



Validity expires on 28.02.2024

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

*Present: Dr.H.Nagesh Prabhu, IFS (Rtd.), Chairman, Dr. K.Jayachandran, Member &  
Dr.Usha Titus I.A.S Member Secretary.*

**Sub: SEIAA- Environmental Clearance for the proposed building stone quarry project in Survey No. 555/2 at Nagaroor Village, Chirayinkeezhu Taluk, Thiruvananthapuram District, Kerala by Mr.Rajesh Jha, Chief Executive Officer, M/s Adani Vizhinjam Port Private Limited - Granted – Orders issued.**

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### **STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA**

**No. 1200/EC2/2018/SEIAA**

***Dated,Thiruvananthapuram 01.03.2019***

- Ref: 1. Application received on 31.12.2018 from Mr.Rajesh Jha, Chief Executive Officer, M/s Adani Vizhinjam Port Private Limited, 2<sup>nd</sup> floor, Vipanchika Tower, Thycaud, Thiruvananthapuram – 695014
2. Minutes of the 90<sup>th</sup> meeting of SEAC held on 4<sup>th</sup> January, 2019
3. Minutes of the 92<sup>nd</sup> meeting of SEAC held on 22.01.2019
4. Minutes of the 89<sup>th</sup> meeting of SEIAA held on 27<sup>th</sup> February 2019.
5. Affidavit received on 28.02.2019 from Sri.Manoranjana Tripathy, Deputy General Manager- Projects, Adani Vizhinjam Port Pvt.Ltd.

### **ENVIRONMENTAL CLEARANCE NO.02/2019**

Mr.Rajesh Jha, Chief Executive Officer, M/s Adani Vizhinjam Port Private Limited, 2<sup>nd</sup> floor, Vipanchika Tower, Thycaud, Thiruvananthapuram – 695014, vide the hardcopy of application received on 31.12.2018, has sought Environmental Clearance under EIA Notification, 2006 for the quarry project in Survey No. 555/2 at Nagaroor Village, Chirayinkeezhu Taluk, Thiruvananthapuram District, Kerala for an area of 3.6630 Ha. The project comes under Category B2, Activity 1(a), (i) as per the Schedule of EIA Notification 2006.

2. The proposed project site falls within Latitude 8<sup>0</sup>43'42.88" N to 8<sup>0</sup>33'51.74" N Longitude 76<sup>0</sup>50'15.26" E to 76<sup>0</sup>50'23.24" E . The lease area consists of 3.6630 hectares,

which belongs to Government (Purambooke) land. The proposed project is for quarrying of 5,12,500 tonnes per annum. The daily water demand will be about 4 KLD, in which 2 KLD for domestic, 1KLD for plantation and 1KLD for dust suppression. The total project cost is 750 lakhs.

3. The proposal was placed in the 90<sup>th</sup> meeting of SEAC held on 4<sup>th</sup> January, 2019 and in the 92<sup>nd</sup> meeting of SEAC held on 22.01.2019. The Committee decided to recommend to issue EC subject to the following observations and conditions in addition to the general conditions.

1. *The NE and SW portion of the proposed quarry area is already mined to the localized baseline. Therefore, the area remaining to be mined out is the eastern portion of the proposed land.*
2. *On completion of the proposed mining activity, one quarter of the hillock under government land will vanish.*
3. *The geological reserve estimated is 51,96,250 tons out of which the mineable reserve is 17,78,750 tone (up to the bench level of 28m AMSL) and blocked reserve is 34,17,500 tons. The mineable reserve up to 40m AMSL is 15,07,500 tons. It means that if the total mineable quantity is allowed to be extracted, the mine will go below the present ground level of 40m AMSL by a depth of 12m creating a pit.*
4. *The reclamation and rehabilitation plan indicates that after the extraction over five years, there will a pit of 3 Ha out of which 0.95 Ha will be converted as a water pond and balance area of 2.05 Ha will be retained as pit.*
5. *The proposal for year-wise mining indicates that the extraction will be to the tune of 1,52,500 tons (1<sup>st</sup> year), 4,99,375 tons (2<sup>nd</sup> year), 5,12,500 tons (3<sup>rd</sup> year), 5,11,875 tons (4<sup>th</sup> year) and 1,02,500 tons (5<sup>th</sup> year). However, the proposal does not mention about the requirement for the next two years, during which it is understood that the breakwater construction will be over.*
6. *If we consider that the breakwater construction will be completed in two years and the quantity of stone projected for extraction in the first two years is the actual requirement for the proponent, then the quantity extracted will be 6,51,875 tons, i.e., 37% of the mineable reserve. If the mining is allowed upto the bench level of 70m as per the mine plan, the quantity extractable is 7,51,875 tons, i.e. 15% more than the requirement.*



