Annex 7-4　JCC on April 13, 2011

MINUTES OF MEETING BETWEEN JAPANESE PROJECT CONSULTATION TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA ON JAPANESE TECHNICAL COOPERATION FOR THE PROJECT FOR CAPACITY DEVELOPMENT OF ENVIRONMENTAL MONITORING (PHASE 2)

The Japanese Project Consultation Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. Mitsuo YOSHIDA, visited the People's Democratic Republic of Algeria (hereinafter referred to as "Algeria") from April 6, 2011 to April 21, 2011 for the purpose of discussing the progress of the technical cooperation project concerning "The Project for Capacity Development of Environmental Monitoring (Phase 2)" (hereinafter referred to as "the Project") .

During its stay in Algeria, the Team exchanged views and had a series of discussions with the Algerian authorities concerned with respect to desirable measures to be taken by JICA and the Government of Algeria for the successful implementation of the above-mentioned Project.

As a result of the discussions, the Team and the Algerian authorities concerned came to the understanding concerning the matters referred to in the document attached hereto.

Both sides agreed on that the Minutes of Meeting are prepared in both English and French. In case any discrepancy arises in interpretation, the English text shall prevail.

Alger, April 13, 2011

Dr. Mitsuo YOSHIDA
Leader, the Project Consultation Team,
Japan International Cooperation Agency
(JICA)

Mr. Abdelkader BENHADJOUDJA
Chief of Minister's Cabinet,
Ministry of Land Planning and Environment
(MATE)
The People's Democratic Republic of Algeria

T. TIRECHE

Mr. Tayeb TIRECHE
Director General
National Observatory for Environment and Sustainable Development (ONEDD)

THE ATTACHED DOCUMENT

1. PROJECT DESIGN MATRIX

Both parties agreed on the necessary adjustment of Project Design Matrix (PDM) to cope with a Formal Notice (hereinafter referred to as "the Notice"), by the Minister of Land Planning and Environment, on procedures of execution of the Executive Decree No. 07-300 on November 28th 2010, for industrial wastewater monitoring, as attached in the Annex-I.

2. CONSTRUCTION OF NEW LABORATORY

The Team mentioned that the current CRL temporal prefabricated laboratory has some difficulties for continuing environmental chemical analysis activities, in terms of durability (such as depression of the floor) and facilities inadequacy (such as a lack of ventilation function for toxic chemical analysis). Since the CRL is vital for the development and expansion of environmental management system in Algeria, the Team further expressed strongly the urgent need for construction of new CRL laboratory to solve the difficulties. MATE responded that Algerian side has already taken action by securing the land and applying for budget to construct the new laboratory, which is a part of new city development, and is given high priority within the Ministry. MATE further mentioned that the construction work is expected to commence before the termination of the Project.

3. COORDINATION WITH RELATED ORGANIZATIONS

The Team pointed out that the environmental monitoring framework under the Notice may need some time to function properly, and the key for better management of the framework would be the supervision and overall coordination of MATE. The Team further asked MATE for this overall coordination. MATE agreed on the importance of the coordination and supervision, since there are many sectors involved in the monitoring activities. MATE also expressed the willingness to reinforce the coordination through conducting various coordination meetings on environmental monitoring by asking for participation from relevant Wilaya (Province).

4. ASSIGNMENT OF COUNTERPART PERSONNEL

The Team expressed their view that the continuous assignment of the counterpart personnel is vital for capacity development activities. Algerian side agreed and promised to assign counterpart personnel continuously.

5. ASSIGMENT OF JAPANESE EXPERT

Algerian side expressed their view that the assignment of Japanese Expert was not enough, due to unexpected malfunction of GC/MS, and asked the Team for the possibility of shifting the assignment from other Expert, such as Coordinator. The Team replied that the desire of Algerian side is understandable and further consideration will be made in Japanese side.

6. MEASURES FOR EQUIPMENT AND LABORATORY MANAGEMENT

To avoid mechanical failure of the laboratory equipment, the Team recommended for ONEDD-CRL and MATE to take proper measures for equipment maintenance, such as securing budget, assigning human resource, arranging periodical maintenance agreement with the manufacturer, and so on. In addition, for sustainable operation of the laboratory, ensuring the consumables/reagents is also needed. ONEDD-CRL agreed on the importance of the maintenance issue, and explained that they are considering the possibility of arranging periodical maintenance agreement, although there are difficulties of limited capacity of service providers in Algeria, such as Shimazu Company.

7. ACTIONS FOR NEW FRAMEWORK

The new framework under the Notice will affect the analytical work load of ONEDD-CRL to increase with considerable amount, which will ask ONEDD-CRL to increase resource assignment in terms of human resource, consumables, and budget. Under such new circumstance, Algerian side explained that ONEDD is planning to increase human resources for laboratory activities and monitoring station activities.

8. COMPREHENSIVE INTERPRETATION

Algerian side addressed the important role of comprehensive interpretation based on various analytical results and field observation in the model site of the Project. Under the framework of the Project (Output2), at least the following interpretation works should be achieved during the remaining period of the Project through a collaboration between JET and CRL C/P:

(i) Preparation of geographical pollution map of model site

(ii) Evaluation of pollution risk

(iii) Recommendation for future action

Algerian side promised to allocate a new engineer staff as a C/P of interpretation expert.

Annex I: Project Design Matrix (revised)

Annex II: List of Attendants of the Meetings

ANNEX I PROJECT DESIGN MATRIX (Revised)

Project Name: Capacity Development of Environmental Monitoring (Phase 2)

Implementing Agency: ONEDD Cooperating organizations: DEWA and DEWB Supporting Organization: MATET

Project Period: October 2009 to October 2012 (3 years)

Target Group: Staff of ONEDD (CRL and ONEDD Headquarters)

Project Area: Alger, Blida, Oran Constantine Province Model Site: OEH basin in Alger and Blida Provinces and coastal area in Alger Province

Date: April 13, 2011

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations where CRL plays a leading role.	1. Realization of national environmental monitoring system based on the National Environmental Strategy. 2. Establishment of National Environmental Database (SNIE) 3. CRL plays a role of the reference environmental laboratory in Algeria.	1/2 Report of Environmental State of Algeria published by MATET 3.1 Record of supply of reference materials to other laboratories and stations 3.2 Record of technical support, consulting and training, to other laboratories and stations 3.3 Network with research institutes in Algeria 3.4 Accredit from international analytical association	
Project Purpose ONEDD's Capacity to generate environmental information for effective environmental management including inspection, enforcement and pollution prevention is strengthened.	1. The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various clients 2. Number of disclosed information related environmental pollution is increased. 3. Number of effluent monitoring is increased. 4. Number of contract on industrial wastewater monitoring is increased.	1.1 Contracts with clients 1.2 Issued reports/bulletin 2.1 Issued reports/bulletin 2.2 Record of workshops 2.3 Web-site of ONEDD 3. Records of effluent monitoring	The Government of Algeria maintains the current proactive attitude toward environmental policy and its enforcement. The Government of Algeria continues and maintains to necessary supports to ONEDD.
Output 1 CRL acquires advanced analytic technique for GCMS, FTIR and XRF.	1. Reliable analytical results on hydrocarbon, organo-chlonine, BTX, PAH and agrochemicals (pesticides and insecticides) are generated using GCMS.	1/2/3 Records of analyses	Field survey and sampling in the Model Site can be carried out without any restriction.

	2. Reliable analytical results on non-volatile organic chemicals are generated using FTIR and its data library. 3. Reliable results of quantitative XRF analysis are generated. 4. SOPs for advanced analytical methods for GCMS, FTIR and XRF are developed.	4. SOPs	Industries and other polluters are cooperative to project activities.
Output 2 Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site.	1. Pollution inventories including pollution loads are developed. 2. Comprehensive monitoring plan including effluent monitoring plans is developed. 3. Collaborative effluent monitoring activities with DEWA and DEWB are conducted periodically. 4. Types/kinds of analysis parameters are increased. 5. Comprehensive interpretation and risk assessment of the monitoring results are publicized.	1. Pollution inventories 2. Comprehensive monitoring plan 3. Records of effluent monitoring activities 4. Records of analysis 5. Presentation documents, reports, publication	
Output 3 CRL enhanced quality control capacity of lab analysis work.	1. More than 16 staff in CRL work for quality control for inorganic/organic/microbiological analysis. 2. More than 16 staff in inorganic/ organic/ microbiological analysis section in CRL joined trainings on quality control. 3. Quality control system of analytic works is established in CRL.	1. Hearing from CRL 2. Training records Hearing from CRL 3.2 QC reports and log books in CRL	
Output 4 Environmental monitoring technologies possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations.	1. Training team by ONEDD(HQ) and CRL is formulated. 2. Training plan for regional laboratories and monitoring stations is developed. 3. Training courses for regional laboratories and monitoring stations are conducted twice a year. 4. Various stakeholders including industries,	1.Hearing from ONEDD 2. Training plan 3. Training records 4.1 Records of joint seminars 4.2 Proceedings of the seminars	

	academics and NGOs participated in ONEDD-MATET-JICA Joint Seminar. 5. Three workshops for regional laboratories are held as a dissemination of Project contribution.	5. Records of workshops	
Activities for Output1 1. JET and CRL assess the baseline of the capacity for individual analytic technique of GCMS, FTIR and XRF. 2. JET transfers the advanced analytical technique for volatile organic compounds using GCMS to CRL. 3. JET transfers the advanced analytical technique for non-volatile organic compounds using FTIR to CRL. 4. JET transfers the advanced analytical technique for potentially toxic elements using XRF to CRL. 5. JET and CRL develop SOPs for advanced analytical methods for GCMS, FTIR and XRF. **Activities for Output2** 1. CRL and JET develop pollution inventories in the Model Site with DEWA and DEWB. 2. CRL and JET develop comprehensive monitoring plans including effluent monitoring plans for the Model Site. 3. CRL implements effluent monitoring to pollution sources with DEWA and DEWB by following advice of JET. 4. CRL analyzes samples collected by monitoring activities by following advice of JET. 5. CRL conducts comprehensive interpretation and risk assessment of the monitoring results in the Model Site by following advice of JET. 6. CRL reports the results of the comprehensive interpretation and develops the suggestions to DEWA, DEWB and MATET by following advice of JET. **Activities for Output3** 1. JET and CRL assess the problems of quality control system of analytic works. 2. JET conducts trainings for quality control system of	**Input** **<Input from JICA>** 1. Short-term Experts (1) Leader /Environmental Management (Comprehensive Analysis, Risk Assessment, Lab Management) (2) GCMS (3) FTIR (4) XRF (5)Quality Control (6) Lecturers of seminars including Senior Advisor from JICA 2. Data library for FTIR 3. Standard materials for GCMS, FTIR, XRF	**Input** **<Input from ONEDD>** 1. Assigning C/P personnel 2. Buildings and Facilities 3. Office space for JICA experts and meetings 4. Facilities and services such as electricity, gas, water, telephone, internet access and furniture 5. Chemical and reagents for analysis 6. Operational and recurrent cost for the project activities of the Algerian side	ONEDD recruits and assigns necessary personnel. Necessary chemicals and reagents are imported.

analytic works for CRL. 3. CRL develops quality control system of analytic works by following advice of JET.			
Activities for Output4 1. JET reviews in-house training system of ONEDD and makes suggestions for improvement. 2. ONEDD develops the plans for supporting regional laboratories and monitoring stations under the support of JET. 3. ONEDD organizes training courses for regional laboratories and monitoring stations under the support of JET. 4. ONEDD and JICA Experts conduct ONEDD-MATET-JICA Joint Seminar and workshops periodically.			**Pre-conditions** Current level of security situation is maintained in the Project Area. Contract Agreements among ONEDD, DEWA and DEWB are concluded.

Annex II

List of Attendants of the Meetings

(Algerian side)

MATE

1. Mr. Abdelkader BENHADJOUDJA	Chief of Minister's Cabinet, MATE

ONEDD

1. Mr. Tayeb TIRECHE	Director General, ONEDD

CRL

1. Mr. Mohamed Moali	Director, CRL
2. Mr. Houas Omar	Engineer
3. Ms. Azouani Sophia	Engineer

(Japanese side)

Embassy of Japan in Algeria

1. Mr. Takeshi Kamitani	Ambassador
2. Mr. Shobu Nagatani	First Secretary
3. Mr. Shigechika Yamada	Second Secretary

JICA Study Team

1. Dr. Mitsuo Yoshida	Leader
2. Dr. Mimpei Ito	Cooperation Planning

JICA Expert

1. Ms. Saori Konan	Expert

Annex 7-5　JCC on October 29, 2011

MINUTES OF MEETING
ON
3rd JOINT COORDINATION COMMITTEE
ON
THE PROJECT FOR CAPACITY DEVELOPMENT OF ENVIRONMENTAL MONITORING
(PHASE 2)
IN
THE PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
AGREED UPON BETWEEN
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA
AND
JICA EXPERT TEAM

The Japanese Project Consultation Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") visited the People's Democratic Republic of Algeria (hereinafter referred to as "Algeria") in April, 2011 for the purpose of discussing the progress of the technical cooperation project concerning "The Project for Capacity Development of Environmental Monitoring (Phase2)" (hereinafter referred to as "the Project").

Based on the Minutes of Meeting on April 13rd, 2011, the JICA Expert Team (hereinafter referred to as "the JET") had a series of discussions with the Algerian side in June and October, 2011 for the 3rd year's activities for the Project.

As a result of the discussion, the JET and the Algerian authorities concerned came to the understanding concerning the matters referred to in the document attached hereto.

Both sides agreed on that the Minutes of Meeting are prepared in both English and French. In case any discrepancy in interpretation, the English text shall prevail.

Alger, November 15th 2011

Mr. Kenji FUKUSHIMA
Chief Advisor,
JICA Expert Team
Japan International Cooperation Agency (**JICA**)

Mr. Abdelkader BENHADJOUDJA
Chief of Minister's Cabinet,
Ministry of Land Planning and Environment (**MATE**) in The People's Democratic Republic of Algeria

Mr. Tayeb TIRECHE
Director General
National Observatory for Environment and Sustainable Development (**ONEDD**)

T. TIRECHE

Attachment

1- **Project Design Matrix (revised)**

For the successful implementation of the project, the Team and Algerian side proposed the revised Project Design Matrix (hereinafter referred to as "PDM") on April 13, 2011. In the course of discussions, both sides agreed upon the revised PDM which was validated by the JCC as shown in **Annex-1.**

2- **Assignment of Japanese Expert**

The JET expressed to make an effort to ensure additional assignment of the Japanese Expert for GCMS, so the JET asked the Algerian side to complete repairs and adjustments of GC/MS-P&T as soon as possible. Under such circumstances, Algerian side replied to take necessary measures.

3- **Progress of the Plan of Operation (PO)**

Progress of the Plan of Operation (PO), as shown in **Annex-2**, has been prepared by JET and Algerian side, and was validated by JCC with following observations.

- More practice should be done during work program in November 2011 and February 2012.

4- **Submission of the Standard Operation Procedures of ONEDD-LRC**

Within the framework of the Project (Output-3), the Standard Operation Procedures (SOP) was elaborated in October 2010. In the course of discussions, both sides agreed upon the SOP (Ver.1.01) which was validated by the JCC as shown in **Annex-3.**

ANNEX

Annex 1 : Project Design Matrix (revised PDM)

Annex 2 : Progress of the Plan of Operation (PO)

Annex 3 : Index of the Standard Operation Procedure of ONEDD-CRL

Annex4 : List of participants in 3rd JCC

Algerian side :

- Ministry of Land Planning and Environment (MATE)
  M. Abdelkader BENHADJOUDJA Chief of Minister's Cabinet

- National Observatory for Environment and Sustainable Development (ONEDD)
  M. Tayeb TIRECHE Directeur Général de l'ONEDD
  M. Moali Mohamed Directeur de CRL

- DEWAlger.
  M. TEBBANI Messaoud Directeur Environnement

- DEWBlida.
  M. BENOUAMEUR Azzedine Directeur Environnement

JICA side:

- Experts de la JICA.
  M. Kenji Fukushima Premier conseiller de l'équipe d'experts de la JICA

- Mme. Saori KONAN Coordonatrice / JICA

ANNEX I PROJECT DESIGN MATRIX (Revised)

Project Name: Capacity Development of Environmental Monitoring (Phase 2)

Implementing Agency: ONEDD Cooperating organizations: DEWA and DEWB Supporting Organization: MATE

Project Period: October 2009 to October 2012 (3 years)

Target Group: Staff of ONEDD (CRL and ONEDD Headquarters)

Project Area: Alger, Blida, Oran Constantine Province Model Site: OEH basin in Alger and Blida Provinces and coastal area in Alger Province

Date: April 13, 2011

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Project Purpose ONEDD's Capacity to generate environmental information for effective environmental management including inspection, enforcement and pollution prevention is strengthened.	1. The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various clients 2. Number of disclosed information related environmental pollution is increased. 3. Number of effluent monitoring is increased. 4. Number of contract on industrial wastewater monitoring is increased.	1.1 Contracts with clients 1.2 Issued reports/bulletin 2.1 Issued reports/bulletin 2.2 Record of workshops 2.3 Web-site of ONEDD 3. Records of effluent monitoring	The Government of Algeria maintains the current proactive attitude toward environmental policy and its enforcement. The Government of Algeria continues and maintains to necessary supports to ONEDD.
Output 1 CRL acquires advanced analytic technique for GCMS, FTIR and XRF.	1. Reliable analytical results on hydrocarbon, organo-chlonine, BTX, PAH and agrochemicals (pesticides and insecticides) are generated using GCMS.	1/2/3 Records of analyses	Field survey and sampling in the Model Site can be carried out without any restriction.

	2. Reliable analytical results on non-volatile organic chemicals are generated using FTIR and its data library. 3. Reliable results of quantitative XRF analysis are generated. 4. SOPs for advanced analytical methods for GCMS, FTIR and XRF are developed.	4. SOPs	Industries and other polluters are cooperative to project activities.
Output 2 Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site.	1. Pollution inventories including pollution loads are developed. 2. Comprehensive monitoring plan including effluent monitoring plans is developed. 3. Collaborative effluent monitoring activities with DEWA and DEWB are conducted periodically. 4. Types/kinds of analysis parameters are increased. 5. Comprehensive interpretation and risk assessment of the monitoring results are publicized.	1. Pollution inventories 2. Comprehensive monitoring plan 3. Records of effluent monitoring activities 4. Records of analysis 5. Presentation documents, reports, publication	
Output 3 CRL enhanced quality control capacity of lab analysis work.	1. More than 16 staff in CRL work for quality control for inorganic/organic/microbiological analysis. 2. More than 16 staff in inorganic/ organic/ microbiological analysis section in CRL joined trainings on quality control. 3. Quality control system of analytic works is established in CRL.	1. Hearing from CRL 2. Training records Hearing from CRL 3.2 QC reports and log books in CRL	

Output 4 Environmental monitoring technologies possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations.	1. Training team by ONEDD(HQ) and CRL is formulated. 2. Training plan for regional laboratories and monitoring stations is developed. 3. Training courses for regional laboratories and monitoring stations are conducted by twice a year. 4. Various stakeholders including industries, academics and NGOs participated in ONEDD-MATET-JICA Joint Seminar. 5. The workshops for regional laboratories are held as a dissemination of Project contribution.	1.Hearing from ONEDD 2. Training plan 3. Training records 4.1 Records of joint seminars 4.2 Proceedings of the seminars 5. Records of workshops	
Activities for Output1 1. JET and CRL assess the baseline of the capacity for individual analytic technique of GCMS, FTIR and XRF. 2. JET transfers the advanced analytical technique for volatile organic compounds using GCMS to CRL. 3. JET transfers the advanced analytical technique for non-volatile organic compounds using FTIR to CRL. 4. JET transfers the advanced analytical technique for potentially toxic elements using XRF to CRL. 5. JET and CRL develop SOPs for advanced analytical methods for GCMS, FTIR and XRF. **Activities for Output2** 1. CRL and JET develop pollution inventories in the Model Site with DEWA and DEWB. 2. CRL and JET develop comprehensive monitoring plans including effluent monitoring plans for the Model Site. 3. CRL implements effluent monitoring to pollution sources with DEWA and DEWB by following advice of JET. 4. CRL analyzes samples collected by monitoring activities by following advice of JET. 5. CRL conducts comprehensive interpretation and risk	**Input** **<Input from JICA>** 1. Short-term Experts (1) Leader /Environmental Management (Comprehensive Analysis, Risk Assessment, Lab Management) (2) GCMS (3) FTIR (4) XRF (5)Quality Control (6) Lecturers of seminars including Senior Advisor from JICA 2. Data library for FTIR 3. Standard materials for GCMS, FTIR, XRF	**Input** **<Input from ONEDD>** 1. Assigning C/P personnel 2. Buildings and Facilities 3. Office space for JICA experts and meetings 4. Facilities and services such as electricity, gas, water, telephone, internet access and furniture 5. Chemical and reagents for analysis 6. Operational and recurrent cost for the project activities of the Algerian side	ONEDD recruits and assigns necessary personnel. Necessary chemicals and reagents are imported.

assessment of the monitoring results in the Model Site by following advice of JET. 6. CRL reports the results of the comprehensive interpretation and develops the suggestions to DEWA, DEWB and MATET by following advice of JET.			
Activities for Output3 1. JET and CRL assess the problems of quality control system of analytic works. 2. JET conducts trainings for quality control system of analytic works for CRL. 3. CRL develops quality control system of analytic works by following advice of JET.			
Activities for Output4 1. JET reviews in-house training system of ONEDD and makes suggestions for improvement. 2. ONEDD develops the plans for supporting regional laboratories and monitoring stations under the support of JET. 3. ONEDD organizes training courses for regional laboratories and monitoring stations under the support of JET. 4. ONEDD and JICA Experts conduct ONEDD-MATET-JICA Joint Seminar and workshops periodically.			**Pre-conditions** Current level of security situation is maintained in the Project Area. Contract Agreements among ONEDD, DEWA and DEWB are concluded.

