CHAPTER 2

TERMS OF REFERENCE OF EIA STUDY

2.0 Introduction

This chapter provide the Terms of Reference (TOR) of the Environmental Impact Assessment (EIA) study which has been approved by the Department of Environment (DOE). The endorsement of the TOR is for the EIA Study on the Proposed Development of Satellite Waste Management Centre, Johor for Cenviro (Johor) Sdn. Bhd. (CJSB).

2.1 Terms of Reference of EIA Study

AMR Environmental Sdn. Bhd. (AMR) was appointed by Cenviro (Johor) Sdn. Bhd. (CJSB) to conduct the Terms of Reference for this EIA study. The Terms of Reference (TOR) for this EIA was presented for the consideration and approval by the Department of Environment (DOE). The TOR was prepared in accordance with the preparation of an EIA as outline in **Chapter 4 (Pre-submission Stage of EIA Report)** of the **Environmental Impact Assessment Guidelines in Malaysia 2016**, and was briefly presented as the following:

Chapter 1: Introduction
Chapter 2: Study Team
Chapter 3: Scope of Project
Chapter 4: Consideration of Alternatives
Chapter 5: Significant Environmental Impacts to be Studied
Chapter 6: Study Boundaries
Chapter 7: Assessment Standards
Chapter 8: Timeline of Studies
Chapter 9: Consideration of Concurrent Project
Chapter 10: Assessment Methodologies
Chapter 11: Possible Mitigation Measures

The TOR report entitled **"Proposed Development of Satellite Waste Management Centre Johor (SWMCJ) at PTD 2288 in Mukim Pantai Timur, District of Kota Tinggi, Johor for Cenviro (Johor) Sdn. Bhd."** has been submitted to DOE Putrajaya on 24th May 2017. On 18th July 2017, CJSB has been requested by the Technical Review Committee (TRC), DOE Putrajaya via an official letter (Ref. No.: JAS.50/013/901/079 (6) dated on 18th July 2017, **Appendix 2.A**) to incorporate the additional information related to the Proposed Project in the new submission of TOR report to DOE Putrajaya. **Table 2.1** shows the list of additional information requested by the DOE prior to the submission of new TOR.

Table 2.1: List of Additional Information Requested

No.	List of Additional Information Requested
(i)	*ESI yang dikemukakan hendaklah memperinicikan skop maklumat berkaitan perkara-perkara yang dikaji:*
	1. *Perlu menjelaskan cadangan loji rawatan terma (incinerator) yang melibatkan efluen yang dihasilkan melalui proses yang dihantar ke loji rawatan air sisa (waste water treatment plant). Maklumat-maklumat lain juga tidak dinyatakan seperti sisa yang akan dihasilkan oleh incinerator (per day) dan jumlah jam operasi bagi sehari.*
	2. *TOR juga perlu menunjukkan pengurusan tujuan pembinaan Industrial effluent treatment system berkaitan punca bahan buangan adalah daripada PETRONAS RAPID project atau sebaliknya. Kaedah penentuan kuantiti dan kualiti efluen yang akan diproses, kaedah pelepasan, pematuhan efluen yang dilepaskan, dan potensi punca pelepasan juga perlu dijelaskan bagi membantu skop kajian.*
	3. *Perincikan maklumat berkaitan kemudahan penstoran (storage facility) berkenaan sumber bahan buangan bagi tujuan penstoran, tempoh penstoran, dll.*
(ii)	*Mempericikan jenis aktiviti bagi cadangan pembinaan "Industrial Effluent Treatment System" dan "Storage Facility" berdasarkan kepada Perintah Kualiti Alam Sekeliling (Aktiviti yang Ditetapkan) (Penilaian Kesan Kepada Alam Sekeliling) 2015.*
(iii)	*Input di dalam Alternative Consideration perlu dijelaskan tentang pilihan teknologi incinerator dan alat kawalan pencemaran.*
(iv)	*Input di dalam Alternative Consideration perlu dijelaskan tentang pilihan teknologi incinerator dan alat kawalan pencemaran.*
	1. *Alam sekitar sedia ada*
	2. *Kawasan alam sekitar sensitive*
	3. *Assessment standard (kajian hidraulik, persampelan air marin, dll.)*
	4. *Kenalpasti penentuan stesen-stesen pengawasan bagi persampelan kualiti udara, kualiti air, dll.*
(v)	*Penentuan kesan kepada alam sekitar perlu diperincikan memandangkan ianya tidak mempunyai asas rujukan dan tidak dinyatakan dalam TOR/ESI/mana-mana yang berkaitan.*
(vi)	*Cadangan langkah-langkah kawalan hendaklah merangkumi fasa pra, ketika dan pasca pembinaan dan operasi.*
(vii)	*Perlu menyatakan kaedah kajian kerja tanah yang akan digunakan termasuk kerja-kerja tanah yang melibatkan laluan pengangkutan bagi lori di luar tapak projek (laluan sementara).*
(viii)	*Terdapat konsultan yang telah tamat tempoh pendaftaran.*

