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S. I. 21 of 2011

NATIONAL ENVIRONMENTAL (NON-METALLIC MINERALS MANUFACTURING INDUSTRIES SECTOR) REGULATIONS, 2011

In exercise of the powers conferred on me by Section 34 of the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007 and all other powers enabling me in that behalf, I, Mr John Odey, Honourable Minister, Federal Ministry of Environment hereby make the following Regulations :

[28th day of April, 2011] Commencement.

Part I—General Provisions

1. The principal thrust of these Regulations is to prevent and minimize pollution from all operations and ancillary activities of the Non-Metallic Minerals Manufacturing Sector to the Nigerian environment. Thrust

2. Every facility shall be given equal treatment without preference as far as enforcement of relevant laws and inspections are concerned. Environmental Governance.

3.—(1) Every facility shall : Planning.

(*a*) carry out Environmental Impact Assessment (EIA) for new projects or modification including expansion of existing ones before commencement of activity ;

(*b*) submit Environmental Audit Report (EAR) for existing industries every 3 years. Environmental Audit should be conducted by external consultants accredited by Agency ; and

(*c*) submit Environmental Management Plan (EMP) as contained in Schedule XVI to these Regulations.

(2) New projects in the Non-metallic sector shall apply up-to-date, efficient and cleaner technologies to minimize pollution to the barest practicable degree.

(3) Facilities applying new designs shall evaluate their installations and ensure that control measures are sufficient to prevent risks of pollution or accident.

4.—(1) Every facility shall plan and set up machinery for combating pollution hazard and maintain functional equipment in the event of an emergency. Emergency Response plan.

(2) Every facility shall for the purposes of sub-regulation 1 of this regulation, have an emergency plan and a stock of functional pollution response equipment, which shall be readily accessible and available to combat pollution hazards in the event of accidental discharges in line with the template for emergency plan in industries prescribed under Schedule XV to these Regulations.

(3) The owner or operator of a facility shall prepare an emergency response plan that describes the measures to be taken in respect of a deleterious substance to prevent any deposit/discharge out of the normal course of events of such a substance and to mitigate the effects of such a deposit/discharge which shall include such details as stated in Schedule XV to these Regulations.

Pollution Abatement Equipment.

5.—(1) Every facility shall install anti-pollution equipment for the detoxification of effluent, emission and chemical discharges emanating from the facility so as to meet the prescribed effluent and emission permissible limits.

(2) An installation made pursuant to sub-regulation (1) of this regulation shall be based on the Best Available Technology (BAT) or the Best Practicable Technology (BPT).

(3) Vehicles and equipment used in industrial activity are to be operated and maintained in a manner that prevents ground and surface water pollution

Polluter Pays Principle.

6.—(1) The Polluter–Pays–Principle shall apply to every facility that pollutes.

(2) The collection, treatment, transportation and final disposal of wastes shall be the responsibility of the facility generating the wastes within extant standards and guidelines.

(3) In the event of an incident resulting in an adverse impact on the environment whether socio-economic or health wise, the facility shall be responsible for :

(*a*) the cost of damage assessment, control and clean-up ;

(*b*) remediation ; and

(*c*) reclamation/restoration.

Best Practices/ waste Minimisation.

7.—(1) Every facility shall apply the Best Available Environmental Practices in the use of packaging material.

(2) Where applicable, the 5 Rs namely Reduce, Repair, Re-use, Recycle and Recover shall be encouraged.

(3) Every facility shall employ cleaner production processes and pollution prevention measures to yield both economic and environmental benefits.

(4) Every facility shall implement programs on best practices as set out in Schedule XIII to these Regulations or assign the responsibility for pollution control to a person or body corporate accredited by the Agency.

(5) Every facility shall ensure that no employee is exposed to any hazardous condition in the work place without awareness and protective measures.

(6) Every facility shall provide Personal Protective Equipment (PPE) for their employees working in hazard prone sections, as prescribed in Shedule XXII to these Regulations.

(7) Small scale industries shall install anti-pollution equipment or mechanism that will minimize pollution.

(8) Every facility shall focus its pollution prevention programs on reduction of excessive noise pollution during extraction of raw material, use of water and on more efficient use of process chemicals.

(9) Every facility shall reduce waste discharge and decrease wasteful resource expenditure.

(10) Every facility shall embrace continuous improvement of the operating environment.

(11) Heat generated during operation processes shall be reclaimed for other uses where practicable.

Pollution Abatement.

8.—(1) The dry process precalciner line shall have the following built-in pollution control features :

(*a*) the use of low NOx burners ;

(*b*) the use of low NOx calciner ; and

(*c*) firing of fuel in the riser duct of the precalciner to reduce NOx emissions.

(2) Specific rehabilitation, reclamation and annual report of such exercise should be submitted to the Agency in the event of pollution.

(3) Exhaust gases from the kiln shall be routed to the air pollution control system and then discharged to the atmosphere through a stack.

(4) The wet line shall have significant improvements in :

(*a*) liquid effluent quality ;

(*b*) water consumption ; and

(*c*) fuel use efficiencies.

(5) Ambient irrespirable particulate measurements at the Cement plants and the communities in proximity shall be conducted by a NESREA-accredited consultant.

(6) In addition, carbon monoxide, hydrogen sulphide, combustibles and SO_2 gases shall be measured using direct reading instruments.

(7) The collection and transportation of quarry stone by truck to the chutes shall be done in a manner that minimizes pollution.

Global Warming.

9. Every facility, corporation or organisation shall prepare a voluntary action programme for global warming control measures and such measures shall take into account energy- saving and best available technology in their production processes.

Volatile Organic Compound.

10. Every facility, corporation or organisation shall control Volatile Organic Compounds.

Minimisation of Wastes/ Pollution.

11. Facilities shall conform to the permissible limits as provided under Schedules I-XI to these Regulations.

Pollution Control Organisational System.

12.—(1) Every facility shall put in place organizational system for pollution control and shall assign environmental pollution control and prevention duties to an Environmental Manager (EM) with duties described in Schedule XVIII to these Regulations.

(2) In addition, capacity building and assessments shall be conducted to help environmental managers and operators to obtain required qualifications and certification by the Agency as contained in Schedule XVIII to these Regulations.

Extended Producer Responsibility.

13.—(1) All manufacturers and importers shall subscribe to an Extended Producer Responsibility Program, as outlined in Schedule XX to these Regulations.

(2) The Agency shall work with the sector to achieve the Extended Producer Responsibility Program within the period of three years.

Chemical Usage.

14.—(1) Every facility shall submit to the nearest office of the Agency the following information on a quarterly basis :

(*a*) a list of the chemicals used in the manufacture of its products including their Material Safety Data Sheet (MSDS) ;

(*b*) details of stored chemicals and storage conditions ;

(*c*) list of obsolete, expired or abandoned chemicals and the proposed plan for their environmentally sound management ;

(*d*) the local sources of listed precursor chemicals utilized ; and

(*e*) the sources of listed precursor chemicals imported by the facility, organization or body corporate.

(2) Each facility, corporation or organisation shall ensure the minimization of the use of organic solvents.

Banned/ Restricted Chemicals.

15. Use of restricted chemicals as listed under Schedule XIV to these Regulations and as clearly stated in the National Environmental (Chemical, Pharamaceutical, Soap and Detergent Manufacturing Industries) Regulation, 2009, shall be with a permit from the Agency.

Permits.

16.—(1) All permits (notices, order, consent or demand) shall be in writing and shall be in congnance with the provisions of the National Environmental (Permitting and Licensing System) Regulations, 2009.

(2) A facility shall not :

(*a*) Discharge or cause to be discharged any effluent, or oil in any form into water system, public drains, or underground injection and land without a permit from the Agency ;

(*b*) release hazardous or toxic substances into the water or land or air of Nigeria's ecosystem beyond the permissible limits set out under Schedule I to these Regulations.

(3) Application for a permit is as set out in Part 3 of these Regulations.

(4) The permit forms shall be as set out in Schedule XVII to these Regulations or as may be specified by the Agency.

Management of chemicals, oil station and fuel dump sites.

17.—(1) There shall not be contamination arising from leakage of surface/ underground oil/fuel or chemicals storage tank likely to cause pollution of the environment including the surface water and groundwater.

(2) Every facility shall have an impermeable base for any ancillary equipment and provide an appropriate bund wall in the event of any unanticipated discharge or spillage.

(3) The underground tanks of oil stations and fuel dump sites shall be checked regularly for leakages to prevent seepage into ground water.

EFFLUENT LIMITATION

Effluent Limitation Standard.

18.—(1) The National Environmental Standards for effluent limitations for the sector shall be as set out under Schedules I to III to these Regulations.

(2) Any effluent shall be deemed to be non-compliant and polluted if :

(*a*) the concentration of any of its parameters exceeds the permissible limits as specified in Schedule I to III to these Regulations ;

(*b*) it does not comply with the corresponding limit specified in Schedules I-III to these Regulations, as the case may be ; and

(*c*) it is discharged from a facility without appropriate pre-treatment

(3) Such an effluent as described in sub—regulation (2) of this regulation shall not be discharged from a facility, without complying with the National Standards set out under Schedule I to III to these Regulations.

Restriction on the release of effluent.

19.—(1) A Facility shall not discharge effluent onto land, into a watercourse or into a water body unless the facility ensures that the parameters of the effluent does not exceed the permissible limits set out in Schedules I to III to these Regulations.

(2) Notwithstanding sub-regulation(1) of this regulation, any facility using an influent, the limits of concentration or value of any of the parameters of which exceeds the permissible limit for that parameter set out in Schedule I to IV to these Regulations, shall ensure that the concentration or value of the parameters of the effluent conforms to the prescribed permissible limits.

(3) Disposal of hazardous waste material in water or on land without prior treatment is prohibited.

(4) Generators of such treated waste, subject to the Land Disposal Requirements, must provide notification of such to the Agency.