Annex-2 THE PROJECT FOR CAPACITY DEVELOPMENT OF ENVIRONMENTAL MONITORING (PHASE 2) IN THE PEOPLE' S DEMOCRATIC REPUBLIC OF ALGERIA PLAN OF OPERATION (PO)

※Oct 29, 2011

Output of PDM	Japanese Experts (Input from JICA)	Activities	M/M (Algeria)	
Output2,4	① Kenji FUKUSHIMA: Leader/Environmental Management (Comprehensive Analysis, Risk Assessment, Lab	Management of the Project, Support monitoring plan and Training programme	9.60	Plan / Result
Output1,3	② Ryo ISHIMOTO: Sub-Leader/X-Ray Fluorescence (XRF)/ Quality Control	Transfer technique for XRF, Support quality control of the CRL laboratory	8.66	Plan / Result
Output1	③ Tomoko FUKAYA: Gas Chromatography Mass spectrometer (GCMS)	Transfer technique for GCMS	4.83	Plan / Result
Output1	④ Masamichi TSUJI: Fourier Transform Infrared Absorption Spectrometry (FTIR)	Transfer technique for FTIR	3.49	Plan / Result
	⑤ Hiromi NONAKA/Kenji Fukushima: Coordinator	Logistique, Coordination		Plan / Result

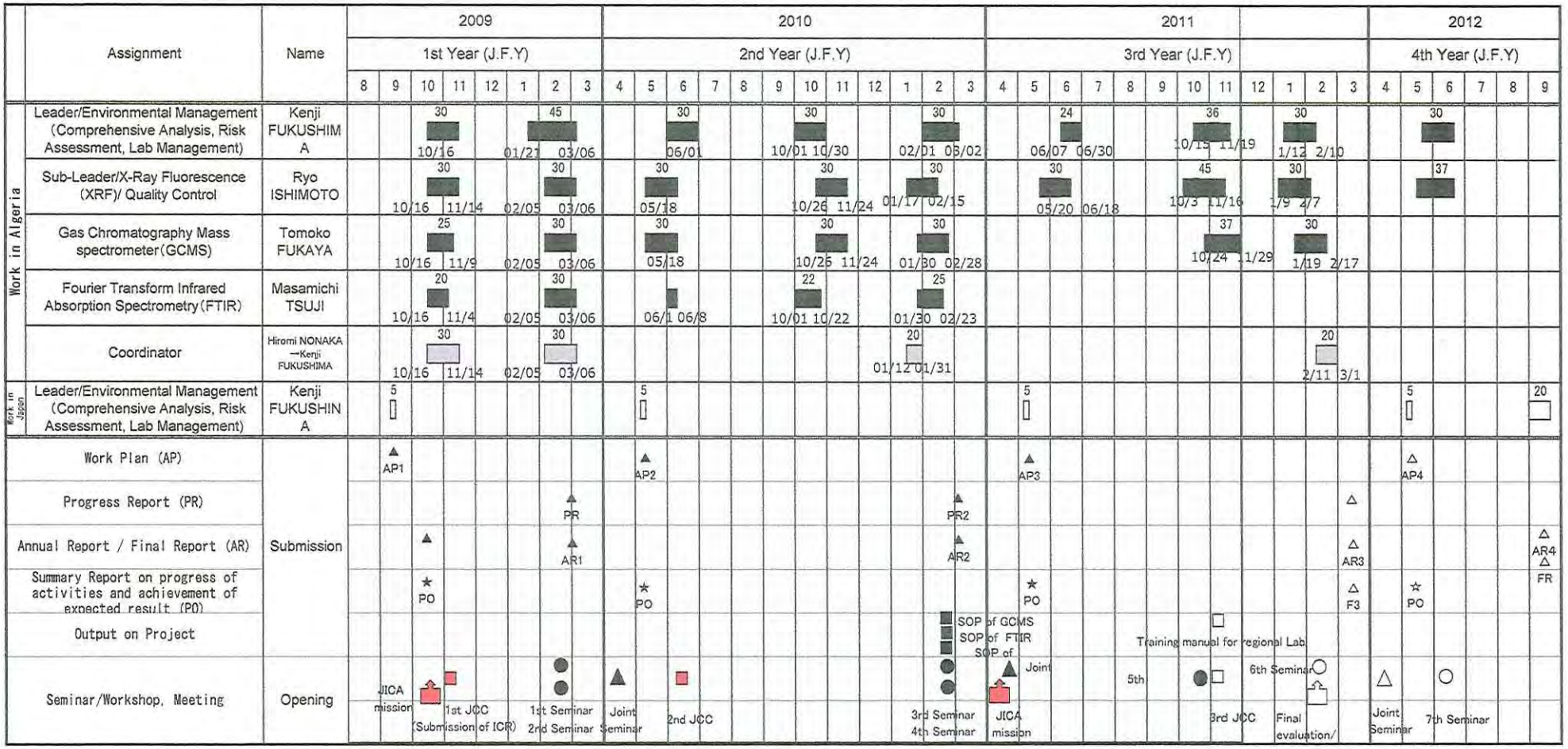
1st Year (J.F.Y) 2009 (9 10 11 12) | 2nd Year 2010 (1 2 3 4 5 6 7 8 9 10 11 12 1 2 3) | 3rd Year 2011 (4 5 6 7 8 9 10 11 12 1 2 3) | 4th Year 2012 (4 5 6 7 8 9) | Remark

Delivery of Equipments and materials	Plan / Result	1st Delivery — Insp. ; 2nd Delivery — Insp.
Joint Coordination Committee (JCC), Mid-term Review (MR), Final Evaluation (FE)	Plan / Result	ICR, 1stJCC ; 2ndJCC ; MR ; 3rdJCC ; FE, 4thJCC
Technical Semminar (TS) / Joint Seminar and Workshop (JSW)	Plan / Result	1st&2ndTS ; JSW ; 3rd & 4thTS ; JSW ; 5thTS ; 6thTS ; JSW ; 7thTS
Products of technical cooperation (SOPs, Training Manual)	Plan / Result	GCMS,FTIR,XRF ; Training Manual
Inception Report and Annual Work Plan (ICR, AP), Progress Report (PR), Annual Report (AR), Plan of Operation (PO), Final Report (FR)	Plan / Result	AP1, ICR ; PR1, AR 1 ; AP2 ; PR2, AR2 ; AP3 ; PR3, AR3 ; AP4 ; AR4, FR

Output of PDM		Objectively Verifiable Indicators	Means of Verification		Activities for Output	Person in charge: Algeria	Person in charge: Japan	
Output 1 CRL acquires advanced technique for GCMS, FTIR and XRF.				1-1	JET and CRL assess the baseline of the capacity for individual analytic technique of GCMS, FTIR and XRF.	CRL	Ishimoto, Fukaya, Tsuji	Plan / Result
	1	Reliable analytical results on hydrocarbon, organo-chlorine, BTX, PAH and agrochemicals (pesticides and insecticides) are generated using GCMS.	1.Records of analyses	1-2	JET transfers the advanced analytical technique for volatile organic compounds using GCMS to CRL.	CRL	Fukaya	Plan / Result
	2	Reliable analytical results on non-volatile organic chemicals are generated using FTIR and its data library.	2.Records of analyses	1-3	JET transfers the advanced analytical technique for non-volatile organic compounds using FTIR to CRL.	CRL	Tsuji	Plan / Result
	3	Reliable results of quantitative XRF analysis are generated.	3.Records of analyses	1-4	JET transfers the advanced analytical technique for potentially toxic elements using XRF to CRL.	CRL	Ishimoto	Plan / Result
	4	SOPs for advanced analytical methods for GCMS, FTIR and XRF are developed.	4.SOPs	1-5	JET and CRL develop SOPs for advanced analytical methods for GCMS, FTIR and XRF.	CRL	Ishimoto, Fukaya, Tsuji	Plan / Result
Output 2 Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site.	1	Pollution inventories including pollution loads are developed.	1.Pollution inventories	2-1	CRL and JET develop pollution inventories in the Model Site with DEWA and DEWB.	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan / Result
	2	Comprehensive monitoring plan including effluent monitoring plans is developed.	2.Comprehensive monitoring plan	2-2	CRL and JET develop comprehensive monitoring plans including effluent monitoring plans for the Model Site.	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan / Result
	3	Collaborative effluent monitoring activities with DEWA and DEWB are conducted periodically.	3.Records of effluent monitoring activities	2-3	CRL implements effluent monitoring to pollution sources with DEWA and DEWB by following advice of JET.	CRL, DEWA, DEWB	Fukushima	Plan / Result
	4	Types/kinds of analysis parameters are increased.	4.Records of analysis	2-4	CRL analyzes samples collected by monitoring activities by following advice of JET.	CRL	Ishimoto, Fukaya, Tsuji	Plan / Result
	5	Comprehensive interpretation and risk assessment of the monitoring results are publicized.	5.Presentation documents, reports, publication	2-5	CRL conducts comprehensive interpretation and risk assessment of the monitoring results in the Model Site by following advice.	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan / Result
	6			2-6	CRL reports the results of the comprehensive interpretation and develops the suggestions to DEWA, DEWB and	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan / Result
Output 3 CRL enhanced quality control capacity of lab analysis work.	1	More than 16 staff in CRL work for quality control for inorganic/organic/microbiological analysis.	1.Hearing from CRL	3-1	JET and CRL assess the problems of quality control system of analytic works.	CRL	Ishimoto	Plan / Result
	2	More than 16 staff in inorganic/ organic/ microbiological analysis section in CRL joined trainings on quality control.	2.Training records	3-2	JET conducts trainings for quality control system of analytic works for CRL.	CRL	Ishimoto	Plan / Result
	3	Quality control system of analytic works is established in CRL.	3.1 Hearing from CRL 3.2 QC reports and log books in CRL	3-3	CRL develops quality control system of analytic works by following advice of JET.	CRL	Ishimoto	Plan / Result
Output 4 Environmental monitoring techniques possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations.	1	Training team by ONEDD(HQ) and CRL is formulated.	1.Hearing from ONEDD	4-1	JET reviews in-house training system of ONEDD and makes suggestions for improvement.	ONEDD/CRL	Fukushima	Plan / Result
	2	Training plan for regional laboratories and monitoring stations is developed.	2.Training plan	4-2	ONEDD develops the plans for supporting regional laboratories and monitoring stations under the support of JET.	ONEDD/CRL	Fukushima	Plan / Result
	3	Training courses for regional laboratories and monitoring stations are conducted twice a year.	3.Training records	4-3	ONEDD organizes training courses for regional laboratories and monitoring stations under the support of JET.	ONEDD/CRL	Fukushima	Plan / Result
	4	Various stakeholders including industries, academics and NGOs participated in ONEDD-MATE-JICA Joint Seminar.	4.1Records of joint seminars 4.2Proceedings of the	4-4	ONEDD and JICA Experts conduct ONEDD-MATE-JICA Joint Seminar and workshops periodically.	ONEDD/CRL	JICA, All Experts	Plan / Result
	5	These workshops for regional laboratories are held as a dissemination of Project contributes	5.Records of workshops			ONEDD/CRL	Fukushima	Plan / Result

2009 (9 10 11 12) | 2010 (1 2 3 4 5 6 7 8 9 10 11 12 1 2 3) | 2011 (4 5 6 7 8 9 10 11 12 1 2 3) | 2012 (4 5 6 7 8 9)

Annex-2 Program of the Project



[Legend of Assignment] Work in Algeria / Work in Japan / Cordinator

[Reports] ICR : Inception Report / FR : Final Report / AR : Annual Report / PR : Progress Report

[Principal Theme of Seminar
1st Seminar: Quality Control
2nd Seminar: Environmental Monitoring in the Model Site
3rd Seminar: Analysis using GCMS
4th Seminar: Analysis using FTIR
5th Seminar: Analysis using XRF
6th Seminar: Comprehensive analysis and risk assessment of environmental monitoring in the model s
7th Seminar: Results of Phase2 and future activities of CRL

Ministère de l'Aménagement du Territoire, et de l'Environnement
Observatoire National de l'Environnement et du Développement Durable

Laboratoire Régional Centre

Procédures D'opérations standards
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Index

Annex 7-6　JCC on February 21, 2012

Minutes of Meeting
Between
The Algerian Terminal Evaluation Team
And
The Japanese Terminal Evaluation Team
On
The Technical Cooperation Project for Capacity Development
of
Environmental Monitoring (Phase 2)

The Japanese Terminal Evaluation Team (hereinafter referred to as 'the Japanese Team'), organized by Japan International Cooperation Agency (hereinafter referred to as 'JICA') and headed by Dr. Mitsuo Yoshida, visited Algeria from February 11 to February 22, 2012 for the purpose of conducting the joint terminal evaluation on the "Project for Capacity Development of Environmental Monitoring (Phase 2)" (hereinafter referred to as 'the Project') on the basis of the Record of Discussions signed on April 28, 2009.

During its stay in Algeria, the Team had a series of discussions and exchanged views with the Algerian Terminal Evaluation Team (hereinafter referred to as 'the Algerian Team') headed by Mr. Adbelkader Benhadjoudja.

As a result of discussions, the Algerian Team and the Japanese Team agreed upon the attached document, including Joint Terminal Evaluation Report.

This Minutes of Meeting including attachments is prepared in two versions. The main version is written in English and the other version is written in French. In case of any divergence of interpretation, the English version shall prevail.

Algiers, February 21, 2012

Dr. Mitsuo YOSHIDA
Leader
Japanese Terminal Evaluation Team,
Senior Advisor,
Japan International Cooperation Agency
(JICA)

Mr. Adbelkader BENHADJOUDJA
Chief of Minister's Cabinet,
Ministry of Land Planning and
Environment
(MATE)

Witnessed by

Mr. Kenji FUKUSHIMA
Chief Advisor
Japanese Expert Team,
Japan International Cooperation Agency
(JICA)

Mr. Tayeb TIRECHE
Director General
National Observatory for Environment
and Sustainable Development
(ONEDD)

ATTACHED DOCUMENT

I. Joint Terminal Evaluation Report

Both Algerian and Japanese parties agreed on the contents of the Joint Terminal Evaluation Report attached as Attachment-I. Japanese party requested Algerian party to follow up the recommendations made by the Joint Evaluation Team so as to maximize the outcome of the Project.

II. Construction of New Laboratory

Japanese party asked Algerian party about the progress of the construction of new laboratory, since the current CRL laboratory is a temporal one and not necessarily suitable for advanced chemical analysis and quality control, which affects the efficiency and sustainability of the Project. Algerian party reported the progress to Japanese party that the plan to set up new laboratory in Boughezoul, a new science and technology capital city, is ongoing and an announcement of tender for selection of detail design firm is opened in a newspaper on 16th October, 2011.

III. Coordination with Wilaya Environmental Departments

For the effective inspection of industrial units, both parties noticed that coordination between ONEDD and Wilaya environmental departments is indispensable. MATE will take appropriate measures in this regard for global coordination.

IV. Appreciation for Japanese Technical Cooperation

Algerian party expressed their appreciation for Japanese Technical Cooperation since the year 2003. Especially, through the two-phased Technical Cooperation Projects and Country-focused Training Course program in Japan, the cooperation with the Japanese party greatly enhanced the CRL function and contributed for human resource development.

Attachment- I Joint Terminal Evaluation Report
Attachment- II List of Attendants

Attachment-I

THE JOINT TERMINAL EVALUATION REPORT

for

THE PROJECT FOR CAPACITY DEVELOPMENT OF ENVIRONMENTAL MONITORING (PHASE 2)

February 21, 2012

Algeria-Japan Joint Terminal Evaluation Team

Dr. Mitsuo YOSHIDA
Team Leader
Japanese Terminal Evaluation Team
Japan International Cooperation Agency
(JICA)

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Sustainable Development (ONEDD)

Ms. Assia BECHARI
Assistant Director
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Ministry of Land Planning and Environment
(MATE)

Ms. Asma OURAMDANE
Chief
Industrial Depollution Program
Ministry of Land Planning and Environment
(MATE)

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1. Project Design Matrix (PDM)
2. Plan of Operation (PO)
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4. List of Counterpart Trained in Japan
5. List of the Provided Equipment
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Abbreviation and Acronyms

BTX	*Benzene, Toluene, Xylene*
C/P	*Algerian Counterpart*
CRL	*Central Regional Laboratory*
DEWA	*Direction of the Environment of Province of Alger*
DEWB	*Direction of the Environment of Province of Blida*
FTIR	*Fourier Transform Infrared Spectrophotometer*
GCMS	*Gas Chromatograph – Mass Spectrophotometer*
GLP	*Good Laboratory Practice*
JCC	*Joint Coordinating Committee*
JET	*JICA Expert Team*
JER	*Joint Evaluation Report*
JICA	*Japan International Cooperation Agency*
MATE	*Ministry of Land Planning and Environment*
MATET	*Ministry of Land Planning, Environment and Tourism*
NAPE-SD	*National Environment Action Plan for Sustainable Development*
OEH	*Oued El Harrach*
ONEDD	*National Observatory for Environment and Sustainable Development*
ONEDD/HQ	*Headquarter of ONEDD*
PAH	*Polycyclic Aromatic Hydrocarbons*
PCM	*Project Cycle Management*
PDM	*Project Design Matrix*
PO	*Plan of Operation*
P&T	*Purge and Trap*
R/D	*Record of Discussions*
SNE	*Stratègie Nationale de l'Environnement*
SNIE	*National Environmental Database*
SOP	*Standard Operating Procedure*
XRF	*X-ray Fluorescence Analyser (Energy Dispersive type)*

1. OUTLINE OF THE EVALUATION STUDY

1-1 Background of the Evaluation Study

The Ministry of Land Use Planning and Environment (MATE) prepared the "Environment National Strategy (SNE)" and the "National Environment Action Plan for Sustainable Development (NAPE-SD)" under the process of preparing "The Report on the Environmental State and Future" in 2000. The "Environment National Strategy" identified twelve challenges to achieve the following three objectives: 1) To integrate the environmental viability into the programs of the socio-economic development of the country, 2) To achieve a sustainable growth, and reduce poverty, and 3) To secure the public health.

The National Observatory of Environment and Sustainable Development, ONEDD, was established under MATE as a part of the NAPE-SD in 2002. The mission of ONEDD is to support the decision making of the environmental administration, and to provide services in the field of laboratory analysis through collecting the information on the current condition of the environment and industrial activities and research of the environment. When outline of the water and sediment pollution in the Oued El Harrach (OEH) was reported as a result of field studies conducted by the JICA short-term experts dispatched from 2003 to 2005, MATE recognized the needs to strengthen his capacity to conduct the environmental monitoring. Consequently, the Government of Algeria requested to the Government of Japan a technical cooperation project for capacity development of ONEDD in environmental monitoring.

According to the request on the above, JICA and ONEDD conducted the "Technical Cooperation Project for Capacity Development of Environmental Monitoring in Algeria" from November 2005 to November 2008, which focused on the strengthening of environmental monitoring capacity of the Central Regional Laboratory (CRL), which is a part of the ONEDD, located in Alger. Through this Project, ONEDD/CRL acquired skills and knowledge such as sampling technique, organic/inorganic chemical analysis and microbial analysis, which led to increase in analysis orders from other clients as well as increase in the number of samples analyzed. ONEDD/CRL increased its capacity and came to be realized as a public environmental monitoring organization in Algeria.

Nevertheless, the capacity of ONEDD/CRL was still at basic level and needs to be enhanced even more in the field of quality control and laboratory management, advanced analytical techniques (such as GCMS, FTIR, and XRF), comprehensive interpretation and risk analysis, so as to effectively conduct environmental monitoring activities. To tackle these challenges, MATE and ONEDD requested a technical cooperation project to JICA.

According to the request, JICA dispatched the Preparatory Study Mission to Algeria in March 2009 and agreed on the contents of the Project with Algerian side, and signed on the Record of Discussions (R/D) on April 28, 2009, which stipulated the framework of the Project. The Project started on October 2009 with three (3) years' cooperation period (until September 2012), and it is now being implemented with five (5) JICA experts dispatched (Leader/Environmental Management, Sub-Leader/XRF, GCMS, FTIR, and Coordinator). As the cooperation period of the Project will terminate in September 2012, the terminal evaluation has been planned in February 2012 in order to verify its achievement. The specific objectives of the terminal evaluation are summarized in the next section.

