

OGUN STATE ENVIRONMENTAL PROTECTION AGENCY

WATER QUALITY REGULATIONS 2023

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PART 1: PRELIMINARY

1. *Citation*

These Regulations may be cited as Water Quality Regulations 2023.

2. *Application of Regulations*

These Regulations shall apply to drinking water, water used for industrial purposes, water used for agricultural purposes, water used for recreational purposes, water used for fisheries and wildlife, and water used for any other purposes.

3. *Interpretation*

In these Regulations unless the context otherwise requires:

“**Agency**” means the Ogun State Environmental Protection Agency established under section 3 of the OGEPA Law No 2 of 2003;

“**Applicable Standards and Limitations**” means all state and federal standards and limitations to which a discharge or activity is subject, including but not limited to effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices and pretreatment standards.

“**Applicant**” means a person who applies for any approval for any discharge, activities, projects, or facilities in accordance with the requirements of these Regulations.

“**Application**” means all forms, documents, and other information required by the Agency to apply for a permit, order, certificate, or other approval from the Agency in accordance with the requirements of these Regulations.

“**Approval**” means an authorization, order of approval, permit, certification, license or equivalent determination issued pursuant to Regulations promulgated by the Agency.

“**Aquifer**” means a geological formation, group of formations, or part of a formation that is capable of yielding an economic amount of water to a well or spring.

“**Best Management Practices (BMPs)**” means schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of and impacts upon waters of the state. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

“**Buffer Zone**” means distinct or established areas that separate potentially competing users and that serves to lessen the danger of potential conflicts;

“**Designated Representative**” means any person authorized by the Agency to act on its behalf.

“**Designated Uses**” means those uses specified in these Regulations for water bodies or segment whether or not they are being attained. In no case shall assimilation or transport of pollutants be considered a designated use.

“**Dredging**” means the extraction of sediments from beneath surface waters by mechanical or hydraulic means.

“**Degraded**” means a change in water quality from local natural background condition which is determined by the Agency to be deteriorating in terms of the magnitude of the change and the importance of the parameters describing ground water quality.

“**Discharge or Discharge of Pollutant**” means any addition or release of any pollutant or combination of pollutants to waters of the state from any source, including but not limited to, emptying, emitting, pouring, pumping, leaking, placing, depositing, spilling, from surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality or other person which do not lead to a personal owned treatment works and discharges

through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any indirect discharger.

“Discharger” means any person who causes or allows any discharge.

“Effluent” means discharged pollutant(s) into the environment, whether or not treated.

“Effluent Limitation” means Restrictions established by OGEPA on quantities, rates and concentrations in water discharge.

“Facility” means all contiguous land, and structures, other appurtenances, and improvements on the land used for recycling, reusing, reclining, transferring, storing, treating or disposing of dangerous waste.

“Ground water” means the water of underground streams, channels, artesian basins, reservoirs, lakes and other bodies of water in the ground, and includes water in interstices below the water table;

“Hazardous waste” means any waste or combination of wastes that exhibits ignitable, corrosive, reactive, or toxic characteristics and poses a substantial danger, now or in the future to human, plant or animal life, and which therefore cannot be handled or disposed of without special precautions.

“Health Advisory” means the level of a pollutant in water at which, with a margin of safety, adverse health effects would be anticipated, as determined by the Agency.

“Industrial Waste” means waste arising from processing and manufacturing industries or trade undertakings and can take the form liquid, non-liquid, solid and gaseous substances.

“Mixing Zones” means a regulatory limited area or volume in the immediate vicinity of a discharge where mixing occurs and the receiving surface water quality is not required to meet applicable standards or criteria provided the minimum conditions described in these Regulations are met.

“Milligrams Per Liter or mg/l” means the weight in milligrams of any specific substance or substances contained in one liter of solution.

“Motor Vehicle Waste Disposal Well” means a well that receives or has received fluids from vehicular repair or maintenance activities such as an autobody repair shop, automotive repair shop, new and used car dealerships, specialty repair shop (e.g transmission and muffler repair shops), or ant facility that does vehicular repair work.

“Natural water body” means any river, stream, spring, lake, swamp, pond, estuary, coastal or other water source in a natural water course;

“New Discharges” means any discharge which commenced subsequent to inception of these Regulations, unless appropriate approvals had been granted.

“Nutrient” means a chemical element or compound such as but not limited to nitrogen or phosphorous which is essential to and promotes the growth and development of marine or freshwater plant species.

“Person” means and individual, public or private corporation, partnership, association, firm, joint stock company, joint venture, trust, estate, state municipality, commission, political group, state or federal agency, department or instrumentality, special district, interstate body or any legal entity, which is recognized by law as the subject of rights and duties.

“pH” means the negative base 10 logarithm of the hydrogen ion concentration;

“**Point Sources**” means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, conduit, tunnel, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft from which pollutants are or may be discharged;

“**Resource Quality** ” in relation to a water resource, means the quality of all the aspects of a water resource including:

- (a) the character and condition of the in-stream and riparian habitat;
- (b) the characteristics, condition and distribution of the aquatic biota;
- (c) the physical, chemical and biological characteristics of the water
- (d) the quantity, pattern, timing, water level and assurance of in-stream flow; and
- (e) the water quality stipulated for the reserves.

PART II: PROTECTION OF SOURCES OF WATER

4. *Prevention of water Pollution*

- 1) The quality of surface waters shall be maintained in a safe and satisfactory condition for agricultural, industrial, public water supplies, wildlife, aquatic life, recreation, hydro-energy and such other uses as may be provided by these Regulations
- 2) Every person shall refrain from any act which directly or indirectly causes, or may cause immediate or subsequent water pollution, and it shall be immaterial whether or not the water resource was polluted before the enactment of the Regulation.
- 3) No person shall throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution.

5. *Standards for Sources of Domestic water*

All sources of water for domestic uses shall comply with the standards set out in First Schedule of these Regulations.

6. *Protection of Lakes, Rivers, Streams, Springs, Wells and other water sources*

No person shall:

- (a) discharge, any effluent from sewage treatment works, industry or other point sources into the aquatic environment without a valid effluent discharge permit issued in accordance with the provisions of the Regulation.
- (b) abstract ground water or carry out any activity near any lakes, rivers, streams, springs and wells that is likely to have any adverse impact on the quantity and quality of the water, without an Environmental Impact Assessment certificate issued in accordance with the provisions of the State environmental laws; or
- (c) cultivate or undertake any development activity within a minimum of six meters and a maximum of thirty meters from the highest ever recorded flood level, on either side of a river or stream, and as may be determined by the Agency from time to time.

