



**PETRONAS**

Ruj. Kami : RAPID-RC-PDRC-DOP-LTR-0001

Tarikh : 26hb. April 2017

**Ketua Pengarah**

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**(U/P: YBhg. Dato' Dr Ahmad Kamarulnajib bin Che Ibrahim)**

YBhg. Dato',

**MAKLUMAT TAMBAHAN KEPADA KAJIAN TERPERINCI IMPAK KEPADA ALAM SEKILILING (DEIA) BAGI CADANGAN PEMBANGUNAN PROJEK 'REFINERY AND PETROCHEMICAL INTEGRATED DEVELOPMENT' (RAPID), MUKIM Pengerang, JOHOR BAGI MERANGKUMI UNIT PEMROSESAN TAMBAHAN EURO 5 MOTOR GASOLINE (MOGAS) DAN TANGKI PENYIMPANAN OLEFIN**

Pengesahan Pemaju Projek Terhadap Maklumat-maklumat Laporan Tambahan DEIA

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Saya dengan ini mengesahkan bahawa segala maklumat yang terdapat di dalam Maklumat Tambahan Kepada Penilaian Terperinci Impak Kepada Alam Sekeliling (DEIA) bertajuk seperti diatas adalah benar dan juruperunding EIA yang dilantik, Integrated Envirotech Sdn Bhd, telah pun menjalankan kajian untuk penyediaan laporan ini berdasarkan maklumat yang diberi oleh pihak kami.

2. Saya bagi pihak Pemaju Projek sedar akan semua kandungan didalam laporan EIA tersebut termasuk semua langkah-langkah kawalan impak yang disyorkan. Pihak Pemaju Projek akan melaksanakan sebaik mungkin syor-syor tersebut bagi mengurangkan kesan buruk ke atas alam sekitar dan akan mematuhi syarat-syarat kelulusan yang dikenakan nanti.

Sekian,

**M Fuard bin Che Ibrahim**

Timbalan Direktor Projek (Refinery and Cracker)

PRPC Refinery and Cracker Sdn. Bhd.

Official Sponsor



**PRPC REFINERY AND CRACKER SDN BHD** (1058557-T)

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s.k :

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Direktor Projek (Refinery),  
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2. Saifuddin Shah bin Sowkkatali  
Ketua Kesihatan, Keselamatan, Sekuriti dan Alam Sekitar,  
Petronas Refinery and Petrochemical Corporation (PRPC)
3. Dr Mohd Zaki Said,  
Pengarah Urusan,  
Integrated Envirotech Sdn Bhd



**PETRONAS**

**PROJECT PROPONENT'S ENVIRONMENTAL PLEDGE**

Project Title: **Additional Information to the DEIA for Refinery and Petrochemical Integrated Development (RAPID) Project, Pengerang Johor, 2012 to include Euro5 Mogas and Olefin Tank Units.**

Project Proponent: **PRPC Refinery and Cracker Sdn. Bhd.**

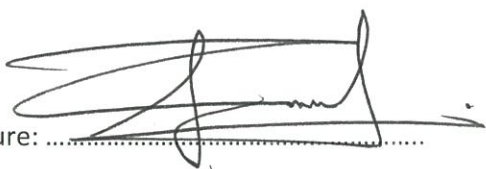
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I hereby declare that the entire EIA Report is the product of the Qualified Person (i.e. the EIA Consultant) engaged by my company and all the facts stated in the Report and the accompanying information are to the best of my knowledge and belief true and correct, and that I have not withheld or distorted any material facts. I agree and I undertake the responsibility to implement all the pollution prevention and mitigating measures (P2M2) described in the EIA Report, in the Environmental Management Plan (EMP), and in the LD-P2M2\* as proposed by the EIA Consultant. I have allocated sufficient funds for the above purpose.

Name of Project Proponent: **M Fuard bin Che Ibrahim**

NRIC Number: **660401-03-6121**

Designation: **Deputy Project Director, Refinery and Cracker, PRPC Refinery and Cracker Sdn. Bhd.**

Signature: 

Date: **26/04/17**

Company's stamp:

(Note\*: LD-P2M2 stands for Land Disturbance Pollution Prevention and Mitigation Measures)

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## **ADDITIONAL INFORMATION (Volume 1 Main Report)**



**ADDITIONAL INFORMATION TO THE DEIA REFINERY  
AND PETROCHEMICAL INTEGRATED DEVELOPMENT  
(RAPID) PROJECT, PENERANG JOHOR, 2012 TO  
INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS**

