

Executive Summary

Introduction

1. The title of the Project is "Proposed Granite Quarry Operation on Lot 3661 (PT 1187), Lot 1476 and Lot 16862, Mukim Taboh Naning, District of Alor Gajah, Melaka".

2. Details of the Project Proponent is as follow:

Project Proponent	:	HO HUP-ICM QUARRY SDN. BHD. (658803-D) (Formerly known as ACV-ICM QUARRY SDN. BHD.)
Address	:	No. 18, Jalan 17/155 c, Bandar Bukit Jalil, 57000 Kuala Lumpur.
Contact Person	:	Mr. Yap Yoon Lean
Position	:	General Manager
Telephone	:	+03-8993 9168
Fax	:	-

3. Details of the Environmental Consultant as follow:

Environmental Consultant	:	KENEP CONSULTANCY & SERVICES SDN. BHD.
Address	:	No. 31 & 33, Persiaran Jelapang Maju 2, Taman Perindustrian Ringan Jelapang Maju, 30020 Ipoh, Perak Darul Ridzuan
Contact Person	:	Ir. Fakhru Zakee Bin Abd Kadir
Position	:	Managing Director
Telephone	:	+605-527 4171
Fax	:	+605-527 5171
Email	:	kcs@kenep.com.my

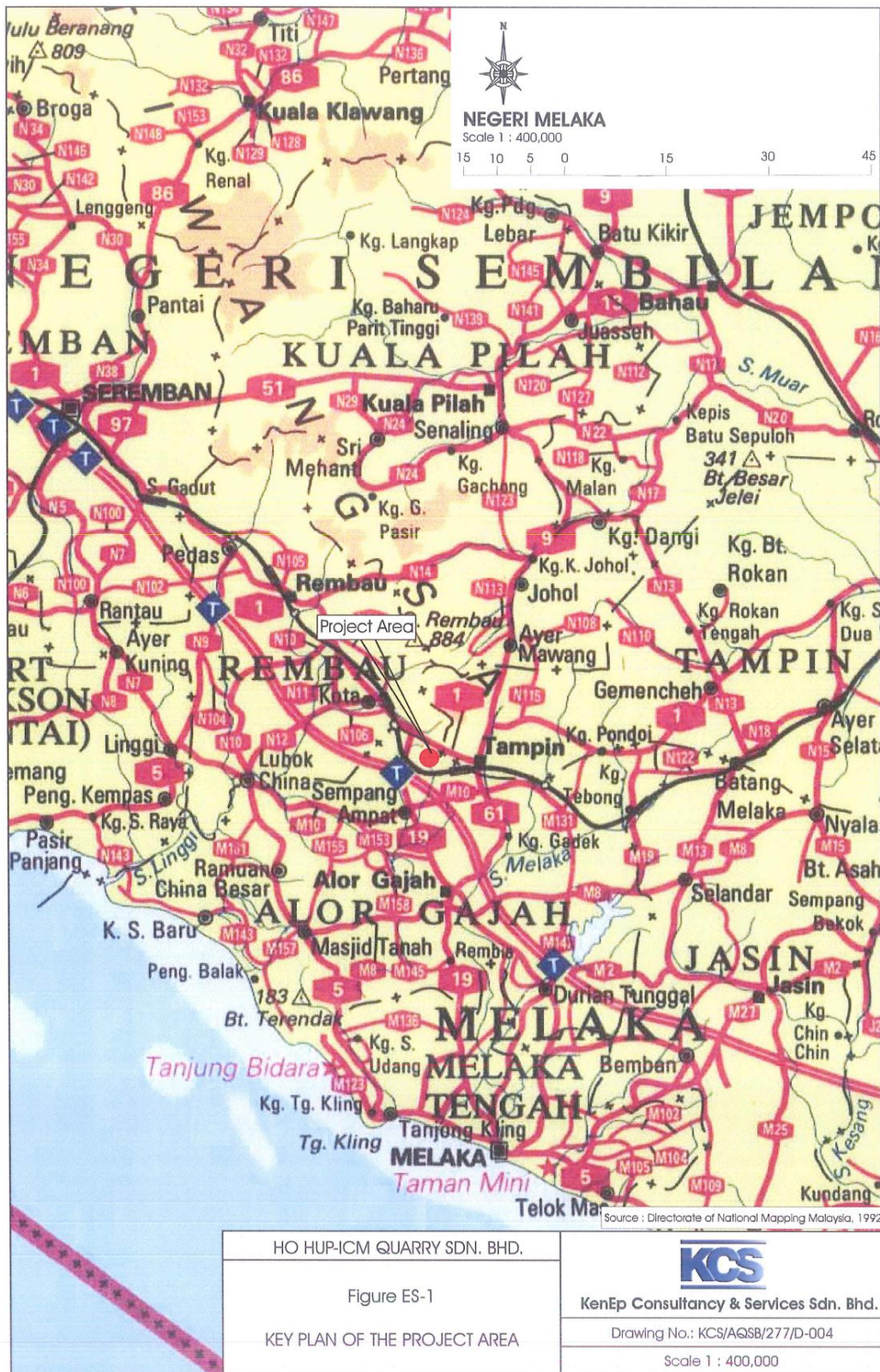
4. The Project site encompasses a total area of about 104.54 ha (258.32 ac) on Lot 3661 (PT 1187). The rock extraction area is identified on Lot 3661 (PT 1187) with total area of 102.30 ha (252.79 ac). The total area of 102.30 ha (252.79 ac) will be subdivided into 4 working phases where Phase 1 and Phase 2 will involve 22.02 ha (54.41 ac) and 20.12 ha (49.72 ac) respectively, while Phase 3 and Phase 4 will involve 15.73 ha (38.87 ac) and 44.43 ha (109.79 ac). Lot 1476 and Lot 16862 with a total area of 2.24 ha (5.54 ac) shall be utilized as other quarry infrastructure, facilities and access road. The Project site is situated at latitude N 02° 28' 29.26" and longitude E 102° 11' 50.98" (Refer **Figure ES-1**).
5. The proposed Project site is located on the northwest of Kampung Taboh Naning. It is about 5 km from Tampin, Negeri Sembilan.
6. The Project site can be accessed from Route 1, via Seremban to Tampin, Melaka. The existing access road is about 0.5 km from the main road passing by Chinese cemetery.

