

**INDUSTRIAL TRAINING REPORT**

**PERUNDING NAJNA SDN BHD**



اَوْنُوْزِيسِيْتِي تَيْكُونُوْ كِيْمَا  
**UNIVERSITI  
TEKNOLOGI  
MARA**



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## ACKNOWLEDGEMENT

In the name of Allah SWT, The Most Beneficial and The Most Merciful, it is with deepest serve gratitude of The Almighty that gives me strength and ability to complete the industrial training.

First of all, I want to express my gratitude to the Founder and Director of PERUNDING NAJNA, Mr Burhanuddin Bin Abu Bakar for giving the opportunity to undergo my industrial training at PERUNDING NAJNA. I am very honoured to undergo my 14 weeks of my industrial training at PERUNDING NAJNA. I feel very welcome in the company with the warmth and pleasant as well as harmony environment of the company. I wish to extend my gratefulness to my supervisor Miss Natasha Binti Zainorin, Environmental Executive, for the guidances and advises that he gave me throughout my internship period to help me grow as a person and an engineer. I would also like to thank Mr Farith Zulhazlami Bin Hajemi, Environmental Executive who kindly led and assist me throughout my report making process. I am also thankful to the staffs of PERUNDING NAJNA that always spare their time to guide me the basics of working within the department. Their support made my industrial training period much easier and I am very grateful for that,

A special thanks to Mohd Haikal Bin Mustafa/Noor Hidayu Binti Abdul Rani, the Industrial Training Coordinator for giving me the opportunity to undergo this industrial training period as well as giving us guidance throughout our internship period to ease the problems that arises due to the fact that the industrial training was conducted during pandemic.

## EXECUTIVE SUMMARY

This report describes the period of internship at PERUNDING NAJNA from 22<sup>nd</sup> March 2021 to 15<sup>th</sup> July 2021 (14 weeks). At the event of internship, I had been working directly under Director of PERUNDING NAJNA SDN BHD, Ir Burhanuddin Bin Abu Bakar.

PERUNDING NAJNA SDN BHD is one of the new, emerging environmental consultancy companies in Sarawak and Malaysia that acquired substantial experience in conducting projects related to oil palm plantations, scheduled wastes recovery facilities, road developments, school projects, commercial developments and sand mining activities. The variety of project involvement has provided the company the confidence to participate in new largescale industrial projects in SCORE development areas will be PERUNDING NAJNA SDN BHD's next target to expand their knowledge and experience in environmental consultancy and services.

During my period of internship, I was entrusted to be involved in Environmental Impact Assessment (EIA), Stack Monitoring, Environmental Monitoring Report (EMR) and Written Notification or also known as Licensing Submission and Approval. Through my involvement in these projects, I gained a lot of new knowledges and experience that will be very useful in the future. I learn a great deal of importance of management as at one time there were a few reports that have to be submitted. Besides that, I gain more confidence to communicate with the other staffs and co-workers as their guidance and assistance were very much needed for me to complete my tasks.

Industrial training is a very important phase in the study of a student as it promote participative learning. Studying about a theory in class and being out in the field practicing the theory are two difference experiences. Therefore, industrial training give the students the outlook on the real life situations that they would face in the future in the working environment. This help student to improve and enhance their thinking, practical and learning capabilities in real word situations. Generally, the industrial training introduces objectives such as maintaining compatibility of program course with the problems and basics of engineering situations in real life. Through industrial

training, students can showcase their capability to work in the industry as well as demonstrate their ability in employment so as to further work upon graduation.

Tremendous appreciation to PERUNDING NAJNA SDN BHD for guidance and knowledges delivered from the entire training supervisor. Thank you to all the staff that has made a significant guidance and valuable support. Last but not least, thanks to the Faculty of Chemical Engineering and lecturers that help to organize this industrial training.