**PREPARED FOR:**

**PRPC REFINERY CRACKER (RC) SDN BHD**

**Prepared By:**

**INTEGRATED ENVIROTECH SDN. BHD. (650387-K)**

**26<sup>th</sup> APRIL 2017**



## **ADDITIONAL INFORMATION (Volume 2 Special Study)**



**ADDITIONAL INFORMATION TO THE DEIA REFINERY  
AND PETROCHEMICAL INTEGRATED DEVELOPMENT  
(RAPID) PROJECT, PENERANG JOHOR, 2012 TO  
INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS**

**PREPARED FOR:**



**PRPC REFINERY CRACKER (RC) SDN BHD**

**Prepared By:**



**INTEGRATED ENVIROTECH SDN. BHD. (650387-K)**

**26<sup>th</sup> APRIL 2017**





 <b>PETRONAS</b>	<b>ADDITIONAL INFORMATION TO THE DEIA REFINERY AND PETROCHEMICAL INTEGRATED DEVELOPMENT (RAPID) PROJECT, PENERANG JOHOR, 2012 TO INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS</b>	 <b>INTEGRATED ENVIROTECH</b>
	<b>LIST OF ABBREVIATION</b>	

3R	Reduce, Reuse and Recycle
AAAQG	Arizona Ambient Air Quality Guidelines
ACC	Accidentally Chemical Contaminated
AERMOD	AMS/EPA Regulatory Model
AIV	Acoustics Induced Vibration
ALARP	As Low As Reasonably Practicable
AO	Active Oxygen
AOC	Accidently Oily Contaminated
ARDS	Atmospheric Reside Desulfurization Unit
ARU	Amine Regeneration Unit
BAT	Best Available Technology
BFW	Boiler Feed Water
BOD	Biological Oxygen Demand
BPA	Bisphenol A
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
CBL	Convective Boundary Layer
CCPS	Center for Chemical Process Safety
CCR	Continuous Catalytic Reformer
CDU	Crude Distillation Unit
CEFS	Central Emergency and Fire Services
CESSWI	Certified Erosion, Sediment and Storm Water Inspector
CIMAH	Control of Industrial Major Accident Hazard
CMT	Crisis Management Team
CNHT	Cracked Naphtha Hydrotreating
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
COD	Chemical Oxygen Demand
COMCEN	Communication Centre
CPU	Cumene Production Unit
CSS	Central Security Services
dBA	A-Weighted Decibels
DCS	Distributed Control System
DEG	Di-Ethylene Glycols
DEIA	Detailed Environmental Impact Assessment
DHT	Diesel Hydrotreating
DOE	Department of Environment
E&P	Exploration and Production
EAI	Environmental Aspect Impact



	<b>ADDITIONAL INFORMATION TO THE DEIA REFINERY AND PETROCHEMICAL INTEGRATED DEVELOPMENT (RAPID) PROJECT, PENERANG JOHOR, 2012 TO INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS</b>	
	<b>LIST OF ABBREVIATION</b>	

EIA	Environmental Impact Assessment
EC	Exposure Concentration
EMP	Environmental Management Plan
EMR	Environmental Monitoring Report
EMT	Emergency Management Team
ENVID	Environmental Impact Identification
EO	Ethylene Oxide
EPDM	Ethylene Propylene Diene Monomer
ERP	Emergency Response Plan
ERT	Emergency Response Team
ERU	Ethylene Recovery Unit
ESBR	Emulsion Styrene Butadiene Rubber
ESCP	Erosion and Sediment Control Plan
ETP	Effluent Treatment Plant
GHG	Greenhouse Gas
GLC	Ground Level Concentration
GPR	Gas Phase Reactor
HAZID	Hazard Identification
HAZOP	Hazard and Operability
HCBR	High-Cis Butadiene Rubber
HCDU	Hydrogen Collection and Distribution
HCl	Hydrogen Chloride
HEMP	Hazards and Effects Management Process
HG	Heavy Glycols
HIA	Health Impact Assessment
HP	High Pressure
HPEO	High Purity Ethylene Oxide
HPU	Hydrogen Production Unit
HQ	Hazard Quotient
HRA	Health Risk Assessment
HSE	Health, Safety and Environment
HSEMS	HSE Management System
Hz	Hertz
IC	Incident Commander
ICS	Incident Command System
IDLH	Immediately Dangerous to Life or Health
IESB	Integrated Envirotech Sdn. Bhd.
IFC	International Finance Corporation