7. *Provisions for Surface Waters*

The following minimum criteria are applicable to all surface waters of the State.

- (a) at a minimum, all waters including mixing zones shall be free of pollutants in concentrations of combinations or from anthropogenic activities, subject to these Regulations adversely affect:
 - (i) composition of wildlife;
 - (ii) physical, chemical or biological integrity of the environment; or
 - (iii) human health.

- (b) all waters including mixing zones shall be free from pollutants in concentrations or combinations that:
 - (i) settle to form deposits that are unsightly, putrescent, or odorous to such a degree as to create a nuisance, or interfere with the existing or designated uses;
 - (ii) float as debris, oil, grease, scum or other floating materials attributable to wastes in amounts to such a degree as to create a nuisance or interfere with the existing or designated uses; or,
 - (iii) produce odour or taste or change the colour or physical, chemical or biological conditions to such a degree as to create a nuisance or interfere with the existing or designated uses; or,
 - (iv) result in the dominance of species of fish and wildlife to such a degree as to create a nuisance or interfere with the existing or designated uses; or,
- (c) Radioactive Substances: the level of radioactive materials in all waters shall not be in concentrations or combinations which will likely be harmful to humans, aquatic life and wildlife, or result in concentrations in organisms producing undesirable conditions in line with extant national regulations.
- (d) Nutrients: Nutrients shall not exceed the limitations specified in this Regulations and/or more stringent site-specific limits necessary to prevent or minimize accelerated or cultural eutrophication.

8. Provisions for Groundwater

- 1) These regulations shall protect groundwater sources by regulating the discharge and underground injection of hazardous wastes, fluids used for extraction of minerals, fossil fuels energy and any other substance having the potential to contaminate groundwater.
- 2) Physico-chemical parameters shall be in conformity with Schedule XI to these Regulations, and limits for substances and characteristics affecting the acceptability of ground water source for domestic use shall be in conformity with Schedule XII to these Regulations.
- 3) Pathogenic organisms and coliform bacteria shall not exceed limits as stated in Schedule XIII to these Regulations
- 4) All other pollutants shall not be in such concentrations which in the opinion of the Agency would impair the waters for use as a source of potable water or to cause or contribute to a condition in contravention of standards for waters of the state.
- 5) No person shall make or permit an outlet for the discharge of sewage or industrial waste or other wastes or the effluent therefrom, into any groundwater of the state without obtaining a permit from the Agency and the permit shall be issued subject to such conditions as stated in the permitting and licensing system of the Agency.
- 6) The Agency shall limit or prohibit the discharges of pollutants to groundwater to ensure that the quality standards of the receiving waters is maintained or attained.
- 7) The Agency shall determine the applicable level of treatment for an individual discharger and such shall be indicated in the individual groundwater discharge permit and in establishing effluent limitations in the individual permits, the Agency shall consider natural background conditions, protect existing adjacent and down gradient uses and shall not interfere with the maintenance and attainment of beneficial uses in adjacent and down gradient waters.
- 8) For the purposes of determining compliance with sub-regulation 8(4) of these Regulations for toxic pollutants in ground waters, the Agency may adopt the use of Health Advisories.
- 9) The Agency shall use available published water quality criteria documents as guidance in establishing case-by-case discharge limits on specific pollutants to groundwaters including but not limited to the Department of Petroleum Resources (DPR)'s Target and Intervention Values and Limits, Nigerian Standards for Drinking Water Quality.
- 10) No person shall use, construct, install, operate or maintain for the purpose of disposal, a Motor Vehicle Waste well in the state.
- 11) No person shall construct or drill pit latrines, septic tanks and soak away except in accordance with relevant Codes of Practice.
- 12) No person shall construct, install, operate or maintain landfills or borrow pits for the purpose of industrial waste disposal where such wastes may allow pollutants into underground sources of water and the presence of the pollutant(s) causes or is likely to cause a violation of the provisions of these Regulations, or which in the opinion of the Agency adversely affects or may adversely affect the environment and/or health of persons.

- 13) No person shall sink (drill) a borehole(s) without a drilling permit (license) from relevant authorities except for personal domestic purpose.
- 14) All owners of boreholes/wells shall register their boreholes/wells by furnishing such information to relevant authorities.
- 15) The Agency shall in consultation with relevant authorities maintain the power to revoke a right to use a borehole/well or take water when such a right is likely to override public interest.
- 16) No person shall conduct any activity that is prohibited by these Regulations or that will endanger an aquifer or portion of an aquifer that meets the definition of an underground source of drinking water.

9. *Bans, Restrictions, etc on Use or Discharge of Water*

- (a) The Agency may impose bans and restrictions and other measures on the use of sources of water for domestic use in order to prevent and control their degradation.
- (b) New discharges into surface waters of the state shall be allowed, provided the discharge will not impair existing uses nor attainment of designated uses and will comply with other provisions of these Regulations including all required approvals.
- (c) New discharges into terminal reservoir of a public drinking water supply is prohibited with the exception of discharges of storm water drainage.
- (d) New discharges into the waters that are not public drinking water supplies may include:
 - (i) Discharge of storm water;
 - (ii) Discharges from industrial non-contact cooling water;
 - (iii) Discharges from construction site dewatering provided that the applicant has demonstrated to the satisfaction of the Agency that no reasonable alternatives exist;
 - (iv) Discharges from groundwater remediation projects provided that the applicant has demonstrated to the satisfaction of the Agency that no reasonable alternatives exist;
 - (v) Discharges from aquaculture facilities as appropriately authorized by all required state and federal agencies;
 - (vi) Discharges from water main maintenance such as main flushing and cleaning operations;
 - (vii) Discharges from dredged material;
 - (viii) Discharges from farming activities into surface waters which are hydrographically disconnected from all other surface waters as approved by the Agency;
 - (ix) Discharges from aquatic research related activities provided that the applicant has demonstrated to the satisfaction of the Agency that no reasonable alternatives exist;
 - (x) Other new discharges provided the applicant demonstrates to the satisfaction of the Agency that:
 - (a) The discharge serves a compelling public purpose which provides benefits to the public as a whole as opposed to individual or private interests;
 - (b) There is no reasonable alternative means of or location for, serving the compelling public purpose cites; and
 - (c) The discharge will not impair existing uses nor attainment of designated uses.

