Validity expires on 17/08/2022

सत्यमेव जयते

Proceedings of the State Environment Impact Assessment Authority Kerala

Present: Prof. (Dr.) K.P. Joy, Chairman; Dr. J. Subhashini Member; Sri. James Varghese I.A.S; Member Secretary.

Sub: - SEIAA- Environmental clearance for the quarry project in Survey No.3/1-1(P), 3/1-2(P), & 3/1-3(P) for an area of 1.0201 hectares by Sri.Shaju P.V.,Managing Partner, M/s. Palissery Granites, Mookkannoor Village & Aluva Taluk, Ernakulam District – E.C. Granted- Orders issued.

STATE ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY

No. 673/SEIAA/KL/5352/2014 **Dated,Thiruvananthapuram. 18/8/2017**

Read:-
1. Application dated 07/11/2014 submitted by M/s.Pallissery Granites of Shri.Shaju.P.V,Managing Partner, Padayatty House, Puthenvelikara.P.O., Ernakulam District.
2. Minutes of the meeting of 53rd meeting of SEAC held on 25th and 26th February, 2016.
3. Minutes of the meeting of 60th meeting of SEAC held on 28th and 29th July, 2016.
4. Minutes of the meeting of 68th meeting SEAC held on 20th& 21st February 2017.
5. Minutes of the meeting of 66th SEIAA held on 7/4/2017.
6. Affidavit dated 14/7/2017 from Shri.P.V.Shaju

Environmental Clearance No.62/2017

Sri.Shaju P.V.,Managing Partner,Padayatty House, Puthenvelikara.P.O ,Ernakulam District, vide his application dated 07/11/2014 has sought Environmental Clearance under EIA Notification, 2006 for the existing quarry project in Sy. No. 3/1-1(P), 3/1-2(P), 3/1-3(P) at Mookkannoor village, Aluva Taluk, Ernakulam District, Kerala for an area of 1.6225 hectares. The project comes under Category B, Activity 1(a), (i) as per the Schedule of EIA Notification 2006 (since it is below 50 hectares) and as per O.M. No. L-11011/47/2011-IA.II(M) dated 18th May 2012 of Ministry of Environment and Forests. It is further categorized as Category B2 as per the O.M. No. J-13012/12/2013-IA-II (I) dt. 24.12.2013 of Ministry of Environment and Forests, since the area of the project is below 25 hectares.

The proposed project site falls within 10°15"51.75" to 10°15''55.19"-N – 76°24'55.14"to 76°25"0.43"-E. The lease area consists of 1.6225 hectares, which is own land. The proposed project is for quarrying of 250 TPD of building stone. Distance of the mining area from the nearest human settlement is recorded as more than 268 m.

The details of the project as furnished by the applicant are as follows:

BASIC INFORMATION OF QUARRY

PART A

	I. Project details	
1.	File No.	673/SEIAA/KL/5352/2014
2.	Name /Title of the project	Granite Building Stone Quarry of M/s. Palissery Granites in Mookkannoor Village, AluvaTaluk, Ernakulam District, Kerala
3.	Name and address of project proponent.	Shri. Shaju P.V, Padayatty House, Puthenvelikara P.O., Ernakulam District, Kerala – 683594 Mobile no: 9605463321 E-Mail ID: shaju8844@gmail.com
4.	Owner of the land	P.V.Shaju, Tomy.K.O, SanilKumar C.S & Jimmy Jose
5.	Survey No. District/Taluk/ and Village etc.	3/1-1(P), 3/1-2(P) and 3/1-3(P), Mookkanoor Village, AluvaTaluk, Ernakulam District, Kerala
6.	Details of period of lease or permit with number including the beginning and expiry date of lease/permit period**(Copy to be attached)**	Recent permit obtained vide letter No.46/16-17/MM/GS/CRPS/DOE/1908/E2/16 dated 20.07.2016 valid till 19.07.2017
7.	Present Status of the project a. Date & Year of starting the work of the quarry project.	07.02.2013
	b. whether the quarry is working at present or not ?	No
	c. If stopped working since when?	23/12/2016
8.	Date of submission of Application	06.11.2014
9.	Brief description of the project.	Attached as Annexure – I
10.	Details of Authorized Signatory and address for correspondence	Shri. Shaju P.V, Padayatty House, Puthenvelikara P.O., Ernakulam District, Kerala – 683594 Mobile no: 9605463321E-Mail ID: shaju8844@gmail.com

