



**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(Impact Assessment Division)**

To,

The MD

M/S SERA GRANITES INDIA PRIVATE LIMITED

Mr. Peter Joseph, Managing Director, M/s Sera Granites India Private Limited, 3/546 V, St. Antonys Shopping Complex, Kizhakkambalam P.O., Ernakulam, Kerala, Ernakulam, Kerala-683562

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/KL/MIN/230373/2020 dated 21 Sep 2021. The particulars of the environmental clearance granted to the project are as below.

- |  |  |
|--|--|
| 1. EC Identification No.                   | EC22A001KL117061   |
| 2. File No.                                | IA-J-11015/86/2021-IA-II(NCM)  |
| 3. Project Type                            | New  |
| 4. Category                                | A  |
| 5. Project/Activity including Schedule No. | 1(a) Mining of minerals  |
| 6. Name of Project                         | Building Stone Mine (Minor Mineral) Quarry Project situated at Re-survey nos. 25/1A (25/2308), 25/1A (25/2310) & others in village-Nediyenga, Sreekandapuram Municipality, Taluk-Taliparamba, Distri |
| 7. Name of Company/Organization            | M/S SERA GRANITES INDIA PRIVATE LIMITED  |
| 8. Location of Project                     | Kerala   |
| 9. TOR Date                                | 03 Feb 2020  |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 05/04/2022

(e-signed)  
Pankaj Verma  
Scientist E  
IA - (Non-Coal Mining sector)

*Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.*

*This is a computer generated cover page.*

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**IA-J-11015/86/2021-IA-II (NCM)**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**Impact Assessment Division**

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2<sup>nd</sup> Floor, Prithvi Block  
Indira Paryavaran Bhawan  
Jor Bagh Road, Aliganj  
New Delhi-110 003  
Date: 5<sup>th</sup> April, 2022

To

M/s Sera Granites India Private Limited  
3/546 V St. Antony's Shopping Complex  
Kizhakkambalam P.O., Ernakulam – 683 562  
Kerala

**Sub: Proposal for Environmental Clearance for Building Stone Mine Quarry Project of M/S Sera Granites India Private Limited over an area of 10.3274 ha with total production capacity of 92,48,683 MT (ROM) [building stone 88,82,293 MT, overburden 1,29,830 MT and top soil 59,012 MT] situated at re-survey no.25/1A (25/2308), 25/1A (25/2310) & others in Village Nediyyenga, Sreekandapuram Municipality, Taluk Taliparamba, District Kannur, State Kerala- reg.**

Sir,

This has reference to the proposal no. IA/KL/MIN/230373/2020 for Environmental Clearance for Building Stone Mine (Minor Mineral) Quarry Project of M/S Sera Granites India Private Limited over an area of 10.3274 Hectares with total production capacity of 92,48,683 MT (ROM) [Building stone 88,82,293 MT, overburden 1,29,830 MT and top soil 59,012 MT] situated at Re-survey nos. 25/1A (25/2308), 25/1A (25/2310) & others in Village Nediyyenga, Sreekandapuram Municipality, Taluk Taliparamba, District Kannur, State Kerala.

|                 |   |
|-----------------|---|
| EAC Meeting     | 47 <sup>th</sup> EAC Meeting                  |
| Date of Meeting | 7 <sup>th</sup> to 9 <sup>th</sup> March 2022 |

The mine lease area is located between Latitude 12°05'09.88" to 12°05'28.12" N and Longitude 75°31'14.19" to 75°31'25.67" E. The mine lease area falls in 48P/12 toposheet and Seismic Zone III. The EIA consultant is M/s Environmental Engineers & Consultants Pvt. Ltd. The category of the project is Category "B", Project or Activity 1(a) – 4 for Mining of Mineral as per EIA Notification S.O. 1533 (E), dated 14th September

  
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2006 and subsequent amendments. SEIAA, Kerala has been constituted on 3<sup>rd</sup> March 2022, however, as per the Ministry's O.M. dated 23<sup>rd</sup> October 2017, "In cases, the proposal is appraised by the EAC due to non-existence of SEIAA/SEIAC, then irrespective of whether recommended, deferred or additional information sought, it will continue to be appraised and decided at the central level, even if the SEIAA/SEIAC is constituted later on."