1-2 Objectives of the Evaluation Study

The specific objectives of the terminal evaluation are outlined as follows:

(1) To review the progress of the Project and evaluate the achievement in accordance with the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability)

(2) To identify the factors to promote/impede the effects

(3) To consider the necessary actions to be taken before/after the end of the Project, and make recommendations for the Project

(4) To summarize the result of the study in a joint evaluation report (JER)

1-3 Members of Evaluation Study Team

The Joint Evaluation Members of the Terminal Evaluation consist of the following members:

1-3-1 The Algerian Side

Mr. Abdelkader BENHADJOUDIA	Team Leader	Chief of Minister's Cabinet Ministry of Land Planning and Environment (MATE)
Mr. Tayeb TIRECHE	Member	Director General National Observatory for Environment and Sustainable Development (ONEDD)
Ms. Assia BECHARI	Member	Assistant Director Proper Technology and Valorization of Waste Ministry of Land Planning and Environment (MATE)
Ms. Asma OURAMDANE	Member	Chief Industrial Depollution Program Ministry of Land Planning and Environment (MATE)

1-3-2 The Japanese Side

Dr. Mitsuo Yoshida	Team Leader	Senior Advisor Japan International Cooperation Agency (JICA)
Dr. Mimpei Ito	Member	Deputy Director, Environmental Management Division 2, Global Environment Department, Japan International Cooperation Agency (JICA)

1-4 Schedule of the Evaluation Study

Date		Activities
11/Feb.	Sat	Arrival of Japanese Team at Algiers
12/Feb.	Sun	Courtesy call to MATE and ONEDD Presentation from C/P(each output), explanation of Terminal Evaluation
13/Feb.	Mon	Preparation of documents
14/ Feb.	Tue	Presentation of Algerian C/P (continued) Evaluation on analytical skill / C/P interview
15/ Feb.	Wed	C/P interview
16/ Feb.	Thu	Discussion on Evaluation report

17/ Feb.	Fri	Modification of Evaluation report
18/ Feb.	Sat	Preparation of Minutes of Meeting (M/M)
19/ Feb.	San	Discussion on Evaluation report
20/ Feb.	Mon	Finalization of Evaluation report and M/M
21/ Feb.	Tue	Signing of M/M Report to ONEDD/CRL
22/ Feb.	Wed	Departure of Japanese Team from Algiers

1-5 Methodology of Evaluation

1-5-1 Evaluation Procedure

The Joint Evaluation Team (hereinafter referred to as "the Team") conducted surveys by questionnaires and interviewed the counterpart personnel (herein after referred to as "C/Ps") and the Japanese experts as well as those officials concerned with the Project. The Team analyzed and evaluated the Project from the viewpoints of evaluation criteria according to the method of Project Cycle Management (PCM).

1-5-2 Items of Analysis

(1) Accomplishment of the Project

Accomplishment of the Project was measured in terms of Inputs, Outputs, and Project Purpose in comparison with the Objectively Verifiable Indicators of the PDM (PDM developed during the Project Consultation Mission in April 2011) as well as the plan delineated in the R/D.

(2) Implementation Process

Implementation process of the Project was also reviewed from the various viewpoints, such as technical transfer, communications among stakeholders, and monitoring process, to see if the Project has been managed properly as well as to identify obstacles and/or facilitating factors that have affected the implementation process.

(3) Evaluation based on the Five Evaluation Criteria

The Evaluation Team also assessed the Project from the viewpoint of following five evaluation criteria.

1) Relevance:

The extent to which the Project Purpose and Overall Goal are consistent with the government development policy of Algeria as well as the development assistant policy of Japan, and needs of beneficiaries.

2) Effectiveness:

The extent to which the Project has achieved its purpose, clarifying the relationship between the Project Purpose and Outputs.

3) Efficiency:

The extent to how economically resources/inputs (funds, expertise, time, etc.) are converted to results/output with particular focus on the relationship between inputs and outputs in terms of timing, quantity and quality.

4) Impact:

Project effect on the surrounding environment in terms of technical, socio-economic, cultural, institutional and environmental factors. Project impacts are to be viewed from cross-cutting aspects according to positive or negative effects.

5) Sustainability

Sustainability of the Project is assessed from the standpoint of organizational, financial and technical aspects, by examining the extent to what the achievements of the Project will be sustained or expanded after the assistance is completed.

2. OUTLINES OF THE PROJECT

The expected Overall Goal, Project Purpose and Outputs written in the current PDM are as follows:

2-1 Overall Goal:

ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations where CRL plays a leading role.

2-2 Project Purpose:

ONEDD's Capacity to generate environmental information for effective environmental management including inspection, enforcement and pollution prevention is strengthened.

2-3 Outputs:

(1) CRL acquires advanced analytic technique for GCMS, FTIR and XRF.
(2) Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site.
(3) CRL enhanced quality control capacity of lab analysis work.
(4) Environmental monitoring technologies possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations.

Details of Activities are shown in the PDM (ANNEX-1), and the schedule of the Project is summarized as shown in the Plan of Operation (PO) attached in the ANNEX-2.

3. ACHIEVEMENT AND IMPLEMENTATION PROCESS

3-1 Inputs

Inputs to the Project during the second phase are as follows:

3-1-1 Japanese Side

Most of the inputs from the Japanese side are executed as follows.

(1) Dispatch of the Japanese Experts

For the technical transfer at the CRL under the Output 1～4, five (5) experts in the five (5) fields were dispatched. And for the Joint Seminars, which were held under the Activity 4-4, five (5) experts as

lecturers were dispatched for these seminars. Details are given in the ANNEX-3.

(2) Trainings in Japan
Total of four (4) C/Ps participated in the trainings on the environmental monitoring and pollution control in Japan, which was financed by the scheme of JICA Country-Focused Training Course. Details are given in the ANNEX-4 in 2010 and 2011.

(3) Provision of Equipment
Equipment, which is equivalent to approximately JPY15.8 million were provided for the implementation of the Project. Major equipment includes, FTIR data library, vacuum pump, standard materials, etc. Details are given in the ANNEX-5.

3-1-2 Algerian Side

(1) C/Ps
The Algerian side nominated the C/Ps for conducting project activities (Output 1~4) defined by the R/D. At the beginning of the Project, there were seventeen (17) C/Ps attending the project activities from the ONEDD/HQ, and CRL. At the end of the Project, the number of C/Ps increased to twenty-four (24). Three (3) C/Ps left the Project due to the various reasons and three (3) C/Ps were transferred to MATE. The list of C/Ps is shown in ANNEX-6.

(2) Project Management Cost
In order to carry out the activities, the total amount of approximately Euro 181,800 (equivalent to 18 million Algerian Dinar) [1]was disbursed from the Algerian side.

(3) Office Space for the Experts and Consumables
The Algerian side has allocated the office space for the JICA Expert Team in the CRL with utilities and some furniture for the Project. And in order to carry out the project activities, the Algerian side provided consumables, such as chemicals, gas, etc.

3-2 Achievement of the Project

The Team evaluated the achievements of Outputs and Project Purpose according to the indicators on PDM and summarized the results as follows:

3-2-1 Outputs

Output 1: "CRL acquires advanced analytic technique for GCMS, FTIR and XRF."

Objectively Verifiable Indicators:

1-1 Reliable analytical results on hydrocarbon, organo-chlorine, BTX, PAH and agrochemicals (pesticides and insecticides) are generated using GCMS.
1-2 Reliable analytical results on non-volatile organic chemicals are generated using FTIR and its data library
1-3 Reliable results of quantitative XRF analysis are generated
1-4 SOPs for advanced analytical methods for GCMS, FTIR and XRF are developed

[1] FX rate at @99.01 per Euro as of Feb.17,2012

Owing to the limitation of present prefabricated lab infrastructure, toxic organic chemicals (organo-chlorine, pesticide, insecticide, etc.) cannot be analyzed. BTX also cannot be analyzed due to malfunction of P&T unit of GCMS. However other volatile organic compounds can be analyzed using GCMS. The result of test analysis of masked standard sample in the Terminal Evaluation showed that the reliability of GCMS analysis of the volatile compounds is satisfactory level (Indicator 1-1). The result of test analysis of masked standard sample in the Terminal Evaluation showed that the reliability of FTIR analysis of non-volatile compounds is satisfactory level (Indicator 1-2). As for the reliability of XRF qualitative analysis, the result of test analysis of masked standard sample in the Terminal Evaluation showed that it is satisfactory level. However, regarding the quantitative analysis, it has been developed basically (Indicator 1-3). Apart from these analytical techniques, SOPs for advanced analytical methods for GCMS, FTIR and XRF have been successfully developed, which are practically applicable in present conditions of ONEDD. SOPs for other analytical instruments also developed. A handbook of SOPs (preliminary version) is firstly published by ONEDD under the financial support of JICA (Indicator 1-4).

It is expected that ONEDD-CRL will acquire advanced analytical technique for GCMS, FTIR and XRF, by the end of the Project. However due to malfunction of P&T device of GCMS, one of advanced techniques cannot be practically utilized. In summary, the Output 1 could be said as **"mostly achieved".**

Output 2: "Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site."

Objectively Verifiable Indicators:

2-1 Pollution inventories including pollution loads are developed
2-2 Comprehensive monitoring plan including effluent monitoring plans is developed
2-3 Collaborative effluent monitoring activities with DEWA and DEWB are conducted periodically
2-4 Types/kinds of analysis parameters are increased
2-5 Comprehensive interpretation and risk assessment of the monitoring results are publicized

Inventories of industrial unit (potential polluters) are developed for the Model Site (Oued El Harrach and Oued Smar area). However DEWA did not give the necessary support to CRL-ONEDD for the sampling in these industrial units. This prevented to make detailed inventories of the pollution sources (Indicator 2-1). Monitoring plan including effluent monitoring plan is developed within the framework of available inventory data (Indicator 2-2). Collaborative effluent monitoring activities with DEWA and DEWB have been conducted five (5) times. Collaborative effluents monitoring with DEWB is frequent. As a whole, it is hard to say the monitoring have been conducted "periodically" (Indicator 2-3). 4 types and more than 39 kinds of analysis parameters are increased in the course of the Project as summarized in the following Table-1 (Indicator 2-4). According to the Plan of Operation (ANNEX-2), a comprehensive interpretation and risk assessment of the monitoring results in Model Site will be publicized in Seminar and Final Report by the end of the Project. Preliminary interpretation has been already attempted in ONEDD-CRL in-house workshop (Indicator 2-5).

Table-1: Increased number of analytical parameters in the Project (source JET)

Type	GCMS	GCMS/P&T	FTIR	XRF
Analytical Parameters	15	24	Non-volatile organic compound analysis	quick element analysis of solid sample

It is expected that ONEDD-CRL will upgrade the environmental monitoring capacity by the end of the Project if planned effluent monitoring activities in the Model Site will be successfully implemented in closed collaboration with DEWA/DEWB under the coordination of MATE. Therefore, it was confirmed that the Output 2 could be said as **"partly achieved".**

Output 3: "CRL enhanced quality control capacity of lab analysis work."

Objectively Verifiable Indicators:

3-1 More than 16 staff in CRL work for quality control for inorganic/organic/microbiological analysis
3-2 More than 16 staff in inorganic/ organic/ microbiological analysis section in CRL joined trainings on quality control
3-3 Quality control system of analytic works is established in CRL

Total 20 staffs in ONEDD-CRL are participating the quality control work (Indicator 3-1). The number of the in-house workshops counts 19 times with participation of majority of staffs (Indicator 3-2). Quality control system of analytical works is established on the basis of GLP (Good Laboratory Practice) principle and being managed by three core staffs trained by the JICA expert (Indicator 3-3).

Therefore, it is expected that ONEDD-CRL will enhance the quality control capacity of lab analytical works by the end of the Project. The framework of quality control is based on GLP concept which is firstly introduced new concept for ONEDD. In summary, the Output 3 could be said as **"successfully achieved".**

Output 4: "Environmental monitoring technologies possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations."

Objectively Verifiable Indicators:

4-1 Training team by ONEDD(HQ) and CRL is formulated
4-2 Training plan for regional laboratories and monitoring stations is developed
4-3 Training courses for regional laboratories and monitoring stations are conducted twice a year
4-4 Various stakeholders including industries, academics and NGOs participated in ONEDD-MATET-JICA Joint Seminar
4-5 Three workshops for regional laboratories are held as a dissemination of Project contribution

A trainer team of ONEDD had been set-up with the support of JET as shown in the Table-2. (Indicator 4-1). A draft training plan for ONEDD regional laboratories and monitoring stations was developed (Indicator 4-2). As for training courses for ONEDD regional laboratories and monitoring stations, only two training courses were conducted by ONEDD owing to a lack of budget (see Table-4). Moreover, visiting consultations of JICA expert to Western Regional Laboratory Oran and Eastern Regional Laboratory Constantine were carried out. Laboratory staffs of Oran and Constantine also participated in training programs conducted by JET in ONEDD-CRL (Indicator 4-3). Algeria-Japan Joint Seminar on Environmental Issue was organized two times, 2010 and 2011 in Alger, by MATE, ONEDD and JICA,

according to the initial plan. The seminar topics were water pollution (2010) and waste pollution (2011). More than 110 professionals, researchers, NGOs and government officers attended the Joint Seminars. The third Joint Seminar during the Project period will be organized in April 2012 in Oran. The seminar topic is set as marine pollution (Indicator 4-4). JET-led Workshops for ONEDD regional laboratories have been held 3 times (Constantine (2009), Oran (2010), Oran (2011)), and the final workshops will be held in Oran and Constantine in June, 2012, as summarized in the following Table-3 (Indicator 4-5).

Table-2 : Name of the engineer trainers from CRL (source CRL-ONEDD)

Name	Target Parameters
MOALI Mohamed	Laboratory Management
ANANE Radia	Cyanide, Nitrogen Kjeldahl
AZOUANI Sophia	Heavy metals
BENSOUILAH Ouahiba	BOD5 and Total nitrogen
Lakhdari Mohamed	Sampling
DJOGHLAF Hadda	COD, oil and grease, SS
HOUAS Omar	Heavy metals
MEBREK Hanifa	COD, oil and grease, SS
NECHAOUNI Leila	Total phosphorus
TIBECHE Amel	COD, oil and grease, SS, florides, chlorides

Table-3: Record of workshops and training made by the Project supported by JET (source JET)

Year/Month	Venue	Participants	Workshop	Training Course
November 2009	Constantine	2 JICA experts 1 ONEDD HQ Officer 8 Regional lab staffs	Discussion on environmental issues with industry and local government	
February 2010	Oran	2 JICA experts 1 ONEDD HQ Officer 5 Regional lab staffs	Discussion on laboratory issue	
November 2011	Oran	1 JICA expert 1 ONEDD-CRL Director 1 ONEDD HQ Officer 6 Regional lab staffs 5 Station staffs	Discussion on laboratory issue	Handling of analytical data
(June 2012)	Constantine		GLP/SOP	GLP/SOP
(June 2012)	Oran		GLP/SOP	GLP/SOP

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Table-4: Internal Training course made by CRL engineers to their colleagues (source CRL-ONEDD)

Unit	Training duration	Year of the training	Number of trainees	Place of the traning
Monitoring station of Bordj Bou Aréridj	3 days	2009	3	Station of BBA
	3 days	2010	2	LRC
Monitoring station of Ain Edefla	3 days	2009	3	LRC
	6 days	2010	3	LRC
Monitoring station of Djelfa	3 days	2009	4	Station of Djelfa
	4 days	2010	2	LRC
Monitoring station of Annaba	4 days	2010	2	LRC
Eastern Regional Laboratory of Constantine	4 days	2010	2	LRC

It is expected that ONEDD-CRL will disseminate the environmental monitoring technologies acquired by the Project to other ONEDD regional laboratories, monitoring stations and other relevant organizations by the end of the Project if planned training courses and workshops are successfully organized by the ONEDD headquarters. In summary, the Output 4 could be said as **"partially achieved"**.

3-2-2 Project Purpose

Project Purpose: "ONEDD's Capacity to generate environmental information for effective environmental management including inspection, enforcement and pollution prevention is strengthened."

Objective Verifiable Indicators:

1. The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various clients
2. Number of disclosed information related environmental pollution is increased.
3. Number of effluent monitoring is increased.
4. Number of contract on industrial wastewater monitoring is increased

As show in the following Figure-1, the number of clients is increasing since the commencement of the Project. It means ONED-CRL is able to respond to the requisition about the environmental monitoring from various clients, according to the human and installed analytical instruments (Indicator P-1). The information related to environmental pollution is disclosed two times in the occasions of Joint Seminars in 2010 and 2011, by the CRL staffs. It is also expected to disclose the result of monitoring program of the Model Site in the Joint Seminar 2012 and later on to disclose through ONEDD website (Indicator P-2). The number of effluent monitoring in the Model Site is also increased as shown in the Figure-1 (Indicator P-3). Lastly, the number of contract on industrial wastewater monitoring is increased as summarized in the Table-5 (Indicator P-4).

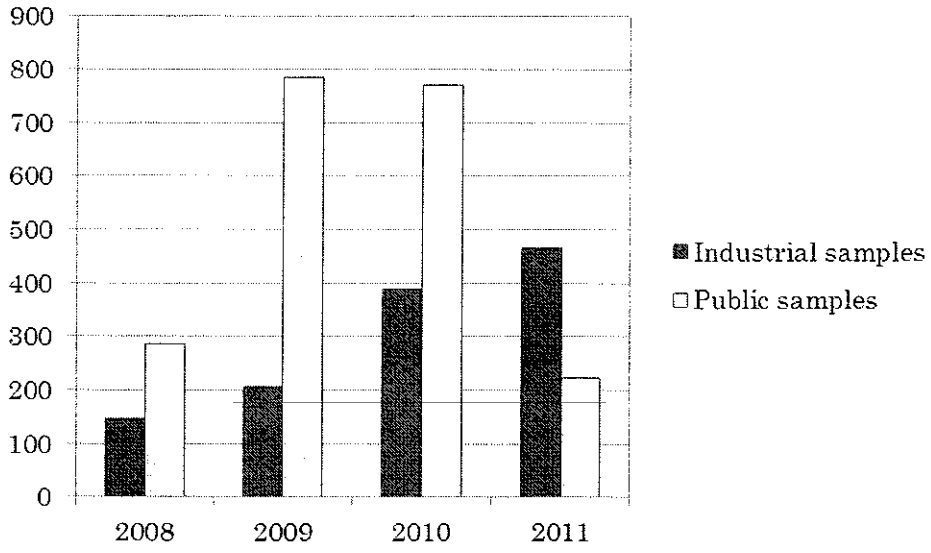


Figure-1: The number of samples analyzed by ONEDD-CRL (source CRL-ONEDD)

Table-5: The number of clients on industrial wastewater monitoring (source CRL-ONEDD)

Fiscal Year	Number of clients
2008	40
2009	54
2010	69
2011	82

Judging from the above figures, the ONEDD's capacity to generate environmental information for effective environmental management including inspection, enforcement and prevention is undoubtedly strengthened. The number of monitoring services for industrial units is steadily increased since the commencement of the course of the Project, which indicates that ONEDD-CRL is gradually recognized as an environmental monitoring institute for effective environmental management. Therefore, the Project Purpose could be said as **"mostly achieved"**.

However, in order to sustain the current level of achievements, continuous efforts to expand environmental monitoring including effluent monitoring, which requires coordination among stakeholders, are needed.

3-2-3 Overall Goal

Overall Goal : "ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations where CRL plays a leading role."

Objective Verifiable Indicators:

1-1 Realization of national environmental monitoring system based on the National Environmental Strategy.
1-2 Establishment of National Environmental Database (SNIE).
1-3 CRL plays a role of the reference environmental laboratory in Algeria.

The plan for establishing nation-wide environmental monitoring system is under the consideration of MATE and not yet materialized (Indicator O-1). The plan for establishing SNIE is under the consideration of MATE in the framework of new 10 Years National Plan (Indicator O-2). It is difficult to predict the realization of CRL being the reference laboratory in near future under current conditions. There would be many challenges for ONEDD-CRL to be upgraded to a Reference Laboratory (Indicator O-3).

ONEDD-CRL acquired various environmental monitoring skills including lab analyses, which plays important roles for enhancing the monitoring capacity for all over the ONEDD. However it is still difficult to predict concretely a nation-wide environmental monitoring system based on the National Environmental Strategy, because of the MATE policy in new 10 Years National Plan is under the consideration.

3-3 Project Implementation Process

Project Design Matrix (PDM) had been developed before the commencement of the Project as a tool to monitor the progress of project implementation. The monitoring of the Project was regularly conducted jointly by C/P and JET through the framework of JCC. Publishing the progress reports (two times) also contributed for effective monitoring of the Project. JICA HQ also annually dispatched consultation mission for monitoring the progress of the Project, in the occasion of the Algeria-Japan Joint Seminar in April. The results of monitoring had been applied for the project management such as new assignment of C/P in some area and modification of expert dispatch program.

As shown in ANNEX-2, most activities were implemented as planned, but Activities 2-5 (interpretation and risk assessment), 2-6 (making reports on the result and formulation of recommendation), shows some delay and/or not implemented so far because of the lack of data. The Activity 4-3 (Internal training) experienced some delay because of lack of budget.

The Project is generally operated by C/P, which indicates a high ownership in Algerian side.

Questionnaire/interview survey revealed that the communication and mutual understanding between JET and C/P are generally fruitful.

4. EVALUATION BY FIVE CRITERIA

4-1 Relevance

The relevance of the Project is high.

