To,

10th April 2023

Dr. Deepesh V, Scientist C,
The Central Pollution Control Board
Regional Directorate ,
Bengaluru
(Email: deepesh.cpcb@nic.in)

Subject : Submission objecting to the recommendations in the report of the joint committee to Hon'ble NGT with regard to OA No. 304 of 2019 (M. Haridasan Vs. State of Kerala)

Reference : 1) O.A. No. 304/2019 before the Hon'ble National Green Tribunal, Principal Bench, New Delhi (M. Haridasan Vs State of Kerala & ors.)
2) Constitution of the Seven-member Joint Committee in the above case as per the judgment dated 09-12-2021 of the Hon'ble National Green Tribunal
3) Report of the Joint Committee in the above matter submitted on 02.03.2023 before the Hon'ble National Green Tribunal

Dear Sir,

Registered Metal Crusher Units Owners Association (RMCU) is an association of industrialists who have invested in mining (Quarry) and established processing plant(s) (crusher) to produce crushed aggregates for the construction industry in Kerala. RMCU was formed in 1993 and is the largest association of stake holders in this industrial sector in Kerala representing more than 100 quarry-crusher owners.

On behalf of our members and stakeholders in the mining industry in Kerala, we are addressing this letter to you, as you are the Nodal Officer in the Seven-member Joint Committee constituted as per the judgment dated 09-12-21 of the Hon'ble National Green Tribunal under references 1 and 2 above.

It is unfortunate that the Report of the Joint Committee dated on 02.03.2023 submitted to Hon'ble NGT is fraught with factual mistakes and inconsistent results, and based on such an erroneous report, the Committee has irrationally recommended a safety distance of 150m in building stone quarry operations.

On detailed perusal of the said Report submitted by the Joint Committee, we would like to place a strong protest against misrepresentation of facts , arbitrary fixation of standards and inconsistent results included in the said report.

The following are the factual mistakes, inconsistencies and errors noted in the technical report submitted by the Joint Committee before the Hon'ble NGT:

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1. ***Mistake of Facts in the Report*** :

a) On Page 10 of the Report: Under *'Table 1: The details of physical hearing, participation & submissions received'*, it is mentioned that the committee has received only 1 Study Report each from the hearings conducted at Ernakulam on 24-08-22 and Thiruvanthapuram on 25-08-22. This is incorrect. RMCU had put forward a detailed submission at both Ernakulam and Thiruvanthapuram, which contained summary of 11 blast study reports at different stakeholder quarries conducted by prestigious organisations like CSIR-CIMFR (one of the members of the seven-member joint committee) and National Institute of Technology (NIT) Karnataka, which has highlighted safe blasting within 50M. **Hence, these scientific blast study reports have not been considered at all by the Joint Committee**.

b) On perusal of the Report under the sections covering blast study specific to each of the nine selected quarries, it has come to the attention of these quarry owners that there is gross misrepresentation of facts in the report as far their blasting methodology is concerned. To take a case in point, on Page 1037 of the Report, in the section dealing with one of the quarry units, M/s Parackal Granites Kerala, under clause *'1.3 Details of quarrying/mining activities', the following is mentioned:*

'The rock breaking is done using pneumatic breakers and transported to the crusher site using trucks/ tippers of 15 Tonnes carrying capacity for various products. ***Every day, blasting is carried out in 2 prefixed timings with maximum 60 no. of holes/blast.'***
This is gross misrepresentation of facts, as we are informed by management of M/s Parackal Granites Kerala that they had informed the Committee during the blast studies at their site that their everyday normal blasting practise is only using maximum 20 numbers of holes/blast. It was only on the Committee's insistence that blasting was carried out with higher holes/blast during the blast study at their site. Now, the Committee has mispresented in the Report that the normal practise of blasting at their site is with maximum of 60 no. of holes/blast. We are informed by the management of M/s Parackal Granites Kerala that they are filing a written complaint against this gross misrepresentation of facts as regards their blasting practise in the report with relevant authorities.