2. Tenure of SEIAA/SEAC, Kerala got completed on 18.09.2021 due to which the project proponent made an online application vide proposal no: IA/KL/MIN/230373/2020 dated 21-09-2021 for Environmental Clearance. The proposed quarry project for obtaining Environmental Clearance is for mine lease area of 10.3274 hectares with targeted annual production capacity of 9,00,000 MT with life of mine as 10 years. Earlier the proposal for Environmental Clearance was considered in the 41<sup>st</sup> EAC meeting held during 15th – 16th November and 18th November, 2021. After detailed deliberations, the Committee noted that the project proponent has not submitted the authenticated District Survey Report as per Ministry's Notification S.O 3611(E) dated 25.07.2018. As per 2018 Notification "The District Survey Report shall form the basis for application for environmental clearance, preparation of reports and appraisal of projects". Therefore, the Committee deferred the proposal. The project proponent needs to submit the above information on Parivesh Portal. The project proponent submitted the reply on 15.02.2022. The project proponent submitted the Hon'ble High Court, Kerala order vide WP(C) NO. 4875 OF 2022 dated 14/02/2022. The relevant extract is produced below:

*"this writ petition is also disposed of, directing the 2<sup>nd</sup> respondent to consider and pass orders on the application submitted by the petitioner for Environmental Clearance which is referred to in Exhibit P2, on the basis of DSR 2016 issued by the Department of Mining and Geology, Government of Kerala, which has been certified to confirm with Notification No.S.O.3611(E) dated 25.07.2018. Appropriate steps shall be taken within a period of one month from the date of receipt of a copy of this judgment."*

3. The project proponent submitted that ToR was approved by SEAC, Kerala in its 112<sup>th</sup> Meeting held on 12-14th August, 2020. Based on the ToR, EIA study was conducted by accredited consultancy organization (ACO), accredited under QCI/NABET Scheme (ACO: M/s Environmental Engineers & Consultants Pvt. Ltd., New Delhi) in the month of March (2020), April (2020), May (2020) and March (2021) & April (2021) and the draft EIA report was prepared. The draft EIA report was submitted at Kerala Pollution Control Board (KSPCB) for conduction of public hearing. It was conducted on 10.03.2021 under the Chairmanship of the Additional District Magistrate, Kannur at Collectorate Auditorium, Kannur by as procedure stated in the EIA Notification, 2006. PP submitted the Pre-feasibility report. The Mining plan was approved by the District Geologist, Mining & Geology Department, Govt. of Kerala vide letter dated 09 Dec 2019.

  
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4. The project proponent submitted that the Letter of Intent was granted vide letter no. 7016/M3/2019 dated 29.10.2019. The project proponent submitted the LOI extension letter dated 09.01.2022. PP submitted that the mining plan was approved vide letter no. DOC/M-1302/2019 dated 09.12.2019 for about 10 years. The project proponent submitted that the total excavation will be 88, 82,293 MT (Mineable Reserve) wherein production capacity of building stone will be 9,00,000 MTA, total top soil production will be 59,012 MT and total waste will be 1,29,830 MT. The PP submitted the EIA/EMP report on 21.09.2021.

5. The project proponent submitted that the method of mining will be opencast with multiple blast holes of 1.5 to 2.5 m depth will be drilled with the help of 32 mm drill rod, Jack Hammer and Air Compressor of 100 cfm capacity. The controlled blasting through "NONEL" blasting technique using Nitrate Mixture as explosive is proposed by adopting all the safety measures. Bench height will be 5 m and bench width will be 5 m. Individual bench slope will be 72° and overall pit slope will be 45°. About 10 years is the life of mine. Vehicles will be engaged for transfer of mined out material and about 25 trips of 15 T capacity tipper / dump will be utilized for transporting the mineral on per hour basis. The mine lease area of 10.3274Ha is the private land.

6. The project proponent submitted that the daily water demand will be about 22 KL wherein 7 KLD for domestic purposes, 10 KLD for dust suppression in mine and 5 KLD for plantation purposes. Source of water will be open well & stored rain water in pond. Proposed area for green belt/plantation will be 1.0 ha. The budget for plantation of 8,300 trees is Rs. 91.30 Lakhs.

