

Report of the Joint Committee as per the direction of the Hon'ble NGT south zone
Case filed in Hon'ble NGT South Zone
O.A. No. 155/2020
Shri Vijeesh Kumar Vs. U.O.I and others

November 2020

State Environmental Impact Assessment Authority
Ministry of Environment, Forest and Climate Change
National Centre for Earth Science Studies
Kerala State Pollution Control Board
Department of Mining and Geology



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1.0 Background

The Covenant Stones Pvt Ltd is involved in the operation of a building stone quarry and dimension stone quarry in an area of 8.9637 Ha. in the Manikkal and Thekkada Villages of



Fig.1 Thiruvananthapuram district with location of the quarry



Fig 2 View of the Covenant quarry

Nedumangad Taluk of Thiruvananthapuram district, Kerala (Fig 1 and 2). The first environmental clearance was issued by SEIAA to this quarry on 2014 vide environmental clearance No 237/SEIAA/ KL/ 885/2014 dated 27/11/2014 and it was expired in 2019. The SEIAA had given an extension of six months vide environmental clearance by SEIAA no 1422/EC1/2019/SEIAA dated 3.01.2020 from 2019 to 2020 (see Annexures 6 and &7) . Meanwhile the Tahsildar , Nedumangad Taluk issued a stop memo dated 7.3.2020 to M/s Covenant Stones Pvt. Ltd. for transporting quarried materials without valid documents. At present the environment clearance is not in force and all the quarrying operations are stopped. As per the statement of the Company representative the quarry is not in operation since 7 March 2020. At the moment the extension period of the EC is over and the mining operations have come to a standstill. Further extension of the lease period is rejected by SEIAA. Now the company has applied for the approval of Terms of reference (TOR) for conducting an EIA study

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followed by public hearing which are pre requisites for Environmental Clearance (EC) for any mining projects having areal extent of 5 Ha or more. This application is now pending before SEIAA, Kerala.

Shri Vijeesh Kumar filed O.A. No 155/2020 before Hon'ble NGT South Zone alleging that lot of environmental damage has been done on account of violations committed by M/s Covenant Stones (P) Ltd, Vembayam, Thiruvananthapuram and the Proponent had manipulated mining plan submitted with application for EC for the subsequent periods.

Vide order dated 19.08.2020 in OA No 155/2020 Hon'ble NGT South Zone has directed to appoint a Joint Committee consisting of officers from SEIAA, MoEF& CC, KSPCB, DMG and NCESS (Annexure 1 and 2) to ascertain the real state affairs and also the violation said to have been committed by M/s Covenant Stones in carrying out quarrying operations.

The members of the Joint Committee are

1. Shri G. Sankar, Member, SEAC, Kerala and Scientist G (Retd), National Centre for Earth Science Studies, Thiruvananthapuram
2. Dr S. Prabhu, Scientist C, MoEF and CC, Bengaluru
3. Shri A. M. Harees, Environmental Engineer, Kerala State Pollution Control Board, District Office, Thiruvananthapuram
4. Dr A. Krishnakumar, Scientist D, National Centre for Earth Science Studies (NCESS), Thiruvananthapuram
5. Shri M. M. Vahab, Geologist, Directorate of Mining and Geology (DMG), Kerala

SEIAA, Kerala coordinated the work as the nodal department.



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2.0 Methodology

The Hon'ble court had directed the Joint Committee to examine / carry out the following

1. Joint committee members have to inspect the quarry and submit a status report
2. Assessment of environment violation if any
3. Whether excess quarrying was carried out
4. Whether closure plan has been complied with
5. Whether rehabilitation and reclamation has been carried out
6. Whether environmental degradation caused on account of unscientific method of quarrying
7. Whether any damages to neighbouring houses due to quarrying and to the ecology
8. Whether pollution control measures provided by the operator was adequate or not

The Committee met in the Office of the Kerala State Pollution Control Board on 28th October, 2020, observing all government protocols on COVID-19, to formulate the methodology of investigation to be carried out. The meeting also decided to carry out the site inspection on 2nd November 2020 from 9 am onwards. SEIAA was requested to officially inform M/s Covenant Stones Pvt Ltd regarding the site visit. The Committee also had carried out field studies in the area around the quarry on the same day to ascertain any damages to the neighbouring houses due to quarrying. It was also decided to meet at the Kerala State Pollution Control Board district office, Thiruvananthapuram after the field visit on November 2nd at 3 pm to discuss about the data collected and to identify the gaps if any. It was also decided that the existing reports and data available will be made use for the report.

3.0 Questions raised by the Hon'ble NGT

Hon'ble NGT has raised the following aspects:

1. Assessment of environment violation if any
2. Whether excess quarrying was carried out
3. Whether closure plan has been complied with
4. Whether rehabilitation and reclamation has been carried out
5. Whether environmental degradation caused on account of unscientific method of quarrying



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6. Whether any damages to neighbouring houses due to quarrying and to the ecology
7. Whether pollution control measures provided by the operator was adequate or not

3.1 Field visit

On 2 November, 2020 the Joint Committee carried out the site inspection with all the Government protocols on COVID-19 (Annexure 3a and 3b). All the Joint Committee members reached the site at 9 am itself. The representative of the management of the Covenant Stones Pvt Ltd, Shri Jijo Mathew was present at the time of visit (Fig.3). Shri. S.Mamallan, R.Q.P. of the company was also present at the site to explain the technical questions. The field studies were concluded at 1.30 pm. The technical teams from the respective organisations of the Joint Committee helped the members in carrying out the investigations.

The environmental clearance (EC) No 237/SEIAA/KL/885/2014 dated 27.11.2014, was issued to this quarry by SEIAA is with 5 (five) specific and 40 (forty) general conditions to be followed during the EC period of 5 (five years). The Joint Committee verified each of the conditions and verified its compliance by M/s Covenant Stones Pvt Ltd. On verifying the records it was observed that there were many complaints and court cases regarding the environmental issues raised by few local people. Revenue department had issued stop memo to this firm for not producing documents for the transportation of mined material.

The quarry was not functioning at the time of visit. On enquiry the Committee was informed that the operations of the quarry was stopped on 7 March 2020. Except Shri Jijo Mathew,, representative of the Company and Shri Mamallan, RQP and the security personnel no other employees were seen at the time of visit. The crusher unit was also not functioning at the time of visit. The internal roads leading to the quarry and crusher unit is wide, black topped. One boundary pillar BP 20 is located in the main approach road (fig 4). The finding of the field investigation is described under different titles below.



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Fig. 3 Briefing the company representative before the field inspection



Fig 4 Boundary pillar on the black topped road

3.2 Assessment of environment violation if any

The environmental clearance issued in 27.11.2014 specifies 5 (five) specific and 40 (forty) general conditions (Annexures 6 and 7) to be followed during the EC period. The Joint Committee examined these conditions.

The specific conditions imposed are on account of the peculiar topographic , geologic and other site specific socio environmental issues.

In any mining activity the boundary pillars defining the lease area assumes lot of importance. The exact position of a boundary pillar is given as geo coordinates (latitude / longitude) in the approved mine plan of the mining project. Since geo coordinates are known revisiting a boundary pillar is easy. So any violation regarding encroachment or buffer or garland canal etc is determined using the present position of boundary pillars in the site.

The Boundary Pillars (BP) with geo coordinates followed in the approved mine plan is given in Table1, were physically checked where ever accessible in the field with hand held GPS and cross checked with GPS facility available with the smart phones. Remote sensing and GIS tools were adopted to check the BP positions with respect to the actual mined area. (Fig 5, Fig 7, Fig 8 and Fig 9)

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Table 1 :Lease area of the area defined for quarrying is bounded by the following boundary pillars

<u>Boundary Pillar No</u>	<u>Geo coordinates</u>		<u>Remarks</u>
	<u>Lattitude</u>	<u>Longitude</u>	
BP 01	N8° 39' 03.5"	E76° 57' 07.7"	No mining area .Verified correct debris mantle slope vegetated area
BP 02	N8° 39' 01.4"	E76° 57' 07.1"	Verified correct, No garland canal, No buffer
BP 03	N8° 39' 01.0"	E76° 57' 07.9"	Verified correct, No garland canal. No buffer
BP 04	N8° 38' 58.2"	E76° 57' 07.0"	No garland canal No Buffer
BP 05	N8° 38' 57.8"	E76° 57' 08.4"	No garland canal No Buffer
BP 06	N8° 38' 56.6"	E76° 57' 08.0"	No garland canal , No Buffer
BP 07	N8° 38' 55.0"	E76° 57' 07.1"	Excess mining No garland canal No Buffer
BP 08	N8° 38' 54.0"	E76° 57' 09.4"	Excess mining No garland No Buffer
BP 09	N8° 38' 53.3"	E76° 57' 11.3"	No garland canal
BP 10	N8° 38' 56.0"	E76° 57' 12.6"	Encroachment to outside lease area. No buffer
BP 11	N8° 38' 55.4"	E76° 57' 16.2"	Excess mining, encroachment to outside lease area. No Buffer
BP 12	N8° 38' 54.9"	E76° 57' 16.1"	Encroachment to outside lease area, No buffer
BP 13	N8° 38' 54.9"	E76° 57' 17.3"	Vegetated area
BP 14	N8° 38' 53.9"	E76° 57' 17.7"	BP located in steep and bush area
BP 15 missing	N8° 38' 53.4"	E76° 57' 18.5"	Verified mining seen side lease area. BP
BP 16	N8° 38' 54.3"	E76° 57' 19.2"	Verified No garland canal
BP 17	N8° 38' 55.2"	E76° 57' 18.5"	Verified No garland canal
BP 18	N8° 38' 55.4"	E76° 57' 17.7"	Verified , No garland canal , No Buffer
BP 19	N8° 38' 58.3"	E76° 57' 18.4"	Near Canal. Verified
BP 20	N8° 38' 58.5"	E76° 57' 16.2"	On the road. Not concreted Verified and found correct (Fig.4)



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BP 21	N8° 39' 00.3" E76° 57' 16.5"	Verified near magazine store .Fixed temporarily on theMetallic pole. Verified
BP 22	N8° 39' 01.4" E76° 57' 13.3"	Fixed temporarily on the the road verified metallic pole. Verified
BP 23	N8° 39' 04.2" E76° 57' 14.3"	Boundary pillar is not found- missing
BP 24	N8° 39' 05.8" E76° 57' 10.3"	Two pillars seen. Metallic pole verified correct. Other one inside the lease area in the buffer area . (photo)
BP 25	N8° 39' 06.5" E76° 57' 08.2"	verified. No mining area vegetataed. Debris mantle slope
BP 26	N8° 39' 07.9" E76° 57' 03.5"	Steep slope..No mining area debris mantle slope. Vegetated area
BP 27	N8° 39' 05.2" E76° 57' 02.6"	Steep slope No mining area debris mantle slope . Vegetated area

Fig 5 shows the boundary pillars plotted in the latest Google earth map to check any deviations made in the mining. It could be seen that at many places mining has trespassed the area bounded by the boundary pillars (BP)



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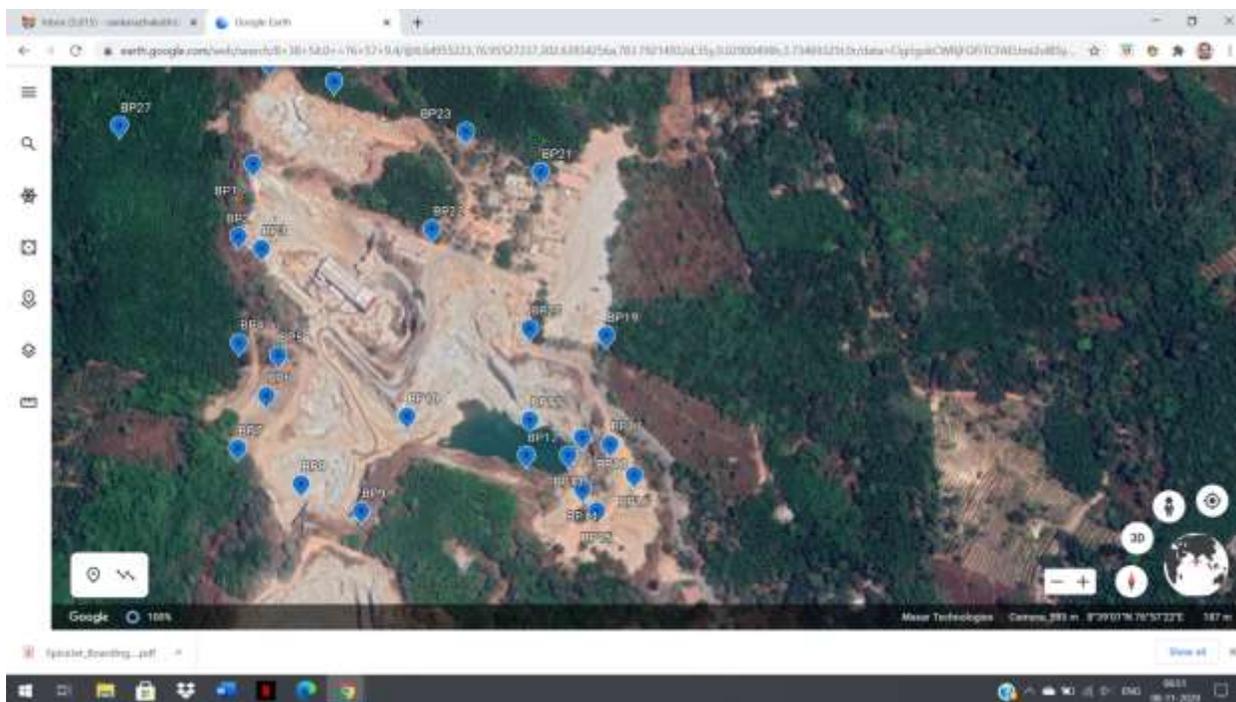


Fig.5 Google Earth Image of the Covenant Stones quarry location with boundary pillars

3.21 Specific conditions

3.2101. “Western most debris mantled sloping area merging with the lower flat land is very steep quarrying must be avoided.”

Complied. The Fig. 6 indicates the actual ground condition of the boundary pillars which were given the approved mining plan. In the Specific condition the mining was prohibited in the debris mantle slope on the western side on the lease area . BP 25, 26 , 27 and 1 cover this area. At the time of visit the area is fully vegetated and undisturbed.(Fig 6and 7)

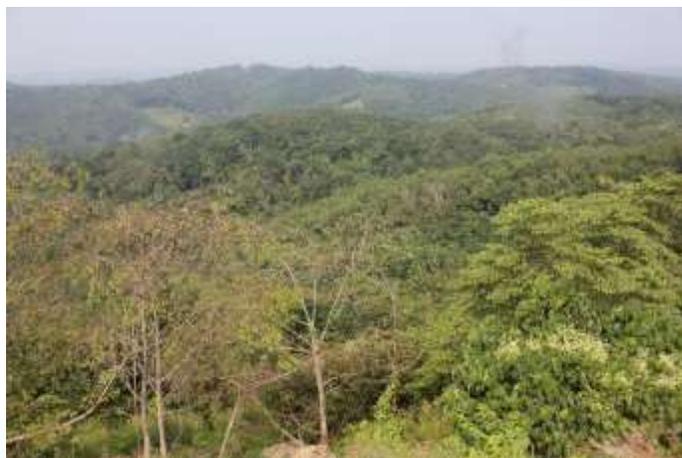
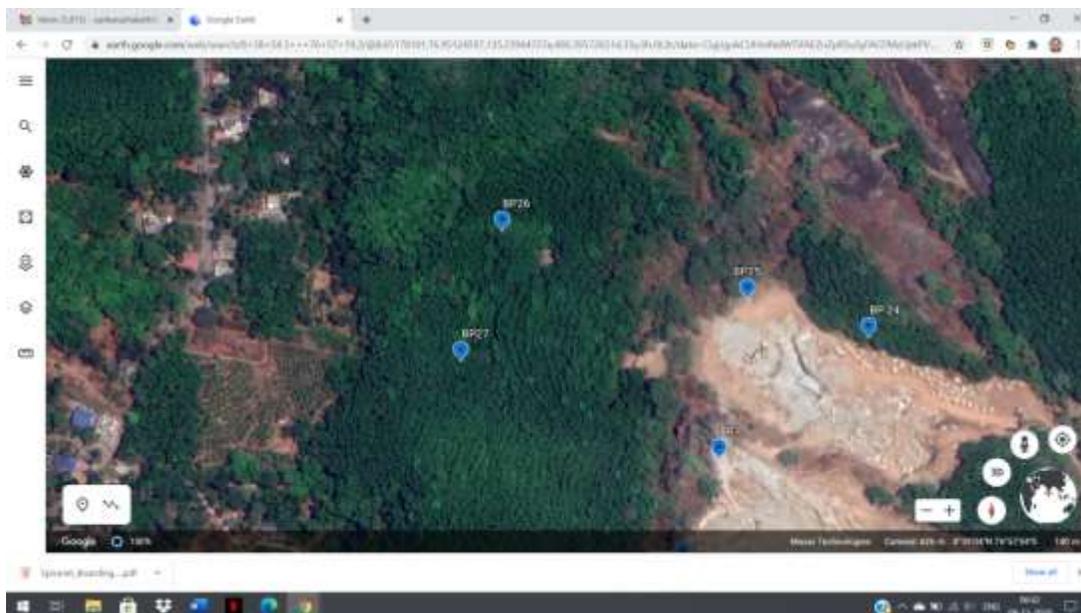


Fig 6 Debris mantle slope on the western side of the quarry. Not quarried

(Handwritten signature)



*Fig7 Google Earth image showing Border Pillars 1, 25, 26 and 27 covering the debris mantle slope .
No mining was carried out here . Fully vegetated at the time of visit .*

3.2102 Specific Condition 2 : A minimum buffer distance of 250m to be maintained from Thampurana para in the north.

Complied . There is an aerial distance of approx. 270m from BP 25 to Thampurana para. The distance was measured using tools available in Google earth. (Fig.8). BP 25 BP geo coordinates were verified on the field. So the distance criterion is maintained. At this spot encroached mining

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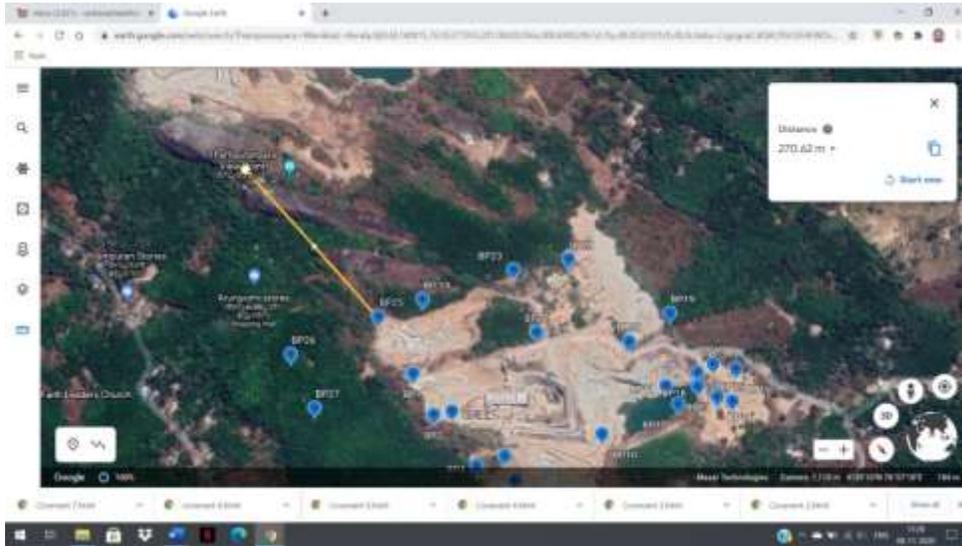


Fig.8. Distance of Thampurapara from the nearest BP in the north is observed.

