ENVIRONMENTAL QUALITY (INDUSTRIAL EFFLUENT) REGULATIONS 2009

PU(A) 434/2009

IN exercise of the powers conferred by sections 21, 24, 25 and 51 of the **Environmental Quality Act 1974***[Act 127]*, the Minister, after consultation with the Environmental Quality Council, makes the following regulations:-

10 December 2009

1. Citation

These regulations may be cited as the **Environmental Quality (Industrial Effluent) Regulations 2009**.

In these Regulations:-

"best management practices" means practical, structural or non-structural methods for the purpose of preventing or reducing the discharge of industrial effluent or mixed effluent containing contaminants;

"industrial effluent" means any waste in the form of liquid or wastewater generated from manufacturing process including the treatment of water for water supply or any activity occurring at any industrial premises;

"mixed effluent" means any waste in the form of liquid or wastewater containing both industrial effluent and sewage;

"sludge" means any deposit of particulate matter settled from any liquid, including deposit resulting from physical, chemical, biological or other treatment of water or industrial effluent or mixed effluent;

"professional engineer" has the same meaning assigned to it in the **Registration of Engineers Act 1967***[Act 138]*;

"sewage" means any liquid waste or wastewater discharge containing human, animal, domestic, or putrescible matter in suspension or solution, and includes liquids containing chemicals in solution either in the raw, treated or partially treated form;

"licence" means a licence referred to in regulation 15 pursuant to subsection 25(1) of the Act;

"parameter" means chemical oxygen demand or any of the factors shown in the first column of the Fifth Schedule or in the Ninth Schedule;

"authorized officer" means any officer appointed under section 3 of the Act or any other officer to whom the Director General has delegated his power under section 49 of the Act;

"batch discharge" means any controlled discharge of a discrete volume of industrial effluent or mixed effluent;

"licensed premises" means premises occupied by a person who is the holder of a licence issued in respect of the premises; and

"industrial effluent treatment system" means any facility including the effluent collection system, designed and constructed for the purpose of reducing the potential of the industrial effluent or mixed effluent to cause pollution.

3. Application

These Regulations shall apply to any premises which discharge or release industrial effluent or mixed effluent, onto or into any soil, or into inland waters or Malaysian waters, other than the premises as specified in the First Schedule.

4. Obligation to notify the Director General

(1)No person shall, without prior written notification to the Director General:-

(a) carry out any work on any premises that may result in a new source of discharge of industrial effluent or mixed effluent;

(b) construct on any land, building or facility designed or used for a purpose that may cause the land or building or facility to result in a new source of discharge of industrial effluent or mixed effluent;

(c) make or cause or permit to be made any change of, to, or in any plant, machine, or equipment used or installed at the premises that causes a material change in the quantity or quality of the discharge or release from an existing source; or

(d) carry out upgrading work of an existing industrial effluent treatment system that may result in a material change in the quantity or quality of the discharge or release.

(2) The written notification to carry out any work, construction, or upgrading, or to make any change referred to in subregulation (1) shall be submitted to the Director General in the form as specified in the Second Schedule within thirty days before the work or construction or upgrading commences.

5. Design and construction of industrial effluent treatment system

(1) An owner or occupier of a premises shall conduct any design and construction of the industrial effluent treatment system to collect and treat the industrial effluent or mixed effluent generated within the premises in strict compliance with the specifications as specified in the Guidance Document on the Design and Operation of Industrial Effluent Treatment System issued by the Department of Environment.

(2) An owner or occupier of the premises shall appoint a professional engineer to undertake the design and supervision of the construction of the industrial effluent treatment system and the work performed shall meet the satisfaction of the Director General.

(3) An owner or occupier of the premises and the professional engineer referred to in subregulation (2) shall provide a written declaration, in a form as specified in the Third Schedule, certifying that the design and construction of the industrial effluent treatment system have complied with the specifications referred to in subregulation (1).

(4) As-built drawings that show the placement of any works or structures that form part of the industrial effluent treatment system shall be submitted to the Director General not later than thirty days from the date the premises commences operation.

(5) In this regulation, "as-built drawings" means any engineering drawing that shows the placement of facilities as measured after a work is completed.

6. Compliance with specifications of industrial effluent treatment system

(1) No person shall operate any industrial effluent treatment system unless it complies with the specifications as specified in subregulation 5(1).

(2) The Director General may issue a directive to the owner or occupier of a premises who does not comply with subregulation (1) requiring him to repair, alter, replace or install any additional equipment or instruments or to conduct performance monitoring of industrial effluent treatment system at his own expense, in any manner as the Director General may determine in such directive.

7. Monitoring of discharge of industrial effluent or mixed effluent

(1) An owner or occupier of a premises that discharges industrial effluent or mixed effluent onto or into any soil, or into any inland waters or Malaysian waters shall, at his own expense:-

(a) monitor the concentration of chemical oxygen demand (COD) and any parameter as specified in the Fifth Schedule; and

(b) install flow-meters, sampling, monitoring and recording equipment.

(2) The owner or occupier of the premises shall maintain a record of industrial effluent or mixed effluent discharge monitoring data in the form as specified in the Tenth Schedule.

(3) The owner or occupier of the premises shall submit the first record of industrial effluent or mixed effluent discharge monitoring data to the Director General within thirty days after the date of coming into operation of these Regulations and the subsequent records shall be submitted within thirty days after the end of the calendar month for the report of the previous month.

(4) The record of industrial effluent or mixed effluent discharge shall also be made available for inspection by any authorized officer.

8. Proper operation of industrial effluent treatment system

(1) An owner or occupier of a premises shall operate and maintain industrial effluent treatment system in accordance with sound engineering practice for the treatment of the industrial effluent or mixed effluent and ensure that all components of the industrial effluent treatment system are in good working condition.

(2) In this regulation, "sound engineering practice" means the manner by which effluent treatment system is operated where the operational characteristics are maintained within the normal range of values commonly used for the treatment of industrial effluent or mixed effluent.

9. Performance monitoring of effluent treatment system

(1) An owner or occupier of a premises shall:-

(a) conduct performance monitoring of the components of the effluent treatment system in the manner as specified in the Guidance Document on Performance Monitoring of Industrial Effluent Treatment Systems issued by Department of Environment; and

(b) equip himself or itself with facilities, relevant equipment or instruments for the purpose of conducting performance monitoring referred to in paragraph (a).

(2) In this regulation, "performance monitoring" means the routine monitoring of certain characteristics to provide an indication that a treatment process is functional and capable of treating the industrial effluent or mixed effluent.

10. Competent person

(1) The operation of an industrial effluent treatment system shall be supervised by a competent person.

(2) A competent person shall be any person who has been certified by the Director General that he is duly qualified to supervise the operation of an industrial effluent treatment system.

(3) An owner or occupier of a premises shall ensure that a competent person is on duty at any time the industrial effluent treatment system is in operation.

11. Acceptable conditions for the discharge of industrial effluent other than parameter of chemical oxygen demand (COD)

(1) No person shall discharge industrial effluent which contains any parameter in concentration greater than the limits of:-

(a) Standard A, as shown in the third column of the Fifth Schedule, into any inland waters within the catchment areas as specified in the Sixth Schedule; or

(b) Standard B, as shown in the fourth column of the Fifth Schedule, into any other inland waters or Malaysian waters.

(2) Where two or more of the metals specified as parameters (xii) to (xvi) as specified in the Fifth Schedule, pursuant to subregulation (1), are present in the industrial effluent or mixed effluent, the concentration of these metals shall not be greater than:-

(a) 0.5 milligrammes per litre in total, where Standard A is applicable; or

(b) 3.0 milligrammes per litre in total, and 1.0 milligramme per litre in total for soluble forms, where Standard B is applicable.

(3) Where Standard B is applicable and when both phenol and free chlorine are present in the same industrial effluent, the concentration of phenol individually, shall not be greater than 0.2 milligrammes per litre and the concentration of free chlorine individually, shall not be greater than 1 milligramme per litre.

12. Acceptable conditions for the discharge of industrial effluent for parameter of chemical oxygen demand (COD)

In relation to any trade or industry as specified in the Seventh Schedule, No person shall discharge industrial effluent which contains COD in conentration greater than the limits of:-

(a) Standard A, as shown in the third column of the Seventh Schedule, into any inland waters within the catchment areas as specified in the Sixth Schedule; or

(b) Standard B, as shown in the fourth column of the Seventh Schedule, into any other inland waters or Malaysian waters.

13. Acceptable conditions for the discharge of mixed effluent for parameter of chemical oxygen demand (COD)

No person shall discharge mixed effluent which contains COD in concentration greater than the limits of:-

(a) Standard A, as shown in the second column of the Eighth Schedule, into any inland waters within the catchment areas as specified in the Sixth Schedule; or

(b) Standard B, as shown in the third column of the Eighth Schedule, into any other inland waters or Malaysian waters.

14. Best management practice for the discharge of industrial effluent or mixed effluent for other parameters

An owner or occupier of a premises shall adopt the best management practice for discharge of any industrial effluent or mixed effluent for any parameter as specified in the Ninth Schedule.

15. Licence to contravene the acceptable conditions for the discharge of industrial effluent or mixed effluent

(1) Any person may apply for a licence under subsection 25(1) of the Act to contravene the acceptable conditions of discharge of industrial effluent or mixed effluent as specified in regulations 11, 12 and 13.

(2) An application for a licence shall be made in accordance with the procedures as specified in the **Environmental Quality (Licensing) Regulations 1977***[P.U. (A) 198/1977]* and shall be accompanied by:-

(a) a report on industrial effluent characterization study in a format as specified in the Guidance Document on Industrial Effluent Characterization Study issued by Department of Environment; and

(b) a licence and effluent-related licence fee as specified in regulation 31.

16. Methods of analysis and sampling of industrial effluent or mixed effluent

(1) An authorized officer may carry out an in-situ or ex-situ analysis of industrial effluent or mixed effluent using any instruments approved by the Director General.

(2) An analysis of any industrial effluent or mixed effluent discharged or released onto or into any soil, or into any inland waters or Malaysian waters shall be carried out in accordance with the methods contained in the publications as specified in the Fourth Schedule.

(3) The analysis of the industrial effluent or mixed effluent referred to in subregulation (1) shall be based on grab samples.

(4) In this regulation:-

(a) "ex-situ analysis" means the analysis conducted on an industrial effluent or mixed effluent sample that has been removed from its location and conducted at the different site from the site the sample was taken;

(b) "in-situ analysis" means the analysis conducted on an industrial effluent or mixed effluent sample that has not been removed from its location or conducted at the site where the sample was taken; and

(c) "grab sample" means a discrete individual sample taken within a period of time of less than fifteen minutes.

17. Point of discharge of industrial effluent or mixed effluent

(1) The point of discharge of industrial effluent or mixed effluent shall comply with the specifications as specified in the Eleventh Schedule and shall be clearly indicated by the owner or occupier of a premises on the layout plans or engineering drawings certified by a professional engineer.

(2) An owner or occupier of the premises shall submit to the Director General the layout plans or engineering drawings referred to in subregulation (1) thirty days before the premises commence operation.

(3) Where an owner or occupier of the premises proposes to make any alteration or change to the location or position of the point of discharge or design of the outlet at the point of discharge of industrial effluent or mixed effluent, he or it shall notify the Director General within thirty days prior to the making of such alteration or change.

18. Prohibition against industrial effluent or mixed effluent discharge through by-pass

(1) No person shall discharge or cause or permit to be discharged any industrial effluent or mixed effluent onto or into any soil, or into any inland waters or Malaysian waters through a by-pass.