10. *Prohibited Discharges*

The prohibitions enumerated in this regulation shall apply to all pollutants, regardless of the effect on water quality standards or the treatment which the pollutants received.

- 1) Pollutants- No person shall discharge or engage in activities that introduce pollutants into the waters of the state except as in compliance with the provisions of these Regulations and pursuant to the terms and conditions of an approval issued by the Agency.
- 2) Urban Runoff- No person shall discharge storm water, gutter runoff, sump discharges, or street runoff to a treatment works designed to receive only wastewater.
- 3) Hazardous Waste and Hazardous Substances- No person shall discharge hazardous wastes or hazardous substances into any surface waters of the state, except as in compliance with the provisions of these Regulations and other applicable laws, and in accordance with the terms and conditions of an approval issued by the Agency.
- 4) Oil, Petroleum Products, Solvents- No person shall discharge oil or petroleum products into the waters of the state except as in compliance with the provisions of these Regulations and other applicable Regulations of the Agency, and in accordance with the terms and conditions of an approval issued by the Agency.
- 5) Discharges of Sewage from Vessels-

- (a) No person shall discharge any sewage from a vessel into the waters of the state;
- (b) No person shall operate or moor in the waters of the state a vessel equipped with a marine toilet that is:
 - (i) Not a type approved by the Agency and relevant authorities;
 - (ii) An approved type that is not in proper working condition or
 - (iii) Not having the vessel's marine toilets properly scaled to prevent overload discharges.
- (c) All sewage must be discharged into an approved marina pump-out facility.

11. *Compliance with Water Quality Standards*

All operators and suppliers of treated water, containerized water and all water vendors shall comply with the relevant quality standards in force as promulgated by the relevant lead agencies.

12. *Activities in Violation of Water Quality Standards*

No Person shall discharge pollutants into any waters of the state or perform any activities alone or in combination which the Agency determines will likely result in the violation of any of the water quality criteria or interfere with one or more of the existing or designated uses assigned to the receiving waters or to downstream waters in accordance with these Regulations.

13. *Approvals and Permits Required for Regulated Activities*

- (1) No person shall release any substance into or conduct any activity which will likely cause or contribute to pollution or adversely affect species of, the waters of the state, without having obtained all required approvals and permits from the Agency.
- (2) For the purpose of sub-regulating (1) of this regulation, such activities shall include but not limited to:
 - (a) Discharge of wastewater;
 - (b) Discharge of pollutants;
 - (c) Dredging of surface water;
 - (d) Dredging and dredged material disposal;
 - (e) Filling of surface waters of the state;
 - (f) Construction activities;
 - (g) Mining activities;
 - (h) Any commercial, industrial, state or municipal land development that results in the creation of more of additional impervious area;
 - (i) Point source discharge of pollutants
 - (j) Any other activity that may produce a measurable change in a water body.
- (3) Where any project or activity mentioned in sub-regulation (2) of this regulation or requires a permit or approval by any other authority, the approval or permit shall be obtained before commencement of the project.
- (4) Existing facilities shall obtain permit for regulated activities within six months of the commencement of these Regulations.

14. *Water Quality Monitoring*

- 1) The Agency in consultation with the relevant lead agencies, shall maintain water quality monitoring records for sources of domestic water at least twice every calendar year and such monitoring records shall be in the prescribed form as set out in the Second Schedule to these Regulations.
- 2) The determination of compliance or non-compliance of sewage, industrial waste or other waste discharges with the requirements of these Regulations shall be made through tests or analytical determinations of groundwater or effluent samples collected, transported and stored in such a manner as may be approved by the Agency and the location at which such groundwater or effluent samples are collected shall be determined by the Agency provided that in selecting or approving such locations, the Agency shall consider all relevant facts.
- 3) The Agency in collaboration with relevant authorities shall determine the number of observation and monitoring wells necessary for the determination of compliance with these Regulations.
- 4) Analytical tests to determine compliance or non-compliance with standards shall be made in accordance with methods approved by the Agency.

- 5) The Agency, upon receiving complaints of activity(ies) or discharge(s) that may jeopardize water uses as stated by these Regulations, shall embark on investigation and substantiation and take reasonable steps to ensure that the activity(ies) is controlled in line with these Regulations.
- 6) Where the Agency has reasonable cause to believe that any discharge(s) or activity(ies) is likely to violate the provisions of these Regulations, the Agency may serve an improvement notice on that person on a form prescribed by the Agency ordering compliance with these Regulations.
- 7) A person on whom an improvement notice is served shall be entitled to demonstrate that such prohibited discharge or activity does not emanate from his facility or actions, and the absence of which the person shall be bound to carry out the requirements in the improvement notice.

PART III: WATER FOR INDUSTRIAL USE AND EFFLUENT DISCHARGE

15. *Water for Industrial Use and Effluent Discharge*

- (1) No person shall use water for trade or industrial undertaking unless such person complies with the standards established or adopted by the competent lead agencies in regard to that particular activity.
- (2) The Agency shall take measures to ensure compliance with the said standards by the owner or operator of the facility.
- (3) No person shall discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit any person to dump or discharge such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards set out in the Third Schedule of these Regulations.
- (4) Every local authority or person operating a sewage system or owner or operator of any trade or industrial undertaking shall be guided by the monitoring guide for discharge into the environment as set out in the Fourth Schedule to these Regulations or as the Agency may prescribe.
- (5) Every owner or operator of a trade or industrial undertaking issued with a license by a local authority or sewerage service provider to discharge effluent into any existing sewerage systems shall comply with the standards set out in the Fifth Schedule to these Regulations.

16. *Discharge Monitoring*

- 1) Every person who generates and discharges effluent into the environment under a permit issued under the Law shall carry out effluent discharge quality and quantity monitoring in accordance with methods and procedures of sampling and analysis prescribed by the Agency, and shall submit monthly records of such monitoring to the Agency or its designated representative.
- 2) Such discharge monitoring record shall be submitted with an administrative charge to the Agency and shall be in the prescribed form as set out in Sixth Schedule to these Regulations.
- 3) The Agency shall review monitoring records in order to verify compliance with these Regulations.