3.2103 Specific Condition 3 : Quarrying must be limited to Sy Nos 29/2,29/3 part and 30/4 part at Thekkada village & Sy nos 470.472/41, 474/1, 474/1-1, 474 ½, 472/5, 472/6, 469/4/3/4, 469/4/3/3, 469/4/2, 469/4/1/1, 469/4/1/2,469/4/1/3 and 469/4 at the Manickal village, Nedumangad taluk, Thiruvananthapuram district, Kerala.

Not Complied. The Boundary Pillars with the geocordinates numbering BP1 to BP27 mentioned in the approved mine plan covers the lease area in the sy nos 470.472/41, 474/1, 474/1-1, 474 ½, 472/5, 472/6, 469/4/3/4, 469/4/3/3, 469/4/2, 469/4/1/1, 469/4/1/2,469/4/1/3 and 469/4 at the Manickal village, Nedumangad taluk, Thiruvananthapuram district, Kerala. Field verification and GIS interpretation (i.e. Superimposition of Geocordinates of BP in the Satellite image) it is evident that mining has encroached into the areas beyond the sy.nos mentioned in the environmental clearance. Most affected areas are in the south and southwestern areas. The Department of Mining and Geology (DMG) has carried out an extensive field based survey to find out excessive mining carried out by the Company. DMG have also confirmed that mining was encroached to outside lease area.

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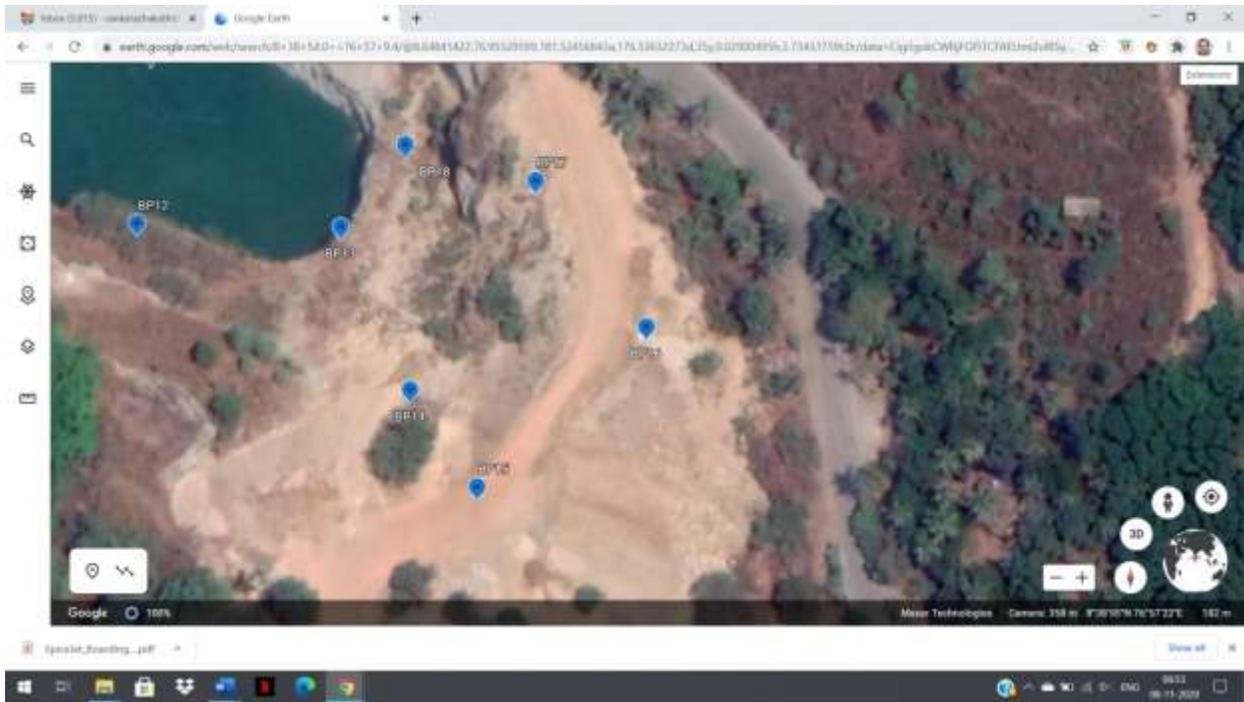


Fig.9 Google image with BP 16, 15, 14, 13, 12 indicates mining was carried out outside the lease area.

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In Fig.9, Fig 10 and Fig.11 It is noticed that the boundary pillars are located not on the borders but inside the mining area, indicating that encroachment has taken place.

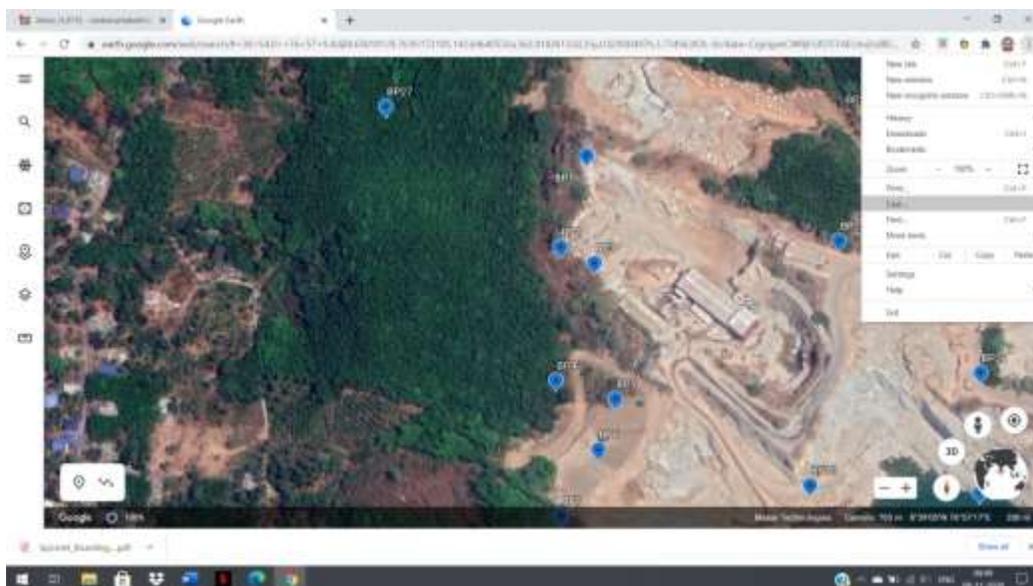


Fig10 Google image showing BP 27, 1,2,3,4,5, 6 and 7. BP 5, 6, 7 No Buffer. no garland canal within the BP limits .The western high slope is not disturbed.

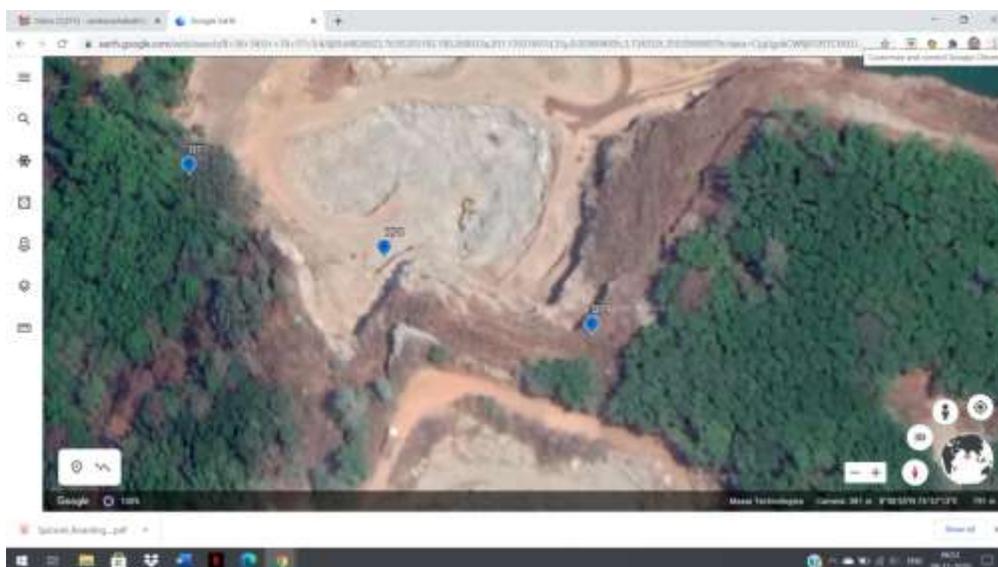


Fig.11 Google image showing BP 7, 8 and 9. South of BP 8 excess mining was carried out. Also it is observed that there are no garland canal and buffer within the BP limits

3.2104 Specific condition 4 : Buffer distance of 15 m should be maintained from the

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Taluk boundary.

Complied . Cross checked in the field as well as using GIS / satellite image . The Boundary points were plotted on the map (Fig.12) shows that there is buffer maintained from the taluk boundary. The position of the Boundary Pillars near the Taluk boundary are also verified in the field.

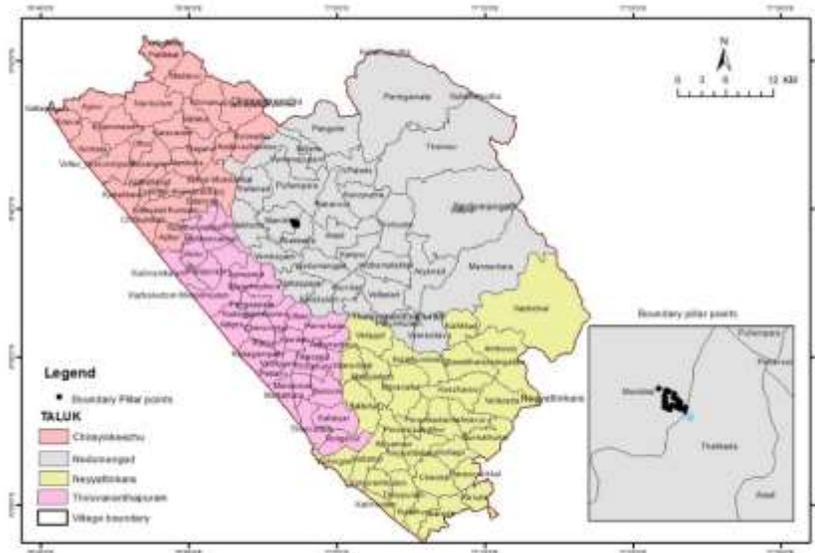


Fig.12 Map showing Taluks and Villages in Thiruvananthapuram district with BP of the quarry

3.2105 Specific Condition 5 : Boundary pillars should not be tampered with.

Not complied. In this quarry boundary pillars are not maintained properly. Boundary Pillars define the exact boundary of the lease / permit area of quarry. In other words the mining/ quarrying activities should be limited inside the area covered by the boundary pillars. The buffer zone, the garland canal should be within this area. In an ideal case the boundary pillars should be concrete pillars or stone pillars of 4ft high, concreted to the base with yellow colour painted as background with black lettering showing the geo coordinates of the spot. Border pillars are all metallic and few are concreted. The values are fixed on a flex sheet pasted on it with yellow background and black letterings. Some boundary pillars are found loosely fixed on the ground (Fig 4, 13 and 14). The co ordinates of the Boundary pillars were located on a recent google earth image which is freely down loadable. The Fig.5, 7, 8, 9,10 and 11.

Boundary pillars are not maintained properly. In couple of places it is either missing or dilapidated. This BP is located on an asphalted road leading to the site (Fig13) . Another one is

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also found located in the middle of the road (BP 14) . Both these BP are metallic and removable. This is not permissible for quarrying operations. Mining projects are long term projects and the BP should not degrade with time. Since BP are located in open, metallic poles will be subjected to rusting. So concrete pillars or stone pillars concreted to the base are envisaged in a mining project. At one locality two BP boundary pillars are seen (Fig 15) .



Fig.13. Removable BP in the middle of the road

Fig.14. BP in the middle of the road loosed fixed

There are two boundary pillars (Fig 15) seen near BP 24 one stone pillar painted as BP24 and the other metallic one with BP24 sticker. The metallic pole is the correct one and the stone pillar with same number is found inside the lease area. This indicates the negligence of the management in maintaining the Boundary pillars (BP). BP 23 is found missing in the spot where it should have located as per the geo coordinates. Few BP are located in steep inaccessible location and could not be verified physically. Their position was checked using GIS / satellite image (Google earth)



Fig.15 Two boundary pillars are seen near BP 24.

(The metallic pole with coordinate gave the correct values)

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3.22 General Conditions:**3.2201: General Condition 1 Rain Water Harvesting facility should be installed as per the prevailing provisions of KMBR/KPBR, unless otherwise specified.**

Complied. It was noted that PA has made arrangement for collection of rainwater in two ponds. (Fig16 and Fig17). PA has informed that the water is used for sprinkling on haulage road for dust suppression and also for the plantation.



Fig 16. Rainwater harvesting at old mining pits. Fig 17 Rain harvesting pond

3.2202 General Condition 2 Environment Monitoring cell as agreed under the affidavit filed by the proponent should be formed and made functional.

Not Complied. PA has not produced any records in this regard. In the Compliance reports available it is mentioned that a EMC is functional headed by quarry Manager along with qualified Environmental consultant / engineers is being engaged for the effective implementation of pollution control measures.

3.2203 General Condition 3 Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, including of approach road and internal roads.

Partly Complied. The joint committee observed that only very small number of avenue trees are within a quarry lease area. However, PA has informed that one thousand tree saplings are planted along road side.

3.2204 General Condition 4 Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.

Complied, PA has provided two solar street lights.

3.2205 General Condition 5 Sprinklers shall be installed and used in the project

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site to contain dust emissions.

Complied.

3.2206 General Condition 6 Eco-restoration including the mine closure plan shall be done at the own cost of the project proponent.

Not Complied.

3.2207 General Condition 7 At least 10 percent of the total area excavated pit should be retained as water storage areas and the remaining area should be reclaimed with stacked dumbering and overburden and planted with indigenous plant species that are eco friendly

Partly Complied. PA has retained old mining pit as a water storage area. However, plantation carried out only at very less area in overburden dump areas.(Fig.18)



Fig18. Overburden dump area.

3.2208 General Condition 8 Corporate Social Responsibility (CSR) agreed upon by the proponent should be implemented

Partly Complied. During the visit, PA has informed that CSR activities were carried out in surrounding villages, however, not submitted any supporting documents. The activities carried out are not as per activities listed in the proposal.

3.2209 General Condition 9 The lease area shall be fenced off with barbed wires to a minimum height of 4ft around, before starting of mine.

Partly Complied. Proper fencing of the lease area has not provided in all places.

A small, square box containing a handwritten signature in blue ink. The signature is cursive and appears to be the name of the Chairman.

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Fig.19 Fencing not provided.



Fig.20 Few places proper fencing is observed

3.2210 General Condition 10 Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged as per stipulations of Explosive Department.

Complied.



Fig.21 Siren fixed to give warning alarm at the time of blasting

3.2211 General Condition 11 Control measures on noise and vibration prescribed by KSPCB should be implemented.

Not complied. PA has not submitted any supporting documents.

3.2212 General Condition 12 Quarrying activities should be limited to daytime as per KSPCB guidelines.

Complied. Signage erected at strategic points.

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Fig.22 Blasting time board.

3.2213 General Condition 13 Blasting should be done in a controlled manner as specified by the regulations of Explosives Department or any other concerned agency.

Not Complied. PA has not submitted any supporting documents. Compliance report it is mentioned that Controlled blasting is followed as per the supervision of competent persons.

3.214 General Condition14 A licensed person should supervise/ control the blasting operations.

Not Complied. PA has not submitted supporting documents. Compliance report it is mentioned that one first class manager, second class manger, foreman and two mates.

3.2215 General Condition 15 Access roads to the quarry shall be tarred to contain dust emissions that may arise during transportation of materials.

Complied. The main road (Fig.23) is a tarred (black topped) road. The small roads branching from main road is not tarred (Fig.24)



Fig23 . The main access road in Quarry area.



Fig.24 Untarred road leading to dimension stone quarry

3.2116 General condition 16 Overburden materials should be managed within the site and the old quarries, if any, should be reclaimed and restored.

Partly Complied

3.2217 General Condition 17 Height of benches should not exceed 5m and width

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should not be less than 5m.

Not complied. Height and width of benches not maintained (Fig25) as per EC conditions. All benches are mined out to extract more materials.



Fig. 25 5m x 5m benching method is not adopted here

3.2218 General Condition 18
10PPV should be provided.

Mats to reduce flyrock blast to a maximum of

Could not verify the compliance as the quarry was not in operation.

3.2219 General Condition 19
level at site shall not exceed 10m
 Not complied (Fig.26)

Maximum depth of mining form general ground



Fig.26 Mining depth exceeded 10m

3.2120 General Condition 20

No mining operations should be carried out at

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places having a slope greater than 45°.

Complied. No mining was carried out in the debris mantle slope. (Fig.7)

3.2121 General Condition 21 Acoustic enclosures should have been provided to reduce sound amplifications in addition to the provisions of green belt and hollow brick envelop for crushers so that the noise level is kept within prescribed standards given CPCB/KSPCB.

Not complied. Noise level monitoring report has not been submitted.

3.2222 General condition 22. The workers on the site should be provided with the required protective equipment such as ear muffs, helmet, etc

Could not verify the compliance as the quarry was not in operation.

3.2223 General Condition 23 Garland drains with clarifiers to be provided in the lower slopes around the core area to channelize storm water.

Not complied. There is one canal (Fig.27) going for a short distance without any silt traps near BP19. This drain is now being used as a duct for cables and it not maintained properly. The garland drain is being used to drain mine drainage. It should be located between the benches and the buffer. The rain water falling on the benches should drain through these garland canals and the silt should deposit in the silt traps provided in these canals before joining the common public drainage system. Such an arrangement is not adopted here.



Fig. 27 The Garland canal is located near BP 19 .

3.2224 General Condition 24 The transportation of minerals should be done in covered trucks to contain dust emissions.

Could not verify the compliance as the quarry was not in operation.

3.2225 General Condition 25 The proponent should plant trees at least-5times of the loss that has been occurred while clearing the land for the project.

Not Complied

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3.2226 General Condition 26 Disposal of spent oil form diesel engines should be as specified under relevant Rules / Regulations.

Complied and no spillage observed

3.2227 General Condition 27 Explosives should be stored in magazines in isolated places specified and approved by the Explosives Department.

Complied. A separate Magazine store room has been found.

3.2228 General Condition 28 A minimum buffer distance of 100m from the boundary of the quarry to the nearest dwelling unit or other structures, not being any facility for mining shall be provided.

Complied.

3.2229 General Condition 29 200m buffer distance should be maintained from forest boundaries.

Complied. No forest boundaries within 200 m.

3.2230 General Condition 30. Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.

Complied. Obtained.

3.2231. General Condition 31 All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.

Complied. Obtained.

3.2232 General Condition 32 In the case of any change(s) in the scope of the project the project would require a fresh appraisal by this Authority.

Company has submitted an application to SEIAA for extension of EC. Since the area is more than 5 Ha the Proponent was asked to submit TOR for EIA and public hearing for getting EC

3.2233 General Condition 33. The Authority reserves the right to add additional safeguard if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1989 to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.



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Agreed by PA

3.2234 General Condition 34 The stipulation by statutory Authorities under different Acts and Notification should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974 , the Air (Prevention and control of Pollution) at 1981, the Environment (Protection) Act, 1986, the Public Liability (Insure acne) Act, 1991 and EIA Notification, 2006.

Agreed by PA

3.2235 General Condition 35 . The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Department of Environmental and Climate Change, Govt. of Kerala and may also be seen on the website of the Authority at www.seiaakerala.org.in 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 the Authority as confirmation

Complied.(Fig 28).



Fig. 28 Advertisement in Deepika and Mangalam daily

3.2236 General Condition 36 A copy of the clearance letter shall be sent by the proponent to concerned Grama Panchayat / District Panchayat/ Municipality /Corporation/ Urban Local Body and also to the Local NGO, if any from whom suggestion / 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

Partly complied.

