



## ***Proceedings of the State Environment Impact Assessment Authority Kerala***

*Present : Prof. (Dr.) K.P. Joy, Chairman; Dr. J. Subhashini, Member and Sri. P. Mara Pandiyan, I.A.S.,  
Member Secretary.*

Sub: SEIAA- Environmental Clearance for the proposed building stone quarry project in Survey Nos. 101/5 and 101/6 at Edayur Village, Edayur Panchayath, Thirur Taluk, Malappuram District by Sri. Binu Cherian, Thakkirickal House, Chelad P.O., Kothamangalam, Ernakulam District-686681-Granted- Orders issued.

### **STATE ENVIRONMENTAL IMPACT ASSESSMENT AUTHORITY**

**No. 839/SEIAA/EC1/2717/2015**

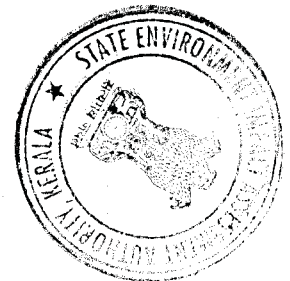
***dated, Thiruvananthapuram 05-02-2016***

**Read:** - 1. Application dated 07-07-2015 submitted by Sri. Binu Cherian, Thakkirickal House, Chelad P.O., Kothamangalam, Ernakulam District-686681  
2. Minutes of the 48<sup>th</sup> meeting of SEAC held on 06/07-11-2015.  
3. Minutes of the 47<sup>th</sup> meeting of SEIAA held on 07-01-2016.

#### **Environmental Clearance No. 11/2016.**

Sri.Binu Cherian, Thakkirickal House, Chelad P.O., Kothamangalam, Ernakulam District-686681, vide his application received on 14-07-2015 has sought Environmental Clearance under EIA Notification, 2006 for the quarry project in Sy. Nos. 101/5 and 101/6 at Edayur Village, Edayur Panchayath, Thirur Taluk, Malappuram District, Kerala for an area of 2.6872 hectares. The project comes under Category B, Activity 1(a), (i) as per the Schedule of EIA Notification 2006 (since it is below 50hectares) 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.

2. This is an existing Quarry. The quarry was in operation with a short term quarrying permit issued by Mining & Geology Department, Government of Kerala for an area of 0.4046 hectares. The land use as per revenue records is private own land of 3.6460 hectares. Main rock type in the area is granite and the area is mineral specific and hence no alternate site was examined. The present land use is some native trees, shrubs, herbs etc. The proposed project is for quarrying of 100,000 MTA of building stone from an area of 2.6872 hectares of land. Domestic effluent will be discharged in septic tank and soak pit system. The quarry operation is proposed to carry out with conventional open cast semi-mechanized mining by maintaining the bench height and width to 5.0 meter. Considering the stability of rocks the final slope or ultimate pit slope is proposed 45° from vertical. Mining will be carried out from the top to bottom by slicing of 2.5 m thick. The mineral exploitation is being done from 150 m MSL to 85 m MSL for the expected life of ten years. At the end of life of mine, excavated area will be converted into water pond and plantation. A storm water collection pond is proposed for



meeting the water requirements of crusher/M-sand unit, other dust separation system and plantation. Negligible quantity of used oil will be generated which will be disposed to the local recyclers.

3. There are no protected areas like ecological landscape, cultural area, tourist, pilgrim areas etc. identified within the 15 Km radius. There is religious places like church (14 km., SW), temple (4 km., S), mosque (3 km., S) etc. within 15 km of the quarry. There is no Eco-sensitive area (ESA) and prohibited area like defence establishments within the radius of 15 km from the proposed area. There is no protected sensitive species are identified within the 15km radius. Nearest river is Kunthi River which is flowing at a distance of 6.5 Km SE of the project site. The area is devoid of forests within the 15km radius. Electrical installation HT line is passing at a distance of about 0.6 km and LT line is available within the proposed area. There is a stone crusher associated with the quarry unit and the proponent stated that, there is no litigation pending against the lease area/applicant of the lease area in any court of law, CRZ recommendations are not applicable. The total cost of the project is Rs. 1.50 Crores. It is proposed to spend Rs. 10.20 Lakhs (recurring) and 9.15 Lakhs (non-recurring) towards various corporate social responsibility (CSR) activities. Other details of the proposal are as under:

#### 4. BASIC INFORMATION OF THE PROJECT

<b>About the Project</b>		
Name of project	Quarry project of Sri. Binu Cherian	
Brief description of the project	Quarry project with an area of 2.6872 ha. & production capacity of 1,00,000 MTA	
Location Sy no/ district, Taluk/ village etc. of the proposal	Quarry project in Sy. Nos. 101/5 and 101/6 at Edayur Village, Edayur Panchayath, Thirur Taluk, Malappuram District, Kerala.	
Extend of land in hectares.	2.6872 hectares	
Minimum and maximum height of excavation (MSL)	150 m MSL and 85 m. MSL	
Ultimate depth of mining (in MSL)	85 m. MSL	
Distance from the adjacent quarry	There is only one quarry is operating within 500 m. radius (52/2015-16/GR/DOM/M-824/2015 dated 14-10-2015)	
Capacity of production	1,00,000 MTA	
Details of Project Cost	Rs. 1.50 Crores.	
GPS co-ordinates	Latitude (N)	10°56'06.62"N to 10°55'59.42"N
	Longitude (E)	76°05'04.06"E to 76°04'56.83"E
<b>Environmental parameters considered</b>		
<b>WATER</b>		
Total water requirement and sources	Total water requirement is about 15 KLD in which 1 KLD is for domestic, which would be sourced from open well, 12 KLD for dust suppression system in mine as well as ancillary unit (crusher/M-sand unit) and 2 KLD for plantation purpose and will be sourced from storm water pond.	
RWH units proposed	Rain water collection pond.	
Facilities for liquid waste treatment	<p>Mining activities may cause adverse impacts due to discharge of domestic wastewater, siltation and soil erosion due to runoff/storm water. Control measures includes:</p> <ul style="list-style-type: none"> <li>• Construction of check dams and collecting channel all around the foot of the hill to prevent soil erosion during monsoon season and also to collect the storm water for various uses.</li> <li>• The storm water will be used for dust suppression, green belt development etc. All measures will be taken not to disturb the existing drainage pattern adjacent to the other property.</li> <li>• The sewage to a tune of 0.8 KLD generated from the mine office will be diverted to the septic tank followed by soak pit.</li> <li>• The storm water after treated in holding/ siltation pond will be used for dust suppression in the crusher unit. The effluent generated from this</li> </ul>	