	II. Land Details	
11.	a) Extent of area in hectares	1.0201 Ha
12.	b) Is the property forest land/Govt. land/own land/patta land	Private patta land
13.	c) Quantity of top soil/over burden produced and managed	Total waste – 12,901m^3 Top soil – 1935m^3 Overburden – 10,966m^3
14.	d) Latitude and Longitude	10°15"51.75" to 10°15'55.19" – N 76°24"55.14" to 76°25"0.43" – E
15.	e) Topography of land and elevation	The granite occurs in an sloping terrain from North to South with RL ranges from +48m AMSL to +74m AMSL
16.	f) Slope analysis	The bench height will be pruned to 5 m, width will be greater than bench height & pit slope will be maintained to 45° as per direction of DGMS.
17.	g) Will there be any significant land disturbance resulting in soil erosion, subsidence & natural drainage.	There will be land disturbance due to mining. However, the disturbance does not cause erosion, subsidence or instability. The bench slopes will be maintained as per DGMS rules and requirement and hence there cannot be any instable slopes.
18.	h) Access road to the site width and condition	The project site is approachable from Palissery – Mookannur road which is branching out from Thabore - Palissery road. The width of access road is 4m.
19.	i) Will there be any adverse impact on the aesthetics of the proposal site	There will not be any adverse impact. Moreover, water body will be formed up to + 48m AMSL till the floor level of +30m AMSL and the benches above + 48m AMSL reclaimed with bench plantation in mined area which adds to the aesthetics of the site.
	III. Mining details	
20.	a) Minimum and Maximum height of excavation.	Minimum & Maximum height of excavation:18m & 44m
21.	b) Life of mine proposed.	5 years
22.	c) Underground mining if any proposed	No
23.	d) Method of Mining	Semi-mechanized opencast quarrying
24.	e) Distance from the adjacent quarry	There are no quarries in the adjacent 500m radius from the mine boundary.

25.	f) Cluster condition if any	Not Applicable
26.	g) Has "No cluster certificate" submitted?	Not Applicable
27.	h) Distance from nearby habitation	More than 300 m away
28.	i) Distance from nearby forest, if applicable	KodasseriKumpan RF – 9 km – N (Aerial) Kodasseri RF - 7.5 km – NE (Aerial) KumbadanMudi RF - 4.2 km – NE(Aerial) InchaKundu RF – 3.5 km – N(Aerial) Malayattur RF- 5 km – E (Aerial)
29.	j) Distance from protected area, Wildlife Sanctuary, National Park etc.	Nil within the buffer zone. Chimmini wildlife sactuary is located at a distance of 16km (aerial) in the SE direction.
30.	k) Distance from nearby streams/rivers/National Highway and Roads	**Water bodies:** Kalalli Main Canal – more than 300 m – W (Aerial) Chalakudy River – 3 km – NE (Aerial) Periyar River – 11 km – S (Aerial) **Highway:** NH – 47 - Chalakudy to Angamaly – 5.4 km – W (Aerial)
31.	l) Is ESA applicable? If so distance from ESA limit	Nil within the study area
32.	m) Has approved mining plan, prepared by RQP submitted?	Yes
33.	n) Capacity of production in TPA	250 TPD (or say 50,000 TPY),
34.	o) Details of mining process	Semi-mechanized opencast quarrying is adopted for exploiting the granite rocks. The mining operation comprises of drilling using jack hammer and compressors, blasting, removal of blasted material using excavator and transportation of material directly to the outside crusher unit.
	IV. Details of Project cost	
35.	a) Land cost	58.55 lakh
36.	b) Plant and Machinery	The product of this quarry is and will be sent to crusher outside. The machinery involved are rented.
37.	c) Total Cost	74.12 lakh
38.	**V.** Financial Statement including funding sourceand	Funding has been done by the partners of M/S.Palissery Granites.