3.2237 General Condition 37 The Proponent shall submit half yearly reports on the status of compliance of the stipulated EC conations including results of monitoring data

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(both in hard copies as well as be 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 the Directorate of Environmental and Climate Change, Govt. of Kerala.

Complied.

3.2238 General Condition 38 The details of Environmental Clearance should be prominently displayed in a metallic board of 3ft.x3 ft with green background and yellow letters of Times New Roman font of size of not less than 40. Signboard with extent of lease area and boundaries shall be depicted at the entrance of the quarry, visible to the public

Complied. PA has provided display board (Fig.29) at the entrance of the quarry for public.



Fig.29 EC display board at entrance.

3.2239 General Condition 39 The proponent should provide notarized affidavit (indicating the number and date of Environmental Clearance proceedings) that all the conditions stipulated in the EC shall be scrupulously followed.

Complied.

3.2240 General condition 40 The above conditions shall prevail notwithstanding anything to the contrary, in consistent, or simplified, contained in another permit, license on consent given by any other authority for the same project

Complied. (Agree to comp)

Out of the 5 Specific conditions imposed while issuing EC the Company has complied only three. Two conditions are not complied. In the general conditions the Company have compliance

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only for 22 conditions. 5 conditions were partly complied, 3 conditions were not got a clear answer due to non working of the quarry and 10 conditions are not complied at all. Except in the case of excess quarrying for which the mining and geology department has initiated action the other aspects no action has been found initiated so far.

3.3 Whether any excess quarrying was carried out ?

Yes. Excess quarrying was done at many places. EC condition for quarrying insists 7.5 meter buffer from the border pillar stone, then a garland canal to drain out quarry drainage then 5m x 5m bench mining/quarrying for the building stone quarries. This techniques should be followed in the dimension quarry as well. Here in the case of Covenant stones quarried the lease area up to the boundary pillar. The entire material were mined without leaving any space for buffer garland canal(Fig 30 and Fig 30a) . No benches are also seen. In this manner huge quantity of material were mined out without observing any EC mining conditions such as Buffer zone , Garland canal and benching. Many places vertical and steep cutting of more than 16m were observed. In the south western area of the lease area , quarrying seems to have encroached to outside the lease area . This is confirmed by the BP positions. (Figs 7,9,10 and 11)

To determine the exact quantity of the stones mined detailed ground surveys are needed. The Department of Mining and Geology, Thiruvananthapuram district office representative informed us they have conducted ground survey and the taluk surveyor and the geologists conducted site inspection on 15.06.2020. In the letter no 3455/DOT/ML/2019 dated 15.09.2020 they have issued a demand notice to M/s Covenant Stones Pvt Ltd with the following details.(Annexure 4)

“ M/s Covenant Stones Pvt Ltd has mined excess quantity of building stones from and out side the lease area in Sy no 29/3, 29/2, 30/4 in Thekkada village and 470, 472/5, 472/6, 474/1, 474/1-2, 474/4-1, 474/1-1 of Manikkal village and Sy no 30/5 out side the lease area.

	Quantity of stones extracted	9,52,978	MT
(i)	Quantity of stones extracted from sy no 496/4	20,860	MT
(ii)	Quantity of stones extracted from sy no 30/5	403.75	MT
	(i is delt separately since it is dimension stone and ii Already paid the penalty)		
	Less (i) and (ii) from the quantity extracted	9,31,714	MT

Action taken by the Department of Mining and Geology

(Vide demand notice No 3455/DOT/ML/2019 dated 15.09.2020 addressed to

Sri Reghunadhan Kunjukrishnan, M/s Covenant Stones Pvt Ltd, Katta, Cheeranikkara P O Vembayam, Thiruvannthapuram from Senior Geologist, Mining and Geology District



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Office , Kesavadasapuram)

Penalty imposed by DMG

Royalty	2,23,61,136 .00	(INR)
Price	4,47,22,272.00	(INR)
Fine	25,000.00	(INR)
Total	6,71,08,430.00	(INR)

The above calculation was made by the Department of Mining and Geology, Thiruvananthapuram district office for the excess mining carried out for the building stones quarry by M/s Covenant stones Pvt Ltd. The excess mining carried out in the Dimension stone quarry of M/s Covenant Stones Ltd is being done by the DMG , Thiruvananthapuram office.

According to the DMG Geologist's report "The Dimension stone lease area was inspected on 06.11.2020 with the taluk surveyor . it was observed that the lease holder had extracted Granute Dimension stone far in excess of the permitted quantity in the lease . In that case a show cause case notice had served to the lease holder on 12.11.2020 only on receipt of explanation proper legal steps will be initiated to reliaise the loss sustained to the Government." (Annexure 4)



Fig.30 Benches and buffer area mined out



Fig30a. Steep cutting without any bench, buffer or garland Canal

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3.31 Environmental compensation

An accepted method to prepare the scale of compensation for excess quarrying especially in the case of building stones and dimension stones is not developed so far. This Committee has examined the method for sand mining adopted by NGT. The Hon'ble NGT, Principal Bench, New Delhi vide order dated 05/04/2019 in OA No. 360/2015 (13 clubbed cases) related to illegal sand mining from riverbeds in different States, constituted a Committee comprising of representatives of MoEFCC, Central Pollution Control Board (CPCB), Indian Institute of Forest Management Bhopal, Institute of Economics Growth and Madras School of Economics and directed “.....to prepare a scale of compensation (for sand mining), after including the components mentioned in the order, which can then be adopted in whole of Country. The nodal agency for compliance and coordination is CPCB. The committee may also take professional services of an expert/institution in the matter if it so desires.”

Accordingly, the committee prepared the final report on “Recommendations on scale of compensation to deal with the cases of illegal sand mining” dt 30/01/2020 submitted to the NGT.

The Committee report considered two approaches:

- Approach 1: Direct Compensation based on the market value of extraction, adjusted for ecological damages.
- Approach 2: Computing a Simplified NPV for ecological damages.

Hon'ble NGT vide order dated 17/08/2020 observed that the direct compensation approach method is preferable and suggested a modification.

Direct Compensation (Violation with respect to Quantity/Production):

The compensation to be charged is based on three distinct criteria:

1. **Exceedance Factor (EF)**: This criteria captures the extent of illegal mining that has taken place. It is introduced in order to bring in a notion of balance that the amount of penalty that is charged to any party is in proportion to the extent of illegal extraction of material at the first stage.
2. **Risk Factor (RF)** : This criteria reflects the severity of the ecological damages at the field site in question. Since the project site is not located in forest area within a radius of 5



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KM, the Committee considered moderate risk factor.

Severity	Mild	Moderate	Significant	Severe
Risk Level	1	2	3	4
Risk Factor	0.25	0.50	0.75	1.0
Discount	8%	7%	6%	5%

Deterrence Factor (DF): This criteria is an attempt to capture the fact that ecological damages tend to display non-linearities and can increase in unexpected ways. Thus, the greater the extent of extraction (as reflected in the relative magnitude of the illegally extracted amount), the greater is the likelihood that this may have cumulative impact over time, which may not be observable at time of assessment (as reflected in the RF). Given that the scale should also have a deterrence effect, this criteria is introduced to proxy for these non-linear aspects till such time that more site specific data becomes available to carry out a comprehensive NPV.

Direct Compensation based on the market value of extraction, adjusted for ecological damages:

Permitted Quantity (in MT or m ³)	Total Extraction (in MT or m ³)	Excess Extraction (in MT or m ³)	Exceedance in Extraction:	Compensation Charge (in Rs.)
X	Y	Z=Y-X	Z/X	$= D * (1+RF+DF)$ Where D=Z * Market Value of material per MT or m ³
				DF= 0.3 if Z/X= 0.11 to 0.40
				DF =0.6 if Z/X= 0.41 to 0.70
				DF=1 if Z/X>=0.71
				RF = 0.25, 0.50, 0.75, 1.00

Method suggested by Hon'ble NGT

If there is evidence of illegal mining (but no seizure) in a low risk zone, then the RLEF would be 0.4, the RCF would remain at 0.3, and an additional no seizure factor of 1.0 would be added with a total additive value of 1.7 and the total compensation amount: Ecological Damage (ED) = EQ x MP x (No seizure factor of 1.0 + Risk of Ecological Loss Factor + Restitution Cost factor).

This Committee made calculations based on this and felt that this approach is not



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suitable because of different environmental conditions of fluvial and land environment for calculating compensation for building stone / dimension stone quarry violations. Detailed technical studies are required to develop an acceptable method for calculating the environmental compensation. So in this report the environmental compensation could not be worked out.

3.4 Whether closure plan has been complied with

Not complied. The Covenant Stones closure plan has not been complied. They have applied for an extension of the EC. This application is pending with SEIAA, Kerala.

3.5 Rehabilitation and reclamation has been carried out

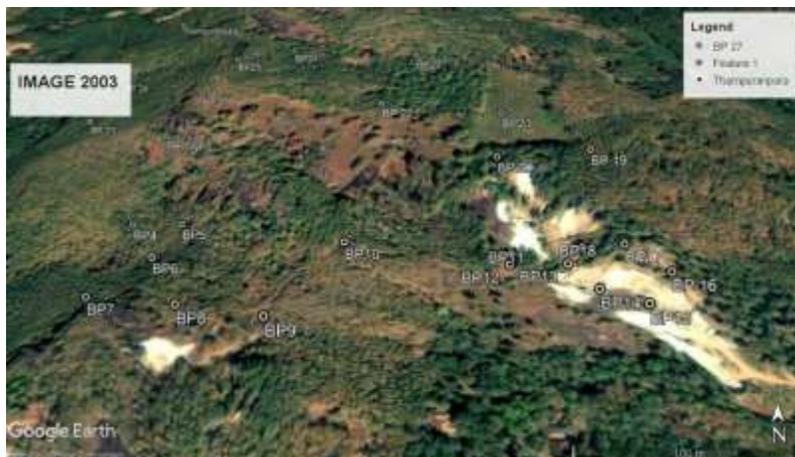
Not complied. Rehabilitation is the action of restoring a mined area that has been damaged due to mining to its former condition. Reclamation is the combined process by which adverse environmental effects of surface mining are minimized and mined lands are returned to a beneficial end use. End uses may be open space, wildlife habitat, agriculture, or residential and commercial development.

In Covenant stones quarry rehabilitation and reclamation has not done so far. The company has applied for extension of lease period.

3.6 Environmental degradation caused on account of unscientific method of quarrying

Quarrying whether it is scientifically done or unscientifically done, causes considerable irreversible changes in an area especially from the environmental point of view.

Fig.31 Google map of the lease area in 2003 . quarrying activity could be



(Handwritten signature)

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seen near BP8,14, 16, 17,18. 14

The land,water,air,bio and socio environments needs careful handling while quarrying / mining to even minimise the impacts. Landform & landuse changes could be analysed using time series satellite images. Google Earth has the collection of images from 2003 onwards. So this gives a provision to examine the changes happened due to mining in the leased area of M/s Covenant Stones Pvt Ltd. The BP co ordinates were super imposed on these images to to detect the changes.



Fig.32 Google map of the lease area in 2007. quarrying activity seen near BP8,14, 16, 17,18. 14



Fig.33 Google map 2011 also indicates quarrying activity near BP8 and BP7

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Fig.34 Google map of the lease area in 2012. Pond near BP 8 well developed



Fig.35 Google map of the lease area in 2015. quarrying activity in full scale



Fig.36 Google map of the lease area in 2017. quarrying activity spreads to more areas

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Fig.37 Google map of the lease area in 2019 . quarrying activity in deeper areas



Fig.38 Google map of the lease area in 2020 .Present condition of the Covenant quarry

Fig. 31 to Fig. 38 indicates the changes that have happened to the lease area of the Covenant quarry from 2003 to 2020. Before starting full scale quarrying in 2015 , quarrying activity was noticed in 2003 itself (Fig. 31) . Fig 32, 33 and 34 indicates quarrying activity near BP 7 and 8

Land environment : Fig.31to 38 indicates that considerable topographic changes occurred in this area due to quarrying. Steepcutting measuring more than 16m. The mining has created lot of steep slopes there by increasing the scope of landslides and rockfalls. Since in many places overburden has been removed and chances of debris flow has reduced. The rock is massive in many places. So rockfall chances are also less. Increased slope and lack of vegetation will increase the soil erosion. Since the top soil has been removed for mining water holding capacity of the soil is reduced and the overland flow has increased. Soil chemical analysis done by an external agency available in the compliance report also suggests that the values are within acceptable limit. The pH of soil is in the acidic range. Local survey conducted indicated that the

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local people who are dwelling at the bottom part of the hillocks (*Thampuram Para* and *Thampuratty Para*) and about less than 1 km air distance from the quarry feared that vibrations of quarrying may trigger landslips, enhance soil erosion or destabilize rock boulders on the slopes of the hillocks.

Hydrologic environment: There is no major stream flowing close to this area. This site depends on rainwater and ground water for water needs. The major water body present in the area is the rain harvesting ponds inside the lease area. There are no streamlets present in the area. As per the PFR the level of water table in the open wells is about 15-20m depth during summer and 10-15m depth during monsoon from the general ground level. This level is maintained in the rainwater harvesting ponds also. Since the drainage from the working quarry site is flowing into the harvesting tank, it is also acting as a pollutant absorbant. No major drainage outlet is observed. Positive aspect is that the rainharvesting pond will be recharging nearby wells through the secondary fracture systems present in the bed rock. Inside the project area water quality measurements done by an external agency is available with the compliance reports. Except in the case of pH which is in the acidic range all other parametrs are within the acceptable limit. In the vicinity of the quarry i.e., less than 200m ground water quality status was assessed. It was found that the parameters are found within permissible limits prescribed by Bureau of Indian Standards (2007) except for pH which is acidic in nature. In The compliance reports also pH values are in the acidic nature. But people in the vicinity of the quarry area said that the well water is unfit for drinking during rainy seasons due to high turbidity. During monsoon season, precipitation will enhance the sedimentation of suspended particulate matter (SPM) and dust particles emitted from rock processing into the waters of the surrounding areas.

There are only two observational wells regularly monitored in this locality by the GWD. One in Koppam and the other in Thekkada. The observation taken monthly for 10 years is given in table 2 & 3. The observation was made in an open well as well as in a bore well.



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Table :2 Obsevation details of the State Ground water Department Observation well
Location : Koppam , Open well (air distance 2.6 km from the Quarry)

Taluk: Nedumangad		Latitude- 8° 38'06"	
Village: Vembayam		Longitude-76° 56'04"	
Location - Koppam		Well type : Open Well	
	date of measurement	time of measurement	Water Level(mbgl)
	28/10/2009	11:15:00	8.78
	26/11/2009	11:10:00	8.93
	21/12/2009	11:55:00	9.05
	25/01/2010	11:20:00	9.48
	27/02/2010	11:20:00	10.00
	07/04/2010	12:45:00	10.76
	10/05/2010	15:48:00	11.12
	05/06/2010	11:50:00	10.06
	09/07/2010	11:30:00	9.09
	05/08/2010	11:45:00	8.60
	23/09/2010	13:25:00	8.82
	27/10/2010	15:15:00	7.18
	29/11/2010	15:50:00	4.95
	30/12/2010	11:50:00	7.60
	28/01/2011	11:25:00	8.30
	23/02/2011	11:05:00	8.65
	29/03/2011	11:30:00	9.20
	27/04/2011	11:40:00	9.38
	26/05/2011	11:18:00	10.00
	17/06/2011	10:50:00	9.15
	22/07/2011	11:15:00	9.30
	18/08/2011	14:15:00	9.65
	27/09/2011	11:50:00	10.03
	21/10/2011	10:50:00	10.34
	29/11/2011	11:35:00	9.02
	27/12/2011	11:45:00	9.34
	19/01/2012	11:10:00	8.45
	24/02/2012	11:20:00	8.82
	29/03/2012	11:05:00	9.56
	27/04/2012	11:22:00	7.72



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	31/05/2012	11:34:00	9.58
	29/06/2012	10:45:00	9.68
	24/07/2012	11:00:00	9.70
	22/08/2012	11:58:00	7.68
	20/09/2012	10:45:00	9.15
	21/10/2012	12:27:00	8.65
	27/11/2012	11:30:00	8.42
	28/12/2012	11:25:00	8.77
	31/01/2013	15:20:00	9.41
	25/02/2013	16:50:00	7.22
	18/03/2013	11:48:00	10.73
	18/04/2013	11:25:00	9.72
	29/05/2013	12:05:00	9.80
	22/06/2013	11:25:00	7.52
	15/07/2013	12:35:00	7.40
	21/08/2013	12:01:00	7.91
	28/09/2013	11:33:00	7.20
	29/10/2013	11:20:00	7.59
	26/11/2013	11:55:00	6.77
	23/12/2013	11:20:00	7.81
	25/01/2014	11:45:00	8.65
	29/01/2014	12:10:00	7.70
	25/03/2014	11:55:00	7.53
	23/04/2014	10:17:00	7.65
	28/05/2014	11:48:00	9.05
	30/06/2014	11:15:00	9.32
	23/07/2014	11:36:00	9.03
	29/08/2014	11:00:00	10.11
	29/09/2014	10:55:00	8.35
	25/10/2014	10:45:00	7.88
	28/11/2014	11:55:00	8.67
	23/12/2014	11:20:00	7.81
	29/01/2015	11:10:00	9.00
	25/02/2015	10:56:00	9.31
	28/03/2015	11:18:00	9.75
	24/04/2015	11:16:00	7.80
	25/05/2015	10:55:00	9.26
	26/06/2015	11:10:00	8.60
	28/07/2015	11:23:00	8.38
	20/08/2015	10:50:00	8.57



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	25/09/2015	10:25:00	8.41
	29/10/2015	11:10:00	8.23
	26/11/2015	11:18:00	6.16
	19/12/2015	11:15:00	7.79
	25/01/2016	10:50:00	8.52
	25/02/2016	11:00:00	8.97
	23/03/2016	11:41:00	9.36
	27/04/2016	10:15:00	9.79
	26/05/2016	11:50:00	8.85
	30/06/2016	11:00:00	7.91
	27/07/2016	11:04:00	8.23
	29/08/2016	11:04:00	8.45
	20/09/2016	10:38:00	8.73
	24/10/2016	10:52:00	9.65
	21/11/2016	11:46:00	10.17
	26/12/2016	11:00:00	10.78
	17/01/2017	11:30:00	11.38
	13/02/2017	11:23:00	11.58
	07/03/2017	10:43:00	11.75
	07/04/2017	12:20:00	
	05/05/2017		
	07/06/2017	10:33:00	11.90
	07/07/2017	11:51:00	11.27
	05/08/2017	10:50:00	11.17
	15/09/2017	11:32:00	11.05
	19/10/2017	11:05:00	9.28
	08/11/2017	12:02:00	8.72
	13/12/2017	11:30:00	7.58
	08/01/2018	11:20:00	8.61
	06/02/2018	11:30:00	8.87
	09/03/2018	11:35:00	9.34
	03/04/2018	11:25:00	10.06
	07/05/2018	11:42:00	10.29
	08/06/2018	12:22:00	9.65
	03/07/2018	11:53:00	8.51
	14/08/2018	11:24:00	6.27
	05/09/2018	11:30:00	6.81
	25/09/2018	11:55:00	7.87
	15/10/2018	11:55:00	7.87
	07/11/2018	11:31:00	7.62



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	10/12/2018	12:10:00	7.89
	16/01/2019	11:48:00	8.50
	05/02/2019	11:20:00	8.43
	12/03/2019	11:44:00	8.76
	01/04/2019	11:12:00	8.89
	01/04/2019	11:50:00	8.64
	07/05/2019	11:12:00	8.89
	07/06/2019	11:24:00	8.09
	05/07/2019	11:15:00	8.46
	06/08/2019	11:42:00	8.67
	04/09/2019	12:21:00	7.96
	03/10/2019	10:56:00	7.18
	05/11/2019	11:15:00	5.40
	09/12/2019	11:55:00	6.53
	07/01/2020	11:40:00	8.11
	07/02/2020	11:18:00	8.47
	01/03/2020	11:25:00	8.46
	18/04/2020	10:58:00	9.28
	08/05/2020	11:11:00	9.35
	03/06/2020	11:25:00	7.25
	02/07/2020	13:34:00	7.88
	05/08/2020	12:05:00	7.30
	03/09/2020	11:47:00	7.91
	06/10/2020	11:55:00	7.10



