

OCT 05 1998

DENR Administrative Order

No. 98-63
Series of 1998

SUBJECT: GUIDELINES FOR THE DESIGNATION OF DENR
RECOGNIZED ENVIRONMENTAL LABORATORIES

Pursuant to the provisions of Presidential Decree No. 984 otherwise known as the "Pollution Control Decree of 1976", PD No. 1586 establishing the Environmental Impact Statement (EIS) System in the Philippines, and by virtue of Executive Order No. 192, Series of 1987 and Executive Order No. 292 otherwise known as the "Administrative Code of 1987", the Department of Environment and Natural Resources (DENR), hereby adopts and promulgates the following guidelines for the designation of DENR recognized laboratories.

01. "DENR recognized environmental laboratories" are laboratories that are authorized to generate environmental data in connection with the Environmental Impact Assessment (EIA) System, environmental monitoring, and research activities in support of the formulation and implementation of policies, criteria, guidelines, rules, and regulations, and other activities of the Environmental Management and Protected Areas Sector (EMPAS) of the DENR;

02. DENR "recognition" shall cover the following components:

a. Laboratories

Laboratories, whether owned and/or operated by local or foreign nationals, that generate environmental data in connection with the EIA System, environmental monitoring, and research activities in support of the formulation and implementation of policies, criteria, guidelines, rules, and regulations, and other activities of the Environmental Management and Protected Areas Sector (EMPAS) of the DENR shall obtain a Certificate of recognition from the DENR;

b. Activities

The analysis of environmental samples for specific parameters like physical-chemical, organics, metals, and bacteriological parameters or for a combination of parameters and sample type conducted by environmental laboratories which may be granted recognition. Specific activities under this scheme are the following:

(1) Analysis of water (freshwater, groundwater, water for various uses) and wastewater. Parameters and methods are given in Annex A;

(2) Analysis of ambient air and stack emissions. Parameters and methods are given in Annex B; and

- (3) Analysis of sediments and biota. Parameters and methods are given in Annex C.

c. Duration

The Certificate of Recognition shall have an effectivity of three (3) years.

03. Requirements for recognition

a. Application document

Any person, firm or corporation desiring to establish or operate and maintain an environmental laboratory shall submit to the DENR, through the Environmental Management Bureau (EMB), an application document containing the following data and information:

- (01) Name of establishment;
- (02) Address of establishment;
- (03) Name, citizenship, and domicile of owner of establishment;
- (04) Name of laboratory;
- (05) Address of laboratory;
- (06) Name, citizenship, and domicile of the head of the laboratory;
- (07) Statement that the applicant has complied with all business requirements under existing laws;
- (08) Tax clearance for the preceding year;
- (09) Scope of the desired recognition;
- (10) Mission statement or overview of the mandate of the establishment and the laboratory;
- (11) Accreditation record of the laboratory;
- (12) Technical and support personnel of the laboratory;
- (13) Scope and nature of work of the laboratory;
- (14) Laboratory test report forms;
- (15) Reference literature available in the laboratory;
- (16) Equipment calibration and maintenance program of the laboratory;
- (17) Quality assurance program of the laboratory;
- (18) Track record of the laboratory;
- (19) Pollution control and waste management practices adopted by the laboratory;
- (20) Floor plan of the laboratory and related facilities (scale= 1:100); and
- (21) Duly accomplished official application form.

b. Personnel

The operation of environmental laboratories shall be under the direction and supervision of a licensed chemist, chemical engineer or professional in allied fields with at least 5 years experience in laboratory analysis and management.

The minimum staff of the environmental laboratory shall be composed of one licensed professional, one laboratory assistant, and one laboratory aide.

The licensed professional shall have at least 2 years experience and must have analyzed a minimum of 300 relevant environmental samples.

The laboratory assistant shall have at least a baccalaureate degree in natural and applied sciences, undergone 120 hours of training in the analysis of environmental samples, and analyzed a minimum of 100 relevant environmental samples under the supervision of a licensed professional.

The laboratory aide shall have obtained a high school diploma or have completed a laboratory-oriented vocational course.

c. Track record of the laboratory

The laboratory applying for recognition shall have analyzed a minimum of 300 relevant environmental samples.

d. Physical layout

- (1) The laboratory shall be housed in a permanent building constructed of strong materials, preferably, concrete or semi-concrete;
- (2) The laboratory shall have adequate running water supply and regular electric power supply and provision for emergency power source;
- (3) The laboratory shall have adequate drainage, preferably with separate waste lines for domestic sewage and laboratory wastewater;
- (4) Work rooms shall be well ventilated with adequate provisions for either natural or artificial lighting;
- (5) The working space of the laboratory shall correlate with the volume and type of analysis to be undertaken, including provisions for periods of peak work load;
- (6) Working space requirement shall include sufficient bench top area for processing samples, storage space for chemicals, glassware, and portable and fixed equipment, and an adequate appropriate area for cleaning glassware and sterilizing materials;
- (7) There shall be effective separation between neighboring units when the activities therein are incompatible;
- (8) There shall be adequate physical provisions for the safety of laboratory personnel considering exposure to chemicals, inflammable reagents, fires, and similar substances. Safety provisions shall include emergency exit and egress, emergency shower and eyewash, fire extinguishers, first aid kits, fume hoods, and protective personnel equipment.