The above case of M/s Parackal Granites Kerala is only cited as an example, and we are informed by almost all the nine quarry owners where such blast studies were conducted by the Committee that such gross misrepresentation of their blasting practise is mentioned in the Report which is substantially higher than number of holes/blast than their normal practise of blasting. We are also informed by the management of these quarries that they have filed written complaints against this gross misrepresentation of facts as regards their blasting practise in the report with relevant authorities.

c) **Blatant Cut and Copy misrepresentation issues in the Report**:
On page 1069 of Report, blasting study pertaining to Ms Cochin Blue Metal quarry unit is listed. However, under clause 1.1 General Information, the information provided is mistakenly that of Ms Parackal Granites, which is another unit where blast study was conducted. The same information given under Ms Parackal Granites is copied here.

Hence, the general information pertaining to Ms Cochin Blue Metal quarry unit is missing. We are informed that Ms Cochin Blue Metal has lodged a written complaint to the relevant authorities with regard to this mistake of facts in the report.

2. ***Results of the Online Survey not considered in determining the distance criteria***

On Pages 10 & 11 of the Report: The online survey regarding stone quarries in Kerala conducted by the Joint Committee was open for public response online from 09-08-2022 to 26-08-2022 and a total of 6734 responses were recorded. Based on the total responses (6734) received, 65.3 % of the participants were living near stone quarries. But 74.7% of the responses indicated that they have no grievances related to stone quarries. **Hence, this fact that majority of the public had no grievance against stone quarries has not been factored into the final recommendation of the Joint Committee in increasing the existing safety distance from 50M to 150M arbitrarily.**

3. Ground vibrations and Safety distance criteria

Page 26 of the Report: Under '*6.1: Blast trials and assessment of vibration',* it is mentioned that the experiments were designed to study the influence even under the worse case scenario: *'The number of holes and total explosive charges were increased as a result of human response study where some of the people living in the vicinity of quarries claimed that the normal practice of blasting by the mine management had a bigger size (higher intensity) than that blasting conducted on the experimental day. Therefore, the experiments were designed to study the influence even under the worst scenario.'*

As already discussed under Point 1 (b) earlier where the Committee has misrepresented the normal blasting practise and conducted blasting at higher-than-normal intensity, this itself is also a pointer that the study results will not be reflective of the normal/standard practise/ scale of blasting adopted by majority quarries in Kerala, but are exaggerated results obtained by conducting blasting at a higher-than-normal intensity as worst scenario cases.

The safe permissible vibration level (Peak Particle Velocity, PPV) as per the DGMS Ground Vibration Standards for all the experimental sites is 10 mm/s as the frequency levels recorded for most of the blasts is above 25 Hz. Please refer Page 33 of the report : '*Table 6: Permissible peak particle velocity (mm/sec) as per Directorate General of Mine Safety (DGMS) in India (Technical Circular Number 7 of 1997)*.'

Further, on Page 26, the Report goes on to state:
'Considering the peak dominant frequency of ground vibration wave, the ground vibration data recorded at different quarries (even ground vibration value of 10.42 mm/s recorded at 28 m distance from the blast) were all within the safe level as per DGMS Ground Vibration Standards. However, due to human response studies at different quarries, PPV value of 5 mm/s has been considered as the safe level.'

This is completely arbitrary and unsound. The current safe permissible vibration level/standard by DMGS (PPV of 10 mm/s for blasts above 25 Hz) is applicable throughout India. There cannot be any change to existing standard as determined by any other agencies based on human response. This is objectionable because there is no such established standards

as Human response standard. This will vary from person to person. Hence a scientifically established and approved standard should not be overlooked or superseded by a human response standard. Further, in stating that a different ground vibration limit/standard may be considered for Kerala is totally arbitrary and is discriminating against the State. At best, each quarry operation is site-specific and not State specific.

On Page 32 in the report, it states: ***'The maximum value of vibration recorded at a distance of 50 m from the blasting face was 8.21 mm/s having dominant excitation frequency of 230 Hz.'***
Further, the summary of the ground vibrations for the maximum and minimum values is on Page 33 of the report under '*Table 5: Minimum and Maximum Values of PPV and AOP recorded during experimental trials at different stone quarries of Kerala.*'. **It can be seen that all the P.P.V values are within permissible limit of 10 mm/s by DGMS Standard for distances of 50M and above.**

Hence, the current safety distance of 50M is sufficient as per the results of blast study conducted by the joint committee study if the DGMS standards are adhered to in Kerala. As mentioned before, it is also important to reiterate that all these values were within permissible levels of DGMS standards even considering the fact blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting.