	details of insurance etc.		
39.	Management Plan	AIR POLLUTION	MANAGEMENT PLAN: ➢ Regular wetting of transport road using water tanker ➢ Avoiding overloading of tippers ➢ Covering of loaded tippers with tarpaulins during transportation ➢ Development of green belt / barriers wherever possible
		WATER POLLUTION	➢ Sewage generated will be properly discharged into septic tanks with soak pits. ➢ During the course of mining, it is suggested to develop rainwater harvesting sump at the bottom most level of mining which can be utilized for the industrial water requirement and can also as rain water harvesting pit. ➢ It is suggested to construct a settlement pond on the south eastern side of the lease area around +48m AMSL so that the water can be diverted into this pond. Clear supernatant water after settling can be let out of this pond after passing through settling traps.
		NOISE	➢ Noise levels can be abated through good preventive maintenance of machineries, green belt creation, provision of ear muffs to workers, etc., ➢ Sound proof operator's cabin for equipment like dumpers, shovel, tippers, etc., ➢ Ground vibration are controlled through optimum design for burden & spacing, inclined drilling practice, using ordinary electric milli second delay detonators, in combination with detonating fuse etc.,
		Solid waste Management	➢ Other than a small portion in the northeastern side of the lease area which is already mined, the remaining area has top soil layer as well as overburden. The total quantity of waste to be generated from the lease area is 12,901m^3 comprising 1935 m^3 of top soil and 10966m^3 over burden /waste. ➢ The top soil will be used for reclamation purpose. Small quantity of waste will be used for road formation and filling of low lying areas. Remaining waste if any can be dumped in proponent's own land

				in the north of the lease area or can be disposed for other commercial purpose outside the lease as per norms.
		Eco restoration	➢	In the mine closure stage, Water body will be formed up to +48m AMSL till the floor level of +30m AMSL and the benches above +48m AMSL reclaimed with bench plantation. Out of 0.7213 Ha of mined out area, 0.4827 Ha will be left as water body and the remaining 0.2386 Ha of area above +48m AMSL will be reclaimed back with bench plantation/plantation. The mined area will be properly fenced all around. Plantation / Green belt will be developed in the safety zone.
40.	**VI.** Whether Environment Management Plan or Eco restoration Plan satisfactory?	Yes		
41.	**VII.** Does it suggest mitigation measures for each activity	Yes		
42.	**VIII.** If Pre-Feasibility Report (PFR) satisfactory	Yes		
43.	**IX.** Does it need public hearing	No		
44.	**X.** Details of litigation and Court verdict if any	No		
45.	**XI.** Details of public complaint, if any	No		
46.	**XII.** Details of statutory sanction required	• Permit valid till19.07.2017 • License to store and use Explosive obtained from Dy. Chief Controller of Explosives, Ernakulam valid till 31.03.2020		
47.	**XIII.**If CRZ recommendation applicable?	Not applicable		
PART B **Environment Impact Assessment and Mitigation Measures**				
Impact on water				

48.	a) Details of water requirement per day in KLD	Domestic & Sanitary - 1.0 KLD Dust suppression, plantation etc., - 5.0 KLD Total - 6.0 KLD
49.	b) Water source/sources.	For Industrial operation - Mine Sump pit For Drinking & Sanitary – Outside source
50.	c) Expected water use per day in KLD.	6.0 KLD
51.	d) Details of water requirements met from water harvesting.	Rain water stored in the mine pit will be used for Industrial operation like dust suppression and green belt.
52.	e) What are the impact of the proposal on the ground water?	Mining operation require very less quantity of water as such its impact on water environment is negligible.
53.	f) How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	Since this is a mining project, there is no process effluent generated. Domestic effluent will be collected in a septic tank with soak pits arrangements.
54.	g) What is the incremental pollution load from waste water generated from the proposed activities?	
55.	h) How is the storm water from within the site managed?	Rain water falling in the quarry will be harvested in the sump at the lowest level of the quarry. This sump will act as a settling pond to prevent solids escaping along with discharge, before outlet etc. It is also suggested to construct a settling pond on the south eastern side of the lease area around +48m AMSL to divert the water into this pond. Clear supernatant water after settling can be let out of this pond after passing through settling traps
Impact on Biodiversity and Eco restoration Programmes		
56.	a) Will the project involve extensive clearing or modification of vegetation (Provide details)	The lease area has sparse vegetation comprising mostly Vata, Phasiolus, Mimosa, Odina, Grasses, Sida, Rubber etc. which have to be cleared. At the mine closure stage, water body will be formed up to + 48m AMSL till the floor level of +30m AMSL and the benches above + 48m AMSL reclaimed with bench plantation in mined area.Plantation / Green belt will be developed in the safety zone.