e. Laboratory procedures

All laboratory procedures adopted by the laboratory shall conform to the DENR approved methods of analysis or other procedures that may be recommended or adopted by the DENR.

f. Reagents

All reagents to be used in the analysis of environmental samples shall be of the highest grade to obtain reliable results, unless otherwise stated in the procedure.

g. Equipment and instruments

All equipment, instruments, and consumables shall conform to the requirements of the analytical methods approved, recommended or adopted by the DENR.

h. Quality control

The laboratory shall prepare and adopt a quality assurance program to enhance the quality of the data generated by the laboratory.

The laboratory shall analyze quality control samples to check on the proficiency of its analysts and equipment on a regular basis.

Quality control charts shall be displayed in a conspicuous place in the laboratory.

i. Instrument calibration

The laboratory shall formulate and adopt a system for calibration and maintenance of its laboratory facilities. Certificates of equipment calibration shall be compiled and made available upon request by the DENR.

j. Laboratory waste management

The laboratory shall have adequate provisions for the collection, storage, treatment, and disposal of domestic and laboratory wastes. Laboratory effluent and emissions shall conform with relevant environmental quality standards.

The laboratory shall formulate and adopt proper management practices for expired chemicals, toxic chemicals and laboratory wastes.

04. Procedure in the recognition process

a. Submission of application document

The laboratory seeking to obtain a Certificate of Recognition by the DENR shall prepare and submit the application document, the contents of which are given in Section 3.a of this Administrative Order.

The Secretariat consisting of EMB staff shall be created to coordinate and support activities related to the recognition of environmental laboratories by the DENR. It shall make a preliminary assessment of the completeness of the application document. After the document has been assessed and the relevant data/information has been found to be included

in the document, the same shall be forwarded to the members of the Laboratory Inspection and Assessment Team (LIAT).

b. Laboratory inspection and assessment

Within 30 working days upon receipt of the complete application document, the Laboratory Inspection and Assessment Team (LIAT) shall inspect the applicant laboratory and validate the data and information contained in the said document.

The LIAT shall be composed of the following:

Two (2) External Assessors;
Two (2) EMB Assessors; and
One (1) DENR/EMPAS Assessor.

The External Assessors shall be designated by the EMB Director in consultation with relevant professional groups. The applicant-laboratory shall be given the right to accept or reject the External Assessors.

The Laboratory Assessment Report, to be prepared by the LIAT in accordance with the format prescribed by the EMB, shall be consolidated by the Chairperson of the LIAT and subsequently endorsed to the Technical Advisory Group for Laboratory Recognition (TAG-LR).

The Secretariat shall assist the LIAT in the discharge of its functions.

c. Proficiency testing

The laboratory shall be required to participate in interlaboratory exercises organized by the EMB.

The laboratory shall be required to participate in interlaboratory exercises recommended by the EMB.

The Secretariat shall prepare the report for the proficiency test. Said report shall be forwarded to the TAG-LR for consolidation and review.

d. Consolidation and review of data and information

The Technical Advisory Group for Laboratory Recognition (TAG-LR) shall be created by the DENR Secretary to consist of the following:

Chairperson of the LIAT;
Representative of professional chemical associations;
Technical representative of environmental NGOs;
Director, EMB; and
Undersecretary for Environment, DENR.

The TAG-LR shall consolidate and review the laboratory inspection/assessment and proficiency testing reports. From the data and information available, the TAG-LR shall recommend to the DENR Secretary the issuance/non-issuance of the Certificate of Recognition to the applicant laboratory.

The Secretariat shall assist the TAG-LR in the discharge of its functions.

e. Issuance of the Certificate of Recognition

The Certificate of Recognition shall be issued, signed and approved by the Secretary of the DENR if the laboratory has complied with the documentation, analytical performance, and other requirements, upon recommendation of the Technical Advisory Group.

The Certificate of Recognition shall, among others, contain the following information: name and address of the recognized laboratory, laboratory code number, scope of recognition, persons recognized by the DENR as being responsible for the technical validity of test reports, effectivity and date of expiry of the Certificate of recognition, signature of the Secretary of the DENR, and dry seal of the DENR.