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Table :3 Obsevation details of the State Ground water Department Observation well
Location : Tekkada near the quarry Bore well (air distance 1.5 kmfrom quarry)

	Block: Nedumangad		Latitude: 8°38'4"
	Village: Thekkada		Longitude: 76°56'25"
	Location: Thekkada		Well Type _ Bore Well
	date of Measurement	time of measurement	Water Level mbgl
	28/10/2009	11:10:00	2.65
	26/11/2009	11:00:00	1.64
	21/12/2009	11:50:00	2.66
	25/01/2010	11:15:00	2.96
	27/02/2010	11:15:00	3.42
	07/04/2010	12:45:00	3.66
	10/05/2010	15:50:00	3.09
	05/06/2010	11:45:00	1.92
	09/07/2010	11:25:00	1.67
	05/08/2010	12:35:00	1.80
	24/09/2010	13:10:00	2.48
	27/10/2010	15:20:00	1.57
	29/11/2010	15:55:00	0.40
	30/12/2010	11:45:00	2.15
	23/02/2011	11:05:00	2.82
	30/03/2011	11:30:00	2.94
	27/04/2011	11:33:00	2.81
	26/05/2011	11:13:00	3.15
	17/06/2011	10:45:00	1.60
	22/07/2011	11:15:00	2.15
	18/08/2011	11:50:00	1.75
	27/09/2011	11:45:00	2.98
	21/10/2011	10:45:00	3.31
	29/11/2011	11:15:00	1.12
	27/12/2011	11:40:00	2.63
	19/01/2012	11:00:00	2.21
	24/02/2012	11:20:00	2.98
	29/03/2012	11:00:00	3.44
	27/04/2012	11:15:00	2.67
	31/05/2012	11:30:00	2.88



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	29/06/2012	10:40:00	3.05
	24/07/2012	10:50:00	3.45
	22/08/2012	11:09:00	2.76
	20/09/2012	10:40:00	2.46
	21/10/2012	12:18:00	1.46
	27/11/2012	11:10:00	2.43
	28/12/2012	11:20:00	2.99
	31/01/2013	15:30:00	3.42
	28/02/2013	17:00:00	3.48
	18/03/2013	11:48:00	3.58
	18/04/2013	11:20:00	3.86
	29/05/2013	11:59:00	3.89
	22/06/2013	11:15:00	0.58
	15/07/2013	12:25:00	0.90
	21/08/2013	11:50:00	1.92
	28/09/2013	11:28:00	1.70
	29/10/2013	11:14:00	2.12
	26/11/2013	11:45:00	1.68
	23/12/2013	14:05:00	7.61
	25/01/2014	11:20:00	3.45
	29/01/2014	12:05:00	3.34
	25/02/2014	13:00:00	3.45
	25/03/2014	11:45:00	3.72
	23/04/2014	10:10:00	3.50
	28/05/2014	11:41:00	3.01
	30/06/2014	11:08:00	3.04
	23/07/2014	11:28:00	2.60
	29/08/2014	10:54:00	0.88
	29/09/2014	10:51:00	1.94
	25/10/2014	10:40:00	1.12
	28/11/2014	11:45:00	1.68
	23/12/2014	11:15:00	2.64
	29/01/2015	11:00:00	3.12
	25/02/2015	10:15:00	3.24
	28/03/2015	11:13:00	3.77
	24/04/2015	11:10:00	3.20
	25/05/2015	10:45:00	1.88
	26/06/2015	11:01:00	1.32



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28/07/2015	11:11:00	2.31
20/08/2015	10:37:00	2.65
25/09/2015	10:20:00	1.70
29/10/2015	11:00:00	1.55
26/11/2015	11:10:00	1.52
19/12/2015	11:07:00	1.38
25/01/2016	10:41:00	2.95
25/02/2016	10:50:00	3.27
23/03/2016	11:55:00	3.55
27/04/2016	10:12:00	3.85
26/05/2016	11:45:00	2.01
30/06/2016	10:54:00	1.65
27/07/2016	10:59:00	2.38
29/08/2016	10:57:00	3.09
20/09/2016	10:28:00	3.45
24/10/2016	10:48:00	3.65
21/11/2016	11:41:00	3.66
26/12/2016	10:50:00	4.06
17/01/2017	11:16:00	4.09
13/02/2017	11:17:00	4.71
07/03/2017	10:35:00	4.97
07/04/2017		10.74
05/05/2017	11:23:00	5.19
07/06/2017	10:27:00	1.83
07/07/2017	11:14:00	2.27
05/08/2017	10:45:00	3.17
15/09/2017	11:26:00	2.47
19/10/2017	11:01:00	1.55
08/11/2017	11:55:00	1.00
13/12/2017	11:20:00	1.88
08/01/2018	11:10:00	2.84
06/02/2018	11:18:00	3.24
08/03/2018	11:24:00	3.59
03/04/2018	11:16:00	4.15
07/05/2018	11:31:00	4.20
08/06/2018	12:15:00	1.80
08/07/2018	11:46:00	1.86
14/08/2018	11:19:00	0.84
03/09/2018	11:24:00	1.89
26/09/2018	11:45:00	2.68



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	15/10/2018	11:46:00	2.16
	07/11/2018	11:25:00	1.42
	10/12/2018	11:57:00	2.45
	16/01/2019	11:41:00	3.18
	05/02/2019	11:15:00	3.45
	12/03/2019	11:30:00	3.79
	01/04/2019	11:45:00	3.84
	07/05/2019	11:02:00	4.36
	07/06/2019	11:20:00	4.08
	05/07/2019	11:05:00	3.29
	06/08/2019	11:32:00	3.06
	14/09/2019		1.96
	03/10/2019	10:35:00	0.78
	05/11/2019	11:05:00	1.01
	09/12/2019	11:50:00	2.21
	07/01/2020	11:30:00	2.87
	07/02/2020	11:12:00	3.32
	01/03/2020	11:18:00	3.67
	18/04/2020	10:50:00	4.07
	08/05/2020	11:00:00	3.31
	03/06/2020	11:15:00	0.86
	02/07/2020	11:25:00	1.27
	05/08/2020	11:35:00	0.89
	03/09/2020	11:41:00	1.97
	06/10/2020	11:45:00	1.79

The two sets of data are not showing any significant changes during 2015-19 when the quarry was in operation. The impact in the immediate vicinity of the quarry is described in 3.15 .

Air environment and noise :

Prior to quarrying this area was used for agriculture based activities. Changing the land use from agri based activity to an industry which is included in red category as far as pollution is concerned, generates lot of problems related to pollution especially air and noise. When the



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pollution reduction measures are not followed the effect will be beyond any description. In this case buffer zone is not maintained. Even the the area demarcated for buffer zone is mined. Buffer zone with suitable species are to maintained for reducing the air pollution in the neighbouring areas. This buffer will also reduce the noise pollution. Since the quarry was not functional since March 2020 the air quality was fine at the time of visit. The ambient air quality data shown in compliance reports of the previous years shows that all parameters (PM10, PM 2.5, SO2 and NO2) are all within the prescribed standards. The feedback of the locals is given in the later portion(3.7)of this report.

Biological environment: Changes in the Bio diversity: Before the the start of the quarrying operations a biodiversity Assessment report was prepared by Metamorphosis NABT accredited EIA consultant for submission to SEIAA. The bio diversity part of the PF report is given as Annexure 5 . In the report it is mentioned that there are 20 varieties of plants, 5 types of mammals 4 types of reptiles , 8 types of birds and 5 different types of butterflies are located in the area. As the google images reveal now only very little vegetation is remaining. No even the buffer vegetation is maintained. The debris mantle slope which is prohibited from mining no other area has significant growth of vegetation, the area mostly is barren The Biodiversity report is concluding in the in PFR is like this ***Based on the observations and scale of quarry operations, the impact on the flora & fauna is assessed to be insignificant. However, it is proposed/suggested that the post mine closure should be systematic and scientific as per the Environmental Management Plan, considering ecology of the surrounding area.***



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3.7 Any damages to neighbouring houses and to the ecology due to quarrying

The baseline environmental status of the region had been studied in the adjacent human habited areas of the quarry. Field observations were conducted in the nearby settlements, housing colonies and made discussions based on different environmental attributes concerning water, land, air, socio-economics, health and the potential environmental implications due to quarrying activities and based on the field visit and compilation of collected information, this section of report is prepared.

Environmental issues and concerns

Earth resources are considered as the capital for economic development. Expanding human requirements and economic developments impose immense pressure on our resource base and environmental setting. Lack of adequate studies on the various aspects of resource extraction and its impact on the environment is a major setback in proper planning and developments. Hence, the extraction and utilization of earth resources, especially, mining and quarrying are to be planned and executed in a careful manner and to be verified in every stages of operations for assessing the environmental conditions. Here, we include the present environmental conditions around the hard rock quarry obtained through the fieldwork. Fig.39 shows the location map of the quarry.

During the field work, a survey had been conducted by interacting with the local people who are residing adjacent to the quarry area. There are serious apprehensions to the local people regarding the impacts of rock quarrying using massive explosives. People claimed that the high impulse noise is affecting the tranquility of normal life. It is observed that the walls of some houses and wells in the area developed minor cracks (Fig 40 and 41). Massive explosions are causing high ground vibrations and that may be the reason for triggering cracks in the walls of houses and wells. People who are dwelling at the bottom part of the hillocks (*Thampuran Para* and *Thampuratty Para*) and about less than 1 km air distance from the quarry feared that such vibrations may trigger landslips, enhance soil erosion or destabilize rock boulders on the slopes of the hillocks. The various issues caused due to hard rock quarrying in different environmental components as collected from the field survey are summarized in Table 4. The details of the houses near the quarry, where the survey was conducted to understand the environmental issues area are shown in Table 5.



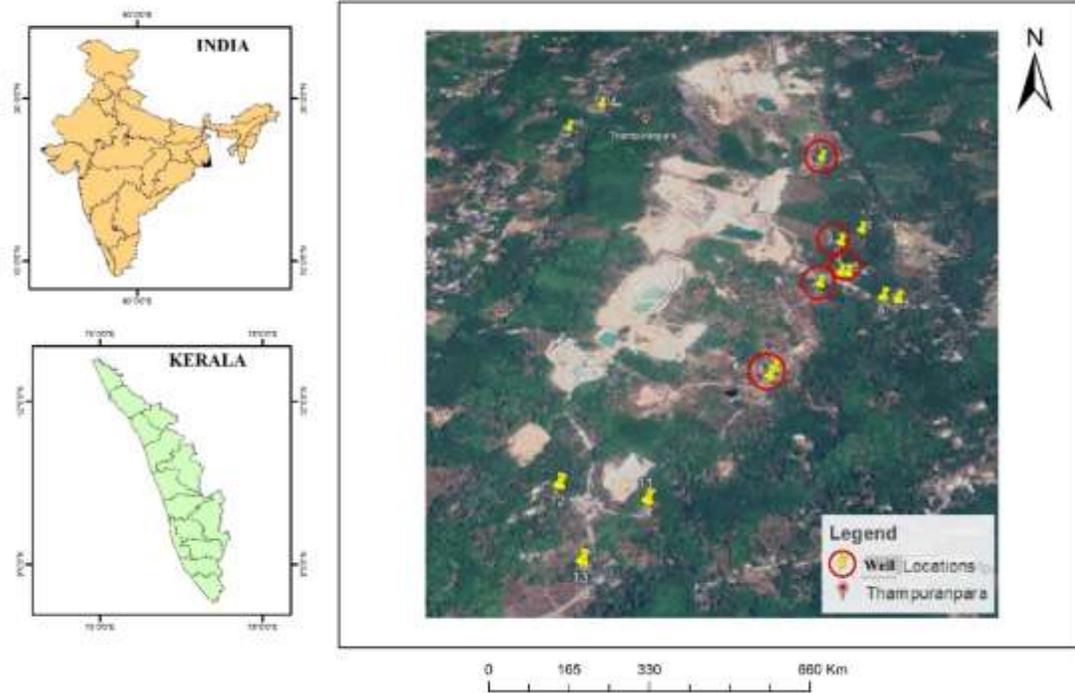
Chairman

Table 4 Various issues caused due to hard rock quarrying in different environmental components.

Environmental attributes	Causative activities	Type of effects in different environmental attributes
Air quality	Soil excavation, drilling, blasting, crushing, loading, transportation & debris dumping	Dust emission, shattering of rock particulates, dust deposition on canopy cover, inhalation of fine particulates
Noise level	Soil excavation, drilling, blasting, crushing, loading, transportation & debris dumping	Significant to extreme and continuous grinding sound, discrete machinery noise, impulse noise of high to moderate level and intermittent traffic noise
Water Quality	Soil excavation, quarrying, debris dumping	Water resources: Increased runoff and turbidity in runoff water during rainy season
Socio-Environments	Soil excavation, drilling, loading, transportation, crushing, debris dumping Quarrying, transportation, manual crushing, labour unions Blasting, crushing & transportation	Employment: Increased direct and indirect employment opportunities to 200 people residing in the adjacent areas of the quarry Income: Increased income to the quarry and crusher operator, Enhanced income generating activities in nearby localities Tranquillity: Loss of calmness, prevalence of uneasiness



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*Fig.39 Location map of the quarry and the nearby houses surveyed.
Location of houses surveyed with details are given in table 5 below*

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Sl No	Coordinates	Location/ Home	Name of the owner	Distance from quarry (meters)	Contact	Employment	Remarks
1	8°39'5.34"N 76°57'21.60"E	Nandanam, Manickal	Ammukutty	102	-	Rubber tapping	Vibrations and intense noise while blasting in the NE direction of quarry. Runoff of muddy water from the quarry to the road created problems to the local people. So, a wall was built by the quarry owners.
2	8°38'55.13"N 76°57'25.32"E	Shinto Bhavan, Manickal	Kunjappan	180	-	NREGS Worker	Since new residents, not aware about the issues.
3	8°38'53.57"N 76°57'23.66"E	Krishna Bhavan, Manickal	Saiju	108	7902739573	Driver	Dust emission and deposition on canopy cover, inhalation of fine particles resulted in asthma. Cracks and leakage were observed in the house. Moderate level of noise pollution.
4	8°38'49.96"N 76°57'23.75"E	Sharon Villa, Kattelkizhakekara	Seenaa	144	9947223278	Housewife	Cracks in the wall of well observed, Quality issues in drinking water
5	8°38'49.93"N 76°57'24.31"E	Madhavam, Kattelkizhakekara	Geetha	161	-	Housewife	No problems, Worker in Quarry

6	8°38'47.28"N 76°57'27.01"E	Thiruvonam, Manickal	Ambili	275	-	Sweeper	No problems, Worker in Quarry
7	8°38'46.99"N 76°57'28.10"E	Kuraplankara house, Manickal	Anoop	307	-	Quarry worker	No problems, Worker in Quarry
8	8°38'48.70"N 76°57'22.21"E	Kailas, Katta Vembayam GP vice president's residence	Lathikumar	148	9605104793	Social activity	Noise and dust issue/Quality issues in drinking water sometimes.
9	8°38'40.20"N 76°57'19.47"E	Aanjalmootil, Katta	Lathika/Radha	198	-	Quarry employer	Cracks and leakages observed
10	8°38'39.48"N 76°57'19.18"E	Sreenilayam, katta	Rajendran	194	7593981408	Driver	Excessive use of road by heavy vehicles of quarry
11	8°38'29.71"N 76°57'12.78"E	AmbiliNivas, Manickal	Omana	354		Weed Cleaner	Worker in Quarry
12	8°38'30.70"N 76°57'7.08"E	Padheyam, Manickal	Rahul	249	9995866662	Tyre worker	Noise and dust issue
13	8°38'26.24"N 76°57'11.45"E	Lekshmi Bhavan, Thampuranpara	SheebaSugathan	427	7592054048		Blasting caused throwing of stones, fear of landslips
14	8°39'14.33"N 76°56'59.85"E	Lathi Nivas, Thampuranpara	Purushothaman	359		Driver	Cracks were observed in the house, fear of landslips
15	8°39'10.23"N 76°56'57.71"E	Dwaraka, Thampuranpara	Sindhu	334		Housewife	Cracks and leakage were observed in the house, Quality issues in drinking water

Table 5 Details of the houses surveyed to understand various environmental issues in the vicinity of the quarry



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Table 6 Chemical characteristics of Ground water samples

Sample Location	Krishna Bhavan, Manickal	Nandanam, Manickal	Sharon Villa, Kattelkizhakekara	Kailas, Katta	Sreenilayam, Katta	Drinking Water Specification (IS 10500 :2012)	<p>Remarks:</p> <p><i>In situ</i> analysis were carried out using Hydras DS5 Multiparameter Water Quality Sonde.</p> <p>All the parameters were found within BIS (2007) limit except pH</p>
Coordinates	8°38'53.57"N 76°57'23.66"E	8°39'5.34"N 76°57'21.60"E	8°38'49.96"N 76°57'23.75"E	8°38'48.70" N 76°57'22.21" E	8°38'39.48"N 76°57'19.18"E		
pH	4.8	4.6	5.1	5.4	5.2	6.5-8.5	
EC (µS/cm)	74.83	41.18	65.23	47.56	57.28	-	
TDS (mg/l)	44.87	24.77	40.65	26.19	31.50	500	
Salinity (ppm)	26.55	18.83	22.43	19.89	21.17	-	
Turbidity (NTU)	0.19	1.84	0.25	0.71	1.42	5	

pH: Measure of acidity/alkalinity. Here the samples exhibited acidic nature.

Total Dissolved Solids (TDS): represents the total concentration of any dissolved substances like minerals, salts, metals, cations or anions in water.

Electrical Conductivity (EC): reflects the total content of salts or any charged particles in water, which is dependent on the



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geological conditions of weathering and other sources that may affect the concentrations of dissolved compounds.

Salinity: *the dissolved inorganic salt content of water especially Sodium and Chloride ions.*

Turbidity: *Measure of cloudiness of water due to suspended organic and inorganic particles*



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Fig 40 Cracks developed in a nearby house



Fig 41 Cracks observed in the well of an adjacent house

In order to understand the general quality status of ground water in the area, *insitu* analysis was carried out in 5 selected well locations by using **Hydras DS5 Multiparameter Water Quality Sonde**. The results of the parameters analysed are shown in Table 5. The results showed that the parameters are found within permissible limits prescribed by Bureau of Indian Standards (2007) except for pH. But people in the vicinity of the quarry area said that the well water is unfit for drinking during rainy seasons due to high turbidity. During this season, precipitation will enhance the sedimentation of suspended particulate matter (SPM) and dust particles emitted from rock processing into the waters of the surrounding areas.

People residing in the immediate vicinity of the quarry were on the threat of severe dust pollution. The inhalation of dust as a result of shattering of rock particulates during rock processing caused severe respiratory illness like Asthma, Bronchitis, Cough etc. The dust and smoke emission from heavy trucks by transportation was also adversely affected the people. It is also observed that there are poor road conditions in and around the area due to heavy trucks movements. So, it is very essential that the roads near the quarry site have to be properly textured and periodically maintained to reduce the impacts due to dust pollution.

During the survey, we could realize that the quarry operations had direct and indirect roles in socio-economic development of the area. Approximately, 180 people were solely depending on the quarry for their livelihood. So, the need of the hour is to derive plans and management strategies for any type of quarrying activities by integrating environmental concerns and thereby protection of the environment.

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3.8 Whether pollution control measures provided by the operator was adequate or not

No adequate measures were adopted by the mine operators to control the pollution.