<table>
<tr><td>57.</td><td>b) What ate the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)</td><td>At the mine closure stage, 0.2386 Ha above +48 m AMSL in the lease area will be reclaimed back with bench plantation / plantation. Plantation will also be done on the periphery of the lease area. The afforestation plan is given below:
<table>
<tr><th>S.No</th><th>Year</th><th>Area (In Ha)</th><th>No of Saplings</th><th>Location</th></tr>
<tr><td>1</td><td>I Year</td><td>0.08</td><td>160</td><td rowspan="3">Periphery of Mining lease</td></tr>
<tr><td>2</td><td>II Year</td><td>0.08</td><td>160</td></tr>
<tr><td>3</td><td>III Year</td><td>0.08</td><td>160</td></tr>
<tr><td>4</td><td>IV Year</td><td>-</td><td>-</td><td rowspan="2">Maintenance of existing plantation</td></tr>
<tr><td>5</td><td>V Year</td><td>-</td><td>-</td></tr>
<tr><td>6</td><td>Post operation stage</td><td>0.2386</td><td>470</td><td>Reclamation of the area</td></tr>
<tr><td></td><td>TOTAL</td><td>0.4786</td><td>950</td><td></td></tr>
</table></td></tr>
<tr><td>58.</td><td>c) Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ?
d) Presence of any endangered species or red listed category (in detail)</td><td>Not applicable. There are no endemic or endangered species occurring in the study area.</td></tr>
<tr><td colspan="3">Impact on Air Environment</td></tr>
<tr><td>59.</td><td>a) What are the mitigation measures on generation of dust, smoke and air quality</td><td>Air pollution in mines is mainly due to:
▪ Drilling & Blasting.
▪ Movement of HEMM.
▪ Loading & Unloading.
▪ Transportation of Material.
▪ Drilling & Blasting.
▪ Movement of HEMM.
▪ Loading & Unloading.
▪ Transportation of Material.
The following mitigation measures are and will be adopted:
• Covering of drill holes with wet cloth for controlling dust emission
• Usage of sharp drill bits for drilling of holes.
• Regular wetting of transport road using water tanker to suppress the dust.
• Well-designed blasting parameter, effective stemming to achieve optimum breakage occurs without generating fines.
• Avoiding blasting during high wind periods where the fine dust is carried out away easily affecting the ambient air quality.</td></tr>
</table>

		• Use of controlled blasting techniques to keep the dust generation, noise as well as vibration level within the prescribed limits. • Proper maintenance of HEMM which avoids excessive noise and vibration • Acoustic enclosures for operator cabin. • Imparting sufficient training to operators on safety and environmental parameters • Proper maintenance of hauling equipment's • Regular maintenance of the transport vehicles. • Avoiding of overloading of tippers and covering of loaded tippers with tarpaulins during transportation. • Development of Greenbelt. • Periodical monitoring of air quality to take steps to control the pollutants.
60.	b) Details of internal traffic management of the site.	Only 5 tippers will be engaged for transporting granite to outside crusher plant. No internal traffic management in the site is needed.
61.	c) Details of noise from traffic, machines and vibrator and mitigation measures	Noise/Vibration generation in mining operations are mainly due to: • Mechanization adopted. • Drilling & Blasting Operation. • Movement of Vehicles, etc. • Ground Vibration The mitigation measures are given below:
62.	d) Impact of DG sets and other equipment on noise and vibration and ambient air quality around the project site and mitigation measures	• Planting of trees wherever possible to act as acoustic barriers. • Sound proof operator's cabin for equipment like dumpers, shovel, tippers, etc. • Proper and regular maintenance of equipment may lead to less noise generation. • Providing in-built mechanism for reducing sound emissions. • Providing earplugs, earmuffs to workers exposed to higher noise level. • Conducting regular health check-up of workers including Audiometry test for the workers engaged in noise/vibration prone area. The following mitigation measures will be adopted for noise control: • Optimum design for burden and spacing. • Inclined drilling practice, whenever necessary. • Reducing explosive charge to minimum. • Proper deck charging practices, looking to consolidation and hardness of strata conditions. • Using ordinary electric milli second delay detonators, in combination with denoting fuse etc. This sequence of blasting reduces vibration to a large extent, thereby minimizing propagation of shock waves. • Avoiding blasting in unfavorable weather condition.