#### 7. Details of EMP:

| Sr. No. | Description   | Item  | Capital Cost   | Recurring Cost | Remarks   |
|---------|---------------|---|----------------|----------------|---|
|         |               |   | (Rs. In Lakhs) |                |   |
| 1.      | Air Pollution | Personnel Protective Equipments (PPE) to mine workers | 6              | 2              | Safety shoe twice in a year, helmets once in three years and hand gloves (daily). ear plugs, safety goggles |
|         |               | Uniform for mine workers                              | 0.4            | 0.2            | Issued six monthly  |
|         |               | Blast mats  | 0.8            | 0.4            | As and when needed (L/S)  |
|         |               | Wetting of roads (paved and unpaved) and              | 8.0            | 5.0            | Water tanker cost @one tanker per day for 300 days.   |

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|                  |                                |   |             |             |  |
|------------------|--------------------------------|---|-------------|-------------|--|
|                  |                                | sprinkler system  |             |             |  |
|                  |                                | Plantation on road side-3m interval and buffer zone – 3m interval plus maintenance        | 5.0         | 1.0         | Re-plant the non-surviving plants, watering and protection from animals.           |
|                  |                                | Regular cleaning of paved roads,  | 0.1         | 3.0         | Two workers daily  |
|                  |                                | Construction of speed controllers   | 0.5         | 0.1         | Construction cost of speed breakers  |
|                  |                                | Asphalting of roads and its maintenance   | 25.0        | 2.0         | -  |
| <b>Sub-Total</b> |                                |   | <b>45.8</b> | <b>13.7</b> |  |
| 2                | Noise & vibration Pollution    | Maintenance of machinery suitably   | 8           | 4           | Included in maintenance cost   |
|                  |                                | PPE's like Ear muffs  | 2           | 1           | Once in six months   |
|                  |                                | Acoustic enclosure for DG set   | 3           | 0.5         | -  |
|                  |                                | Blasting siren and notice boards  | 2           | 0.2         | -  |
| <b>Sub-Total</b> |                                |   | <b>15</b>   | <b>5.7</b>  |  |
| 3                | Water Pollution                | Construction of garland drains with intermittent siltation traps (storm water management) | 10          | 4           | Once only for the lease period /life of mine.                                      |
|                  |                                | De-silting operations   | 5           | 2           | Yearly and manual operation  |
|                  |                                | Construction of ponds (rain water harvesting)   | 10          | 2           | Once in year, cost incurred is to buy sand bags and filling sand. and de-siltation |
|                  |                                | Construction of retaining wall for waste dump in slope side                               | 4           | 2           | Cost of construction of wall around the dip side of the dump.                      |
| <b>Sub Total</b> |                                |   | <b>29</b>   | <b>10</b>   |  |
| 4                | Occupational Safety and Health | First aid kits – 2 nos. Fire extinguishers-2 nos.   | 2           | 1           | Once in year, replace by conducting periodically check-up                          |
|                  |                                | Training and awareness programs on risk   | 2           | 3           | Once in six months and create sign boards about                                    |



|                    |                          |   |                      |                    |   |
|--------------------|--------------------------|---|----------------------|--------------------|---|
|                    |                          | factors during emergencies by the experts.  |                      |                    | the risk and safety precaution regularly.   |
|                    |                          | Periodical medical check-up and supply of medicines   | 4                    | 4                  | Once in a year and supply of medicines for every three months.  |
| <b>Sub Total</b>   |                          |   | <b>8</b>             | <b>8</b>           |   |
| 5                  | Ecological Environment   | <ul style="list-style-type: none"> <li>Green Area development in buffer of mine lease area.</li> <li>Saplings of trees in mine lease area will be transplanted to land outside mine lease area owned by PP.</li> <li>Development of medicinal garden own land outside mine lease area owned by PP.</li> </ul> | 85.0                 | 3                  | 8,300 tree plantation @ Rs. 1100/-  |
| <b>Sub Total</b>   |                          |   | <b>85.0</b>          | <b>3</b>           |   |
| 6                  | Environmental monitoring | Ambient Air Quality study   | -                    | 0.48               | Will be done through MoEF&CC / NABL recognized laboratories (ambient air, noise, soil & water) & by approved experts of Accredited environmental consultancy organization (Hydrogeology, Ecological & Socio-economic assessment). |
|                    |                          | Noise and vibration studies   | -                    | 0.942              |   |
|                    |                          | Soil studies  | -                    | 0.1                |   |
|                    |                          | Water quality studies   | -                    | 0.32               |   |
|                    |                          | Hydrogeology  | -                    | 0.1                |   |
|                    |                          | Ecology assessment  | -                    | 0.25               |   |
|                    |                          | Socio-economic assessment   | -                    | 0.2                |   |
| <b>Sub Total</b>   |                          |   | <b>-</b>             | <b>2.392</b>       |   |
| <b>GRAND TOTAL</b> |                          |   | <b>182.8 say 183</b> | <b>40.4 say 41</b> |   |