Effluent treatment.

20.—(1) Every facility that discharges effluent into the environment shall treat the effluent to permissible level as specified in Schedules I to III to these Regulations, to ensure assimilation by the receiving medium.

(2) Every facility shall :

(*a*) carry out effective treatment, all the time that the plant or unit is operating ;

(*b*) ensure the environmentally sound management of sludge containing heavy metals or other toxics and dispose same in a landfill or designated disposal site approved by the Agency ;

(*c*) ensure the treatment of toxic organics contained in both effluent and sludge as approved by the Agency ; and

(*d*) ensure that effluent is not diluted to achieve the standards contained in Schedule I to these Regulations.

(3) Wastes that contain toxic organics shall be subjected to thermal treatment to effectively destroy or remove over 99.99 *per cent* of toxic organics and the resulting residue shall be disposed of as set out under Schedules I—III to these Regulations.

Sludge Disposal.

21.—(1) A facility shall not discharge sludge directly into any water body and any discharge to any part of the environment is prohibited except under a sludge disposal licence.

(2) Sludge disposed onto land shall be classified and none of its components shall exceed the prescribed limit in to Schedule X of these Regulations.

(3) Any other sludge beside purely domestic (Organic) sludge and purely agricultural (Organic) sludge shall be treated as hazardous waste.

(4) Hazardous Sludge shall be treated and disposed of in a secure landfill approved by the Agency.

EMISSIONS

Emission Control.

22. Every facility, corporation or organisation shall comply with the Emission Standards as prescribed in Schedules V—IX to these Regulations.

Priority Air Pollutants.

23.—(1) Every facility, corporation or organisation with any source or potential source of emission shall measure the emission of every priority air pollutant emitted, develop and implement a plan to control such emission in accordance with the Standard prescribed in Schedule V—IX to these Regulations.

(2) Every facility, corporation or organisation shall be required to report the emission data, sources of emissions and undertake emission reduction in

accordance with the implementation plan which shall be reviewed every three years by the Agency.

(3) Every facility, corporation or organisation shall ensure that it measures the odour detection threshold and the odorous dilution ratio of the working environment or emissions.

(4) The dilution method of testing odours shall adopt American Society for Testing Materials (ASTM) or any other method as may be specified by the Agency to safeguard the health of the workers.

Burning of Fuels.

24.—(1) No facility, corporation or organisation shall burn light oil fuel containing over 0.5 percent sulphur by weight as fired in an existing source or in a new source.

(2) No facility, corporation or organisation shall burn medium oil fuel containing over 1.1 percent sulphur by weight as fired.

(3) Notwithstanding subregulation (1) of this regulation heavy fuel oil with not more than 3 *per cent* sulphur may be burnt at a new or existing facility with new fuel combustion sources or a combination of new and existing fuel combustion sources if :

(*a*) one or more of such sources operate in a manner that sulphur dioxide is absorbed by coming into contact with the product or with a scrubbing device or other material ; and

(*b*) the total sulphur dioxide emission from the entire facility is less than the allowable sulphur dioxide emission.

Prevention and control technique to reduce SO_2 emissions in ceramics industries.

25. In order to control SO_2 emission in the ceramics manufacturing industries, every facility shall :

(*a*) use fuel with low sulphur content such as natural gas or liquefied petroleum gas ;

(*b*) use low-sulphur raw materials and low sulphur body additives to reduce sulphur levels in processed material ; and

(*c*) optimize the heating process and firing temperature.

Prevention and contriol techque to reduce SO_2 emissions (for galss industries).

26. In order to control So_2 emission in the glass manufacturing industries ; every facility shall :

(*a*) minimize the quantity of sodium or calcium sulphate in the batch materials ; and

(*b*) install semi-wet scrubbers characterized by the addition of some basic reactive chemicals (calcium and sodium based) that are dissolved in wash water (wet abatement).

Reduction of nitrogenous gas emission in the ceramics and tiles industries.

27. To reduce nitrogenous gas emission in the ceramics and tiles industries ; every facility shall :

(*a*) optimize peak flame temperature in the kiln, and use of computerized control of kiln fire ;

(*b*) reduce the nitrogen content in raw material and additives ; and

(*c*) use low NOx burners.

Reduction of nitrogenous gas emission in the glass industries.

28. To reduce greenhouse gas emission in the glass industries every facility shall :

(*a*) use low carbon content fuels like natural gas instead of fuel oil or solid fossil fuel ;

(*b*) maximize cullet use to increase energy efficiency and to limit the use of carbonate raw materials, especially in container glass production ; and

(*c*) use inverter-based variable speed drives with large combustion air and cooling air fans.

Prevention and control technique to reduce fugitive particulate matter emissions (Ceramics and tiles).

29. In order to control fugitive particulate emission in the ceramics and tiles manufacturing industries every facility shall :

(*a*) segregate storage areas from other operational areas ;

(*b*) use enclosed silos to store bulk powder materials ;

(*c*) use wind protection barriers for wind protection (e.g. either artificial barriers or vertical greenery, such as densely growing trees and shrubs) if raw material is stored in open piles ;

(*d*) use enclosed dry raw material transport systems (e.g. conveyor, enclosed screw feeders and feed pocket enclosures) ;

(*e*) use dust extraction equipment and bag house filters particularly for dry material and unloading points where products are cut/ground and polished ;

(*f*) reduce air leakage and spillage points through maintenance activities ;

(*g*) maintain negative pressure in closed systems used for material handling and dust air suction ;

(*h*) use wet dust separators to treat emissions from spray drying and glazing processes in fine ceramics manufacturing ; and

(*i*) use sintered laminar filters to separate wet dust from spray glazing and to clean off-gas from spraying cabins.

Management strategies for Green House Gases Control (Ceramics).

30. To reduce greenhouse gas emission in the Ceramics industries every facility shall :

(*a*) always use efficient kilns ;

(*b*) use cleaner fuels where practicable ;

(*c*) improve kiln sealing to reduce heat losses arising from excessive air flow (e.g. metal casing and sand or water seals in tunnel kilns and intermittent kilns) ;

(*d*) improve thermal insulation of kilns to reduce heat loss ;

(*e*) use low thermal mass insulation in intermittently fired kilns ;

(*f*) use low thermal mass kiln cars to improve overall efficiency (e.g using materials such as cordierite-mullite, sillimante and re-crystallized silicon carbide), as well as minimize other parasite loads ;

(*g*) use high-velocity burners to obtain a higher combustion efficiency and heat transfer ;

(*h*) optimize peak flame temperatures in the kiln, and install computerized control of kiln firing ;

(*i*) optimize dried-material transfer between the dryer and kiln and where possible use the preheating zone of the kiln for completing the dry process (to avoid unnecessary cooling of the dried ware before the firing process) ;

(*j*) recover excess heat from the kiln especially from the cooling zone, for heating dryers and predrying products ;

(*k*) recover heat from kiln exhaust gas to preheat combustion air ;

(*l*) use spray dryer with an optimized nozzle ; and

(*m*) install insulators for spray dryers ;

Management strategies and energy conservation for GreenHouse Gases(Glass).

31. To reduce green house gas emission in the glass industries every facility is encouraged to :

(*a*) use low carbon content fuels like natural gas ;

(*b*) maximize cullet use to increase energy efficiency and limit the use of carbonate raw materials, especially in container glass production ; and

(*c*) use inverter-based variable speed drives with large combustion air and cooling air fans.

Abatement Technologies.

32.—(1) Every facility which discharges gaseous emission shall reduce it to the permissible level as prescribed under Schedules V—IX to these Regulations.

(2) Reduction of such emission can be achieved through the use of appropriate treatment technologies for minimizing the release of significant pollutants to the air including :

(*a*) stack gas scrubbing, carbon adsorption or combustion (for toxic organics) ;

(*b*) bag houses (for particulate matter removal) ; biological filters ; and

(*c*) cyclone or any other appropriate technology.

Noise Standards.

33. Every Facility shall evaluate its installations and ensure that routine controls are sufficient to prevent risks of noise pollution.

Noise Abatement.

34. Noise abatement measures should be in place to achieve the levels prescribed in Schedule X1 to these Regulations.

Hearing Conservation Program.

35.—(1) Every facility shall administer a continuing, effective Hearing Conservation Program, whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measures on the A scale (slow response) or, equivalent to a dose of one hundred percent.

(2) For purposes of the hearing conservation program, employee noise exposures shall be computed, regardless of the provision and the use of Personal Protective Equipment.

(3) An 8-hour time weighted average of 85 decibels shall be referred to as the action level.

Noise Monitoring.

36.—(1) Monitoring shall be repeated whenever a change in production, process, equipment or control, increases noise exposures to the extent that :

(*a*) Additional employees shall be subjected to risk at the action level ; or

(*b*) The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet requirements of sub-regulation I of this regulation..

(2) Every facility, which incorporates the operation of quarry in its process, shall minimize noise and vibration during blasting by the use of modern blasting techniques and observe the following :

(*a*) blasting shall be carried out only during the day period *i.e.* 7:00a.m. – 7:00p.m. ;

(*b*) noise and vibration during each blasting shall be monitored at a position not more than 500m away from the blast ; and

(c) in the event of excessive noise and or vibration preventive actions shall be taken before any further blast is carried out.

Community Relations.

37. Every facility shall have a sustainable community relations program as part of demonstration of compliance with her Corporate Social Responsibility.

PART II—SAMPLING PROCEDURES

Collection and analysis of samples.

38. For the purposes of determining license classification and license compliance, the facility shall examine samples according to standard analytical methods in a laboratory accredited by NESREA.

Spot Sampling for physical or chemical parameters.