17. *Application for Effluent Discharge Permit*

- 1) Application for an effluent discharge permit shall be in Form A of the Seventh Schedule and accompanied by the prescribed fee as set out in Eleventh Schedule to these Regulations.
- 2) The decision of the Agency together with the reasons thereof shall be communicated to the applicant within thirty working days from the date of submission of the duly completed application.
- 3) Where the Agency approves an application to grant an effluent discharge permit, it shall conduct appropriate monitoring exercise to ascertain the quality of discharge and issue an effluent discharge permit upon satisfactory exercise within twenty-one (21) days.
- 4) An effluent discharge permit issued under the regulation shall be in Form B set out in the Seventh Schedule to these Regulations and shall be valid for such period of time as may be determined by the Agency.
- 5) The Agency shall maintain a register for effluent discharge permit as prescribed in Form C of the Seventh Schedule.

18. Construction and Operation of Effluent Treatment Plant (ETP)

- 1) No person shall construct, install, or operate any plant, equipment, facility, vessel, or aircraft capable of causing or contributing to water pollution, or designed to prevent water pollution of any type designed by Agency regulations without a permit granted by the Agency or in violation of any conditions imposed by such permit;
- 2) Applications for permits shall be submitted and processed in accordance with the guideline given by the Agency on construction and operation of Effluent Treatment Plant (ETP) and shall contain such documentation and/or information as the Agency may require, including but not limited to:
 - (a) Hydrology of the area
 - (b) Type of discharge, the concentration and quantity;
 - (c) Action plan, timetable and duration of the proposed construction or other activities;
 - (d) Comprehensive engineering plan, technical/process details and specifications for the proposed project;
 - (e) Any additional information as may be deemed necessary by the Agency to fully assess the impact of the proposed activity upon the waters of the state or to support any changes in the scope of the project, actual or anticipated;
 - (f) Proprietary information where in the opinion of the Agency, such information is necessary to fully disclose all relevant facts concerning the application for the approval.
- 3) Failure of the applicant to submit information deemed necessary by the Agency in order to fully assess the impact of the proposed project on waters of the state or to support any changes in the scope of the proposed project, actual or anticipated, shall constitute valid cause for denial of the application.
- 4) The Agency may approve modifications to an approved project or activity without further notice, provided that the project had been noticed in accordance with these regulations, and such modifications are minor in nature and will have little or no adverse environmental impact.
- 5) In granting an approval, the Agency shall have regard for:
 - (i) the use of innovative pollution control and best management practices;
 - (ii) the economic and social benefits of the activity;
 - (iii) the prevention or remediation of environmental or public health threats;
 - (iv) the preservation of assimilative capacity for future industry and development.
- 6) A performance evaluation report of a plant that has been approved shall be submitted in accordance with the guideline set by the Agency or at any such time deemed fit by the Agency.

19. Obligations of a Permit Holder

- 1) The issuance of an approval mandates compliance with all terms, conditions, management practices and operations and maintenance requirements set forth in the approval.
- 2) The issuance of an approval does not relieve any person of the continuous responsibility to comply with any applicable part of these regulations or applicable regulations of other relevant extant Regulations.
- 3) The issuance of an approval by the Agency does not relieve any person of the responsibility for obtaining any other necessary permits or approvals from any federal, state, regional or local agency.
- 4) The issuance of an approval does not authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, state or local Law or Regulations.
- 5) Where the works or activities to which the permit relates are carried out by persons other than the permit holder, it is the duty of the permit holder to take all steps to ensure that the permit and any conditions specified in it are complied with by the person carrying out the works or activities.
- 6) A permit holder shall keep record in writing of activities conducted in line with the approval and shall submit to the Agency periodically as specified in the permit.

20. Modification, Suspension, Transfer or Revocation of Approval

- 1) The Agency may modify suspend or revoke in whole or in part, an approval for cause, including, but not limited to:
 - (a) Information indicating that the project will likely result in probable harm to the environment or pose a threat to the health, safety and/or welfare of the public;

- (b) The existence of a factor or factors which if properly and timely brought to the attention of the Agency, would have justified the application of more or less stringent conditions than required by these Regulations, but only if such factor(s) arose after the approval was issued;
 - (c) Where circumstances on which the approval was based have materially and substantially changed since the approval was issued;
 - (d) The information or data submitted by the applicant or permit holder either on the form(s) required or in any other material in support of the application is found to be false, misleading or erroneous; or
 - (e) The project is not undertaken in strict compliance with the conditions or provisions of any approval issued by the Agency.
- 2) A notice of revocation/suspension of an approval shall be in the form of a letter notifying the permit holder or subsequent transferee of the revocation or suspension and the reasons why the approval is being revoked or suspended.
 - 3) An effluent discharge permit issued under this Regulation shall not be transferable.

PART IV: WATER FOR AGRICULTURAL AND RECREATIONAL USES

21. *Use of Wastewater for Irrigation*

- 1) No person shall discharge or apply any poison, toxic, noxious or obstructing matter, radioactive wastes, or other pollutants or permit any person to dump or discharge any such matter into water meant for fisheries, wildlife, recreational purposes or any other uses unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards set out in the Third Schedule to these Regulations.
- 2) No person shall be permitted to use wastewater for irrigation purposes unless such water complies with the quality guidelines set out under the Eighth Schedule to these Regulations.
- 3) Where the General Manager, in exercise of his powers has issued an order for the management of a natural water body, no person shall abstract water from such body for irrigational purposes unless such water meets the standards set out in the Ninth Schedule to these Regulations.
- 4) Any owner or operator of an irrigation scheme shall create a buffer zone of at least 50 meters in width between the irrigation scheme and the natural water body into which such irrigation scheme discharges its waters.
- 5) All owners or operators of existing irrigation schemes shall within Ninety (90) days upon the coming into force of these Regulations take necessary steps to comply with these Regulations.
- 6) The Agency in consultation with the relevant lead agencies shall take measures to ensure compliance with these Regulations by the owner or operator of such irrigation schemes.
- 7) No person shall use or allow to be used any natural water body for recreational purposes unless the water body meets the quality standards for recreational standards as set out in Tenth Schedule to these Regulations

PART V: MISCELLANEOUS PROVISIONS

22. *Inventory of Water Bodies*

Within three years from the date of commencement of these Regulations, the Agency shall prepare and maintain an inventory of natural water bodies and take measures including the development of environmental management plans, to prevent and control degradation of such sources.

23. *Offences and Penalties*

- 1) Any person who contravenes any of these Regulations commits an offence and shall be liable on conviction to a fine as stipulated by the Agency Fees Order.
- 2) In addition to the above, the court may give such other orders as provided for by the Law.

