

TERMS OF REFERENCE FOR THE

**Consultancy Services for Establishing a
Laboratory Management System based on
ISO/IEC 17025:2017**

REGIONAL ENVIRONMENTAL LABORATORY

**Environmental Management Bureau –
Cordillera Administrative Region
DENR Compound, Gibraltar, Baguio City, Benguet**

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1. INTRODUCTION

The main objective of the project is to provide assistance and guidance in the establishment and implementation of Laboratory Management System of **Environmental Management Bureau CAR REGIONAL ENVIRONMENTAL LABORATORY** based on the requirements of **ISO/IEC 17025:2017** and **Philippine Accreditation Bureau – Department of Trade and Industry (PAB – DTI)** located at DENR Compound, Gibraltar, Baguio City, Benguet covering the following TESTING activities:

MATRIX	PARAMETER	METHOD
Chemical Testing		
Waters and Wastewater	Ammonia as NH ₃	Phenate
	BOD ₅ @ 20 °C	5-Day BOD Test (SMEWW 5210 B)
	Color	Visual Comparison (SMEWW 2120 B)
	Chloride	Argentometric Method
	Conductivity	Potentiometric Method
	Cyanide	Ion Selective Electrode Method
	pH	Electrometric (SMEWW 4500-H* B)
	Phosphates	Ascorbic Acid Method (SMEWW 4500-P D)
	Total Suspended Solids	Stannous Chloride Gravimetric dried @ 103-105 °C (SMEWW 2540 D)
	Copper, Dissolved	SMEWW 3111B
	Lead	
	Cadmium	
	Zinc	
	Manganese	
Nickel		
Iron		
Mercury	Cold Vapor Technique (AAS)	
Ambient Air	PM 10	Gravimetric
	PM 2.5	Gravimetric
Microbiological Testing		
Water and wastewater	Fecal Coliform	Multiple Tube Fermentation Technique
	Total Coliform	

This proposal includes the different phases and activities of the consulting services to be provided by Consultant(s), including the estimated duration of the project, details of the trainings to be conducted, consulting & auditing, and advisories.

2. METHODOLOGY AND WORK PLAN

Proposed Approach

The general approach to the project is for the Consultant(s) to work closely with the Key Personnel (a Project Team) of **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY** in getting inputs to adequately prepare all the necessary quality, administrative, and technical systems documentation to comply with the Philippine Accreditation Bureau's (PAB) accreditation requirements.

Personnel involved in the Testing activities will be required to follow a program of implementation of trainings and workshops about the requirements of the ISO/IEC 17025:2017:

- Management System Documentation, Document & Records Control
- Measurement Uncertainty Estimation (Chemical Testing & Microbiological Testing),
- Method Validation (Chemical Testing & Microbiological Testing),
- Quality Control (Chemical Testing & Microbiological Testing),
- Risk-based Thinking
- Root Cause Analysis, Corrective and Preventive Actions

The Environmental Management Bureau CAR REGIONAL ENVIRONMENTAL LABORATORY will apply the gained concepts and techniques in establishing the Laboratory Management System and eventually in its implementation, leading to accreditation.

The adequacy of the documentation and its implementation will be reviewed by the Consultant(s).

The establishment and implementation, including accreditation of the Environmental Management Bureau CAR REGIONAL ENVIRONMENTAL LABORATORY management system shall be completed in nine (9) months upon the receipt of Notice to Proceed.

Consultant(s) will work following the schedule set by the EMB-CAR Laboratory. Within the nine-month schedule, there shall be at least one technical personnel from the **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY** with whom the Consultant(s) will be working.

2.1 Detailed Work Plan, Time Schedule, and Deliverables

The specific activities and approaches consistent with tasks are outlined in the Work Plan described below.