Reference: JAS Letter Ref. No. JAS.50/013/901/079 (6), Appendix 2.A

A new TOR report including the additional information requested by the DOE Putrajaya was submitted on 31st July 2017 and approved on 15th August 2017. The TOR approval letter from the DOE Putrajaya (Ref. No.: JAS.5/013/901/079 (11)) dated on 15th August 2017 which states the requirement and scope of an EIA study for the intended project. A copy of TOR approval letter is given in **Appendix 2.B**.

The TOR on the preparation of the EIA for the Proposed Project was approved and subjected to the requirements as stipulated in **Table 2.2**, which shall be taken into account in this EIA report.

Table 2.2: Requirements of TOR Approval

No.	TOR Requirements
(i)	*Kesemua ulasan bertulis daripada agensi dan pakar pengulas individu yang dikemukakan kepada pihak tuan termasuk ulasan sama ada secara bertulis atau yang dibincangkan hendaklah diberikan perhatian yang sewajarnya dalam Laporan EIA. Format maklumbalas kepada ulasan bertulis yang akan diterima kelak adalah seperti di* ***Table 2.4****.*
(ii)	*Laporan Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2) hendaklah disediakan mengikut Guidance Document for the Preparation of the Document on Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2).*
(iii)	*Pemilihan teknologi yang terbaik bagi Thermal Treatment Plant dan Industrial Effluent Treatment System mestilah dikemukakan dengan terperinci di dalam Laporan EIA.*
(iv)	*Pelaksanaan Guided Self-Regulation (GSR) bagi pengurusan alam sekitar ke atas projek ini hendaklah dijelaskan dengan terperinci dalam Laporan EIA.*
(v)	*Perunding EIA yang dilantik hendaklah dipastikan tempoh sah pendaftaran dipatuhi sebelum kajian EIA dijalankan.*
(vi)	*Kajian EIA bagi cadangan projek ini hendaklah dijalankan secara kuantitatif, komprehensif dan langkah-langkah kawalan pencemaran yang dicadangkan juga perlu dijelaskan dengan spesifik dan terperinci bagi isu-isu kritikal yang dikenalpasti.*

Reference: JAS Letter Ref. No. JAS.5/013/901/079 (11), Appendix 2.B

TOR report was distributed to the Appointed Individuals (AIs) and Government Agencies (GAs) who need to submit the written comments prior to the submission of EIA report to the DOE (Refer **Appendix 2.C**). The list of AIs and Gas involves in this project are listed as follows;

i. Department of Environment, Johor;
ii. Department of Irrigation and Drainage, Johor;
iii. Department of Town and Country Planning, Johor;
iv. Department of Town and Country Planning, Kuala Lumpur;
v. Department of Forestry, Johor;
vi. Department of Health, Johor;
vii. Department of Wildlife and National Parks (PERHILITAN), Johor;
viii. Johor State Economy Planning Unit;
ix. Johor State Fisheries Office;
x. Kota Tinggi District Council;
xi. Department of Environment, Cameron Highland; and
xii. Hazardous Substances Division, Department of Environment, Putrajaya.

All the written comments and feedback from project proponent and environmental consultant is presented in **Table 2.3** and **2.4** as per format stipulated by the DOE.