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# CHAPTER 1

## INTRODUCTION OF COMPANY

### 1.1 Background of the Company

PERUNDING NAJNA SDN BHD is one of the new, emerging environmental consultancy companies in Sarawak and Malaysia. Incorporated in early 2009 in Kuching city, Sarawak, PERUNDING NAJNA is headed by its founding Director, Environmental Consultant and Chemical Engineer, Ir. Burhanudin bin Abu Bakar. A 100% Bumiputera-owned company, PERUNDING NAJNA SDN BHD has in span of five years of its incorporation, acquired substantial experience in conducting projects related to oil palm plantations, scheduled wastes recovery facilities, road developments, school projects, commercial developments and sand mining activities. The variety of project involvement has provided the company the confidence to participate in new largescale industrial projects in SCORE development areas will be PERUNDING NAJNA's next target to expand their knowledge and experience in environmental consultancy and services.

In order to pursue more challenging projects in the near future, PERUNDING NAJNA has therefore acquired the expertise of four associate consultants as part of its environmental study team, having four varying fields of specialization-civil engineering, biotechnology, socio-economy and ecology.

## 1.2 Company Profile

### i. Company Logo



Figure 1.1 Logo for PERUNDING NAJNA

### ii. Company Address

Level 4, RCW Corporate, Lot 12292-3-2,  
Jalan Tun Jugah, 93350, Kuching, Sarawak

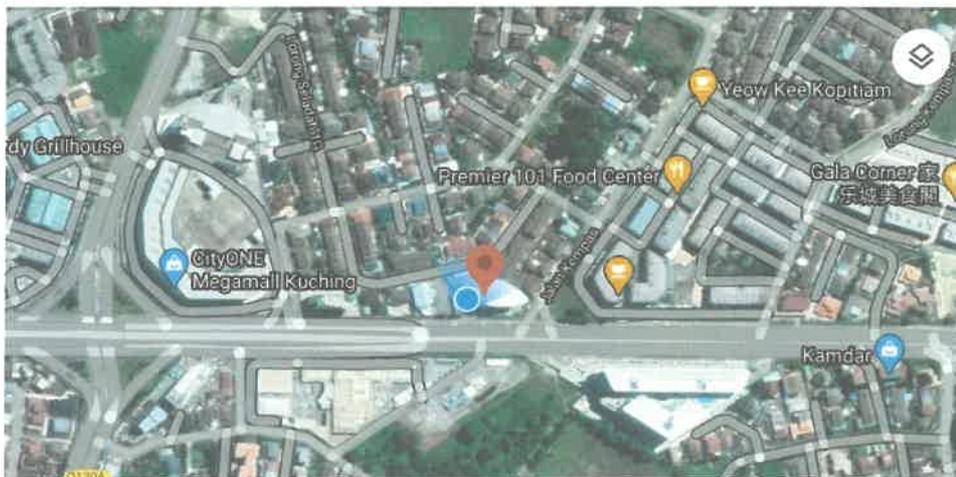


Figure 1.2 Location of PERUNDING NAJNA



*Figure 1.3 PERUNDING NAJNA SDN BHD's Office at RCW Corporate*



### 1.3 Services

PERUNDING NAJNA's core business is to provide professional environmental consultancy services to its esteemed clients from various sectors such as Properties Development, Plantation and Agriculture, Quarries, River and Coastal Mining, Construction and Engineering and others. These services include Environmental Impact Assessment (EIA) study, Environmental Management Plan (EMP) study, Environmental Monitoring, Environmental Permitting Reports and also stack monitoring.

PERUNDING NAJNA is also capable of providing consultancy services for Feasibility study and Special Study involving new, pioneer projects that require an initial assessment prior to further project development and environmental report submissions.

*Table 1.1 Services Provided by PERUNDING NAJNA*

Monitoring	Provide monitoring in the preparation of environmental impact assessment or regulations, as well as in many circumstances in which human activities carry a risk of harmful effects on the natural environment
Engineering	To provide technical expertise in protecting people from the effect of adverse environmental effects, such as pollution, as well as improving environmental quality
Environmental Impact Assessment	To evaluate the impacts on environment of a proposed project or development, taking into account interrelated, socio-economic, culture and human-health impacts, both beneficial and adverse.
Licensing Submission and Approval	Getting the needed details of approval, authorisation, license or permit required by or obtained from any regulatory authority of environment, safety and health.