24. Fees

All applications and Permits shall be accompanied by the prescribed fees as set out in the Eleventh Schedule to these Regulations.

FIRST SCHEDULE

QUALITY STANDARDS FOR SOURCES OF DOMESTIC WATER

Parameter	Guide Value (max allowable)
pH	6.5 – 8.5
Suspended solids	30 (mg/L)
Nitrate-NO ₃	10 (mg/L)
Ammonia –NH ₃	0.5 (mg/L)
Nitrite –NO ₂	3 (mg/L)
Total Dissolved Solids	1200 (mg/L)
(<i>E.coli</i>)	Nil/100 ml
Fluoride	1.5 (mg/L)
Phenols	Nil (mg/L)
Arsenic	0.01 (mg/L)
Cadmium	0.01 (mg/L)
Lead	0.05 (mg/L)
Selenium	0.01 (mg/L)
Copper	0.05 (mg/L)
Zinc	1.5 (mg/L)
Alkyl benzyl sulphonates	0.5 (mg/L)
Permanganate value (PV)	1.0 (mg/L)

Nil means less than limit of detection using prescribed sampling and analytical methods and equipment as determined by the Agency.

And any other parameters as may be prescribed by the Agency from time to time

SECOND SCHEDULE

WATER QUALITY MONITORING FOR SOURCES OF DOMESTIC WATER

Name of Water Source

Sample No

Description of sample (untreated).....

Date and time sample received in lab

Date and time sample was examined

Parameter	RESULTS	
	Observed value	Guide value (max allowable)
pH		6.5 -8.5
Suspended solids		30 (mg/L)
Nitrate-NO ₃		10 (mg/L)
Ammonia –NH ₃		0.5 (mg/L)
Nitrite –NO ₂		3 (mg/L)
Total Dissolved Solids		1200 (mg/L)
(<i>E.coli</i>)		Nil/100 ml
Fluoride		1.5 (mg/L)
Phenols		Nil (mg/L)
Arsenic		0.01 (mg/L)
Cadmium		0.01 (mg/L)
Lead		0.05 (mg/L)
Selenium		0.01 (mg/L)
Copper		0.05 (mg/L)
Zinc		1.5 (mg/L)
Alkyl benzyl sulphonates		0.5 (mg/L)
Permanganate value		1.0 (mg/L)

And any other parameters as may be prescribed by the Agency from time to time

Remarks

.....

.....

.....

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.....

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And any other parameters as may be prescribed by the Agency from time to time Remarks

Standard values are daily/monthly average discharge values. Not detectable (ND) means that the pollution status is below the detectable level by the measurement methods established by the Agency

THIRD SCHEDULE

STANDARDS FOR EFFLUENT DISCHARGE INTO THE ENVIRONMENT

Parameter	Max Allowable(Limits)
1,1,1-trichloroethane (mg/l)	3
1,1,2-trichloroethane (mg/l)	0.06
1,1-dichloroethylene	0.2
1,2-dichloroethane	0.04
1,3-dichloropropene (mg/l)	0.02
Alkyl Mercury compounds	Nd
Ammonia, ammonium compounds, NO ₃ compounds and NO ₂ compounds (Sum total of ammonia-N times 4 plus nitrate-N and Nitrite-N) (mg/l)	100
Arsenic (mg/l)	0.02
Arsenic and its compounds (mg/l)	0.1
Benzene (mg/l)	0.1
Biochemical Oxygen Demand (BOD 5days at 20 °C) (mg/l)	30
Boron (mg/l)	1.0
Boron and its compounds – non marine (mg/l)	10
Boron and its compounds –marine (mg/l)	30
Cadmium (mg/l)	0.01
Cadmium and its compounds (mg/l)	0.1
Carbon tetrachloride	0.02
Chemical Oxygen Demand (COD (mg/l)	50
Chromium VI (mg/l)	0.05
Chloride (mg/l)	250
Chlorine free residue	0.10
Chromium total	2
cis -1,2- dichloro ethylene	0.4
Copper (mg/l)	1.0
Dichloromethane (mg/l)	0.2
Dissolved iron (mg/l)	10
Dissolved Manganese(mg/l)	10
E.coli (Counts / 100 ml)	Nil
Fluoride (mg/l)	1.5
Fluoride and its compounds (marine and non-marine) (mg/l)	8
Lead (mg/l)	0.01
Lead and its compounds (mg/l)	0.1
n-Hexane extracts (animal and vegetable fats) (mg/l)	30
n-Hexane extracts (mineral oil) (mg/l)	5
Oil and grease	10
Organo-Phosphorus compounds (parathion,methyl parathion,methyl demeton and Ethyl parantrophyenyl phenylphosphorothroate, EPN only) (mg/l)	1.0
Polychlorinated biphenyls, PCBs (mg/l)	0.003
pH (Hydrogen ion activity----marine)	5.0-9.0
pH (Hydrogen ion activity--non marine)	6.5-8.5
Phenols (mg/l)	0.001
Selenium (mg/l)	0.01
Selenium and its compounds (mg/l)	0.1
Hexavalent Chromium VI compounds (mg/l)	0.5
Sulphide (mg/l)	0.1
Simazine (mg/l)	0.03
Total Suspended Solids, (mg/l)	25
Tetrachloroethylene (mg/l)	0.1
Thiobencarb (mg/l)	0.1
Temperature (in degrees celcius) based on ambient temperature	± 3
Thiram (mg/l)	0.06
Total coliforms (counts /100 ml)	30
Total Cyanogen (mg/l)	Nd
Total Nickel (mg/l)	0.3
Total Dissolved solids (mg/l)	1200
Colour in Hazen Units (H.U)	15
Detergents (mg/l)	Nil
Total mercury (mg/l)	0.005
Trichloroethylene (mg/l)	0.3
Zinc (mg/l)	0.5
Whole effluent toxicity	
Total Phosphorus (mg/l)	2 Guideline value
Total Nitrogen	2 Guideline value