Statutory Requirement

7. The proposed project falls under prescribed activity 19 according to the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015. Prescribed activity 19 is referring to "Quarrying of Rock Material". Thus, the development of this project requires the approval of the Department of Environment (DOE) before it can be granted the permission to proceed.

Statement of Need

8. The demand for rock aggregate in Malaysia in general and within the vicinity of the Project site in particular shall increase in tandem with the development of infrastructure in the country. Hence, the need for the continuous supply of aggregate is vital.



Project Description

9. The estimated granite reserve on the proposed site is about 189,374,728 MT with the operational life about 184 years.
10. The Project has been designed to produce a planned capacity of about 100,000 metric tonnes of granite per month and operating at maximum 9 hours daily and 26 days per month.
11. The proposed quarry operation shall involve blasting and size reduction activities. Crushers, screens and other processing equipment shall be installed at the quarry area. (Refer **Figure ES-2**)
12. The quarrying operation involved multi-staged activities, the most critical activities that required specific attention being the overburden removal and rock extraction which include drilling, blasting, and haulage. Total 40 workers shall be employed at the quarry when it is fully operational.
13. The blasted rocks are then loaded to the quarry infrastructure area whereby crusher plane, stockpile area and other quarry infrastructure shall be located.
14. Diesel will be used as fuel for a number of machinery and equipment during the development and operational stage of the Project. A dedicated area within the quarry site shall be established to accommodate the diesel storage tanks, delivering pump sets and associated piping.

Existing Environment

15. The Project site covers undulating hills area with elevations ranging from 100 m above Mean Sea Level (MSL) to the highest of 260 m.
16. The regional geological setting of the Project area is identified to be intrusive rocks where the acid intrusive is undifferentiated.
17. The soils within and around the Project site is Rengam-Jerangau series.

