REPUBLIC OF CAMEROON
Peace - Work - Fatherland

MINISTRY OF ENVIRONMENT AND PROTECTION OF NATURE

INSPECTORS' AND CONTROLLERS' PRATICAL GUIDE OF THE MINISTRY OF ENVIRONMENT AND PROTECTION OF NATURE

SUMMARY

INTRODUCTION

This document is a set of reference points or criteria which the MINEP inspector or controller must follow during inspection or control.

It is structured around the following points:

- Definition of terms;
- nspection and control procedures;
- Some examples of plants/facilities and related checking parameters;

A - DEFINITION OF TERMS

Environment: all natural and artificial elements and factors which are conducive to the existence of human, animal and plant life;

Waste: any residue from a production, processing or utilization process, or any goods abandoned or intended to be abandoned.

Effluent: any processed or unprocessed liquid or gaseous evacuation of domestic, agricultural or industrial origin, discharged directly or indirectly into the environment

Pollution: any contamination or direct or indirect modification of the environment provoked by discharges exceeding the threshold set by standards.

Nuisances: all the technical or social factors which jeopardize the environment and make life unhealthy or difficult.

Standards: level of set or allowed values favourable to sustainable development

Development: anthropogenic activity geared towards the promotion of economic, cultural and social action.

Sustainable development: mode of development which aims at meeting the development needs of present generations without jeopardizing the capacities of future generations to meet theirs.

Plant or facility: any fixed or mobile device or unit likely to be environmentally harmful, irrespective of their owner or use.

Biodiversity: diversity of living species and their genetic characteristics

Ecology: Science that studies the relationship between living things and their surroundings or environment **(cf law n°96/12 of August 5, 1996)** the study of relationships existing between the various living things or organisms and their surroundings.

Ecosystem: Fundamental unit formed by the association of a community of plants, animals and micro-organisms (living species) and their living

environment combined in a dynamic complex **(cf law n°96/12 of August 5, 1996)** the dynamic complex comprising the community of plants, animals, micro-organisms and their living environment which, through their interaction, make up a functional unit.

Inspection: operation carried out in a plant by the environmental inspector aiming at determining the impact of operations on the receptor environment and biodiversity.

Control: operation to check compliance with the implementation of recommendations resulting from environmental inspections or the checking of conformity with respect to pre-established standards.

B - INSPECTION PROCEDURE

⇒ FUNDAMENTAL QUESTIONS

Once at a given plant:

1 - Where to do the checking ?

Checking is done at the following points:

- points of solid waste disposal, liquid effluents outlets and gas emissions;
- the waste processing or treatment device if there is any;
- the waste storage site;
- the noise-generation sites.

2 - What it is to be checked ?

The elements to be checked are as follows:

- environmental parameters and their conformity with regulation;
- implementation of previous recommendations.

3 - How to check ?

Checking can be done in the following way:

- visual observation
- consultation of documents of the company (results of analyses and possibly standards etc.)
- sampling (for later analysis and interpretation of the results) if possible
- in situ checking (kits, measuring device etc.)

4 - With whom to check ?

The working team is made up as follows:

• a team made up of an inspector, team leader and two assistants sworn in (inspectors or controllers on oath)

⇒ PRINCIPAL STAGES OF INSPECTION

Stages	Actions to be carried out
Preparation **(Place: office)**	Establishment of mission order
	Examination of documents relating to previous inspections and the EMP if there is one; otherwise, the inspection must nevertheless be conducted
	Putting together the required equipment (inspection kits, shooting apparatus or camera, GPS, inspector's card, individual equipment etc.)
	Informing the officials in charge of the plant in the event of a routine inspection
Conduct of inspection **(At the site of the plant)**	Meeting with the officials in charge and presenting the mission
	Working session (explaining the purpose of the inspection)
	Guided tour of the plant (checking of incoming raw materials, their processing and their outflow in order to note any abnormality at each stage)
	Sampling if necessary (kits)
	Visual appraisal of the impact of the activity or discharge on the receptor environment (air, soil, water and human settlements) or on biodiversity
	Questioning for further information (have the ana-

	lyses been made? point of sampling? frequency of sampling? Results of analysis?)
	Restitution of the preliminary results of the inspection to the officials in charge of the plant
	Drafting and signing of the report or statement of inspection by the parties concerned (Inspectors and officials in charge of the enterprise) alongside recommendations

NB.