FOURTH SCHEDULE

MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT

DISCHARGING FACILITY	Gas and Oil	Dairy Products	Grain Mills	Canned Fruits & Vegetables	Canned & Preserved Sea Foods	Sugar Processing	Textiles	Cement	Feedlots	Electroplating	Organic Chemicals	Inorganic Chemicals	Plastics & Synthetics	Soap & Detergents	Fertilizers Manufacturing	Petroleum Refining	Iron & Steel Manufacturing	Non-Ferrous	Phosphate Manufacturing	Steam Electric Power Generating
Water quality parameters																				
Biochemical Oxygen Demand, BOD	X	x	x	X	x	X	x		X		x	x	x	x	x	x				
Total Suspended Solids	X	x		X	x	X	x	x		x	x	x	x	x	x	x	x	X	x	x
pH	X	x	x	X	x	X	x	x	X	x	x	x	x	x	x	x	x	X	x	x
Faecal Coliforms	X	x	x	X	x	X	x	x	x	x	x	x	x	x	x	x	x	X	x	x
Oil & Grease	X				x		x				x			x		x	x	X	x	x
Temperature	X	x	x	X	x	X	x	x	x		x	x	x	x		x	x	X	x	x
Chemical Oxygen Demand, COD						X	x				x	x	x	x		x		X		
Colour/Dye/Pigment	X	x	x	X	x	X	x	x	x	x	x	x	x	x	x	x	x	X	x	x
Elemental Phosphorus																				x
Total Phosphorus						X				x					x				x	x
Ammonia (as N)												x			x	x	x	X		
Organic Nitrogen as N						X									x					
Nitrate						X									x		x			
Flow	X	x	x	X	x	X	x	x	x	x	x	x	x	x	x	x	x	X	x	x
Phenols							x				x		x				x	x		
Sulphide							x									x	x			
Total Chromium							x			x		x					x			
Chromium VI										x		x					x			x
Chrome																				
Copper										x		x	x							x
Nickel										x		x								
Zinc										x			x				x			x
Zinc												x								
Cn total										x		x								
Cyanide A										x		x								
Fluorine										x		x	x					X	x	
Free Available Chlorine																				
Residual Chlorine	X																			x
Cadmium										x		x					x			
Lead										x		x					x	X		
Iron										x										
Tin										x		x								x
Silver										x										
Gold										x										
Iridium										x										
Palladium										x										
Rhodium										x										
Ruthenium										x										
Mercury (total)												x								
Total Organic Carbon												x							x	
Aluminium												x							x	
Arsenic												x							x	
Selenium												x								
Barium																				
Manganese																				x
Tannin																				
Oil																				
Settleable Solids																				
Surfactants																				

FOURTH SCHEDULE: MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT

DISCHARGING FACILITY	Fero Alloy manufacturing	Leather tanning & finishing	Glass	Asbestos manufacturing	Rubber processing	Timber products	Pulp, Paper & paperboard	Builders paper & paperboard mills	Meat products	Paving and roofing materials	Intensive chemical agriculture farm	Edible vegetable oils and fats	Hotels, Restaurants and Game Lodges
Water quality parameters													
BOD		x	X		x	x	x	x	x	x		x	X
TSS	X	x	X	x	x	x	x	x	x	x			X
pH	X	x	X	x	x	x	x	x	x	x	X	x	X
Faecal Coliforms	X	x	X	x	x	x	x	x	x	x	x	x	X
Oil & Grease		x			x	x	x	x	x	x		x	X
Temperature	X	x	X	x	x	x	x	x	x	x		x	X
COD			X	x	x							x	
Colour/Dye/Pigment	X	x	X	x	x	x	x	x	x	x	x	x	X
Elemental Phosphorus							x				x		
Total Phosphorus			X								x		X
Ammonia (as N)	X		X						x		x		X
Organic Nitrogen as N											x		X
Nitrate													
Flow	X	x	X	x	x	x	x	x	x	x	x	x	X
Phenols	X		X			x							
Sulphide													
Total Chromium	X	x			x								
Chromium VI	X												
Chrome		x											
Copper													
Nickel													
Zinc					x								
Zinc													
Cyanide total	X												
Cn													
Fluorine			X		x								
Free Available Chlorine							x	x					
Residual Chlorine													
Cadmium													
Lead													
Iron			X										
Tin													
Silver													
Gold													
Iridium													
Palladium													
Rhodium													
Ruthenium													
Mercury (total)													
Total Organic Carbon													
Aluminium													
Arsenic													
Selenium													
Barium													
Manganese	X												
Tannin		x											
Oil		x											
Settleable Solids								x					
Surfactants											x	x	

FOURTH SCHEDULE (Cont.) MONITORING GUIDE FOR DISCHARGE INTO THE ENVIRONMENT

DISCHARGING FACILITY	Bakeries & wheat confectioneries	Breweries (malt)	Soft Drinks & Carbonated Waters	Sugar confectionery	Tobacco processing	Distilling & blending of spirits	Motor vehicle assembly	Paints, varnishes & lacquers	Batteries manufacture	Cosmetics	Printing, publishing & allied industry	Domestic sewage system	Pharmaceutical industries	Tea/Coffee Industries	Slaughter Houses	Combined sewage (Domestic and Industrial effluent)
Water quality parameters																
BOD	X	x	x	X	X	x	x	x			x	x	x	x	x	X
TSS	X	x	x	X				x	x			x	x	x	x	X
pH	X	x	x	X	X	x	x	x	x	x	x	x	x	x	x	X
Faecal Coliforms/Ecoli.	X	x	x	X	X	x	x	x	x	x	x	x	x	x	x	X
Oil & Grease					X		x	x			x	x			x	X
Temperature	X	x	x	X	X	x	x	x	x	x	x				x	
COD		x	x	X		x	x	x	x	x	x	x	x	x	x	X
Colour/Dye/Pigment	X	x	x	X	X	x	x	x	x	x	x	x	x	x	x	X
Elemental Phosphorus																
Total Phosphorus				X								x			x	X
Ammonia (as N)								x				x			x	X
Organic Nitrogen as N				X										x	x	X
Nitrate																X
Flow	X	x	x	X	X	x	x	x	x	x	x	x	x	x	x	X
Phenols																X
Sulphide/Sulphur				X							x					X
Total Chromium								x								X
Chromium VI																X
Chrome																X
Copper												x		x		X
Nickel													x			X
Zinc								x	x				x	x		X
Zinc A																
Cn total																X
Cn A																
Fluorine																X
Free Available Chlorine									x		x	x				X
Cadmium													x			X
Lead							x	x	x		x		x			X
Iron							x	x	x		x					X
Tin																X
Silver																X
Gold							x				x					X
Iridium																X
Palladium																X
Rhodium																X
Ruthenium																X
Mercury							x			x	x					X
Total Organic Carbon, TOC																
Aluminium																X
Arsenic																X
Selenium																X
Barium																X
Manganese																X
Tannin																X
Oil										x						X
Settleable Solids							x				x					
Surfactants								x						x		X

X Means parameters to be monitored

And any other parameters and/or discharging facilities as may be prescribed by the Agency from time to time.

