAM (Directora Licda. Natalia Young, Ing. Guillermo Pugliese y personal del laboratorio, Lic. Fabian Maregocio).
- 17 de dic. Entrega de credenciales de Sra. Fukaya, experto de la sustancia química peligrosa en la oficina de JICA, embajada de Japón y ANAM, a su regreso al Japón, después de una corta visita.
- 21 de dic. Reunión ordinaria en ANAM con la Licda. Natalia Young e Ing. Guillermo Pugliese, del asunto de PDM, PO y JCPP.
- 23 de dic. Presentación de solicitud de compra de los equipos y materiales del 2004, a la oficina de JICA de Panamá.
- 28 de dic. Cambio de opiniones de la administración del ambiente en Panamá con los señores Muramatsu, Tsuji y Moriyuki, voluntarios "seniors" de INDICASAT, en el Laboratorio de ANAM.
- [ Año 2005 ]
- 4 de feb. Entrega de credenciales y la presentación del informe del Jefe Asesor, Ing. Fukushima en la oficina de JICA de Panamá, embajada de Japón y ANAM, a su regreso al Japón.
- 28 de feb. Llegada de la misión argentina de investigación sobre la enseñanza tecnológica del análisis de la calidad de agua.

- 2 de mar. Renuncia de Srta. Gina Vaca, secretaria del laboratorio de ANAM y el reemplazo por la Sra. Telvys Guerra.
- 14 de mar. Renuncia del asistente del proyecto.
- 21 de mar. Reunión ordinaria en ANAM.
- 8 de abr. Entrega de credenciales del Jefe Asesor, Ing. Fukushima en la oficina de JICA, de embajada de Japón y ANAM a su llegada a Panamá.
- 22 de abr. Reunión ordinaria en ANAM.
- 26 de abr. Monitoreo de la calidad de agua en la ciudad de Panamá (con relación al proyecto, duración de una semana).
- 16 de may. Inicio de trabajo del Ing. Eduviges Núñez (44 años) en el laboratorio.
- 20 de may. Reunión ordinaria en ANAM.
- 23 de may. Regreso temporal del experto Sawaki al Japón, por un mes.
- 8 de jun. Dos encargados del monitoreo de la Autoridad Marítima recibieron una enseñanza de manejo de los equipos del personal del laboratorio.
- 9 de jun. Dos consultores cubanos dictaron un curso del control de calidad e ISO.
- 15 de jun. Inicio de la publicación del proyecto en la página Web de ANAM.
- 16 de jun. Dos estudiantes de la Universidad Tecnológica de Panamá reciben enseñanza del análisis de metal pesado en el agua residual de mina, por parte del personal del laboratorio, por cuatro semanas.
- 19 de jun. Envío de un empleado del laboratorio a Chile para un entrenamiento de dos semanas.
- 20 de jun. Exhibición de un panel de propaganda de P/J durante el mes de medio ambiente, en la oficina de ANAM, por una semana.
- 24 de jun. Participación en la ceremonia de apertura del mes de medio ambiente, en la oficina de ANAM (Suspensión de la presentación del personal del laboratorio y Ing. Fukushima).
- 10 de jul. Envío a Chile de Lic. Genghis Kan Yau del laboratorio, hasta el 31 de julio para entrenamiento, de acuerdo al programa de JCPP.
- 14 de jul. Consejo y reunión con la directora de ANAM (suspendido), visita de RPC canal 4. Llegada del experto Hori de la prevención de desastre en Centro América.
- 18 de jul. Renuncia del coordinador del proyecto Ing. Guillermo Pugliese, y la Lcda. Ileana Taylor lo reemplazó.
- 19 de jul. Reunión ordinaria con la contra parte en la oficina de JICA de Panamá.
- 28 de jul. Apertura de comisión general de ajuste en el Hotel Bristol.