### 1.4 Organization Chart

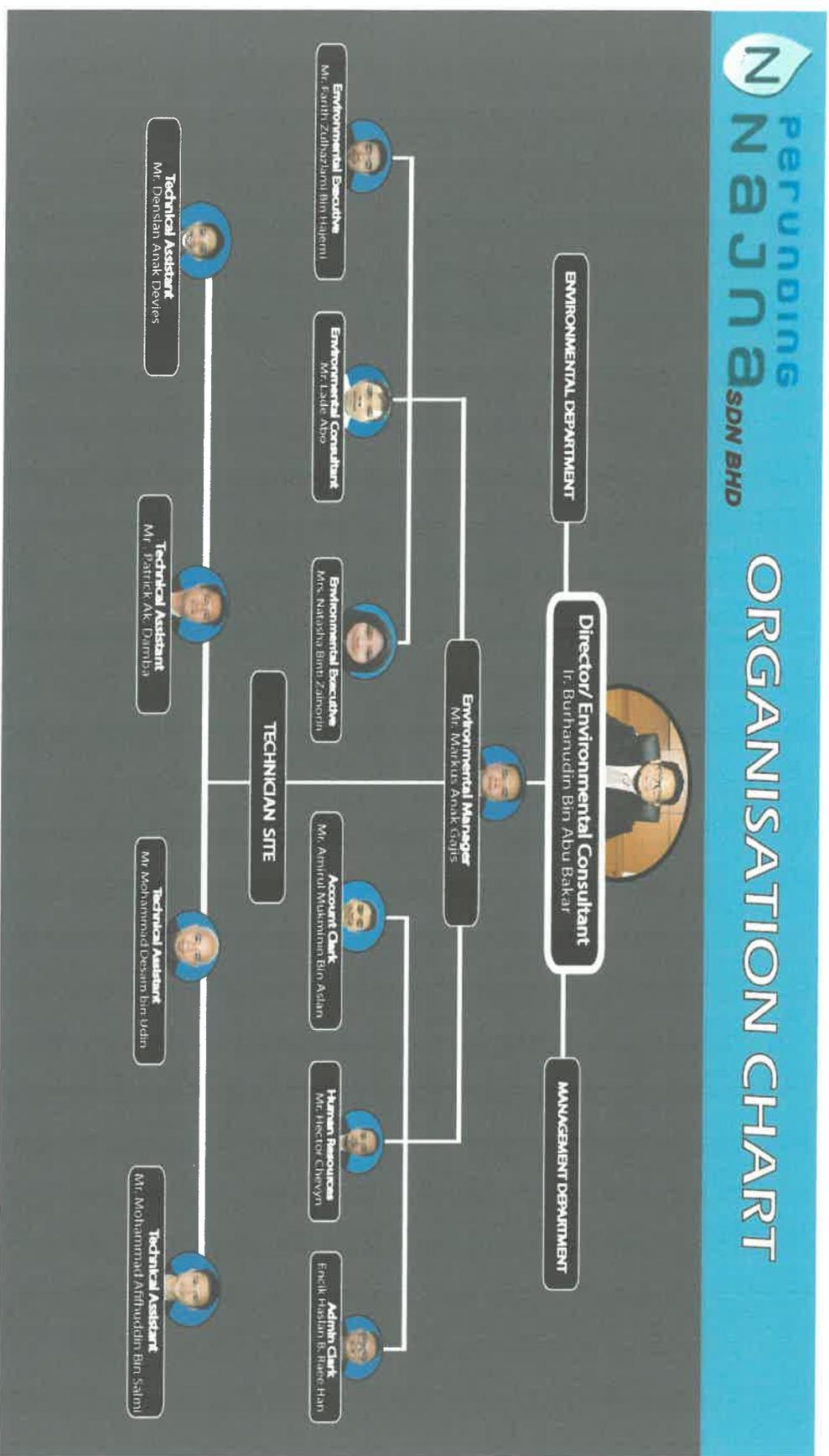


Figure 1.4 Organization Chart of PERUNDING NAJNA

## CHAPTER 2

### INDUSTRIAL TRAINING ACTIVITIES

#### 2.1 Licensing Submission and Approval

Licensing submission and approval is the process of getting the details of any approval, authorisation, licence or permit required from any regulatory authority of environment, safety and health. This process is usually done in the case client want to upgrade the equipment or install a new equipment.

Activities conducted included assist in the calculation involving generator set, boiler/burner, cyclone, bag filter as well as water treatment system. Besides that, find the related journals or articles and catalogues or technical specification sheet to support or conduct the calculation.



*Figure 2.1 Front Cover of Written Notification*

#### 2.2 Environmental Monitoring Report

Environmental monitoring report is to provide monitoring in the preparation of environmental impact assessments or regulations.

The Environmental Monitoring Reports partake are for first quarter of 2021 (January-March). The information such as Chemical Oxidation Demand (COD), Biological Oxygen Demand (BOD), Suspended Solids (TSS), pH and etc are updated quarterly. This information are obtained based on the samples taken by technical staffs of the company from the site quarterly.

The values of the item mentioned above should not exceed the limit established by Department of Environment (DOE).

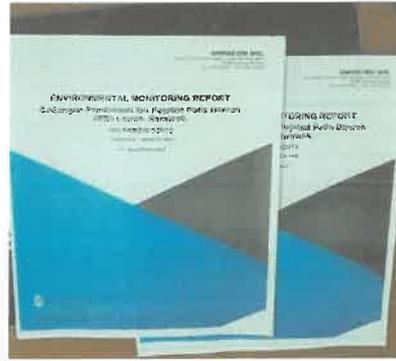


Figure 2.2 Front Cover of Environmental Monitoring Report



Figure 2.3 Process of Sampling at W1 for EMR Kuala Baram

## 2.3 Environmental Impact Assessment

Environmental impact assessment is the process of evaluating the likely environmental impact of proposed project. It is conducted before a project is started on the site. The process usually takes a long time depending on the current needs and wants of the related authorities mainly Department of Environment (DOE).