Man-days	Activities	DELIVERABLES	PERSONS RESPONSIBLE
PHASE I			
2	1.2 Conduct Training on Awareness on the requirements of ISO/IEC 17025:2017 and PAB.	Training Certificates	Consultant(s) Lab personnel Quality Manager Top Management Support Services
1	1.3 Conduct Training on Documentation Requirements of ISO/IEC 17025, Document & Records Control.	Training Certificates	Consultant(s) Lab personnel Quality Manager Document Controller
2	1.4 Prepare / revise (onsite and offsite) Laboratory Quality Manual based on ISO/IEC 17025:2017. 1.5 Discuss with staffs the draft Laboratory Quality Manual.	Draft copy of the Laboratory Quality Manual	
1	1.6 Prepare / revise Laboratory Quality Policy Statement. Set Quality objectives including the manner of monitoring and recording.	Lab Quality Policy Statement Quality Objectives monitoring	
1	1.7 Conduct Training on Method Validation & Verification	Training Certificates	Consultant(s) Lab personnel
1	1.8 Prepare Method Validation Plan and MV Procedure. Lab personnel to do MV's for all test sought for accreditation.	Method Validation Plans and procedures Lab submits to Consultant the MV Reports.	

Man-days	Activities	DELIVERABLES	PERSONS RESPONSIBLE
(30)	1.9 Lab personnel to do MV's for all test sought for accreditation.	Lab submits to Consultant the MV Reports.	Lab personnel
PHASE II			
1	2.1 Check progress and implementation of Method Validations and lab practices.	Recommendations from Consultant(s)	Consultant(s)
1	2.2 Conduct QA QC Training in the Lab.	Training Certificates	lab personnel
1	2.3 Prepare QC Procedures and QC Charts for tests sought for accreditation.	QC Procedures and QC Charts	
4	2.4 Prepare / revise (onsite and offsite) Quality Procedures and forms required by ISO/IEC 17025:2017. 2.5 Discuss with personnel the draft Procedures and Forms. 2.6 Personnel to start implement to produce related records.	Quality Procedures and forms Records	Consultant(s) Lab personnel Quality Manager Document Controller
PHASE III			
4	3.1 Continuation of review and revision of (onsite and offsite) Quality Procedures and forms required by ISO/IEC 17025:2017. 3.2 Discuss with personnel the draft Procedures and Forms. 3.3 Personnel to start implement to produce related records.	Quality Procedures and forms Records	Consultant(s) Lab personnel Quality Manager Document Controller
2	3.4 Check implementation and progress of lab Management system, Method Validations, QC practices	Recommendations from Consultants	Consultant(s) Lab personnel Quality Manager
2	3.4 Conduct training on Measurement Uncertainty.	Training Certificate	
4	3.5 Calculate Measurement uncertainty in all test sought for accreditation 3.6 Prepare procedures for MU.	Procedures on MU MU Budgets and calculations	Consultant(s) Lab personnel
PHASE IV			

Man-days	Activities	DELIVERABLES	PERSONS RESPONSIBLE
PHASE IV			
PHASE NO. 04: TRAVEL FROM MANILA TO LAB LOCATION			
1	4.1 Check progress and implementation of lab mgmt. system and lab practices.	Recommendations from Consultants	Consultant(s)
2	4.2 Conduct workshops on Risk-Based Thinking for the Lab and prepare Risks & Opportunities Register. 4.3 Prepare determining Risk & opportunities procedure.	Training Certificates Procedures Risk & Opportunities Register	Consultant(s) All lab personnel Quality Manager
2	4.4 Conduct training on Internal Audit	Training Certificates	Consultant(s) Lab personnel Quality Manager Top Management
2	4.5 Conduct Assisted Internal Audit. 4.6 The Consultant(s) shall assist lab's pool of Auditors in the execution of Internal Audit of the lab management and technical system. 4.7 The Consultant(s) shall assist in the consolidation of internal audit findings, preparation of internal audit report and preparation of corrective actions.	Internal Audit plan, schedule Internal Audit reports Non-conformity reports Development of Corrective and Preventive actions and follow ups.	Consultant(s) Lab personnel Quality Manager Top Management
2	4.8 Conduct Management Reviews with the lab personnel. The lab prepares the MR Report.	Notice of MR MR presentations and data MR attendance MR report	Consultant(s) Lab personnel Quality Manager Top Management
2	4.9 Assistance on completion and submission of the PAB forms for Application Requirements: - Quality Manual & Procedures Manual - Internal Audit Reports and Management Review Reports. - Information on Applicant Signatories: CV's, summary of trainings attended. - PAB Forms: Application for Accreditation, Signatories, Assessment Checklist.	Completed Application Requirements	Consultant(s) Lab personnel Quality Manager
END OF PHASE NO. 04: TRAVEL BACK TO MANILA (If applicable)			