The Project is consistent with the "National Environment Strategy (SNE)" and "National Action Plan for Environment and Sustainable Development (NAPE-SD)", both of which set the year 2010 as a target year. Under SNE and NAPE-SD, the Algerian Government conducts Depollution Program, which includes Oued El Harrach (OEH) as a target river. The Decree 07-300 (issued in 2007, enacted in 2010) defined ONEDD as designated laboratory for industrial wastewater monitoring. Environmental monitoring will be focused on priority issue for next 10 years national plan of environmental protection, which is under the preparation by the Government of Algeria.

According to the "Rolling Plan for the People's Democratic Republic of Algeria", which is developed by MOFA Japan, the Project is included in "Environmental Measures Program" under the development issue of "Improvement of environmental pollution". So, the Project deals with the priority issue of Japan and JICA.

One of the functions of ONEDD is to analyze industrial effluents and environmental samples, to interpret and to combine those data, and to provide information for other stakeholders so as to be used for enforcement. The Project deals with capacity development of ONEDD staff in terms of analysis, data interpretation, and quality control. Thus, the Project matches with the needs of the target group.

4-2 Effectiveness

The effectiveness of the Project is moderate to high.

1) Project Purpose

As explained in 3-2-2, judging from the performance of the indicators and the comments received during the Terminal Evaluation, the Project Purpose could be said as "mostly achieved". However, in order to sustain the current level of achievements, continuous efforts to expand environmental monitoring including effluent monitoring, which requires coordination among stakeholders, are needed.

2) Contribution of Each Output

Four (4) Outputs have been contributing to achieve the Project Purpose in the following manner. By conducting the monitoring activities of two Wilayas (Output 2) and by disseminating the monitoring technologies to other laboratories/monitoring stations (Output 4), environmental information will increase quantitatively. Likewise, by acquiring advanced techniques (Output 1) and by enhancing the capacity of quality control (Output 3), environmental information will improve qualitatively.

3) Inhibiting/Promoting Factors to Achieve the Project Purpose

Minister of Land Planning and Environment had issued the Circular (370/SPM/10; 28th November 2010) on procedures of execution of the Executive Decree No. 07-300 for industrial wastewater monitoring. The intention of this Circular was to promote joint inspection/joint effluent monitoring activities of ONEDD and industrial unit of Wilaya Environmental Departments. The Circular paved the way for joint monitoring and regarded as a promoting factor.

However DEWA did not give the necessary support to CRL-ONEDD for the sampling in these industrial units. This prevented to make detailed inventories of the pollution sources.

4-3 Efficiency

The efficiency of the Project is considered as moderate to low.

1) Japanese Side

Most of the inputs from Japanese side, such as expert dispatch, training of C/Ps in Japan and local cost support, were executed as planned. Appropriate coupling between Japanese experts and C/Ps was sometimes difficult because of limited stay of experts, which affected the efficiency.

2) Algerian Side

The assignment of technical C/P gradually increased from seventeen (17) to twenty-four (24) at the time of Terminal Evaluation. It was pointed out in the questionnaire survey that the number of C/P was sufficient for project implementation but the technical transfer program was much more efficiently implemented if more experienced personnel who has basic knowledge of chemistry would be recruited as staff C/Ps for chemical analysis work.

It was pointed out that there were some delays in execution of internal training program of the engineers of the other regional laboratories and monitoring stations due to a lack of ONEDD budget. Questionnaire survey also revealed that the analytical instruments (FTIR and GCMS) and the status of infrastructure of current prefabricated temporal laboratory inhibited the smooth implementation of activities of experts and C/P.

4-4 Impact

There are several positive impacts of the Project. Enhanced analytical capacity of ONEDD-CRL has promoted its publicity and resulted in the significant increase of clients for environmental monitoring works. MATE has assigned ONEDD as designated laboratory for industrial effluent monitoring as given in Decree 07-300 and the Circular for applying a penalty tax system against discharging wastewater above the regulation level. Under such circumstance, some of industrial units, such as chlorine manufacturing plant are planning to adopt a cleaner production process. Some of the results of Project activities of ONEDD-CRL were reported by local mass media in the occasion of Joint Seminar in 2011, which contributed to raise public awareness on environmental pollution.

MATE is launching an industrial depollution study of the OEH basin, which wastes will be directed to stations of industrial effluent purifications.

No negative impact has been observed.

4-5 Sustainability

The sustainability of the Project, judged as moderate level, can be secured though continuous efforts of ONEDD with support of MATE.

1) Policy aspects

MATE is now updating the 10 years National Action Plan of Environment and Sustainable Development. According to the interview survey, the environmental monitoring is still one of the priority issues in the next national plan, as well as SNE.

2) Organizational aspects

According to the interview result, new laboratory facility of ONEDD CRL is now on the stage of detail design, to be constructed in the New Science City of Boughezoul, which secures to enhance the monitoring capacity and human resource development of ONEDD.

3) Financial aspects

Consequently to the established weakness of ONEDD budget and considering that most of the ONEDD missions are public service missions and in order to ensure a better financial sustainability, MATE decided to change its status in February 2012.

4) Technical aspects

As already seen in the section 3-2-1, technical sustainability is secured in chemical analysis if the C/Ps continue to work in the laboratory. Technical sustainability is rather moderate in comprehensive interpretation of monitoring results and risk assessment based on the monitoring data.

5. CONCLUSIONS AND RECOMMENDATIONS

5-1 Factors Promoting the Impact and Sustainability of the Project

5-1-1 Factors Concerning to Planning

(1) Needs in the environmental monitoring

As the industrialization process is accelerating in Algeria with rapid economic growth, environmental pollution load is also increasing. Thus, there is a growing need for monitoring of effluent, in particular from industrial units. This Project was planned to meet this growing needs in Algeria.

5-1-2 Factors Concerning to the Implementation Process

(1) Utilization of Seminars and Workshops

By taking the opportunities of seminars, workshops and Joint Seminars, C/Ps are urged to summarize what they had learned from the Project activities and to make presentation. These opportunities helped C/Ps to deepen their understanding and also served as a good occasion to promote the activities of ONEDD/CRL.

5-2 Factors Inhibiting the Impact and Sustainability

5-2-1 Factors Concerning to Planning

(1) DEWA involvement

Since the planning stage of the Project, DEWA has been insufficiently involved for a better implementation of the Project.

5-2-2 Factors Concerning to the Implementation Process

(1) Needs for appropriate laboratory and good maintenance of analytical instruments

Current prefabricated temporal laboratory also has negative effect on those instruments. Fragile laboratory infrastructure is not suitable for accurate chemical analysis and safety work environment, which negatively affects smooth technology transfer program on advanced analysis techniques.

5-3 Conclusions

Based on the Five Evaluation Criteria, Relevance is considered to be high, and Effectiveness is moderate to high. On the other hand, the Efficiency is observed to be moderate to low, and Sustainability is moderate. Therefore, the Team concluded that the Project has mostly been able to achieve its Purpose within the remaining period, given that continuous efforts are made by the Algerian side.

The Team identified that one of the largest constraints for efficient implementation of the Project is the delay of the new laboratory construction. This issue was also raised at the last Terminal Evaluation Study of Phase 1 Project. The lack of proper laboratory limit certain advanced chemical analysis, and affect the

condition of analytical instruments.
However, the Team judged the achievement level of each analytical technique and quality control was satisfactory level, even under the given constraints of laboratory condition.

5-4 Recommendations

(1) Construction of new laboratory
Since the delay of new laboratory construction limit certain advanced chemical analysis and affect the condition of analytical instruments, it is strongly recommended that ONEDD would continue its effort for construction of new laboratory. Considering the safety issue, the advanced analysis of toxic organic chemicals (organo-chlorine, pesticide, insecticide, etc.) would only be possible after the new laboratory is constructed.

(2) Dissemination of knowledge and skills
Knowledge and skills on advanced technologies of chemical analysis acquired by ONEDD/CRL should be defused for other ONEDD regional laboratories and monitoring stations under systematic dissemination program.

(3) Scientific risk assessment
The achievement of environmental monitoring in the Model Site is still partial, which covers about 30% of industrial units in the area. It is recommended to accumulate more monitoring data in the area, and after getting sufficient data a scientific risk assessment should be attempted.

(4) Securing the periodical maintenance of analytical instruments
Keeping the condition of analytical instruments in good condition is vital for continuing the environmental monitoring activities. Especially, the advanced analytical techniques dealt during this Project needs appropriate maintenance instruments such as GCMS and FTIR. It is recommended that ONEDD keeps its effort for seeking maintenance supports from the engineering firms.

(5) Budget allocation
To secure these recommendations, it is also recommended to secure/allocate budget for training activities and maintenance of instruments.

ANNEX-1 PROJECT DESIGN MATRIX (Revised)

Project Name: Capacity Development of Environmental Monitoring (Phase 2)

Implementing Agency: ONEDD Cooperating organizations: DEWA and DEWB Supporting Organization: MATE

Project Period: October 2009 to October 2012 (3 years)

Target Group: Staff of ONEDD (CRL and ONEDD Headquarters)

Project Area: Alger, Blida, Oran Constantine Province Model Site: OEH basin in Alger and Blida Provinces and coastal area in Alger Province

Date: April 13, 2011

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal ONEDD establishes environmental monitoring system based on the National Environmental Strategy under the well-organized network of laboratories and stations where CRL plays a leading role.	1. Realization of national environmental monitoring system based on the National Environmental Strategy. 2. Establishment of National Environmental Database (SNIE) 3. CRL plays a role of the reference environmental laboratory in Algeria.	1/2 Report of Environmental State of Algeria published by MATET 3.1 Record of supply of reference materials to other laboratories and stations 3.2 Record of technical support, consulting and training, to other laboratories and stations 3.3 Network with research institutes in Algeria 3.4 Accredit from international analytical association	
Project Purpose ONEDD's Capacity to generate environmental information for effective environmental management including inspection, enforcement and pollution prevention is strengthened.	1. The Central Regional Laboratory (Alger) is able to response to the requisition about the environmental monitoring from various clients 2. Number of disclosed information related environmental pollution is increased. 3. Number of effluent monitoring is increased. 4. Number of contract on industrial wastewater monitoring is increased.	1.1 Contracts with clients 1.2 Issued reports/bulletin 2.1 Issued reports/bulletin 2.2 Record of workshops 2.3 Web-site of ONEDD 3. Records of effluent monitoring	The Government of Algeria maintains the current proactive attitude toward environmental policy and its enforcement. The Government of Algeria continues and maintains to necessary supports to ONEDD.
Output 1 CRL acquires advanced analytic technique for GCMS, FTIR and XRF.	1. Reliable analytical results on hydrocarbon, organo-chlorine, BTX, PAH and agrochemicals (pesticides and insecticides) are generated using GCMS.	1/2/3 Records of analyses	Field survey and sampling in the Model Site can be carried out without any restriction.

	2. Reliable analytical results on non-volatile organic chemicals are generated using FTIR and its data library. 3. Reliable results of quantitative XRF analysis are generated. 4. SOPs for advanced analytical methods for GCMS, FTIR and XRF are developed.	4. SOPs	Industries and other polluters are cooperative to project activities.
Output 2 Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site.	1. Pollution inventories including pollution loads are developed. 2. Comprehensive monitoring plan including effluent monitoring plans is developed. 3. Collaborative effluent monitoring activities with DEWA and DEWB are conducted periodically. 4. Types/kinds of analysis parameters are increased. 5. Comprehensive interpretation and risk assessment of the monitoring results are publicized.	1. Pollution inventories 2. Comprehensive monitoring plan 3. Records of effluent monitoring activities 4. Records of analysis 5. Presentation documents, reports, publication	
Output 3 CRL enhanced quality control capacity of lab analysis work.	1. More than 16 staff in CRL work for quality control for inorganic/organic/microbiological analysis. 2. More than 16 staff in inorganic/ organic/ microbiological analysis section in CRL joined trainings on quality control. 3. Quality control system of analytic works is established in CRL.	1. Hearing from CRL 2. Training records Hearing from CRL 3.2 QC reports and log books in CRL	
Output 4 Environmental monitoring technologies possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations.	1. Training team by ONEDD(HQ) and CRL is formulated. 2. Training plan for regional laboratories and monitoring stations is developed. 3. Training courses for regional laboratories and monitoring stations are conducted twice a year. 4. Various stakeholders including industries,	1.Hearing from ONEDD 2. Training plan 3. Training records 4.1 Records of joint seminars 4.2 Proceedings of the seminars	

	academics and NGOs participated in ONEDD-MATET-JICA Joint Seminar. 5. Three workshops for regional laboratories are held as a dissemination of Project contribution.	5. Records of workshops	
Activities for Output1 1. JET and CRL assess the baseline of the capacity for individual analytic technique of GCMS, FTIR and XRF. 2. JET transfers the advanced analytical technique for volatile organic compounds using GCMS to CRL. 3. JET transfers the advanced analytical technique for non-volatile organic compounds using FTIR to CRL. 4. JET transfers the advanced analytical technique for potentially toxic elements using XRF to CRL. 5. JET and CRL develop SOPs for advanced analytical methods for GCMS, FTIR and XRF. **Activities for Output2** 1. CRL and JET develop pollution inventories in the Model Site with DEWA and DEWB. 2. CRL and JET develop comprehensive monitoring plans including effluent monitoring plans for the Model Site. 3. CRL implements effluent monitoring to pollution sources with DEWA and DEWB by following advice of JET. 4. CRL analyzes samples collected by monitoring activities by following advice of JET. 5. CRL conducts comprehensive interpretation and risk assessment of the monitoring results in the Model Site by following advice of JET. 6. CRL reports the results of the comprehensive interpretation and develops the suggestions to DEWA, DEWB and MATET by following advice of JET. **Activities for Output3** 1. JET and CRL assess the problems of quality control system of analytic works. 2. JET conducts trainings for quality control system of	**Input** **<Input from JICA>** 1. Short-term Experts (1) Leader /Environmental Management (Comprehensive Analysis, Risk Assessment, Lab Management) (2) GCMS (3) FTIR (4) XRF (5)Quality Control (6) Lecturers of seminars including Senior Advisor from JICA 2. Data library for FTIR 3. Standard materials for GCMS, FTIR, XRF	**Input** **<Input from ONEDD>** 1. Assigning C/P personnel 2. Buildings and Facilities 3. Office space for JICA experts and meetings 4. Facilities and services such as electricity, gas, water, telephone, internet access and furniture 5. Chemical and reagents for analysis 6. Operational and recurrent cost for the project activities of the Algerian side	ONEDD recruits and assigns necessary personnel. Necessary chemicals and reagents are imported.

analytic works for CRL. 3. CRL develops quality control system of analytic works by following advice of JET.			
Activities for Output4 1. JET reviews in-house training system of ONEDD and makes suggestions for improvement. 2. ONEDD develops the plans for supporting regional laboratories and monitoring stations under the support of JET. 3. ONEDD organizes training courses for regional laboratories and monitoring stations under the support of JET. 4. ONEDD and JICA Experts conduct ONEDD-MATET-JICA Joint Seminar and workshops periodically.			**Pre-conditions** Current level of security situation is maintained in the Project Area. Contract Agreements among ONEDD, DEWA and DEWB are concluded.

ANNEX-2 Plan of Operation (PO)

※February 20, 2012

Output of PDM	Japanese Experts (Input from JICA)	Activities	M/M (Algeria)	
Output2,4	① Kenji FUKUSHIMA: Leader/Environmental Management (Comprehensive Analysis, Risk Assessment, Lab Management)	Management of the Project, Support monitoring plan and Training programme	9.60	Plan
				Result
Output1,3	② Ryo ISHIMOTO: Sub-Leader/X-Ray Fluorescence (XRF)/ Quality Control	Transfer technique for XRF, Support quality control of the CRL laboratory	8.66	Plan
				Result
Output1	③ Tomoko FUKAYA: Gas Chromatography Mass spectrometer (GCMS)	Transfer technique for GCMS	4.83	Plan
				Result
Output1	④ Masamichi TSUJI: Fourier Transform Infrared Absorption Spectrometry (FTIR)	Transfer technique for FTIR	3.49	Plan
				Result
	⑤ Hiromi NONAKA/Kenji Fukushima: Coordinator	Logistique, Coordination		Plan
				Result
Delivery of Equipments and materials				Plan
				Result
Joint Coordination Committee (JCC), Mid-term Review (MR), Final Evaluation (FE)				Plan
				Result
Technical Semminar (TS) / Joint Seminar and Workshop (JSW)				Plan
				Result
Products of technical cooperation (SOPs, Training Manual)				Plan
				Result
Inception Report and Annual Work Plan (ICR, AP), Progress Report (PR), Annual Report (AR), Plan of Operation (PO), Final Report (FR)				Plan
				Result

1st Year (J.F.Y) 2009: 9 10 11 12 | 2010: 1 2 3 | 2nd Year 2010: 4 5 6 7 8 9 10 11 12 | 2011: 1 2 3 | 3rd Year 2011: 4 5 6 7 8 9 10 11 12 | 2012: 1 2 3 | 4th Year 2012: 4 5 6 7 8 9

1st Delivery — Insp. | 2nd Delivery — Insp.

ICR — 1st JCC | 2nd JCC | MR | 3rd JCC | FE, 4th JCC

1st & 2nd TS | JSW | 3rd & 4th TS | JSW | 5th TS | 6th TS | JSW | 7th TS

4 MNS2 DR XRF | 4 Coming Manuals

AP1, ICR | PR1, AR | AP2 | PR2, AR | AP3 | PR3, AR | AP4 | AR4, FR

Output of PDM		Objectively Verifiable Indicators	Means of Verification		Activities for Output	Person in charge: Algeria	Person in charge: Japan	
Output 1 CRL acquires advanced analytic technique for GCMS, FTIR and XRF.				1-1	JET and CRL assess the baseline of the capacity for individual analytic technique of GCMS, FTIR and XRF.	CRL	Ishimoto, Fukaya, Tsuji	Plan
								Result
	1	Reliable analytical results on hydrocarbon, organo chlorine, BTX, PAH and agrochemicals (pesticides and insecticides) are generated using GCMS.	1.Records of analyses	1-2	JET transfers the advanced analytical technique for volatile organic compounds using GCMS to CRL.	CRL	Fukaya	Plan
								Result
	2	Reliable analytical results on non-volatile organic chemicals are generated using FTIR and its data library.	2.Records of analyses	1-3	JET transfers the advanced analytical technique for non-volatile organic compounds using FTIR to CRL.	CRL	Tsuji	Plan
								Result
	3	Reliable results of quantitative XRF analyses are generated.	3.Records of analyses	1-4	JET transfers the advanced analytical technique for potentially toxic elements using XRF to CRL.	CRL	Ishimoto	Plan
								Result
	4	SOPs for advanced analytical methods for GCMS, FTIR and XRF are developed.	4.SOPs	1-5	JET and CRL develop SOPs for advanced analytical methods for GCMS, FTIR and XRF.	CRL	Ishimoto, Fukaya, Tsuji	Plan
								Result
Output 2 Quality of environmental monitoring capacity of CRL is upgraded through the environmental monitoring activities including effluent monitoring in the Model Site.	1	Pollution inventories including pollution loads are developed.	1.Pollution inventories	2-1	CRL and JET develop pollution inventories in the Model Site with DEWA and DEWB.	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan
								Result
	2	Comprehensive monitoring plan including effluent monitoring plans is developed.	2.Comprehensive monitoring plan	2-2	CRL and JET develop comprehensive monitoring plans including effluent monitoring plans for the Model Site.	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan
								Result
	3	Collaborative effluent monitoring activities with DEWA and DEWB are conducted periodically.	3.Records of effluent monitoring activities	2-3	CRL implements effluent monitoring to pollution sources with DEWA and DEWB by following advice of JET.	CRL, DEWA, DEWB	Fukushima	Plan
								Result
	4	Types/kinds of analysis parameters are increased.	4.Records of analysis	2-4	CRL analyzes samples collected by monitoring activities by following advice of JET.	CRL	Ishimoto, Fukaya, Tsuji	Plan
								Result
	5	Comprehensive interpretation and risk assessment of the monitoring results are publicized.	5.Presentation documents, reports, publication	2-5	CRL conducts comprehensive interpretation and risk assessment of the monitoring results in the Model Site by following advice	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan
								Result
				2-6	CRL reports the results of the comprehensive interpretation and develops the suggestions to DEWA, DEWB and	ONEDD/CRL, DEWA, DEWB	Fukushima	Plan
								Result
Output 3 CRL enhanced quality control capacity of lab analysis work.	1	More than 16 staff in CRL work for quality control for inorganic/organic/microbiological analysis.	1.Hearing from CRL	3-1	JET and CRL assess the problems of quality control system of analytic works.	CRL	Ishimoto	Plan
								Result
	2	More than 16 staff in inorganic/ organic/ microbiological analysis section in CRL joined trainings on quality control.	2.Training records	3-2	JET conducts trainings for quality control system of analytic works for CRL.	CRL	Ishimoto	Plan
								Result
	3	Quality control system of analytic works is established in CRL.	3.1 Hearing from CRL 3.2 QC reports and log books in CRL	3-3	CRL develops quality control system of analytic works by following advice of JET.	CRL	Ishimoto	Plan
								Result
Output 4 Environmental monitoring technologies possessed by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organizations.	1	Training team by ONEDD(HQ) and CRL is formulated.	1.Hearing from ONEDD	4-1	JET reviews in-house training system of ONEDD and makes suggestions for improvement.	ONEDD/CRL	Fukushima	Plan
								Result
	2	Training plan for regional laboratories and monitoring stations is developed.	2.Training plan	4-2	ONEDD develops the plans for supporting regional laboratories and monitoring stations under the support of JET.	ONEDD/CRL	Fukushima	Plan
								Result
	3	Training courses for regional laboratories and monitoring stations are conducted twice a year	3.Training records	4-3	ONEDD organizes training courses for regional laboratories and monitoring stations under the support of JET.	ONEDD/CRL	Fukushima	Plan
								Result
	4	Various stakeholders including industries, academies and NGOs participated in ONEDD MATE JICA Joint Seminar.	4.1Records of joint seminars 4.2Proceedings of the	4-4	ONEDD and JICA Experts conduct ONEDD MATE JICA Joint Seminar and workshops periodically.	ONEDD/CRL	JICA, All Experts	Plan
								Result
	5	Three workshops for regional laboratories are held as a dissemination of Project contribution	5.Records of workshops			ONEDD/CRL	Fukushima	Plan
								Result