18. The Malaysian Meteorological Services (MMS) a principal meteorological station at Melaka airport (Station No.: 48665) with latitude of N 2°16', longitude E 102°15' and elevation of 8.5 m above mean sea level.
19. The average monthly mean rainfall and raindays pattern for Malacca station from year 1930-1941 and 1946-2010 shows that highest rainfall was in the year 1984 with annual amount of 2,717.7 mm and the lowest rainfall was in the year 1972 with annual amount of 1,405.0 mm.
20. The Project site is not located within water catchments area. There are only seasonal waterways found on the project site. The runoff discharge from the Project area is channelled to Sungai Sempang Ampat tributary or to Sungai Tampin.
21. Water testing was conducted and analyzed at the sampling points and the results were recorded within National Water Quality Standard for Malaysia (NWQS).
22. The results of the environmental baseline monitoring (TSP, PM₁₀, and PM_{2.5}, SO₂, NO₂, O₂, CO) are within the Malaysian Ambient Air Quality Standards.
23. The ambient noise monitoring for the sampling points complied to its limits under the Department of Environmental Recommended Guideline of 50 dB(A) for day and 40 dB(A) for night.
24. As shown from the land use plan (Refer **Figure ES-3**), the current land use surrounding the area is dominated by secondary forest, agricultural and burial facilities.

Potential Impacts and Proposed Mitigation Measures

25. The potential environmental impacts from the Project and proposed mitigation measures are summarised in the following table:

Impact	Sources of Impact	Proposed Mitigation Measures
Dust Pollution	Development/ Operation	<ul style="list-style-type: none"> • Frequent spraying of water on the exposed surface especially during dry seasons. • Regular spraying the entrance and exit points of the site. • Implement all construction vehicles to go through the washing bay after tire washing from the construction site before exiting the facility. • Traffic controls such as speed limits and traffic volume restrictions to reduce dust churned up by vehicles. The recommended speed is not exceeding 50 km/h along the haulage road. • Vehicles transporting earth and other materials should be covered properly with tarpaulin to reduce windblown dust. • Transport of earth and materials should be confined to non-peak hours, if possible. • The burning of plant debris and other construction wastes is prohibited. A warning sign board must be erected to send the message across at all time. • Proper maintenance and frequent servicing of construction vehicles to reduce exhaust fume emissions. • Regular checking and maintenance of the air pollution control equipment and production equipment to mitigate fugitive dust. • Carry out dust monitoring programme. • Workers should be supplied with respiratory masks.
Noise , Vibration and Flyrock	Development/ Operation	<ul style="list-style-type: none"> • Construction work and movement of heavy vehicles should be confined to daytime hours, i.e. between 0700 to 1900 hours, and minimize activities during weekends and public holidays. • Hoarding is recommended to isolate the unsightly construction activity from the nearby residents, and to enhance the safety and health environment, and to attenuate noise levels within the site. • The machinery used should also be properly checked and maintained at optimum operating conditions. All machinery should be shut down when not in use.

Impact	Sources of Impact	Proposed Mitigation Measures
Noise , Vibration and Flyrock	Development/ Operation	<ul style="list-style-type: none"> • Overall noise level emitted from the transportation of the construction equipment and materials to be controlled by routing all construction vehicles to routes that will cause minimum disturbance. • Any complaints from nearby residents should be immediately attended to and actions taken. • Impose and enforce a speed limit on all vehicles moving within the project site for example at max of 50 km/h. • Regulate the number of external and internal vehicle trips per day. Based on the current production the optimum trip should not exceed 40 trips per day. • Maintain natural buffer zones to attenuate the noise impact. • Carry out noise monitoring programme. • Provide workers with earplugs or earmuffs. • Have work shifts for the workers. • Carry out regular audiometric test on the workers. • Adopt proper and safe blasting technique. • Engage qualified personnel to handle blasting and explosive. • No secondary blasting • Use delay blasting technique and correct stemming. • Carry out quarry face survey. • Monitor blast as feedback for future blast design. • Install effective noise suppression system.
Water Quality	Development/ Operation	<ul style="list-style-type: none"> • Ensure minimum or no direct water discharge into any of the nearby natural water courses. • The surface runoff from the development area is being channelled into the temporary drainage system and subsequently to the sedimentation pond built in place, before finally discharge. • Adequate sedimentation pond, siltation pond to contain water. • Oil and grease leakages from servicing the construction equipment, is to be drained into a drum for collection and disposed as 'scheduled waste' at the designated skid areas. • Fuel, grease, engine oil storage must be carefully sited to avoid contamination of the surface waters.