## 2.4 Stack Monitoring

The process of stack monitoring enables the facility managers, inspectors as well as other key personnel to measure the level of industrial waste and/or pollutants a stack emits into the atmosphere.

## 2.5 Site Visit

Due to the current situation, we did not obtained a lot of opportunities to do a site visit as it is considered risky. Fortunately, we did obtained an opportunities to visit Halal Abattoir Complex to do a monthly monitoring visit to the wastewater treatment system.



*Figure 2.4 Entrance of Halal Abattoir Complex*



*Figure 2.5 Aeration Tank of the Wastewater Treatment System at Halal Abattoir Complex*

## **CHAPTER 3**

### **PROJECT ASSIGNED**

#### **3.1 Introduction**

The project fall under the licensing and approval submission category titled 'Written Notification on Air Emission Sources (Generator) Under Regulations 5 of the Environmental Quality (Clean Air) Regulation, 2014'. The project is to design a generator set at Sibul Airport. The project is coordinated by Malaysia Airport Sdn Bhd and had appointed PERUNDING NAJNA SDN BHD as Environmental Consultant who is responsible for the design of the said equipment.

There is no requirement for Environmental Impact Assessment and Environmental Management Plan study for the project. This is because the project is not a prescribed activity under Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987.

The report in regard of the project is submitted to Department of Environment (DOE) for their approval and critique. In the case it was not approved, the report have to be revised based on the comments and requirements aligned with the request from Department of Environment.