39. A spot sample for the purpose of analysis for all the tests including oil and grease, dissolved oxygen, pH, chlorine and sulphide shall be taken as follows :

(*a*) the whole sample volume is to be taken at one time, at the point of discharge or, if the discharge has stopped, at the nearest practicable point within one kilometre upstream and downstream of the point of discharge ;

(*b*) the sample shall be analysed immediately after collection where possible but not later than 24 hours after taking the sample and the whole sample volume shall be used.

Composite sampling for physcial or chemical parameters.

40. —(1) A composite sample for the purpose of analysis for all tests other than those for temperature and pH shall be taken by combining individual samples as follows :

(*a*) a minimum of five samples of equal volume of not less than 500 ml each shall be taken at the point of discharge or, if the discharge has stopped, at the nearest practicable point within one kilometre upstream and downstream of the point of discharge, at approximately equal intervals of time over a minimum period of four hours within any 24 hour period ;

(*a*) two of the composite samples, collected when the discharge has been stopped, will be used to prove the source and extent of pollution ;

(*c*) the samples shall be kept as cool as at site conditions license. Sample analysis shall commence not later than 24 hours after taking the last sample ;

(*d*) where the discharge has stopped or is intermittent, two grab samples shall be collected at the nearest practicable point within one kilometer upstream and downstream each of the point of discharge.

(2) The soil quality level during routine operations within the facility shall not exceed the required levels as listed in Schedule XII to these Regulations.

Sampling for license classification.

41. The whole volume of spot sample and for further laboratory analysis shall be taken at one time at the point of discharge.

Sampling for other parameters.

42. Where full laboratory facilities do not exist on the site, the oxygen in the sample may be "fixed" at the time of sampling by adding any of the following reagents; alkaline azide reagent, sulphuric acid, permanganate, oxalate, manganous sulphate and alkaline iodide or any other approved scientific method :

Provided that—

(*a*) the stopper of the sample container shall be replaced and the solution shall be well mixed ;

(*b*) the remaining steps shall be carried out later in the laboratory.

Sampling for microbiological analysis.

43.—(1) When a number of samples for different purposes are to be taken from the same sampling point, the following precautions are to be observed—

(*a*) the sample for bacteriological examination shall be collected first unless special investigations are necessary ;

(*b*) samples for bacteriological examination shall be kept strictly separate from all others to avoid contamination ;

(*c*) boxes for the transportation of samples shall be made of materials that can be disinfected regularly and they shall not be used for carrying anything other than samples of water for bacteriological examination ;

(2) Sterile bottles used exclusively for bacteriological purposes that are fit for immediate use shall be provided by the laboratory performing the examination.

(3) Officers must ensure that the volume of each sample is at least 500ml and that at least one sample is taken at each sampling point.

Air Sampling for Analysis.

44.—(1) Measurements of air quality parameters shall take place at any facility, downwind and upwind.

(2) Measurement of total suspended particulate shall be by gravimetric method using air sampler.

(*a*) a minimum of two sampling periods (both 1-hour and 8-hour) shall be adopted.

(*b*) the heavy metals level of total suspended particulate shall be determined using any referenced standard method.

(3) gaseous pollutants shall be measured by passive sampling, active sampling or continuous sampling as follows :

(*a*) passive sampling method shall require the submission of analysis certificate along with results and a minimum of three sampling periods (1-hour, 24-hour and 30-day) shall be adopted as may be considered appropriate ;

(*b*) active sampling for NOx shall use the Saltzman or any other standard method ;

(*c*) active sampling for SO_2 shall use the West-Gaeke, hydrogen peroxide/ conductimetry or any other standard method ;

(*d*) active sampling for hydrocarbons shall use the adsorption on activated charcoal method ;

(*e*) continuous sampling of any gaseous air pollutant shall use instruments with detection range accommodating the maximum allowable limit of measured parameter and measurement shall last for at least 1 hour in every sampling location.

Noise Measure-ments.

45.—(1) Noise levels shall be measured with instrument having both A and C weighting, a resolution not more than 0.1 dB and fast/slow responses.

(2) Measurement shall be taken at least 3 metres from any barrier or other sound reflecting sources, at about 1.2 – 1.5 metres above ground level or working platform and shall last for at least 10 seconds.

(3) Daytime (07:00 – 22:00) and night time (22:00 – 7:00) measurements shall be taken at the fence line of any facility.

PART III—PERMITS

Procedure for permitting and Licensing.

46. Procedures for application for issuing of permits and revocation of such permits where they have already been issued, are as contained in the National Environmental (Permitting and Licensing System) Regulations, 2009, S.I.29 .

PART IV—INDUSTRIAL EFFLUENT/AIR EMISSION MONITORING AND REPORTING

Reporting Requirements.

47.—(1) Permit holder subject to categorical standards shall comply with reporting requirements under the NESREA Permit including, but not limited to, Baseline Monitoring Reports, Periodic Compliance Reports, Incidence Report and Monthly Industrial Discharge Monitoring Reports (IDMR), to the Agency's Field Offices.

(2) Permit holder must submit to the Agency, monthly report, based on sampling analysis performed in the period covered by the report and all reports shall be in compliance with NESREA format as prescribed under Schedule XXI to these Regulations.

(3) The permit holder shall report all sample results for parameters listed on the Effluent Limitations and Monitoring Requirement, on the Industrial/ Commercial Discharge Monitoring Report forms as stipulated under Schedule XXI to these Regulations.

(4) The Permit holder shall install monitoring equipment to facilitate accurate observation, sampling and measurement of the quality of waste discharges as required by the permit. The equipment shall be in working order and accessible to all authorized officials at all times.

(5) Permit holder discharging or proposing to discharge wastewater to a general sewer or treatment plants shall maintain the following :

(*a*) records of production ;

(*b*) water consumption and discharge flow records ;

(*c*) complete monitoring records as specified in these Regulations ;

(*d*) process monitoring records ;

(*e*) incident reports ;

(*f*) waste handling records and any other records necessary to demonstrate compliance with these Regulations.

(6) Permit holder shall be required to file reports with the Agency if the permit holder :

(*a*) in any month commits a serious violation or fails to submit a Completed Discharge Monitoring Report ;

(*b*) exceeds an effluent limitation for the same pollutant at the same discharge point source by any amount for four out of six consecutive months ; and

(*c*) has emergency discharges that could cause problems to the Environment, including any sludge loadings.

Authorized Signatory.

48.—(1) The permit holder shall sign the report and attach a copy of the Certificate of Analysis from the Agency's accredited laboratory.

(2) Each report shall be signed by the appropriate officer/responsible corporate officer, if the Permit holder submitting the reports is a corporation.

(3) Each report shall include the following certification statement :

"*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief true, accurate and complete*"

Monitoring Records.

49. Monitoring Records shall be made available to the Agency and shall be retained for a minimum of Ten (10) years and throughout the course of any pertinent litigation.

Fees.

50.—(1) The Agency shall adopt charges and fees that shall include :

(*a*) fees for processing application for permit ;

(*b*) fees for reviewing accidental discharge, prevention procedures and construction ;

(*c*) other fees as the Agency may deem necessary to carry out the requirements contained herein which may include emergency incident response and cost of personnel and equipment.

(2) These fees relate solely to the matters covered by these Regulations and are separate from all other fees chargeable by the Agency.

Confidential Information and Public Access to Records.

51. Public access to information under these Regulations shall be governed by the NESREA Act and wastewater constituents and characteristics, shall not be recognized as confidential information.

PART V—ENFORCEMENT

Enforcement Notice.

52.—(1) An enforcement notice shall be served on an Operator where the Agency is of the opinion that the operator has contravened, is contravening or is likely to contravene any condition of the permit.

(2) An enforcement notice shall—

(*a*) specify the matters constituting the contravention or the matters making it likely that the contravention will arise, as the case may be ;

(*b*) specify the steps that must be taken to remedy the contravention or to remedy the matters making it likely that the contravention will arise, as the case may be ; and

(*c*) specify the period within which those steps must be taken.

(3) Sub-regulation (2) of this regulation shall apply whether or not the particular manner of operating the facility in question, is regulated by or contravenes a condition of the permit.

Enforcement Notice Reminder.

53.—(1) Failure to comply with the terms of an enforcement notice issued pursuant to regulation 52 of these Regulations within the specified period will occasion a second notice to be issued prescribing the time of compliance.

(2) Failure to comply with the second notice within the specified time limit will lead to the issuance of a suspension notice or any other punitive action as may be necessary.

Mode of delivery.

54. Enforcement notice shall be delivered by registered post/courier, hand delivery or pasting at any of the registered office of the organization.

Suspension notice.

55.—(1) Where a suspension/stop work order is served under these Regulations, such permit shall, upon the service of the notice, cease to have effect as stated in the notice.

(2) The Agency may withdraw a suspension notice after compliance.

Equity.

56. Every facility shall be given equal treatment without preference as far as inspection and enforcement of relevant laws are concerned.

Part VI—Offences

Contravention of Permit Condition.

57. It is an offence for a facility to—

(*a*) fail to comply with or to contravene a condition of a permit ;

(*b*) fail to comply with the requirements of an enforcement notice, or a closure notice under these Regulations ; and

(*c*) fail without reasonable excuse, to comply with any requirement imposed by a notice served by the Agency.

False Statement.

58.—(1) It shall be an offence for a facility to make a statement which is known to be false or misleading particularly, where the statement is made—

(*a*) in purported compliance with a requirement to furnish any information imposed by or under any provision of these Regulations ;

(*b*) for the purpose of obtaining a permit for the facility for variation, transfer or surrender of a permit ;

(*c*) to intentionally make a false entry in any record pertaining to the permit : or

(*d*) with intent to deceive, to forge or use a document issued or authorized to be issued under a condition of a permit or required for any purpose under a condition of the permit.

(2) It shall be an offence to make a statement or have in possession a document that is likely to mislead or deceive the Agency.

Failure to comply with abatement measure.