(2) In this regulation, "by-pass" means any diversion of industrial effluent or mixed effluent from any portion of an industrial effluent treatment system.

19. Dilution of industrial effluent or mixed effluent

(1) No person shall dilute, or cause or permit to be diluted, any industrial effluent or mixed effluent, whether raw or treated at any time or point after it is produced at any premises.

(2) Industrial effluent or mixed effluent becomes diluted when it undergoes a process to make it less concentrated by adding water or other liquids from external sources other than liquids or materials used for treating the industrial effluent or mixed effluent.

20. Spill, accidental discharge or leakage of industrial effluent or mixed effluent

(1) In the event of the occurrence of any spill, accidental discharge or leakage of any industrial effluent or mixed effluent which either directly or indirectly gains or may gain access onto or into any soil, or into any inland waters or Malaysian waters, the owner or occupier of the

premises shall immediately and not more than six hours from the time of the occurrence inform the Director General of the occurrence.

(2) An owner or occupier of the premises shall, to every reasonable extent, contain, cleanse or abate the spill, accidental discharge or leakage or recover the industrial effluent or mixed effluent discharged in a manner that satisfies the Director General.

(3) The Director General may in any particular case, if he considers it necessary to do so, specify the manner in which the spill, accidental discharge or leakage is to be contained, cleansed or abated and the owner or occupier of the premises shall comply with such specification.

(4) The Director General shall determine any damage caused by any spill, accidental discharge or leakage and may recover all costs and expenses from the owner or occupier of the premises.

(5) Where the Director General undertakes to cleanse or abate the spill, accidental discharge or leakage, he shall determine the full costs and expenses incurred and may recover such costs and expenses from the owner or occupier of the premises in accordance with the provisions of section 47 of the Act.

21. Prohibition against discharge of industrial effluent or mixed effluent containing certain substances

No person shall discharge or cause or permit the discharge of any industrial effluent or mixed effluent containing any of the following substances onto or into any soil, or into any inland waters or Malaysian waters:

(a) any inflammable solvent;

(b) any tar or other liquids immiscible with water;

(c) sawdust or wood waste; or

(d) sludges.

22. Making changes that alter quality of industrial effluent or mixed effluent

(1) The holder of a licence shall not make, or cause or permit to be made, any changes to the premises or in the manner of running, using, maintaining or operating the premises or in any operation or process carried out at the premises, which cause, or is intended or is likely to cause, a material increase in the quantity or quality of industrial effluent or mixed effluent, or both discharged from the premises, unless prior written permission of the Director General has been obtained for the change.

(2) For the purpose of subregulation (1), changes to licensed premises include:-

(a) any change in the construction, structure or arrangement of the premises or any building serving the premises;

(b) any change in the construction, structure, arrangement, alignment, direction or condition of any channeling device, system, or facility serving the premises; and

(c) any change of, to, or in any plant, machine or equipment used or installed at the premises.

23. Restriction on discharge or disposal of sludge

(1) No person shall discharge, or cause or permit the discharge or disposal of any sludge generated from any production or manufacturing process, any industrial effluent treatment system or water treatment plant onto or into any soil, or surface of any land, or into any inland waters or Malaysian waters without the prior written permission of the Director General.

(2) In this regulation, "water treatment plant" means any facility used or constructed for the treatment of water for domestic or industrial purpose.

24. Reporting changes in information furnished for purpose of application of licence

An applicant for a licence or for the renewal or transfer of such licence shall, within seven days of the occurrence of any material change in any information furnished in his application or furnished in writing pursuant to a request by the Director General under subsection 11(2) of the Act, give the Director General a report in writing of the change.

25. Display of licence

The holder of a licence shall display his licence, together with every document forming part of the licence, in a conspicuous place in the principal building of the premises.

26. Continuance of existing conditions and restrictions in case of change in occupancy

Where a person becomes the occupier of any licensed premises in succession to another person who holds an unexpired licence in respect of such premises, then:-

(a) for a period of fourteen days after the change in occupancy; or

(b) where the new occupier applies within the period specified in paragraph (a) for the transfer of the licence to him, for the period from the change in occupancy until the final determination of his application, the conditions and restrictions of the licence shall be binding on the new occupier and shall be observed by him, notwithstanding that he is not yet the holder of the licence or that the licence may, during the period as specified in paragraph (a) or (b), as the case may be, have expired.

27. Maintenance of record

(1) An owner or occupier of a premises equipped with the industrial effluent treatment system shall maintain records of the manufacturing processes, operation, maintenance and performance monitoring of the industrial effluent treatment system.

(2) The records under subregulation (1) shall be made available for inspection by the authorized officer.

28. Personnel training

An owner or occupier of a premises:-

(a) shall ensure that his or its employees attend training on environmental requirements and the best management practices in the operation and maintenance of industrial effluent treatment system before they begin work;

(b) shall ensure that the training for his or its employees include retraining on updates for new, revised and existing requirements and procedures; and

(c) shall maintain records of training which shall include the training date, name and position of employee, training provider and a brief description of the training content.

29. Owner or occupier to render assistance during inspection

An owner or occupier of a premises shall provide the Director General or any authorized officer every reasonable assistance and facility available at the premises, including labour, equipment, appliances and instruments that the Director General or authorized officer may require for the purpose of inspection.

30. Prohibition order

(1) In the event of any undesirable occurrence as listed in the Twelfth Schedule, the Director General may issue a prohibition order to an owner or the occupier of a premises prohibiting the further operation of an industrial plant or process absolutely or conditionally for such period as the Director General may direct or until remedial measures as directed by the Director General have been complied with.

(2) For the purpose of subregulation (1), a copy of the Director General's prohibition order shall be posted in a conspicuous place in the vicinity of the facility to which the said prohibition order refers and No person shall operate such industrial plant or process with effect from the date of the prohibition order until the prohibition order is withdrawn.

(3) Where a prohibition order has been issued to an owner or occupier of any premises prohibiting the further operation of an industrial plant or process, the Director General or any authorized officer shall render such industrial plant or process inoperative by any means as the Director General or authorized officer may determine.

31. Licence fee

(1) The fee for a licence shall be five hundred ringgit and an additional effluent-related licence fee computed in accordance with the method as specified in the Thirteenth Schedule.

(2) The fee for a licence and the additional effluent-related licence of five hundred ringgit shall accompany the application.

(3) If the Director General refuses to approve the application for a licence and the additional effluent-related licence, only the effluent-related licence fee shall be refunded.

(4) The fee for transfer of licence shall be one hundred ringgit.

32. Penalty

Any person who contravenes regulations 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27, 28, 29 and 30 shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding one hundred thousand ringgit or to a term of imprisonment for a period not exceeding five years or to both and to a further fine not exceeding one thousand ringgit a day for every day that the offence is continued after the notice by the Director General requiring him to cease the act as specified in the notice has been served upon him.

33. Revocation, transitional and savings provision

(1) The **Environmental Quality (Sewage and Industrial Effluents) Regulations 1979***[P.U. (A) 12/1979]* is revoked (hereinafter referred to as "the revoked Regulations").

(2) Any application made under this revoked Regulations for a licence to contravene the acceptable conditions, renewal or transfer of such licence, or written permission, which are pending immediately before the date of the coming into operation of these Regulations shall, after the date of the coming into operation of these Regulations, be dealt with under the revoked Regulations and for such purposes it shall be treated as if these Regulation have not been made.

(3) All licences issued and written permission granted under the revoked Regulations shall, after the date of the coming into operation of these Regulations, continue to remain in full force and effect until the licence expires, is amended, suspended or cancelled or the written permission expires or is revoked under the revoked Regulations and for such purposes it shall be treated as if these Regulation have not been made.

(4) The provisions of the revoked Regulations relating to the acceptable conditions for discharge of effluent shall continue to apply until twelve months after the date of the coming into operation of these Regulations where on the date of the coming into operation of these Regulations:-

(a) any work on any construction of any industrial effluent treatment system has not commenced within twelve months from date of the issuance of the written permission for its construction immediately before the date of the coming into operation of these Regulation;

(b) any work on any construction of any industrial effluent treatment system has commenced but has not been completed immediately before the date of the coming into operation of these Regulations; or

(c) any work on any construction of any industrial effluent treatment system has been completed but has not begun its operation before the date of the coming into operation of these Regulations.

(5) Where on the date of the coming into operation of these Regulations, any premises is discharging industrial effluent or mixed effluent into any inland waters which is not specified as a catchment area under the revoked Regulations immediately before the date of the coming into operation of these Regulations, the provisions of the revoked Regulations relating to acceptable conditions for discharge of effluent shall continue to apply to such effluent until twelve months after the date of the coming into operation of these Regulations.

(6) Any proceeding, whether civil or criminal, commenced under the revoked Regulations and are pending on the date of the coming into operation of these Regulations shall, on the date of the coming into operation of these Regulations, be continued and concluded under the revoked Regulations and for such purposes it shall be treated as if these Regulation have not been made.

FIRST SCHEDULE

(Regulation 3)

LIST OF PREMISES TO WHICH THESE REGULATIONS Do NOT APPLY

1. Processing of oil-palm fruit or oil-palm fresh fruit bunches into crude palm oil, whether as an intermediate or final product

2. Processing of natural rubber in technically specified form, latex form including prevulcanised or the form of modified and special purpose rubber, conventional sheet, skim, crepe or scrap rubber

3. Mining activities

4. Processing, manufacturing, washing or servicing of any other products or goods that produce industrial effluent or mixed effluent of less than 60 cubic meters per day

5. Processing, manufacturing, washing or servicing of any other products or goods that produce industrial effluent or mixed effluent of which does not contain oil and grease or those contaminants listed as parameters (v) to (xv) in the first column of the Fifth Schedule

6. Processing, manufacturing, washing or servicing of any other products or goods where the total load of biochemical oxygen demand (BOD5 at 20°C) or suspended solids or both, shall not exceed 6 kilogrammes per day (concentration of 100 milligrammes per litre)

SECOND SCHEDULE

[Subregulation 4(2)]

NOTIFICATION FOR NEW OR ALTERED SOURCES OF DISCHARGE OF INDUSTRIAL EFFLUENT OR MIXED EFFLUENT

Please tick in appropriate box

(i) New construction-Paragraph 4(1)(a) or (b) _____
(ii) Change of equipment or machinery-Paragraph 4(1)(c) _____
(iii) Upgrading of industrial effluent treatment system-Paragraph 4(1)(d) _____

A. IDENTIFICATION

1. (i) Name of owner or occupier :.....

(ii) Identification card number:.....

(iii) Address of owner or occupier: .....

(iv) Telephone number.:..... Fax number:.....

2. (i) Name of company:.....

(ii) Company registration number:.....

(Please attach certificate of registration of company)

(iii) Address of company:.....

(iv) Telephone number:.....Fax number:.....

3. (i) Name of premises:.....

(ii) Address of premises:.....

(iii) Telephone number:..... Fax number:.....

(v) Latitude:..... degree..... minutes:..... second:.....

Longitude:..... degree..... minutes:..... second:.....

B. OPERATIONAL INFORMATION

4. Proposed commencement date of construction of premises or upgrading work:.....

.....

5. Proposed date of occupation/use of premises or the date of the premises has been occupied/used or completion of upgrading work:.....

6. If the notification is to increase the capacity of industrial effluent treatment system, please state the reason:

.....

7. Schedule of operation

(i) Number of shifts per day:..... average:..... maximum:.....

(ii) Hour of operation:..... average:..... maximum:.....

(iii) Number of operating days:..... per week:..... per month:..... per year:.....