1st & 2nd TS | JSW | 3rd & 4th TS | JSW | 5th TS | 6th TS | JSW | 7th TS

A 7-6

Annex 7-6 JCC on February 21, 2012

ANNEX-3 List of Japanese Experts

List of Experts other than Activity 4-4

	Assignment	Name	Assignment Days in each fiscal year			Total	
			2009	2010	2011※	Days※	M/M※
1	Leader/Environmental Management (Comprehensive Analysis, Risk Assessment, Lab Management)	Kenji Fukushima	60	90	90	240	8.0
2	Sub-Leader/X-Ray Fluorescence (XRF)/ Quality Control	Ryo Ishimoto	60	90	105	255	8.5
3	Gas Chromatography Mass spectrometer (GCMS)	Tomoko Fukaya	55	90	67	212	7.1
4	Fourier Transform Infrared Absorption Spectrometry (FTIR)	Masamichi Tsuji	50	55	0	105	3.5
5	Coordinator	Hiromi Nonaka →Kenji Fukushima	60	20	20	100	3.3

※As of March 2012

List of Experts for Activity 4-4

	Assignment	Name	From	To
1	Environmental Law	Naoki Ikeda	2010.4.23	2010.4.30
2	Water environmental administration	Mayumi Otani	2010.4.23	2010.4.30
3	Water environmental technology/coordinator for seminar	Mitsuo Yoshida	2010.4.12	2010.4.30
4	Environmental risk of hazardous waste and its proper management	Shoichi Hayami	2011.4.17	2011.4.22
5	Environmental pollution caused by illegally dumped waste	Mitsuo Yoshida	2011.4.6	2011.4.22

ANNEX-4

List of Counterpart Trained in Japan

No.	Name of the Course	Participants	Period	Location
1	Pollution Control for Hazardous Substances in the Environment	Ms. AZOUANI SOPHIA (CRL)	31 May to 7 Aug 2010	JICA Osaka
2	Urban Environmental Management Course	Ms. MEBREK HANIFA (CRL)	29 Aug to 15 Sep 2010	JICA Yokohama
3	Water Environmental Monitoring	Ms. DAOUADJI NASSIMA (CRL)	5 Sep to 23 Oct 2010	JICA Tokyo
4	Pollution Control and Local Environmental Management	Ms. GUERFI LYNDA (CRL)	20 Aug to 6 Oct 2011	JICA Nagoya

ANNEX-5 List of Provided Equipment

No.	Description Item		Price Unit	Quantity	(J.Yen)	Remark
1	FTIR反射法標準ｽﾍﾟｸﾄﾙﾗｲﾌﾞﾗﾘ	Aldrich Lib.	1,700,000	1 set	1,700,000	For FTIR
2	FTIR吸収法(透過法)標準ｽﾍﾟｸﾄﾙ	Ichem/SDBS Lib	2,650,000	1 set	2,650,000	
3	FTIRｽﾍﾟｸﾄﾙ解析ｿﾌﾄ	Paranorama soft	400,000	1 pc	400,000	
4	FTIR用参考図書ｽﾍﾟｸﾄﾙﾊﾝﾄﾞﾌﾞｯｸ(無	NICODOM Inorganic	270,000	1 set	270,000	
5	CRCﾊﾝﾄﾞﾌﾞｯｸ(物理・化学)	CRC Handbook	30,000	1 set	30,000	
6	FTIR器具類 メノウ乳鉢及び乳棒(100mm)	Agate Mortare	67,000	1 set	67,000	
7	ハミルトンマイクロシリンジ型番: 7001標準型KHPT-2 容量1μℓ	Hamilton Micro Syringe 7001 Standard type KHPT-2 Capacity: 1μℓ	23,000	3 pcs	69,000	For GCMS
8	ハミルトンマイクロシリンジ型番: 701固定針型N横穴針型PT-5容量10μℓ	Hamilton Micro Syringe 701 Cemented Needle PT-5 Capacity: 10μℓ	20,000	6 pcs	120,000	
9	ハミルトンマイクロシリンジ型番: 705固定針型N横穴針型PT-5容量50μℓ	Hamilton Micro Syringe: 705 Cemented Needle PT-5 Capacity: 50μℓ	20,000	1 pc	20,000	
10	ハミルトンマイクロシリンジ型番: 710固定針型N横穴針型PT-5容量100μ	Hamilton Micro Syringe 710 Cemented Needle PT-5 Capacity: 100μℓ	20,000	1 pc	20,000	
11	ハミルトンマイクロシリンジ型番: 750固定針型N横穴針型PT-5容量500μ	Hamilton Micro Syringe: 750 Cemented Needle PT-5 Capacity: 500μℓ	20,000	1 pc	20,000	
12	分液ロートPTFEコック付2ℓ	Separating funnel PTFE with cock 2ℓ	50,000	8 pcs	400,000	
13	分液ロートPTFEコック付300mℓ	Separating funnel PTFE with cock 300mℓ	20,000	8 pcs	160,000	
14	ステンレス分液ロート台2ℓ用 4個掛	Funnel support (Stainless, for 2ℓ/4 funnels)	40,000	2 pcs	80,000	
15	ステンレス分液ロート台200～300mℓ用 8個掛	Funnel support (Stainless, for 200～300mℓ/8 funnels)	40,000	1 set	40,000	
16	SPCなす型フラスコ300mlℓ SPC29	SPC Flask 300mlℓ SPC29	10,000	8 pcs	80,000	
17	パスツールピペット(フリントガラス製) 全長228mm綿栓なし100本/箱×10箱入	Pasteur Pipette(lint glass) O. Length: 228mm without cap	20,000	1 set	20,000	
18	スポイト(シリコンゴム製)2mℓ用 穴径6.5mm	Spuit(silicone rubber), for 2mℓ/hole dia: 6.5mm	100	3 pcs	300	
19	共栓試験管目盛付ガラス平栓付 容量20mℓ 一目盛0.5mℓ	Test tube with graduation/glass flat cap Capacity: 20mℓ - 0.5mℓ graduation	1,200	12 pcs	14,400	
20	NRK遠心沈殿管(丸底)茶 容量100mℓ 外径45×137mm 材質:ガラス	NRK Centrifuge tube (round bottom), brown Capacity: 100mℓ, O. Dia: 45×137mm	10,000	12 pcs	120,000	
21	クロマトカラム PTFEコック φ10mm X長さ300mm	Chromatography column PTFE cock 10mm(Dia.) x 300mm(L)	15,000	8 pcs	120,000	
22	クロマトカラム用スタンド (アジャスター付)360×300	Stand for chromatography column (with adjuster) 360 x 300	20,000	4 pcs	80,000	
23	ムッフ付ユニバーサルクランプ	Universal clamp with holder	7,000	4 pcs	28,000	
24	ねじ口びん(デュラン)赤キャップ(PTFE張りパッキン付き)付 容量100mℓ 10本	Bottle (Duran) with red cap (with PTFE packing) Capacity: 100mℓ 10pcs./set	20,000	2 sets	40,000	
25	メスフラスコスーパーグレードガラス平栓付 容量10mℓ 10本入	Volumetric flask, super high-grade glass with flat cap, Capacity: 10mℓ 10pcs./set	20,000	1 set	20,000	
26	メスフラスコスーパーグレードガラス平栓付 容量100mℓ 10本入	Volumetric flask, super high-grade glass with flat cap, Capacity: 100mℓ 10pcs./set	23,000	1 set	23,000	
27	ホールピペットスーパーグレード 容量1mℓ 10本入	Pipette, super grade Capacity: 1mℓ 10pcs./set	8,000	1 set	8,000	
28	ホールピペットスーパーグレード 容量3mℓ 10本入	Pipette, super grade Capacity: 3mℓ 10pcs./set	8,000	1 set	8,000	
29	ホールピペットスーパーグレード 容量5mℓ 10本入	Pipette, super grade Capacity:5mℓ 10pcs./set	8,000	1 set	8,000	
30	ホールピペットスーパーグレード 容量10mℓ 10本入	Pipette, super grade Capacity:10mℓ 10pcs./set	10,000	1 set	10,000	
31	アジレント用12x32mm クリンプバイアル・セット品ラベル付褐色500組・収納	Auto-Sampler Vials for Agilent with label, 12 x 32mm 500 pairs/with storage case	20,000	1 set	20,000	
32	PP製冷却可能バイアル保存容器透明 12×32mm用 収納数:50本	PP Vial storage container, clear, for 12x32mm, Storage capacity: 50 vials	10,000	2 sets	20,000	
33	ハンドクリンパー適用径:11mm	Hand crimpit, effective dia.: 11mm	22,700	1 set	22,700	
34	シリコンカラー安全スポイト	Spuit(silicone rubber)	10,000	2 pcs	20,000	
35	スクリューバイアル瓶(ねじ口瓶) 強化硬質無色SV-100 容量100ml 25本	Screwed Vial, SV-100 Capacity: 100ml 25pcs./set	20,000	2 sets	40,000	
36	スクリューバイアル瓶用キャップ 白キャップ(メラミン樹脂) 25ヶ入	Cap for Screwed vial, white cap (melamine resin) 25pcs./set	5,000	2 sets	10,000	
37	スクリューバイアル瓶用パッキン テフロン/シリコン 25ヶ入	Packing for Screwed vial, Teflon/Silicone) 25pcs./set	10,000	2 sets	20,000	
38	フリージングコンテナ FC-6 セット品 (本体＋中しきり)フタ無 しきり数:20	Freezing container, FC-6 (contaier +partition) without lid, Partition: 20	20,000	2 sets	40,000	
39	メノー乳鉢浅型(乳棒付き)	Agate mortar	11,800	2 sets	30,000	For XRF
40	P1プラスチック液体試料カップ/100個 (つまみ無)	P1 Plastic Sample Cell	30,000	2 sets	60,000	
41	P1プラスチック液体試料カップ/100個 (つまみ付)	P1 Plastic Sample Cell With Hat	30,000	2 sets	60,000	
42	Ausmonガラスモニタサンプル (直径40mm)	Grass Sample Ausmon 40mm	300,000	1 set	300,000	
43	モニタサンプルセット(6個)	6 Monitor Samples A3-F2	400,000	1 set	400,000	
44	TOXEL標準サンプル(5個)	Toxel Standards	1,400,000	1 set	1,400,000	
45	N500/22-16-5 塩ビリング100個入り	ENBI Ring	20,000	1 set	20,000	

No.	Description Item		Price Unit	Quantity	(J.Yen)	Remark
46	WDISEMINI (取っ手なし1枚/付き1枚)	Mini Dise for Minipress	160,000	1 set	160,000	
47	スペーサー	Minipress Spacer	70,000	1 pc	70,000	
48	PRESS 25t手動プレス機 (9200 540 06008 25011)	Hydraulic Presses 25T	940,000	1 pc	940,000	
49	固定用架台(9200 540 11541)	Minipress Table	91,600	1 pc	91,600	
50	無停電電源装置(UPS)	Uninterruptible Power System	56,276	1 pc	56,276	1DZD=1.279JY
51	GPS	Global Positioning System	27,800	2 pcs	55,600	
52	XRF用プリンター	Printer for XRF	22,974	1 pc	22,974	1DZD=1.263JY
53	複合機	Multifunction Printer	15,834	1 pc	15,834	1DZD=1.263JY
54	40mL バイアル	40ml Vial	16,650	1 pc	16,650	
55	40mL プレクリーンバイアル用セプタム	40ml Septum	11,700	2 pcs	23,400	
56	GCMS用サンプリングチューブ	Sampling Tube	46,620	1 pc	46,620	
57	BTX分析用	Column for BTX	78,210	1 pc	78,210	
58	PAH分析用カラム	Column for PAH	79,200	1 pc	79,200	
59	有機塩素系農薬分析用カラム	Column for Organochlorine Pesticide	63,900	1 pc	63,900	
60	水質試験用VOC 混合標準液	Volatile organic compounds including BTEX54 components, ampul of 1ml	18,275	3 sets	54,826	
61	PAH 混合標準液	PAH8270 Calibration Mix 19 components 2000μg/ml each in methylen chloride ampule of 1ml	21,462	3 sets	64,386	
62	α-HCH	Alpha HCH 100mg	58,648	1 set	58,648	
63	β-HCH	Beta HCH 100mg	43,349	1 set	43,349	
64	γ-HCH	Delta HCH 100mg	104,972	1 set	104,972	
65	δ-HCH	Gammma HCH (Indane) 500ml	33,149	1 set	33,149	
66	p, p′-DDT	p,p'- DDT 1g	39,312	1 set	39,312	
67	p, p′-DDE	p,p'- DDE 1g	20,825	1 set	20,825	
68	p, p′-DDD	p,p'- DDD 1g	14,025	1 set	14,025	
69	メトキシクロル	Methoxychlor 1g	19,124	1 set	19,124	
70	ジコホル(ジコホール)(ケルセン)	Dicofol (Kelthane) 100mg	18,487	1 set	18,487	
71	アルドリン	Aldrine 100mg	37,825	1 set	37,825	
72	ディルドリン	Dieldrine 250mg	40,374	1 set	40,374	
73	エンドリン	Endrin 250mg	30,599	1 set	30,599	
74	α-エンドスルファン	Endosulfan alpha 100mg	99,022	1 set	99,022	
75	β-エンドスルファン	Endosulfan beta 100mg	134,314	1 set	134,314	
76	ヘプタクロル	heptachlor 100mg	44,624	1 set	44,624	
77	ヘプタクロル-exo-エポキシド	heptachlor epoxide isomere beta 50mg	50,574	1 set	50,574	
78	Trans-クロルデン	Chlordane Trans 10mg	36,549	1 set	36,549	
79	Cis-クロルディン	Chlordane Cis 10mg	36,549	1 set	36,549	
80	oxy-クロルディン	Chlordane oxy 1ml	47,174	1 set	47,174	
81	Trans-ノナクロール	Nonachlor Trans 25mg	92,647	1 set	92,647	
82	Cis-ノナクロール	Nonachlor Cis 25mg	92,647	1 set	92,647	
83	ヘキサクロロベンゼン	Hexachlorobenzene 1g	14,875	1 set	14,875	
84	オクタクロロスチレン	Octachlorostyrene 1ml ampul	21,887	1 set	21,887	
85	p, p′-DDT-13C12	4,4' DDT 13C12 1.1ml	95,197	1 set	95,197	
86	(HCB)ヘキサクロロベンゼン-13C6	Hexachlorobenzene 13C6 10mg	156,396	1 set	156,396	
87	ベンゾ(a)ピレン-d12	Benzo(a)pyrene D12 10mg	188,270	1 set	188,270	
88	フェナントレン-d10	Phenanthrene D10 100mg	34,850	1 set	34,850	
89	フルオランテン-d10	Fluoranthene D10 50mg	248,194	1 set	248,194	
90	p-ターフェニル-d14	P-terphenyl-d14	11,050	1 set	11,050	
91	4-ブロモフルオロベンゼン標準原液	1-bromo-4-fluorobenzene	15,724	1 set	15,724	
92	残留農薬試験用硫酸ナトリウム(無水)	Anhydrous sodium sulfate Suprapur 500g	253,932	1 set	253,932	
93	カラムクロマト用シリカゲル60(63-210μm)	Florisil® PR 60/100mesh 500g	55,249	2 sets	110,497	
94	有機塩素系農薬混合物	Organochlorine Pesticides Mix AB1 20 components 200 μg/ml each in hexane/toluene(1:1), ampul of 1ml	9,988	3 sets	29,964	
95	底質	Certified standard BRC-535 (fresh water harbour sediment PCB)40g	89,673	1 set	89,673	
96	産業土壌	Certified standard BRC-524 (industrial soil PAH)40g	140,247	1 set	140,247	
97	土壌認証標準物質 無機成分分析用	Certified standard BRC-143R (sewage sludge ind oritrace elements)40g	140,247	1 set	140,247	
98	土壌認証標準物質 無機成分分析用	Certified standard BRC-145R (sewage sludge ame soil trace elements)40g	140,247	1 set	140,247	
99	土壌認証標準物質 無機成分分析用	Certified standard BRC-146R (sewage sludge mix ori trace elements)40g	140,247	1 set	140,247	
100	金属成分分析用 土壌認証標準物質	Certified standard BRC-142R (light sandy soil trace elements)40g	140,247	1 set	140,247	
101	有害金属成分分析用 汚染土壌認証標準物質	Certified standard BRC-320R (river sediment trace elements)40g	70,974	1 set	70,974	
102	ヘキサン	n-hexane Pestinorm for pestcides residues analysis 2.5l	70,547	6 sets	423,283	
103	ガス検知器	Leak Detector	90,720	1 pc	90,720	
104	底質採泥器	Bottom Sampler	102,000	1 pc	102,000	
105	ベッセル	Standard Vessel for GCMS-P&T	14,532	1 pc	14,532	
106	塩ビリング	PVC－Ring N500-32/25-5	16,380	2 sets	32,760	
107	GCMS-P&T用ロングターレット、バイアル	Accessory for GCMS-P&T、Log-Tarlet and Vial	32,760	1 set	32,760	
108	真空ポンプ	Vacuum Pump / BUCHI V-703 with accessories	807,450	1 set	807,450	
109	ウォーターバース	Water Bath / SIBATA WB-22 with accessories	152,817	1 set	152,817	
110	GCMS-P&T用部品(トランスファーバルブ)	Accessoires for GCMS-P&T 、Transfer Valve	86,206	1 set	86,206	
	Total				15,807,909	

ANNEX-6 List of the Algerian Counterpart Personnel

	Name	M/F	Position	Organization		JICA project									Field (Output)				Equipment in Charge		Japan Training	Assignmnet in CRL/ONEDD	Transfer/ Resignation	Experience			
				CRL	ONEDD	JICA		CD phase 1			CD phase 2				1	2	3	4	Phase 1	Phase 2				Org Chem	Inorg	Analysis	Microbio
						2004	2005	2006	2007	2008	2009	2010	2011	2012													
1	Moali Mohamed	M	Lab Manager	●		→	→	→	→	→	→	→	→	→	●	●	●	●	Lab. management		2007 ONEDD	2001.01	-	○	○	○	
2	Houas Omar	M	Ingénieur	●		→	→	→	→	→	→	→	→	→	●		●		SAA	XRF	2004 MATET	1989.06	-		○		
3	Lakhdari Mohamed	M	Ingénieur	●		→	→	→	→	→	→	→	→	→		○	●		Sampling		2007 ONEDD	1987.03	-			○	
4	Nechaouni Leila	F	Ingénieur	●		→	→	→	→	→	→	→	→	→	●		●		UV, FTIR	GCMS	2006 MATET	1991.11	-	○			
5	Smai Mohamed	F	ATL	●		→	→	→	→	→	→	●							Sampling			1989.06	Transfer to MATE (2009)			○	
6	Anane Radhia	F	Ingénieur	●		→	→	→	→	→	→	→	→	→	●		●		Kjeldahl, CN	FTIR		1990.05	-			○	
7	Tibeche Amel	F	Ingénieur	●			→	→	→	→	→	→	→	→			●		GC, DCO			2006.05	-			○	
8	Bensouilah Ouahiba	F	Ingénieur	●				→	→	→	→	→	→	→	●		●		GC, DCO	FTIR		2007.03	-	○			
9	Djoghlaf Hadda	F	Ingénieur	●				→	→	→	→	→	→	→	●		●		DBO,TOC	XRF		2007.07	-			○	○
10	Azouani Sophia	F	Ingénieur	●				→	→	→	→	→	→	→	●		●		SAA	XRF	2010 ONEDD	2007.1	-		○		
11	Mebrek Hanifa	F	Ingénieur	●			総合解析業務	→	→	→	→	→	→	→	●	● 2011.6-	●		Microbio.	XRF	2010 ONEDD	2007.11	-			○	○
12	Kimri Leila	F	Ingénieur	●					→	→	→	→	→	→	●		●		GCMS FTIR	GCMS		2008.04	-	○			
13	Guerfi Lynda	F	Ingénieur	●						→	→	→	→	→	●		●		SAA	XRF	2011 ONEDD	2008.01	-		○		
14	Bouadi Fatima Zohra	F	Ingénieur	●							●	→	→	→	○					FTIR		2008.02	Resign (Mar 2010)			○	○
15	Daouadji Nassima	F	Ingénieur	●							→	→	→	→							2010 ONEDD	2009.04	Resign (Apr 2011)			○	○
16	Kamel Nawel	F	Assist. admin	●						→	→	→	→	→			●					2008.03	-				
17	Assia Chatal	F	Ingénieur		●			Data base要員（2011年から他業務へ）		→	→	→	→	→		○						2005.09	-				
18	Abdallah Ahlem	F	Agent. admin	●							→	→	→	→			●					2009.03	-				
19	Salima Oussalem	F	Ingénieur		●			海洋モニタリングからMATEへ異動			→	→	→	→		○						2002.12 MATE et ONEDD	Transfer to MATE (Jul 2011)				
20	Sarah Oudjal	F	Ingénieur		●			解析要員からMATEへ異動			→	→	→	→		○						2006.06	Transfer to MATE (Dec 2010)				
21	Remini Louisa	F	Assist. admin	●							→	→	→	→								2008.1	Trasnfer to Univ (Dec 2010)				
22	Naâsse Saadjia	M	Ingénieur	●				Data base要員からサンプリング要員			→	→	→	→		○	●					2005. 09 De ONEDD/HQ	-				
23	Omri Lynda	F	Ingénieur	●							→	→	→	→	●		●			GCMS		2010	-			○	
24	Boulekraouet Souhila	F	Ingénieur		●			総合解析、リスク評価要員			→	→	→	→		● 2011.6-						ONEDD/HQ 2009.12	-				
25	Hannachi Naila	F	Ingénieur		●			総合解析、リスク評価要員				→	→	→		● 2011.6-						ONEDD/HQ 2011.06	-				
26	Benboudjema Meriem	F	Ingénieur		●			総合解析、リスク評価要員				→	→	→		● 2011.6-						ONEDD/HQ 2010.05	-				
27	Tirechi Zabaria	M	Cmptable	●								→	→	→			●					2010.03	-				
28	Tillou Soulayman	M	Principale	●								→	→	→			●					2011.07	-				
29	Saoud HADDA	F	Ingénieur d'Etat	●								→	→	→			●					2011.07	-				
30	Lakheira Kenza	F	Agent. admin	●								→	→	→			●					2011.07	-				