1 - The restitution makes it possible for inspectors to get a precise idea of the situation in order to write the inspection report or statement with maximum objectivity, avoiding de facto any possible dispute.

2 - Persons carrying out the inspection must be sworn in

C - CHECKING PROCEDURE

⇒ FUNDAMENTAL QUESTIONS

1 - Where to carry out checking ?

Checking is carried out at the following points

- points of solid waste disposal, liquid effluents outlets and gas emissions;
- waste processing device if there is;
- waste storage site;
- noise-generation sites.

2 - What is to be checked ?

The elements to be checked are as follows:

- The implementation of previous recommendations.
- Conformity with respect to pre-established standards

3 - How to check ?

Checking can be done in the following way:

- visual observation;
- emanation of odours;

• consultation of documents of the company (results of analyses and possibly standards etc.)
• sampling (for later analysis and interpretation of the results);
• in situ checking (kits, measuring device etc.)

4 - With whom to check ?

The working team is made up in as follows:
• a team made up of at least two sworn in controllers

⇒ PRINCIPAL STAGES OF CONTROL

Phases	Actions to be carried out
Preparation	Establishment of mission order
	Examination of documents relating to previous inspections and establishing a "check list" of resulting recommendations
	Gathering of equipment necessary (inspection kits, shooting apparatus or camera, GPS, inspector's card, individual equipment etc.)
	Information of parties concerned in the case of routine control
Conduct of control	Meeting with the officials in charge and presenting the mission (purpose, work to be carried out)
	Guided tour of the plant
	Sampling if need be (kits)
	visual, sound, olfactory checking, of the impact of the activity or the discharge in the receptor environment (air, soil, water and human settlements) or on biodiversity

	Restitution of preliminary results of the inspection to the officials in charge of the plant
	Drafting of the control mission report

D - SOME COMMONLY INSPECTED PLANTS AND THE NATURE OF RELATED DISCHARGES

Type of activities	Nature of waste			Some parameters of checking
	Solid	liquid	Gaseous	
Service station	Used filters, packaging	Used oils, waste water	Hydrocarbon vapour, VOCs (volatile organic compounds)	Presence of lubricating oils or grease, Lead, Chromium and Zinc
Hotel and restaurant	Domestic waste packaging	Waste or used water Mud from draining/emptying	Odours	BOD5, COD, pH, oil and grease, faecal Coliform
Food-processing industry	Packaging (papers, wood, scrap, plastics), expired pesticides, molasses, brewer's or spent grains, bagasse/megass; solid	Used water from manufacturing process, used water from washing and cleaning, expired liquid pesticides, used oils and greases, boi-	Suspended matter, unburnt gas, water vapour, odorous emanation,	PH, BOD5, COD, SM, Oils and grease, total Nitrogen, rise in T°C, bacteria coliform bacteria, VOCs, SM, CO2, CO, NOx and SO2, heavy metals Nuisances (noises and vibrations, odours)

	hulls, parchments and other biomasses and solid waste, biomedical waste	ler waters		
Quarry	Empty packaging, carcasses of machines, biomedical waste	Used oil and grease,	Dusts,	SM2.5, SM10, heavy Metals noises and vibrations
Wood industry	Reject of wood, sawdust, filters and worn tyres, worn batteries, packaging, scrap metal and irons filings, biomedical waste	Residues of pesticides, spent oils, boiler waters	Dust, unburnt gas residues,	SM (SM2.5, SM10), dust, Heavy metals Noise and vibration