- 4 de ago. Visita de Sr. Eshima, voluntario de análisis del agua potable, asignado en el Ministerio de Salud.
- 9 de ago. Inventario de los equipos del laboratorio (reactivos y envases de vidrio) y preparación del listado de inventario, hasta fin de agosto.
- 12 de ago. Llegada de la experta Kameumi, con estadía corta (hasta 5 de octubre), enviada por Kokusai Kougyou.
- 16 de ago. Visita cordial de la experta a la oficina de JICA de Panamá y conversación breve.
- 17 de ago. Visita cordial de la experta a la oficina de ANAM y conversación breve.
- 6 de sep. Reunión ordinaria con la contra parte en la oficina de JICA de Panamá.
- 21 de sep. Investigación preparatoria del monitoreo de la calidad de agua en la bahía de Panamá (por el bote comprado por el proyecto).
- 26 de sep. Participación de todo el personal del laboratorio a la clase de estudio de ISO, Presentación por el Ing. Eduviges Núñez, y pregunta y respuesta en el laboratorio de ANAM.
- 3 de oct. Apertura de seminario tecnológico de metal pesado por la experta Kamegai y Lic. Fabian Maregocio, en la oficina de ANAM.
- 4 de oct. Informe de actividad de la experta Kamegai en la oficina de JICA de Panamá y visita cordial a la embajada de Japón.
- 5 de oct. Salida de la experta Kamegai y regreso temporal del Jefe Asesor, Ing. Fukushima, hasta el 13 de nov., por el trabajo interno en Japón.
- 12 de oct. Robo del motor del bote de muestreo comprado por JICA.
- 13 de oct. Reunión de JICA y ANAM, relacionada con el robo; mover el bote a ANAM
- 14 de oct. Visita cordial de Lic. Fabian Maregocio a la oficina de JICA, relacionada al entrenamiento en Chile por JCPP.
- 24 de oct. Reunión de explicación sobre la licitación para la mejora del laboratorio y reunión interna del laboratorio.
- 15-29 de oct. Entrenamiento de Lic. Fabian Maregocio de CENMA en Chile, por JCPP; el experto Sawaki lo acompañó por una semana.
- 26-27 de oct. Examen de calibración de organización de análisis por el programa del Ministerio de Comercio e Industrias (examen de inter-laboratorio, COD, BOD).
- 28 de oct. Licitación sobre la mejora del laboratorio.
- 14 de nov. Llegada del Jefe Asesor, Ing. Fukushima y reunión en JICA y ANAM.
- 16 de nov. Reunión con el personal del Banco Mundial y Ministerio de Economía y Finanzas del proyecto del Banco Mundial en Panamá.

- 23 de nov. Reunión ordinaria del proyecto en la oficina de JICA de Panamá, sobre la preparación de la evaluación intermedia.
- 30 de nov. Entrenamiento inicial por un técnico americano del medidor de análisis de mercurio, que llegó el día 23 de nov..
- 2 de dic. Reunión con el encargado de JBIC sobre el arreglo del alcantarillado en la oficina de JICA.
- 5 de dic. Visita del Sr. Ejima, voluntario del análisis de la calidad de agua.
- 6 de dic. Cambio de opiniones con los señores Tsuji y Moriyuki, voluntarios "seniors" sobre el control de los equipos de análisis; visita de Sr. Misawa, gerente de la oficina de JICA en Nicaragua y ex gerente de JICA de Panamá.
- 13 de dic. Reunión ordinaria del proyecto, en la oficina de JICA, sobre la preparación de la evaluación intermedia; reunión con la misión de evaluación general a través de la televisión.
- 15 de dic. Visita del consultor especial del control de calidad en laboratorio, con relación al proyecto de la Organización de Naciones Unidas.
- 19 de dic. Reunión ordinaria del proyecto, en la oficina de JICA, sobre la preparación de la evaluación intermedia.
- 20-22 de dic. Acompañamiento del consejero principal Fukushima al monitoreo de calidad del agua en Cerro Punta, Chiriquí, de la contaminación de plaguicidas.
- 30 de dic. Cierre del trabajo del año; agasajo.
- [ Año 2006 ]
- 9 de ene. Visita de Sr. Nagata de Inet, experto para la evaluación intermedia.
- 10 de ene. Reunión con el Sr. Nagata en JICA y ANAM.
- 11 de ene. Reunión con el Sr. Nagata en BID y ANAM.
- 12 de ene. Visita a SENACYT con el experto Nagata; reunión en ANAM.
- 15 de ene. Llegada de señores Tanaka, especialista, y Hamaguchi, empleado de JICA, para la evaluación intermedia (hasta el 21 de enero).
- 16 de ene. Reunión con los evaluadores en ANAM.
- 17 de ene. Gestión de la evaluación general (en la oficina de JICA, hasta el 19 de enero).
- 19 de ene. Firma de minuta de la evaluación general, visita de la Directora General, Dra. Ligia Castro.
- 20 de ene. Apertura del 3er comité general de ajuste, y firma de minuta en el Hotel Crown Plaza.