FIFTH SCHEDULE

STANDARDS FOR EFFLUENT DISCHARGE INTO PUBLIC SEWERS

1 PARAMETER	Maximum levels permissible
Suspended solids (mg/L)	50
Total dissolved solids (mg/L)	2000
Temperature °C	20-35
pH	6-9
Oil and Grease (mg/L) -where conventional treatment shall be used	10
Oil and Grease (mg/L)- where ponds is a final treatment method	5
Ammonia Nitrogen (mg/L)	20
Substances with an obnoxious smell	Shall not be discharged into the Sewers
Biological Oxygen Demand BOD ₅ days at 20 °C (mg/L)	30
Chemical Oxygen Demand COD (mg/L)	50
Arsenic (mg/L)	0.02
Mercury (mg/L)	0.05
Lead (mg/L)	<1
Cadmium (mg/L)	0.5
Chromium VI (mg/L)	0.05
Chromium (Total) (mg/L)	2.0
Copper (mg/L)	1.0
Zinc (mg/L)	5.0
Selenium (mg/L)	0.2
Nickel (mg/L)	3.0
Nitrates (mg/L)	20
Phosphates (mg/L)	30
Cyanide Total (mg/L)	2
Sulphide (mg/L)	2
Phenols (mg/L)	10
Detergents (mg/L)	15
Colour	Less than 40 Hazen units
Alkyl Mercury	Not Detectable (nd)
Free and saline Ammonia as N (mg/L)	4.0
Calcium Carbide	Nil
Chloroform	Nil
Inflammable solvents	Nil
Radioactive residues	Nil
Degreasing solvents of mono-di-trichloroethylene type	Nil

And any other parameter as the Agency and the sewerage service provider may prescribe.

SIXTH SCHEDULE

MONITORING FOR DISCHARGE OF TREATED EFFLUENT INTO THE ENVIRONMENT

Agency:

Name of organization

Nature of work

Sample No

Description of sample

Date and time sample received in lab

Date and time sample was examined

Average* Flow Rate (m³/day)

Parameter	RESULTS				
	Sample upstream	Sample at discharge point	Sample downstream	Guide value	Remark
pH				6.5-8.5	
Biological Oxygen Demand (5 days at 20 °C)				30 (mg/L) max	
Chemical Oxygen Demand				50 (mg/L) max	
Suspended solids				25 (mg/L) max	
Ammonia –NH ₄ + Nitrate-N ₀₃ + Nitrite –N ₀₂				100 (mg/L) max	
Total Dissolved Solids				1200 (mg/L) max	
E.Coli				Nil/100 ml	
Total coliform				1000/100 ml	

***Based on sampling analysis monitoring frequency. (daily/weekly/monthly/quarterly)**

Others

1.
2.
3.
4.

As guided by the Fourth Schedule or as may be directed by the Agency

SEVENTH SCHEDULE

FORM A:

APPLICATION FOR EFFLUENT DISCHARGE INTO AQUATIC ENVIRONMENT

PART A: DETAILS OF APPLICANT

A1. Name of applicant:

.....

A2. Personal Identification Number

.....

A3. Address:

.....

A4. Name of contact person:

.....

.....

A5. Telephone No.

A6. Fax No.

A7. E-mail

A8. Previous Permit Number

PART B: DETAILS OF DISCHARGING FACILITY

B1. Location of discharging facility:

.....

B2. Activity of discharging facility (e.g. coffee factory, sewage plant, tea factory)

.....

B3. Nature and composition of effluent:

.....

B4. Does the facility have effluent treatment plant (Yes or No)

.....

B5. Maximum quantity of effluent which is proposed to discharge on any one day (in M³/day)

.....
B6. The highest rate at which it proposes to discharge the effluent (in M³/hr.)

.....
B7. Source of processing water to the facility

.....
B8. Does the facility have access to a Laboratory for monitoring the quality of discharged effluent?
(Yes or No).....

B9. Description of the activities of the facility

.....
.....
.....
B10. Point of discharge:
.....

1.1.1 PART C: DECLARATION BY APPLICANT

I hereby certify that the information given above is correct and true to the best of my knowledge:

.....
Signature of Application

.....
Full Names in Block letters

.....
Position

On behalf of:
(Firm name and seal)

Date:

PART D: FOR OFFICIAL USE

Approved/Not Approved

.....

COMMENTS

.....

.....

.....

Official Signature.....

Date

Important Notes: Please submit the following: (a) Application form in triplicate and (b) Prescribed fee to:

General Manager

Ogun State Environmental protection Agency
State Secretariat,
Oke-Mosan,
Abeokuta, Ogun State,
Nigeria.

THE ENVIRONMENTAL MANAGEMENT AND COORDINATION REGULATION
EFFLUENT DISCHARGE PERMIT

Form B

Application Reference No.

Permit No.

FOR OFFICIAL USE

This is to certify that the application for discharge to aquatic Environment received from
..... (name of applicant) of (address) to the
Ogun State Environmental Protection Agency in accordance with Water Quality Regulations for
..... (facility) located at (locality and district) to
discharge effluent to has been evaluated and a permit is hereby issued for
discharge, subject to the attached conditions.

Dated this day of 20..

Signature:

(Official Stamp)

General Manager
Ogun State Environmental Protection Agency

Conditions of Permit

1. This Permit is valid for a period of from the date hereof.
2. Frequency of Monitoring (Daily/Weekly/Monthly/Quarterly)
3.
4.
5.

FORM C: REGISTER FOR EFFLUENT DISCHARGE PERMIT INTO THE ENVIRONMENT

Name of discharging facility	Location of facility	Permit No.	Date of issue	Expiry Date	Conditions of Permit	Discharging into	Date and name of Filing officer	Date	Remarks/ Status

Status of Permit

1. New
2. Cancelled
3. Variation

EIGHTH SCHEDULE

MICROBIOLOGICAL QUALITY GUIDELINES FOR WASTEWATER USE IN IRRIGATION

Reuse conditions	Exposed group	Intestinal Nematodes (MPN/L)*	Coliforms (MPN/100 ml)
Unrestricted irrigation (crops likely to be eaten uncooked, sports fields, public parks)	Workers, consumers, Public	<1	<1000**
Restricted irrigation (cereal crops, industrial crops, fodder crops, pasture and trees***)	Workers	<1	No standard recommended

* *Ascaris lumbricoides*, *Trichuris trichiura* and human hookworms.