Man-days	Activities	DELIVERABLES	PERSONS RESPONSIBLE
Note: PHASE no. 05 is AFTER the PAB Visit.			
PHASE NO. 05: TRAVEL FROM MANILA TO LAB LOCATION			
2	9.1 Assistance after the Phil. Accreditation Bureau's Initial Assessment 9.2 The Consultant(s) shall provide assistance in the preparation of the corrective actions for the findings raised during the PAB initial visit. 9.3 Lab will be responsible for the collation and sending the documented Corrective Actions & Preventive Actions to PAB	Assisted Development of Corrective and Preventive actions / answer to PAB's findings	Consultant(s) Laboratory head and staffs Quality Manager Top Management
END OF PHASE NO. 05: TRAVEL BACK TO MANILA			
Total of 40 Man-days			

2.2 TIME PLAN

Proposed 9-month Project Schedule ISO/IEC 17025:2017. The schedule will be treated with flexibility.

WAVE	ACTIVITY	MO. 1	MO. 2	MO. 3	MO. 4	MO. 5	MO. 6	MO. 7	MO. 8	MO. 9	MO. X
1	1.1 Conduct training on Awareness ISO/IEC 17025:2017	2									
	1.2 Conduct training on Documentation	1									
	1.3 Preparation Quality Assurance Manual and communication to personnel.	3									
	1.4 Prepare Quality Policy statement, set Objectives and monitoring	1									
	1.5 Prepare Quality Policy statement, set Objectives and monitoring	1									
	1.6 Conduct training on MV, prepare plan & procedures, implement	2									
	1.7 Lab performs MV for tests sought for accreditation	implementation									

2	2.1 check progress & outputs of Method Validations & lab practices			1							
	2.2-2.3 Conduct training on QAQC in lab, prepare QC procedures and QC Charts.			2							
	2.4-2.6 Preparation & revise Quality Procedures and Forms			4							
	Lab implements Quality Controls, QC Chart for tests sought for accreditation, implements Quality Forms			implementation							
3	3.1 -3.3 Continuation of documentations					4					
	3.4 check progress & outputs of Quality Controls & lab practices					2					
	3.5-3.7 Conduct Training on MU, prepare procedures, calculate MU on tests					6					
	Lab implements Quality Controls and the whole Management System.					implementation					
4	4.1 Check progress & implementation of Lab Mgmt System and lab practices							1			
	4.2-4.3 Conduct workshop on Risk Based Thinking, prepare procedures and Risk Register							2			
	4.4 Conduct Training on Internal Audits based on ISO/IEC 17025							2			
	4.5-4.7 Conduct Assisted Internal Audits on the labs & prepare reports							2			
	4.8 Assist in CAPA's from Internal Audits.							2			
4	4.8 Conduct Management Reviews.							2			

	Application Requirements										
	Lab continually implements CAPA's and the whole Management System.							implementation			
	PAB Visits the lab										
5	5.1-5.3 Assistance after PAB Visit										2

Note: The proposed project schedule runs for 9 months. Pacing would depend on the commitment and resources provided by **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY.**

MO. X – is dependent on the schedule of PAB Visit.