63.	e) Air quality monitoring in detail	AAQ monitoring were studied in 4 locations and the details are given below: **Sample Code & Location** **Parameter (in µg/m)^3** / **PGA1** **MINE LEASE AREA** / **PGA2** **VIJOPURAM** / **PGA3** **KARUKUTTY** / **PGA4** **MOOKA NNOOR** / ***Limits** PM_{10}: 59.7 / 47.1 / 50.6 / 53.3 / 100 $PM_{2.5}$: 26.7 / 19.4 / 21.8 / 21.1 / 60 SO_2: 4.2 / 3.2 / 3.3 / 3.7 / 80 NO_2: 8.6 / 6.4 / 6.6 / 7.3 / 80 **CO**: **BDL (DL-1144)** / **BDL (DL-1144)** / **BDL (DL-1144)** / **BDL (DL-1144)** / **4000** *National Ambient Air Quality Standards from CPCB Remarks: BDL- Below detectable limit , DL- Detectable Limit. All monitored values were found to be well within the prescribed NAAQ Limits
		Energy Conservation
64.	a) Details of power requirement and source of supply.	No electricity is needed for quarry operations as only diesel operated mining machinery including jack hammer are used for quarrying. Hence the negligible power requirement of the administrative buildings etc., are met from state grid
65.	b) Details of renewable energy (non – conventional) used.	Not applicable
		Risk Management
66.	a) Are there sufficient measures proposed for	• Yes. Bench height, width and slope will be maintained as per direction of DGMS. • The mined area will be properly fenced all around to prevent fall of

	as accident at the site?	of Explosive obtained from Dy. Chief Controller of Explosives, Ernakulam. Explosive License No: E/SE/KL/22/38 (E86285) dated: 12.06.2015valid up to 31.03.2020.
67.	b) Are proposals for fencing around the quarry satisfactory? c) Storage of explosives/hazardous substance in detail d) Facility for solid waste management	• The top soil from this mine will be used for reclamation purpose. Waste will be used for road formation and filling of low lying areas. Remaining waste if any can be dumped in proponents own land in north of the lease area.
	Socio Economic Impacts	
68.	a) Will the project cause adverse effects on local communities disturbance to sacred sites or other cultural values. What are the safe guards proposed?	Not Applicable
69.	b) Will the proposal result in any changes to the demographic structure of local population. If so, provide details.	No
70.	b) Are the CSR proposals satisfactory. Give details	The proponent has submitted the CSR that he spend a recurring amount of Rs.5 lakh and non-recurring amount of Rs.5 lakh towards the welfare of the local community in consultation with the local panchayat
71.	c) What are the projects benefits in terms of employment potential?	This project provides direct employment to about 13 persons and indirect employment to about 50 persons
	PART C	
72.	Details of NABET approved EIA Consultant engaged-Their name, address and accreditation	Creative Engineers & Consultants Address: 9 B/4, Bharathwajar Street, East Tambaram, Chennai – 600059 E-mail: cecgiri@yahoo.com Tel.: 044- 22395170 Mob: 09444133619

	details	Listed in S.No 28 in NABET list of Accredited Consultants
Summary and Conclusion		
73.	a) Overall justification for implementation of the project.	The Granite Building stone from this quarry will be dispatched to the consumers directly. There is a good demand for the aggregates in the region in construction industry. Regionally, it also will provide good employment opportunities directly and indirectly as mentioned earlier. Besides, the proponent will also be carrying out various CSR activities towards improvement in infrastructure, living conditions of local community, etc., Monetary gains will also accrue to state and central Governments through receipt of royalties, Taxes, etc., Under their CSR initiatives, proponent has already carried out excellent activities. About Rs.3.0 lakh is spent so far for this purpose. These programmes will continue in future vigorously. Rs. 5 lakh per year will be spent for future CSR activities. Future planned social outreach programmes will further enhance the life style, income levels educational and medical services and infrastructural services of the local area and local community.
74.	b) Explanation of how adverse impact have been mitigated.	The mitigation measures to control the adverse impact due to this project on various environmental factors are explained in Part B above.

2. The proposal was placed in the 53rd meeting of SEAC Meeting, Kerala, held on 25th and 26th February, 2016. Further to the intimation, the proponent and RQP attended the meeting and RQP made a brief presentation.They informed that the Quarry is working now. So it's a case of violation. Hence the Committee DEFERRED the item for field visit for investigating the land use pattern and submission of revised CSR. The proponent was instructed to clarify the reason for revision of the project area.