1. No Buffer zone maintained . Tall trees were absent. Even the buffer is non exitant due to mining. Dust pollution and noise pollution no controls
2. Garland canal to direct the storm water was absent . Even the one existing doesnot have silt traps
3. Overland flow is directed to the rain harvesting pond. So the silt collected is deposited into the rain harvesting pond. And it is not flowing outside.
4. No waste oil spillage noticed
5. Major roads are blacktopped where as braching roads are not given protection.
6. 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 CPCB/KSPCB.



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4.00 Concluding remarks and suggestions

This report prepared by the Joint Committee is based on available records and on the spot field observations made during a time when this quarry is not functioning. The satellite images from 2003 were examined and we have come to the conclusion that minor quarrying activities are seen from 2003 onwards.

- Joint committee visited the site on November 2, 2020. Both the quarry and crusher unit were not working at the time of visit.
- The JC members checked the EC conditions as well as the points raised by the Hon'ble NGT. It was noticed that two of the Special conditions such as quarrying out side the lease area and negligence in maintaining boundary pillars noticed. Few boundary pillars are found missing.
- Out of the 5 Specific conditions imposed while issuing EC the Company has complied only three. Two conditions are not complied. In the general conditions the Company have compliance only for 22 conditions. 5 conditions were partly complied, 3 conditons were not got a clear answer due to non working of the quarry and 10 conditons are not complied at all.
- Excess quarrying was observed at many places. Area demarcated for buffer and garland canal was also mined. Benching at 5m x 5m is also not observed. Google time series maps have indicated that at many places quarrying has encroached to adjacent area also. Department of mining and geology have calculated the excess mining quantity for building stone as well as dimension stone and issued notices to the Company.
- Mine closure, mine rehabilitation and reclamation etc have not been done. Company has applied for environmental clearance in SEIAA for further extraction of building and dimension stones.
- Environmental degradation has happened in this area due to quarrying. Available analytical results of land, air and water shows not much degradation. But excess and unscientific mining has resulted in landform changes, loss of bio diversity.
- Environmental compensation was not calculated for excess mining. Though a method was not available for calculating the compensation, this Committee have attempted using the method adopted by NGT for another minor mineral (Sand) developed by an expert team but found that it is not suitable for building and dimension stone quarrying violations.
- It is suggested that an expert committee should study in detail the methods suitable for calculating the environmental compensation for building stone and dimension stone quarrying violations.

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- Survey conducted in the areas around the quarry indicated that problems due to dust, vibrations movement of large trucks are the major problems. There are other quarries are also working in this locality. So the problem is cumulative. There are no major issues related to the quality of water except the acidic nature of water .
- Though the people who were working on the quarry for their livelihood are facing severe economic crisis after the closure of the quarry, the present field investigation revealed that that resource extraction through mining and quarrying activities took place here has accelerated the degradation of environmental conditions in various ways. So, formulation of an effective integrated management plan and cross checking of the same at every stage of quarrying operation is essential with the proper consultation of the geo- environmental experts in the concerned research areas.
- It seems there are no effective follow up or checking of the compliance of the conditions imposed with environmental clearance. Concerned agencies should make sure that all conditions are complied with after getting their half yearly compliance reports.
- Any application for renewal of EC of this quarry should be based on a new mine plan with new EMP and EIA with public hearing.

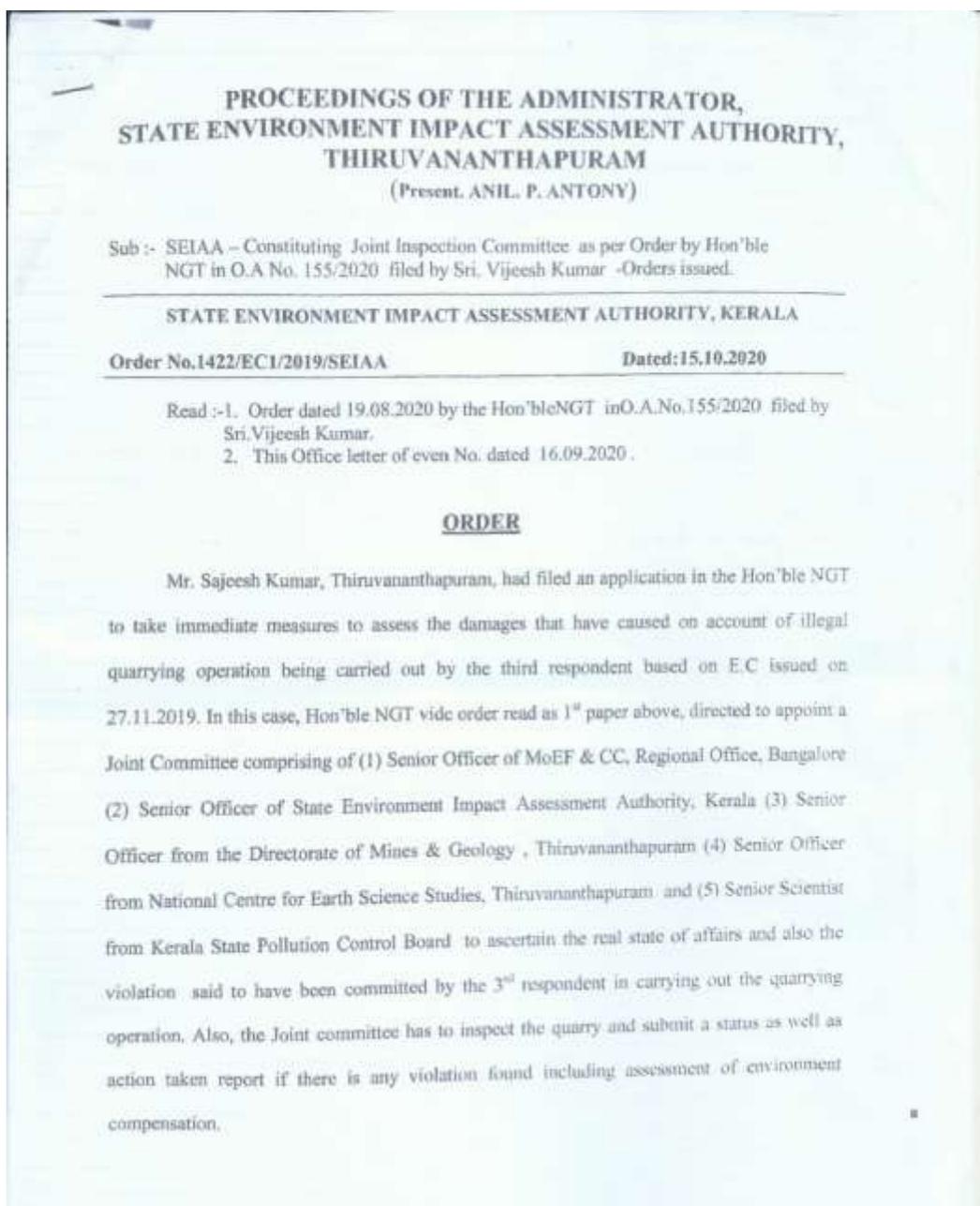
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Annexure 1

Constitution of the Joint Committee



November 2020

Accordingly, Hon'ble NGT has already designated SEIAA as nodal agency for coordination and providing all necessary logistics for this purpose. In the above circumstance orders are issued constituting the Joint Committee, designating Sri. G.Sankar, Member, SEAC as the Chairman of the Committee with the following members.

The Members are:

1. Dr.S.Prabhu, Scientist. C, MoEF& CC, Regional Office, Bangalore.
2. Smt.Bincy B.S, Assistant Environmental Engineer (Holding Charge of Environmental Engineer), KSPCB.
3. Shri. M.M.Vahab, Geologist, Directorate of Mining and Geology
4. Dr.A.Krishnakumar, Scientist D, NCESS, Akkulam

The committee is directed to submit the report to Hon'ble NGT on or before 27.11.2020 by e-filing.

Sd/-
ANIL.P.ANTONY
Administrator, SEIAA

To

1. Shri.G.Sankar, Member, SEAC
2. Dr.S.Prabhu, Scientist. C, MoEF& CC, Regional Office, Bangalore.
3. Smt.Bincy B.S, Assistant Environmental Engineer (Holding Charge of Environmental Engineer), KSPCB.
4. Shri. M.M.Vahab, Geologist, Directorate of Mining and Geology
5. Dr.A.Krishnakumar, Scientist D, NCESS, Akkulam

Forwarded/By Order


Section Officer

Copy to,

1. PA to Principal Secretary, Environment Department
2. The District Treasury Officer, Thiruvananthapuram
3. Accounts
4. Office copy/Stock file



November 2020

Annexure 2 Joint Committee order 2

**PROCEEDINGS OF THE ADMINISTRATOR,
STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY,
THIRUVANANTHAPURAM
(Present. ANIL P. ANTONY)**

Sub :- SEIAA –Constituting Joint Inspection Committee as per Order by Hon'ble NGT
in O.A No. 155/2020 filed by Sri. Vijeesh Kumar -Supplementary Orders issued.

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

Order No.1422/EC1/2019/SEIAA

Dated: 27.10.2020

- Read :-1. Order dated 19.08.2020 by the Hon'ble NGT in O.A.No.155/2020
filed by Sri.Vijeesh Kumar.
2. Proceedings No. 1422/EC1/2019/SEIAA dated 15.10.2020
3. KSPCB letter No. PCB/HO/DD4/NGT/O.A. No. 155/2020 dt. 21.10.2020 .

ORDER

Bassed on the Judgement of Hon'ble NGT vide order read as 1st paper above, SEIAA as nodal agency, constituted a Joint Committee as per the proceedings read as 2nd paper above. Now, vide letter read 3rd paper above, Kerala State Pollution Control Board has nominated Sri. Harees A.M Environmental Engineer, KSPCB as the Committee member replacing the earlier nomination of Smt. Bincy B.S. In the circumstances, orders are issued reconstituting the committee substituting Smt. Bincy B.S with Sri. Harees A.M as the representative from KSPCB.

Sd/-
ANIL P. ANTONY
Administrator, SEIAA

- To
- ✓ Shri.G.Sankar, Member, SEAC (from SEIAA)
 - Dr.S.Prabhu, Scientist. C, MoEF& CC, Regional Office, Bangalore.
 - Sri. Harees A.M, Environmental Engineer, KSPCB, District Office, Thiruvananthapuram
 - Shri. M.M.Vahab, Geologist, Directorate of Mining and Geology
 - Dr.A.Krishnakumar, Scientist D, NCESS, Akkulam



Forwarded/By Order

Section Officer

- Copy to,
1. PA to Principal Secretary, Environment Department
 2. The District Treasury Officer, Thiruvananthapuram
 3. Accounts
 4. Office copy/Stock file

(Handwritten signature)

November 2020

Annexure: 3a and b Inspection Notices to members and the proponent



3a



3b

Joint Inspection conducted on 02.11.2020 at Quarry of Covenant Stones Private limited, Vembayam, Thiruvananthapuram in compliance with Order dated 19.08.2020 of Hon'ble NGT in O.A No. 155/2020 filed by Vijesh Kumar

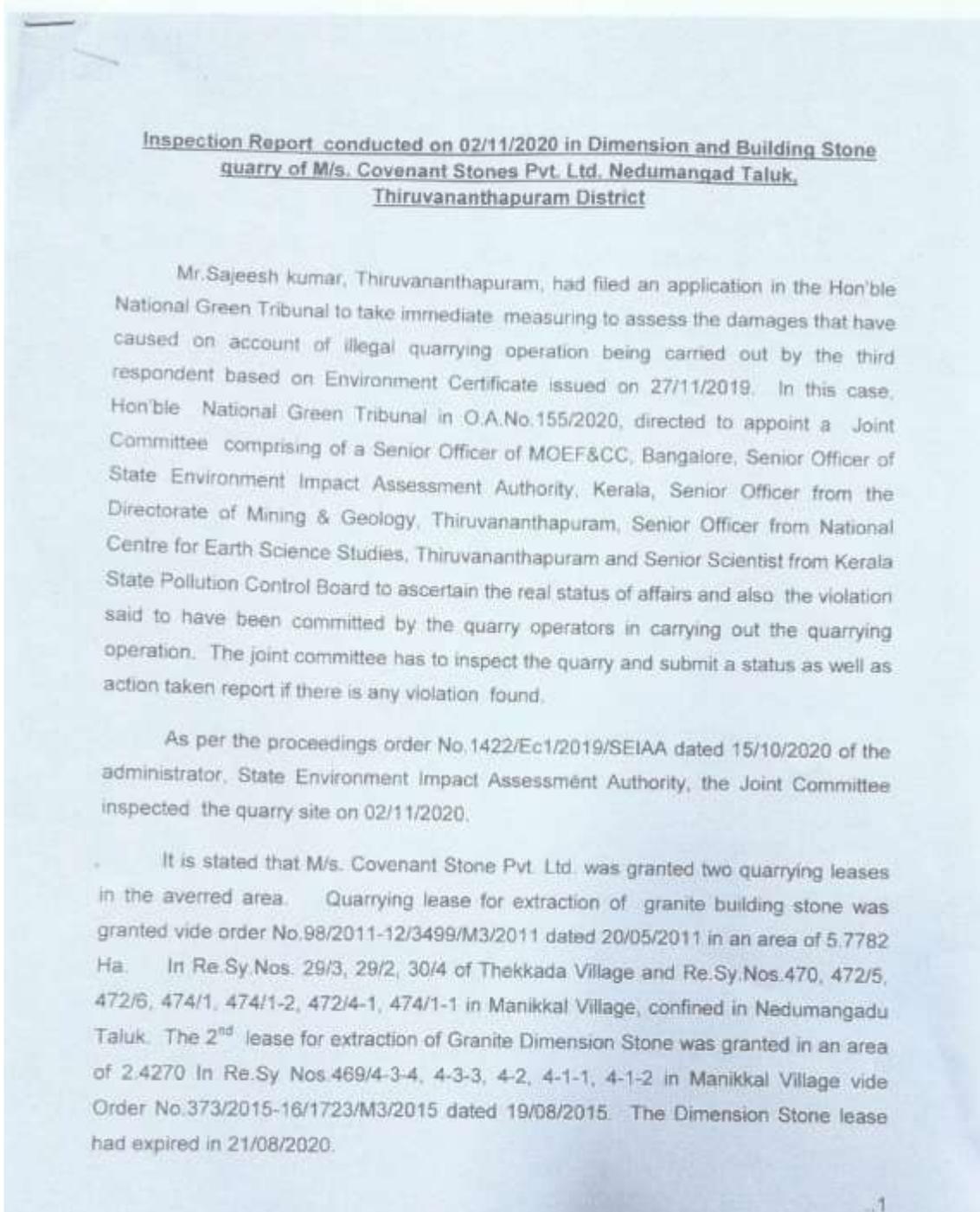
LIST OF PARTICIPANTS

Sl No	Name	Designation/Organization	Signature
1	A.M. HARVEY	Environment Specialist Kerala State Road Dist Office, Thiruvananthapuram	[Signature]
2	Dr. S. PRABHU	Scientist C, MCEEG RD, Bangalore	[Signature]
3	M. Vignesh	Geologist, DDO, Tirupur	[Signature]
4	D. A. Kishan Kumar	Scientist D, MCEEG Thiruvananthapuram	[Signature]
5	G. Sankar	Member SEAC 207, P. O. Box, 10, Vembayam, Thiruvananthapuram	[Signature]
6	Anand C A	Assistant Engineer Kerala State Road Dist. Thiruvananthapuram	[Signature]

3c. Site inspection attendance sheet of the Joint Committee

November 2020

Annexure 4 Geologist's Report



November 2020

-2-

It is stated that the granite building stone lease area was inspected with the assistance of Taluk Surveyor on 15/06/2020 and it was detected that from the lease area and outside, the lease had unauthorized by extracted 9,31,714 metric tonnes of granite and for the same a demand notice for Rs.6,71,08,430/- was served to the quarry owner on 15/09/2020 (copy enclosed). Since the due amount was not remitted in time, a revenue recovery requisition has been made to the District Collector to realize the amount through Revenue Recovery proceedings.

The Dimension Stone lease area was inspected as 06/11/2020 with the assistance of the Taluk Surveyor. It was observed that the lease holder had extracted Granite Dimension Stone far in excess of the permitted quantity in the lease. In that circumstance, a show case notice had already been served to the lease holder on 12/11/2020 (copy enclosed). Only after receipt of explanation, proper legal steps will be initiated to realise the loss sustained to Government.


M.M.Vahab
Geologist



November 2020

രജിസ്ട്രേഷൻ

നമ്പർ : 3455/ഡിഒറ്റി/എംഎൽ/2019

മൈനിങ് & ജിയോളജി വകുപ്പ്
ജില്ലാ ആഫീസ്, തിരുവനന്തപുരം
കേശവദാസപുരം, പട്ടം പാലസ് പി.ഒ.,
email : geo.thi.dmg@kerala.gov.in
Phone: 0471-2442055
തീയതി :15.09.2020

ഡിമാന്റ് നോട്ടീസ് - Revised

വിഷയം:- മൈനിങ് & ജിയോളജി - ഖനിയും ഖനിയുടേയും - ചെറുകിട ധാതു -
കരിങ്കല്ല് -അനധികൃത ഖനനം - ഡിമാന്റ് നോട്ടീസ് -ദേശഗതി വരുത്തുന്നത് -
സംബന്ധിച്ച്.

- സൂചന:-
1. 2015-ലെ കേരള മൈനർ മിനറൽ കൺസർവ്ഷൻ ചട്ടങ്ങൾ
 2. 20.05.2011 ലെ 98/11-12/3499/M3/2011 നമ്പർ ഉത്തരവ്
 3. നെടുമങ്ങാട് താലൂക്ക് സർവ്വെയുടെ 05.06.2020 ലെ D1-3773/2020 നമ്പർ റിപ്പോർട്ട്
 4. 15.06.2020 ലെ സംയുക്ത സ്ഥലപരിശോധന
 5. 25.06.2020 ലെ അസിസ്റ്റന്റ് ജിയോളജിസ്റ്റിന്റെ റിപ്പോർട്ട്
 6. 30.06.2020 ലെ മേൽ നമ്പർ കാരണം കാണിക്കൽ നോട്ടീസ്
 7. താങ്കളുടെ 15.07.2020 ലെ വിശദീകരണം
 8. 05.08.2020 ലെ മേൽ നമ്പർ ഡിമാന്റ് നോട്ടീസ്

മേൽ സൂചനകൾ ശ്രദ്ധിക്കുക. നെടുമങ്ങാട് താലൂക്കിൽ തെക്കെ വില്ലേജിൽ റിസർവ്വേ നമ്പർ 29/3, 29/2, 30/4 ലും മാണിക്കൽ വില്ലേജിൽ റിസർവ്വേ നമ്പർ 470, 472/5, 472/6, 474/1, 474/1-2, 472/4-1, 474/1-1 ത്ത്പെട്ടതുമായ 5.7782 ഹെക്ടർ സ്ഥലത്ത് കരിങ്കല്ല് ഖനനത്തിന് സൂചന (2) ആയി ക്വറിയിങ് ലിസ്റ്റ് അനുവദിച്ച സ്ഥലത്ത് നടത്തിയ പരിശോധനയിൽ കണ്ടെത്തിയ അനധികൃത ഖനനത്തിന് (9,52,978MT) 6,86,39,420 /- രൂപ ചെനാൽറ്റി ഒടുക്കുന്നതിന് സൂചന (8) ആയി ഡിമാന്റ് നോട്ടീസ് നൽകിയിരുന്നു.