### 3.2 Problem Statement

The purpose of this project is to build two set of generators at Sibul Airport that meet the requirement and standards as well as the guidelines set by Department of Environment (DOE). Generator is known to produce sound at a certain decibel that can affect or interrupt the daily life of crowd in the affected area. In this case, the sound produced can reach around 100 meter. Layers of silencers are required to surround the generator to reduce the sound produce by the generator. Effectiveness of the silencers depend on the decibels produce by the generator as well as the type of silencers used. Thus, the sound produce by the generator in the range of 20 m is calculated and the best brand of silencers are chosen.

### 3.3 Objectives

- a) Notify the related authorities regarding the plan to install the equipment
- b) To ensure the project comply with legislative requirement, and any other requirement stipulated by other agencies, department, and the overall project environmental objectives.

### 3.4 Scope of Work

The project is covering the area of Sibul, Sarawak. The specific location is located at Sibul Airport, 96000, Sibul Sarawak. There is no public facilities in the area within 150 m radius from the location.



Figure 3.1 Locality Plan of the Project

### **3.5 Sections of the Report**

#### **a) Form ASB/PUB/N-JANA**

This form compiled the details of the project. It was divided to a few sections namely:

**i) General Information for Notification**

Information of the applicants (clients) and the information of the manufacturer (consultants) is compiled at this section. The information regarding the location of the project is also entailed at this section.

**ii) Generator Information**

This section compiled the information of the generator installed for the project which included:

- Manufacturer
- Model
- Capacity
- Type of fuel
- Operational Hours
- Rate of Fuel Consumption

**iii) Information of the Generator House**

This section carried the explanation on the prevention of noise generation or the acoustic consideration that had been incorporated in drawing or working paper. This include the noise level at the nearest premise boundary.

**iv) Exhaust Design**

This section compiled the information of the design of the exhaust which included:

- Exhaust Outlet
- Proposed Height of Exhaust
- Date of Operation
- Date of Installation
- Date of Completion
- Date of First Test-Run

**v) Plan/ Drawing/Catalogue/Technical Specification/Calculation**

This section act as a reminder or checklist of the information or guidelines that have to be included in the report. This section consist of followed:

- Attach drawings showing construction details of the exhaust
- Land use plan and location plan within the radius of 500 metre from the exhaust
- Building layout and elevation plan showing location of the generator and air pollution control system
- Related catalogue and document
- All plans and engineering drawings should be in A1 and certified by professional engineer preferably in the discipline of Environmental Engineering, Chemical Engineering, Civil Engineering or Mechanical Engineering. All plans should be completed with title and reference number.

**vi) Declaration**

Declaration from the engineer involved in the instalment of the equipment.

**b) Drawings/Layout Plans**

This section comprised of the drawings of the project. The drawings typically included are:

**i) Locality Plan**

It show the site location of the proposed project in details.

**ii) Typical Plan Elevation of Generator Set**

It shows the details of the generator to be installed in different perspective.

**c) Calculations**

A specific calculation is conducted in accordance to the guidelines given by Department of Environment (DOE) to calculate the noise generate by the generator. There is a range of noise generated that is approved by Department of Environment

that have to be followed. Therefore, the calculation is vital to make sure the noise generated comply with the approved range.

**d) Catalogue/ Technical Specification Sheet**

Both catalogue and technical specification sheet are important as both carried the information needed to perform the calculation of noise produced by generator and fuel consumption.

**e) Appointment Letter**

A formal appointment letter of applicants (clients) appointing the environment consultant as a reference for the related authorities.

**f) Performance Monitoring Sheet**

In order to make sure the equipment function at best condition, performance monitoring sheet is provided to give the idea to the related authorities of how the monitoring process of the equipment is conducted.