	<b>ADDITIONAL INFORMATION TO THE DEIA REFINERY AND PETROCHEMICAL INTEGRATED DEVELOPMENT (RAPID) PROJECT, PENERANG JOHOR, 2012 TO INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS</b>	
	<b>LIST OF ABBREVIATION</b>	

IR	Individual Risk
IRIS	Integrated Risk Information System
JPS	Jabatan Pengairan dan Saliran Malaysia
KHT	Kerosene Hydrotreating
LCR	Lifetime Cancer Risk
LDAR	Leak Detection and Repair
LDPE	Low Density Polyethylene
LLDPE	Linear Low Density Polyethylene
LP	Low Pressure
MAAQG	Malaysia Ambient Air Quality Guideline
MEG	Mono Ethylene Glycols
MMWQCS	Malaysian Marine Water Quality Criteria and Standard
MOLF	Material Offloading Facility
MSDS	Material Safety Data Sheets
MZCR	Multi-zone Circulating Reactor
N <sub>2</sub> O	Nitrous Oxide
NE	Northeast
NHT	Naphtha Hydrotreating
NO <sub>2</sub>	Nitrogen Dioxide
NTU	Nephelometric Turbidity Unit
NWQS	National Water Quality Standards
OAAQC	Ontario Ambient Air Quality Criteria
OLM	Ozone Limiting Method
OP	Operating Procedures
OSBL	Outside Battery Limit
OSC	On Scene Commander
OSHA	Occupational Safety and Health Act
PAH	Polynuclear Aromatic Hydrocarbon
PBL	Planetary Boundary Layer
PCP	Pengerang Cogen Plant
PCU	Poly Carbonate Unit
PDWT	Pengerang Deepwater Terminal
PET	Polyethylene Terephthalate
PFD	Process Flow Diagram
PLC	Programmable Logic Controllers
PMC	Project Management Consultant
PMS	Performance Management System
POU	Propylene Oxide Unit
PPE	Personal Protective Equipment





	<b>ADDITIONAL INFORMATION TO THE DEIA REFINERY AND PETROCHEMICAL INTEGRATED DEVELOPMENT (RAPID) PROJECT, PENERANG JOHOR, 2012 TO INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS</b>	
	<b>LIST OF ABBREVIATION</b>	

PPU	Phenol Production Unit
PRPC	PETRONAS Refinery and Petrochemical Corporation
PSV	Process Safety Valve
PTS	PETRONAS Technical Standard
PVMRM	Plume Volume Molar Ratio Method
QRA	Quantitative Risk Assessment
RAPID	Refinery and Petrochemical Integrated Development
RfC	Reference Concentration
RFCC	Residue Fluidized Catalytic Cracking
RfD	Reference Dose
RPSA	Refinery Pressure Swing Adsorption
RRF	Resource Recovery Facility
RSCC	RAPID Security Control Centre
SBL	Stable Boundary Layer
SGP	Saturated Gas Plant
SO <sub>2</sub>	Sulphur Dioxide
SOP	Standards Operating Procedures
SPH	Spheripol Unit
SPJ	Solid Product Jetty
SPL	Sound Pressure Levels
SPZ	Spherizone Unit
SRU	Sulphur Recovering Unit
SSBR	Solution Styrene Butadiene Rubber
SVOC	Semi Volatile Organic Compounds
SW	Southwest
SWL	Sound Power Levels
SWO	Storm Water Outlet
SWS	Sour Water Stripping
SWW	Sanitary Wastewater
TDS	Total Dissolved Solid
TEG	Tri-Ethylene Glycols
TOR	Terms of Reference
TPH	Total Petroleum Hydrocarbon
TSS	Total Suspended Solid
TTLR	Tank Truck Loading Rack
UPT	Unit Project Team
URF	Unit Risk Factor
US NOAA SQuiRTs	United State National Oceanic and Atmospheric Administration Screening Quick Reference Tables



	<b>ADDITIONAL INFORMATION TO THE DEIA REFINERY AND PETROCHEMICAL INTEGRATED DEVELOPMENT (RAPID) PROJECT, PENERANG JOHOR, 2012 TO INCLUDE EURO 5 MOGAS AND OLEFIN TANK UNITS</b>	
	<b>LIST OF ABBREVIATION</b>	

US OSHA	United State Occupational Safety and Health Administration
USEPA	United States Environmental Protection Agency
VCE	Vapour Cloud Explosion
VOC	Volatile Organic Carbon
WCCS	Worst Case Credible Scenarios
WCS	Worst Case Scenarios
WWB	Wastewater Basin

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