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8. The project proponent submitted that total Cost for EMP is 1.83 crore and recurring cost is 0.40 crore. The project cost is Rs. 11.95 crores and manpower requirement is 50 persons.

9. **Observation and Recommendation of the Committee:**

The proposal for Environmental Clearance was considered in the 47<sup>th</sup> EAC meeting held during 7<sup>th</sup> to 9<sup>th</sup> March 2022. After the detailed deliberations, the Committee **recommended** the proposal for Environmental Clearance of Building Stone Mine (Minor Mineral) Quarry Project of M/s Sera Granites India Private Limited over an area of 10.3274 Hectares with total production capacity of 92,48,683 MT (ROM) [Building stone: 88,82,293 MT, overburden: 1,29,830 MT and top soil: 59,012 MT] situated at Re-survey nos. - 25/1A (25/2308), 25/1A (25/2310) & others in Village-Nediyenga, Sreekandapuram Municipality, Taluk Taliparamba, District- Kannur, State-Kerala subject to the compliance of certain Specific conditions in addition to all Standard conditions applicable for non-coal mining projects.

10. The Ministry has examined the proposal in accordance with the Environmental Impact Assessment Notification, 2006 and further amendments thereto; and after accepting the recommendations of 47<sup>th</sup> EAC meeting held during 7<sup>th</sup> to 9<sup>th</sup> March 2022 hereby accords the Environmental Clearance of building stone mine quarry project of M/s Sera Granites India Private Limited over an area of 10.3274 ha with total production capacity of 92,48,683 MT (ROM) [building stone 88,82,293 MT, overburden 1,29,830 MT and top soil 59,012 MT] situated at re-survey nos. 25/1A (25/2308), 25/1A (25/2310) & others in Village Nediyenga, Sreekandapuram Municipality, Taluk Taliparamba, District Kannur, State Kerala along with the following specific conditions and standard conditions subject to compliance of conditions and environmental safeguards mentioned below:

**A. Specific conditions**

- (i) Since the habitation is shown at 103 m from the lease boundary, blasting should be controlled and single low blasting to avoid noise vibration impacts.
- (ii) Monitoring of noise vibration and air quality at the lease boundary particularly in the direction of the habitation must be regularly done. To check the efficacy of the proposed EMP shall be implemented.
- (iii) The EMP budget which is proposed to one year in capital should also be extended to addressing concerns of people within one year of the start of mine.
- (iv) Strictly abide by the mining plan and shall not intersect ground water.
- (v) The project proponent shall continue to monitor the air quality, noise quality at the edge of the mine in all the directions besides specific station in the direction of village and submit the 6 monthly report to the IRO.



- (vi) The restoration plan submitted has to be augmentation by using scientific methods as suggested by the expert members.
- (vii) The Project Proponent should periodically monitor and maintain the health records of the mine workers digitally prior to mining operations, at the time of operation of mine and post mining operations.

**B. Standard conditions**

**I. Statutory compliance**

- (1) This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- (2) The Project proponent complies with all the statutory requirements and judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors before commencing the mining operations.
- (3) The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgment of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India & Ors.
- (4) This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- (5) This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- (6) Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- (7) The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- (8) The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- (9) The Project Proponent shall follow the mitigation measures provided in MoEFCC's Office Memorandum No. Z-11013/57/2014-IA.II (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects

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wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".