	unit carries lot of mine dust particles which will be treated in sand filter followed by sedimentation tank and the clear water will be recycled/ reused in the same process.
Water quality meeting requirements	<ul style="list-style-type: none"> <li>Regular monitoring and analysis will be carried out after treatment (filtration, disinfection &amp; sedimentation) to meet the stipulated standards from time to time.</li> </ul>
<b>LAND</b>	
Access road and width to the plot	<ul style="list-style-type: none"> <li>8 m. wide, tarred road, W. For the purpose of mining activities, existing roads are sufficient. However, haul road will be developed within the proposed area.</li> </ul>
Land use change	<p>There will be changes in land use pattern of the area due to mining activities. The following control measures are adopted to minimize the adverse effects:</p> <ul style="list-style-type: none"> <li>Construction of check dams and collecting channel all around at the foot of the hill to prevent soil erosion during the monsoon season and also to collect the storm water for various use within the mine lease area.</li> <li>Green belt development along the boundary of the lease area.</li> <li>It is proposed to reclaim the pit area and this area will be suitably planted with local species for eco-restoration in all possible means.</li> <li>Proper barricading and monitoring of the water stored area will be taken up to prevent accidents.</li> </ul>
Storage of explosives /hazardous substances	<ul style="list-style-type: none"> <li>Explosive shall be procured by License vender and transported to the site at the time of blasting and used in accordance with Explosive Rules 2008, MSIHC Rules 1989 Mines Act 1952 and MMR 1961 and with necessary permission for blasting from DGMS.</li> <li>NFO mixture is proposed to be used for blasting. Due care will be taken to avoid risk during handling, storage, use or spillage of explosives. However, a 550 Kg magazine is there for storing the explosive.</li> <li>Controlled blasting with optimum charge of holes will be carried out to loosen the rock.</li> <li>Explosion hazards are envisaged due to mishandling of explosives.</li> <li>Explosives will be handled with utmost care in compliance of conditions imposed by Chief Controller of Explosive &amp; Metalliferous Mines Regulation.</li> <li>Blasting will be carried out by competent qualified blaster under the supervision of qualified statutory mine manager. Sufficient caution will be given to the public by Siren and red flags.</li> </ul>
Facility for solid waste management	<ul style="list-style-type: none"> <li>A total quantity of 22,841 m<sup>3</sup> of top soil and 5,374 m<sup>3</sup> over burden will be removed during the mining operations.</li> <li>The top soil excavated from the quarry will be properly stacked at pre-determined places and will be utilized for plantation over the reclaimed areas. Precautions will be taken to limit the height of the topsoil dump to 5-6 m in order to preserve its fertility and shelf life. It will be suitably protected from soil erosion and infertility by planting fodder grass and leguminous plants during temporary storage.</li> <li>At the end use the OB can be utilized as soil base for plantation.</li> </ul>
Significant land disturbance resulting in erosion, subsidence & instability	<ul style="list-style-type: none"> <li>As per BMTPC, Vulnerability Atlas Seismic Zone of India IS: 1893-2002, the proposed area comes under Zone-III, moderate damage risk zone. The proponent stated that the project area is not prone to earthquake, landslide and flooding. There are no incidents of cloudburst and landslide reported so far.</li> </ul>
<b>NOISE</b>	
Noise pollution control measures	<p>The major noise generating source from the proposed activity is due to drilling, blasting, compressors, plying of vehicles.</p> <p><b>Control Measures:</b></p>

	<ul style="list-style-type: none"> <li>• Proper maintenance of machinery, equipments and improvement on design of machines.</li> <li>• Use of personal protective devices such as earmuffs and earplugs by workers, working in high noise areas.</li> <li>• Creation of wide green belt of dense foliage between mine areas and residential colonies.</li> <li>• The proposed mine operates only 10 hours a day.</li> <li>• Conducting periodical medical check-up of all workers for any noise related health problems. Proper training to personnel to create awareness about adverse noise level effects.</li> <li>• Periodic noise monitoring at suitable locations in the mining area and nearby habitations to assess efficacy of adopted control measures.</li> </ul>
Noise level monitoring	<ul style="list-style-type: none"> <li>• Periodic air quality monitoring will be carried out in mining area and nearby villages to ensure ambient air quality within permissible limits.</li> </ul>
<b>AIR</b>	
Likely emissions affecting environment and Air pollution control measures: By deposition of pollutants emitted to air into the land or into water	<ul style="list-style-type: none"> <li>• During operation phase there will be dust emissions mainly from drilling, loading, blasting, loading and transportation.</li> <li>• Negligible quantities of CO, HC and NO<sub>x</sub> will also be emitted. The transportation on unpaved area results in fugitive emissions to the tune of 1.261 kg/VkmT for PM<sub>10</sub> and 0.126 kg/VkmT for PM<sub>2.5</sub>. The proposed control measures are the following: <ul style="list-style-type: none"> <li>• Laying of haul road as per the standards, black topping of permanent haul road to avoid or eliminate air borne dust.</li> <li>• Wet drilling method will be adopted to avoid dust generation.</li> <li>• Drill machines will be equipped with dust collectors.</li> <li>• Use of appropriate explosives and avoiding overcharging of blast holes.</li> <li>• Controlled blasting.</li> <li>• Covered transportation.</li> <li>• Limiting the speed of vehicles.</li> <li>• Watering of haul road at regular intervals.</li> <li>• Provision of dust filters and mask to workers.</li> <li>• Provision of green belt along the periphery of the lease area.</li> <li>• Periodical monitoring of Ambient Air Quality.</li> <li>• Adopting latest green technology.</li> <li>• Use of bag filters at all traverses points.</li> <li>• Closed conveyor system with water sprinkling arrangements.</li> <li>• The crusher unit will be based on the latest green technology and the entire unit is closed loop with proper control strategies.</li> </ul> </li> </ul>
Air quality monitoring	<ul style="list-style-type: none"> <li>• Air quality will be monitored periodically as per Norms and Mitigation Measures will be carried out to prevent dust and Air propagation in to air. Mist Water spraying will be carried out to suppress dust.</li> </ul>
<b>ENERGY</b>	
Energy requirement	<ul style="list-style-type: none"> <li>• The total power requirement will be 75 kW for compressions, which will be drawn from diesel engine.</li> <li>• Fuel Quantity: 16-20 lt/hr.</li> </ul>
<b>BIODIVERSITY</b>	
Presence of any endangered species or red listed category	<ul style="list-style-type: none"> <li>• There is no endangered, endemic or scheduled flora species existing at proposed mine lease area.</li> <li>• There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN.</li> </ul>
Loss of native species and genetic diversity	<ul style="list-style-type: none"> <li>• There will not be loss of some native species and vegetation. However, some of these species will be planted at the end use for eco-restoration.</li> </ul>