The site visit was conducted by Subcommittee of SEAC on 15.07.2016, comprising Dr. K.G. Padmakumar and Sri. John Mathai. The proponent Sri. P V. Shaju was present at the site at the time of site visit. The details of which are given below:

The project is located at about one km ESE of Palissery. This quarry lease area falling in own land occupy the south facing slope of a hill ridge exposing hard rock. The approach road through a rubber plantation is narrow and not surfaced. Several old pits were noted in the area. Boundary pillars of this plot are erected and numbered displaying GPS values. Part of the area was being worked with permits but not at the time of inspection. The central pit with cliff like faces is seen presently filled with rainwater. A Sastha temple is seen to the NE side. OB and top soil is heaped randomly. Rubber is the dominant landuse in and around the site. Dwelling units are not seen within 100 m.

The quarry may be recommended for EC after considering the following points:-

1. *The steep cliff like faces to be marked as danger zones with proper fencing and sign boards.*
2. *100 m distance to be left from the temple boundary. The boundary pillars to be relocated on the ground with changes in the mine plan.*
3. *The central part of the worked out pit has to be left out due to distance restriction. It can be used as a RWH structure.*
4. *Top soil and OB need proper storage area on the lower part on the southern side and to be provided with protective embankments.*
5. *The approach road needs widening and surfacing.*
6. *Quarry operations should be avoided during the days of the Temple festival.*
7. *Details of CSR and land document may be verified from the application.*

3. The proposal was considered in the 60th meeting of SEAC, Kerala, held on 28th and 29thJuly, 2016. The Committee after examining the mining plan, prefeasibility report, field inspection report and all other documents submitted decided to defer the item that the proponent was asked to submit the following additional documents/assurances.

1. *The steep cliff like faces to be marked as danger zones with proper fencing and sign boards.*
2. *100 m distance to be left from the temple boundary. The boundary pillars of the proposed quarry to be relocated on the ground with changes in the mine plan. Adequate measures to be ensured.*
3. *The central part of the worked out pit has to be left out due to distance restriction. The proponent shall explore the possibility whether it can be used as a RWH structure.*
4. *Top soil and over burden need proper storage area on the lower part on the southern side and to be provided with protective embankments.*
5. *The approach road needs widening and surfacing.*
6. *Quarry operations should be avoided during the days of the Temple festival.*
7. *Details of CSR and land document may be verified from the application.*

Subsequently the proponent has submitted the documents/clarifications sought by 60th SEAC. The proponent submitted an application for Environmental Clearance along with Approved Mine Plan for operating Granite Building Stone Quarry over an area of 1.0201 Ha in survey no's 3/1-1(P), 3/1-2(P) and 3/1-3(P). The proponent submitted the CSR details.

4. The proposal was placed in the 68th meeting SEAC held on 20th& 21st February 2017. The Committee appraised the proposal based on Form I, Pre-feasibility Report, revised Mining Plan, field inspection report of the Sub Committee and all other documents submitted with the proposal. The Committee decided to Recommend for issuance of EC subject to general conditions in addition to the following specific conditions.

1. *If any plant species endemic to Western Ghats are noticed in the area they shall be properly protected in situ or by transplanting to an appropriate location inside the lease area.*

The proponent should give an undertaking committing to spend a recurring amount of Rs.5 lakhs and a non-recurring amount of Rs.5 lakhs towards the welfare of the local community in consultation with the local Panchayat.

5. The Authority in its 66th meeting of SEIAA held on 7/4/2017 decided to issue Environmental Clearance subject to the general conditions and the above specific condition. The proponent should submit an affidavit stating that the quarry was not working after December 2016 after the period of permit, whichever is earlier and that all the conditions required in the inspection report have been fulfilled. The proponent has submitted the Affidavit dated 14/07/2017 satisfying all the general and specific conditions.