Table 2.3: Checklist for the Compliance on "Revised TOR"

No.	Items in the "Revised TOR" (Please state)	Reference in EIA Report (Please state chapter and page involve)	Comment from DOE
(i)	*Kesemua ulasan bertulis daripada agensi dan pakar pengulas individu yang dikemukakan kepada pihak tuan termasuk ulasan sama ada secara bertulis atau yang dibincangkan hendaklah diberikan perhatian yang sewajarnya dalam Laporan EIA. Format maklumbalas kepada ulasan bertulis yang akan diterima kelak adalah seperti di* ***Table 2.4****.*	*Rujuk Table 2.4, muka surat 2-5,* ***Bab 2 - Terms of Reference of EIA Study***	
(ii)	*Laporan Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2) hendaklah disediakan mengikut Guidance Document For The Preparation of The Document on Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2).*	*Laporan Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2) telah disediakan dan disertakan di dalam* ***Bab 7 – Evaluation of Impacts***	
(iii)	*Pemilihan teknologi yang terbaik bagi Thermal Treatment Plant dan Industrial Effluent Treatment System mestilah dikemukakan dengan terperinci di dalam Laporan EIA.*	*Maklumat teknologi bagi Thermal Treatment Plant dan Industrial Effluent Treatment System telah dikemukakan di dalam* ***Bab 5 – Project Description***	
(iv)	*Pelaksanaan Guided Self-Regulation (GSR) bagi pengurusan alam sekitar ke atas projek ini hendaklah dijelaskan dengan terperinci dalam Laporan EIA.*	*Pelaksanaan Guided Self-Regulation (GSR) bagi pengurusan alam sekitar ke atas projek ini telah diperincikan di dalam* ***Bab 9 – Environmental Management Plan (EMP)***	
(v)	*Perunding EIA yang dilantik hendaklah dipastikan tempoh sah pendaftaran dipatuhi sebelum kajian EIA dijalankan.*	*Rujuk Table 1.1, muka surat 1-9,* ***Bab 1 - Introduction***	
(vi)	*Kajian EIA bagi cadangan projek ini hendaklah dijalankan secara kuantitatif, komprehensif dan langkah-langkah kawalan pencemaran yang dicadangkan juga perlu dijelaskan dengan spesifik dan terperinci bagi isu-isu kritikal yang dikenalpasti.*	*Kajian EIA bagi cadangan projek ini telah dijalankan dan langkah-langkah kawalan pencemaran yang dicadangkan telah dijelaskan di dalam* ***Bab 8 – Mitigation Measures***	

Reference: JAS Letter Ref. No. JAS.5/013/901/079 (11), Appendix 2.B

Table 2.4: Feedback to Written Comments from Government Agencies and Appointed Individuals

No.	Written Comments	Reference in EIA Report (Please state chapter and page involve)	Comment from DOE
(i)	*Menyenaraikan kod-kod buangan yang akan diproses kerana ianya akan menjangkakan impak yang boleh dikawal dan perlu diperjelaskan di dalam laporan EIA;*	*Kod-kod buangan yang akan diproses telah diperincikan di dalam **Bab 5 – Project Decsription,** muka surat 5-4*	
(ii)	*Mengemukakan cadangan teknologi yang akan digunakan untuk rawatan dan peroleh kembali buangan; dan*	*Cadangan teknologi yang akan digunakan untuk rawatan buangan telah dijelaskan di dalam **Bab 5 – Project Description**, muka surat 5-33*	
(iii)	*Memperjelaskan 'waste mass balance' di dalam Figure 3.4 di muka surat 20, Laporan TOR.*	*Maklumat ini adalah sebagai anggaran awal yang disediakan oleh PETRONAS RAPID bagi cadangan projek*	

Reference: JAS.50/013/901/079 (17), Appendix 2.C

The TOR for conducting the EIA on the proposed development of Satellite Waste Management Centre Johor (SWMCJ) is generally evaluating the impacts of the **Thermal Treatment Plant with Power Generation Capability, Off-site Storage Facility** and **Industrial Effluent Treatment System (IETS)** at the SWMCJ Project site. However, the EIA study will emphasize and evaluate pertinent areas of potential environmental concern due to these facilities at the proposed site.

2.2 Scope of Endorsed Terms of Reference (TOR)

The endorsed TOR document presents the scope of study for conducting the EIA of the proposed waste management centre. As such the scope of this EIA will strictly evaluate the capability or the performance of the proposed facilities. The EIA is presented and evaluated the pertinent areas of environmental concern of the proposed facilities as to establish potential impacts within the context of the existing environmental conditions. The EIA will document the existing environmental conditions at the site and its environs including the physical-chemical and public health as well as socio-economic aspects.