7. Kerala experiences intermittent micro earthquakes such as the ones in Nedumkandam in 1988 with 4.5 magnitude, Vadakkencherry in 1994 with 4.3 magnitude, Erattupetta in 2000 and 2001 with magnitudes 5 and 4.8 respectively, off the coast of Thiruvananthapuram in 2001 with magnitude 4.5 etc. Based on the studies on the causative factors of micro tremors in Kerala, it is understood that variation in hydraulic pressure in the near-surface joints and fractures, increased pore-pressure and its uncertain variations etc lead to disturbance in the subsurface rock formations. Studies also indicated that from among the micro-tremors recorded in the seismograph installed in Peechi between 2000 and 2008, 45% occurred between July and October and 29% between November and January when there is significant rainfall and groundwater recharge. It indicates that the landuse changes, hydraulic pressure build up, pore-pressure variations etc. could influence occurrence of micro-tremors. There have been micro-tremors centered around Vamanapuram in September 1988, Parippalli in December 1994, Kilimanur in August 2006 and Attingal in January 2008. It is suspected that the subsurface rock formations do not have adequate strength to absorb the high magnitude variations in the landuse pattern, landform changes, hydraulic pressure variations etc.. Therefore, there need to be utmost restraints in disturbing the natural landforms of the region.
8. The earlier quarrying of the hillock has left a vertical fall of 70m which is very dangerously poised. If mining is allowed as per mining rules, the vertical fall will become a bench cut which will improve the safety aspect of the frontal portion of the quarry.
9. Since the proposal is to extract stone from one portion of the hillock, there will not be complete removal of the hillock, thus overcoming the implications on micro-climate of the region.
10. There are other quarries in the vicinity of the proposed quarry, but not within 500m as per a document produced by the proponent. It may be verified whether the proponent has submitted the relevant documents along with the application for EC, so as to ensure that there are no quarries within the radius of 500m.
11. The mining is proposed with Non-electric detonator (NONEL) method thereby minimizing air blast, fly rock and ground vibration.
12. The proponent should be directed to constitute a Local Area Monitoring Committee, involving the Grama Panchayat.

13. *No environmental management intervention could adequately mitigate the impacts caused due to the activities linked to quarrying/mining. However, the demand for building stones for essential developmental activities need to be met. Therefore, it is desirable to restrict mining to the minimum essential requirement so as to minimize the environmental impact as well as to protect the resource for future demand of development activities. Hence, mining should not be allowed for extracting the whole of mineable quantity but be permitted to meet the essential requirement. This approach will also minimize the change in landform.*
14. *The proponent may be permitted to extract a maximum of 7 lakh tons of building stone within a period of two years. Further permission for mining may be considered based on the requirement then and environmental assessment.*
15. *The proponent should be asked to comply with all mandatory environmental management conditions that are stipulated while giving EC for such mining projects.*
16. *The social and environmental needs of the locality should be assessed in consultation with the Local Governments based on which the Corporate Social & Environmental Responsibility should be exercised.*
4. The proposal was placed in the 89<sup>th</sup> meeting of SEIAA held on 27<sup>th</sup> February 2019. Authority decided to recommend for issuance of EC with general conditions in tune with KMMC Rules 2015 and its amendments and subject to the following specific conditions.
1. *The mining should be conducted with Non-electric detonator (NONEL) method thereby minimizing air blast, fly rock and ground vibration.*
  2. *Extract a maximum of 7 lakh tons of building stone within a period of two years. Further permission for mining may be considered based on the requirement then and environmental assessment.*
  3. *The proponent shall file an affidavit that he will expend Rs.15 lakhs as part of CER in consultation with Local Self Government.*
  4. *The proponent should follow the closure plans (progressive closure and final closure) as per KMMC Rules.*

The proponent has submitted notarised affidavit committing the CSR activities vide reference 5<sup>th</sup> cited.

5. Environmental Clearance as per the EIA Notification 2006 is hereby accorded for the quarry project of Mr.Rajesh Jha, Chief Executive Officer, M/s Adani Vizhinjam Port Private



Limited, 2<sup>nd</sup> floor, Vipanchika Tower, Thycaud, Thiruvananthapuram – 695014 in Survey No. 555/2 at Nagaroor Village, Chirayinkeezhu Taluk, Thiruvananthapuram District, Kerala for an area of 3.6630 Ha, subject to the specific conditions as in para 4<sup>th</sup> above, all the environmental impact mitigation and management measures undertaken by the project proponent in the Form I, EMP, PFR and Mining plan submitted to SEIAA. 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 48), appended hereto will be applicable and have to be strictly adhered to.