Eco restoration programmes	<ul style="list-style-type: none"> <li>An area equivalent to about 10% of the proposed area is reserved in the area owned by the project proponent outside the [proposed quarry for compensatory mass plantation. The area selected in such that there is enough depth of top soil and OB and the quarrying in this area is not proposed in future.</li> <li>The year wise programme of afforestation for the life of mine, about 2,500 trees will be planted. The main aim of the green belt development is to restore the eco-system to its original form to a maximum extent by designing the green cover with the same native species.</li> </ul>
<b>SOCIAL ASPECTS</b>	
Proximity to nearest human settlement	<ul style="list-style-type: none"> <li>129 m towards South</li> </ul>
CSR related to the project	In the following sectors: <ol style="list-style-type: none"> <li>Education</li> <li>Public Health</li> <li>Infrastructure Development and also as provided in PFR.</li> </ol>
<b>GENERAL</b>	
Details of Authorised Signatory	Sri. BinuCherian, Thakkirickalhouse,Chelad P.O Ernakulam-686681. Email : binuthakkiri@gmail.com Mob No : 9446322711,Ph.0484-2595843
Details of NABET approved EIA consultant Organisation	M/s Environmental Engineers & Consultants Pvt. Ltd. (at Sr. No. 54 as per MoEF & CC list of Accredited Consultant Organization) <i>Head Office :-</i> A1-198, JanakPuri, New Delhi. <i>Branch Office:-</i> C-306, Kanchanjunga Apartments, Palarivattom P.O., Kochi, Kerala.

5. The proposal was appraised in the 48<sup>th</sup> meeting of SEAC held on 6th to 7th November 2015 and the Committee appraised the proposal based on the Mining Plan, Prefeasibility Report and all other documents submitted along with the Form I application and decided to recommend for issuance of Environmental Clearance with the general conditions stipulated for mining projects.

6. The proposal was considered by SEIAA in its 47<sup>th</sup> meeting held on 07.01. 2016. The Authority examined the recommendations of SEAC and decided to accept the recommendation and to issue E. C subject to the general conditions stipulated for mining projects and the mitigation measures undertaken in the EMP in the PFR. However if any genuine complaints about the quarry is received, E. C issued shall be reviewed.

7. Validity will be five years subject to inspection by SEIAA on annual basis and compliance of the conditions, and 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. Environmental Clearance is therefore granted to the quarry project of Sri.Binu Cherian, Thakkirickal House, Chelad P.O., Kothamangalam, Ernakulam District, Kerala subject to the general conditions annexed hereto.

8. 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 Chapter 4.3.4 of 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 4.3.4 (EMP) of the Mining Plan, Chapter 5 of Mining plan (Blasting), Chapter 4.3.9 of PFR (Disaster Management), 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.

9. Compliance of the conditions herein will be monitored by the Directorate of Environment and Climate Change 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, Malappuram to take legal action under the Environment (Protection) Act 1986.
- iii) The given address for correspondence with the authorised signatory of the project is Sri.Binu Cherian, Thakkirickal House, Chelad P.O., Kothamangalam, Ernakulam District-686681.