2.2.1 Scope of Proposed Scheduled Waste Management Facilities

In the endorsed TOR, the following are main infrastructure facilities for scheduled waste management generated from PETRONAS RAPID project and other potential waste generator which will be further described in this EIA report.

1) **Thermal Treatment Plant** - Capacity of 22,750 MT per annum including waste reception and feeding system, core reactor (rotary kiln with secondary combustion chamber), boiler/turbine and generator for power generation, Air Pollution Control System (APCS), Continuous Emission Monitoring System (CEMS), residual handling and collection system and stack;
2) **Off-site Storage Facility** - Waste storage and transit area; and
3) **Industrial Effluent Treatment System (IETS)** – To cater for the surface runoff (dirty rainwater) from roads and thermal treatment plant open area.

Other infrastructures will be built at the Proposed Project site in order to support the main operation of SWMCJ are as follows;

1) Site preparation and earth works;
2) Gate and guard house at the main entrance to the property;
3) Security fencing around the whole of the property and additional security fencing around areas/facilities with restricted access;
4) Internal access roads, including traffic routing and control facilities as well as parking lots for vehicles and mobile equipment;
5) Waste Receiving Area;
   - Weighbridge for incoming and outgoing trucks;
   - Administration building;
   - Service building: - Staff decontamination, toilets and washing facilities;
     - Staff change and medical first aid rooms;
     - Kitchen, mess room, prayer rooms and restrooms;
     - Simple laboratory for waste analysis and characterization, environmental monitoring;
     - Garage and maintenance or workshop facilities;
     - Truck or vehicle washing and decontamination facilities and sampling;
7) Pre-Treatment Area;
8) Control Room;
9) Tipping Area at the Thermal Treatment Plant;
10) Tank farm;
11) Utilities;
    - Fuel storage and fuelling facilities (Can be combined in Item 10: Tank farm);
    - Fire control and fire-fighting system;
    - Power supply (There is a readily available 11KV substation at the corner of the 40 acres site at the front, West side. The function and future usage shall be discussed with TNB at the later stage)
    - Potable water supply and storage;
    - Storm water and drainage system;
    - Telecommunication facilities.

All the detailed description of SWMCJ project will be presented in **Chapter 5 Project Description of this EIA report**. The description of the project concept is included the project background, size and capacity, source and amount of scheduled waste to be received, detail description of main facilities and other infrastructure, waste acceptance criteria, project implementation schedule and others.

2.2.2 Scope of Existing Environment and Baseline Study

The description of the existing environment is mostly based on the baseline conducted for collection of primary data by the EIA study team and also secondary data resources obtained from various sources for the project. Background information on all aspects of interest or concern is solicited to further enhance the understanding of the localised physical characteristics and the existing environment of the study area. Primary as well as secondary sources of information relevant to the study will be reviewed and assessed accordingly and these include data such as:

i. Land use (present and future) for the areas surrounding the project;
ii. Climate and meteorological data;
iii. Survey, aerial and topographical information;
iv. Population, social and health information in the vicinity the project site;
v. Infrastructure such as roads, drainage, utilities and others; and
vi. Solid and hazardous wastes disposal areas or landfill facility at the project site.

A description of the existing physical structures or characteristics of the site where the project is proposed to be located is presented in relation to the project foot-print and its surrounding existing physical infrastructure is addressed in this EIA report. Similarly, the most recent information such as topography, drainage, land use pattern, population and health as well as infrastructures and utilities will be gathered and presented in the EIA. In addition, all other existing surrounding development those already established nearby to the Proposed Project site are reported as these are also directly affecting the day-to-day operation of the Proposed Project in the future.

Survey of the sensitive receptor from Proposed Project area and its surroundings is reported in the EIA. The land use data and information that are used in the EIA report will be taken from the existing secondary maps and reports that include the structure and local plan, topography maps and site survey within 5 km Zone of Impact (ZOI). A detailed analysis of the existing land use near the project site area within a radius of 5 km is made through field survey and information gathered from local authorities.