59.—(1) It shall be an offence if a facility fails to :

(*a*) take reasonable measures to remove or otherwise treat and dispose of any effluent to minimize adverse effects

(*b*) take measures required by the Agency after unauthorized release of effluent

(*c*) remediate the environment to the standard prescribed by the Agency

(*d*) furnish all information to the inspector ;

(*e*) remove equipment or contain materials causing release into the environment from place when requested by inspector ;

(*f*) produce document when requested by the inspector ;

(*g*) comply with the guidelines with respect to the handling, storing and transporting of any effluent.

(*h*) ensure the use of Personal Protective Equipment (PPE) while handling, storing, treating or disposing of effluent.

(2) It shall be an offence, if a facility :

(*a*) handles effluent in a manner which causes adverse effect to human health and the environment ;

(*b*) knowingly obstructs the inspectors from performing their duties ;

(*c*) dismisses, suspends or sanctions employee(s) who report(s) contravention of the NESREA Act ;

(*d*) imposes penalty on any employee who reports cases of contravention of these Regulations,

(*e*) transports any effluent and sludge which are not covered by a manifest ;

(*f*) transports effluent and sludge which are not completely enclosed, covered and secured.

Failure to report.

60. It shall be an offence, if a facility fails to :

(*a*) maintain records of all discharges.

(*b*) file monthly, quarterly or annual reports of all discharges.

Discharge of effluent beyond permissible level.

61. It shall be an offence for a facility to :

(*a*) release effluent and sludge into the environment in excess of permissible level.

(*b*) fail to report release of effluent and sludge into the environment in excess of permissible level as contained under Schedules I, II, IIIand X to the Regulations.

(*c*) fail to take reasonable measures to prevent, reduce or remedy the adverse effect of effluent, sludge and emissions released into the environment.

Part VII—Penalty

Penalty.

62.—(1) Any person who violates the provisions of Regulations 57-61 of these Regulations commits an offence and shall on conviction, be liable to a fine not exceeding ₦200,000.00 or to imprisonment for a term not exceeding six months or to both such fine and imprisonment and an additional fine of ₦5,000.00 for everyday the offence subsists.

(2) Where an offence under Regulations 57-61 to these Regulations is committed by a body corporate, it shall on conviction, be liable to fine not exceeding ₦1, 000, 000:00 and an additional fine of ₦50, 000.00 for everyday the offence subsists.

(3) Without prejudice to the provisions of these Regulations, the Agency shall have the power to enter and seal any facility contravening the provisions of these Regulations.

Part VIII—Interpretations

Interpretations.

63. In these Regulations unless the context otherwise requires ;

"*Act*" means the National Environmental Standards and Regulations Enforcement Agency (Establishment) Act, 2007 ;

"*Activated Carbon*" means extremely porous adsorbent carbon, used for adsorption of chemical substances as in wastewater treatment, removal of toxic substances from liquid and gaseous emissions ;

"*Agency*" means the National Environmental Standards and Regulations Enforcement Agency (NESREA) ;

"*Appropriate Pretreatment*" means suitable treatment for the effluent so that it can comply with these Regulations ;

"*Bag House*" means air pollution control equipment which employs fabric filter for dust capturing, dust collection or filtering process ;

"*Biological Filter*" means natural filtering system, usually consisting of environmentally friendly bacteria that convert pollutants into harmless nitrates ;

"*Carbon Adsorption*' means the process of using activated carbon for wastewater and gas treatment ;

"*Catalytic Incinerator*" means waste treatment process of oxidation in the presence of a catalyst, carried out at temperature much lower than in thermal incineration which oxidizes volatile organic compounds to less harmful substances using catalyst to promote the combustion process ;

"*Composite Sample*" means a sample made up of materials from different samplings ;

"*Cyclone*" means equipment that separates coarse suspended material in a stream of air through centrifugal force ;

"*Designated Officer*" means a person who has been appointed by the Agency to be responsible for processing applications with respect to activities designated under these Regulations and includes an acting officer ;

"*Director General/Chief Executive Officer (DG/CEO)*" means the Director General of the National Environmental Standards and Regulations Enforcement Agency (NESREA) ;

"*Effluent*" means Waste water treated or untreated that flows out of a treatment plant, sewer or industrial outfall resulting from the commercial or industrial use of water, generally refers to as wastes discharged into surface waters ;

"*EIA*" means Environmental Impact Assessment ;

"*Environment*" means the aggregate of all external factors affecting the life and development of an organism ;

"*Environmental Policy*" means :

(*a* Codes, standards and industrial Regulations concerning environmental protection issued by the Federal, State and Local authorities including other rules and Regulations on environmental management made in accordance with relevant standards ;

(*b*) Scientific and standard operation procedures, in line with standards and requirement of environment-protection policy made to strengthen supervision and control, and to prevent environmental pollution ;

"*Extension*" means increase in size, volume or other physical dimensions of an activity which may cause an adverse effect if not properly mitigated ;

"*Facility*" means a Non-metallic mineral industry for the manufacture of glass, pottery, refractory, sanitary wares, ceramics/tiles and cement ;

"*Hazardous waste*" means any waste that has negative impact on human health and the environment ;

"*Heavy fuel*" means the residual oil from distillation ;

"*Influent water*" means either processed waste water or raw water from a river, stream, spring or canal, or water abstracted from underground and used by a facility ;

"*Landfill*" means site used for waste disposal or burial ;

"*Leq*" means equivalent steady sound of noise energy during a sampling time ;

"*Liquefied Petroleum Gas*" means a by-product of petroleum refining which consists of hydrocarbons (propane) that are vapour at normal temperatures and pressures, but turns to liquid at moderate pressure ;

"*Manifest*" means paper document for tracking the transportation of hazardous waste containing information about the waste such as classification, name of the generator, signature of the generator, government approval etc. ;

"*Minister*" means the Minister in charge of Environment.

"*Modification*" means change in any activity that may cause an adverse effect if not properly mitigated and includes, but not limited to, the expansion of the same process, addition of product lines and replacement of equipment with different technology other than that presently in use ;

"*Natural Gas*" means natural mixture of hydrocarbon obtained from natural driven wells which comprises of methane (about 80 *per cent*), ethane, propane, butane and other hydrocarbon compounds (20 *per cent*) ;

"*New Kiln*" means any kiln in operation after the release of the National Environmental (Non Metallic Minerals manufacturing Industries) Regulations 2011 ;

"*Old Kiln*" means any kiln in operation before the release of the National Environmental (Non Metallic Minerals Manufacturing Industries) Regulations 2011 ;

"*Other facility wastewater*" means effluent originating from the washing and general maintenance of a facility ;

"*Ozone depleting Substances*" means substances that deplete the ozone layer such as, but not limited to—

(*a*) Chlorofluorocarbons ;

(*b*) Halons (fully halogenated chemicals) ;

(*c*) Carbontetrachloride ;

(*d*) Methylchloroform ;

(*e*) Hydrobromofluorocarbons ;

(*f*) Methyl bromide ;

"*Permit*" means official document, authorization, license, or equivalent control document issued by the Agency to implement the requirements of

these Regulations to discharge effluent especially for a limited period of time ;

"*Pollutant*" means waste materials introduced into the air which causes or has the potential to cause harm by virtue of its chemical nature, its constituent or its persistence ;

"*Responsible corporate officer*" means the Chief Executive, Managing Director or Chairman of the corporation in charge of a principal business function or any designated person who performs similar policy or decision making functions for the corporation ;

"*Scrubbing Device*" means a device used to remove pollutants ;

"*Sewage*" means waste water produced either from domestic or industry and discharged into the sewer ;

"*Sludge*" means semi solid residue flow from water treatment process which can be classified as hazardous ;

"*Small scale business*" means any facility that has less than ten employees ;

"*Stack Gas Scrubbing*" means a device used to remove pollutants from stack before stack emission ;

"*Thermal treatment*" means to high temperature treatment as in thermal incinerators ;

"*Thermal incinerator*" means incinerator used for the combustion of organic substances in waste treatment process at high temperature ;

"*Volatile Organic Compound*" means an organic chemical compound having significant vapour pressure and can have either short term or long-term adverse health effects ;

"*Water bodies*" means an underground water, river, stream, spring, canal, reservoir, well, lake, lagoon, ocean etc. ;

"*Wastewater system*" means sewer, conduit, pump, engine or other appliance used or intended to be used for the reception, conveyance, removal, treatment and disposal of effluent but does not include house sewers ;

"*Watercourse*" means natural or artificial channel, pipe or conduit, excluding the sewerage system, carrying, or that may carry, and discharging water directly or indirectly into a water body ;

"*Wet Scrubber*" : means dust collector that uses liquid, (usually atomized water spray) for trapping dust from air stream containing dust.

Citation.

64.—(1) These Regulations shall be cited as the National Environmental (Non-Metallic Minerals Manufacturing Industries Sector) Regulations, 2011.

SCHEDULE I

(*Regulations* 16(2), 11,18,(1)(2)(a&b)(3),19(1)(2),20(1)(2)(d)(3)

MAXIMUM PERMISSIBLE EFFLUENT LEVELS FOR CERAMIC TILES MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
pH	SU	6-9
BOD	mg/l	50
TSS	mg/l	50
Oil and Grease	mg/l	10
Lead	mg/l	0.2
Cadmium	mg/l	0.1
Chromium (VI) hexavalent	mg/l	0.1
Cobalt	mg/l	0.1
Copper	mg/l	0.1
Nickel	mg/l	0.1
Zinc	mg/l	2
Temperature	°C	Inland surface water: 40 Public sewers:45

*At the edge of a scientifically mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity.

SCHEDULE II

(Regulations 11,18(1)(2)(a&b)(3)20(1)(3)

MAXIMUM PERMISSIBLE EFFLUENTS LEVELS FOR CEMENT AND LIME MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
pH	SU	6-9
TOTAL SUSPENDED SOLIDS	mg/l	50
TEMP. INCREASE	°C	LESS THAN 3

[a] At the edge of a scientifically mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity.