- 21 de ene. Regreso del señor Tanaka, especialista, Hamaguchi, empleado de JICA, y Osada, experto.
- 25 de ene. Transferencia del trabajo al sub-gerente Endou y Takada, en la oficina de JICA.
- 26 de ene. Reunión con la profesora Yolanda, entomóloga en la Universidad de Panamá.
- 27 de ene. Fiesta de despedida del encargado del proyecto Endou de JICA de Panamá.
- 31 de ene. Traslado del Ing. Aristίδes Falcón Paz al laboratorio de ARI como administrador.
- 1 de feb. Partida de la Licda. Natalia Young, directora de la protección de la calidad ambiental al Japón, para entrenamiento como contra parte.
- 2 de feb. Visita de IDIAP y del Gorgas al laboratorio, con relación al cambio de opinión de análisis de plaguicida.
- 6 de feb. Investigación de la calidad del agua en la Comarca de San Blas, por los señores Sawaki y Lic. Glaister Tejada, empleado del laboratorio, hasta el 9 de feb.
- 7 de feb. Visita del profesor Chiar, de la Universidad de Panamá, y cambio de conversación sobre el monitoreo del agua de lago.
- 14 de feb. Visita de Elys de JICA, al laboratorio, para la filmación del proyecto en video.
- 19 de feb. Visita de Dr. Manuel A. Leiva-Guzman, jefe del laboratorio de CENMA, y Sr. Rodrigo Sequel A. de Chile, para entrenar y dictar clases en JCPP, hasta el 25 de febrero.
- 20 de feb. Inicio de trabajo de nuevo empleado en el laboratorio, M.Sc. Aydeé Cornejo Remice (bióloga).
- 22 de feb. Reunión en ANAM con la administradora general de ANAM y la directora Licda. Natalia Young y otra reunión en la oficina de JICA sobre JCPP.
- 22-24 de feb. Seminario tecnológico (JCPP) acerca del control de calidad del laboratorio y la adquisición de la norma ISO 17025.
- 24 de feb. Informe final de dos expertos de CENMA chilenos, en la oficina de JICA y ANAM.
- 8 de mar. Entrega de credenciales del consejero principal Fukushima, por regreso temporal al Japón en la oficina de JICA, y Conservación de la Calidad Ambiental.
- 9 de mar. Regreso temporal del Jefe Asesor, Ing. Fukushima, al Japón.
- 17 de abr. Llegada de Ing. Fukushima a Panamá, y entrega de credenciales en la oficina de JICA y ANAM.

24 de abr.- 6 de may	Envío del personal del laboratorio, Licda. Yajaira Serrano, por JCPP al CENMA en Chile, para entrenamiento.
25 de abr.	Ejecución del monitoreo de la calidad de agua en el lago de Las Cumbres, junto con la Universidad de Panamá.
27 de abr.	Reunión ordinaria del proyecto en la oficina de JICA.
9-10 de may.	Ejecución del monitoreo de agua en 4 lugares de la bahía de Panamá.
16 de may.	Ejecución del monitoreo de calidad del agua en el lago de Las Cumbres, junto con la Universidad de Panamá.
28 de may.-	Envío de Lic. Fabian Maregocio, empleado del laboratorio a CENMA chileno, por JCPP para entrenamiento de la administración del manejo de laboratorio y la adquisición de la norma.
3-6 de jun.	Reparación de acueducto de agua en el laboratorio.
6 de jun.	Apertura de seminario del monitoreo en el lago en ANAM, preparado por PROTEMOCA.
9 de jun.	Llegada del experto Kurata de Kokusai Kogyo, en visita corta.
13-15 de jun.	Ejecución del monitoreo de la calidad de agua en el lago y la bahía, por instrucción del experto Kurata.
16 de jun.	Ejecución del monitoreo del agua marina durante la visita del experto Kurata y el personal del laboratorio a AMP y ACP.
19 de jun.	Inicio de la mejora del laboratorio (desde la parte de la terraza del primer piso y terminará el 8 de sep.).
21 de jun.	Instalación de destilador mejorado en el laboratorio; visita de los señores Kai, Takata y Esequel.
23 de jun.	Apertura de seminario tecnológico ofrecido por PROTEMOCA, acerca de medidas contra la contaminación marítima, en la Universidad de Panamá.
26 de jun.	Informe del experto Kurata en la oficina de JICA, Conservación del Medio Ambiente y la embajada de Japón, a su regreso a Japón.
27 de jun.	Regreso del experto Kurata.
29 de jun.	Reunión ordinaria del proyecto en la oficina de ANAM.