6. 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 the undertakings in Chapter 2 (Mining) & (Blasting), Chapter 3 (Mines Drainage), Chapter 4 (Stacking of Mineral rejects and Disposal of waste) Chapter 8 (Progressive Mine Closure Plan) & EMP of the Mining Plan as submitted will be deemed to be part of this proceedings as conditions as undertaken by the proponent, as if incorporated herein.

7. Validity of the Environmental Clearance will be five years from the date of this clearance, 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.

8. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its authorised offices 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, Thiruvananthapuram.

- iii. The given address for correspondence with the authorised signatory of the project is Mr.Rajesh Jha, Chief Executive Officer, M/s Adani Vizhinjam Port Private Limited, 2<sup>nd</sup> floor, Vipanchika Tower, Thycaud, Thiruvananthapuram – 695014.

Sd/-  
**Dr.Usha Titus I.A.S**  
**Member Secretary, SEIAA**

To,

Mr.Rajesh Jha,  
Chief Executive Officer,  
M/s Adani Vizhinjam Port Private Limited,  
2<sup>nd</sup> floor, Vipanchika Tower, Thycaud,  
Thiruvananthapuram – 695014

Forwarded/By order

  
Administrator, SEIAA

Copy to,

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4<sup>th</sup> Floor, E&F Wing, II Block, Koramangala, Bangalore-560034.
2. The Principal Secretary to Government, Environment Department, Government of Kerala.
3. District Collector, Thiruvananthapuram
4. Director, Mining & Geology, Thiruvananthapuram -4.
5. The Member Secretary, Kerala State Pollution Control Board
6. District Geologist, Thiruvananthapuram
7. Tahsildhar, Chirayinkeezhu Taluk, Thiruvananthapuram district
8. Village Officer, Nagaroor Village (Kadavila), Thiruvananthapuram
9. Chairman, SEIAA.
10. Website.
11. S/f
12. O/c





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

1. A separate environmental management and monitoring cell with qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
2. 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.
3. Sprinklers shall be installed and used in the project site to contain dust emissions.
4. Eco-restoration including the mine closure plan shall be done at the own cost of the project proponent.
5. In view of the deep pits left after the excavation, stacking at maximum top level should be carried out.
6. Corporate Environment Responsibility agreed upon by the proponent should be implemented.
7. The project proponent shall comply the conditions stipulated by the statutory authorities concerned.
8. Tarring /multiple options on the access roads shall be undertaken so as to reduce dust pollution during movement of vehicle.
9. Overburden materials should be managed within the site and used for reclamation of mine pit as per mine closure plan / specific conditions.
10. Height of benches should not exceed 5 m, and width should not be less than 5 m, if there is no mention in the mining plan/specific condition.
11. Ground level should be fixed in individual cases separately
12. No mining operations should be carried out at places having a slope greater than 45°.
13. 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. This condition is applicable only in such cases if a crusher is adjacent to the quarry.
14. The workers on the site should be provided with the required protective equipment such as ear muffs, helmet, etc.
15. Garland drains with clarifiers to be provided in the lower slopes around the core area to channelize storm water.
16. The transportation of minerals should be done in covered trucks to contain dust emissions. The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project. SEAC should assess the number of trees in each project site before the issuance of EC so as to ensure the promptness in planting.
17. Explosives should be stored in magazines in isolated place specified and approved by the Explosives Department.
18. 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.
19. 50 m buffer distance should be maintained from forest boundaries.
20. Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating mining activity.
21. 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.
22. 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 proponent shall apply and get the approval of this Authority.
23. 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.
24. 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.



25. 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](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.
26. The Environmental Clearance shall be put on the website of the company by the proponent.
27. Proponent shall submit half yearly reports in soft copy and SEIAA will upload it on the website.
28. 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
29. 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.
30. 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.
31. 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.
32. 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°. 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.
33. 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.
34. 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<sub>10</sub> and PM<sub>2.5</sub> 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.
35. 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.
36. Measures should be taken for control of noise levels below 85 dBA in the work environment.
37. The funds earmarked for environmental protection measures and CER 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.
38. 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.
39. 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.
40. 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.
41. The SEIAA may revoke or suspend the order, for non implementation of any of the specific or this implementation 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.



42. 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.
43. 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.
44. The mining operation shall be restricted to above ground water table and it should not intersect ground water table.
45. 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'
46. 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.
47. 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.
48. 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