SCHEDULE III

(Regulations 11,18(1)(2)(*a*&*b*)(3)20(1)(3)

MAXIMUM PERMISSIBLE EFFLUENT LEVELS FOR GLASS MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
pH	SU	6-9
total suspended solids	mg/l	50
COD	mg/l	130
Lead	mg/l	0.1
Antimony	mg/l	0.3
Arsenic	mg/l	0.1
Fluorides	mg/l	5
Boric acid	mg/l	2
Temp. increase	°C	Less than 3

[a] At the edge of a scientifically mixing zone which takes into account ambient water quality, receiving water use, potential receptors and assimilative capacity.

SCHEDULE IV

Regulations 11, 32

MAXIMUM PERMISSIBLE AIR EMISSIONS LEVELS FOR CEMENT MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
Particulate matter (new kiln system)	mg/Nm^3	50[a]
Particulate matter (old kiln system)	mg/Nm^3	100
Dust (other point source including clinker, cooling, cement grinding)	mg/Nm^3	100
SO_2	mg/Nm^3 (10% Oxygen)	2,000
NOx (gas/ Oil fired)	mg/Nm^3 (10% Oxygen)	600
NOx (coal fired)	mg/Nm^3 (10% Oxygen)	850
NOx (old wet Kiln) (old dry kiln)	mg/Nm^3 (10% Oxygen)	1,200
HCl	mg/Nm^3	10[b]
Hydrogen Fluoride	mg/Nm^3	1[b]
Total Organic carbon	mg/Nm^3	10
Dioxin-furans	mg/TEQ /Nm^3	0.1[b]
Cadium and thallium	mg/Nm^3	0.05[b]
Mercury	mg/Nm^3	0.05[b]
Total metals[c]	mg/Nm^3	0.5

Notes

[a] 10mg/Nm^3 if more than 40% of the resulting heat released comes from hazardous wastes.

[b] if more than 40% of the resulting heat release comes from hazardous wastes, average value over the sample period of a minimum 0f 30 minutes and a maximum of 8 hrs

[c] total metals—Arsenic (As), lead (Pb), Cobalt (Co), Chromium (Cr), Copper (Cu), Manganese (Mn), Nickel (Ni), Vanadium and Antimony (Sb)

SCHEDULE V

Regulations 11, 22, 23, (1), 32

MAXIMUM PERMISSIBLE AIR EMISSION LEVELS FOR LIME. MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
Dust	mg/Nm^3	50
SO_2	mg/Nm^3	500
NO_X	mg/Nm^3	600
HCl	mg/Nm^3	10

SCHEDULE VI

Regulations 11, 22, 23, (1), 32

MAXIMUM PERMISSIBLE EMISSION AND WASTE GENERATION

Output Per Unit of Product	*Unit*	*Industry Benchmark*
EMISSIONS DUST	kg/t Equivalent Cement	20-50a
NO_X	kg/t Equivalent Cement	600-800b
SO_X	kg/t	0.1-2.0ah
CO^2 From Carbonation from Fuel	kg/t kg/t Equivalent Cement	400-525a,e,f,h,k 150-350a,e,f,h

(*a*) Buzzi-Unicem (2004).
(*b*) IPPC (2001).
(*c*) Ernest Orlando Lawrence, Berkeley National Laboratory (2004).
(*d*) NRCan (2001).
(*e*) CIF (2003).
(*f*) Italcementi Group (2005).
(*g*) Environment Canada (2004).
(*h*) Lafarge (2004).
(*i*) Influenced by the variable quantities of fly ash and other additives used.

(f) CO_2 emissions from waste incineration (at least from the biodegradable fraction) are regarded as neutral in several countries.
(g) World Business Council on Sustainable Development, Cement

SCHEDULE VII

Regulations 11, 22, 23, (1), 32

MAXIMUM PERMISSIBLE AIR EMISSIONS LEVELS FOR CERAMIC TILES MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
Particulate Matter	mg/Nm^3	50[a]
Soot	mg/Nm^3	400[b]
NOx	mg/Nm^3	600[b]
HCl	mg/Nm^3	30
HF	mg/Nm^3	5
Lead	mg/Nm^3	0.5
Cadmium	mg/Nm^3	0.2
TOC	mg/Nm^3	20

Notes :

[a] Dryer and kiln stacks ;
[b] Kiln operations (at 10 *per cent* O2).

SCHEDULE VIII

Regulations 11, 22, 23, (1), 32

MAXIMUM PERMISSIBLE AIR EMISSIONS LEVELS FOR GLASS MANUFACTURING

Pollutants	*Units*	*Guidelines Values*
Particulate	mg/Nm^3	100[a]
Hydrocarbons		50[a]
SO_2	mg/Nm^3	700-1500[b]
NOx	mg/Nm^3	1,000
HCl	mg/Nm^3	30
Fluorides	mg/Nm^3	5
Lead	mg/Nm^3	5

Cadmium	mg/Nm^3	0.2
Arsenic	mg/Nm^3	1
Other heavy metals (total)	mg/Nm^3	5[c]

[a] Where toxic metals are present, not to exceed 20 mg/Nm^3. To achieve dust emissions of 50 mg/Nm^3 installation of secondary treatments (bag filters or electrostatic precipitators) is necessary. Good operating conditions of the furnace and adoption of primary measures can achieve emission levels of 100 mg/Nm^3.

B 700 mg/Nm^3 for natural gas firing. 1500 mg/Nm^3 for oil firing.

c 1 mg/Nm^3 for selenium

SCHEDULE IX

Regulations 11, 22, 23, (1), 32

NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	*Time Weighted Average*	*Concentration In Ambient Air (G/M^3)*
Dust	Annual	300 $\mu g/m^3$
	24hrs	500 $\mu g/m^3$
Particulate Dust P_{10}	Annual	120 $\mu g/m^3$
	24hrs	150 $\mu g/m^3$
Pb	Annual	1.0 $\mu g/m^3$
	24hrs	1.4 $\mu g/m^3$
SO_2	Annual	80 $\mu g/m^3$
	24hrs	120 $\mu g/m^3$
NO_2	Annual	80 $\mu g/m^3$
	24hrs	120 $\mu g/m^3$
CO	8 hours	5.0 mg/m^3
	1 hour	10.0 mg/m^3
NH_3	Annual	0.2 mg/m^3
	24hrs	0.6 mg/m^3

SCHEDULE X

(*Regulations* 11, 21, (2)

SLUDGE DISPOSAL PERMISSIBLE LIMIT

DRY SLUDGE GENERATION FROM WASTEWATER TREATMENT	
Parameters	*Sludge Production Kg of DS/tonne*
Sludge (total)	200
Primary Treatment:	
Mixing- sedimentation	80
Mixing-Chemical treatment + sedimentation	150-200
Mixing chemical treatment + Flotation	150-200

SCHEDULE XI

(*Regulations* 11 and 34)

NOISE STANDARDS

MAXIMUM PERMISSIBLE NOISE LEVELS (CONTINUOUS OR INTERMITTENT NOISE) FROM A FACTORY OR WORKSHOP [A]

Column 1	*Column 2*	*Column 3*
Leq dB (A)	Duration (Daily)	Duration (Weekly)
90	8 Hours	40 Hours
93	4 hours	20 hours
96	2 hours	10 hours
99	1 hour	5 hours
102	30 minutes	2.5 hours
105	15 minutes	1.25 hours
108	7.5 minutes	37.5 minutes
111	1.875 minutes	9.375 minutes

[B] Table of Noise dose, Leq. and Time

TIME IN HOUR	LEQ								
	85	87	89	91	93	95	97	99	101
0.50	6.25 %	9.91 %	15.70 %	24.88 %	39.43 %	62.50 %	99.06 %	156.99 %	248.82 %
1.00	12.50 %	19.81 %	31.40 %	49.76 %	78.87 %	125.00 %	198.11 %	313.99 %	497.63 %
1.50	18.75 %	29.72 %	47.10 %	74.65 %	118.30 %	187.50 %	297.17 %	470.98 %	746.45 %
2.00	25.00 %	39.62 %	62.80 %	99.53 %	157.74 %	250.00 %	396.22 %	627.97 %	995.27 %
2.50	31.25 %	49.53 %	78.50 %	124.41 %	197.17 %	312.50 %	495.28 %	784.96 %	1244.08 %
3.00	37.50 %	59.43 %	94.20 %	149.29 %	236.61 %	375.00 %	594.33 %	941.96 %	1492.90 %
3.50	43.75 %	69.34 %	109.90 %	174.17 %	276.04 %	437.50 %	693.39 %	1098.95 %	1741.72 %
4.00	50.00 %	79.24 %	125.59 %	199.05 %	315.48 %	500.00 %	792.45 %	1255.94 %	1990.54 %
4.50	56.25 %	89.15 %	141.29 %	223.94 %	354.91 %	562.50 %	891.50 %	1412.94 %	2239.35 %
5.00	62.50 %	99.06 %	156.99 %	248.82 %	394.35 %	625.00 %	990.56 %	1569.93 %	2488.17 %
5.50	68.75 %	108.96 %	172.69 %	273.70 %	433.78 %	687.50 %	1089.61 %	1726.92 %	2736.99 %
6.00	75.00 %	118.87 %	188.39 %	298.58 %	473.22 %	750.00 %	1188.67 %	1883.91 %	2985.80 %
6.50	81.25 %	128.77 %	204.09 %	323.46 %	512.65 %	812.50 %	1287.73 %	2040.91 %	3234.62 %
7.00	87.50 %	138.68 %	219.79 %	348.34 %	552.09 %	875.00 %	1386.78 %	2197.90 %	3483.44 %
7.50	93.75 %	148.58 %	235.49 %	373.23 %	591.52 %	937.50 %	1485.84 %	2354.89 %	3732.25 %
8.00	100.00 %	158.49 %	251.19 %	398.11 %	630.96 %	1000.00 %	1584.89 %	2511.89 %	3981.07 %

$$\text{Dose} = 100 \times T/8 \times 10^{(Leq - 85)10}\% \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (i)$$

$$Leq. = 10 \log_{10}[(\text{Dose}/100) \times (8/T)] + 85\text{dB(A)} \ldots\ldots\ldots (ii)$$

Where :

T = Individual Worker exposure time

Leq. = A weighted, sound level linearly energy average over T hours. Worker noise exposure in noise dose calculated by equation (*i*) shall not exceed 100%.