എന്നാൽ തുടർന്നുള്ള പരിശോധനയിൽ താലൂക്ക് സർവ്വേയർ അളവെടുപ്പ് നടത്തിയിരുന്നതും എന്നാൽ സൂചന (2) ലിസ്റ്റ് ഏരിയയിൽ ഉൾപ്പെടാത്തതുമായ സർവ്വേ നമ്പർ 469/4 ൽ നിന്നും നീക്കം ചെയ്ത 8344 ക്യൂബിക് മീറ്റർ കരിങ്കല്ല് ചെനാൽറ്റി കൂടി ഡിമാന്റ് നോട്ടീസിൽ നൽകിയതിൽ ഉൾപ്പെട്ടതായും ലിസ്റ്റ് ഏരിയയ്ക്കു പുറത്തു സർവ്വേ നമ്പർ 30/5 ത്ത്പെട്ട വസ്തുവിൽ നടന്ന അനധികൃത ഖനനത്തിന്റെ അളവുകൾ (700 MT), ചെനാൽറ്റി കണക്കാക്കുന്നതിൽ ഉൾപ്പെടുത്തിയിരുന്നവെങ്കിലും ടി സർവ്വേ നമ്പർ ഡിമാന്റ് നോട്ടീസിൽ രേഖപ്പെടുത്താൻ വിട്ടുപോയിട്ടുള്ളതായും ശ്രദ്ധയിൽപ്പെട്ടിട്ടുണ്ട്. കൂടാതെ സർവ്വേ നമ്പർ 30/5 ത്ത്പെട്ട വസ്തുവിൽ നിന്നും മുൻപ് 403.75 MT കരിങ്കല്ല് അനധികൃത ഖനനം നടത്തിയിട്ടുണ്ട് ചെനാൽറ്റി തുറാടാക്കിരുന്നതായും ശ്രദ്ധയിൽപ്പെട്ടിട്ടുണ്ട്. സർവ്വേ നമ്പർ 469/4 ൽ Granite Dimension Stone നാണ് ക്വറിയിങ് ലിസ്റ്റ് അനുവദിച്ചിട്ടുള്ളത്. ആകയാൽ ആയതിന്റെ അളവുകൾ പ്രത്യേകം കണക്കാക്കേണ്ടതിനാൽ നിലവിൽ നൽകിയിട്ടുള്ള ഡിമാന്റ് നോട്ടീസിൽ നിന്നും സർവ്വേ നമ്പർ

November 2020

496/4 ത്വപെട്ട വസ്തുവിൽ നിന്നും ഖനനം ചെയ്ത നീക്കിയതായി കണ്ടെത്തിയ 8344M³ കുറവ് ചെയ്യേണ്ടതായി ബോധ്യപ്പെട്ടിട്ടുണ്ട്. അതോടൊപ്പം സർവ്വെ നമ്പർ 30/5 ത്വപെട്ട വസ്തുവിൽ നിന്നും മുൻപ് പെനാൽറ്റി ഈടാക്കിയിട്ടുള്ള 403.75 MT കുരിങ്കല്ലിന്റെ അളവും കുറവ് ചെയ്യേണ്ടതായി കാനണ സഹായകര്യത്തിൽ താഴെ വിവരിക്കും പ്രകാരം സൂചന (8) ഡിമാന്റ് നോട്ടീസിൽ ഭേദഗതി വരുത്തുന്നു.

M/S കവനന്റ് സ്റ്റോൺസ് പ്രൈവറ്റ് ലിമിറ്റഡ് എന്ന സ്ഥാപനത്തിന് കുരിങ്കൽ ഖനനത്തിന് ചുവന്നിയിങ് ലിസ് അനുവദിച്ചിരുന്ന നെടുമങ്ങാട് താലൂക്കിൽ തേക്കട വില്ലേജിൽ സർവ്വെ നമ്പർ 29/3, 29/2, 30/4, മാണിക്കൽ വില്ലേജിൽ 470, 472/5, 472/6, 474/1, 474/1-2, 472/4-1, 474/1-1 ത്വപെട്ട വസ്തുവിൽ നിന്നും ലിസ് ഏരിയക്കപ്പൊത്ത് സർവ്വെ നമ്പർ 30/5 പെട്ട വസ്തുക്കളിൽ നിന്നും അനധികൃതമായി നീക്കം ചെയ്തതായി കണ്ടെത്തിയ കുരിങ്കല്ലിന്റെ അളവ് - 9,52,978 MT

(i) സർവ്വെ നമ്പർ 496/4 ത്വ നിന്നും നീക്കം ചെയ്ത കുരിങ്കല്ല് - 20,860MT

(ii) സർവ്വെ നമ്പർ 30/5ത്വപെട്ട വസ്തുവിൽ നിന്നുള്ള ഖനനത്തിന് മുൻപ് പെനാൽറ്റി ഒടുക്കിയത് - 403.75 MT

(i), (ii) അളവുകൾ കുറവ് ചെയ്യാൽ (9,52,978 ത്വ നിന്നും) ബാക്കിയുള്ളത് -9,31,714 MT

പെനാൽറ്റി ഇനത്തിൽ ഒടുക്കേണ്ട തുക

റോയൽറ്റി = 2,23,61,136 രൂപ
 വില്പന = 4,47,22,272/- രൂപ
 പിഴ = 25,000/- രൂപ
 ആകെ = 6,71,08,430 /- രൂപ

മേൽ വിവരിച്ച തുക ഈ നോട്ടീസ് ലഭിച്ച് 15 ദിവസത്തിനുള്ളിൽ ആഫീസിൽ ഹാജരായി ചെല്ലാൻ കൈപ്പറ്റി ഭംഗിയിൽ ഒടുക്കി അസൽ ചെല്ലാൻ ഹാജരാക്കേണ്ടതാണ്. അല്ലാത്ത പക്ഷം താങ്കളിൽ നിന്നും ടി തുക റവന്യൂ റിക്കവറി നടപടിയിലൂടെ ഈടാക്കുന്നതാണ്.

എ

സിനിയർ ജിയോളജിസ്റ്റ്

To
 Sri Reghunadhan Kunju Krishnan
 M/S Covenant Stones Pvt Ltd
 Katta, Cheeranikkara P.O.
 Vembayam
 Thiruvananthapuram

Copy to: 1. കവനന്റ്സ് ഓഫീസ്, നെടുമങ്ങാട്
 2. ശ്രീ ചൈങ്ങു പി., അസിസ്റ്റന്റ് ജിയോളജിസ്റ്റ്

Granite Dimension Stone ലിസ്
 ഏരിയ അടിയന്തിരമായി പരിശോധിച്ച്
 നീക്കം ചെയ്ത GDS/GBS ന്റെ അളവുകൾ
 റോയൽറ്റി സമർപ്പിക്കുന്നതിന്

Attested
m.m. VAHAB
geologist



[Handwritten signature]

November 2020

തടിയേറ്റേർഡ്

നമ്പർ. 3455/ഡിഒറ്റി/എംഎൽ/2019

മൈനിംഗ് & ജിയോളജി വകുപ്പ്
ജില്ലാ ഓഫീസ്, തിരുവനന്തപുരം
കേശവദാസപുരം, പട്ടം പാലസ്.പി.ഒ
email : geo.thi.dmg@kerala.gov.in
Phone: 0471-2442055

തീയതി: 12/11/2020

കാരണം കാണിക്കൽ നോട്ടീസ്

വിഷയം:- ഖനിയും ഖനിയുണ്ടാകും-കരിങ്കല്ല്-ഗ്രാനൈറ്റ് ഡയമെൻഷൻ സ്റ്റോൺ-അന്ധികൃത ഖനനം-നിയമ നടപടി സ്വീകരിക്കുന്നതിന്- സംബന്ധിച്ച്

- സൂചന:-1) 19/08/2015 തീയതിയിൽ അനുവദിച്ച 373/2015-16/1723/എം3/2015 നമ്പർ ക്വാറിയിൽ ലീസ്.
- 2) 06/11/2020 തീയതിയിൽ താലൂക്ക് സർവ്വെയറുമൊത്തു നടത്തിയ സംയുക്ത സ്ഥല പരിശോധന.
- 3) കെ.എം.എം.സി.പട്ടങ്ങൾ 2015.

മേൽ സൂചനകൾ ശ്രദ്ധിക്കുക. നെടുമങ്ങാട് താലൂക്കിൽ മാണിക്കൽ വില്ലേജിൽ സർവ്വേ നമ്പർ 469/4-3-4, 4-3-3, 4-2, 4-1-1, 4-1-2-ൽപ്പെട്ട സ്ഥലത്ത് സൂചന (1) പ്രകാരം ഗ്രാനൈറ്റ് ഡയമെൻഷൻ സ്റ്റോൺ ഖനനം ചെയ്യുന്നതിന് താങ്കൾക്ക് ക്വാറിയിൽ ലീസ് അനുവദിച്ചിരുന്നു. സൂചന (2) ആയി താലൂക്ക് സർവ്വെയറുടെയും താങ്കളുടെ പ്രതിനിധിയുടെയും സാന്നിധ്യത്തിൽ നടത്തിയ പരിശോധനയിൽ ലീസ് അനുവദിച്ച സ്ഥലത്തുനിന്നും ആകെ ഖനനം നടന്നിട്ടുള്ളത് 25,230 ക്യൂ.മീറ്റർ കരിങ്കല്ല് ഗ്രാനൈറ്റ് ഡയമെൻഷൻ സ്റ്റോൺ-ഗ്രാനൈറ്റ് ബിൽഡിംഗ് സ്റ്റോൺ ലീസുകളുടെ കോമൺ ബൗണ്ടറിയിൽ നിന്നും ബഹു സോണിൽ നിന്നും 3570 മെ.ടൺ കരിങ്കല്ല് ഗ്രാനൈറ്റ് ഡയമെൻഷൻ സ്റ്റോൺ ലീസ് ഏരിയയുടെ വടക്കു ഭാഗത്തുള്ള ബഹു സോണിൽ നിന്നും അന്ധികൃതമായി 262.5 മെ.ടൺ ഗ്രാനൈറ്റ് ഡയമെൻഷൻ സ്റ്റോണും ഖനനം ചെയ്തു നീക്കിയതായി ബോധ്യപ്പെട്ടിട്ടുണ്ട്. സൂചന (1) പ്രകാരം താങ്കൾക്ക് ലീസ് അനുവദിച്ചിരുന്ന പ്രതിവർഷ ഉല്പാദനത്തിൽ കൂടുതലായി ഗണ്യമായ അളവിൽ താങ്കൾ ധാതു ഖനനം ചെയ്തു നീക്കം ചെയ്തത് സൂചന (3) ചട്ടങ്ങളുടെ ലംഘനമാകയാൽ ഇതു സംബന്ധിച്ച താങ്കളുടെ വിശദീകരണവും താങ്കൾക്ക് ഗ്രാനൈറ്റ് ഡയമെൻഷൻ സ്റ്റോൺ/ഗ്രാനൈറ്റ് ബിൽഡിംഗ് സ്റ്റോൺ വേസ്റ്റ് ഏന്നിവ നീക്കം ചെയ്യുന്നതിന് നാളിതുവരെ നൽകിയ നിയമപരമായ അനുമതികളുടെ പകർപ്പും ഈ നോട്ടീസ് ലഭിച്ച 7 ദിവസത്തിനുള്ളിൽ ഹാജരാക്കേണ്ടതാണ്. അല്ലാത്തപക്ഷം ഈ ഓഫീസിൽ ലഭ്യമായ രേഖകളുടെ അടിസ്ഥാനത്തിൽ ചട്ടപ്രകാരമുള്ള തുടർ നടപടികൾ സ്വീകരിക്കുന്നതാണ്.

[Handwritten Signature]
12/11/20
സീനിയർ ജിയോളജിസ്റ്റ്

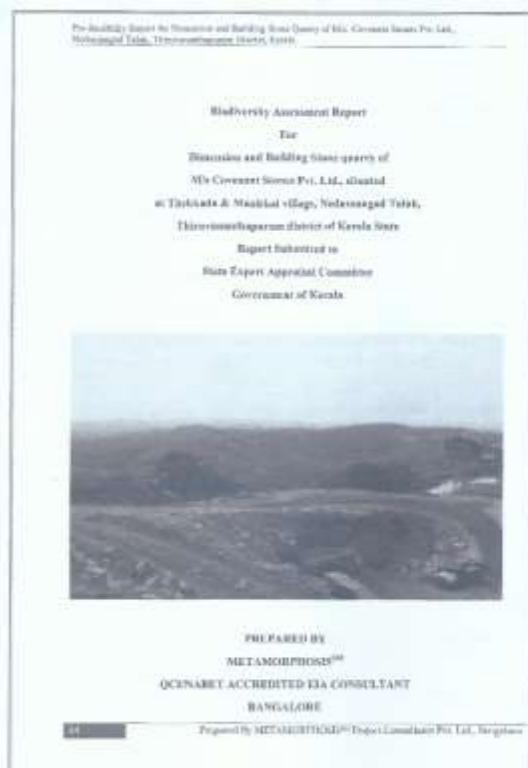
To
ശ്രീ.രഘുനാഥൻ കുഞ്ഞു കൃഷ്ണൻ
മെ. കവണറ്റ് സ്റ്റോൺസ് (പ്രൈവ) ലിമിറ്റഡ്
കുറ്റ. ചീരാണിക്കൽ.പി.ഒ
വെമ്പായം, തിരുവനന്തപുരം

പകർപ്പ്:
1) തഹസിൽദാർ, നെടുമങ്ങാട്
2) വില്ലേജ് ഓഫീസ്, മാണിക്കൽ
M.M. VAHAS
Geologist


[Handwritten Signature]

November 2020

Annexure 5 Bio diversity report from PFR (2013)



1.0 Background on Biodiversity Conservation

Biodiversity represents the variety and abundance of life, represented as the genetic, populations, species and ecosystem levels, within and outside, terrestrial and marine. Biodiversity provides the goods and services essential for the survival of human beings and other species on the earth. Thus, biodiversity may be roughly defined as the total number of species in a particular area. Conservation of biodiversity is therefore important to ensure sustainable human development. A further, the dominant view, that the rapid loss of life is an aspect of biodiversity, biodiversity based on facts, and so distinctive between wild and domesticated, cultivated and uncultivated. In other biodiversity is the diversity among all living forms in the habitat.

1.1 Western Ghats - one of the Biodiversity hotspot of World

About 18 'Hot Spots' (of special interest) are identified around the world. Among them two are in India - one in the Western Ghats and the other in the eastern Himalayan region. These two 'Hot Spots' together have about 1500 endemic species including flowering plants, mammals, reptiles, amphibians and butterflies. The biodiversity of Western Ghats has been well known for millennia.

It is considered to be the cradle of single of important commercial species like pepper, cardamom and cinchona (Dutt, 1997). India's forests and their biodiversity were the significant source of income for the colonisation since 1793. Forest resources had been severely exploited. Teak and Rosewood were extracted in large scale for shipbuilding. Biodiversity of the forests and forests biodiversity made the nation prosper the leading economic power of the world. The present-day developed countries do not possess such diverse life forms.

1.2 Salient features of the study area

Forest area under or less reported by Charitable (commercially known as quarry), and a place Charitable is covered by forest. Charitable is situated to a depth of 1-2 m from top, however the basement formation is not known / seen.

There is one 'Working spot' (Thattapuzha) is at distance of 220 m towards north of quarry. Heavy forest cover there (PFR) is at distance of 2.5 km towards west of quarry. Indira Gandhi Reserve forest is situated at distance of 7.5 km towards north and Vansada Reserve forest is situated at distance of 4.5 km towards south east.

The opening Discussion & Building stone quarry is situated in Village Thakkada & Moolakkal, Netheranagal Taluk, Thiruvananthapuram District, Kerala State in an area of 0.9637 ha at an altitude and longitude of 8° 30' 37" 00.00" to 8° 30' 37" 19.2" and 76° 52.2" to 76° 50' 07.9". The peak summer is from the month of April and May months and the highest temperature recorded is about 39°C in the season. The lowest temperature is observed in the month of November and December, which is about 18°C. The Highest rainfall recorded in last 10 years is around 3800-4000 mm. The Vansapuzha River is present towards N direction of quarry at a distance of 4.5 km.

1.3 Approach and Methodology

1.3.1 Approach:

A participatory and consultative approach was followed for generating the assessment on Biodiversity assessment of the stone quarry site and adjacent region. A team of experts along with Dr. Shashi Thiruvananthapuram (PIA Coordinator), Dr. Nagesh BC (FNE-Ecology & Biodiversity) from METAMORPHOSIS, Bangalore have visited the project area and the field survey was conducted on 15th and 16th of October 2013. Discussions have been held with Mr. Dr. Shaji Kumar representative & other employees of M/s Coovana Stone Pvt. Ltd, to know the history of mining and restoration works undertaken in the area area. They have observed the area area boundary and adjacent reserve forest area. Further we have consulted the forest line officials of the Forest Department and local villagers on existing biodiversity of the region and the forest management aspects. Literature survey included review of forest working plan and other records related biodiversity of the region.

Methodology

We have examined the flora and fauna of Netheranagal taluk of Thiruvananthapuram district. We have also visited all the locations of the quarry site and recorded the biodiversity including in stream area, agricultural lands, rubber plantation, Vansapuzha river, aquatic plants/animals, house backyard etc.. In each of the local area, we have identified the species and recorded their life form. Besides recording the plant species, other biodiversity aspects in the form of endemic status, conservation status and life form have been collected from the literature.

1.3.2 Observation & Discussion

The core area of project site of 0.9637 ha is devoid of vegetation. The demarcated stone quarry area doesn't contain any vegetation. They have demarcated the boundary by

establishing linked wire fence and also they have planted native species as a green belt. There is no reserve forest or protected area around the stone quarry.

The small reserve forest situated on north-eastern side of the quarry site at a distance of 4.5 km, which is coming in Sikkimantharala Forest range and it was categorized as medium. Tropical semi-evergreen forest in natural disturbance forest (Champion & Seth, 1987), is a natural reserve of the forest type of India. The region presents a wide range of altitude, aspect, slopes, drainage, and soils giving rise to a variety of local factors related to the occurrence of number of forest types from tropical semi-evergreen to moist deciduous forests. The dominant species observed was *Terminalia paniculata*, *Miconia elaeagnifolia*, *Careya arborea*, *Indigo pennicula* and *Ardisia cuneata*. Bamboo breaks were also observed throughout the semi-evergreen and moist deciduous forest types. They are mostly found along stream sides of south-east direction, where opening have occurred and they occur along with *Terminalia* species.

The buffer area of the project site is predominantly covered by grassland/scrubland, which comprises of rubber, coconut, coffee-tee, mango, banana, coffee plantation around the human settlements and areas not plantation are also seen along the streams. The villages coming in buffer zone villages are well connected with each other by roads and bridges. The life line buffer zone is fully and uniformly has a well developed drainage system through natural streams and canals.

The plant species documented in and around 1-km radius of the project site are given in Table 1. The study region has not reported the big mammals except wild bear. The list of small mammals, reptiles, birds and butterflies reported for the region were given in table 2, 3, 4 and 5 respectively.

Table 1. List of plants observed around quarry at Thakkada & Moolakkal Netheranagal of Thiruvananthapuram District of Kerala

Sl. No.	Scientific name	Family	Vernacular name	Habitat
1	<i>Cordia allamanda</i> L.	Carabellaceae	Thalasa	Shrub
2	<i>Calophyllum inophyllum</i> L.	Guttiferaceae	Panna	Tree
3	<i>Cyrtia amara</i> L.	Rubiaceae	Kappu	Shrub
4	<i>Centropogon daniellii</i> Mitr.	Euphorbiaceae		Shrub

November 2020

Annexure 5 Biodiversity report from PFR 2013

Pre-Feasibility Report for Demarcation and Building Stone Quarry of M/s. Coovasa Stone Pvt. Ltd., Madhavangal Taluk, Thiruvananthapuram District, Kerala.