Health care establishment	Empty packaging, biomedical waste, domestic Waste	Used Water coming from the mortuary, used oils, effluent of treatment stations	Odorous emanations,	system for purification of used water Management of solid waste Existence and functioning of incinerator
Thermal station	Used filters, packaging (drum, etc),	Used oils, heavy fuel,	Unburnt gas,	Suspended matter, CO2, CO, NOx and SO2, heavy metals, noises and vibration Hydrocarbon dumping or spillage
Garage automobile	Old engines, old batteries, wrecks of vehicles, scrap metal, carbide wastes, worn tyres	Used oils, grease, hydrocarbons	Dust containing heavy metals	Oils and grease Chlorine, VOCs Hydrocarbon dumping or spillage
Soap factory	Empty packaging,	Oils, caustic soda, solvents	Odours, smokes,	SM, oil and grease, pH, BOD, COD

Slaughter-house	Horns, hoofs, faeces, frag-ments of bones	blood, used water	Odours	BOD, COD, SM, pH, total coliforms
Brewery	Fragment of glass, draffs, pips, caustic soda waste, and various packaging wastes.	Used water from oil chan-ge or sewa-ge, used water from cleaning, cooling waters, water for produc-tion, and used oils.	CO, CO2, S02, unburnt gas residues, odours, MES, dust, noises, smoke	BOD5, COD, PH, phosphates, nitrates, nitrites
Oil change of vehicles (apart from service stations)	Used filters, Empty packaging	Used oils, used water from washing	Odours	oily sludges, grease, lead, chromium, zinc
Rubbish dump	Refuse, hou-sehold refu-se, glasses,	Lixiviat, dirty water from pipes or	Odours, MES, dusts	BOD5, PH, COD, CH4, H2S, heavy metals, SO2 (burning off)

	papers, paperboards, rubber, cans, wood, waste from electronics and electric household appliances, etc...	mains		
Bakery-pastry-making	Used bags, papers, paperboards, waste from flour, damaged products, yeast waste.	used water from manufacturing process, cooling water, waste water from cleaning, used oils	Odours CO, CO2, S02, smokes	BOD5, PH, phosphates.

E – PRACTICAL DETAILS FOR CARRYING OUT INSPECTIONS AND CONTROLS

1 - Inspections

Inspections are carried out jointly by:

- Central structures and the regional brigade

2 - Controls

It is necessary to distinguish between the two levels of control: significant structures and structures of less importance

- With regard to major structures
- Controls are carried out jointly by the central services and the regional brigade
- As regards structures of lesser importance controls are carried out by the regional brigade with its controllers

3 - At the regional level

the delegate can if he/she deems necessary, be part of the control or inspection team with the brigade head and controllers

KEY

BOD5: Biochemical Oxygen Demand over five days

(the higher it is compared to the reference values, the more polluted the environment becomes)

Defines the quantity of oxygen needed by micro-organisms to break up the organic matter of the environment over 5 days

- The allowed reference values are:
- Lower than 100 mg/l if the daily flow does not exceed 30 kg
- Lower than 30mg/l beyond that

COD: Chemical Oxygen Demand

It is the quantity of oxygen required for chemical reactions leading to the decomposition of the elements of the environment

The allowed reference values are:

- Lower than 200 mg/l if daily flow does not exceed 100 kg
- Lower than 100mg/l beyond that

PH: Hydrogen potential of an environment, it varies from 0 to 14.

- For the values of pH between 0-7, the environment is an acid environment, for values ranging between 7-8, the environment is neutral
- For values between 7-8, the environment is basic

The allowed values of pH must be between 6 and 9

SM: Suspended matter
The limiting purity value must be lower than 50 ml

CO: Carbon monoxide

CO2: Carbon dioxide (Carbon dioxide)

CH4: Methane

H2S: Hydrogen sulphite

SO2: Sulphur dioxide (dioxide of sulphur)

NOX Nitrogen Oxides

VOCS: Volatile organic compounds

PM: Particulate matter

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