8. List of raw materials/chemicals *

Item/Name	**Unit of quantity**	**Quantity per month**
_____	_____	_____
_____	_____	_____

9. List of products *

Item/Name	Unit of quantity	Quantity per month
_____	_____	_____
_____	_____	_____

10. Describe in detail the production processes and attach relevant flow diagrams:

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.....

*(Please use attachment if necessary)

11. Has cleaner production concept been considered in the proposal? Please give details:

.....

.....

C. INFORMATION ON WATER SUPPLY AND CONSUMPTION

12.

	Water use	Source	Average quantity, m3per day
(i)	Potable water	_____	_____
(ii)	Process water	_____	_____
(iii)	Boiler feed water	_____	_____
(iv)	Cooling water	_____	_____
(v)	Others	_____	_____

13. Is the water treated before use? Yes _____ No _____

(Please tick (v) in appropriate box)

14. If yes, please describe the method of managing the sludge generated*:

.....

*(Please use attachment if necessary)

D. INFORMATION ON INDUSTRIAL EFFLUENT TREATMENT SYSTEM AND EFFLUENT DISPOSAL

15. Submit the following information*:

(i) Production process flow chart showing points of industrial effluent or mixed effluent generation and flow rate;

(ii) (a) Industrial Effluent Characterization Study (IECS) Report based on the Guidelines on Industrial Effluent Characterization Study or information from secondary sources; and (b) in the case of notification to upgrade the capacity of treatment system, IECS report shall include overall assessment of the causes contributing to the failure of the existing treatment system to comply with the discharge standard;

(iii) Description of the industrial effluent treatment technologies proposed;

(iv) Design basis and calculations of proposed industrial effluent treatment system;

(v) Calculation and summary of mass balance and block diagram showing the efficiency of unit operations and unit processes for every treated parameter;

(vi) Detailed engineering drawings of treatment system (layout, cross section, plan view and side view) including process and instrumentation (P&I) diagram and drainage system layout certified by a professional engineer preferably in the discipline of Environmental Engineering, Chemical Engineering or Civil Engineering with experience in the treatment of industrial effluents or mixed effluent;

(vii) #Factory layout plan showing final industrial effluent or mixed effluent discharge point marked 'X';

(viii) List of major equipment of industrial effluent treatment system including list of spare parts or stand by equipment such as pump, pH meter etc. Document or catalogue of relevant equipment should be submitted;

(ix) Proposed measures or plans to ensure continuous compliance including period involving maintenance work taking into consideration the requirements at the design and operational stages;

(x) Proposed implementation schedule for the construction of industrial effluent treatment system;

(xi) Performance guarantee for the industrial effluent treatment system; and

(xii) Consultant/contractor's appointment letter from the premises.

(All plans shall be in A1 size)

16. Industrial effluent or mixed effluent discharge

(i) Watercourse:_____

Type of watercourse
River or stream:_____ Pond:_____ Lake:_____
Sea:_____ Spring:_____ Well:_____
Name of the watercourse:_____
Specify if other than the above*:_____
(ii) Sewer:_____
Name and address of Authority:_____
Name and address of the sewage treatment plant:_____
(iii) Recycle or reuse:_____
Percentage of process water recycled:_____
(iv) Others:_____ specify:_____
*(Please use attachment if necessary)

17. Mode and characteristic of effluent discharged

(i) Mode of industrial effluent or mixed effluent discharged

(a) Batch discharge _____

Discharge frequency: _____ times per day
_____ times per week
_____ times per month

Discharge quantity: _____ m3 per day
_____ m3 per week
_____ m3 per month

Time of discharge: _____

(b) Continuous discharge _____

Quantity of continuous effluent discharge

Average quantity/maximum quantity

m3per hour:_____/_____ m3per day:_____/_____

m3per month:_____/_____ m3per year:_____/_____

(ii) Quality of effluent discharged:

Parameter (in mg/L, unless otherwise specified)	**Raw Effluent****	**Treated Effluent**
(1) Temperature ºC	_____	_____
(2) pH value	_____	_____
(3) BOD at 200ºC	_____	_____
(4) COD	_____	_____
(5) Suspended solids	_____	_____
(6) Mercury	_____	_____
(7) Cadmium	_____	_____
(8) Chromium, Hexavalent	_____	_____
(9) Arsenic	_____	_____
(10) Cyanide	_____	_____
(11) Lead	_____	_____
(12) Chromium, Trivalent	_____	_____
(13) Copper	_____	_____
(14) Manganese	_____	_____
(15) Nickel	_____	_____
(16) Tin	_____	_____
(17) Zinc	_____	_____
(18) Boron	_____	_____
(19) Iron	_____	_____
(20) Phenol	_____	_____
(21) Aluminium	_____	_____
(22) Barium	_____	_____
(23) Oil and Grease	_____	_____
(24) Cobalt	_____	_____
(25) Silver	_____	_____

(26) Fluoride (as F)	_____	_____
(27) Formaldehyde	_____	_____
(28) Molybdenum	_____	_____
(29) Chloride	_____	_____
(30) Chlorine (Free)	_____	_____
(31) Selenium	_____	_____
(32) Sulphide	_____	_____
(33) Sulphate	_____	_____
(34) Colour	_____	_____
(35) Ammoniacal Nitrogen	_____	_____
(36) Nitrate Nitrogen	_____	_____
(37) Phosphate (as P)	_____	_____
(38) Detergents, Anionic	_____	_____
(39) Beryllium	_____	_____
(40) Vanadium	_____	_____
(41) Polychlorinated Biphenyls	_____	_____

(42) Pesticides, fungicides, herbicides, insecticides, rodenticides, fumigants or any other biocides or any other chlorinated hydrocarbons

_____ _____

(43) Any substance that either by itself or in combination or by reaction with other waste may give rise to any gas, fume or odour or substance which causes or is likely to cause pollution

_____ _____

** Information obtained from Industrial Effluent Characterization Study (IECS) as per item 15(ii)

18. State whether any inflammable solvents, tar or other liquids immiscible with water are used or generated in the production processes:

.....

E. SLUDGE PRODUCTION AND DISPOSAL

19. Sludge generated from the production and industrial effluent treatment unit operations and unit processes:

Types of sludge (chemical/biological)	Source	Average quantity metric tons per day
_____	_____	_____
_____	_____	_____

20. Describe the proposed method of sludge storage or disposal:

.....

.....

F. PERFORMANCE MONITORING PROGRAMME FOR INDUSTRIAL EFFLUENT TREATMENT SYSTEM

21. Describe using additional attachment the detailed proposal on performance monitoring programme for each major unit process and unit operation including information on equipment, competent person, frequency, location, parameter, normal range of values of operational parameters and implementation method.

G. DECLARATION

I, ...***the owner or occupier, or authorized agent of the owner or occupier hereby declare that all the information given in this application is to the best of my knowledge and belief true and correct.

Date:_____ Signature of owner or occupier or authorized agent *** :_____

Telephone number:_____ Full name:_____

Fax number:_____ Identity card number:_____

Official seal or stamp of the company:_____ Designation:_____

***Delete whichever is not applicable

THIRD SCHEDULE

[Subregulation 5(3)]

WRITTEN DECLARATION ON DESIGN AND CONSTRUCTION OF INDUSTRIAL EFFLUENT TREATMENT SYSTEM

Name of premises:.....

Address of premises:.....

File number of Department of Environment (if applicable):.....

Telephone number:..... Fax number:.....

We, the undersigned hereby declare that the industrial effluent treatment system has been designed and constructed in strict compliance with the minimum requirements and specifications

as specified in the Guidance Document on the Design and Operation of Industrial Effluent Treatment Systems issued by the Department of Environment.

_____

(Signature of the owner or occupier of a premises)

Date:_____
Identity card number:_____

_____

(Signature of the Engineer responsible for the treatment process design)

Date:_____
Identity card number:_____
* Discipline: chemical/environmental/ others (please specify):_____
B.E.M. registration number:_____

_____

(Signature of the Engineer responsible for the structural design)

Date:_____
Identity card number:
Discipline: civil
B.E.M. registration number:_____

_____

(Signature of the Engineer responsible for the design of mechanical components)

Date:_____
Identity card number:_____
Discipline: mechanical
B.E.M. registration number:_____

_____

(Signature of the Engineer responsible for the design of electrical and electronic components)

Date:_____
Identity card number:_____
Discipline: electrical
B.E.M. registration number:_____
Note: BEM stands for Board of Engineers, Malaysia
* Delete whichever is not applicable

FOURTH SCHEDULE

[Subregulation 16(2)]

METHODS OF ANALYSIS OF INDUSTRIAL EFFLUENT OR MIXED EFFLUENT

1. The 21st edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation of the United States of America; or

2. "Code of Federal Regulations, Title 40, Chapter 1, Subchapter D, part 136" published by the Office of the Federal Register, National Archives and Records Administration, United States of America.

FIFTH SCHEDULE

[Paragraph 11(1)(a)]

ACCEPTABLE CONDITIONS FOR DISCHARGE OF INDUSTRIAL EFFLUENT OR MIXED EFFLUENT OF STANDARDS A AND B

	Parameter	Unit	Standard	
			A	B
	(1)	(2)	(3)	(4)
(i)	Temperature	°C	40	40
(ii)	pH Value	-	6.0-9.0	5.5-9.0
(iii)	BOD at 20°C	mg/L	20	50
(iv)	Suspended Solids	mg/L	50	100
(v)	Mercury	mg/L	0.005	0.05
(vi)	Cadmium	mg/L	0.01	0.02
(vii)	Chromium, Hexavalent	mg/L	0.05	0.05
(viii)	Chromium, Trivalent	mg/L	0.20	1.0
(ix)	Arsenic	mg/L	0.05	0.10
(x)	Cyanide	mg/L	0.05	0.10
(xi)	Lead	mg/L	0.10	0.5
(xii)	Copper	mg/L	0.20	1.0
(xiii)	Manganese	mg/L	0.20	1.0
(xiv)	Nickel	mg/L	0.20	1.0
(xv)	Tin	mg/L	0.20	1.0
(xvi)	Zinc	mg/L	2.0	2.0
(xvii)	Boron	mg/L	1.0	4.0
(xviii)	Iron (Fe)	mg/L	1.0	5.0
(xix)	Silver	mg/L	0.1	1.0
(xx)	Aluminium	mg/L	10	15
(xxi)	Selenium	mg/L	0.02	0.5
(xxii)	Barium	mg/L	1.0	2.0
(xxiii)	Fluoride	mg/L	2.0	5.0
(xxiv)	Formaldehyde	mg/L	1.0	2.0
(xxv)	Phenol	mg/L	0.001	1.0
(xxvi)	Free Chlorine	mg/L	1.0	2.0
(xxvii)	Sulphide	mg/L	0.50	0.50
(xxviii)	Oil and Grease	mg/L	1.0	10
(xxix)	Ammoniacal Nitrogen	mg/L	10	20
(xxx)	Colour	ADMI*	100	200

*ADMI-American Dye Manufacturers Institute

SIXTH SCHEDULE

[Paragraph 11(1)(a), Regulations 12 and 13]

LIST OF CATCHMENT AREAS WHERE STANDARD A APPLIES

1. The catchment areas referred to in these Regulations shall be the areas upstream of surface or above subsurface water supply intakes, for the purpose of human consumption including drinking water.