A baseline study is the study of the current status of the environment in the Proposed Project development area before the development work is started. The baseline study will provide a detailed description of the affected area and establish the existing environmental and socio-economic baseline status that is used in the impact assessment phase. The existing

background information on all aspects of interest or concern are solicited to further enhance the understanding of the localised physical characteristics and the existing environment of the study area.

The information on the methodologies that is used for undertaking the impact assessment and evaluation of significance if further evaluated in this EIA report. Various aspects of environmental media may be it physical and chemical are will be continuously monitored within and outside the Proposed Project location. Thus, the description of the state of the ambient environmental impacts if any, affecting the air, water including noise will be identified. The quality of ambient air, water and noise during construction and operation are assessed to be presented as a baseline data for this project as follows.

i. Sources of air emission within the project site;
ii. Air quality data within and around the project area;
iii. Noise data within and around the project site;
iv. Source of wastewater effluents available at the project site; and
v. Baseline surface water and marine water quality data within and around the project area.

Description and assessment of the most significant area of environmental concern with regard to the proposed Satellite Waste Management Centre Johor (SWMCJ) is presented in **Chapter 6 Existing Environment of this EIA report**.

2.2.3 Scope of Potential Impacts

Table 2.5 presents the summary of environmental impact matrix of pertinent aspects of environmental areas of the study and their magnitude of impact associated with the Proposed Project. The evaluation of impacts are made against established standards and criteria made under the Environmental Quality Act, 1974 and its subsidiary legislation as well as other internationally and nationally accepted standards criteria or based on the existing values set by the Department of Environment (DOE). The impact assessment is evaluated during the **pre-construction**, **construction** and **operation** of SWMCJ facilities. The scope of potential impacts of particular concern that can be adversely affected by the operation of SWMCJ are summarised in **Figure 2.1**.

Figure 2.1: Scope of Potential Impacts

Table 2.5: Summary of Environmental Impact Matrix of the Proposed Project

Environmental Area	Magnitude of Potential Impact			Remarks or Comments
	Low	Medium	High	
Air Quality			√	• Suspensions of dust during the earth works and exhaust emission from transportation vehicles. • Degradation of air quality due to emissions and potentially hazardous release of toxins, dioxin, furans, toxic heavy metals, trace metals, sulphur, nitrogen oxides, fly ash and other pollutants.
Land Disturbing		√		• Earthwork activity will cover an area of approximately 20 acres for the construction of SWMCJ facilities. • Site clearing. • Removal of vegetation.
Health Impact		√		• Health risks to local residents from the prolonged exposure to air emission pollutants. • Chemical reaction, fire or explosion from incompatible storage and classification of waste material. • Prolonged exposure to toxic and hazardous materials and emission potentially hazardous operator health if insufficient protection measures are taken.
Quantitative Risk Assessment		√		• Accidental fire, toxic dispersion and explosion from incompatible storage and classification of waste material.
Waste Management		√		• Solid waste (i.e. construction waste) that is likely to be generated by the construction activities. • Residue (fly ash and bottom ash) generated from the operation of thermal treatment plant. • Residue (sludge) generated from Industrial Effluent Treatment System (IETS) operation.
Wastewater Quality		√		• Inadequate design or operation of IETS leading from contaminated discharge to water courses. • Contamination of waterways can result from liquid discharge (i.e. treated effluent discharge, surface run off or accidental release of raw/partly treated wastewater).

Table 2.5: Summary of Environmental Impact Matrix of the Proposed Project (cont.)

Environmental Area	Magnitude of Potential Impact			Remarks or Comments
	Low	Medium	High	
Socio-economic	√			• Socio-economic environment, baseline data regarding on the population and settlement, socio-cultural features and public amenities, infrastructure facilities, public health and safety, employment and other social aspects.
Noise Quality	√			• Movement of vehicles and construction machineries like excavator, backhoe, compactor and pumps may be possible sources of noise pollution.
Hydraulic Study	Not significant			• The Proposed Project does not involve any development in the sea area.
Marine Water Study	Not significant			• The Proposed Project does not involve any development in the sea area.

All mentioned scope of environmental area will potentially be affected by the project works or components which are covered in **Chapter 7 Evaluation of Impacts of this EIA report**.