Impact	Sources of Impact	Proposed Mitigation Measures
Water Quality	Development/Operation	<ul style="list-style-type: none"> Domestic and solid wastes should be collected in covered bins and finally disposed off into an approved dumpsite.
Soil Erosion and sedimentation	Development/Operation	<ul style="list-style-type: none"> Limit the work area to the minimum and expedite work during dry season. Maintain the sediment pond constructed. To maintain bund and drainage in place within the project site to minimize soil erosion on-site as well as runoff and siltation off-site. Overburden stockpile cleared regularly and be compacted. Maintain the sediment pond constructed. To maintain bund and drainage in place within the project site to minimize soil erosion on-site as well as runoff and siltation off-site.
Waste Generation	Development/Operation	<ul style="list-style-type: none"> Proper disposal at approved dump site. Adequate disposal bin prepared on site.
Occupational Health and Safety	Development/Operation	<ul style="list-style-type: none"> Observe safety aspects pertaining to the condition of the truck used. Comply with Factory and Machinery (Building Operations and Works of Engineering Constuction) Regulations, 1986. Follow the emergency response plan formulated. Workers supplied with proper PPE. Workers to be send for periodical medical check-up. Ear plug for workers. Yearly audiometric testing for workers.

Residual Impacts

26. Residual adverse impacts are such as impact due to air pollution, noise and water quality. Residual beneficial impact arise is socio-economic impacts.
27. In order to minimize these potential residual adverse impacts, the Project Proponent is recommended to follow all the mitigation measures mentioned as close as possible for the friendly impact to the environment.

Environmental Management Plan

28. It is proposed that an Environmental Management Plan (EMP) be established by the Project Proponent which gives emphasis on the prevention of adverse environmental impacts, rather than resolving problems after they occur. This EMP also deals with all relevant environmental issues and to achieve effective and long-term compliance in environmental protection.
29. There shall also Environmental Compliance Audit Programme recommended for implementation. This programme which requires reviewing the project, judging the prediction and recommendation made compared to actual experiences have the objective to determine whether impacts were accurately predicted and to identify additional significant effects that are not anticipated and thus warrant corrective measures. There shall be Environmental Audit Checklists provided as helping hand for this audit programme.
30. Environmental Monitoring Programme involves measuring and recording of physical social variables associated with development of Impacts such as noise, accidents and public safety. The monitoring programme is necessary as it identifies existing problems, evaluates the effectiveness of the mitigating programme and other regulatory management activities, assess compliance with regulation and criteria.

Emergency Response Plan

31. As for safety and emergency response procedures, the Project Proponent shall established a dedicated policy to progressively introduce better and safer working conditions. This include application of safety and emergency response procedures, establishment of an enhance organizational framework, training programme for personnel on safety and emergency response measures, practice of reporting any abnormal incidence, spill and emission control plans and implementation of contingency plans and emergency response.

Conclusion

32. Based on the abundant available reserve to be quarried, the readily available market and compatibility with surrounding land use, the Project is foreseen to be economically and environmentally viable. Furthermore, with the proper mitigation measures recommended in this report, the proposed quarry operation could be carried out in an environmental-friendly manner.

33. Given the favourable outcome of the environmental assessment undertaken in this study, it is therefore recommended that the Project Proponent, **HO HUP-ICM QUARRY SDN. BHD.** is granted a full environmental approval by the DOE and other authorities concerned in order to commence the proposed quarry operation.