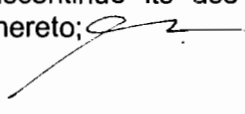
f. Monitoring and reassessment

The EMB, in coordination with the EMPAS, shall institute monitoring mechanisms within the period of effectivity of the Certificate of Recognition to ensure that the recognized laboratory continues to comply with the requirements. These include but are not limited to the following:

- (1) laboratory inspection; and
- (2) provision of quality control/intercomparison samples for analysis by the recognized laboratory.

05. Responsibilities of DENR recognized environmental laboratories

- a. The recognized laboratory shall analyze environmental samples for private companies and individuals, DENR, other government agencies/instrumentalities, NGOs, and local government units;
- b. The recognized laboratory shall submit annual reports according to the prescribed format of EMB. Said report should contain, among others, the following: number of samples analyzed, number of determinations made and performance evaluation report on laboratory comparison exercises participated in by the laboratory;
- c. The recognized laboratory shall at all times comply with the relevant stipulations in the application document;
- d. The recognized laboratory shall acknowledge that it is recognized only with respect to services for which it has been granted recognition and which are carried out in accordance with these conditions;
- e. The recognized laboratory shall pay such fees as shall be determined by the DENR;
- f. The recognized laboratory shall not use its recognition in such a manner as to bring the DENR into disrepute and shall not make any statement relevant to its recognition which DENR may consider misleading or unauthorized;
- g. The recognized laboratory shall, upon suspension or withdrawal of its recognition, forthwith discontinue its use of all advertising matter that contains any reference thereto;



- h. The recognized laboratory shall ensure that no Certificate or report nor any part thereof is used in a misleading manner;
- i. The recognized laboratory, in making reference to its status of recognition in communication media such as advertising, brochures or other documents, shall comply with the requirements of the DENR;
- j. The recognized laboratory shall notify DENR of changes in any aspect of its operation affecting its
 - (1) legal, commercial or organizational status;
 - (2) organization and management, e.g. key managerial staff;
 - (3) policies or procedures, where appropriate;
 - (4) premises;
 - (5) personnel, equipment, facilities, working environment or other resources, where significant;
 - (6) authorized signatories;

and such other matters that may affect the laboratory's capability, or scope of relevant activities, or compliance with the requirements or any other relevant criteria of competence specified by DENR; and

- k. The recognized laboratory shall adopt and implement a continuing technical training program for its staff.

06. Grounds for revocation of Certificate of Recognition and reduction of the scope of the recognition.

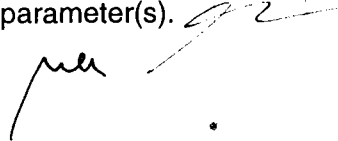
a. Revocation of Certificate of Recognition

The following constitute the grounds for the revocation of the Certificate of Recognition:

- (1) Non-submission/delay in the submission of the annual reports;
- (2) Refusal to admit the DENR monitoring and reassessment team;
- (3) Deliberate falsification of documents and test results;
- (4) Refusal to analyze quality control and similar samples as required by the DENR;
- (5) Violation of DENR provisions regarding pollution control, waste management, and safety regulations; and
- (6) Misrepresentation/concealment of relevant information in the application document.

b. Reduction in the scope of recognition

Failure to meet the acceptable concentration levels for specific parameter(s) in three (3) consecutive DENR-organized or -recommended proficiency tests shall result in the reduction of the scope of recognition for a given laboratory through the suspension of recognition for the specific parameter(s).




07. Reinstatement of the revoked Certificate of Recognition

The Certificate of Recognition shall be reinstated only upon submission of the completed Re-Instatement Application Form and satisfactory compliance with the corrective action.

08. Expiration

The Certificate of Recognition of an environmental laboratory shall expire within three (3) years from the granting of the Certificate unless otherwise revoked.

09. Renewal

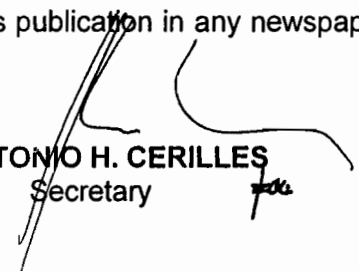
Application for renewal shall be filed at least two months before the expiration of the Certificate.

10. Updating of requirements


The requirements for Certification of the environmental laboratory shall be updated from time to time as the need arises.

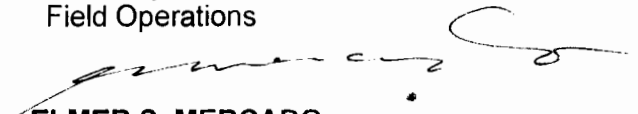
Effectivity

This Order shall take effect fifteen (15) days after its publication in any newspaper of general circulation.