Note :

'A' Exposure to impulsive or impact noise should not exceed 140 dB(C) peak sound pressure level.

'B' Noise and induced ground vibration of quarry blast measured at 500m from the blast </= 100dB(C), 8mm/s.

SCHEDULE XII

Regulation 40 (2)

SOIL QUALITY STANDARDS

During routine operations of these industry specifics, there may be soil contamination and the need to preserve the environment. The soil quality levels listed below must not be exceeded within the facility.

Parameter	*Guideline value (mg/kg dry weight)*
Arsenic	20
Barium	400
Cadmium	3
Chromium ($Cr+^{6}$)	100
Cobalt	50
Copper	100
Lead	164
Mercury	4
Molybdenum	40
Nickel	70
Tin	50
Zinc	421
Benzene	0.1
Toluene	0.1
Xylene	0.1
Styrene	0.1
Hexane	0.5
Heptane	0.5
Fluorine	100
Cyanide	5
Phenol	10

SCHEDULE XIII

(*Regulation* 7(4)

BEST PRACTICES

(*a*) Embracing cleaner production with emphasis on water reuse and recycling ;

(*b*) Encourage more efficient use of process chemicals ;

(*c*) Recovering and reusing process chemicals and dye solution ;

(*d*) Substituting less-toxic dye carriers wherever possible and avoid carriers containing chlorine ;

(*e*) Using peroxide-based bleaches instead of sulfur and chlorine-based bleaches, where feasible ;

(*f*) Adopting countercurrent rinsing and improved cleaning and housekeeping ;

(*g*) Wastewater load levels shall be less than 100 m^3 per ton of fabric, and not more than 150 m^3 per ton of fabric ;

(*h*) Install vapour recovery systems to control air emissions to prevent the release of toxic organics into air ;

(*i*) Replace highly toxic and persistent ingredients with less toxic, degradable ones.

(*j*) Control loss and wastage of active ingredients.

(*k*) Return packaging for refilling.

(*l*) Recover solvents and reduce to the barest minimum the use of halogenated solvents.

(*m*) Use equipment wash down waters as makeup solutions for subsequent batches.

(*n*) Minimize wastage by inventory control, and find uses for off-specification products

(*o*) Control of Fugitive Emissions mostly Volatile Organic Compound (VOC) emissions associated with handling of chemicals in open vats and mixing processes. The prevention and control techniques recommended include the following :

* Substitution of less volatile substances, such as aqueous solvents;

* Collection of vapours through air extractors and subsequent treatment of gas stream by removing VOCs with control devices such as condensers or activated carbon adsorption ;

* Collection of vapours through air extractors and subsequent treatment with destructive control devices such as Catalytic Incinerators, Thermal Incinerators, Enclosed Oxidizing Flares, etc.

* Use of floating roofs on storage tanks to reduce the opportunity for volatilization.

(p) To control and prevent fluorides in the Ceramic industries ;

* Use low-fluoride raw material and additives, which can be used to dilute emissions in the processed material

* Use dry scrubbers and basic absorbents such as $NaHCO_3$ and $Ca(OH)_2$ in dry or wet conditions

(q) To reduce metal emissions ;

* Use commonly available glazes that do not contain lead or other toxic metals. Chromium based pigments and colorants that contain antimony, barium, cobalt, lead, lithium, manganese or vanadium should be avoided.

* Use coloured compounds (e.g. stain-containing pigments) which are stable at high temperatures and generally inert in silicate systems. The risk of metal volatility with this type of glaze can be further reduced with firing cycles.

* Use high-efficiency dust-abatement techniques (e.g fabric filters).

(r) Facility should have a clean-up measure for pollution in case of accidental discharge.

SCHEDULE XIV

(*Regulation* 15)

BANNED /RESTRICTED CHEMICALS

CONTROLLED SUBSTANCES UNDER THE MULTILATERAL ENVIRONMENTAL AGREEMENTS ON ENVIRONMENT

Chemical/Pesticide	*CAS Number*
ROTTERDAM CONVENTION	
PART 1: Banned Chemicals and Pesticides	
2,4,5-T	93-76-5
Aldrin	309-00-2
Binapacryl	485-31-4
Captafol	2425-06-1
Chlordane	57-74-9
Chlordimeform	6164-98-3
Chlorobenzilate	510-15-6
DDT	50-29-3
Dieldrin	60-57-1
DNOC and its salts (such as ammonium salt, potassium salt and sodium salt)	534-52-1;2980-64-5;5787-96-2; 2312-76-7
Dinoseb and its salts and esters	88-85-7
EDB (1,2-dibromoethane)	106-93-4
Ethylene dichloride	107-06-2
Ethylene oxide	75-21-8
Fluoroacetamide	640-19-7
HCH (mixed isomers)	608-73-1
Heptachlor	76-44-8
Hexachlorobenzene	118-74-1
Lindane (gamma-HCH)	58-89-9
Mercury Compounds	
Monocrotophos	6923-22-4

Chemical/Pesticide	*CAS Number*
Parathion	56-38-2
Parathion (all formulations - aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) - of this substance are included, except capsule suspensions (CS))	56-38-2
Pentachlorophenol	87-86-5
Toxaphene (Camphechlor)	8001-35-2
dustable powder formulations containing a combination of benomyl at or above 7%, carbofuran at or above 10% and thiram at or above 15%	17804-35-2;1563-66-2;137-26-8
Methamidophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)	10265-92-6
Methyl-parathion (emulsifiable concentrates (EC) with 19.5%, 40%, 50%, 60% active ingredient and dusts containing 1.5%, 2% and 3% active ingredient)	298-00-0
Monocrotophos	6923-22-4
Phosphamidon (Soluble liquid formulations of the substance that exceed 1000 g active ingredient/l)	13171-21-6 (mixture, (E)&(Z)-isomers) 23783-98-4 ((Z)-isomer), 297-99-4 ((E)-isomer)
Actinolite asbestos	77536-66-4
Amosite, asbestos	12172-73-5
Anthophyllite	77536-67-5
Tetraethyl lead	78-00-2

Chemical/Pesticide	*CAS Number*
Tetramethyl lead	75-74-1
Tremolite	77536-68-6
Tris(2,3 dibromopropyl)phosphate	126-72-7
PART 2 : Severely Restricted Chemicals and Pesticides	
Polybrominated Biphenyls (PBBs)	36355-01-8(hexa-) 27858-07-7(octa-) 13654-09-6(deca-)
Polychlorinated Biphenyls (PCBs)	1336-36-3
Polychlorinated Terphenyls (PCTs)	61788-33-8
STOCKHOLM CONVENTION PART 3 : Persistent Organic Pollutants - (POPs)	
Aldrin	309-00-2
Chlordane	57-74-9
DDT	50-29-3
Dieldrin	60-57-1
Dioxins	
Endrin	
Furans	
Heptachlor	76-44-8
Hexa Chloro Benzene (HCB)	11-74-1
Polychlorinated Biphenyls (PCBs)	1336-36-3
Mirex	
Toxaphene	8001-35-2
MONTREAL PROTOCOL PART 4- Ozone Depleting Substances	
Trichlorofluoromethane	75-69-4
Dicholrodifluoromethane	75-71-8
Trichlorotrifluoroethane	76-13-1
Dichlorotetrafluoroethane	76-14-2
	76-15-3
Bromochlorodifluoromethane	353-59-3

Chemical/Pesticide	*CAS Number*
Bromotrifluoromethane	75-63-8
Dibromotetrafluoroethane	76-15-3
Chlorotrifluoromethane	75-72-9
Pentachlorofluoroethane	354-56-3
Tetrachlorodifluoroethane	76-12-0
Tetrachloromethane or carbon tetrachloride	56-23-5
Trichloroethane or methyl chloroform	71-55-6
Chlorodifluoromethane	75-45-6
Dichlorotrifluoroethane	306-83-2
Chlorotetrafluoroethane	2837-89-0
Dichlorofluoroethane	1717-00-6
Clorodifluoroethane	75-68-3
Methyl Bromide or Bromoethane	74-83-9
1,2-dibromoethane (EDB)	106-93-4
BASEL CONVENTION All wastes arising from the chemicals covered under the Rotterdam and Stockholm Conventions as well as the Montreal Protocol.	
Others	
Acetic acid	64-19-7
Acetyl bromide	506-96-7
Acetone	67-64-1
Allyl isothiocyanate	57-06-7
Ammonia (35% or greater)	
Ammonia (less than 35%)	7664-41-7
Ammonium Nitrate	6484-52-2
Antimony pentachloride	7647-18-9
Antimony trihydride	7803-52-3
Arsine	7784-42-1
Arsenical substances	
Boric acid; Sodium borate	10043-35-3, 1330-43-4