2. For the purpose of these Regulations, the water supply intake points shall include the public water supply intakes specified below:

(1) The State of Johor

Location of Water Intake		Name of River/Reservoir/Well	Water Supply Scheme
(1)		(2)	(3)
Longitude (East)	Latitude (North)		
102° 40' 12"	2° 39' 29"	Sg. Muar	Segamat
102° 55' 37"	2° 32' 57"	Sg. Segamat	Segamat
102° 03' 10"	2° 28' 02"	Sg. Jauseh	Segamat
102° 03' 10"	2° 28' 02"	Sg. Jauseh	Segamat
102° 39' 57"	2° 25' 29"	Sg. Jementah	Segamat
102° 49' 55"	2° 21' 01"	Sg. Muar	Muar
102° 47' 11"	2° 18' 11"	Sg. Muar	Muar
102° 48' 40"	2° 14' 59"	Sg. Muar	Muar
102° 44' 58"	2° 12' 04"	Sg. Muar	Muar
102° 44' 03"	2° 10' 49"	Sg. Muar	Muar
103° 05' 03"	1° 53' 09"	Sg. Sembrong/Sg. Bekok Transf	Batu Pahat
103° 32' 24"	2° 12' 03"	Sg. Kahang	Kluang
103° 26' 55"	2° 05' 27"	Sg. Kahang	Kluang
103° 40' 14"	2° 35' 15"	Labong Dam	Mersing
103° 47' 31"	2° 30' 22"	Conggok Dam	Mersing
103° 39' 22"	2° 23' 13"	Sg. Lenggor	Mersing

103° 54' 07"	2° 02' 11"	Sg. Sedili Besar	Mersing
103° 51' 16"	2° 16' 27"	Bekas Lombong	Mersing
104° 02' 52"	1° 53' 38"	Sg. Gembut	Kota Tinggi
103° 49' 50"	1° 49' 52"	Sg. Pelepah	Kota Tinggi
103° 43' 19"	1° 48' 01"	Sg. Linggiu	Kota Tinggi
103° 40' 05"	1° 48' 14"	Sg. Sayong	Kota Tinggi
103° 40' 05"	1° 48' 14"	Sg. Sayong	Kota Tinggi
103° 35' 28"	1° 51' 28"	Sg. Penggeli	Kota Tinggi
104° 08' 08"	1° 44' 39"	Sg. Sedili Kecil	Kota Tinggi
104° 12' 13"	1° 32' 30"	Lebam Dam	Kota Tinggi
103° 46' 58"	1° 44' 47"	Sg. Johor	Kota Tinggi
103° 27' 09"	1° 43' 12"	Sg. Pontian Besar	Johor Bahru
103° 54' 43"	1° 33' 22"	Layang Dam	Johor Bahru
103° 50' 14"	1° 44' 07"	Sg. Johor	Johor Bahru
103° 21' 54"	2° 03' 35"	Sg. Sembrong	Kluang
103° 11' 01"	1° 58' 23"	Sembrong Dam	Kluang
103° 17' 47"	1° 49' 33"	Sg. Benut	Kluang
103° 03' 10"	2° 00' 57"	Sg. Bekok Transf	Batu Pahat
104° 03' 12"	2° 00' 54"	Sg. Bekok Transf	Batu Pahat
103° 05' 57"	1° 52' 33"	Sg. Sembrong	Batu Pahat
102° 44' 03"	2° 10' 49"	Sg. Muar	Muar
102° 44' 05"	2° 10' 48"	Sg. Muar	Muar
102° 44' 05"	2° 10' 48"	Sg. Muar	Muar
102° 34' 56"	2° 19' 37"	Ledang Dam	Muar
102° 50' 09"	2° 31' 07"	Sg. Segamat	Segamat
102° 50' 17"	2° 31' 12"	Sg. Segamat	Segamat
102° 49' 59"	2° 30' 55"	Sg. Segamat	Segamat
103° 03' 11"	2° 28' 01"	Sg. Jauseh	Segamat
103° 52' 24"	1° 44' 42"	Sg. Johor	PUB Singapura
103° 39' 40"	1° 33' 30"	Sg. Skudai	PUB Singapura
103° 34' 14"	1° 32' 30"	Pulai Dam	PUB Singapura
103° 44' 24"	1° 33' 00"	Sg. Tebrau	PUB Singapura

(2) The State of Pahang

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
102° 27' 00"	3° 41' 00"	Sg. Pahang	Batu Sawar

102° 37' 00"	3° 26' 00"	Sg. Pahang	Bukit Kertau
102° 36' 00"	3° 30' 00"	Sg. Pahang	Chenor
102° 39' 00"	3° 44' 45"	Sg. Jempol	Ulu Jempol
102° 40' 00"	3° 41' 00"	Sg. Jempol	Jengka 3-7
102° 51' 00"	3° 38' 00"	Sg. Liut	Kg. New Zealand
102° 39' 00"	3° 40' 00"	Sg. Jempol	Simpang Jengka
102° 40' 00"	3° 47' 00"	Sg. Jerik	Sg. Jerik Pump House
102° 56' 00"	3° 20' 00"	Sg. Mentiga	Cini
192° 59' 00"	2° 56' 00"	Sg. Keratung	Paluh Rumbeh
102° 32' 48"	3° 07' 63"	Sg. Aur	Aur
102° 51' 27"	2° 50' 51"	Sg. Keratung	Keratung
103° 23' 00"	3° 30' 15"	Sg. Pahang	Kg. Mengkasar
103° 10' 00"	3° 33' 00"	Sg. Pahang	Lepar/Pulau Manis
103° 26' 00"	3° 08' 00"	Ground Water	Nenasi
103° 23' 30"	3° 30' 54"	Sg. Pahang	Peramu
103° 19' 00"	3° 35' 00"	Sg. Pahang	Sekor
101° 53' 00"	3° 41' 00"	Sg. Bilut	Bilut
101° 45' 00"	3° 44' 00"	Sg. Hijau	Bukit Fraser Pump House
101° 49' 00"	3° 56' 00"	Sg. Cheroh	Cheroh
101° 58' 00"	3° 55' 00"	Sg. Keloi	Dong
101° 49' 00"	4° 19' 00"	Sg. Jelai	Kuala Medang Pump House
102° 01' 00"	3° 42' 00"	Sg. Pertang	Lembah Klau

101° 51' 30"	3° 45' 24"	Sg. Bilut	Raub
101° 59' 00"	3° 44' 30"	Sg. Chalit	Sg. Chalit Pump House
102° 00' 00"	3° 46' 00"	Sg. Kelau	Sg. Klau
101° 48' 30"	3° 44' 00"	Sg. Teras	Teras
101° 47' 45"	4° 12' 30"	Sg. Koyan	Sg. Koyan Pump House
103° 29' 36"	3° 48' 24"	Ground Water	Rompin
103° 26' 35"	2° 37' 15"	Empangan Sg. Anak Endau	Loji Air Seladang
102° 10' 30"	3° 31' 00"	Sg. Semantan	Bukit Damar
102° 18' 00"	3° 18' 00"	Sg. Teriang	Bukit Mendi
102° 30' 00"	2° 18' 00"	Sg. Bera	Bera
102° 33' 00"	3° 24' 00"	Sg. Pahang	Charuk Puting
102° 22' 00"	2° 45' 00"	Sg. Kerau	Jenderak Utara
102° 26' 00"	2° 30' 00"	Sg. Pahang	Lubuk Kawah
102° 23' 00"	3° 31' 00"	Sg. Semantan	Mentakab
101° 24' 30"	3° 14' 30"	Sg. Teriang	Triang (Baru)
101° 55' 00"	3° 29' 00"	Sg. Benus	Bt. 4, Jln KL/ Bentong
101° 53' 00"	3° 20' 00"	Sg. Benus	Janda Baik
102° 03' 00"	3° 26' 00"	Sg. Temelong	Karak
101° 53' 00"	3° 41' 00"	Sg. Bilut	Lurah Bilut
102° 07' 10"	3° 15' 20"	Sg. Gapoi	Sg. Gapoi
101° 54' 00"	3° 39' 00"	Sg. Penjuring	Sg. Penjuring
102° 00' 30"	3° 33' 00"	Sg. Kelau	Sg. Sertik

101° 23' 30"	4° 31' 20"	Sg. Bertam	Brinchang
101° 25' 00"	4° 34' 00"	Sg. Perlong	Kuala Terla
101° 21' 00"	4° 27' 00"	Sg. Jasin	Lubok Tamang
101° 24' 10"	4° 24' 35"	Sg. Bertam	Takong Empangan Bertam Valley
101° 23' 50"	4° 26' 20"	Sg. Luchut	Takong Empangan Habu
101° 24' 20"	3° 34' 40"	Sg. Ikan	Takong Empangan Kg. Raja
101° 21' 40"	4° 24' 20"	Sg. Ringlet	Takong Empangan Ringlet
101° 25' 3"	4° 30' 02"	Sg. Triangkap	Takong Empangan Tringkap
102° 11' 00"	4° 00' 00"	Sg. Cheka	Batu Balai
102° 21' 42"	3° 57' 30"	Sg. Pahang	Batu Embun
102° 28' 00"	3° 53' 00"	Sg. Tekam	Jengka 8-15
102° 19' 00"	4° 03' 00"	Sg. Retang	Padang Piol
102° 31' 48"	3° 52' 00"	Sg. Tekam	Sg. Tekam
102° 33' 42"	3° 50' 00"	Sg. Tekam	Sg. Tekam Utara
102° 16' 00"	4° 05' 00"	Sg. Jelai	Mela
102° 11' 00"	4° 12' 00"	Sg. Jelai	Bt. 9 Halt
101° 58' 00"	4° 02' 00"	Sg. Lipis	Benta
101° 59' 00"	4° 14' 25"	Sg. Jelai	Bukit Betong
102° 02' 10"	4° 10' 20"	Sg. Lipis	Kuala Lipis
102° 01' 00"	4° 38' 00"	Sg. Merapoh	Merapoh Pump House
102° 06' 00"	4° 19' 00"	Sg. Temau	Sg. Temau Pump House
103° 22' 00"	3° 51' 00"	Sg. Jabor	Alor Batu Pump House

103° 21' 00"	4° 01' 00"	Sg. Ular	Baru Sg. Ular
103° 12' 00"	3° 53' 00"	Sg. Riau	Bukit Goh
103° 15' 34"	3° 49' 42"	Sg. Kuantan	Bukit Ubi/Kg. Kobat
103° 15' 00"	3° 15' 00"	Sg. Kuantan	Kg. Padang
103° 6' 00"	3° 33' 00"	Sg. Lepar	Lepar Hilir
103° 12' 00"	3° 53' 00"	Sg. Kuantan	Pasir Kemudi
103° 13' 00"	3° 53' 00"	Sg. Berkelah	Paya Bungor
103° 21' 00"	3° 50' 00"	Sg. Kuantan	Semambu
103° 02' 00"	3° 56" 0"	Sg. Kuantan	Sg. Lembing

(3) The State of Kelantan

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
102° 14' 40"	6° 06' 50"	Kg. Puteh Wellfield	Kampong Puteh
102° 16' 40"	6° 05' 20"	Kubang Kerian Wellfield	Kubang Kerian
102° 17' 40"	6° 09' 40"	Pengkalan Chepa Wellfield	Pengkalan Chepa
102° 14' 15"	6° 05' 50"	Pintu Geng Wellfield	Pintu Geng
102° 16' 15"	6° 08' 30"	Tg Mas Wellfield	Tanjung Mas
102° 16' 44"	6° 05' 18"	Kubang Kerian Wellfield	Chicha
102° 15' 57"	6° 03' 53"	Kg. Seribong Wellfield	Chicha
102° 15' 03"	6° 04' 41"	Kg. Chicha Wellfield	Chicha
102° 15' 38"	6° 05' 12"	Kg. Pasir Hor Wellfield	Chicha
102° 16' 48"	6° 04' 01"	Kg. Pasir Tumboh Wellfield	Chicha
102° 15' 44"	6° 04' 29"	Kg. Pdg. Penyadat Wellfield	Chicha
102° 17' 08"	6° 05' 38"	Kg. Kenali Wellfield	Chicha
102° 05' 20"	6° 12' 30"	Wakaf Bharu Wellfield	Wakaf Bharu
102° 10' 20"	6° 10' 00"	Wakaf Bharu Wellfield	Wakaf Bharu
102° 11' 50"	6° 07' 00"	Kg. Sedar Wellfield	Kg. Sedar
102° 09' 23"	6° 02' 50"	Sg. Kelantan	Kelar
101° 58' 00"	6° 01' 10"	Rantau Panjang Wellfield	Rantau Panjang
102° 08' 31"	6° 02' 15"	Sg. Kelantan	Lemal