**APPENDIX-VIII Evaluation Grid for the Terminal Evaluation Study on the “Water Quality Monitoring Technology Project in the Republic of Panama” assisted by JICA:**

		Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
		Category	Sub-category			
Verification of Implementation Processes	Is the input provided according to the plan?	Progress on input of Japanese Expert	Progress on input of Counterpart officers	<ul style="list-style-type: none"> <li>Discrepancy between objectives and actual results</li> <li>Change after the intermediate evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Input plans by fiscal year</li> <li>Input performance</li> <li>Timing of input</li> <li>Both countries' budget plans and progression of expenditures</li> <li>Activity plans by fiscal year</li> <li>Actual results of activities</li> <li>Evaluation by the experts</li> <li>Status of counterparts' work</li> <li>Extent to which PDM indicators in Outputs level have been achieved</li> <li>Extent to which Project Purpose indicators have been achieved</li> </ul>	<ul style="list-style-type: none"> <li>APO<sup>1</sup> or monitoring forms</li> <li>Visit to Labo<sup>2</sup> facilities</li> <li>Summary of budget plans</li> </ul>
	Were the activities implemented according to plan?	—	—			
	Was the Outputs generated according to the plan?	—	—			
	Are the Project Purpose expected to be achieved?	—	—			
	Are there any problems with the technical transfer?	—	—			
				<ul style="list-style-type: none"> <li>Do implemented activities match below mentioned aspects?</li> <li>Characteristics of the C/Ps</li> <li>Capacity of resources of the counterpart organization</li> <li>Culture of the counterpart organization</li> </ul>	<ul style="list-style-type: none"> <li>Methods of the technical transfer</li> <li>Suitability of the methods</li> </ul>	<ul style="list-style-type: none"> <li>Review of the technical transfer plan</li> <li>Evaluation by a technical member of the mission</li> </ul>
					<ul style="list-style-type: none"> <li>Preliminary report</li> <li>Periodic report by the Japanese Experts</li> <li>Tests given to C/P<sup>3</sup></li> </ul>	

<sup>1</sup> Annual Plan of Operation  
<sup>2</sup> Labo, Laboratory on the JICA Project  
<sup>3</sup> Panamanian Counterpart Staff

Relevance	Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
	Category	Sub-category			
	Is there any change on the management system for the Project?	—	<ul style="list-style-type: none"> <li>Have the subject recognized on the Intermediate Evaluation been improved?</li> </ul>	<ul style="list-style-type: none"> <li>Location of the staff for the Project</li> <li>Monitoring method for the Project</li> <li>The subject body for the management of the Project</li> <li>Relationship between Japanese experts and Panamanian members for the Project</li> </ul>	<ul style="list-style-type: none"> <li>Review of related materials</li> <li>Interviews with those in charge at JICA's Panama office</li> <li>Interviews with the JICA experts</li> <li>Interviews with the Project Director</li> </ul>
		Does the JCC take part on the project implementation?	<ul style="list-style-type: none"> <li>Has JCC been held according to the necessity?</li> <li>Has the JCC recommended concrete solutions?</li> </ul>	<ul style="list-style-type: none"> <li>Problem and solutions discussed on the JCC</li> <li>Schedule for the solution</li> <li>Results on the solution</li> </ul>	<ul style="list-style-type: none"> <li>Review of related materials</li> <li>Interviews with those in charge at JICA's Panama office</li> <li>Interviews with the JICA experts</li> <li>Interviews with the Project Coordinator and the Project Director</li> </ul>
	Other problems caused on the implementation of the Project	—	<ul style="list-style-type: none"> <li>Obstacles on the activities and production of the outputs on the Project</li> </ul>	—	<ul style="list-style-type: none"> <li>Preliminary report on the evaluation</li> <li>Interviews with the the JICA experts</li> <li>Interviews with the Project Director</li> </ul>
Relevance	Is the project consistent with Panama's needs?	Is the project consistent with the needs of the residents and the polluters in the Target Area?	—	<ul style="list-style-type: none"> <li>Needs of the residents and the Polluters in the Target Area</li> <li>Incentives of the Project for the polluters</li> </ul>	<ul style="list-style-type: none"> <li>Review of related materials</li> <li>Interviews with residents in affected area</li> <li>Interviews with the polluters</li> </ul>
		Is the project consistent with the needs of the related organizations implementing the project?	<ul style="list-style-type: none"> <li>Necessity for ANAM to establish its own Laboratory (Labo) for water quality analysis</li> </ul>	<ul style="list-style-type: none"> <li>Justification of Labo on the institutional framework in the administrative law</li> <li>Future plan of Labo</li> <li>Needs of Labo on the administrative function</li> <li>The needs on the technical aspect of the analysis</li> <li>Other alternatives to achieve the Project Purpose (out-sourcing, other donor's scheme and etc)</li> </ul>	<ul style="list-style-type: none"> <li>Interviews and discussions with the Project Director</li> <li>Interviews and discussions with the director of the Overseas Cooperation in ANAM</li> <li>Review of the related materials on the low and the administration</li> </ul>

Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
Category	Sub-category			
	Is the legal and institutional framework about the ANAM Labo clear?	<ul style="list-style-type: none"> <li>Is demarcation in charge on the legal and Institutional framework clarified?</li> <li>Existence of the definition in the related law</li> </ul>	<ul style="list-style-type: none"> <li>Legal and institutional demarcation and charge with Labo in INDICASAT, the universities, IDAAN, MINSA and the privates.</li> <li>Description in the law</li> </ul>	<ul style="list-style-type: none"> <li>Interviews with those in charge of the water quality analysis in IDAAN and MINSA</li> <li>Discussion for the Minutes of the Meeting</li> <li>Review of materials</li> <li>Interview with the Project Director</li> <li>Interviews with the JICA experts</li> </ul>
	Is the Project consistent with the mid and long term development plan on the ANAM Labo?	<ul style="list-style-type: none"> <li>Existence of the definition of Labo.</li> <li>In the plan related law Existence.</li> </ul>	<ul style="list-style-type: none"> <li>Description in the plan</li> <li>関係法令の中の記述</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interview with the Project Director</li> <li>Interviews with the JICA experts</li> </ul>
	Is the project consistent with Panama's development policies and the policies of related sectors?	—	<ul style="list-style-type: none"> <li>Related context in the development plan of Panama's government</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interview with the Project Director</li> </ul>
Is the project consistent with Japan's aid policies?	Is the project consistent with the prior issue in the discussion on ODA Task Force and policy dialogue with Panamanian government?	<ul style="list-style-type: none"> <li>Consistency of the Project Purpose and Overall Goal with the issue.</li> </ul>	<ul style="list-style-type: none"> <li>Records of the discussions on the ODA Task Force and dialogue.</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews at JICA's Panama office and Japanese Embassy</li> </ul>
Is there any integrated strategy as the all Japanese Aid?	Is there any integrated strategy with JBIC project and the other related Japanese schemes?	<ul style="list-style-type: none"> <li>Existence of mutual strategic alliance among the schemes.</li> </ul>	<ul style="list-style-type: none"> <li>Alliance with JBIC project</li> <li>Alliance with the other Japanese projects</li> <li>"JICA Country Assistance Implementation Plan"</li> </ul>	<ul style="list-style-type: none"> <li>Party in charge in JBIC</li> <li>Party in charge in Japanese Embassy</li> </ul>
Is the Project relevant as JICA Project for Panama?	Has the Project purpose consistency with program implementation plan for JICA's aid?	—	<ul style="list-style-type: none"> <li>The program implementation plan by JICA Panama Office</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews at JICA's Panama office</li> </ul>
Relevance of the Japan's Aid in technical aspect in the fields	Does Japanese technology in the field have any advantage?	—	<ul style="list-style-type: none"> <li>Japan's advantage in technology related to the Outputs</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews with the committees in Japan</li> </ul>



Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
Category	Sub-category			
Appropriateness as a means	Is the project's approach appropriate?	<ul style="list-style-type: none"> <li>Does the project have a clear role within the superior program?</li> </ul>	<ul style="list-style-type: none"> <li>Project's role within development issues</li> <li>Division of responsibilities with other donors e.g. IDB</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews with domestic committees</li> <li>Interviews with those in charge at JICA's Panama office</li> <li>Interview with the Project Director</li> <li>Interview with the director and/or consultants of the IDB project</li> </ul>
	Commitment of Panamanian actors	Is commitment of Panamanian actors high?	<ul style="list-style-type: none"> <li>Performance on the pledged issue on budgets, HR and assumptions by the government.</li> </ul>	<ul style="list-style-type: none"> <li>Minutes of the Meetings on the intermediate evaluation</li> <li>Interviews with the Project Director</li> <li>Interviews with JICA Experts</li> <li>Interviews at JICA's Panama office and Japanese Embassy</li> </ul>
Effectiveness	Are the Project Purpose expected to be achieved?	<ul style="list-style-type: none"> <li>Prediction as to whether objectives will be achieved based on the extent to which Outputs has currently been achieved</li> <li>Appropriateness of causality embedded in the PDM.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation plan by field and extent of progress made</li> <li>Procedural plan to the achievement</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Reports on Outputs performance</li> <li>Interview with the director of the IDB project</li> <li>Interviews with the Project Coordinator</li> <li>Technical evaluation of the Mission.</li> </ul>
	Are there any factors impeding or encouraging the achievement of the Project Purpose?	<p>Will the Project purpose be realized by achievements of only Outputs and Important Assumptions in the current PDM?</p> <p>—</p>	<ul style="list-style-type: none"> <li>PDM</li> <li>Technical recommendation of a member in charge of the Mission.</li> </ul>	
Efficiency	Achievements of the Outputs	<ul style="list-style-type: none"> <li>Extent to which objectives have been achieved in qualitative and quantitative terms</li> </ul>	<ul style="list-style-type: none"> <li>Factors impeding or encouraging the achievement of the Project Purpose and future outlook</li> </ul>	<ul style="list-style-type: none"> <li>Aforementioned verification of performance</li> </ul>
	Are there any factors impeding or encouraging the achievement of the Project Purpose?	<p>—</p>	<ul style="list-style-type: none"> <li>Factors impeding or encouraging the achievement of the Outputs and future outlook</li> </ul>	<ul style="list-style-type: none"> <li>Experts' reports</li> </ul>

Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
Category	Sub-category			
Were the quantity, quality and timing of the input appropriate?	Did the long-term and short-term experts have the expertise and qualifications that the project requires?	<ul style="list-style-type: none"> <li>Qualitative evaluation based on materials and results of survey</li> </ul>	<ul style="list-style-type: none"> <li>Contrast between input and actual results of plan</li> <li>Impact of input on achieving outcome</li> </ul>	<ul style="list-style-type: none"> <li>Review of related materials</li> <li>Record of the use of equipments and machineries</li> <li>Inspection at Labo</li> <li>Interview and discussion with C/Ps and Japanese Experts</li> </ul>
	Were the number of short-term experts dispatched, the number of days for which they were dispatched and the timing with which they were dispatched appropriate?			
	Were the potential of the assigned counterpart technicians appropriate?			
	Were the potential of the assigned counterpart members for the management appropriate?			
	Was the equipment provided in a timely manner?			
	Was the scale and quality of the equipment provided appropriate?			
	Do the specifications of the equipments and the machineries match the Activities?			
	Has any of the donated equipment go unused?			
	—			
	Was the methodology on the technical transfer appropriate?			
Was the Japanese and third-nation training appropriate?	<ul style="list-style-type: none"> <li>Was the training duration and content appropriate?</li> <li>Was the knowledge and technology acquired during training utilized after returning home?</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews with trainees</li> </ul>		
Did Important Assumptions and preconditions have any impact?	Were both countries' budgets used with appropriate quantities and timing?	<ul style="list-style-type: none"> <li>Evaluation by long-term experts</li> <li>Evaluation by Project Director</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews with Project Director and Chief Adviser</li> </ul>	

Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
Category	Sub-category			
	Was equipment procured smoothly?		<ul style="list-style-type: none"> <li>Problems with equipment procurement</li> <li>Major factors impeding each Outputs</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews with Project Director and Chief Adviser</li> <li>Interviews at JICA's Panama office</li> <li>Review of materials</li> <li>Interviews at JICA's Panama office</li> </ul>
	Were there any factors that impeded or promoted the achievement of the various Outputs?			
Impact	Can the Overall Goal be achieved as an effect of the accomplishment of the Project Purpose?	<ul style="list-style-type: none"> <li>Qualitative evaluation by checking project's logic</li> </ul>	<ul style="list-style-type: none"> <li>Can the Overall Goal be achieved by fulfilling the Project Purpose and Important Assumptions?</li> <li>Possibility of fulfilling Project Purpose and Important Assumptions</li> <li>Is the policy framework needed to achieve the Overall Goal feasible?</li> <li>Is there any estrangement between the Project Purpose and the Overall Goal?</li> <li>Is the course to the achievement of the overall goal in each technical field clarified?</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interview with the director of the IDB project</li> <li>Interviews with the Project Director</li> </ul>
		Is appropriate mutual complementary system with the other donors	<ul style="list-style-type: none"> <li>Does technical specification in the environmental regulation established by the IDB Project reflect the proposed technical level on the JICA Project?</li> </ul>	<ul style="list-style-type: none"> <li>Achievement of collaboration and/or partnership with the IDB Project</li> <li>Mutual complementary system between both projects</li> </ul>
	Are there any factors contributing to or impeding the achievement of the Overall Goal?		<ul style="list-style-type: none"> <li>Factors contributing to and impeding the achievement of the Overall Goal</li> <li>Degree of appropriateness of Important Assumptions</li> </ul>	

	Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
	Category	Sub-category			
Sustainability	Are there any spillover effects beneficial or detrimental to project?	Impact on economic and environmental policies	—	<ul style="list-style-type: none"> <li>Impact and effect of water quality monitoring on policy</li> </ul>	<ul style="list-style-type: none"> <li>Interview with the Project Director</li> <li>Interviews with the Project Coordinator</li> <li>Interviews at JICA's Panama office</li> </ul>
		Is there any influence on Panama's economic development? Are there any other influences?	<ul style="list-style-type: none"> <li>Did the project incite any market failures?</li> <li>—</li> </ul>	<ul style="list-style-type: none"> <li>Negative Impact and effect on economy</li> <li>Impact and effect on women, ethnic groups and social classes</li> </ul>	
Sustainability	Is organizational capacity sufficient to sustain the project's effect?	Has the Lebo's future image been established?	<ul style="list-style-type: none"> <li>Is there a feasible, specific plan for the future?</li> </ul>	<ul style="list-style-type: none"> <li>Documents on future plan for Labo</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interview with the Project Director</li> <li>Interviews at JICA's Panama office</li> <li>Interviews with those in charge for IDB project</li> </ul>
		Are the systems and laws enabling Labo to function in the future as an organization expected to be established? Are systems and laws enabling the utilization of the project's technology and equipment expected to be established?	<ul style="list-style-type: none"> <li>Existence of framework for legal system and degree of future feasibility</li> </ul>	<ul style="list-style-type: none"> <li>Legal Justification of Labo</li> <li>Feasibility of legal system to sustain environmental monitoring system</li> </ul>	
		Can Labo's internal operation abilities be retained or improved after the project is implemented?	<ul style="list-style-type: none"> <li>Outlook for the solution of the recommendations on the intermediate evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>Plan of relocation of the management officers for Labo's staff</li> <li>Outlook for establishment of exclusive working system of the technicians in Labo.</li> <li>Improvement of recognition of the management officers.</li> <li>Institutional framework to maintain the technical capacity in Labo.</li> </ul>	
		Are there any incentives for the survival and retention of the project's technology and equipment and Labo?	—	<ul style="list-style-type: none"> <li>Existence of internal and external incentives for Labo</li> <li>Can incentives be added to the project?</li> </ul>	
Sustainability	Are there any other stakeholders (other donors, NGOs, etc.) that could take over the project's technology and equipment?	—	—	<ul style="list-style-type: none"> <li>Possibility of affiliations with NGOs and other donors carrying out related activities</li> </ul>	

Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
Category	Sub-category			
Is there sufficient technology to sustain the project's effects?	Can current affiliations with related organizations be maintained?	<ul style="list-style-type: none"> <li>Outlook for sustainability of affiliations after project's conclusion</li> </ul>	<ul style="list-style-type: none"> <li>Current status of activities conducted in affiliation with the MINSA, DAAN, AMP, private consultants and the other institutes for water analysis</li> <li>Outlook for sustainability of activities</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interviews with those organizations</li> </ul>
	Can the counterparts acquire technology for water quality monitoring by the time the project is completed?	<ul style="list-style-type: none"> <li>Can technology levels reach the level intended in the Outputs?</li> </ul>	<ul style="list-style-type: none"> <li>Testimony by long-term experts</li> <li>Extent to which counterparts have currently acquired technology</li> <li>Outlook for final technology acquisition</li> </ul>	<ul style="list-style-type: none"> <li>Records of technology transfer monitoring</li> <li>Tests by the Mission</li> </ul>
	Can the counterparts acquire technology for water quality analysis by the time?	<ul style="list-style-type: none"> <li>Existence of appropriate maintenance in present and possibility in future.</li> </ul>	<ul style="list-style-type: none"> <li>The current status of the maintenance</li> <li>Problem and prospect for the solution.</li> </ul>	<ul style="list-style-type: none"> <li>Record of the maintenance</li> <li>Interviews with those in charge of the maintenance</li> <li>Interview with JICA experts</li> </ul>
	Can Labo establish technology for publication of result of the analysis by the time?	<ul style="list-style-type: none"> <li>Possibility for the solution of the recommendation on the intermediate evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>Subject on the technical capacity development.</li> <li>Prospect of the solutions.</li> <li>Change of the recognition of those concerned with the management of Labo.</li> </ul>	<ul style="list-style-type: none"> <li>Interview with Project director</li> <li>Interview with JICA experts</li> </ul>
Can capable HRs be continuously procured?	Possibility for the solution of the recommendation on the intermediate evaluation.	<ul style="list-style-type: none"> <li>Prospect and preparations for the solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Procurement plan of the HRs</li> <li>Procurement plan of junior staff</li> <li>Integrated allocation plan of the HR in DINAPROCA</li> </ul>	<ul style="list-style-type: none"> <li>Interview with Project director</li> <li>Interview with JICA experts</li> </ul>
Can financial support to sustain the project's effect be assured?	Is it possible to secure a budget to maintain the donated equipment?	<ul style="list-style-type: none"> <li>Feasibility of securing overall budget for future plan</li> </ul>	<ul style="list-style-type: none"> <li>Estimated cost of maintaining equipment</li> <li>Current status of maintenance costs</li> <li>Basic operational cost for Labo</li> <li>Cost for technical capacity development</li> <li>Procurement plan of the budget</li> </ul>	<ul style="list-style-type: none"> <li>Review of materials</li> <li>Interview with the director of the IDB project</li> <li>Interviews with the Project Coordinator</li> <li>Technical evaluation by the Mission</li> </ul>
	Can basic operational cost for Labo be continuously procured?			
	Can cost for technical capacity development be continuously procured?			

Route for the achievement of the superior or subjects	Questions on the Evaluation and Issues		Criteria and Means for Determination	Requisite Information and Data	Source of Information and Survey Method (Interviews were conducted with long-term experts and counterparts in regards to all items)
	Category	Sub-category			
	Are there any other factors that would influence the project's sustainability?	—	—	—	<ul style="list-style-type: none"> <li>• Interview with the director of the IDB project</li> <li>• Interviews with the Project Coordinator</li> <li>• Interviews at JICA's Panama office</li> </ul>
	Route for the Overall Goals	Structure of the subjects for the Overall goals	—	<ul style="list-style-type: none"> <li>• Subjects on the aspect of policy, law, institution, finance, technology, HRs and infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops and interviews with stakeholders</li> <li>• related actors</li> <li>• Interviews with JICA Experts</li> <li>• Interviews with a person in charge of Labo</li> <li>• Interviews at JICA's Panama Office</li> <li>• Interviews with sector specialists in IDB</li> <li>• Interviews with the directors for international cooperation and environmental policy.</li> </ul>
	Route for the superior goals	Structure of the subjects for the purification of Panama Bay Overall goals Demarcation of the charge for ANAM and the other Panamanian organizations. Ministries. Necessary aid by foreign actors.	—	<ul style="list-style-type: none"> <li>• Subjects to be solved by ANAM</li> <li>• Subjects to be solved by the other Panamanian organizations.</li> <li>• Necessary support in the aspect of finance, technique and institution</li> <li>• Subjects to be solved by ANAM itself</li> <li>• Necessary alliance by the actors</li> <li>• Resume and list of the projects by the international cooperation schemes.</li> <li>• Agenda on the policy dialogue between Panamanian and Japanese governments.</li> <li>• JICA's Assistance Program in Panama.</li> <li>• Relevance with advantage of the Japan's Aid.</li> <li>• Necessary alliance for efficient aid.</li> </ul>	
		Aid projects by the foreign organizations. Criteria on the Japan's Aid strategy Aid program to be proposed. Subjects to be solved by Panamanian government. Necessary alliance with the other organizations	—		