Chemical/Pesticide	*CAS Number*
Boron tribromide	10294-33-4
Boron trichloride	10294-34-5
Boron trifluoride	7637-07-2
Bromine; Bromine solutions	7726-95-6,
Captafol	2939-80-2, 2425-06-1
Carbamates,	598-55-0
Bendiocarb	22781-23-3
BPMC (Fenobucarb)	3766-81-2
Mercaptodimethur (methiocarb)	2032-65-7
Carbon monoxide	630-08-0
Carbon tetrafluoride	75-73-0
Calcium Ammonium Nitrate	
Chlorinated hydrocarbons	85422-92-0
Chlorine	7782-50-5
Chlorine trifluoride	7790-91-2
Chlorobenzenes	108-90-7
Chlorophenols	25167-80-0
Chlorophenoxyacids; their salts, esters, amines	94-74-6,
Chlorosilanes	
Chlorosulphonic acid	7790-94-5
Chromic acid	1333-82-0
Cyanides	
Diborane	19287-45-7
Dibromochloropropane	96-12-8
Diethyl sulphate	77-78-1
Epichlorohydrin	106-89-8
Ethyl mercaptan	75-08-1
Ethylene imine	151-56-4
Ferric chloride	7705-08-0
Fipronil	120068-37-3
Fluorine	7782-414

Chemical/Pesticide	*CAS Number*
Fluoroacetamide	640-19-7
Formic acid	64-18-6
Germane	
Hydrazine anhydrous; Hydrazine aqueous solutions	302-01-2
Hydrochloric acid	7647-01-0
Hydrofluoric acid	7664-39-3
Hydrogen chloride	7647-01-0
Hydrogen cyanide; Hydrocyanic acid	74-90-8,
Hydrogen selenide	7783-07-5
Hydrogen peroxide	7722-84-1
Isocyanates	
Mercury compounds including inorganic mercury compounds, alkyl mercury compounds, alkyloxyalkyl and aryl mercury compounds, and other organic compounds of mercury	
Metanil yellow (sodium salt of metanilylazo-diphenylamine)	587-98-4
Methyl chloride	74-87-3
Methyl mercaptan	74-93-1
Monomethyltetrachloro diphenyl methane	76253-60-6
Monomethyl-dichloro-diphenyl methane	76253-60-24
Monomethyl-dibromodiphenyl methane	99688-47-8
Neonicotinoid compounds used as pesticides	138261-41-3
Nitric acid (95% or greater)	
Nitric acid (less than 95%)	
Nitric oxide	10102-43-9
Nitrogen trifluoride	7783-54-2
Nitromethane	75-52-5
Oleum	8014-95-7

Chemical/Pesticide	*CAS Number*
Orange II [sodium salt of p-(2-hydroxy-1-naphthylazo) benzenesulphonic acid]	
Organic peroxides	
Organo-tin compounds	
Perchloromethyl mercaptan	594-42-3
Perfluorooctane sulfonate (PFOS)	29457-72-5
Phenols	
Phenol ethoxylate	9016-45-9
Phosgene	75-44-5
Phosphides	
Phosphine	603-35-0
Phosphorus compounds, excepting Dimethoate Fenchlorphos Fenitrothion Phenthoate Profenophos Prothiophos Quinalphos	
Phosphorus oxybromide	7789-59-5
Phosphorus oxychloride	10025-87-3
Phosphorus pentabromide	7789-69-7
Phosphorus pentachloride	10026-13-8
Phosphorus pentafluoride	7647-19-0
Phosphorus trichloride	7719-12-2
Polybrominated diphenyl ethers	
Potassium Nitrate	7757-79-1
Potassium Chlorate	3811-04-9
Potassium perchlorate	7778-74-7
Potassium hydroxide	1310-58-3
Prochloraz	67747-09-5

Chemical/Pesticide	*CAS Number*
Pyrethroid compounds used as pesticides	
Sodium azide	26628-22-8
Sodium hydroxide	1310-73-2
Sodium Nitrate	7631-99-4
Sodium Chlorate	7775-09-9
Sulphur tetrafluoride	7783-60-0
Sulphur trioxide	7446-11-9
Sulphuric acid	7664-93-9
Sulphuryl chloride	7791-25-5
Sulphuryl fluoride	2699-79-8
Titanium tetrachloride	7550-45-0
Tungsten hexafluoride	7783-82-6
Urea	57-13-6

SCHEDULE XV

Regulation 4 (2) (3)

DRAFT GUIDE TEMPLATE FOR EMERGENCY PLAN IN INDUSTRY

Contents

Step 1—Establish a Planning Team

There must be an individual or group in charge of developing the emergency management plan.

1. Form the Team.
2. Establish Authority.
3. Issue a Mission Statement.
4. Establish a Schedule and Budget.

Step 2—Analyze Capabilities and Hazards

This step entails gathering information about current capabilities and about possible hazards and emergencies, and then conducting a vulnerability analysis to determine the facility's capabilities for handling emergencies.

* Where Do You Stand Right Now?
* Meet with Outside Groups.
* Identify Codes and Regulations.
* Identify Critical Products, Services and Operations.
* Identify Internal Resources and Capabilities.
* Identify External Resources.
* Do an Insurance Review.
* Conduct a Vulnerability Analysis.
* List Potential Emergencies.
* Estimate Probability.
* Assess the Potential Human Impact.
* Assess the Potential Business Impact.
* Assess the Potential Property Impact.
* Assess Internal and External Resources.
* Add the Columns.

Step 3—Develop the Plan

Emergency planning shall be part of the corporate culture.

Look for opportunities to build awareness; to educate and train personnel; to test procedures; to involve all levels of management, all departments and the community in the planning process; and to make emergency management part of what personnel do on a day-to-day basis.

* Plan Components.
* The Development Process.

Step 4—Implement the Plan

Implementation means more than simply exercising the plan during an emergency. It means acting on recommendations made during the vulnerability analysis, integrating the plan into company operations, training employees and evaluating the plan.

* Integrate the Plan into Company Operations
* Conduct Training, Drills and Exercises

SCHEDULE XVI

Regulation 3 (*c*)

GUIDELINE FOR PREPARING ENVIRONMENTAL MANAGEMENT PLAN (EMP)

An Environmental Management Plan (EMP) describes the process that an organization will follow to maximize its compliance and minimize harm to the environment. This plan also helps an organization map its progress toward achieving continual improvements.

Regardless of the organization's situation, all environmental plans must include the following elements :

* Policy ;
* Planning ;
* Implementation and Operation ;
* Checking and Corrective Action ;
* Management Review and commitment.

Policy

Policy statements are important to an organisation because they help anchor the organisation on a core set of beliefs. These environmental guiding principles will enable all members of an organisation to focus on the same objective. They provide an opportunity for outside interests to understand the operation of the organisation. The policy should be focused, concise and easy to read. The environmental policy should address the following :

* Compliance with legal requirements and voluntary commitments ;
* Minimising waste and preventing pollution ;
* Continual improvement in environmental performance, including areas not subject to Regulations ;
* Sharing information on environmental performance with the community.

Planning

The planning should define the organisation's environmental footprints and set goals. Goals and objectives should be focused on maximising their positive impacts on the environment. When evaluating, the following elements should be considered :

* Impacts on the environment through its activities, products and services ;
* Legal requirements associated with protecting the environment ;
* Meaningful and focused environmental objectives and targets.

Implementation and Operation

Implementation and operation should define the activities that the organisation will perform to meet its environmental objectives and targets. The EMP should identify activities each person is responsible for, ensure completion and set targets for each of the identified activities. In addition, this area should specify employee training, communication and outreach activities that are necessary to ensure successful implementation of the plan.

Checking and Corrective Action

The EMP should describe the process that will be followed to verify proper implementation and how problems will be corrected in a timely manner. Routine evaluation and continual improvement to the process is necessary to make sure that the plan successfully leads towards the completion of environmental objectives and targets.

Management Review and Commitment to Improvement

Routine management review and support are necessary and meaningful tools for the organization. This should identify the routine management evaluations that will be conducted to ensure that the plan is appropriately implemented to meet its environmental objectives.

SCHEDULE XVII *Regulations* 16(4)

DRAFT PERMIT FORM

FORM 1

Application for Discharge of Effluents

1. Name of Applicant

.....

2. Year of Incorporation and Registration Number of Business Name

.....

3. Location of Business Premises

.....

4. Description of plant facilities, outfall location(s), Effluent Characteristic(s)

.....

.....

.....

.....

5. Qualifications and experience of staff involved in pollution control

.....

.....

6. A listing of all toxic substances used or manufactured on the site

.....

.....

7. Does the establishment have any other permit issued to the facility? (State type)

.....

8. Description of pollution abatement/monitoring facilities on site (including details of year of installation, capacity, etc. and also copies of design plans of sewerage and/or drainage plans

.....

.....

9. A listing of all chemicals in use at the facility (trade names not acceptable)

.....

10. Present discharge locations (illustrate) and position of inspection tap for compliance monitoring

.....

.....

11. For new sources - submission of EIA report is mandatory. Request for permit must be made 3 months before the expected date of discharge.

12. Volume of raw water consumption

.....

13. Source of energy at facility and quantitative estimate of consumption on a monthly basis

.....

14. Any safety/contingency plan/EMP

.....

15. Distance of facility from residential area

.....

16. Detailed description of effluent treatment/disposal methods

.....

17. Production capacity:

(*a*) current production capacity .....

(*b*) estimated production especially as a result of any proposed expansion

.....

(*c*) estimated yearly waste load

.....

....