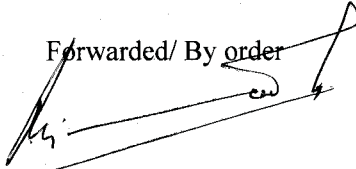
Sd/  
P. Mara Pandiyan., I.A.S  
Member Secretary (SEIAA)  
&  
Additional Chief Secretary to Government  
Environment & Forest Department  
Government of Kerala.

To,  
Sri.Binu Cherian,  
Thakkirickal House,  
Chelad P.O.,  
Kothamangalam,  
Ernakulam -686681

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4<sup>th</sup> Floor, E& F Wing, II block, Koramangala, Bangalore-560034.
2. Principal Secretary to Government, Environment Department.
3. The District Collector, Malappuram
4. The Director, Department of Environment & Climate Change.
5. The Director, Mining and Geology Department, Kesavadasapuram, Thiruvananthapuram-4
6. The Secretary, Edayur Grama Panchayat, Edayur (N) P.O., Valanchery Taluk, Malappuram, Kerala -676552.
7. Chairman, SEIAA
8. Website
- ✓ 9. Stock File
10. O/C.



Forwarded/ By order  
  
Administrator  
SEIAA

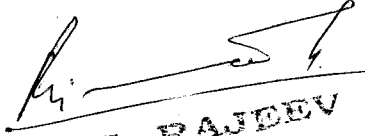
**STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY KERALA**  
**GENERAL CONDITIONS** (for mining projects)

- (i) Rain Water Harvesting facility should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified.
- (ii) Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.
- (iii) 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.
- (iv) Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project. .
- (v) Sprinklers shall be installed and used in the project site to contain dust emissions.
- (vi) Eco-restoration including the mine closure plan shall be done at the own cost of the project proponent.
- (vii) 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 dumpings and overburden and planted with indigenous plant species that are eco-friendly.
- (viii) Corporate Social Responsibility (CSR) agreed upon by the proponent should be implemented
- (ix) ***The lease area shall be fenced off with barbed wires to a minimum height of 4ft around, before starting of mine.***
- (x) Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged as per stipulations of Explosive Department.
- (xi) Control measures on noise and vibration prescribed by KSPCB should be implemented.
- (xii) Quarrying activities should be limited to day time as per KSPCB guidelines.
- (xiii) Blasting should be done in a controlled manner as specified by the regulations of Explosives Department or any other concerned agency.
- (xiv) A licensed person should supervise/ control the blasting operations.
- (xv) Access roads to the quarry shall be tarred to contain dust emissions that may arise during transportation of materials.
- (xvi) Overburden materials should be managed within the site and the old quarries, if any, should be reclaimed and restored.
- (xvii) Height of benches should not exceed 5 m and width should not be less than 5 m.
- (xviii) Mats to reduce fly rock blast to a maximum of 10 PPV should be provided.
- (xix) ***Maximum depth of mining from general ground level at site shall not exceed 10m***
- (xx) No mining operations should be carried out at places having a slope greater than 45°.
- (xxi) 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.
- (xxii) The workers on the site should be provided with the required protective equipment such as ear muffs, helmet, etc.
- (xxiii) Garland drains with clarifiers to be provided in the lower slopes around the core area to channelize storm water.
- (xxiv) The transportation of minerals should be done in covered trucks to contain dust emissions.
- (xxv) The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.
- (xxvi) Disposal of spent oil from diesel engines should be as specified under relevant Rules/ Regulations.
- (xxvii) Explosives should be stored in magazines in isolated place specified and approved by the Explosives Department.
- (xxviii) ***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***

- (xxix) 200 m buffer distance should be maintained from forest boundaries.
- (xxx) Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.
- (xxxi) 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.
- (xxxii) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.
- (xxxiii) 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.
- (xxxiv) 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.
- (xxxv) 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 Department of Environment and Climate Change, Govt. of Kerala and may also be seen on the website of the Authority at [www.seiaakerala.org](http://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.
- (xxxvi) 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.
- (xxxvii) 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 Directorate of Environment and Climate Change, Govt. of Kerala.
- (xxxviii) 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.
- (xxxix) 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.
- (xl) 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



  
**G. RAJEEV**  
Administrator  
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