6. Environmental clearance as per the EIA notification 2006 is hereby accorded for the proposed Quarry project of Sri.Shaju P.V., Managing Partner, M/s.Pallisssery Granites, Padayatty House,Puthenvelikara in Sy. No. 3/1-1(P), 3/1-2(P), 3/1-3(P) at Mookkannoor village, Aluva Taluk, Ernakulam District, Kerala for an area of 1.0201hectares subject to the specific conditions stipulated in para 4 & 5, all the environmental impact mitigation and management measures undertaken by the project proponent in the Form I and other documents submitted to SEIAA , the mitigation measures proposed in the table in para 1 above. The assurances and clarifications given by the proponent will be deemed to be a part of these proceedings as if incorporated herein. Also the general conditions for projects stipulated for mining, (items 1 to 61), appended hereto will be applicable and have to be strictly adhered to.

7. The clearance issued will also be subject to full and effective implementation of all the undertakings given in the application form, mitigation measures as assured in the Environment Management Plan and the mining features including progressive mine closure plan as submitted with the application and relied on for grant of this clearance. The above undertakings and the conditions and undertakings in chapter 4 of Mining plan (Mining), Chapter 11 (EMP) of the Mining Plan and Chapter 5 of Mining plan (Blasting) and the entire Progressive Mine Closure Plan as submitted will be deemed to be part of these proceedings as conditions as undertaken by the proponent, as if incorporated herein.

8. Validity shall be five years subject to inspection by SEIAA on annual basis and compliance of the conditions, subject to earlier review of E.C in case of violation or non-compliance of conditions or genuine complaints from residents within the security area of the quarry.

9. Compliance of the conditions herein will be monitored by the Authority or its agencies and also by the regional office of the Ministry of environment & forests, Govt. of India, Bangalore.

i. Necessary assistance for entry and inspection should be provided by the project proponent and those who are engaged or entrusted by him to the staff for inspection or monitoring.

ii. Instances of violation if any shall be reported to the District collector, Ernakulam to take legal action under the Environment (Protection) Act 1986.

iii. The given address for correspondence with the authorised signatory of the project is Shri.Shaju P.V- Managing Partner, Padayatty House, Puthenvelikara.P.O., Ernakulam District.Kerala- 683 594.

Sd/-
James Varghese IAS
Member Secretary (SEIAA)

To

Shri.Shaju.P.V.,
Managing Partner, Pallisery Granites,
Padayatty House,
Puthenvelikara.P.O.,
Ernakulam District
Kerala- 683 594.

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E& F Wing, II block, Koramangala, Bangalore-560034.
2. Additional Chief Secretary to Government, Environment Department.
3. The District Collector, Ernakulam
4. The Director, Mining and Geology Department, Kesavadasapuram, Thiruvananthapuram-4
5. The Member Secretary, Pollution Control Board
6. The District Geologist, Ernakulam
7. The Thahasildar, Aluva Taluk,Ernakulam
8. Chairman, SEIAA
9. E.C File
10. Stock File
11. Website
12. O/C.

Forwarded /By Order

Administrator (SEIAA)

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY KERALA

GENERAL CONDITIONS (for mining projects)

1. Rain Water Harvesting facility should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified.
2. Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.
3. Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, including of approach road and internal roads.
4. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.
5. Sprinklers shall be installed and used in the project site to contain dust emissions.
6. Eco-restoration including the mine closure plan shall be done at the own cost of the project proponent.
7. At least 10 percent out of the total excavated pit area should be retained as water storage areas and the remaining area should be reclaimed with stacked dumping and overburden and planted with indigenous plant species that are eco-friendly, if no other specific condition on reclamation of pit is stipulated in the E.C.
8. Corporate Social Responsibility (CSR) agreed upon by the proponent should be implemented
9. The lease area shall be fenced off with barbed wires to a minimum height of 4ft around, before starting of mining. All the boundary indicators (boards, stores, markings, etc) shall be protected at all times and shall be conspicuous.
10. Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged as per stipulations of Explosive Department.
11. Control measures on noise and vibration prescribed by KSPCB should be implemented.
12. Quarrying activities should be limited to day time as per KSPCB guidelines/specific conditions.
13. Blasting should be done in a controlled manner as specified by the regulations of Explosives Department or any other concerned agency.
14. A licensed person should supervise/ control the blasting operations.
15. Access roads to the quarry shall be tarred to contain dust emissions that may arise during transportation of materials.
16. Overburden materials should be managed within the site and used for reclamation of mine pit as per mine closure plan / specific conditions.
17. Height of benches should not exceed 5 m, and width should not be less than 5 m, if there is no mention is the mining plan/specific condition.
18. Mats to reduce fly rock blast to a maximum of 10 PPV should be provided.
19. Maximum depth of mining from general ground level at site shall not exceed 10m
20. No mining operations should be carried out at places having a slope greater than 45°.
21. Acoustic enclosures should have been provided to reduce sound amplifications in addition to the provisions of green belt and hollow brick envelop for crushers so that the noise level is kept within prescribed standards given by CPCB/KSPCB.
22. The workers on the site should be provided with the required protective equipment such as ear muffs, helmet, etc.
23. Garland drains with clarifiers to be provided in the lower slopes around the core area to channelize storm water.
24. The transportation of minerals should be done in covered trucks to contain dust emissions.
25. The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.
26. Disposal of spent oil from diesel engines should be as specified under relevant Rules/ Regulations.
27. Explosives should be stored in magazines in isolated place specified and approved by the Explosives Department.
28. A minimum buffer distance of 100m from the boundary of the quarry to the nearest dwelling unit or other structures, not being any facility for mining shall be provided.
29. 100 m buffer distance should be maintained from forest boundaries.

30. Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating mining activity.

31. All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.

32. In the case of any change(s) in the scope of the project, extent quantity, process of mining technology involved or in any way affecting the environmental parameters/impacts as assessed, based on which only the E.C is issued, the project would require a fresh appraisal by this Authority, for which the proponentshall apply and get the approval of this Authority.

33. The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.

34. The stipulations by Statutory Authorities under different Acts and Notifications should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

35. The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Environment Impact Assessment Authority (SEIAA) office and may also be seen on the website of the Authority at www.seiaakerala.org. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.

36. A copy of the clearance letter shall be sent by the proponent to concerned Grama Panchayat/ District Panchayat/ Municipality/Corporation/Urban Local Body and also to the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The Environmental Clearance shall also be put on the website of the company by the proponent.

37. The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) and upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of India and also to the State Environment Impact Assessment Authority (SEIAA) office.

38. The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40.Sign board with extent of lease area and boundaries shall be depicted at the entrance of the quarry, visible to the public

39. The proponent should provide notarized affidavit (indicating the number and date of Environmental Clearance proceedings) that all the conditions stipulated in the EC shall be scrupulously followed.

40. No change in mining technology and scope of working should be made without prior approval of the SEIAA, No further expansion or modifications in the mine shall be carried out without prior approval of the SEIAA, as applicable.

41. The Project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. Necessary safeguard measures to protect the first order streams, if any, originating from the mine lease shall be taken.

42. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places loading and unloading points & transfer point to reduce fugitive emissions.

43. The top soil, if any, shall temporarily be stored at earmarked site(s) only for the topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The maximum height of the dumps shall not exceed 8m and width 20m and overall slope of the dumps shall be maintained to 45^{0}. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining.

44. Catch drains and siltation ponds of appropriate size shall be constructed around the mine working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.

45. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM_{10} and $PM_{2.5}$ such as haul Road, loading and unloading points and transfer points – it shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

46. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.

47. Measures should be taken for control of noise levels below 85 dBA in the work environment.

48. A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.

49. The funds earmarked for environmental protection measures and CSR activate should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the State Environment Impact Assessment Authority (SEIAA) office.

50. The Regional Office of MOEF & CC located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (S) of the Regional Office by furnishing the requisite data/information/monitoring reports.

51. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

52. Concealing the factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

53. The SEIAA may revoke or suspend the order, for non implementation of any of the specific or thisimplementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

54. The above conditions shall prevail notwithstanding anything to the contrary, in consistent, or simplified, contained in any other permit, license on consent given by any other authority for the same project.

55. This order is valid for a period of 5 years or the expiry date of mine lease period issued by the Government of Kerala, whichever is earlier.

56. The Environmental Clearance will be subject to the final order of the courts in any pending litigation related to the land or project, in any court of law.

57. The mining operation shall be restricted to above ground water table and it should not intersect ground water table.

58. All vehicles used for transportation and within the mines shall have 'PUC' certificate from authorized pollution taking centre. Washing of all vehicles shall be inside the lease area'

59. Project proponent should obtain necessary prior permission of the competent authorities for drawal of requisite quantity of surface water and ground water for the project.

60. Regular monitoring of flow rates and water quality upstream and downstream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the six monthly reports to SEIAA.

61. Occupational health surveillance program of the workers should be under taken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.

For Member Secretary, SEIAA Kerala