Sl. No.	Scientific name	Family	Vernacular name	Habitat
5	<i>Chromolaena odorata</i> L.	Verbenaceae	Eachil	Clutter
6	<i>Chromolaena saturei</i> L.	Asteraceae	Ambrivayal	Open
7	<i>Emilia officinalis</i> Linn	Euphorbiaaceae	Kali	Tree
8	<i>Wedelia macrocarpa</i> L.	Umbelliferae	Maruvayal	Clutter
9	<i>Panicum sp.</i>	Gramineae	Adichu	Tree
10	<i>Stenotaphrum secundatum</i> L. Poiteau	Gramineae	Cheruvu	Tree
11	<i>Crotalaria retusa</i> L.	Fabaceae	Chakkal	Tree
12	<i>Adiantum species</i>	Mossaceae	Chakkal	Shrub
13	<i>Adiantum species</i>	Mossaceae	Maly	Tree
14	<i>Adiantum species</i>	Mossaceae	Manjeri vaka	Tree
15	<i>Adiantum species</i>	Mossaceae	Chakkal	Tree
16	<i>Adiantum species</i>	Mossaceae	Arachal	Tree
17	<i>Adiantum species</i>	Mossaceae	Adimayal	Tree
18	<i>Adiantum species</i>	Mossaceae	Pirya	Tree
19	<i>Adiantum species</i>	Mossaceae	Paruvayal	Shrub

Table 3. List of Reptiles recorded around granite quarry at Thakkolath Marical Madhavangal of Thiruvananthapuram District of Kerala

Sl.	Scientific name	Common name	Vernacular name	Poisonous/ No. Non-
1	<i>Zootoca bleekeri</i>	Common Indian Brounie Back on	Wilosha	Non-poisonous
2	<i>Batrachoseps</i>	Russell's Earth Boa	Manneoli parathu	Non-poisonous
3	<i>Lycodonomorphus</i>	Common Wolf Snake	Shanga vanyar	Non-poisonous
4	<i>Kribia</i>	Indian Cobra	Manthara Sargam	Poisonous

Table 4. List of Birds recorded around granite quarry at Thakkolath Marical Madhavangal of Thiruvananthapuram District of Kerala

Sl. No.	Scientific name	Common Name	Vernacular Name	Family
1	<i>Apollonia cybura melanoleuca</i>	Common Ibis	Iyala	Ciconiidae
2	<i>Actitis hypoleucos</i>	Common King Ibis	Chukka	Actinidae
3	<i>Actitis hypoleucos</i>	White-breasted Woodhen	Kalikkochi	Rallidae
4	<i>Actitis hypoleucos</i>	Brown Ibis		Actinidae
5	<i>Actitis hypoleucos</i>	Red Ibis	Kalikkochi	Actinidae
6	<i>Actitis hypoleucos</i>	Red Ibis	Imakkochi	Ciconiidae
7	<i>Actitis hypoleucos</i>	Red Ibis	Kalikkochi	Actinidae
8	<i>Actitis hypoleucos</i>	Red Ibis	Peruvayal	Actinidae

Table 5. List of Insects recorded around granite quarry at Thakkolath Marical Madhavangal of Thiruvananthapuram District of Kerala

Sl.No	Scientific name	Common name	Family
1	<i>Chalcid</i>	Common Chalcid	Pimplidae
2	<i>Chalcid</i>	Tamil Yonna	Nyctelidae
3	<i>Chalcid</i>	Common Chalcid	Nyctelidae
4	<i>Chalcid</i>	Flora cupid	Lyonelidae
5	<i>Chalcid</i>	Green Egg Fly	Nyctelidae

Prepared By METAMORPHOSIS Project Consultants Pvt. Ltd., Bangalore

Pre-Feasibility Report for Demarcation and Building Stone Quarry of M/s. Coovasa Stone Pvt. Ltd., Madhavangal Taluk, Thiruvananthapuram District, Kerala.

4.1 Conclusions

Based on the observations and scale of quarry operations, the impact on the flora & fauna is assumed to be insignificant. However, it is proposed that the post mine closure should be systematic and scientific as per the Environmental Management Plan, considering ecology of the surrounding area.

View around the quarry area.

4.5.6 Socio-Economic

The major occupation of the Kerala state is the agriculture, household activity, livestock, forestry, fishing, mining, quarrying activities. The quarrying activity will benefit local villages to both directly and indirectly. Direct beneficiary will be those who get employed in Quarry as skilled and unskilled workers. The indirect beneficiaries are those who are open the small business, cooperatively in long run backward relations will send their children to school.

Prepared By METAMORPHOSIS Project Consultants Pvt. Ltd., Bangalore

November 2020

Annexure 6 EC issued in 2014 with general and specific conditions

Proceedings of the State Environmental Impact Assessment Authority Kerala
 (Presenting Officer: Chief Secretary, Government of Kerala, Dehradun P.O. Member, Secretary, Government of Kerala, Dehradun P.O. Member, Secretary, Government of Kerala, Dehradun P.O.)
 Subject: SHAA, Kerala - Quarry project of M/S Coovend Stone Pvt. Ltd, Marical Village, Mookampal Taluk, Thiruvananthapuram District, Kerala - Government Government - Government

Environmental Clearance
 No. SHAA/K/14/55004 Dated: 27-11-2014

Ref:
 1. Application dated 25/03/2014 from Sri. Saba Joseph, Managing Director, M/S COOVEND STONE PVT. LTD, Marical, Marical Village & its Sy. Nos. 478, 472A/1, 472B, 472C, 472D, 472E, 472F, 472G, 472H, 472I, 472J, 472K, 472L, 472M, 472N, 472O, 472P, 472Q, 472R, 472S, 472T, 472U, 472V, 472W, 472X, 472Y, 472Z, 473A, 473B, 473C, 473D, 473E, 473F, 473G, 473H, 473I, 473J, 473K, 473L, 473M, 473N, 473O, 473P, 473Q, 473R, 473S, 473T, 473U, 473V, 473W, 473X, 473Y, 473Z, 474A, 474B, 474C, 474D, 474E, 474F, 474G, 474H, 474I, 474J, 474K, 474L, 474M, 474N, 474O, 474P, 474Q, 474R, 474S, 474T, 474U, 474V, 474W, 474X, 474Y, 474Z, 475A, 475B, 475C, 475D, 475E, 475F, 475G, 475H, 475I, 475J, 475K, 475L, 475M, 475N, 475O, 475P, 475Q, 475R, 475S, 475T, 475U, 475V, 475W, 475X, 475Y, 475Z, 476A, 476B, 476C, 476D, 476E, 476F, 476G, 476H, 476I, 476J, 476K, 476L, 476M, 476N, 476O, 476P, 476Q, 476R, 476S, 476T, 476U, 476V, 476W, 476X, 476Y, 476Z, 477A, 477B, 477C, 477D, 477E, 477F, 477G, 477H, 477I, 477J, 477K, 477L, 477M, 477N, 477O, 477P, 477Q, 477R, 477S, 477T, 477U, 477V, 477W, 477X, 477Y, 477Z, 478A, 478B, 478C, 478D, 478E, 478F, 478G, 478H, 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Criteria	Remarks
Mineral content/grade	Mineral content is not specified in the quarry site and nearby villages.
Life cycle impacts affecting environment	Due to quarry activity and operation of heavy machinery, generation of dust, noise is likely. However, mitigation measures are proposed in the EMP.
Energy requirements	Power requirements for office and other buildings is 200000 KWH.
Energy sources	Power for office and other buildings will be met through KSEB.
Presence of any indigenous species of soil and vegetation	There will not be any loss of native species of genetic diversity as the quarry already exists and a reclamation of the same will not affect the loss of native species to ground.
Presence of ancient buildings	As per the site inspection report conducted by subcommittee of SEIAA, there was no reference in the GIS in vicinity of the proposed quarry site.
Details of Authorized Signatory	Mr. Sibi Joseph, Managing Director MS Continuity Mines Pvt. Ltd., Maddur, Sree Nilam, 277, Maddur P.O. Thiruvananthapuram District, Kerala.
Details of NARPT approved EIA consultant	MS Continuity Mines (Qualifies Associated EIA Consultant, Bangalore)

3. The proposed project was taken up in the 28th SEAC meeting held on 20th and 21st March 2014 under agenda item no. 26.36. The project proponent made presentation of the proposal. The Committee wanted the proponent to clarify certain defects in the application and also in the biodiversity assessment report specifically of the project. The distance of the quarry site from the nearest habitation is given as 0.013 km towards NW from the quarry as given in certificate and 0.07 km away from the site towards SE as given in pre-feasibility report. Hence the proponent was directed to provide the correct details of the nearest habitation from the quarry. The proponent was also directed to provide specific details on CSR specifying the proposed activities linked with the present project along with details on the beneficiaries to whom the same shall be provided. Regarding grant of ownership of land, certain discrepancies were found and the proponent was directed to provide the/Resolution/Document in the form. According to the above mentioned facts, the item was deferred for site visit and the proponent was directed to provide the required details for further consideration of the proposal.

4. As per the decision taken by the Committee a site visit was conducted by an expert team and the following points were recommended for implementation:

- Strip castings are seen in the quarry face. Hence formation is in facted part only. The strip castings especially by the side of the main road and near to the road should be filled with layers and slope side bank.
- The western most directly oriented dipping area (where the land is very steep and quarrying must be avoided in this part).
- Excavated earth and sandy loam is seen directed towards the road of the road. The road should be widened.

1. Accordingly, the Environmental Clearance under EIA notification 86/86 is issued for the proposed quarry project of MS Continuity Mines Pvt. Ltd. Maddur Village, Thiruvananthapuram District, Kerala in the Sree Nilam P.O. and 277 km towards NW from the quarry as given in certificate and 0.07 km away from the site towards SE as given in pre-feasibility report. Hence the proponent was directed to provide the correct details of the nearest habitation from the quarry. The proponent was also directed to provide specific details on CSR specifying the proposed activities linked with the present project along with details on the beneficiaries to whom the same shall be provided. Regarding grant of ownership of land, certain discrepancies were found and the proponent was directed to provide the/Resolution/Document in the form. According to the above mentioned facts, the item was deferred for site visit and the proponent was directed to provide the required details for further consideration of the proposal.

2. The proposed project was taken up in the 28th SEAC meeting held on 20th and 21st March 2014 under agenda item no. 26.36. The project proponent made presentation of the proposal. The Committee wanted the proponent to clarify certain defects in the application and also in the biodiversity assessment report specifically of the project. The distance of the quarry site from the nearest habitation is given as 0.013 km towards NW from the quarry as given in certificate and 0.07 km away from the site towards SE as given in pre-feasibility report. Hence the proponent was directed to provide the correct details of the nearest habitation from the quarry. The proponent was also directed to provide specific details on CSR specifying the proposed activities linked with the present project along with details on the beneficiaries to whom the same shall be provided. Regarding grant of ownership of land, certain discrepancies were found and the proponent was directed to provide the/Resolution/Document in the form. According to the above mentioned facts, the item was deferred for site visit and the proponent was directed to provide the required details for further consideration of the proposal.

3. As per the decision taken by the Committee a site visit was conducted by an expert team and the following points were recommended for implementation:

- Strip castings are seen in the quarry face. Hence formation is in facted part only. The strip castings especially by the side of the main road and near to the road should be filled with layers and slope side bank.
- The western most directly oriented dipping area (where the land is very steep and quarrying must be avoided in this part).
- Excavated earth and sandy loam is seen directed towards the road of the road. The road should be widened.

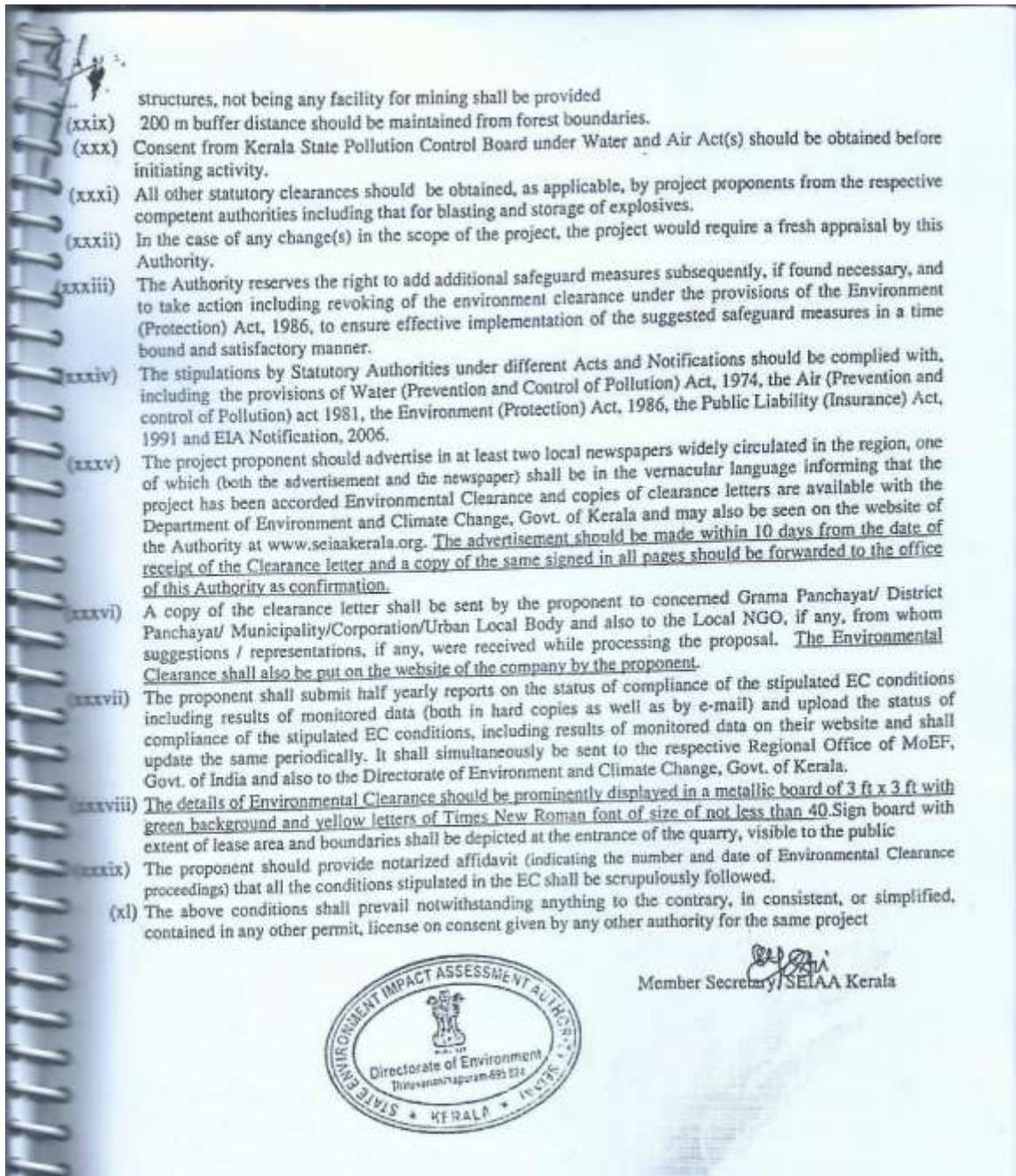
STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY KERALA

GENERAL CONDITIONS (for mining projects)

- (i) Rain Water Harvesting facilities should be installed as per the prevailing provisions of KMBR / KPDR, 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 state 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 beaches should not exceed 5 m and width should not be less than 5 m.
- (xviii) Mist 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 in 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 overlay 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 proponent from the respective

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Annexure 7 EC given in 2019 with Erratum


PROCEEDINGS OF THE ADMINISTRATOR, STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, THIRUVANANTHAPURAM
 (Present Submits)

Sd/- SEIAA-Application for ToR for the proposed quarry stone quarry project in Sy.No.292, 293 & 304 of Thakkala Village & Survey Nos. 470,472,471, 470/1, 470/1, 472/1,472/1,472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1 & 4004 of Marical village, Nedumangal Taluk, Thiruvananthapuram District, Kerala by M/Raghavath Koju Krishna, Director, M/s Cement stone Pvt. Ltd - Extension of period of Validity of Environmental Clearance - (Grand - Odan Road).

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY
 No.143/EC/2019/SEIAA Date, Thiruvananthapuram 18.12.2019

Read -

1. Proceedings No. 237/SEIAA/2019 dated 27.11.2019
2. Minutes of the 10th SEAC meeting held on 1st & 2nd August 2019.
3. Minutes of the 10th SEAC meeting held on 17th & 18th October, 2019.
4. Request from M/Raghavath Koju Krishna dated 23.01.2019
5. Minutes of the 9th SEAC meeting held on 21st & 22nd November, 2019.
6. G.O.(P) No. 29/2019 dated 12.04.2019


ORDER

M/Raghavath Koju Krishna, M/s Cement stone Pvt. Ltd, City Office, Kats, Cheralathra P.O., Vettuvayam, Thiruvananthapuram, Pin-695513, has been granted Environmental Clearance for the proposed quarry project in Sy.No.292, 293 & 304 of Thakkala Village & Survey Nos. 470,472,471, 470/1, 470/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1 & 4004 of Marical village, Nedumangal Taluk, Thiruvananthapuram District, Kerala vide G.O.No. 237/SEIAA/2019 dated 27.11.2019 for a period of 5

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years from 27.11.2019 for an area of 6.9437 hectares and production capacity for 100,000 cum/annum/year & building stone is 2,37,000 cum/annum.

The nearest river is Nedumangal, which is at a distance of 8 km from the project site. Water will be used only for both commercial and domestic purposes. The main source of water is from the bore well within the area. The total water requirement is 3.16 MLD. For quarry operation no power is required as the HEMMs are operated by HSD. For office building electricity is run through KSED. One No. of 250 KVA DG set is kept for back up power. The total size is 25 acres.

The proposal for extension of EC was placed in the 10th SEAC meeting held on 1st & 2nd August 2019. The Committee directed the proponent to apply for ToR.

The proponent submitted application for ToR vide no. 10/04.2019 and submitted the following on 17.09.2019.

The proposal was placed in the 10th SEAC meeting held on 17th & 18th October, 2019. The Committee decided to issue quarry ToR after conducting EIA study.

Based on the decision of the 10th SEAC meeting, ToR letter has been issued vide letter dated 23.11.2019. Now the proponent vide letter dated 23.01.2019, requested to grant extension of validity of existing Environmental Clearance through the process of ToR.

The proposal was placed in the 9th SEAC meeting held on 21st & 22nd November, 2019. Authority noted that when original EC was granted there is no extension of EIA study and public hearing. However based on the NCEI Order no. 06/03/2014 the applicant has to conduct EIA study as the project area is greater than 5 ha. As the proponent of EIA report and public hearing takes time and the EC period is expiring on 28.11.2019, Authority decided to extend EC for 5 months from the date of expiry of EC. The proponent should carryout all the required activities within this period and no more extension will be given. In the mean time SEAC may conduct a field visit to ascertain whether there is any violation of EC conditions. If on suitable recommendations shall be made while recommending the extension of EC.

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In the above circumstances extension of the validity of Environmental Clearance for a period of 5 months from the date of expiry of EC, is hereby accorded for the quarry project in Sy.No.292, 293 & 304 of Thakkala Village & Survey Nos. 470,472,471, 470/1, 470/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1 & 4004 of Marical village, Nedumangal Taluk, Thiruvananthapuram District, Kerala by M/s Cement stone Pvt. Ltd subject to the strict compliance of the conditions in the EC already issued and the additional conditions suggested by SEIAA in its 9th meeting held on 21st & 22nd November, 2019. The project proponent shall carryout all the required activities within this period and no more extension will be given. In the mean time SEAC may conduct a field visit to ascertain whether there is any violation of EC conditions. If on suitable recommendations shall be made while recommending for extension of EC.


SABYTHAS
 Administrator, SEIAA

To,
 M/Raghavath Koju Krishna,
 M/s Cement stone Pvt. Ltd,
 City Office, Kats,
 Cheralathra P.O.,
 Vettuvayam, Thiruvananthapuram, Pin-695513


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PROCEEDINGS OF THE ADMINISTRATOR, STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, THIRUVANANTHAPURAM
 (Present Submits)

Sd/- SEIAA- Application for ToR for the proposed quarry stone quarry project in Sy.No.292, 293 & 304 of Thakkala Village & Survey Nos. 470,472,471, 470/1, 470/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1, 472/1 & 4004 of Marical village, Nedumangal Taluk, Thiruvananthapuram District, Kerala by M/Raghavath Koju Krishna, Director, M/s Cement stone Pvt. Ltd - Extension of period of Validity of Environmental Clearance - (Grand - Odan Road).