102° 20' 40"	6° 02' 30"	Kg. Chap Wellfield	Kg. Chap
102° 23' 10"	5° 00' 50"	Kg. Chap Wellfield	Kg. Chap
102° 24' 00"	6° 02' 50"	Jelawat Wellfield	Jelawat
102° 24' 50"	5° 49' 45"	Sg. Rasau	Wakaf Bunut
102° 13' 08"	5° 31' 17"	Sg. Kelantan	Tualang
102° 13' 40"	5° 28' 20"	Sg. Lebir	Pahi
102° 12' 20"	5° 29' 30"	Sg. Lebir	Manik Urai
102° 08' 40"	5° 41' 50"	Sg. Kelantan	Kg. Bandar Kemubu
102° 05' 45"	5° 55' 50"	Sg. Muring	Kemahang
102° 09' 20"	5° 47' 20"	Sg. Kelantan	Bukit Remah
102° 05' 45"	5° 55' 50"	Sg. Jegor	Bendang Nyior
101° 58' 30"	5° 50' 00"	Sg. Jedok	Batu Gajah
102° 05' 30"	5° 41' 00"	Sg. Kerila	Kuala Tiga
101° 53' 25"	5° 46' 40"	Sg. Lanas	Air Lanas
101° 50' 30"	5° 42' 00"	Sg. Pergau	Jeli
101° 50' 10"	5° 29' 20"	Sg. Terang	Kuala Balah
102° 00' 00"	5° 18' 20"	Sg. Stong	Stong
102° 04' 14"	5° 04' 50"	Sg. Galas	Limau Kasturi
102° 18' 29"	4° 57' 40"	Sg. Lebir	Aring
102° 02' 39"	5° 08' 50"	Sg. Nenggiri	Bertam Baru
102° 10' 36"	4° 53' 56"	Sg. Ciku	Ciku
101° 59' 07"	4° 50' 35"	Sg. Ketil	Sg. Ketil
101° 47' 25"	4° 54' 01"	Sg. Betis	Panggung Lalat

(4) The State of Perlis

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
100° 09' 14"	6° 20' 11"	Anak Sungai	Terusan Arau
100° 16' 15"	6° 25' 15"	Telaga Gerek/Mada Canal	Arau
100° 19' 00"	6° 31' 25"	Telaga Gerek	Felda Chuping
100° 12' 00"	6° 42' 30"	Sungai Rasa	Wang Kelian
100° 12' 00"	6° 34' 00"	Empangan Timah Tasoh	Timah Tasoh
100° 14' 30"	6° 33' 15"	Telaga Gerek	Semadong

(5) The State of Kedah

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**

Longitude (East)	Latitude (North)		
100° 25' 48.3"	6° 12' 20.5"	Ter. MADA Utara	Alor Star
100° 27' 34.8"	6° 13' 11.9"	Sg. Padang Terap	Jitra
100° 36' 56.0"	6° 14' 48.0"	Kuala Nerang	Kuala Nerang
100° 41' 18.0"	6° 20' 27.5"	Sg. Ahning	Padang Sanai
100° 45' 10.5"	6° 03' 16.3"	Sg. Muda	Nami
100° 29' 2.47"	5° 55' 29.1"	Ter. MADA Selatan	Bukit Jenun
100° 43' 53.8"	6° 00' 05.8"	Sg. Muda	Lubuk Merbau
100° 26' 6.2"	6° 23' 48.0"	Sg. Temin	Changloon
100° 38' 43.4"	5° 54' 26.2"	Sg. Muda	Jeneri
100° 29' 47.3"	5° 34' 13.8"	Sg. Muda	Pinang Tunggal
100° 29' 59.6"	5° 34' 13.8"	Sg. Muda	Pinang Tunggal
100° 37' 13.8"	5° 49' 26.8"	Sg. Muda	Jeniang
100° 26' 28.3"	5° 46' 04.7"	Gunung Jerai	Tupah
100° 24' 54.1"	5° 44' 36.6"	Gunung Jerai	Merbok
100° 41' 37.8"	5° 47' 40.0"	Sg. Chepir	Sik
100° 30' 24.5"	5° 34' 15.6"	Sg. Muda	Kulim Hi- Tech
100° 30' 24.5"	5° 34' 15.6"	Sg. Muda	Bukit Selambau
100° 29' 47.3"	5° 39' 39.7"	Sg. Ketil	Baling
100° 29' 59.6"	5° 40' 23.0"	Gunung Inas	Baling
100° 37' 13.8"	5° 40' 52.4"	Gunung Inas	Baling
100° 26' 28.3"	5° 36' 30.6"	Kuala Ketil	Kuala Ketil
100° 24' 54.1"	5° 43' 24.8"	Sg. Muda	Teloi Kanan
100° 29' 47.3"	5° 19' 40.7"	Sg. Kerian	Mahang
100° 29' 59.6"	5° 28' 57.0"	Sg. Sedim	Bikan
100° 37' 13.8"	5° 21' 50.5"	Sg. Kulim	Sg. Ular
100° 26' 28.3"	5° 08' 18.0"	Sg. Krian	Lubuk Buntar
100° 29' 47.3"	6° 22' 45.8"	Sg. Raga	Langkawi
100° 29' 59.6"	6° 22' 47.3"	Sg. Melaka	Langkawi
100° 37' 13.8"	6° 21' 09.4"	Empangan Malut	Langkawi
100° 26' 28.3"	6° 15' 16.5"	Sg. Teluk Bujur	Pulau Tuba
100° 24' 54.1"	6° 20' 24.3"	Ter. MADA, Arau	Langkawi
100° 11' 10"	6° 20' 26"	Mada Canal (Arau Canal)	Sg. Baru

(6) The State of Perak

Location of Water Intake (1)		Name of River/Reservoir/Well (2)	Water Supply Scheme (3)
Longitude (East)	Latitude (North)		
100° 55' 15"	4° 56' 25"	Sg. Biong	Sauk
100° 57' 04"	4° 48' 04"	Sg. Perak	Kota Lama Kiri

100° 51' 33"	4° 45' 04"	Sg. Kangsar	Padang Rengas
100° 51' 23"	4° 36' 17"	Sg. Guar	Manong
101° 04' 33"	4° 49' 21"	Sg. Kerbau	Sg. Siput
101° 04' 10"	4° 47' 42"	Sg. Bemban	Sg. Siput
101° 04' 19"	4° 59' 00"	Sg. Kucha	Felda Lasah
101° 10' 45"	4° 54' 40"	Sg. Kerbau	Perlop I
101° 01' 09"	5° 42' 36"	Sg. Kuak	Pengkalan Hulu
101° 00' 20"	5° 45' 33"	Sg. Semangga	Pengkalan Hulu
101° 04' 11"	5° 42' 00"	Sg. Kuak	Lepang Nenering
101° 01' 02"	5° 38' 08"	Sg. Kajang	Klian Intan
101° 08' 03"	5° 31' 51"	Sg. Berok	Kg. Jong
101° 21' 02"	5° 33' 10"	Sg. Perak - Tasek Temenggor	Pulau Banding
101° 12' 43"	5° 25' 48"	Sg. Perak - Tasek Bersia	Grik V
101° 09' 45"	5° 21' 40"	Sg. Perak	Air Ganda
101° 03' 11"	5° 18' 55"	Sg. Pulau	Lawin Kinayat
101° 00' 41"	5° 11' 43"	Sg. Ibol	Sumpitan
100° 57' 38"	5° 06' 55"	Sg. Lenggong	Lenggong
100° 28' 38"	5° 03' 54"	Terusan Besar	Jalan Baru
100° 39' 06"	4° 57' 38"	Terusan Selinsing	Gunung Semanggol
100° 46' 15"	4° 52' 45"	Sg. Ranting	Taiping Headworks
100° 46' 15"	4° 52' 53"	Sg. Anak Ranting	Taiping Headworks
100° 46' 29"	4° 50' 39"	Sg. Batu Teguh	Taiping Headworks
100° 46' 16"	4° 50' 06"	Sg. Tupai	Taiping Headworks
100° 45' 53"	4° 52' 05"	Sg. Air Terjun	Taiping Headworks
100° 49' 23"	5° 14' 47"	Sg. Seputeh	Sungai Bayor
100° 51' 25"	5° 15' 40"	Sg. Selama	Selama
100° 52' 30"	5° 09' 10"	Sg. Klian Gunung	Kelian Gunung
100° 50' 30"	5° 00' 55"	Sg. Air Hitam	Jelai
100° 49' 58"	4° 54' 27"	Sg. Kurau	Batu Kurau
100° 45' 25"	4° 41' 27"	Sg. Terong	Terong
100° 42' 56"	4° 37' 48"	Sg. Wang	Air Terjun
100° 46' 07"	4° 37' 38"	Sg. Nyior	Air Terjun
100° 46' 10"	4° 36' 32"	Sg. Pulai	Air Terjun
100° 46' 13"	4° 48' 47"	Sg. Larut	Air Kuning
100° 44' 45"	4° 48' 41"	Sg. Buluh	Air Kuning
101° 09' 41"	4° 22' 02"	Sg. Kampar	Sg. Kampar
101° 10' 38"	4° 21' 24"	Sg. Palai	Sg. Palai
101° 02' 42"	4° 37' 45"	Sg. Tapah	Sg. Tapah
100° 54' 57"	4° 29' 17"	Sg. Perak	Sultan Idris Shah II
101° 12' 03"	4° 40' 07"	Sg. Kinta	Ulu Kinta
100° 53' 00"	4° 19' 19"	Sg. Perak	Teluk Kepayang
100° 53' 00"	4° 24' 19"	Sg. Perak	Kg. Paloh
100° 54' 12"	4° 22' 40"	Sg. Perak	BB Seri Iskandar
100° 47' 00"	4° 31' 11"	Sg. Lichin	Beruas
100° 47' 07"	4° 32' 29"	Sg. Beruas	Beruas
100° 56' 11"	4° 11' 02"	Sg. Perak	Kampung Gajah

101° 19' 40"	4° 17' 25"	Sg. Btg. Padang	Bukit Temoh
101° 21' 45"	4° 13' 04"	Sg. Who	Bukit Temoh
101° 31' 48"	3° 47' 52"	Sg. Behrang	Sg. Dara
101° 16' 27"	3° 56' 38"	Sg. Sungkai	Felda Gunung Besout
101° 25' 39"	3° 57' 17"	Sg. Trolak	Trolak Selatan
101° 25' 39"	3° 57' 17"	Sg. Trolak	Trolak Timor
101° 24' 41"	4° 00' 54"	Sg. Tesong	Felda Sg. Klah
101° 30' 28"	3° 53' 30"	Sg. Gelinting	Tg. Malim (Proton City)