ANNEX-7 Data Used to Examine the Achievement of Indicators

(1) Presentation material of C/P on achievement (attached)
(2) SOP List (attached)
(3) Expenditure of CRL related to the Project in 2010-2011 (attached)
(4) "UN GUIDE pour Interpretations Detaillees et Evaluation du Risque des Resultats de Surveillance Dans le Site Modele du Projet" (Feb 2012)
(5) "Compte Rendu du Séminaire conjoint Algérie-Japon sur la Protection de l'Environnement Hydrique 2010," (Proceedings of the Algeria-Japan Joint Seminar on Water Environmental Protection 2010)
(6) "Compte Rendu du Séminaire conjoint Algérie-Japon sur les dechets solides et la pollution 2011" (Proceedings of the Algeria-Japan Joint Seminar on Solid Waste and Pollution 2011)
(7) PROGRESS REPORT (I) (March 2010)
(8) Compte-rendu d' avancement (I) (Mars 2010)
(9) PROGRESS REPORT (II) (March 2011)
(10) Compte-Rendu d' Avancement (II) (Mars 2011)

2012/2/20

Introduction

mposés aliphatiques halogénés
roethylene, dichlomethane)

sés aromatiques monocycliques
uène, éthyle benzène)

s aromatiques polycycliques
énanthrène, Pyrène, etc.)

O.N.E.D.D / L.R.C
oratoire Régional de l'Environnement

Détermination des composés organiques volatils (COV) dans l'eau par système purge and trap couplé à un GCMS

Février 2012

Domaines d'application

potables

erraines

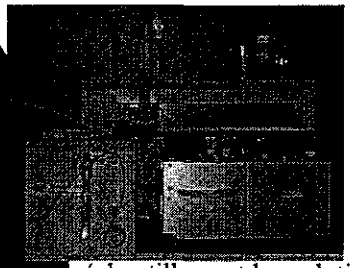
face

Caractéristiques

ible solubilité dans l'eau

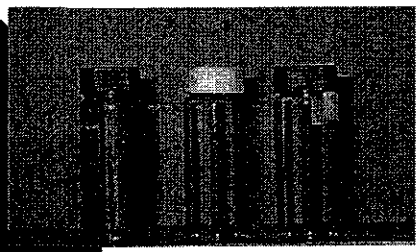
ression de vapeur

Système Purge and Trap



s échantillons et les solutions de
s l'échantillonneur automatique

Prétraitement



vec des bouchons contenants
des septums

2012/2/20

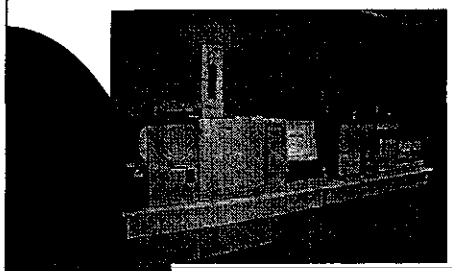
Principe de fonctionnement du système

Purge and trap

Transfert ⇨ Adsorption ⇨ Désorption

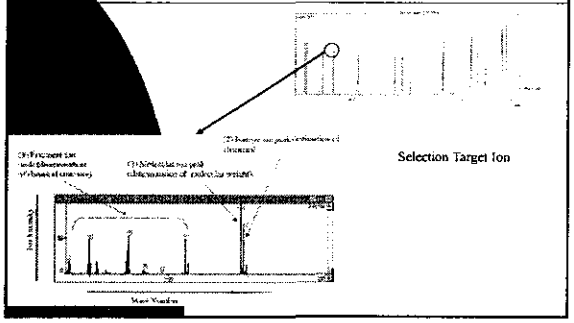
Détection ⇦ séparation

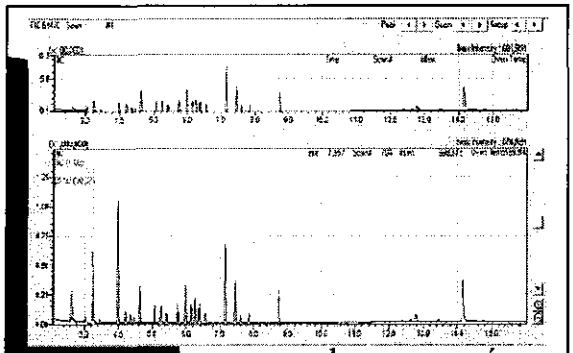
GCMS



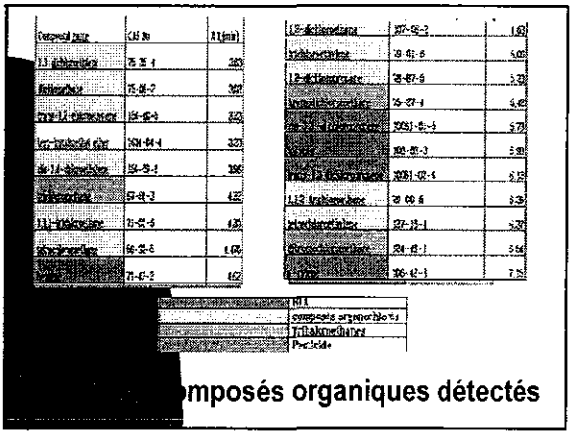
« Purge and Trap » couplé à un chromatographe en phase gazeuse et à un spectromètre de masse.

Qualitative → Quantitative



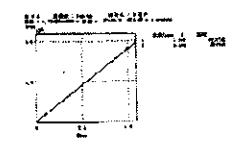


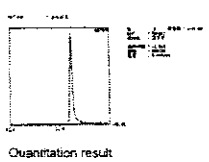
ogramme des composés
ques volatils détectés



mposés organiques détectés

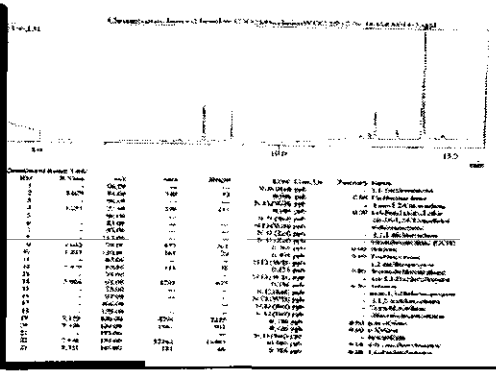
Quantification





2012/2/20

Résultat de Hamoude Boualem



Limites de quantification et de détection

Nom des composés	Temps de rétention (min)	Limite de quantification (ppb)	Limite de détection (ppb)
1,1-dichloroethylene	11	5.695	5	2
dichloromethane	14	5.906	5	2
trans-1,2-dichloroethylene	16	6.27	5	2
tert-butylmethyl ether	17	6.355	5	2
cis-1,2-dichloroethylene	18	6.992	5	2
trichloromethane	20	7.228	5	2
1,1,1-trichloroethane	21	7.464	5	2
Tetrachloromethane	22	7.678	5	2
Benzene	23	8.055	5	2
Trichloroethylene	25	8.267	5	2
1,2-dichloropropane	27	8.551	5	2

Nom des composés	Temps de rétention (min)	Limite de quantification (ppb)	Limite de détection (ppb)
Bromodichloromethane	32	9.479	5	2
cis-1,3-dichloropropene	34	9.773	5	2
Toluene	37	9.981	5	2
trans-1,3-dichloropropene	39	10.25	5	2
1,1,2-trichloroethane	41	10.508	5	2
Tetrachloroethylene	43	10.775	5	2
Dibromochloromethane	45	11.05	5	2
m,p-xylene	47	11.25	5	2
o-xylene	49	11.49	5	2
Bromoform	52	11.9	5	2
1,1,2,2-tetrachloroethane	54	12.3	5	2

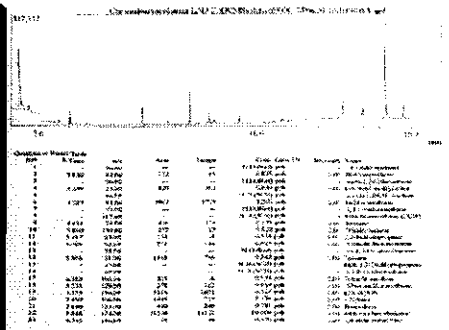
Résultats d'analyse de BTEX

(ppb)

	E.F.O.ROMANE	E.F.B.KNOUN	E.F.DOUERA	E.F.J
benzene	<5	<5	<5	<5
toluene	<5	<5	<5	<5
ethylbenzene	<5	<5	<5	<5
m/p-xylene	<7	<7	<7	<7
o-xylene	<5	<5	<5	<5
other				

	E.F.J	E.Unee
benzene	<5	<5
toluene	<5	<5
ethylbenzene	<5	<5
m/p-xylene	<7	<7
o-xylene	<5	<5
other	Trichloroethylene is detected	

Résultat de pharma LAD



Détermination des Hydrocarbures Aromatique polycyclique dans l'eau et le sol par GCMS

Résultats d'analyse de VOCs

(ppb)

	Pharma Lad (Medicine)	Hamoud (Cube)	std added sample std added sample (10ppb)	(2.5ppb)
1,1-dichloroethlene	<5	<5	21	<5 (3)
dichloromethane	<5	<5	20	<5 (3)
trans-1,2-chloroethylene	<5	<5	21	<5 (3)
tert-butylmethyl ether	<5	<5	20	<5 (3)
cis-1,2-chloroethylene	<5	<5	20	<5 (2)
trichloromethane	<5	<5	21	<5 (2)
1,1,1-trichloroethane	<5	<5	20	<5 (3)
tetrachloromethane	<5	<5	20	<5 (3)
benzene	<5	<5	20	<5 (2)
trichloroethylene	<5	<5	22	<5 (2)
1,2-dichloropropane	<5	<5	21	<5 (3)
bromodichloromethane	<5	<5	19	<5 (2)
cis-1,3 -dichloropropene	<5	<5	20	<5 (2)
toluene	<5	<5	21	<5 (3)
trans-1,3-dichloropropene	<5	<5	20	<5 (2)
1,1,2-trichloroethane	<5	<5	20	<5 (2)
tetrachloroethylene	<5	<5	21	<5 (3)
dibromochloromethane	<5	<5	20	<5 (2)
m-xylene + p-xylene	<7	<7	41	<7 (5)
o-xylene	<5	<5	20	<5 (2)
tribromomethane	<5	<5	20	<5 (2)
1,4-dichlorobenzene	<5	<5	20	<5 (2)

( ) uncertain value

3

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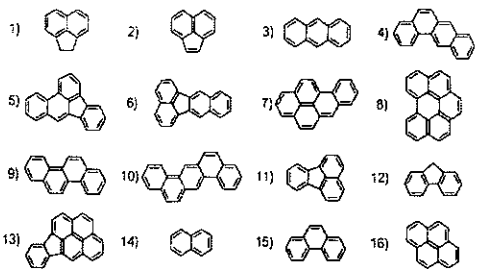
Domaines d'application(eau)

Cette méthode est applicable pour les HAP présent dans l'eau potable, les eaux souterraines ,les eaux de surface, et les eaux de rejet dont les matières en suspension contenant jusqu'à 1000 mg/L

Structures des HAPs



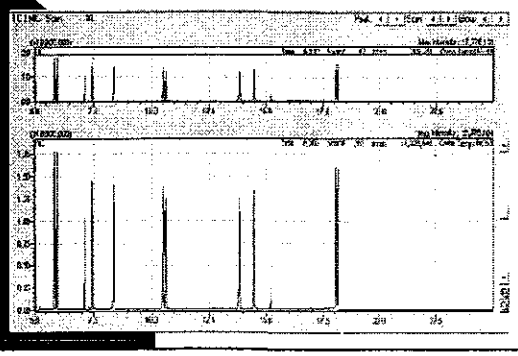
extraction liquide-liquide à l'aide d'un solvant anique.

principe

rmination des hydrocarbures polycycliques ues présent dans l'eau ou dans le sol se

standard interne pour calculer le taux tion et vérifier la performance de la

Chromatogramme d'un standard



concentration et purification si nécessaire de trait

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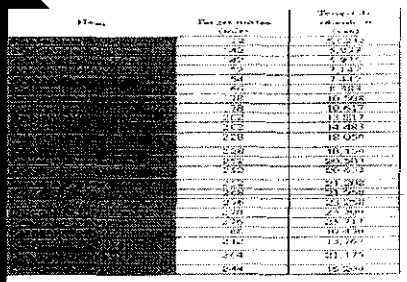
Limites de quantification et de détection (PAH eau)

	Detection Limit* (µg/L)	Quantification Limit** (µg/L)
Acenaphtene	0,6	2
Fluorene	0,2	0,4
Phenanthrene	0,02	1
Anthracene	0,04	0,2
Fluoranthene	0,02	0,05
Pyrene	0,02	0,1
Benz[a]anthracene	0,02	0,1
Chrysene	0,02	0,05
Benzo[b]fluoranthene	0,2	0,5
Benzo[a]pyrene	0,2	0,5
3-Methylcholanthrene	0,2	0,5
Indeno[1,2,3-cd]pyrene	0,2	0,6
Dibenz[a,h]anthracene	0,2	0,6
Benzo[ghi]perylene	0,2	0,9

Résultats



Résultats d'analyse de PAH sur des matériaux standard certifiés et l'échantillon du biote

	Echantillon	Echantillon Pris (g)	Resultats D'Analyses (mg/kg)	Valeurs Certifiees (mg/kg)	Tez de Recuperation du Standard Interne* (%)
Pyrene	BCR-524**	0.2031	130	173±11	(107)
	BCR-535**	1.0001	1.9	2.52 ±0.18	(103)
	Biota***	5.0161	<0.02(N.D.)		(107)
Benz[a]anthracene	BCR-524	0.2031	22	22.5±1.8	
	BCR-535	1.0001	1.1	1.54 ±0.10	
	Biota	5.0161	<0.02(N.D.)	-	
Benzofluoranthene	BCR-524	0.2031	22	19.7±2.2	
	BCR-535	1.0001	3.5	3.38 ±0.30	
	Biota	5.0161	<0.1(N.D.)	-	
Benzo[e]pyrene	BCR-524	0.2031	6.3	8.6±0.5	81.2
	BCR-535	1.0001	0.65	1.16 ±0.10	88.4
	Biota	5.0161	<0.1(N.D.)		47.6
Indeno[1,2,3-cd]pyrene	BCR-524	0.2031	3.5	5.1±0.4	
	BCR-535	1.0001	0.84	1.56 ±0.14	
	Biota	5.0161	<0.1(N.D.)	-	

*Fluoranthene-d10 est utilise comme standard interne pour Pyrene
**Matiere standard certifiee fournie par IRMM
*** Experience conjointe echantillon fourni par L'AIEA

2012/2/20

Analyse et Identification des Spectres FTIR par la Technique ATR

R. Anane

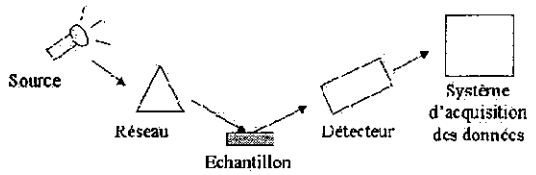
1. Introduction

- La spectroscopie infrarouge a transformée de fourrier FTIR est une méthode optique
- La gamme spectrale est de **4000 a 600 cm^{-1}**
- L infrarouge étudie les vibrations fondamen tales et structurales des groupes fonctionnels.

Système d'analyse des Spectres Infrarouge à Transformée de Fourier (FTIR).

- Le spectre infrarouge (IR) d'un échantillon est établi en faisant passer un faisceau lumineux à travers ce dernier.
- La lumière transmise indique la quantité d'énergie absorbée à chaque longueur d'onde.

Principe de la spectroscopie à Réflexion.



2.Methode d´analyses

- Le FTIR comprend 2 méthodes d´analyses

Technique KBr

Technique ATR

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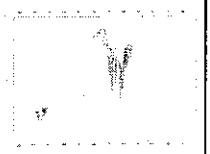
2.1.Technique ATR

- Méthode à Reflection Totale Attenuée.
- Utiliser pour l'analyse des matières organiques non volatiles et les échantillons ayant une forte absorbance.
- L'échantillon liquide ou solide utilisé ne nécessite aucun prétraitement.

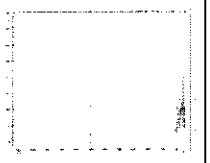
2.2. Conditions de mesure

• Placer le dispositif ATR dans l'appareil.

• Sélectionner spectre fond d'absorption (BKG) à vide .



•Sélectionner spectre échantillon (la ligne de base) à vide .



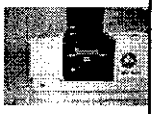
2.3.Méthode ATR

• Placer L'échantillon liquide directement dans l'ATR.

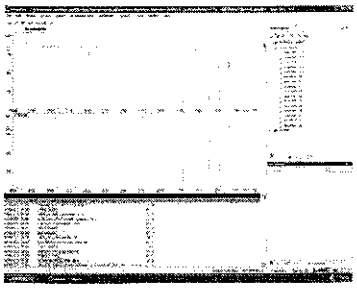
• Glisser le couvercle sur le dispositif ATR.

• Installer le dispositif ATR dans le compartiment de l'échantillon.

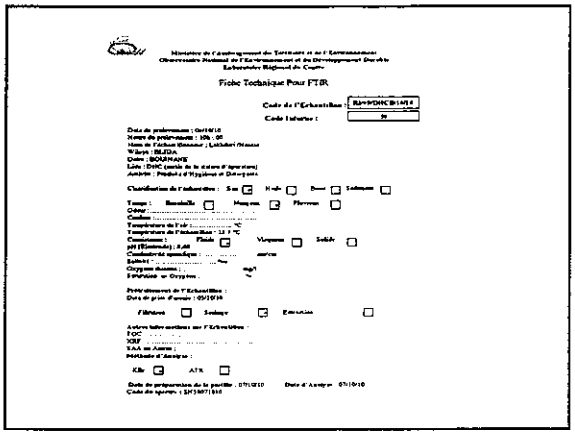
• Lancer l'analyse.