ANTONIO H. CERILLES
Secretary

Recommending Approval


RAMON J.P. PAJE
Undersecretary for
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ELMER S. MERCADO
Undersecretary for
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MARLITO L. CARDENAS
Director
Environmental Management Bureau

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ANNEX A
PARAMETERS AND METHODS
FOR WATER AND WASTEWATER ANALYSIS

PARAMETER	METHODS OF ANALYSIS
Arsenic	Silver Diethyldithiocarbamate Method (Colorimetric)
BOD ₅	Azide Modification (Dilution Technique)
Boron	Carmine Colorimetric Method
Cadmium, Total	Atomic Absorption Spectrophotometry Method (Wet ashing with concentrated HNO ₃ and HCl)
Chemical Oxygen Demand	Open Reflux Dichromate Method
Chromium (Hexavalent)	Diphenyl Carbazide Colorimetric Method
Coliform, Fecal and Total	Multiple Tube Fermentation Technique Membrane, Filter Technique
Color	Visual Comparison Method (Platinum Cobalt Scale)
Copper, Dissolved and Total	Atomic Absorption Spectrophotometric Method (Wet ashing with concentrated HNO ₃ and HCl)
Cyanide, Free	Specific Ion Electrode Method
Dissolved Oxygen	Azide Modification (Winkler Method), Membrane Electrode Method (DO Meter)
Lead	Atomic Absorption Spectrophotometry (Wet ashing with concentrated HNO ₃ and HCl)
Nitrate as Nitrogen	Brucine Method for Saline Waters, Specific Ion Electrode Meter for Fresh Water
Oil and Grease	Gravimetric Method (Petroleum Ether Extraction)
Organochlorine Pesticides	Gas Chromatographic Method (Electron Capture Detector)
Organophosphate pesticides	Gas Chromatographic Method (Flame Photometric Detector)
pH	Glass Electrode Method
Phenols	Chloroform Extraction Method
Phosphate as Phosphorus	Stannous Chloride Method
Polychlorinated Biphenyls (PCB)	Gas Chromatography (Electron Capture Detector)
Settleable Solids	Imhoff Cone Method
Surfactant (Methylene Blue Active Substances)	Methylene Blue Colorimetric Method
Temperature	Use of Mercury-Filled Thermometer
Total Mercury	Cold Vapor Technique, (Mercury Analyzer or Flameless Atomic Absorption Spectrophotometer)
Total Suspended Solids	Gravimetric Method

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ANNEX B
PARAMETERS AND METHODS FOR
AMBIENT AIR AND STACK EMISSIONS ANALYSIS

PARAMETER	ANALYTICAL METHOD
Ammonia	Nesslerization Method Indophenol Method
Carbon Dioxide	Non-dispersive Infra-red (NDIR) Spectrophotometric Method
Carbon Disulfide	Tischer Method
Chlorine and Chlorine Compounds expressed as Cl ₂	Methyl Orange Method
Fluorine and Fluorine Compounds expressed as HF	Titration Method with Sodium Nitrate Solution
Formaldehyde	Chromotropic Acid Method MBTH Colorimetric Method
Hydrogen Chloride	Titration Method with Mercuric Nitrate Solution
Hydrogen Sulfide	Methylene Blue Method
Lead	High Volume Sampler and Atomic Absorption Spectrophotometric Method
Mercury	Cold Vapor Technique
Nitrogen Dioxide, Total	Gas Bubbler Griess Saltzman Method or Chemiluminescence Method
Nitrogen Oxides, Total	Phenoldisulphonic Acid Method
Other Heavy Metals (Arsenic, Cadmium, and Copper)	High Volume Sampler and Atomic Absorption Spectrophotometric Method
Ozone	Neutral Buffer Potassium Iodid (NBKI) or Chemiluminescence Method
Phenol	4-Aminoantipyrine Method
Phosphorous Pentoxide	UV-VIS Spectrophotometric Method
Sulfur Dioxide (Ambient sample)	Gas Bubbler and Pararosaniline Method (West and Gaeke Method) of Flame Photometer Detector Method
Sulfur Dioxide (stack sample)	Titration Method with Barium Perchlorate/Barium Chloride using Thorin as Indicator
Suspended Particulate Matter - TSP - PM 10	High Volume and Gravimetric Method High Volume with 10 micron particle-size inlet and Gravimetric Method

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ANNEX C
PARAMETERS AND METHODS FOR
SEDIMENTS AND BIOTA ANALYSIS

PARAMETERS	ANALYTICAL METHOD
Arsenic	Atomic Absorption Spectrophotometric Method - Hydride Generation
Coliform, Fecal and Total	Multiple Tube Fermentation Technique
Organochlorine Pesticides and Polychlorinated Biphenyls (PCBs)	Gas Chromatograph Method (Electron Capture Detector)
Organophosphate Pesticides	Gas Chromatograph Method (Flame Photometric Detector)
Total Cadmium, Copper, Iron, Lead, Manganese, Nickel, Silver, Zinc	Atomic Absorption Spectrophotometric Method (Wet ashing)
Total Mercury	Cold Vapor Technique

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