(7) The State of Penang

Location of WaterIntake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude	**Latitude**		
(East)	**(North)**		
100° 16' 10"	5° 24' 00"	Sg. Air Hitam	Pulau Pinang
100° 15' 56"	5° 24' 13"	Sg. Air Itam (Sg. Tepi)	Pulau Pinang for Kolam Air, Air Itam
100° 16' 58"	5° 26' 25"	Sg. Air Terjun	Pulau Pinang
100° 14' 41"	5° 26' 53"	Sg. Batu Ferringhi	Pulau Pinang
100° 14' 28"	5° 26' 51"	Sg. Batu Ferringhi	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 14' 20"	5° 27' 17"	Sg. Batu Ferringhi	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 14' 42"	5° 26' 52"	Sg. Batu Ferringhi	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 14' 45"	5° 26' 55"	Sg. Batu Ferringhi	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 14' 45"	5° 27' 12"	Sg. Batu Ferringhi	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 14' 45"	5° 27' 27"	Sg. Batu Ferringhi	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 17' 32"	5° 26' 04"	Highlands	Pulau Pinang
100° 17' 28"	5° 25' 02"	Highlands	Bekalan for Kolam Air, Air Terjun
100° 16' 23"	5° 27' 39"	Sg. Kecil	Pulau Pinang
100° 16' 18"	5° 27' 44"	Sg. Kecil	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu

			Ferringhi
100° 16' 37"	5° 27' 23"	Sg. Klean	Pulau Pinang
100° 15' 49"	5° 26' 23"	Talian Kuasa Sg. Klean	Pulau Pinang for Kolam Air Guilemard and Kolam Air Batu Ferringhi
100° 13' 33"	5° 24' 15"	Sg. Pinang Barat	Pulau Pinang
100° 13' 40"	5° 24' 16"	Sg. Pinang Barat	Bekalan for Kolam Air Balik Pulau
100° 14' 17"	5° 28' 15"	Anak Sg. Sebelah 3Vs	Pulau Pinang
100° 16' 33"	5° 27' 41"	Sg. Siru	Pulau Pinang
100° 16' 45"	5° 24' 55"	Anak Sg. Tats	Pulau Pinang
100° 14' 55"	5° 25' 09"	Kolam Air Tiger Hill	Pulau Pinang for Bukit Bendera area
100° 15' 51"	5° 23' 46"	Empangan Air Itam	Pulau Pinang for Kolam Air, Air Itam
100° 30' 13"	5° 26' 05"	Sg. Kulim	Seberang Perai Utara
100° 29' 15"	5° 33' 24"	Sg. Muda	Seberang Perai Utara
100° 29' 52"	5° 22' 33"	Kolam Air Bukit Berapit/Sg. Mengkuang	Seberang Perai Tengah
100° 30' 39"	5° 21' 02"	Kolam Air Cherok Tok Kun	Seberang Perai Tengah
100° 32' 11"	5° 09' 35"	Kolam Air Bukit Panchor	Seberang Perai Selatan
100° 17' 00"	5° 25' 00"	Sg. Air Putih	Pulau Pinang Air Hitam
100° 14' 41"	5° 26' 53"	Sg. Batu Ferringhi	Pulau Pinang
100° 14' 35"	5° 28' 00"	Sg. Batu Ferringhi	Pulau Pinang Batu Ferringhi
100° 34' 00"	5° 10' 00"	Sg. Kecil Hilir	Seberang Perai Selatan
100° 32' 00"	5° 09' 00"	Simpang Hantu	Seberang Perai Selatan
100° 13' 00"	5° 26' 30"	Empangan Teluk Bahang	Pulau Pinang

(8) The State of Selangor

Location of Water Intake		**Name of River/ Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
101° 04' 48"	3° 43' 48"	Sg. Bernam	Sabak Bernam
101° 40' 06"	3° 27' 54"	Sg. Batang Kali	Hulu Selangor
101° 23' 54"	3° 40' 30"	Sg. Dusun	Hulu Selangor
101° 26' 48"	3° 44' 24"	Sg. Bernam	Hulu Selangor
101° 25' 30"	3° 37' 30"	Sg. Tengi	Hulu Selangor
101° 35' 42"	3° 38' 54"	Sg. Inki	Hulu Selangor
101° 41' 30"	3° 36' 42"	Sg. Gerachi	Hulu Selangor
101° 34' 00"	3° 24' 30"	Sg. Darah	Hulu Selangor
101° 26' 48"	3° 24' 00"	Sg. Selangor/Sg. Tinggi	Kuala Selangor

101° 25' 20"	3° 23' 20"	Sg. Selangor/ Empangan Sg. Tinggi	Kuala Selangor
101° 25' 20"	3° 23' 20"	Sg. Selangor/ Empangan Sg. Tinggi	Kuala Selangor
101° 25' 20"	3° 23' 20"	Sg. Selangor/ Empangan Sg. Tinggi	Kuala Selangor
101° 10' 30"	3° 32' 30"	Sg. Sireh	Kuala Selangor
101° 41' 10"	3° 16' 05"	Sg. Batu/Empangan Batu	Gombak
101° 40' 00"	3° 17' 00"	Sg. Kanching	Gombak
101° 44' 00"	3° 18' 30"	Sg. Gombak	Gombak
101° 36' 50"	3° 14' 15"	Sg. Buloh	Gombak
101° 44' 18"	3° 17' 54"	Sg. Rumput	Gombak
101° 37' 36"	3° 14' 18"	Sg. Keroh	Gombak
101° 33' 00"	3° 01' 05"	Sg. Pusu	Gombak
101° 48' 06"	3° 09' 42"	Sg. Ampang	Gombak
101° 29' 00"	3° 10' 00"	Sg. Subang/Empangan Subang	Kelang
101° 47' 18"	3° 04' 42"	Sg. Langat/Empangan Langat	Hulu Langat
101° 46' 36"	3° 02' 36"	Sg. Langat/Empangan Langat	Hulu Langat
101° 47' 12"	3° 05' 48"	Sg. Serai	Hulu Langat
101° 53' 25"	3° 13' 15"	Sg. Lolo	Hulu Langat
101° 53' 15"	3° 12' 50"	Sg. Pangsoon	Hulu Langat
101° 45' 36"	3° 14' 16"	Sg. Klang/Empangan Klang Gates	Kuala Lumpur
101° 40' 48"	2° 50' 48"	Sg. Langat/Empangan Langat	Kuala Langat
101° 43' 05"	2° 46' 45"	Sg. Labu	Sepang
101° 44' 20"	2° 53' 20"	Sg. Semenyih/Empangan Semenyih	Sepang
101° 25.2' 15.9"	3° 23.2' 19.9"	Batang Berjuntai/Sg. Selangor	Kuala Selangor
101° 26' 20.5"	3° 23' 10.2"	Batang Berjuntai/Sg. Selangor	Kuala Selangor
101° 38' 7.7"	3° 30' 30.4"	Rasa/Sg. Selangor	Kuala Selangor
101° 44' 10"	2° 53' 30"	Sg. Semenyih	Sepang
101° 42' 50"	2° 53' 23"	Sg. Semenyih	Sepang
101° 48' 10"	3° 09' 15"	Sg. Ampang	Gombak
101° 41' 56"	3° 28' 45"	Sg. Batang Kali	Hulu Selangor
101° 20' 05"	3° 40' 50"	Sg. Bernam	Sabak Bernam
101° 26' 48"	3° 44' 30"	Sg. Bernam	Hulu Selangor
101° 31' 42"	3° 24' 24"	Sg. Darah	Hulu Selangor
101° 23' 54"	3° 40' 30"	Sg. Dusun	Hulu Selangor
101° 41' 30"	3° 36' 42"	Sg. Gerachi	Kuala Selangor
101° 44' 00"	3° 18' 30"	Sg. Gombak	Gombak
102° 44' 00"	3° 17' 06"	Sg. Gombak	Gombak
101° 36' 10"	3° 39' 05"	Sg. Inki	Hulu Selangor
101° 40' 18"	3° 16' 24"	Sg. Kepong	Gombak
101° 37' 36"	3° 14' 18"	Sg. Keroh	Sg. Keroh
101° 30' 48"	3° 34' 05"	Sg. Kubu	Kuala Selangor
101° 42" 05"	2° 47' 05"	Sg. Labu	Sepang
101° 40' 48"	3° 50' 48"	Sg. Langat	Kuala Langat
101° 46' 36"	3° 02' 36"	Sg. Langat	Hulu Langat
101° 50' 18"	3° 44' 42"	Sg. Lolo	Hulu Langat
101° 50' 24"	3° 44' 36"	Sg. Pangsoon	Hulu Langat
101° 43' 48"	3° 17' 48"	Sg. Pusu	Gombak

101° 40' 00"	3° 17' 00"	Sg. Rangkap	Gombak
101° 45' 05"	3° 18' 00"	Sg. Rumput	Gombak
101° 26' 48"	3° 24' 00"	Sg. Selangor	Kuala Selangor
101° 26' 48	3° 22' 06"	Sg. Selangor	Kuala Selangor
101° 47' 12"	3° 05' 48"	Sg. Serai	Hulu Langat
101° 25' 40"	3° 38' 15"	Sg. Tengi	Hulu Selangor
101° 45' 36"	3° 14' 16"	Empangan Klang Gates	Kuala Lumpur
102° 45' 36"	4° 14' 16"	Empangan Klang Gate	Gombak
101° 47' 30"	3° 04' 42"	Empangan Sg. Langat (discharge into Sg. Langat)	Hulu Langat
101° 41' 10"	3° 17' 05"	Empangan Sg. Batu	Gombak
101° 28' 48"	3° 10' 00"	Empangan Tasik Subang	Kelang

(9) The State of Sarawak

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
111° 52' 47"	1° 34' 52"	Sg. Batang Rajang	Sibu
111° 52' 27"	2° 15' 51"	Sg. Batang Rajang	Sibu
110° 16' 42"	1° 27' 20"	Sg. Sarawak Kiri	Batu Kitang, Kuching
110° 16' 44"	1° 27' 19"	Sg. Sarawak Kiri	Batu Kitang, Kuching
110° 16' 33"	1° 26' 58"	Sg. Sarawak Kiri	Batu Kitang, Kuching
110° 16' 31"	1° 26' 52"	Sg. Sarawak Kiri	Batu Kitang, Kuching
110° 12' 30"	1° 34' 52"	Empangan Matang	Matang, Kuching
110° 11' 14"	1° 36' 33"	Sg. Cina	Matang, Kuching
110° 12' 53"	1° 34' 56"	Sebubut Basin Intake	Matang, Kuching
112° 02' 05"	4° 18' 18"	Sg. Liku	Miri
114° 02' 05"	4° 18' 19"	Sg. Liku	Miri
114° 06' 05"	4° 18' 18"	Sg. Liku	Miri
114° 01' 58"	4° 18' 06"	Sg. Liku	Miri
114° 07' 40"	4° 11' 37"	Sg. Bakong	Buri
114° 58' 10"	4° 40' 01"	Sg. Berawan	Limbang
115° 02' 27"	4° 37' 07"	Sg. Pendaruan	Limbang
112° 25' 45"	2° 40' 30"	Sg. Krat	Bako
110° 08' 47"	1° 08' 47"	Sg. Sarawak Kanan	Kuching
109° 51' 11"	1° 40' 52"	Sg. Lundu	Kuching
110° 28' 50"	1° 38' 48"	Sg. Selabat	Kuching
110° 24' 04"	1° 17' 28"	Sg. Tapah	Siburan, Tapah and Beratok
109° 47' 44"	1° 47' 41"	Sg. Sebat Besar	Sematan
110° 01' 56"	1° 26' 52"	Sg. Siniawan	Kuching
111° 31' 10"	1° 08' 14"	Sg. Batang Undup	Sri Aman