Analyse du spectre de l'Acétone en utilisant les données de la bibliothèque



- L'ordinateurs est directement intégrés aux spectromètres permettant le stockage et la gestion des données .
- Les informations obtenus pour chaque échantillons ainsi que les noms des spectres sont classés et listés comme suit :



Fiche Technique Pour FTIR

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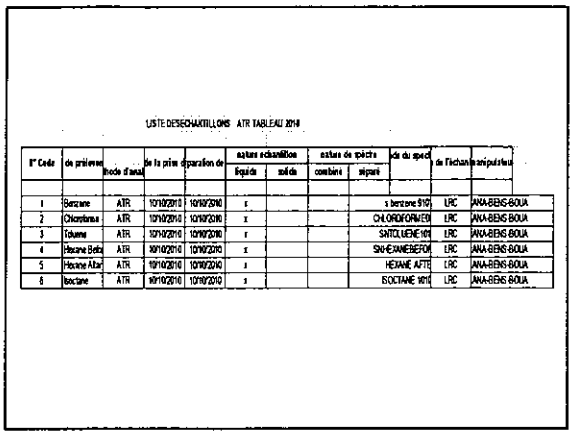

LISTE DES ECHANTILLONS ATR TABLEAU 2010

N° Code	de prélèvement	Mode d'analyse	de la prise	séparation de	nature échantillon liquide	nature échantillon solide	nature de spectre combiné	nature de spectre séparé	de du spect	de l'échan	manipulateu
1	Benzene	ATR	10/10/2010	10/10/2010	x				s benzene 910	LRC	ANA-BENS-BOUA
2	Chloroforme	ATR	10/10/2010	10/10/2010	x				CHLOROFORME01	LRC	ANA-BENS-BOUA
3	Toluene	ATR	10/10/2010	10/10/2010	x				SINTOLUENE101	LRC	ANA-BENS-BOUA
4	Hexane Beta	ATR	10/10/2010	10/10/2010	x				SNHEXANEBEFOR	LRC	ANA-BENS-BOUA
5	Hexane Alfa	ATR	10/10/2010	10/10/2010	x				HEXANE ALFE	LRC	ANA-BENS-BOUA
6	Isooctane	ATR	10/10/2010	10/10/2010	x				ISOCTANE 101	LRC	ANA-BENS-BOUA

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Analyse et Identification des Spectres FTIR par la Technique KBr

W. Bensouilah

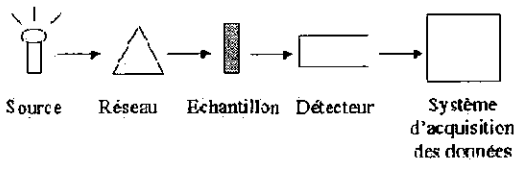
1. Introduction

- La spectroscopie infrarouge à transformée de fourrier FTIR est une méthode optique .
- La gamme spectrale est de **4000 à 400 cm^{-1}**.
- L infrarouge étudie les vibrations fondamen tales et structurales des groupes fonctionnels.

Système d'analyse de Spectres Infrarouge à Transformée de Fourier (FTIR)

- Le spectre infrarouge (IR) d'un échantillon est établi en faisant passer un faisceau lumineux à travers ce dernier.
- A chaque liaison chimique correspond une énergie absorbée cette dernière se définit par l'apparition d'un pic .
- Ce mode de mesure nécessite l'utilisation de supports transparents tel que le bromure de potassium (KBr) .

Principe de la Spectroscopie à Transmission



2. Technique KBr

2.1 Prétraitement des échantillons

- Chaque échantillon est traité différemment selon sa nature et son origine .

A. Échantillon liquide

- Liquide → par séchage / par extraction → Résidus

1

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B. Échantillon solide

solide → par séchage / par extraction → Résidus

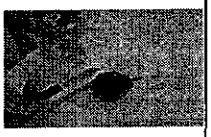
3. Préparation des pastilles

Échantillon liquide ou solide.

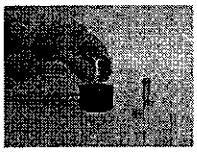
•Filtrer les extraits et les sécher à 50 C° .

•Secher l'échantillon solide à l'air libre .

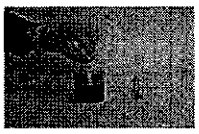
• Dans un mortier, broyer 0,200g de KBr avec 0,002 g ≈ 1% d'échantillon.



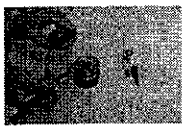
• Assembler la base et le cylindre du moule à pastille .



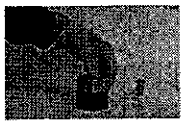
• Mettre l'un des disques dans le cylindre surface lisse vers le haut



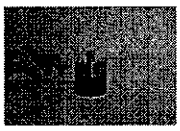
•Mettre tout le mélange (KBr + Ech) dans le cylindre .



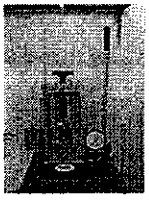
•Placer le 2ème disque dans le cylindre surface lisse vers le bas .



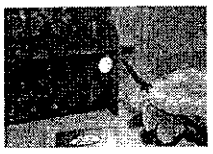
•Glisser le plongeur à l'intérieur du moule à pastille .



• Mettre l'ensemble du moule sous la presse à pastille, compressez jusqu'à 5 tonne décompresser apres 5 mn de stabilisation .



•Démonter les pièces du moule. A l'aide d'une pince retirer délicatement la pastille .



• La placer dans le support à pastille .

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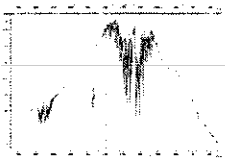
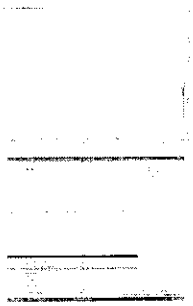
4.Conditions de mesure

- Sélectionner spectre fond d'absorption (BKG) à vide.

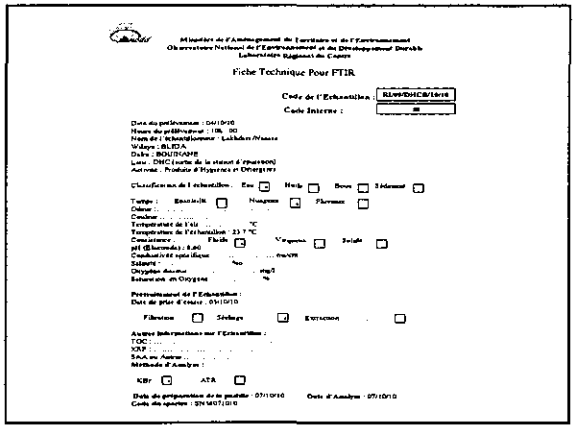
- Sélectionner spectre fond d'absorption (BKG) avec une pastille de KBr (Blanc).



- Sélectionner spectre échantillon avec la pastille KBr (la ligne de base).
- Sélectionner spectre échantillon après avoir placer une pastille de (KBr + Échantillon)puis analyser .
- Résultat : présence d'alcane.



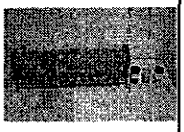
SN4 HADJRET ELNOUSS
Heptatriacontane



Fiche Technique Pour FTIR

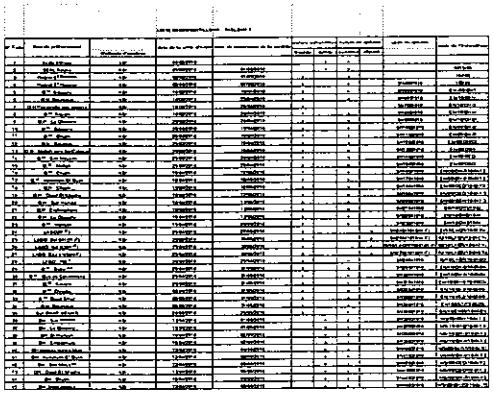
4.Stockage

- Chaque pastille est stockée dans du papier parchemin. (code , date ,nom).



- Les résidus ou solides sont stockés dans des flacons en verre qui porte le code de l'échantillon .

- Les pastilles sont stockées dans le dessiccateur pour éviter la détérioration de ces dernières .
- Toutes les informations et les données des échantillons et des spectres sont regroupées dans le tableau suivant :



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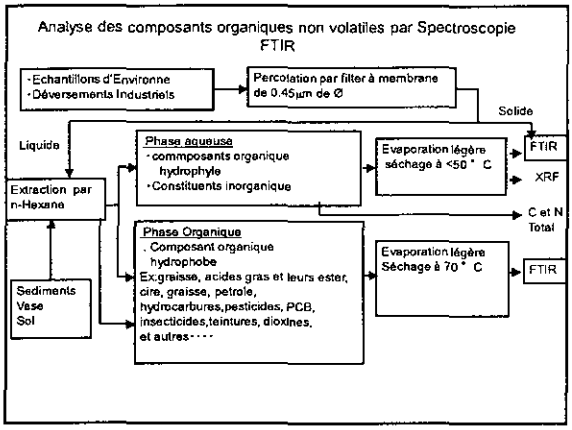
5.Maintenance

- Vérifier la couleur du gel de silice qui se trouve dans le compartiment étanche et dans la chambre d'échantillon (Bleu).
- L'appareil FTIR doit rester allumé.
- Le spectre BKG de la première mesure doit être sauvegardé.

- Ne jamais lancer plusieurs opérations d'analyse à la fois .
- En cas de problème se référer au manuel d'utilisation guide du système.



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JICA Japan International Cooperation Agency

Application de la fluorescence X
Au Laboratoire Régional Centre

Mr Houas Omar , Mme Azouaou Sophia , Mme Guerfi Lynda.

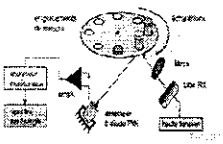
Octobre2009-Janvier 2012

- Principe de base de la XRF
- Objectif tracé
- Initiation à l'appareillage (logiciel)
- Méthodologie d'échantillonnage et de traitement
- Analyse des standards et échantillons inconnus

➡ Manuel de maintenance

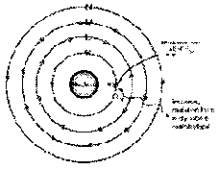
Manuel de l'analyse du Pb dans un sédiment

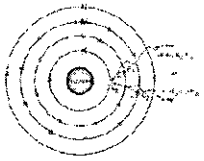
La XRF au LRC



Minipale 4 : ED-XRF
Source : Rh
Energie 30 keV

Base de la xrf



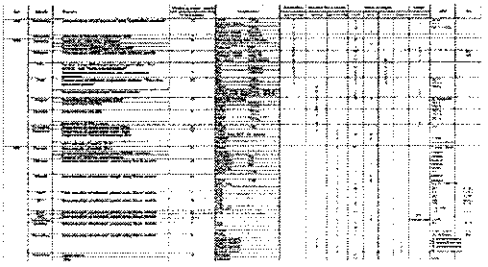


Propriété spectrale ⟹ (Exploité) qualitatifs ou quantitatifs

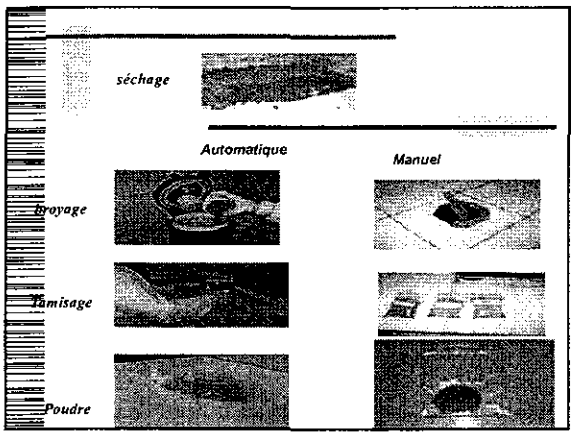
Listing des standards disponibles

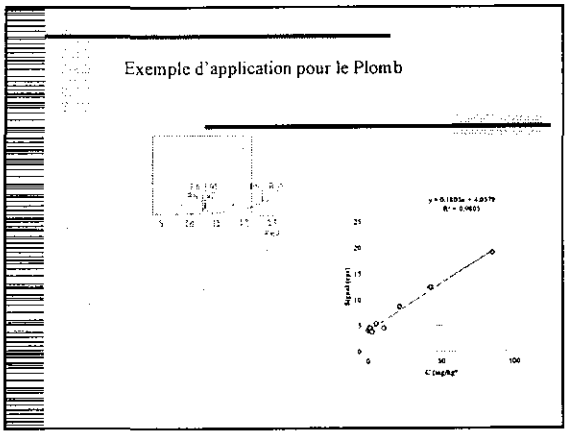
Désignation	Nature	Eléments contenus

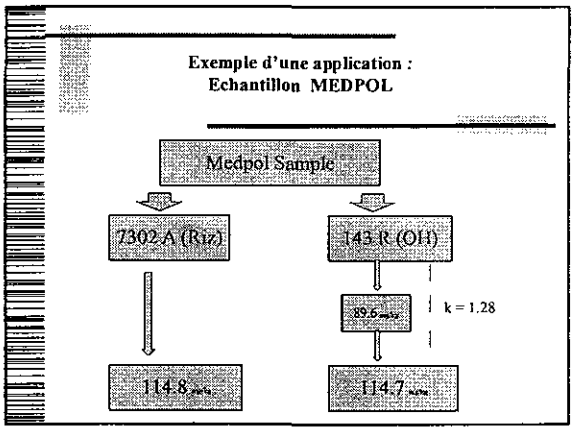
Listing des échantillons analysés



2012/2/20







Conclusion

La méthodologie d'analyse par fluorescence X est acquise pour l'analyse des sédiments, principalement pour le Pb, d'autres éléments ont été étudiés tels le Fe, Mn, Cr, Zn, Cd, Cu, Ni et Hg.

(2) SOP List / SOP Liste

Liste des Procedures d'operations Standard (CRL) pour le contrôle de qualité			ISO		Other (Norme)	SOP realised	
No.	SOP No.	Titre	Number	année	Number	année	version
1	LRC/ECH/4.01	Manuel D'echantillonnage	5667			2011	1.0
2	LRC/DES/1.01	Measure de Debit				2011	1.0
3	LRC/MES/1.01	Dosage des Matieres en	11923	1997	NA :6345	2011	1.0
4	LRC/NTK/1.01	Dosage de l'azote Kjeldahl	5663	2000	NA :2361	2011	1.0
5	LRC/PO4/1.01	Dosage du Phosphore(P)	6878	2004	NA :2364	2011	1.0
6	LRC/DCO/1.01	Dosage de la demande Chimique en Oxygene (DCO)	6060	1989	NA :1134	2011	1.0
7	LRC/DBO/1.01	Dosage de la demande biochimique en oxygene apres cinq(05) Jours (DBO5)	1428464	2003	NA :1135	2011	1.0
8	LRC/SUL/1.01	Dosage des Sulfures	13358	1997		2011	1.0
9	LRC/CN/1.01	Dosage des Cyanures totaux	1752799	1984	NA :1767	2011	1.0
10	LRC/FLU/1.01	Dosage des fluorures	10359-2	1994		2011	1.0
11	LRC/PHE/1.01	Dosage de l'indice phenols	6439	1990	NA :2065	2011	1.0
12	LRC/HUG/1.01	Dosage des matieres extractibles par l' hexane(Huiles et Graisses)	JIS K 0102.24.2			2011	1.0
13	LRC/CR6/1.01	Dosage du CHrome (VI) Cr6+	11083	1984	NA:6923	2011	1.0
14	LRC/MN/1.01	Dosage du Manganèse (Mn)				2011	1.0
15	LRC/AL/1.01	Dosage du Aluminium (Al)	12020	1997	NA :6923	2011	1.0
16	LRC/CD/1.01	Dosage du Cadmium (Cd)	8288	1986	NA:2362	2011	1.0
17	LRC/CO/1.01	Dosage du Cobalt (Co)	8288	1986	NA:2362	2011	1.0
18	LRC/CR/1.01	Dosage du Chrome (Cr)	9174	1998		2011	1.0
19	LRC/CU/1.01	Dosage du Cuivre (Cu)	8288	1986	NA:2362	2011	1.0
20	LRC/HG/1.01	Dosage du Mercure (Hg) AAS	5666	1999	NA :2761	2011	1.0
21	LRC/NI/1.01	Dosage du Nickel (Ni)	8288	1986	NA:2362	2011	1.0
22	LRC/PB/1.01	Dosage du Plomb (Pb)	8288	1986	NA:2362	2011	1.0
23	LRC/SN/1.01	Dosage de l'Etain (Sn)				2011	1.0
24	LRC/ZN/1.01	Dosage Du Zinc (Zn)	8288	1986	NA:2362	2011	1.0
25	LRC/HYC/1.01	Dosage de l'indice hydrocarbure	2729490	2000		2011	1.0
26	LRC/NH/1.01	Doage d'Ammonium				2011	1.0
27	LRC/CLO/1.01	Dosage de Chlorine				2011	1.0
28	LRC/MD/1.01	Maitreis déacntable				2011	1.0
29	LRC/NIT/1.01	Dosage des nitriates				2011	1.0
30	LRC/OCT/1.01	Total carbon organic				2011	1.0
31	LRC/COT/1.01	Azote total				2011	1.0

(3) Expenditure of CRL related to the Project in 2010-2011 / Dépenses du LRC dans le cadre du Projet 2010-2011

Item Articles	Amount (in Dinar) Montant (en Dinar)
Gas and reagent Réactifs et gaz	7,500,000
Repairing and maintenance of equipment Réparation et entretien équipements	850,000
Procurement of equipment (microwave digester, multi-parameter suitcase) Acquisition (valisette multi paramétres) digesteur – micro ondes	2,500,000
Workshop and seminar expenses Frais séminaireset ateliers	350,000
Maintenance and repayment of cars Entretien et réparqtion véhicules	500,000
Communication expense Tel Internet	250,000
Total	11,950,000

Attachment II

List of Attendants of the Meetings

(Algerian side)

MATE		
	Name	Position
1	Mr. Abdelkader Benhadjoudja	Chief of Minister's Cabinet
2	Ms. Assia Bechari	Assistant Director, Proper Technology and Valorization of Waste
3	Ms. Asma Ouramdane	Chief, Industrial Depollution Program
ONEDD		
1	Mr. Tayeb Tireche	Director General
2	Ms. Boulekraouet Souhila	Engineer
3	Ms. Hannachi Naila	Engineer
4	Ms. Benboudjema Meriem	Engineer
CRL		
1	Mr. Mohamed Moali	Director
2	Mr. Houas Omar	Engineer
3	Ms. Anane Radhia	Engineer
4	Ms. Tibeche Amel	Engineer
5	Ms. Bensouilah Ouahiba	Engineer
6	Ms. Azouani Sophia	Engineer
7	Ms. Mebrek Hanifa	Engineer
8	Ms. Kimri Leïla	Engineer
9	Ms. Guerfi Lynda	Engineer
10	Mr. Naâsse Saadjia	Engineer
11	Ms. Omri Lynda	Engineer
12	Mr. Tillou Soulayman	Engineer
13	Ms. Saoud Hadda	Engineer
14	Ms. Smai Mohamed	ATL

(Japanese side)

Embassy of Japan in Algeria		
	Name	Position
1	Mr. Tsukasa Kawada	Ambassador
2	Mr. Shobu Nagatani	First Secretary
JICA Study Team		
1	Dr. Mitsuo Yoshida	Senior Advisor
2	Dr. Mimpei Ito	Deputy Director, Environmental Management Division 2, Global Environment Department
3	Mr. Mohamed Houari	Interpreter
JICA Expert		
1	Mr. Kenji Fukushima	Expert
2	Ms. Tomoko Fukaya	Expert
3	Ms. Saori Konan	Expert

Annex 7-7　JCC on July 15, 2012

MINUTES OF MEETING
ON
4th JOINT COORDINATION COMMITTEE
ON
THE PROJECT FOR CAPACITY DEVELOPMENT OF ENVIRONMENTAL MONITORING
(PHASE 2)
IN
THE PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

AGREED UPON BETWEEN

THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

AND

JICA EXPERT TEAM

Alger, July 16 2012

Mr. Kenji FUKUSHIMA
Chief Advisor,
JICA Expert Team
Japan International Cooperation Agency (**JICA**)

Mr. Abdelkader BENHADJOUDJA
Chief of Minister's Cabinet,
Ministry of Land Planning and Environment (**MATE**) in The People's Democratic Republic of Algeria

Mr. Tayeb TIRECHE
Director General
National Observatory for Environment and Sustainable Development (**ONEDD**)

Attachment

1. Completion of the Project

The 4th Joint Coordination Committee was held after the 7th (final) technology transfer of the project with the participation of all the member of ONEDD-CRL. Within the final seminar, results of the Project and issues on activities of ONEDD-CRL were confirmed and shared out among the participants according to the presentation of ONEDD-CRL personnel. The work by Japanese experts in Algeria will be completed by 20th of July in 2012, and the Project will be finalized the end of September in 2012 after completion of the final report.

2. Continuation of Activities by ONEDD-CRL

The results of the Project were indicated as a report of the terminal evaluation of the project which was implemented by the joint terminal evaluation team organized by Japanese side and Algerian side in February 2012. Based on the terminal evaluation of the Project, ONEDD-CRL confirmed to continue the following activities after the completion of the Project:

- ONEDD-CRL will continue an environmental monitoring including inspection of industrial effluents in the Oued El Harrach river basin in cooperation with DEWA and DEWB, and will disclose the results of environmental monitoring in order to contribute the improvement of environmental quality of the Oued El Harrach river basin.
- ONEDD-CRL will make an effort to diffuse the knowledge and the technology that was transferred by the project to other ONEDD regional laboratories, monitoring stations and other relevant organizations.

3. Maintenance of Equipments and the Construction of New Laboratory

In order to keep necessary and suitable conditions for advanced chemical analysis and quality control, ONEDD-CRL promised to make an effort to continue the maintenance of equipments and encourage the construction of new laboratory.

4. Final Report

Both side agreed that the final report as a result of the three years project will be elaborated by the collaborative work between JET and Algerian counterpart personnel and it will be send to Algeria by the end of September in 2012.