State Environment Impact Assessment Authority, Kerala
 No.143/EC/2019/SEIAA Date, Thiruvananthapuram 01.12.2019

Read -

1. Request from M/Raghavath Koju Krishna, Director, M/s Cement stone Pvt. Ltd dated 23.01.2019 for extension of Validity of EC
2. Extension of Validity of EC vide the Proceedings No. 143/EC/2019/SEIAA of 18.12.2019
3. Representation dt. 13.12.2019 from M/Raghavath Koju Krishna, Director, M/s Cement stone Pvt. Ltd
4. Minutes of the 10th meeting of SEIAA held on 23rd & 24th December, 2019
5. G.O.(P) No.29/2019 dated 12.04.2019

ERRATUM

Extension of Validity of Environmental Clearance was issued to M/Raghavath Koju Krishna, M/s Cement stone Pvt. Ltd, City Office, Kats, Cheralathra P.O., Vettuvayam, Thiruvananthapuram, Pin-695513, for the proposed quarry project in Thakkala & Marical village, Nedumangal Taluk, Thiruvananthapuram District, Kerala.

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based on the decision of 99th SEIAA meeting held on 21st & 22nd November, 2019, vide order read in 2nd paper above.

The proponent, vide representation read in 2nd paper above has informed that, in the Extension order issued vide 2nd paper above, stated that due to oversight, he missed two Sy.No. 472/4-1 and 474/1-1 while preparing Form No.1 and Form No.6. He now submitted corrected Form No.1 and Form No.6 for consideration and also apologized for the said mistake. The Sy.No.s mentioned in the revised Form-1 and Form-6 is Sy.No.292, 293 & 304 of Thekkada Village & Survey Nos. 470,472/4-1, 472/4-1 & 474/1-1, 472/5, 472/6, 474/1, 474/1-2, 469/4/3/4, 469/4/3/5, 469/4/2, 469/4/1/1, 469/4/1/2, 469/4/1/3 & 469/4 of Manickal Village, Nedumangal Taluk, Thiruvananthapuram District, Kerala and requested to issue a certified order.

The proposal was placed in the 100th meeting of SEIAA held on 23rd & 24th December, 2019. Authority decided that based on the decision of the 99th SEIAA meeting, extension proceedings was issued vide order dated 10.12.2019 for a period of 6 months from the date of expiry of EC. Now the proponent vide letter dated 13.12.2019 stated that due to oversight, he missed two Sy.No. 472/4-1 & 474/1-1 while preparing Form No.1 and Form No.6. He now submitted corrected Form No.1 and Form No.6 for consideration. The Sy.No.s mentioned in the revised Form-1 and Form-6 is Sy.No.292, 293 & 304 of Thekkada Village & Survey Nos. 470,472/4-1, 472/4-1 & 474/1-1, 472/5, 472/6, 474/1, 474/1-2, 469/4/3/4, 469/4/3/5, 469/4/2, 469/4/1/1, 469/4/1/2, 469/4/1/3 & 469/4 of Manickal Village, Nedumangal Taluk, Thiruvananthapuram District, Kerala. Authority decided to issue the certified orders.

In the above circumstances, the Sy. Nos. mentioned in the Extension of EC Proceedings 2nd read above is corrected and read as Sy.No.292, 293 & 304 of Thekkada Village & Survey Nos. 470,472/4-1, 472/4-1 & 474/1-1, 472/5, 472/6, 474/1, 474/1-2, 469/4/3/4, 469/4/3/5, 469/4/2, 469/4/1/1, 469/4/1/2, 469/4/1/3 & 469/4 of Manickal Village, Nedumangal Taluk, Thiruvananthapuram District, Kerala.

The Extension of validity of Environmental Clearance Proceedings 2nd read above stands modified to that extent only.


SABITHA
 Administrator, SEIAA

To,

Mr. Raghunath Kozhikrishnan,
 M/s Government stores Pvt. Ltd,
 Site Office, Kanya,
 Changanassery P.O.,
 Vandalooor, Thiruvananthapuram-695015

Copy to:

1. Minis Regional Office, Southern Zone, Keraliya Sada, 4th Floor, E&F Wing, R Block, Karamalga, Bangalore-560014. (through email: msc-log-mofce@gov.in)
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. Tahsildar, Nedumangal Taluk, Thiruvananthapuram
8. Chairman, SEIAA.

S.SF
 16.01




November 2020

Annexure 8 NGT order O.A 360/2015

Item Nos. 04 to 18		Court No. 1
BEFORE THE NATIONAL GREEN TRIBUNAL PRINCIPAL BENCH, NEW DELHI		
(By Video Conferencing)		
Original Application No. 360/2015 (With report dated 30.01.2020)		
National Green Tribunal Bar Association	Versus	Applicant(s)
Virender Singh (State of Gujarat)		Respondent(s)
AND		
Original Application No. 366/2015		
National Green Tribunal Bar Association	Versus	Applicant(s)
Dr. Sarvabhatam Bagali (State of Karnataka)		Respondent(s)
AND		
Original Application No. 368/2015		
National Green Tribunal Bar Association	Versus	Applicant(s)
Dr. Sarvabhatam Bagali (State of Karnataka)		Respondent(s)
AND		
Original Application No. 173/2018 (Earlier O.A. No. 89/2017 (E2))		
Sudhansu Das	Versus	Applicant(s)
State of West Bengal & Ors.		Respondent(s)
AND		
Original Application No. 874/2018		

AND		
Original Application No. 44/2016		
Mushtakeem	Versus	Applicant(s)
MoEF & CC & Ors.		Respondent(s)
AND		
Original Application No. 517/2015		
Sandeep Kumar	Versus	Applicant(s)
Ministry of Environment, Forests and Climate Change & Ors.		Respondent(s)
AND		
Original Application No. 550/2015		
Virender Kumar	Versus	Applicant(s)
Ministry of Environment, Forests and Climate Change & Ors.		Respondent(s)
AND		
Original Application No. 530/2016		
Sandeep Kumar	Versus	Applicant(s)
Ministry of Environment, Forests and Climate Change & Ors.		Respondent(s)
AND		
Original Application No. 272/2016		
M/s Ganga Yamuna Mining Co.	Versus	Applicant(s)
State of Haryana & Ors.		Respondent(s)
AND		
Original Application No. 481/2016		
Jaginder Singh	Versus	Applicant(s)

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AND		
Original Application No. 540/2015		
Ved Pat Singh		Applicant(s)
Versus		
Ministry of Environment and Forests & Clm.		Respondent(s)
AND		
Original Application No. 90/2016		
Chander Mohan Uppal		Applicant(s)
Versus		
State of U.P. & Ors.		Respondent(s)
AND		
Execution Application No. 40/2017 IN O.A. No. 517/2015		
Sandeep Kumar		Applicant(s)
Versus		
Ministry of Environment and Forests & Ors.		Respondent(s)
AND		
Original Application No. 671/2017 (Refer O.A.No.123/2014)		
Himmat Singh Shastriwari		Applicant(s)
Versus		
State of Jharkhand & Ors.		Respondent(s)
Date of hearing: 17.08.2020		
CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON		
HON'BLE MR. JUSTICE S. P. WADHAI, JUDICIAL MEMBER		
HON'BLE DR. NAGIN SANGHA, EXPERT MEMBER		
Applicants:	By: Suresh Kumar, Advocate in O.A.173/2018	
Advocate:	By: Anil Prasad, Senior Advocate with Mr. Agney Seal, Advocate in O.A. 300/2018	
Respondents:	By: Veera Prakash Pandey, Advocate for CPCB	
	By: Nita Bhandari Sengupta, Advocate and Mr. Mahesh Shastri, Advocate for MoEF&CC	

ORDER

1. The issue for consideration in this group of matters relates to updation of enforcement and monitoring mechanism to control and regulate illegal sand mining. The Ministry of Environment, Forest and Climate Change (MoEF&CC) issued Sustainable Sand Mining and Management Guidelines, 2016 under the provision of the Environment (Protection) Act, 1986 (EP Act, 1986) on 15.01.2016. This Tribunal constituted a High Powered Committee headed by the Secretary, MoEF&CC which gave its report in September 2016, suggesting further suggestions. Vide order dated 04.09.2018 in GA 173/2018, Mahabubam v. MoEF & Ors., the Tribunal directed revision of the guidelines in the light of the said report with further suggestions.¹

2. Further, vide order dated 13.04.2018 in O.A. No. 286/2016, Satginder Pandey Vs. MoEF, further direction was issued to strictly

¹ Para 20 of the said order is as follows:
"20. In view of above discussion, we are of the view that since the subject of mining is also required to be regulated for protection of environment and it is in the name of this environment, MoEF&CC has issued directions from time to time under Section 3 and 5 of the Environment Protection Act, 1986. The MoEF&CC needs to revise its directions keeping in mind the following:
1. Mining Regulatory System proposed in para 22 above be finalized in consultation with IEGM Department.
2. Suggestive to the High Power Committee Report.
3. Requirement of demarcation of boundaries being published in respect of different zones in public domain.
4. Need to issue SOP laying down mechanism to reduce loss in the mining and to reduce the cost of reclamation of such through from the legal or illegal sources. Such instructions must include cost of mining material as well as cost of ecological restoration and net present value of future ore system evolved. Suggestive.
5. Need to set up a dedicated institutional mechanism for effective monitoring of sand and gravel mining which may also take care of mining done without any Environmental Clearance as well as mining done in violation of Environmental Clearance conditions.
6. The Mining Department may make a provision for imposing strict about 20% of the value of mined material for restoration of the area affected by the mining and also for compensating the liabilities affected by the mining.
7. One of the conditions of every lease of mine or minerals should be that there will be independent environmental audit atleast once in a year to ensure that every entry

enforce the judgment of the Hon'ble Supreme Court in Deepak Kumar Vs. State of Jharkhand & Ors. (2012) 4 SCC 629 as it was found that the said judgment was being diluted by dispensing with the requirement of public hearing.

3. On reviewing the compliance of the above directions in above batch of matters on 05.04.2019, following issues were framed for consideration and further directions were issued with reference to the above issues:

(a) Revision of Sustainable Sand Mining Guidelines, 2016 by the MoEF&CC in the light of directions of this Tribunal vide order dated 04.09.2018 in Mahabubam (supra).
 (b) Compliance of Sustainable Sand Mining Guidelines, 2016 as may be revised by MoEF&CC as above.
 (c) Effective monitoring mechanism for preventive and remedial measures as directed in orders of this Tribunal, including compliance system and recovery of compensation.
 (d) Disclosure in individual cases listed today.
 (e) Scale of compensation.*

4. Thereafter, the matter was considered on 26.07.2019 and it was found that the MoEF&CC had not complied with the directions of this Tribunal without any justification only on the ground that the MoEF&CC was approaching the Hon'ble Supreme Court. What was required to be done was to incorporate the safeguards suggested by the High Powered Committee and to remedy non-compliance of the order of the Hon'ble Supreme Court in Deepak Kumar (supra), apart from considering certain further suggestions to strengthen the monitoring mechanism. The Tribunal also noted that CPCB was required to give report about scale of environmental compensation and States were required to give report of the steps taken to enforce the sustainable sand mining norms.

5. The matter was thereafter considered on 08.01.2020 and the

came up for hearing on 31.01.2020. The Hon'ble Supreme Court observed that the Tribunal may adjourn proceedings against officials of MoEF&CC. Keeping in mind the observations of the Hon'ble Supreme Court, the matter was deferred and has been taken up for consideration today without going into the matter for earlier non-compliance by the officers of the MoEF&CC.

6. We have considered the compliance report filed by the MoEF&CC on 28.01.2020 to the effect that all necessary suggestions have been included in "Enforcement and Monitoring Guidelines for Sand Mining, 2020". The new guidelines have been uploaded on the website of the Ministry on 27.01.2020. The guidelines have been communicated to all the States.

7. We have also perused the report of the CPCB dated 30.01.2020 prepared by the following:

1. Dr Purnamita Dasgupta, Professor, IEG, Delhi
2. Dr K.S. Kavi Kumar, Professor, MSE, Chennai
3. Dr. Yogesh Dubey, Associate Professor, IFM, Bhopal
4. Shri Sundberg, Director, MoEF&CC, Delhi
5. Shri A. Sudhakar, Additional Director, CPCB, Delhi

8. The Committee considered two approaches:

(i) **Approach 1: Direct Compensation based on the market value of extraction, adjusted for ecological damages.**
 (ii) **Approach 2: Computing a Simplified NPV for ecological damages.**

9. In the first approach, the criteria adopted is:

- Excellence Factor (EF).
- Risk Factor (RF).
- Deterrence Factor (DF).

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Permitted Quantity (in MT or m ³)	Value Available (in MT or m ³)	Excess (Shortage) (in MT or m ³)	Excess/Shortage as a percentage of Permitted Quantity	Compensative Charge (in Rs.)
Q	Q'	Q - Q'	100%	$Q' \times (1 - R) \times 20$ When $Q > Q'$, Market Value of $Q - Q'$ at $2000 \times 0.2 = 400$ or $Q - Q' \times 2000 \times 0.2 = 400(Q - Q')$ $(R = 0.2)$ $EP = 0.25 \times 1000 \times 1000$ (per unit Q)

11. Approach 2 is demonstrated by following formulae:
 "Total Damages (D) = Market Value of illegal activities. (Refer Table 1)
 Total Ecological Costs (C) = Market Value subjected for risk. (Refer D + EP (refer Table 1))"

12. Final recommendation is as follows:

"Think it is recommended that the present net present value (NPV) of the resource should be after taking the difference between the same and the benefits through the use of the value approach, maybe calculated for a period of 5 years at a discount rate of 7% for mining which is at a severe ecological damage risk zone. The approach for buying this RPT is based on expert opinion that mineral and/or petroleum of the resource damages to locally and globally within a short period of time and rarely is it possible to replace 100% resources, even if the total depletion in the near future is reduced through feasible or subsequent years. The respective authorities of the mining sector are therefore to be encouraged for in this manner. Identify the levels of all such damages, including costs of those which can be restored should be charged. Moreover, all data on site-specific assessments becomes available, this approach may be adopted in the interim. In situations where the risk contingencies changed, however, all data on site-specific assessments becomes available, this approach may be adopted in the interim. In situations where the risk contingencies is unacceptable or pending realization, the following (Revised) Rules may be considered:

Severity	Add	Subtract	Discount	Score
High Level	1	0	2	4
Medium Factor	0.25	0.25	0.75	1.0
Disputed	0%	7%	9%	0%

13. We have learnt that the Government of Karnataka has approved the method for determining compensation suggested in complete and subject to the present ecological value. Choice of discount rates has further complexity; these compensation approach method is preferable but needs to be modified as follows:

- a. The market value (MV) is based on a defined market value.
- b. Risk of Loss in Ecology Factor (RLEF) is proposed that there is just two levels of Risk Factor (Rate of Impact) - medium and high.
- c. Shortness of Ecology Cost Factor (ECF) - this factor is proposed to provide for recovery of the ecology that is lost due to the mining.
- d. Shortness of Factor - if is proposed the Shortness Factor is adopted for compensation of realisation.
- e. Therefore, the calculation result may be as follows:
 - i. RLEF - extent of illegally mined quantity of coal
 - ii. MV - Estimated market price
 - iii. Risk of loss in ecology factor (RLEF) - medium - 0.4 and high - 0.7
 - iv. Shortness cost factor (SCF) - 0.7
- f. Therefore, the calculation would therefore be: Ecological Damages (ED) = ED = MV x (Risk of Ecological Loss Factor + Shortness Cost Factor)
- g. In case the market price is not available or is artificially low, then it may be prudent to use the market price on the base value obtained of market price. In such a scenario, the Risk Factor's cost Factor's cost factors would need to be assessed accordingly.
- h. The expert rightly suggests that the compensation for ecological damage would be in addition to the loss of the illegally mined resource that is realisation, and additional provision for the ecological cost level equivalent. It is also suggested that the nature of activities and operations and corresponding law charges for the same shall be considered as they pertain to other activities in the sector involved in the sector.
- i. The application of the modified method would require a single classification of the medium and high risk zones for mining. This would be done by the state and district administration set by the state pollution control board officials in consultation with the mining, forest, industry regulation and public works department officials and

100 per cubic meter, i.e. with a market value of Rs. 100,000, then the RLEF + RCF would be 0.7 + 0.2 = 0.9 and the calculation would be as follows:

Ecological Damages (ED) = ED = MV x (Risk of Ecological Loss Factor + Shortness Cost Factor)
 $ED = 1000 \text{ m}^3 \times \text{Rs. } 100,000 \times 0.9 = 0.9$
 $= 900000 \text{ Rs.}$
 $= \text{Rs. } 9,00,000$

ii. If the coal mined is from a low risk zone, then the RLEF would be 0.4 and the RCF would be 0.3, with an additive total factor value of 0.7, and the total compensation amount would be as follows:

$ED = 1000 \text{ m}^3 \times \text{Rs. } 100,000 \times 0.7 = 0.7$
 $= 700000 \text{ Rs.}$
 $= \text{Rs. } 7,00,000$

iii. In a scenario where the coal is not mined, but there is evidence of illegal mining on the ground, then an additional factor of 1.0 should be added to the ED formula, as follows:

Ecological Damages (ED) = ED = MV x (1.0 where factor of 1.0 = Risk of Ecological Loss Factor + Shortness Cost Factor)

iv. Therefore, in the previous example, if there is evidence of illegal mining, but no estimate of 1000 cubic meters from a high risk zone (with RLEF = 0.7), and the market price of the coal is Rs. 100 per cubic meter, i.e. with a market value of Rs. 100,000, then the total additive factor would be: 1.0 + 0.25 + 0.2 = 1.45 and the calculation would be as follows:

Ecological Damages (ED) = ED = MV x (1.45 where factor of 1.45 = Risk of Ecological Loss Factor + Shortness Cost Factor)
 $ED = 1000 \text{ m}^3 \times \text{Rs. } 100,000 \times 1.45 = 1.45$
 $= 1450000 \text{ Rs.}$
 $= \text{Rs. } 14,50,000$

v. If there is evidence of illegal mining, but no estimate in a low risk zone, then the RLEF would be 0.4, the RCF would remain at 0.3, and an additional no. mining factor of 1.0 would be added with a total additive factor of 1.7, and the total compensation amount would be as follows:

$ED = 1000 \text{ m}^3 \times \text{Rs. } 100,000 \times 1.7 = 1.7$
 $= 1700000 \text{ Rs.}$
 $= \text{Rs. } 17,00,000$

14. We are of the view that the suggestion of Shri Praveen needs to be looked into by the same Committee and thereafter the work of

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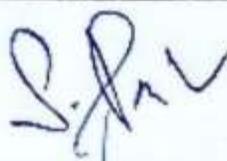
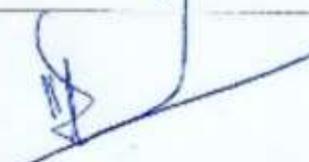
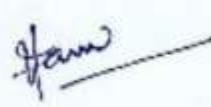
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15. We are of the view that the suggestion of Shri Praveen needs to be looked into by the same Committee and thereafter the work of

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Joint Committee members

SL No.	NAME AND DESIGNATION	SIGNATURE
1	Shri. G. Sankar, Chairman Scientist G (retd.) National Centre for Earth Science Studies/Member SEAC Res 29, Pallavi, Ulloor Lane Jagathy, Thiruvananthapuram -695014	
2	Dr. S. Prabhu, Member Scientist C, MoEF & CC, Integrated Regional Office, Bangalore	
3	Dr. A. Krishnakumar, Member Scientist D, National Centre for Earth Science Studies, Thiruvananthapuram	
4	Shri. Harees A. M., Member Environmental Engineer Kerala State Pollution Control Board District office, Thiruvananthapuram	
5	Shri. M M Vahab, Member Geologist Directorate of Mining and Geology Thiruvananthapuram	

End of report