The potential significant environmental impacts resulting from various pre-construction, construction and operational activities associated with the Proposed Project have been identified. Severity of each impact is evaluated and appropriate mitigation measures is recommended to ensure effectiveness management measures are implemented onsite during pre-construction, construction and operation phases of SWMCJ project.

Also part in this chapter present the Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2) as the Proposed Project development involves activity that disturb land surface, a plan to mitigate soil erosion on the project site is prepared.

LD-P2M2 refers to the use of construction methods, processes, materials, and practices that is intended to prevent, reduce, or eliminate the generation of pollutants at the source (development site) during any land disturbing activity through the protection of natural resources by preservation and conservation, reduction of waste generation and releases or discharges of pollutants to land, air, and water, and incorporation of best management practices (BMPs) and techniques to attain compliance with the conditions stipulated in the EIA approval conditions (Conditions of Approval - COA). The focus of the LD-P2M2 document (or simply LD-P2M2) is on the prevention, mitigation and control of the discharge from the development area containing the major pollutant (suspended solids) resulting from land disturbing activities.

The objectives of the Land Disturbing Pollution Prevention and Mitigation Measures report (LD-P2M2) are:

i. To provide a guide and effective control measures for the developer in managing erosion and sediment impacts during the development activities;
ii. To assess the hydrological condition for both pre and post development;
iii. To provide adequate drainage network to suit with development and environmental friendly demand;
iv. To determine the sediment storage required and provide suitable construction program to avoid excessive and uncontrolled sedimentation;
v. To indicate the level of erositivity for the whole development area; and
vi. To propose prevention measures and control of offsite damage.

2.2.3.1 Summary of Impact Assessment Methodology

This sub-chapter presents the summary of environmental impact assessment as proposed in the endorsed TOR to help determine the level to which identified impacts need to be assessed and to suggest the suitable methodologies when conducting the EIA study. The environmental components on which assessment will need to be carried out to predict the scale of the impact will be project specific.

Environmental assessment is a comparison of the existing environment and a prediction of alterations or changes to these existing conditions that result from the implementation of Proposed Project. All significant changes, whether negatively or positively affecting the existing environment, need to be described conclusively and the appropriate assessment methodology applied to verify conclusions. **Table 2.6** shows summary of impact assessment that is used to evaluate the scale and extent of environmental impacts on the key environmental components.

Table 2.6: Summary of Impacts Assessment

No.	Impacts	Method of Assessment	Evaluation Criteria	Reference
1.	Air Quality	AERMOD air dispersion modelling	Emission Limit Ambient Air Quality Standards	Environmental Quality (Clean Air) Regulations, 2014 Malaysian Ambient Air Quality Guidelines 2013
2.	Land Disturbing	Universal Soil Loss Equation (USLE) to assess the erosion risk Modified Universal Soil Loss Equation (MUSLE) for sediment yield estimation	Guidance Document for Addressing Soil Erosion and Sediment Control Aspects in the Environmental Impact Assessment (EIA) Report Guidelines on Land Disturbing Pollution Prevention and Mitigation Measures (LD-P2M2) Urban Stormwater Management Manual for Malaysia (MSMA Second Edition, December 2011), updated May 2015. Guideline of Erosion and Sediment Control in Malaysia (October 2010)	Department of Environment Department of Irrigation and Drainage
3.	Health	Health risk assessment (HRA) methodology	Acceptable lifetime carcinogenic risk range will be taken as a range between 10^{-6} to 10^{-4}	Guidance Document on Health Impact Assessment (HIA) in Environmental Impact Assessment (DOE, 2012) United States Environmental Protection Agency (U.S. EPA, 2005)

Table 2.6: Summary of Impacts Assessment (cont.)