ANNEX

List of participants in 4th JCC

Algerian side :

- Ministry of Land Planning and Environment (MATE)
  M. Abdelkader BENHADJOUDJA Chief of Minister's Cabinet

- National Observatory for Environment and Sustainable Development (ONEDD)
  M. Tayeb TIRECHE Directeur Général de l'ONEDD
  M. Moali Mohamed Directeur de CRL

JICA side:

- Experts de la JICA.
  M. Kenji Fukushima Premier conseiller de l'équipe d'experts de la JICA

- Mme. Saori KONAN Coordonatrice / JICA

Annex 8 Report of the Algerian Side

Annex 8　Report elaborated by the Algerian side

Ministry of Land Planning and Environment
National Observatory for Environment and Sustainable Development (ONEDD)
Central Regional Laboratory (CRL)

The Project for Capacity Development of Environmental Monitoring in Algeria (Phase 2)

Project Completion Report

(ONEDD/JICA)

July 2012

Global Vision

The evaluation report of the project; “Capacity Development of Environment al Monitoring in Algeria is achieved within the framework of the cooperation between the Government of Algeria and the Government of Japan.

Both parties participated to the approach (from October 2009 to September 2012) and achieved a project with as overall objective, the establishment of a reliable, sustainable and efficient system for the capacity development of environmental monitoring based on a national strategy. A project also aiming at setting a well organised network of laboratories and monitoring stations and which the Central Regional Laboratory (Algiers) plays a leading role in the field of the environmental monitoring.

All along these three years, supports have been offered for the achievement of the main objectives which are:

(1) The capacity development of the CRL/ONEDD by advanced analytical technology transfer of the environmental monitoring using the analytical equipments.

(2) The development of the monitoring capacity of the effluents with DEWA and DEWB in the Eh Harrach basin and the elaboration of a comprehensive interpretation including the risk assessment in order to give orientations to DEWA, DEWB and MATE on the countermeasures.

(3) Development of the quality control capacity of the analytical work in the analytical work in the CLR.

(4) Support for transfer of the environmental monitoring technology from the CRL to the regional laboratories, the monitoring stations and other relevant organisations concerned by the elaboration of a support plan. Improvement of the training system and its implementation by ONEDD.

The difficulties faced by the achievement of these objectives are mainly technical one, a financial assistance not always available and a real procedure of practical modalities for the implementation of a monitoring program of the industrial liquid wastes in accordance with the executive decree N°07-300 fixing the taxation modalities on industrial wastewaters and the lack of the appropriate infrastructure to conduct laboratory activities.

Conducted activities (from September 2009 to June 2012)

During these three last years (October 2009 – June 2012), the achieved activities are those defined in the designed PDM, i.e.:

Output 1: « *The CRL acquired advanced analytic technique for GCMS, FTIR and XRF ».*

JICA made the advance analytic techniques for GCMS, FTIR and XRF. Reliable analytical results on target parameters have been obtained using standard samples and field samples.

Activities	**Achievement**	
	Results	**Observations**
Transfer of an advanced analytic technique for the volatile organic components by using the GCMS in the CRL.	The counterparts acquired basic knowledge and advanced techniques for handling the GCMS and for the PAH in the water and soil. The SOP_s related to these parameters have been elaborated by the counterparts and corrected by JICA Experts.	Because of a mechanic problem on the P&T, the BTX parameters and the organo -chlorure could not be made. The non availability of helium gas of high purity 99.9999% was an obstacle for the good use of the GCMS and the conduct of analysis in general.
Transfer of an advanced analytic technique for the non volatile organic components using the FITR in CRL.	The counterparts acquired a basic knowledge and advanced techniques for using the FTIR and analysing functional groups by the KBR and ATR technique. The SOPs relating to these parameters have been worked out by the counterparts and corrected by JICA Experts.	Now, FTIR is out of order that prevents the counterparts from practicing and making analysis for environmental monitoring.
Transfer of an advanced analytic technique for the toxic inorganic components using XRF in CRL.	The counterparts acquired basic knowledge and advanced techniques for using XRF and for analysing Pb, Cu, Mn, Fer, Cr, Hg, As, Co, etc. in the soils and liquids. The SOPs relating to these parameters have been worked out by the counterparts and corrected by JICA experts.	

Output 2: « *The quality of the environmental monitoring capacity of CRL is up-grated through the environmental monitoring activities including the inspection in the model site* ».

ONEDD/CRL engineers assisted by JET developed pollution inventories including pollution loads, detailed interpretation and risk assessment as well as a comprehensive monitoring plan including the effluent monitoring in collaboration with DEWA and DEWB.

Activities	Achievement	
	Results	**Observations**
Development of pollution inventories in the Model Site in collaboration with DEWA and DEWB.	Inventory of the industrial units of Oued El Harrach river.	Inventory not complete.
Development of a detailed monitoring plan including the effluent monitoring for the Model Site.	A planning of the industrial effluent monitoring as well as of the Model Site has been worked out.	The monitoring planed by DEWA and DEWB has not been executed in a satisfactory and regular way according to the recommendations.
Interpretation and risk assessment relating to pollution in the Model Site.	Based on the technique acquired and transferred by JICA Expert, the counterpart staff made an appropriate comprehensive interpretation as well a risk assessment in the Model Site.	Partially.
Elaboration of reports based on the achieved interpretations and formulation of recommendations to DEWA, DEWB and MATE.	Under way.	-

Output 3: *« CRL enhanced quality control capacity in LRC analysis works »*

Within the framework of the principles relating to the good laboratory practices, the CRL assisted by the technical experts of JICA worked out a manual describing in detail, the conduct of several analytical methods aiming at insuring the achievement of a sure and uniform specific task within the analytical process as well as the achievement of a documentation based on the GPL. Such approach is one of the most important one achieved in the process of developing a quality control system in the CRL.

<table>
<tr><th rowspan="2">Activities</th><th colspan="2">Achievement</th></tr>
<tr><th>Results</th><th>Observations</th></tr>
<tr><td>A) Assessment of the quality control system existing in the CRL as well as the analytical works.</td><td rowspan="2">Primary state of the existing system has been assessed by JICA Experts training sessions and orientations have been given in a practical way to CRL counterparts for the establishing of sure quality control system.</td><td rowspan="3">The infrastructures and the absence of a clear organisation chart in the CRL minimise the development of quality control system in the CRL.</td></tr>
<tr><td>B) Training for establishing a reliable quality control system for the CRL.</td></tr>
<tr><td>Development of a quality control system.</td><td>The quality control system is strengthened by weekly meetings.
The achievement of a quality control documentation (listing of the standards and reagents available, the organisation of the laboratory, etc.) as well as by the validation of the first version of the SOP_s manual.</td></tr>
</table>

Output 4: «*Environmental monitoring technologies acquired by CRL are disseminated to other ONEDD regional laboratories, monitoring stations and other relevant organisations*»

Training sessions ensured by ONEDD staff and JICA Experts have been given to the engineers of the various regional laboratories and monitoring stations. The technology transfer has also been supported by the organisation of joint seminars and workshops attended by ONEDD engineers throughout the territory.

Activities	**Acievement**	
	Results	**Observations**
Setting up an internal training system.	Having profited from an advanced technology transfer a trainer team has been designated by ONEDD.	
Working out of a training plan for the regional laboratories and the monitoring stations.	Training courses have been given to the regional laboratories and the monitoring stations, jointly by the CRL staff and JICA Experts.	The main obstacle to the good functioning of these items has been the budget deficit (financial means for the gatherings of engineers from related monitoring stations and others).
Joint organisation of seminars and workshops (ONEDD/MATE/JICA).	Three seminars have been organised on three important topics i.e. the water pollution in 2010, the wastes pollution in 2011 and last a seminar on the topic of the marine pollution in 2012. In parallel, three worships have been jointly organised by ONEDD and JICA to assess the progress of output 1.	

Annex 9 Photo Album

Annex 9　Record of activities by photo album

National Observatory for Environment and
Sustainable Development (ONEDD),
Ministry of Land Planning and Environment (MATE)
The People's Democratic Republic of Algeria

The Project for Capacity Development of Environmental Monitoring in Algeria (Phase 2)

(October 2009 - September 2012)

《 Activities - Photo Album 》

1. The 1st Visit (16/10/2009 - 14/11/2009)
2. The 2nd Visit (21/01/2010 - 06/03/2010)
3. The 3rd Visit (18/05/2010 - 30/06/2010)
4. The 4th Visit (01/10/2010 - 24/11/2010)
5. The 5th Visit (12/01/2011 - 02/03/2011)
6. The 6th Visit (20/05/2011 - 30/06/2011)
7. The 7th Visit (04/10/2011 - 28/11/2011)
8. The 8th Visit (12/01/2012 - 01/03/2012)
9. The 9th Visit (15/05/2012 - 20/07/2012)

JAPAN INTERNATIONAL COOPERATION AGENCY

OYO INTERNATIONAL CORPORATION
OAFIC CO., LTD.

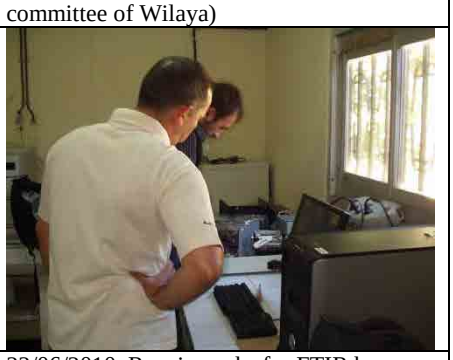
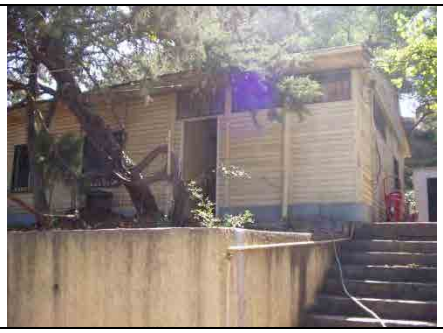
1. The 1st Visit (16/10/2009 - 14/11/2009)

		
18/10/2009, Meeting attended by JICA Consultation Team and JET in MATE	19/10/2009, Kick-off meeting of the project and explanation of the Inception Report in the meeting room of MATE	20/10/2009, Meeting for environmental monitoring with DEWB and DEWA in CRL meeting room.
		
20/10/2009, Site visit in the estuary of Oued El Harrach	25/10/2009, C/P in charge of data analysis (ONEDD Headquarter)	28/10/200, Initial guidance of XRF analysis by JET (Dr. Ishimoto)
		
28/10/2009, Check of equipments and materials on GCMS-P&T by the supplier and JET (Ms. Fukaya)	28/10/2009, Check of equipments and materials on FTIR by the supplier and JET (Dr.Tsuji)	03/11/2009, Visit the laboratory of NARH
		
04/11/2009, Overview of CRL laboratory	08/11/2009, Visit Constantine regional laboratory by JET (Dr. Ishimoto and Mr. Fukushima)	11/11/2009, Signing of M/M in the 1st JCC attended by head of cabinet of MATE, general director of ONEDD and leader of JET.

2. The 2nd Visit（21/01/2010 - 06/03/2010）

		
28/01/2010, Meeting on environmental monitoring with DEWB (in Blida)	09/02/2010, Inspection for the leakage of He gas in GCMS and its regulator by JET (Ms. Fukaya)	09/02/2010, Guidance of XRF by JET (Dr. Ishimoto) in the meeting room of CRL
		
10/02/2010, Meeting for industrial effluents monitoring with DEWA (in Alger)	11/02/2010, Meeting for industrial effluents monitoring with DEWB (in Blida)	14/02/2010, Visit Oran regional laboratory by JET (Ms. Fukaya and Mr. Fukushima)
		
15/02/2010, Meeting with C/P personel and JET (Mr. Fukushima) in CRL	18/02/2010, Water sample taken in Oued El Harrach (DEWB)	20/01/2010、Repair and readjustment for FTIR by SHIMAZU engineer with person in charge in CRL and JET (Dr. Tsuji)
		
21/02/2010, Repair and readjustment for GCM-P&T by SHIMAZU engineer with person in charge in CRL and JET (Ms. Fukaya)	04/03/2010, Meeting attended by general director of ONEDD, all the C/P personal and JET	04/03/2010, Delivery and inspection of apparatus from Japan

3. The 3rd Visit (18/05/2010 - 30/06/2010)

		
26/05/2010, Technology transfer for XRF analysis (treatment of the soil sample)	03/06/2010, Technology transfer for FTIR analysis (daily operational record)	06/06/2010, Meeting on delivery of chemical products with a transit agent and general director of ONEDD
		
09/06/2010, Technology transfer for operational procedures of GCMS analysis (BTX analysis)	14/06/2010, Meeting on analysis of 3 major equipments between CRL-ONEDD and JET	14/06/2010, Sampling of effluents in the Oued Smar industrial area (attended by committee of Wilaya)
		
15/06/2010, Sampling of ground water (borehole) in the Oued Smar industrial area near by the waste dumping site	21/06/2010, The 2nd JCC for report on the progress of activities and the program of 2nd year of the project (in MATE)	22/06/2010, Repair works for FTIR by an engineer from SHIMAZU Turkey in the presence of director of CRL (Mr. Moali Mohamed)
		
22/06/2010, Instruction of maintenance work for FTIR by an engineer of SHIMAZU Turkey	24/06/2010, Warehouse near laboratory, where renovation for organic analysis will be started near future.	28/06/2010, Meeting on activities of the project attended by general director of ONEDD, director of CRL and JET.

4. The 4th Visit (01/10/2010 - 24/11/2010)

		
06/10/2010, Technology transfer for FTIR by JET (Dr.Tsuji)	06/10/2010, Actual situation of waste water management in CRL	17/10/2010, Cleaning for decontamination of Hg in the mercury analyzer
		
18/10/2010, Presentation on the progress for FTIR training by JET (Dr. Tsuji)	18/10/2010, Repair works for AAS by engineers of HTDS Algeria	19/10/2010, Inspection of CRL by engineers from MATE and MEDPOL
		
24/10/2010, Delivery of chemical products, and its receiving inspection	25/10/2010, Self-training of XRF analysis	11/10/2010, Interview of the training program in Japan（31/05 - 07/08, Ms.AZOUANI Sophia (CRL))
		
25/10/2010, Interview of the training program in Japan (29/08 -15/09, Ms. MEBREK HANIFA(CRL))	26/10/2010, Interview of the training program in Japan (05/09 - 23/10, Mrs. DAOUADJI Nassima (CRL))	04/10/2010, Overview of the project office in CRL

5. The 5th Visit (12/01/2011 - 02/03/2011)

		
18/01/2011, Renovated warehouse for organic analysis (pre-treatment of sample)	24/01/2011, Meeting for quality control attended by CRL engineers and JET (Dr. Ishimoto)	24/01/2011, General director of ONEDD visits CRL every day
		
30/01/2011, PCB analysis for UNIDO project oriented by an engineer from Macedonia	30/01/2011, Technology transfer for XRF analysis by JET (Dr. Ishimoto)	03/02/2011, Technology transfer for FTIR analysis by JET (Dr. Tsuji)
		
06/02/2011, Repair works and adjustment for P&T by JET (Ms. Fukaya)	06/02/2011, Meeting for mid-term evaluation attended by all the member of CRL-ONEDD and JET	13/02/2011, Evaporator and vacuum pump delivered from Japan were set up for GCMS analysis
		
21/02/2011, The 3rd and 4th seminar for technology transfer were held in the meeting room of CRL	21/02/2011, Presentation of GCMS analysis by the C/P personnel in the3rd seminar	21/02/2011, Presentation of FTIR analysis by the C/P personnel in the 4th seminar

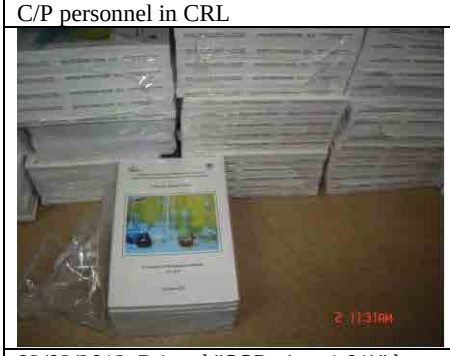
6. The 6th Visit (20/05/2011 - 30/06/2011)

		
14/06/2011, Technology transfer for XRF analysis	15/06/2011, Newly assigned C/P personnel for detailed interpretation and evaluation of risk on output-2 (ONEDD Headquarter)	15/06/2011, Inspection of industrial effluents in the Sheraga community of Alger city
		
16/06/2011, A student of the master degree (USTHB) for training of the pollution of Oued El Harrach	22/06/2011, Training for Output-2	22/06/2011, Same as on the left
		
22/06/2011, Self-training for FTIR analysis	23/06/2011, Polluted water in the estuary of Oued El Harrach (in the dry season)	23/06/2011, Confluence of Oued El Harrach and Oued Smar, where flow rate is decreasing in the dry season
		
23/06/2011, Waste water treatment plant in Baraki community is smoothly operating.	23/06/2011, Highly polluted water in the tributary of Oued El Harrach in Baba Ali community	23/06/2011, SOA Clore company in Baba Ali community where high concentrated mercury was detected

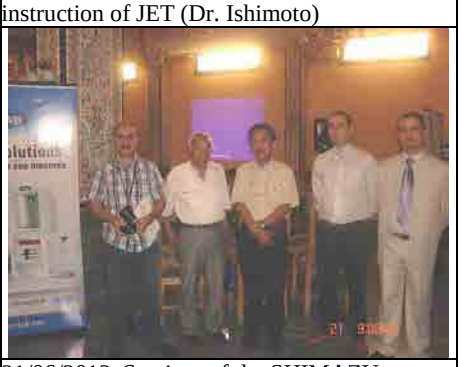
7. The 7th Visit (16/10/2011 - 28/11/2011)

		
24/10/2011,The 5th seminar of technology transfer on XRF analysis, presentation by JET (Dr. Ishimoto)	24/10/2011, Same as on the left, presentation by Ms. Azouani Sophia	24/10/2011, Same as on the left, presentation by Ms. Guerfi Lynda
		
26/10/2011, Training for PAH analysis using GCMS instructed by JET (Ms. Fukaya)	31/10/2011, Provision of sandal shoes to avoid a contamination of the laboratory (as an activity of quality control)	08/11/2012, Provision of white robe for the laboratory work (as an activity of quality control)
		
15/11/2011, The 3rd JCC in the meeting room of MATE	15/11/2012, Same as on the left, approval of SOPs as a result of the Project	15/11/2011, Same as on the left, signing of M/M by head of cabinet of MATE, general director of ONEDD and leader of JET.
		
08/11/2011, Training of output-2 (detailed interpretation and evaluation of risk) in the meeting room of CRL	16/11/2011, Interview of the training program in Japan to Ms. Guerfi Lynda (CRL)	22/11/2011, Training for Oran regional laboratory and monitoring stations under the instruction of JET (Ms. Fukaya)

8. The 8th Visit (12/01/2012 - 01/03/2012)

		
22/01/2012, Weekly meeting for quality control of the laboratory attended by all the C/P personnel in CRL	24/01/2012, Inspection of GCMS-P&T by engineers of ESCLAB (supplier of SHIMZU in Algeria)	30/01/2012, Training of output-2 in the meeting room of ONEDD headquarter (for preparation of the 6th seminar)
		
02/02/2012, Printed "SOPs (ver 1.01)" by 200 copies	06/02/2012, Historical heavy snow-fall surrounding the laboratory after 85 years in Alger city.	06/02/2012, The 6th seminar for technology transfer on output-2 (detailed interpretation and evaluation of risk)
		
12/02/2012、Meeting attended by head of cabinet of MATE, Japanese ambassador and JICA terminal evaluation team, in MATE	12/02/2012, Kick-off meeting on the terminal evaluation attended by joint terminal evaluation teams.	14/02/2012, Blind test for evaluation of technology transfer on analysis of GCMS, XRF and FTIR
		
14/02/2012, Presentation by C/P personnel for terminal evaluation	21/02/2012, Signing of M/M attended by both JICA side and Algerian side, in the meeting room of MATE	26/02/2012, Submission of the progress report and materials to the C/P

9. The 9th Visit (15/05/2012 -20/07/2012)

<table>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>23/05/2012, Training of quality control and GLP for Annaba monitoring station, under the instruction of JET (Dr. Ishimoto)</td><td>23/05/2012, Same as on the left</td><td>29/05/2012, Training of quality control and GLP for Oran regional laboratory, under the instruction of JET (Dr. Ishimoto)</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>18/06/2012, Weekly meeting for quality control of the laboratory attended by all the C/P personnel in the CRL under the instruction of JET (Dr. Ishimoto)</td><td>18/06/2012, Final speech by Dr. Ishimoto</td><td>21/06/2012, Seminar of the SHIMAZU analytical equipments in Constantine attended by C/P personnel and JET</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>26/06/2012, Presentation of C/P personal in the 7th (final) seminar for technology transfer in Alger</td><td>26/06/2012, Same as on the left</td><td>26/06/2012, Same as on the left, director of CRL, leader of JET, representative of Japan embassy, coordinator of JICA Algeria</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>28/06/2012, Printed supplemental SOPs ver. 1.01 (200 copies)</td><td>09/07/2012, Water quality monitoring for sea bathing (near Tipaza)</td><td>15/07/2012, Signing of M/M of the 4th JCC in the meeting room of CRL</td></tr>
</table>