111° 25' 00"	1° 06' 15"	Sg. Dor	Melugu
111° 37' 10"	1° 17' 08"	Sg. Dor	Skrang
111° 49' 51"	1° 00' 11"	Sg. Batang Ai	Lubuk Antu
111° 38' 13"	1° 07' 53"	Sg. Marup	Engkili
111° 23' 05"	1° 18' 22"	Sg. Seterap	Pantu
111° 10' 16"	1° 21' 05"	Sg. Stugok	Lingga
112° 50' 05"	1° 02' 26"	Sg. Lemanak	Lubuk Antu LDS
111° 32' 16"	1° 24' 31"	Sg. Stumbin	Stumbin/Bijat
113° 06' 33"	3° 12' 32"	Sg. Sibiu	Bintulu
113° 06' 32"	3° 12' 27"	Sg. Sibiu	Bintulu
111° 02' 09"	1° 39' 38"	Sg. Meludam	Meludam
111° 07' 00"	1° 10' 00"	Sg. Batang Layar	Betong
111° 23' 57"	1° 39' 12"	Sg. Obar	Debak
111° 12' 19"	1° 38' 01"	Sg. Dumit	Beladin
111° 17 15"	1° 38' 39"	Sg. Undai	Pusa
111° 19 34"	1° 47' 15"	Sg. Sebelak	Betong
111° 41' 11"	2° 04' 54"	Sg. Bintangor	Bintangor
111° 30' 05"	2° 01' 35"	Sg. Bintangor	Sarikei
111° 40' 45"	1° 53' 35"	Sg. Julau	Pakan
111° 54' 15"	2° 01' 41"	Sg. Julau	Julau
111° 15' 42"	2° 00' 54"	Sg. Kerubong	Selalang
115° 23' 11"	4° 49' 34"	Sg. Gaya	Lawas
114° 55' 48"	4° 49' 34"	Sg. Menuang	Lubai Tengah
115° 19' 17"	4° 50' 32"	Sg. Batang Trusan	Trusan
115° 16' 15"	4° 47' 08"	Sg. Batang Trusan	Sundar
110° 33' 45"	1° 09' 45"	Sg. Sadong	Serian
110° 37' 0"8	1° 08' 03"	Sg. Sinyaru	Triboh
110° 47' 61"	1° 22' 03"	Sg. Melanjok	Simunjan
110° 30' 21"	1° 05' 53"	Sg. Kayan	Terbakang
110° 40' 00"	1° 12' 23"	Sg. Batang Krang	Gedong
110° 37' 01"	1° 32' 31"	Sg. Nonok	Samarahan
110° 56' 06"	1° 31' 08"	Sg. Sebuyau	Sebuyau
110° 21' 18"	1° 01' 45"	Sg. Suhu	Tebedu
110° 45' 58"	1° 33' 36"	Sg. Sebangan	Sebangan
110° 48' 26"	1° 03' 04"	Sg. Krang	Balai Ringin
113° 16' 08"	3° 06' 43"	Sg. Sebangat	Sebauh
112° 51' 32"	2° 53' 13"	Sg. Sap Kiri	Tatau
113° 29' 49"	3° 15' 39"	Sg. Batang Kemena	Labang
113° 42' 49"	3° 09' 54"	Sg. Jelalang	Tubau
112° 47' 05"	3° 04' 08"	Ground Water	Bintulu
112° 47' 15"	3° 04' 08"	Sg. Anap	Bintulu
113° 56' 42"	3° 09' 52"	Sg. Koyan	Bakau
114° 19' 06"	4° 10' 40"	Sg. Batang Baram	Miri
114° 24' 43"	3° 45' 56"	Sg. Batang Baram	Long Lama
113° 55' 44"	4° 06' 26"	Sg. Kejapil	Bekenu
114° 06' 15"	3° 58' 02"	Sg. Bakong	Beluru

113° 47' 02"	3° 44' 00"	Sg. Niah	Niah, Subis
112° 11' 26"	2° 46' 08"	Sg. Kanowit	Kanowit
112° 35' 09"	3° 00' 47"	Sg. Mukah	Ulu Mukah
112° 23' 28"	2° 22' 28"	Sg. Ulu Mukah	Ng. Sekuau
112° 04' 19"	2° 52' 26"	Sg. Kanowit	Machan
112° 04' 46"	2° 17' 15"	Sg. Bawang Assan	Sibu
111° 58' 30"	2° 41' 15"	Sg. Ngemah	Ng. Jagau
111° 18' 21"	1° 53' 08"	Sg. Kabah	Ng. Tada
112° 09' 08"	2° 55' 18"	Sg. Ngemah	Ng. Ngungun
112° 56' 15"	2° 00' 51"	Sg. Batang Rejang	Kapit
113° 46' 02"	2° 42' 33"	Sg. Belaga	Belaga
113° 40' 57"	1° 49' 08"	Sg. Batang Baleh	Ng. Entawau
112° 32' 24"	2° 56' 17"	Sg. Suyung	Balingan
112° 09' 05"	2° 05' 57"	Sg. Batang Mukah	Mukah
111° 43' 10"	2° 50' 05"	Sg. Lasai Dagan	Igan
111° 50' 28"	2° 44' 11"	Sg. Nangar	Kut
112° 21' 36"	2° 05' 16"	Sg. Setuan Besar	Kuala Balingian
111° 30' 42"	2° 38' 14"	Sg. Mabun	Kg. Tian
111° 23' 32"	2° 2'5 05"	Sg. Muara Serdang	Semup
111° 15' 12"	2° 24' 48"	Ground Water	Paloh
111° 35' 08"	2° 0'4 49"	Sg. Batang Jemoreng	Matu
111° 27' 54"	2° 37' 57"	Sg. Daro	Daro
111° 27' 50"	2° 30' 00"	Ground Water	Saai

(10) Federal Territory of Labuan

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
115° 11' 00"	5° 21' 00"	Sg. Kina Benuwa	Empangan Air Bukit Kuda
115° 10' 00"	5° 19' 00"	Sg. Kina Benuwa	Empangan Air Sungai Pagar
115° 13' 00"	5° 19' 00"	Sg. Kina Benuwa	Empangan Air Kerupang
115° 12' 59"	5° 18' 13"	Sg. Kina Benuwa	
115° 14' 59"	5° 17' 36"	Telaga Tiub Borehole No. A19	
115° 15' 01"	5° 17' 27"	Telaga Tiub Borehole No. M	
115° 15' 02"	5° 17' 19"	Telaga Tiub Borehole No. B	
115° 15' 17"	5° 17' 21"	Telaga Tiub Borehole No. A 21	
115° 15' 26"	5° 17' 24"	Telaga Tiub Borehole No. M 11	
115° 15' 34"	5° 17' 38"	Telaga Tiub Borehole No. B	

		23
115° 15' 20"	5° 17' 42"	Telaga Tiub Borehole No. A 12
115° 15' 16"	5° 10' 05"	Telaga Tiub Borehole No. W 5
115° 15' 11"	5° 17' 53"	Telaga Tiub Borehole No. A 20
115° 15' 01"	5° 10' 16"	Telaga Tiub Borehole No. B 24
115° 15' 01"	5° 10' 01"	Telaga Tiub Borehole No. 10
115° 14' 59"	5° 10' 30"	Telaga Tiub Borehole No. W 4
115° 14' 48"	5° 18' 45"	Telaga Tiub Borehole No. W 3
115° 14' 26"	5° 19' 51"	Telaga Tiub Borehole No. B 27
115° 14' 26"	5° 19' 52"	Telaga Tiub Borehole No. A 14
115° 14' 13"	5° 19' 36"	Telaga Tiub Borehole No. A 17
115° 14' 29"	5° 19' 18"	Telaga Tiub Borehole No. A 13
115° 14' 38"	5° 19' 28"	Telaga Tiub Borehole No. B 26
115° 14' 33"	5° 19' 05"	Telaga Tiub Borehole No. W 1
115° 14' 39"	5° 19' 12"	Telaga Tiub Borehole No. B 25
115° 14' 40"	5° 18' 56"	Telaga Tiub Borehole No. W 2
115° 14' 44"	5° 18' 28"	Telaga Tiub Borehole No. A 8
115° 14' 28"	5° 18' 28"	Telaga Tiub Borehole No. A 15
115° 15' 09"	5° 17' 32"	Telaga Tiub Borehole No. B 22
115° 14' 46"	5° 18' 00"	Telaga Tiub Borehole No. A 18

(11) The State of Sabah

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude	**Latitude**		

(East)	(North)		
116° 09' 24.2"	5° 55' 21.4"	Sg. Moyog	Penampang
116° 11' 16.2"	5° 54' 47.6"	Empangan Babagon	Penampang
116° 06' 33.6"	5° 54' 52.4"	Sg. Moyog	Penampang
116° 00' 00.1"	5° 41' 06.6"	Sg. Papar	Papar
115° 56' 51.9"	5° 42' 52.9"	Sg. Papar	Papar
115° 56' 52.2"	5° 42' 50.2"	Sg. Papar	Papar
116° 02' 12.5"	5° 42' 31.4"	Sg. Papar	Papar
116° 14' 34.3"	6° 08' 49.9"	Sg. Tuaran	Tamparuli
116° 16' 09.9"	6° 07' 54.9"	Sg. Tuaran	Tamparuli
116° 14' 14.3"	6° 09' 12.2"	Sg. Tuaran	Tamparuli
116° 13' 56.6"	6° 08' 24.9"	Sg. Tuaran	Tamparuli
116° 17' 55.7"	6° 11' 20.4"	Sg. Damit	Tuaran
116° 13' 43.2"	6° 10' 26.1"	Sg. Tuaran	Tuaran
118° 06' 49.7"	5° 51' 14.2"	Boreholes	Sandakan
118° 06' 47.9"	5° 51' 22.0"	Boreholes	Sandakan
118° 06' 29.0"	5° 51' 21.4"	Boreholes	Sandakan
118° 06' 12.9"	5° 51' 27.6"	Boreholes	Sandakan
118° 05' 51.5"	5° 51' 21.6"	Boreholes	Sandakan
118° 04' 41.3"	5° 51' 17.0"	Boreholes	Sandakan
118° 03' 45.1"	5° 49' 58.8"	Boreholes	Sandakan
118° 03' 49.1"	5° 50' 04.1"	Boreholes	Sandakan
118° 04' 07.6"	5° 50' 36.7"	Boreholes	Sandakan
118° 04' 14.1"	5° 50' 45.5"	Pond	Sandakan
118° 04' 19.8"	5° 50' 57.5"	Boreholes	Sandakan
118° 04' 31.8"	5° 51' 14.1"	Boreholes	Sandakan
118° 03' 03.6"	5° 50' 36.5"	Boreholes	Sandakan
118° 03' 01.2"	5° 50' 24.9"	Pond	Sandakan
118° 02' 41.5"	5° 50' 13.6"	Boreholes	Sandakan
118° 02' 46.4"	5° 50' 00.0"	Boreholes	Sandakan
118° 02' 50.8"	5° 49' 57.9"	Pond	Sandakan
118° 02' 26.5"	5° 49' 34.2"	Boreholes	Sandakan
118° 02' 24.3"	5° 49' 20.8"	Boreholes	Sandakan
118° 02' 11.6"	5° 49' 59.1"	Boreholes	Sandakan
118° 01' 44.8"	5° 50' 18.7"	Boreholes	Sandakan
118° 01' 56.1"	5° 49' 39.3"	Boreholes	Sandakan
118° 01' 35.2"	5° 4'9 30.1"	Boreholes	Sandakan
118° 01' 22.4"	5° 49' 25.5"	Boreholes	Sandakan
118° 01' 19.2"	5° 48' 53.9"	Boreholes	Sandakan
118° 04' 42.1"	5° 51' 16.0"	Boreholes	Sandakan
117° 50' 11.3"	5° 29' 07.2"	Sg. Kinabatangan	Kinabatangan
117° 32' 00"	5° 53' 00"	Sg. Muanad	Beluran
117° 52' 48.3"	4° 16' 47.0"	Sg. Tawau	Tawau
117° 53' 52.2"	4° 21' 00.4"	Sg. Tawau	Tawau
117° 46' 31.7"	4° 27' 10.0"	Sg. Merotai	Tawau
118° 10' 09.6"	5° 00' 11.4"	Empangan Sepagaya	Lahad Datu