- (10) The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- (11) A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- (12) State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- (13) The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ([www.parivesh.nic.in](http://www.parivesh.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEFCC Regional Office for compliance and record.
- (14) The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

## **II. Air quality monitoring and preservation**

- (1) The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO<sub>2</sub>, CO and SO<sub>2</sub> etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCI/I, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.
- (2) Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The



Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEFCC/ Central Pollution Control Board.

### **III. Water quality monitoring and preservation**

- (1) In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEFCC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- (2) Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug wall located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (3) Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- (4) The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their

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water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEFCC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- (5) Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IA.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- (6) Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area in consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEFCC annually.
- (7) Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- (8) The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

#### **IV. Noise and vibration monitoring and prevention**

- (1) The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- (2) The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the



biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.

- (3) The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

#### **V. Mining plan**

- (1) The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- (2) The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- (3) The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self-sustaining. The compliance status shall be submitted half-yearly to the MoEFCC and its concerned Regional Office.

#### **VI. Land reclamation**



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- (1) The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- (2) The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- (3) The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- (4) The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- (5) The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- (6) Catch drains, settling tanks and siltation ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- (7) Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- (8) The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the



top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

## **VII. Transportation**

- (1) No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- (2) The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

## **VIII. Green Belt**

- (1) The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- (2) The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in



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community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

- (3) The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- (4) The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- (5) And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

#### **IX. Public hearing and human health issues**

- (1) The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEFCC Regional Office and DGMS on half-yearly basis.
- (2) The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation,



Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

- (3) The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- (4) The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities, (c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEFCC annually along with details of the relief and compensation paid to workers having above indications.
- (5) The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- (6) Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the

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project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.

- (7) The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

#### **X. Corporate Environment Responsibility (CER)**

- (1) The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- (2) Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEFCC and its concerned Regional Office.

#### **XI. Miscellaneous**

- (1) The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- (2) The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- (3) The Project Proponent shall submit six monthly compliance reports on the status of the implementation of the stipulated environmental safeguards to the MoEFCC & its concerned Regional Office, Central Pollution Control Board and State Pollution Control Board.
- (4) A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEFCC.
- (5) The concerned Regional Office of the MoEFCC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to



the MoEFCC officer(s) by furnishing the requisite data / information / monitoring reports.

12. The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection.

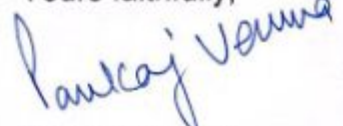
13. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attracts action under the provisions of Environment (Protection) Act, 1986.

14. The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Rajasthan and any other Court of Law relating to the subject matter.

15. 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.

16. This issues with the approval of Competent Authority.

Yours faithfully,



(Pankaj Verma)  
Scientist E

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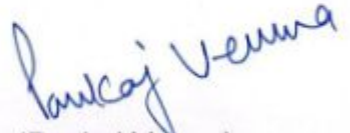
1. The Secretary, Ministry of Mines, Government of India, Shastri Bhawan, New Delhi- 110 001.
2. The Secretary, Department of Mines & Geology, Government of Kerala, Secretariat, Thiruvananthapuram - 695 001.
3. The Secretary, Department of Environment, Government of Kerala, Secretariat, Thiruvananthapuram- 695 001.
4. The Secretary, Department of Forests, Government of Kerala, Secretariat, Thiruvananthapuram- 695 001.
5. The Chief Wildlife Warden, Forest Department, Vazhuthacaud, Thiruvananthapuram – 695 014.
6. The Deputy Director General of Forests (C), Ministry of Env., Forest and Climate Change, Integrated Regional Office, Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, Koramangala II Block, Bangalore - 560034

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7. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110 032.
8. The Member Secretary, Central Ground Water Authority, 18/11, Jam Nagar House, Man Singh Road, New Delhi-110 011.
9. The Chairman, Kerala State Pollution Control Board, Pattom P.O., Thiruvananthapuram - 695 004.
10. The Controller General, Indian Bureau of Mines, Indira Bhawan, Civil Lines, Nagpur-440 001.
11. The District Collector, Kannur.
12. Guard File.
13. PARIVESH.

  
(Pankaj Verma)  
Scientist E