No.	Impacts	Method of Assessment	Evaluation Criteria	Reference
4.	Quantitative Risk Assessment	QRA Individual Risk Modelling (CASQADE)	Criteria for QRA Individual Risk: 1 x 10^{-6} fatality per year for residential areas 1 x 10^{-5} fatality per year for neighbouring industry	UK Health and Safety Executives Criteria and Asian Development Bank (ADB) Department of Environment (DOE), Ministry of Natural Resources and Environment, Malaysia, Environmental Impact Assessment Guidelines for Risk Assessment, December 2004.
5.	Wastewater Quality	Industrial Effluent Characteristic Study	DOE Discharge Limit, Standard B	Environmental Quality (Industrial Effluent) Regulations, 2009
6.	Waste Management	Identification of waste generated Management of waste (i.e. scheduled, solid and biomass waste)	Waste management (solid and scheduled waste) procedures as in the regulations	Environmental Quality (Scheduled Waste) Regulations 2005
7.	Socio-economic	Secondary Data: Literature Review Primary Data: Fieldwork Stakeholder Consultation	Demographic background, property ownership, infrastructure and basic amenities, perception, aesthetics and culture, assessment of level of acceptability.	Primary and Secondary Data
8.	Noise Quality	Noise impact from traffic Construction site noise	70 dBA (day time) and 60 dBA (night time) for designated industrial zone	Annex B, Procedure for Measurement of Noise Emission Levels, The Planning Guidelines for Environmental Noise Limits and Control, 2007

2.2.4 Scope of Mitigation Measures

This EIA report describes the mitigation measures for various potential key environmental impacts resulting from the development of Satellite Waste Management Centre Johor (SWMCJ) which will be implemented to avoid, prevent, minimize or offset the predicted adverse impacts. Mitigation measures are included all actions and activities taken, put in place or executed which could be structural, non-structural, procedural or administrative in nature to mitigate the adverse impacts. Although some of the potential negative impacts may not have serious impacts to the environment, adequate mitigating measures are still necessary to be implemented in ensuring the effects derived from the implementation of the Proposed Project could be minimized if not totally eliminated. It is of paramount importance that the proposed mitigation measures be implemented and adopted according to the various phases of the Proposed Project development.

The recommended mitigation measures are evaluated during the **pre-construction**, **construction** and **operation** of SWMCJ facilities. Further evaluation of other related mitigation measure is discussed in **Chapter 8 Mitigation Measure of this EIA report**.

2.2.5 Scope of Environmental Management Plan (EMP)

The Environmental Management Plan (EMP) which has been formulated for the proposed development of satellite waste management centre project to assist in the management of the potential issues identified to ensure proper implementation of the proposed mitigation measures and is presented in **Chapter 9 Environmental Management Plan (EMP) of this EIA report**.

An Environmental Management Plan (EMP) is recommended to be outlined in order to manage all the potential issues identified in the report. EMP is a practical tool for the implementation of mitigation and protective measures identified in the EIA. The plan relates anticipated project activities to sensitive environmental factors, outlining policies and procedures for the protection of the environment.

The main elements of the EMP are:

i. Legislative and contractual requirements and conditions that need to be observed and complied with;
ii. An administrative setup (i.e. safety, health and environment unit) to be responsible for environmental management with well defined organization structure, manpower requirements, and responsibilities of personnel;
iii. Monitoring programmes (performance monitoring, compliance monitoring and impact monitoring); and
iv. Actions required and the reporting sequence for emergency responses during accidents or abnormal operations of the plant.

2.2.6 Conclusion and Recommendation in Endorsed TOR

The endorsed Terms of Reference (TOR) was examined overall acceptability of the environmental impacts likely to arise as a result from the construction and operation of the Proposed Development of Satellite Waste Management Centre Johor (SWMCJ) at PTD 2288 in Mukim Pantai Timur, District of Kota Tinggi, Johor for Cenviro (Johor) Sdn. Bhd. The SWMCJ facility is primarily aimed to manage and treat the potential scheduled waste generation from PETRONAS RAPID project operation and also future waste from Southern Region of Peninsular Malaysia in a much more secure manner.

Based on the findings from in the endorsed TOR, the main concerns are the air quality issue. However, with the possible mitigation measures being proposed, it is expected that the proposed activity will not impose any significant adverse impact to the environment in the vicinity of the proposed site.

Overall, based on the findings of the endorsed TOR, it is concluded that, with planned mitigation and the implementation of best practices to avoid or minimize adverse environmental impacts, the environmental impacts including cumulative environmental impacts during all phases are not rated significant. This report has also clearly demonstrated general acceptability of the residual impacts and thus the environmentally sensitive receptors in the vicinity of the new project would be successfully protected. Thus, it has been established that the proposed development of Satellite Waste Management Centre Johor (SWMCJ) is predicted to not causing any severe residual impacts onto the environment if its operation strictly adhere to the standard guidelines.