Applicant *Date*

Schedule XVIII

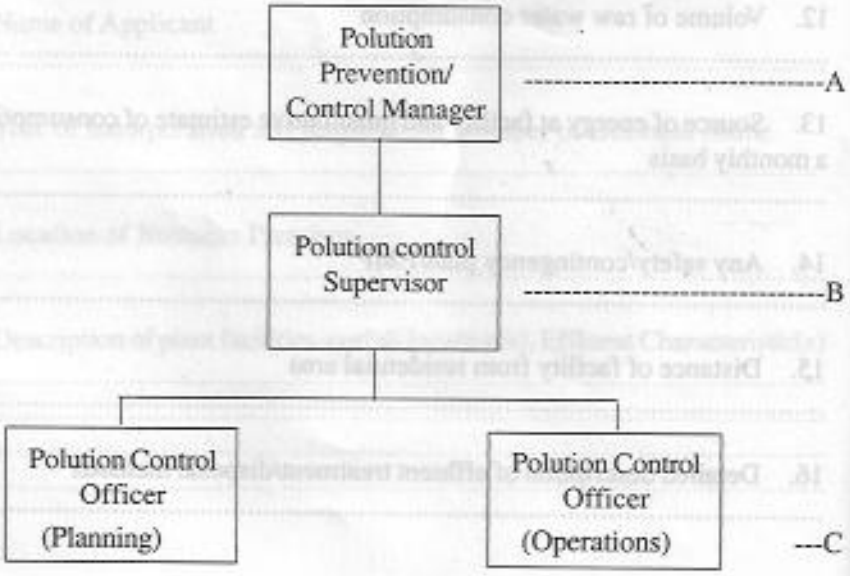
Regulations 12 (2)

ORGANIZATIONAL SYSTEM AND THE FUNCTIONS OF POLLUTION CONTROL MANAGER(S)

Each facility shall be mandated by the Agency to have an organizational system that will carry out Internal Environmental Auditing of the facility as well as liaise with NESREA and other Government Authorities.

The Organizational system shall have Pollution Control Supervisor, Pollution Control Manager and Pollution Control Chief Manager which shall be elected/ appointed. These shall be certified by the Agency through a National examination/qualifying exam.

Organization for Pollution Prevention



Functions :

A—Manages the pollution prevention and control issues of the facility

B—Supervises and directs the Pollution Control Officers (only applicable in facilities where large amount of smoke and sewage is generated).

C—Deals with technical matters like inspection of the facility and raw materials.

Note :

C—depends on the size of the facility; for a large facility there shall be PCM for Air, Land and Water.

SPECIFIC DUTIES OF THE POLLUTION CONTROL MANAGER (PCM)

The specific duties of the PCMs are :

* To ensure that Facility's pollution control management procedures are communicated to all staff;
* To ensure that daily pollution control practices are complied with ; and
* To maintain smooth and proper environmental and safety communications within the facility and the regulatory authorities.

SCHEDULE XIX

HEALTH AND SAFETY

In order to ensure safety and protect the health of staff, every facility shall put in place the following prevention and control technique :

(1) Segregate raw materials, packaging and finished products storage from other operational areas.

(2) Install adequate exhaust ventilation systems with filter units.

(3) Implement periodic dust removal from surface (e.g vacuum cleaning equipment with high-efficiency particulate air filters).

(4) Use premix materials to reduce the need for mixing.

(5) Limit the need for shoveling dry powder and arrange for reception of raw material in larger containers for handling by forklift.

(6) Transport raw material through enclosed conveyor or tubes.

(7) Conduct glazing application in well-ventilated area, and install spray booths.

(8) Avoid low solubility glazes containing lead and other heavy metals.

(9) Provide adequate and appropriate Personal Protective Equipment (PPE) to workers operating in dusty environments and glazing areas.

(10) Carryout specific periodic medical examination on personnel.

(11) Provide adequate working environment in line with relevant laws and Regulations relating to health and safety.

SCHEDULE XX

Regulation 13(1)

GUIDELINES FOR CONSUMER PRODUCTS STEWARDSHIP PROGRAMME

As part of the Strategic Alliance Programme of the Agency, all manufacturers and importers of Non-metallic products shall partner with the Agency to establish an effective Consumer Product Stewardship Programme.

The manufacturers and importers of Non-metallic products shall submit a proposal for a consumer products stewardship programme to the Agency for approval. Such proposal shall include the following elements for successful implementation of the scheme :

(*a*) the consumer products shall include but not limited to bottles, cans, teflon/polyethylene packaging, etc.

(*b*) establish a process for the collection, handling, transportation and final treatment of a post-consumer Non-metallic products ;

(*c*) incorporate the principles of a pollution prevention hierarchy by moving progressively from disposal to reduction, reuse, recycling and recovery of post-consumer products ;

(*d*) submit on or before June 30 in each year to the Agency, an annual report on their consumer products stewardship programme during the previous fiscal year including, but not limited to the following :

(*i*) the total amount of consumer Non-metallic products sold and post-consumer products collected ;

(*ii*) the total amount of post-consumer Non-metallic products processed or in storage ;

(*iii*) the percentage of post-consumer Non-metallic products that were treated or contained, reduced, reused, recycled or recovered ;

(*iv*) efforts taken through consumer Non-metallic products marketing strategies to reduce post-consumer products and packaging waste ;

(v) the types of processes used to reduce, reuse, recycle or recover post-consumer Non-metallic products, including but not limited to details of efforts to incorporate the principles of a pollution prevention hierarchy ;

(vi) the location of return collection facilities or depots ;

(vii) the location of any long-term containment or final treatment and processing facilities for post-consumer non-metallic mineral products ;

(viii) the types of educational information and programs provided ;

(ix) the process of internal accountability used to monitor environmental effectiveness ; and

(x) any other information requested by the Agency.

SCHEDULE XXI

FORM 1

MONTHLY DISCHARGE MONITORING REPORT (MDMR)
[NESREA *Discharge Monitoring Report*]

Regulations 47, (2) (3)

PLEASE COMPLETE AND SUBMIT ONE COPY EACH MONTH.

THIS REPORT MUST BE POSTMARKED NOT LATER THAN THE 28TH OF THE FOLLOWING MONTH.

FACILITY NAME AND ADDRESS :	Mail To : National Environmental Standards and Regulations Enforcement Agency (NESREA), # 4, Oro-Ago Crescent, Garki II, Abuja.
Facility e-mail address	

SAMPLING POINT LOCATION :.....

MONTH/ YEAR

SAMPLING DATES AND TIME :.....

B 688

Type of Samling							
Parameters	*Weekly Results*						*Nesrea's Regulatory Limits*
PHYSICAL:	UNITS	1ST	2ND	3RD	4TH	Average	
Appearance							
Odour							
Temperature	°C						
pH							
Conductivity	µs/cm						
Turbidity	NTU						
Dissolved Oxygen (DO)	mg/l						
Total Suspended Solids (TSS)	mg/l						
Total Dissolved Solids (TDS)	mg/l						
BOD	mg/l						
COD	mg/l						
INORGANIC:							
Chloride	mg/l						
Nitrate	mg/l						
Sulphate	mg/l						
Sulphite	mg/l						
Cyanide	mg/l						
Nitrites	mg/l						
Chromium (hexa-valent)	mg/l						
Copper	mg/l						
Zinc	mg/l						
Lead	mg/l						
Cadmium	mg/l						
Manganese	mg/l						
Silver	mg/l						
Mercury	mg/l						
Arsenic	mg/l						
ORGANICS:							
Phenols	mg/l						
Oil & Grease	mg/l						

MICRO-BIOLOGICAL:							
Fecal Coliform	mg/l						
NOISE MEASUREMENTS							
LOCATIONS				NOISE LEVELS			
			Signature with date of principal executive Officer or authorized agent:	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted.			
Signature of Certified Operator	Date (Month, day, year)		Date :				
	Signature :						

FORM 2

INCIDENT REPORT FORM

This report is to be completed when accidental discharge or incident occurs.

If an employee is injured as a result of his employment at the facility, he must complete and submit the "Incident Report Form". If the employee is unable to complete the form, the supervisor must complete the form on his behalf.

Incident reporting ensures there is a record on file with the employer. In no way does this waive the employee's right to workers' compensation benefits. If an injury occurs, first aid may be appropriate treatment.

All accidental discharges/emergencies/accidents should be reported to NESREA within 48 hours.

1. *Facility* :

Name & Address of Facility :.....

.....

.....

.....

No of Employee :.....

Department where the discharge occurred :.....

.....

Place of the accidental discharge :.....

2. *Discharge* :

Cause(s) of discharge ;

Did the discharge occur as a result of mechanical/technical/unskilled application? Please specify.

.....

Was the discharge gaseous, liquid or solid? Please specify.

.....

What was the nature of discharge, sludge, effluent or influent? Please specify.

.....

Into which medium was it discharged to i.e. water body, land, or air?
Please specify .....

* If water body, specify type of water; pond, stream, lake, river etc.

.....

* if land ;

* Name and location (Geo-reference) of the land where discharge occurred.

.....

.....

.....

.....

* Ways of disposing of discharge; i.e. burying, burning etc. please specify.

.....

Was there any previous accidental discharge of this kind?

Yes *No*

If yes, when?.....

How? .....

Who was/were the victim(s)?.....

.....

SCHEDULE XXII *Regulation 4(4)(c)*

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT ACCORDING TO HAZARD TYPE

Objective	*Workplace Hazards*	*Suggested PPE*
Eye and Face Protection.	Flying particles, molten metal, liquid chemicals, gases or vapors, light radiation.	Safety glasses with side-shields, protective shades, etc.
Head Protection	Falling objects, inadequate heigh clearance and overhead power cords.	Plastic helmets with top and side impact protection.
Hearing Proctection	Noise, ultra-sound.	Hearing protectors (ear plugs or ear muffs).
Foot Protection	Falling or rolling objects, pointed objects. Corrosive or hot liquids.	Safety shoes and boots for protection against moving and failing objects, liquids and chemicals.
Hand Protection	Hazardous, material, cuts or lacerations, vibrations, extreme temperatures.	Gloves made of rubber or synthetic materials (Neoprene), leather, steel, insulating materials, etc.
Respiratory Protection.	Dust, fogs, fumes, mists, gases, smokes, vapors.	Facemasks with appropriate filters for dust removal and air purification (chemicals, mists, vapors and gases). Single or multi-gas personal monitors, if available.
	Oxygen deficiency.	Portable or supplied air (fixed line). On-site rescue equipment.
Body/Leg Protection.	Extreme temperatures, hazardous materials, biological agents, cutting and laceration.	Insulating clothing, body suits, aprons etc of appropriate materials.

MADE at Abuja this 28th day of April, 2011.

MR JOHN ODEY
Honourable Minister,
Federal Ministry of Environment