*Table 3.1 Example of Site Daily Monitoring Log*

Date	Pressure Gauge (If any)		Dark smoke		Signature
	In	Out	Yes	No	

*Table 3.2 Example of Monthly Monitoring Logbook*

Date	Sign of Corrosion	Boiler Operation Frequency (How many days operation?)	Any dust particulate within 3 meters of boiler compound	Signature

Table 3.3 Example of Table for Corrective Action for Upset Condition

<b>Date</b>	<b>Type of Upset Condition</b>	<b>Diagnosis of Cause of Upset Condition</b>	<b>Any Non-Compliance of Emission Standard? – give explanation</b>	<b>Corrective Action Taken</b>	<b>When condition Returned to Normal</b>	<b>Signature of Reporting Officer</b>

## CONCLUSION

In conclusion, the objectives of the case study which are to notify the related authorities regarding the plan to install the equipment is achieved by the submission of this report. The Department of Environment (DOE) have been notified regarding the plan to install a set of generator at Sibuland Airport by the submission of the Written Notification. Albeit that, the objective to make sure the project comply with legislative requirement, and any other requirement stipulated by other agencies are still in discussion as it take a few weeks for the authorities to go through the report and made sure all of the information needed are entailed, the guidelines are followed and the limit established are complied. In the case the submission is approved, the installation of the generator set can proceed and in the case it is not approved the report will be revised.

## RECOMMENDATION

To make sure all of the information and details are complete, it is for the best to start from the Form ASB/PUB/N-JANA. This form is divided into sections that have to be filled and at the same time it inform the details that have to be included in the report. Therefore, it is important to refer to the form concurrently preparing the report. This is to make sure no important details are missing and lead to submission of incomplete form.

Besides that, it is important to refer to the guidelines provided by authorities or in this case guidelines provided by Department of Environment (DOE). Department of Environment provided guidelines for each equipment that have to be installed to make sure it comply to their needs and wants. For example, the design have to be in certain way that will not harm the environment and it have to be complied by environment consultant. Failure to do so will lead to rejection to the written notification and the submission will have to be revised.

Last but not least, the method of calculation always have to be in sync with the method of calculation provided by Department of Environment. Every environment consultant have different approach to calculation, in this case calculation of final noise generated by the generator. Despite having different approach, the Department of Environment insist that their method of calculation have to be applied. Therefore, it is safer to apply their method of calculation.

## REFERENCES

*Department of Environment.* (n.d.). Retrieved 19 April , 2021, from National Water Quality Standard Malaysia.

Department of Environment (DOE). (2020). *Licensing Submission and Approval*. Retrieved 20 April, 2021, from Guidelines For Environmental Noise and Limit: <https://www.doe.gov.my/portalv1/wp-content/uploads/2013/01/Guidelines-Noise-2019.pdf>

Perunding Najna. (2020). *Perunding Najna Environment Consultancy*. Retrieved 20 April, 2021, from Company Profile: <https://perundingnajna.com>

Perunding Najna. (2021). *Written Notification On Air Emission Sources (Generator) Under Regulations 5 of the Environmental Quality (Clean Air) Regulation, 2014 for Sibul Airport*. Retrieved 20 April, 2021

# APPENDIX

## GENERATOR SET 4



### BORANG AS/PUB/N-JANA FORM AS/PUB/N-JAWA

PENDAHARAN BERTULIS PUNCA PENCEMARAN  
LOKASI (LAMPURAN)  
DI BAWAH PERATURAN S, PERATURAN-PERATURAN  
KUALITI ALAM SEKELILING (LOKASI BERSEKUTU), 2014

WRITTEN NOTIFICATION ON AIR EMISSION SOURCES  
REGISTRATION UNDER REGULATIONS  
OF THE ENVIRONMENTAL QUALITY (CELEBRATORY)  
REGULATION 1992

SIKUTERANGKAP BUKAN BERSEKUTU  
KUALITI ALAM SEKELILING (LAMPURAN)  
DI BAWAH PERATURAN S, PERATURAN-PERATURAN  
KUALITI ALAM SEKELILING (LOKASI BERSEKUTU), 2014

JABATAN ALAM BERSIH  
KEMENTERIAN KESIHATAN DAN KESELAMATAN  
DEPARTMENT OF ENVIRONMENT  
MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