** A more stringent guideline (<200 coliform group of bacteria per 100 ml) is appropriate for public lawns, such as hotel lawns, with which the public may come into direct contact.

*** In the case of fruit trees, irrigation should cease two weeks before fruit is picked and fruit should be picked off the ground. overhead irrigation should not be used.

NINTH SCHEDULE

STANDARDS FOR IRRIGATION WATER

Parameter	Permissible Level
Ph	6.5-8.5
Aluminium	5(mg/L)
Ammonium	2(mg/L)
Nitrate	2(mg/L)
Phosphates (as PO ₄ ³⁻)	3.5(mg/L)
Sulphate	500(mg/L)
Sodium	120(mg/L)
Potassium	50(mg/L)
Calcium	180(mg/L)
Magnesium	40(mg/L)
Mercury	0005(mg/L)
Nickel	0.1(mg/L)
Arsenic	0.1 (mg/L)
Boron	0.1(mg/L)
Cadmium	0.5(mg/L)
Chloride	0.01(mg/L)
Chromium	1.5(mg/L)
Cobalt	0.1 (mg/L)
Copper	0.05(mg/L)
<i>E.coli</i>	Nil/100 ml
Fluoride	1.0(mg/L)
Iron	1 (mg/L)
Lead	5(mg/L)
Selenium	0.19(mg/L)
Sodium Absorption Ratio (SAR)	6(mg/L)
Total Dissolved Solids	1200(mg/L)
Suspended Solids	5(mg/L)
Oil & Grease	0.1
BOD ₅	6(mg/L)
COD	30(mg/L)
Zinc	2(mg/L)

And any other parameters as may be prescribed by the Agency from time to time

TENTH SCHEDULE

QUALITY STANDARDS FOR RECREATIONAL WATERS

PARAMETER	MAXIMUM PERMISSIBLE LEVEL
Arsenic (mg/l)	0.05
Fecal coliform (Counts/100 ml)	Nil
Total coliform (Counts/100 ml)	500
Cadmium	0.01
Chromium	0.1
Colour (True Colour Units)	100
Light Penetration (meters)	1.2
Mercury (mg/L)	0.001
Odour (Threshold Odour Number, TON)	16
Oil and Grease (mg/L)	0.1
pH	6 – 9
Radiation, Total (Bq/L)	0.37
Surfactant, MBAs (mg/L)	2
Temperature (⁰ C)	30
Turbidity (NTU)	50

And any other parameters as may be prescribed by the Agency from time to time

ELEVENTH SCHEDULE

TARGET AND INTERVENTION VALUES FOR MICRO POLLUTANTS FOR GROUNDWATER

<i>Substance</i>	<i>Groundwater (Ug/L)</i>	
	<i>Target Value</i>	<i>Intervention Value</i>
1.AROMATIC COMPOUNDS		
Benzene		
Ethyl Benzene	0.2	30
Phenol	0.2	150
Toluene	0.2	2000
Xylene	0.2	1000
	0.2	70
2. METAL		
Arsenic		
Barium	10	60
Cadmium	50	625
Chromium	0.4	6
Cobalt	1	30
Copper	20	100
Mercury	15	75
Lead	0.05	0.3
	15	75
Nickel		
Zinc	15	75
	65	800
3.CHLORINATED HYDROCARBON		
1,2-dichloro ethane		
Trihalomethane	0.01 (dt) 0.01 mg/l	400
4. POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)		
PAH (Total of 10)*		
Naphthalene	0.1	70
Anthracene	0.02	5
Phenanthrene	0.02	5
Fluoranthracene	0.005	1
Benzo (a) anthracene	0.2	0.5
5. OTHER POLLUTANTS		
Mineral oil		
	50	600

dt = Detection threshold

* = Total of 10, include the five listed above and the following: Chrysene, benzo (a) pyrene, benzo(ghi)pyrene, benzo(k) fluoranthene and indeno (1,2,3cd)pyrene

Source: DPR

TWELVETH SCHEDULE

LIMIT FOR SUBSTANCES AND CHARACTERISTICS AFFECTING THE ACCEPTABILITY OF GROUND WATER FOR DOMESTIC USE

<i>Substances</i>	<i>Highest Desirable Level</i>	<i>Maximum Permissible Level</i>
Total Solids	500mg/l	1,500mg/l
pH Range	7.0-8.5	6.5-9.2
Mineral Oil	0.01 mg/l	0.3mg/l
Phenolic Compounds	0.02mg/l	0.002mg/l
Bromide	0.01 mg/l	0.1mg/l
Chlorides as Cl ⁻	200mg/l	600mg/l
Chlorine	<200mg/l	5mg/l
Nitrate	45mg/l	50mg/l
Nitrite	0.5 mg/l	2mg/l
Fluoride	0.6-1.5mg/10.05mg/l	1.5mg/l
Copper as Cu ⁺⁺	0.05mg/l	1.5mg/l
Iron as Fe ⁺⁺	0.1 mg/l	1.0mg
Zinc as Zn ⁺⁺	5.0 mg/l	15mg/l
Sulphate as SO ₄	200mg/l	400mg/l
Total Hardness (CaCO ₃)	100mg/l	500mg/l
Calcium as Ca ⁺⁺	75mg/l	200mg/l
Magnesium as Mg ⁺⁺	30mg/l	150mg/l
Manganese as Mn ⁺⁺	0.05mg/l	0.5mg/l
Anionic Detergents	0.2mg/l	1.0mg/l
Colour	5 unit	50 unit
Odour	Unobjectionable	Unobjectionable
Taste	Unobjectionable	Unobjectionable

SOURCE : NESREA, WHO and Department of Petroleum Resources (DPR).

THIRTEENTH SCHEDULE

MICROBIOLOGICAL LIMITS FOR GROUNDWATER

<i>Parameter</i>	<i>Unit</i>	<i>Maximum Permissible Levels</i>
Total Coliform count	cfu/ml	10
Thermo tolerant Coliform or <i>E.coli</i>	cfu/100ml	0
Faecal streptococcus <i>Clostridium perfringens</i>	cfu/100ml	0
spore	cfu/100ml	0

SOURCE: Nigeria Industrial Standards 5542:2007 of SON 2007.