2.3 EXPECTED OUTPUTS

Outputs	Duration
1. Awareness Training on ISO/IEC 17025:2017	February
2. LABORATORY Quality Assurance Manual	March
3. Quality procedures & forms	April
4. Technical procedure	May
5. Measurement uncertainty calculations, QC programs, and method validations	June
6. Risk & Opportunities register	July
7. Internal Audit report	August
8. Complete application requirements to be submitted to PAB.	July to September

3. Qualifications of the Consultant:

The EMB would like to engage the services of a Consultant with the following qualifications:

- licensed professional with at least five (5) years of experience as Philippine Accreditation Bureau – Department of Trade and Industry (PAB-DTI) ISO/ IEC 17025 auditor;
- with at least eight (8) hours of training from an internationally recognized training provider regarding auditing against ISO/ IEC 17025: 2017 requirements;
- with at least five (5) years of experience in environmental analysis and in conducting trainings and workshops related to ISO/ IEC 17025; and
- with at least five (5) years of experience in providing ISO/IEC 17025 consultancy services to government and private environmental laboratories.

4. Evaluation:

- **Quality – Based Evaluation Procedure (QBE)** will be used for the evaluation of short-listed bidders for the consulting services wherein the technical consultant shall be required to submit his technical and financial proposals simultaneously.

Criteria:

- Quality of Personnel (30%)**
- Experience and Capability of consultant (40%)**
- Plan of Approach & Methodology (30 %)**

5. FEES AND PAYMENTS

FULL CONSULTANCY PACKAGE: The total estimated cost for the proposed full consulting package is **Three Hundred Ten Thousand Pesos only (Php 310,000.00)**.

This includes:

- All applicable taxes
- Transportation cost
- Hotel accommodation and food
- COVID 19 tests required by the IATF and LGU's.

SCHEDULE OF PAYMENT

The payment is broken down as follows:

Payment	FEES (PHP)	Payment be made on
1st	85,000	❖ After the Awareness on ISO/IEC 17025:2017
		❖ After communicating the draft REGIONAL ENVIRONMENTAL LABORATORY Quality Assurance Manual.
2nd	112,500	❖ After the submission of the lab Quality procedures and Forms.
		❖ After the submission of the lab technical procedures.
		❖ After the checking MU calculations, QC programs and Method Validations.
3rd	112,500	❖ After the submission of Risk & Opportunities Register.
		❖ After the submission of Internal Audit Report.
		❖ After assistance and submission of corrective actions to PAB.
TOTAL	310,000	

6. OTHER TERMS AND CONDITIONS

- **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY** and the **Consultant** shall agree upon the project timetable prior to the start of the project, also the physical visit of the lab will be agreed upon.
- **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY** shall form a project team and designate a Lab management Team and point person who shall actively participate in the evaluation, review and documentation

of the Environmental Management Bureau CAR REGIONAL ENVIRONMENTAL LABORATORY management system.

- For the Trainings: **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY** and **the Consultant** shall agree if it will be done virtually or face to face.
 - Other arrangements such as training room, training materials such as white board, audio visual equipment (e.g. LCD projector or multimedia projector for Powerpoint presentation, OHP and screen) shall be provided and/or arranged by **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY**.
- Documents, record, practices and other presentation that will be presented to the Consultant(s) during the course of the project will be treated with strictest confidentiality.

7. CONFIDENTIALITY, COPYRIGHT AND REPRODUCTION

This proposal is submitted by **the Consultant**. It cannot be used for any other purposes, reproduced in whole or part, nor passed to any organization/s or person/s outside **ENVIRONMENTAL MANAGEMENT BUREAU CAR- REGIONAL ENVIRONMENTAL LABORATORY**.

8. VALIDITY

The proposal and fees mentioned herein are valid for acceptance within the **ninety (90) calendar days** from its issuance date. Should there be changes, **The Consultant** and **ENVIRONMENTAL MANAGEMENT BUREAU CAR REGIONAL ENVIRONMENTAL LABORATORY** shall review, approve, and agree on these changes.

Prepared by:


ELIAQUEM L. TAPAIZ, JR.
Head, Regional Environmental Laboratory

Approved by:


MA. VICTORIA V. ABRERA
Regional Director