118° 13' 28.0"	5° 06' 01.2"	Sg. Segama	Lahad Datu
118° 49' 50.8"	5° 04' 24.5"	Sg. Tungku	Lahad Datu
118° 14' 34.7"	4° 28' 52.3"	Sg. Kalumpang	Semporna
118° 11' 04.4"	4° 35' 10.9"	Sg. Kalumpang	Kunak
116° 08' 48.8"	5° 22' 39.9"	Sg. Liawan	Keningau
116° 10' 01.6"	5° 26' 18.0"	Sg. Bayayo	Keningau
116° 20' 04.4"	5° 41' 49.6"	Sg. Tondulu	Tambunan
115° 56' 06.0"	5° 06' 58.7"	Sg. Padas	Tenom
115° 55' 01.8"	4° 53' 38.8"	Sg. Padas	Tenom
116° 25' 59.4"	5° 02' 01.5"	Sg. Panawan	Pensiangan
116° 18' 12.6"	5° 08' 38.2"	Sg. Sook	Sook
115° 46' 10.9"	5° 20' 36.2"	Sg. Padas	Beaufort
115° 34' 37.5"	5° 06' 31.0"	Sg. Lukutan	Sipitang
115° 48' 04.0"	5° 28' 19.7"	Sg. Membakut	Membakut
116° 48' 04.4"	6° 56' 20.5"	Empangan Pinangsoo	Kudat
116° 44' 56.6"	6° 28' 01.1"	Sg. Bandau	Kota Marudu
116° 44' 54.1"	6° 27' 57.1"	Sg. Pengapunya	Kota Marudu
117° 01' 50.1"	6° 40' 45.1"	Sg. Bengkoka	Pitas
116° 26' 05.4"	6° 21' 31.8"	Sg. Tempasuk	Kota Belud
116° 37' 43.4"	5° 57' 16.1"	Sg. Liwagu	Ranau
117° 06' 00"	5° 37' 00"	Sg. Maliau	Telupid
116° 59' 00"	5° 16' 00"	Sg. Milian	Tongod
116° 50' 00"	5° 12' 00"	Sg. Melikop	Tongod

(12) The State of Terengganu

Location of Water Intake		**Name of River/ Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
103° 21' 20"	4° 40' 40"	Loji Air Bukit Bauk	Dungun
103° 20' 18"	4° 47' 40"	Loji Air Serdang	Dungun
103° 10' 20"	4° 49' 10"	Loji Air Tepus	Dungun
103° 19' 10"	4° 13' 00"	Loji Air Bukit Sah	Kemaman
103° 11' 50"	4° 06' 35"	Loji Air Cherul	Kemaman
103° 03' 50"	5° 15' 55"	Loji Air Kepong	Kuala Terengganu
103° 05' 40"	5° 17' 37"	Loji Air Bukit Losong	Kuala Terengganu
103° 00' 35"	5° 04' 30"	Loji Air Kuala Berang	Hulu Terengganu
103° 02' 45"	4° 55' 45"	Loji Air Gunung	Hulu Terengganu
102° 58' 05"	5° 09' 10"	Loji Air Telemong	Hulu Terengganu
103° 12' 15"	4° 50' 38"	Loji Air Jerangau	Hulu Terengganu
102° 30' 00"	5° 38' 05"	Loji Air Bukit Bunga (new and old)	Besut

102° 45' 00"	5° 05' 00"	Loji Air Pulau Perhentian	Besut
102° 45' 00"	5° 31' 50"	Sg. Setiu	Setiu
102° 49' 42"	5° 26' 18"	Sg. Chalok	Setiu
102° 51' 42"	5° 20' 12"	Sg. Nerus	Setiu

(13) The State of Negeri Sembilan

Location of Water Intake		**Name of River/ Reservoir/Well**	**Water Supply Scheme**
(1)		**(2)**	**(3)**
Longitude (East)	**Latitude (North)**		
102° 20' 32"	2° 34' 06"	Empangan Gemencheh	Gemencheh
102° 34' 18.0"	2° 38' 35"	Sg. Muar	Gemas Baru
102° 32' 21"	2° 38' 23"	Sg. Muar	Pasir Besar
102° 21' 10"	2° 40' 14"	Sg. Dangi	Dangi Baru
102° 23' 49"	2° 36' 16"	Telaga Tiub Bukit Rokan	Bukit Rokan
102° 03' 17"	2° 39' 40"	Sg. Beringin	Pedas Baru
102° 34' 18"	2° 38' 59"	Empangan Batu Hampar	Pedas Lama
102° 22' 01"	2° 43.00'	Sg. Jelai	Felda Kepis
102° 14' 79"	2° 44' 02"	Sg. Muar	Bukit Pilah
102° 14' 22"	2° 44' 25"	Sg. Muar	Kuala Pilah
102° 04' 3"	2° 42' 44"	Sg. Batang Terachi	Ulu Bendul
102° 08' 51.7"	2° 47' 10"	Empangan Talang/Sg. Muar	Air Talang
102° 24.090'	2° 44' 24"	Sg. Muar	Kuala Jelai
102° 22' 0.05"	2° 48' 59"	Sg. Muar	Bahau Baru
102° 22' 24.8"	2° 47' 59"	Sg. Muar	Jempol
102° 0.1' 26.4"	2° 48' 14"	Hutan Simpan Berembun	Pantai
101° 55' 04.5"	2° 56' 06"	Sg. Broga	Broga
101° 59' 43.4"	2° 45' 31"	Sg. Batang Benar	Terip
101° 00' 14.3"	2° 45' 33"	Empangan Sg. Terip	Loji Rawatan Air Sg. Terip
102° 14.784'	2° 44' 25"	Sg. Mahang	Mahang
101° 50.000'	2° 48' 14"	Sg. Ngoi-Ngoi	Ngoi-Ngoi
102° 56.927	2° 36' 12"	Sg. Linggi	Linggi
102° 03' 59"	02° 56' 13.1"	Sg. Kemin	Kuala Klawang
102° 13' 04.7"	3° 04' 31"	Sg. Triang	Lakai
102° 06' 40.0"	3° 04' 02"	Sg. Kenaboi	Felda Titi
102° 13' 36"	02° 57' 54"	Sg. Pertang	Durian Tawar

(14) The State of Melaka

Location of Water Intake		**Name of River/Reservoir/Well**	**Water Supply Scheme**
(1)			**(3)**

(2)

Longitude (East)	Latitude (North)		
102° 15' 50"	2° 17' 55"	Sg. Melaka	Jasin, Melaka Tengah and Alor Gajah
102° 18' 40"	2° 20' 00"	Empangan Durian Tunggal	Melaka Tengah, Alor Gajah and Jasin
102° 15' 50"	2° 17' 55"	Sg. Melaka	Melaka Tengah, Alor Gajah and Jasin
102° 15' 25"	2° 24' 35"	Sg. Batang Melaka	Alor Gajah, Masjid Tanah and Lubuk Cina
102° 29' 12"	2° 16' 00"	Sg. Kesang	Jasin
102° 28' 15"	2° 11' 50"	Sg. Kesang	Jasin and Merlimau
102° 22' 15"	2° 26' 35"	Empangan Jus	Alor Gajah, Masjid Tanah and Lubuk Cina
102° 35' 16"	2° 24' 23"	Empangan Asahan	Asahan, Simpang. Bekoh, Nyalas and Bukit Senggeh
102° 45' 02"	2° 12' 10"	Sg. Muar	Melaka Tengah, Alor Gajah and Jasin

SEVENTH SCHEDULE

(Regulation 12)

ACCEPTABLE CONDITIONS FOR DISCHARGE OF INDUSTRIAL EFFLUENT CONTAINING CHEMICAL OXYGEN DEMAND (COD) FOR SPECIFIC TRADE OR INDUSTRY SECTOR

(1) Trade/Industry	(2) Unit	(3) Standard A	(4) Standard B
(a) Pulp and paper industry			
(i) pulp mill	mg/L	80	350
(ii) paper mill (recycled)	mg/L	80	250
(iii) pulp and paper mill	mg/L	80	300
(b) Textile industry	mg/L	80	250
(c) Fermentation and distillery industry	mg/L	400	400
(d) Other industries	mg/L	80	200

EIGHTH SCHEDULE

(Regulation 13)

ACCEPTABLE CONDITIONS FOR DISCHARGE OF MIXED EFFLUENT CONTAINING CHEMICAL OXYGEN DEMAND (COD)

(1)	(2)	(3)
Unit	**Standard A**	**Standard B**
mg/L	80	200

NINTH SCHEDULE

(Regulation 14)

LIST OF PARAMETERS FOR DISCHARGE OF INDUSTRIAL EFFLUENT OR MIXED EFFLUENT WHICH BEST MANAGEMENT PRACTICE TO BE ADOPTED

(i) Nitrate Nitrogen

(ii) Sulphate

(iii) Chloride

(iv) Cobalt

(v) Detergent, Anionic

(vi) Molybdenum

(vii) Phosphate (as P)

(viii) Polychlorinated Biphenyls

(ix) Beryllium

(x) Vanadium

(xi) Pesticides, fungicides, herbicides, rodenticides, fumigants or any other biocides any other chlorinated hydrocarbons

(xii) Any substance that either by itself or in combination or by reaction with other waste may give rise to any gas, fume or odour or substance which causes or likely to cause pollution

(xiii) Total Organic Carbon

(xiv) Whole Effluent Toxicity (WET)

(xv) Dioxin

(xvi) Endocrine disruptors

TENTH SCHEDULE

[Subregulation 7(2)]

MONTHLY INDUSTRIAL EFFLUENT OR MIXED EFFLUENT DISCHARGE MONITORING REPORT

SECTION I

IDENTIFICATION

1. (i) Name and address of premises:

.....

.....

Telephone number:.....Fax number:.....

(ii) File reference number (if applicable): .....

2. (i) Name and address of accredited analytical laboratory:

.....

.....

Telephone number:.....Fax number:.....

(ii) Name of analyst:

.....

3. (i) Reporting year:.....

(ii) Reporting month: .....

SECTION II

INFORMATION ON INDUSTRIAL EFFLUENT OR MIXED EFFLUENT

4. (i) Flowrate*

Minimum:..... m3/d, Maximum:..... m3/d

(ii) Quality of effluent discharged (unit in mg/L)

Parameter* **	**First Week Date:**	**Second Week Date:**	**Third Week Date:**	**Fourth Week Date:**
Temperature				
pH Value				
BOD at 20°C				
COD				
Suspended Solids				
Mercury				
Cadmium				
Chromium, Hexavalent				
Arsenic				
Cyanide				
Lead				
Chromium, Trivalent				
Copper				
Manganese				
Nickel				
Tin				
Zinc				
Boron				
Iron				
Silver				
Aluminium				
Selenium				
Barium				
Fluoride				
Formaldehyde				
Phenol				
Free Chlorine				
Sulphide				
Oil and Grease (n-hexane extract)				
Ammoniacal Nitrogen				

Colour**