Appendix 1 Front Cover of AS/PUB/N-JANA

Parameters	Unit	National Water Quality Standards					
		I	IIA	III	IV	V	VI
Ammoniacal Nitrogen	mg/l	0.1	0.3	0.3	0.9	2.7	>2.7
BOD	mg/l	1.0	3.0	1.0	3.0	12.0	>12.0
COD	mg/l	10.0	25.0	25.0	50.0	100.0	>100.0
DO	mg/l	7.0	5.0-7.0	5.0-7.0	3.0-6.0	<3.0	<1.0
pH	-	6.5-8.5	6.5-8.5	6.5-8.5	5.0-9.0	5.0-9.0	-
Salinity	TDSS	10.0	10.0	10.0	-	-	-
Electrical Conductivity	µmhos/cm	1,000.0	1,000.0	-	-	6,000.0	-
Residual Chlorine	mg/l	0.2	0.2	0.2	-	-	-
Chlorine	mg/l	0.2	0.2	0.2	-	-	-
Salinity	‰	0.5	1.0	-	-	2.0	-
Turbidity	NTU	1.0	1.0	1.0	1.0	1.0	1.0
Total Dissolved Solids	mg/l	50.0	1,000.0	-	-	4,000.0	-
Total Suspended Solids	mg/l	25.0	50.0	50.0	50.0	300.0	300.0
Temperature	°C	-	Normal +2°C	-	Normal +2°C	-	-
Turbidity	NTU	1.0	1.0	1.0	1.0	1.0	1.0
Faecal Coliform	MPN/100 ml	10.0	100.0	100.0	5,000.0	5,000.0	>20,000.0
Total Coliform	MPN/100 ml	100.0	5,000.0	5,000.0	50,000.0	50,000.0	>100,000.0
Iron	mg/l	Statistical	1.0	1.0	1.0	1.0	1.0
Manganese	mg/l	Statistical	0.1	0.1	0.1	0.2	0.2
Nitrate	mg/l	Statistical	7.0	7.0	-	5.0	-
Phosphorus	mg/l	Statistical	0.2	0.2	0.1	-	-
CR & D limits	mg/l	0.04-N	0.04-N	0.1	0.1	0.1	0.1

Notes:  
 0 : No visible faecal coliforms or faecal streptococci or faecal coliforms.  
 + : Present in small numbers, only on a recommended basis.  
 - : Occasional mean.  
 \* : Maximum not to be exceeded.  
 N : Free from visible odour, discoloration and deposits.  
 Class I : Best  
 Class II : Good  
 Class III : Fair  
 Class IV : Fairly good  
 Class V : Fairly poor  
 Class VI : Poor  
 Class VII : Very poor  
 Class VIII : Very poor  
 Class IX : Very poor  
 Class X : Very poor  
 Class XI : Very poor  
 Class XII : Very poor  
 Class XIII : Very poor  
 Class XIV : Very poor  
 Class XV : Very poor  
 Class XVI : Very poor  
 Class XVII : Very poor  
 Class XVIII : Very poor  
 Class XIX : Very poor  
 Class XX : Very poor  
 Class XXI : Very poor  
 Class XXII : Very poor  
 Class XXIII : Very poor  
 Class XXIV : Very poor  
 Class XXV : Very poor  
 Class XXVI : Very poor  
 Class XXVII : Very poor  
 Class XXVIII : Very poor  
 Class XXIX : Very poor  
 Class XXX : Very poor

Appendix 2 National Water Quality Standard Malaysia

Receiving Land Use Category	L <sub>Am</sub> Day 7.00 am - 10.00 pm	L <sub>Am</sub> Night 10.00 pm - 7.00 am
Low Density Residential, Noise Sensitive Receptors, Institutional (School, Hospital, Worship).	55 dBA	50 dBA
Suburban Residential (Medium Density), Recreational	60 dBA	55 dBA
Urban Residential (High Density), Mixed Development	65 dBA	60 dBA
Commercial Business Zones.	65 dBA	60 dBA
Industrial Zones	70 dBA	65 dBA

*Appendix 3 Recommended Permissible Sound Level*