4. Air Overpressure and safety distance criteria

On page 27 in the report, it states :
'AOP limit as per United States Bureau of Mines (USBM) standard is 134 dB(L) and as per CPCB standard is 140 dB with 100 impulses/day based safe distance criteria'

Refer Page 33 of the report for '*Table 5: Minimum and Maximum Values of PPV and AOP recorded during experimental trials at different stone quarries of Kerala.'*

Some key findings from the above table is on Page 34 of the Report, and states :

- *The air-overpressures (AOP) data recorded were in the range of 91.48 dB(L) to 128.6 dB(L).*

- *The dominance of AOP data recorded at a distance of 50 m was in the range of 110 to 120 dB(L) (Table 5).*

Hence, as per the Air Overpressure Standards and as per the results from the blast study conducted by the Joint Committee, blasting with the current safety distance of 50m is safe. As mentioned before, it is also important to reiterate that all these values were within permissible levels /standards considering that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting.

5. Fly Rock and safety distance criteria

On Page 27 of the Report, it states :
'Fly rocks were observed only in two cases during the experimentation. The distance of fly rocks was limited up to 25 m in both the cases.'

Hence, therefore, as per the results from the blast study conducted by the Joint Committee, blasting with the current safety distance of 50m is safe with regard to fly rock issue. As mentioned before, it is also important to reiterate that this is inspite of the fact the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting.

6. ***Noise pollution and safety distance criteria***

As per clause 7 (1) of 'The Noise Pollution (Regulation and Control) Rules, 2000', the permissible limit or standards for the Ambient Noise for the different zones (during day-time) are as follows:

Industrial area – 75 dB (A)
Commercial area – 65 dB (A)
Residential area – 55 dB (A)
Silent zone – 50 dB (A)

As per the 'The Noise Pollution (Regulation and Control) Rules, 2000', the Ambient Air Noise Standards Limits in the Category of Industrial Area / Zone is 75 dB (A) in the Day Time and 70 dB (A) in the Night Time.

As per the clause 7 (1) of the Noise Pollution (Regulation and Control) Rules 2000, complaints can be made to the authority if the noise levels exceed the ambient noise standards by 10 dB (A) or more in any area or zone.

As per the Clause 12 of the 'The Noise Pollution (Regulation and Control) Rules, 2000' the noise level at the boundary of the public place, where loudspeaker or public address system or any other noise source is being used shall not exceed 10 dB (A) above the ambient noise standards for the Industrial area, or 75 dB (A) whichever is lower.

On observations on Noise Pollution on Page 36 of the Report, it states:
'Ambient noise standards of 55 dB(A) for residential areas are applicable from the boundary of quarry/ lease area and any increase in ambient noise by 10 dB(A) shall be deemed as violation/ exceedance in noise.'

Hence, in the report, the ambient noise standards of 55 dB (A) for the Residential Areas is considered when determining whether noise levels exceeded by *10 dB(A*) as a case of violation. If the ambient noise standards of 75 dB(A) for Industrial Area had been used, there would not have been any case of violation at all even for a safety distance of 50 meters, as is seen in the Report on Page 37 : *' Figure 3: Difference in noise dB Leq (A) values at 50, 100 & 200 m station.'* All the values recorded at 50m was lower than the ambient value standard of 75 dB(A) for Industrial Zone.

It is further stated in the report on Page 36 that:
'Maximum noise recorded during operation in 50m was 74.49 dB(A) at Palakkad'

Further, from the *' Figure 3: Difference in noise dB Leq (A) values at 50, 100 & 200m station',* it is clear that the noise levels is not necessarily decreasing in linear pattern as the

distance increases. Please refer **Annexure 1,** which is the summary of the actual values of the noise levels recorded at the quarry units as per graphical representation in Figure 3. These actual values have been taken from detailed part of the report itself under study results of each quarry unit. **Noise levels recorded at four quarries out of nine quarries at 100m is more than the noise levels recorded at 50m during mining operations. This seems illogical in every sense, and hence the results seem to be inaccurate.**

Hence, determining a safety distance based on the noise level observations made by the Joint Committee seem to be fraught with errors and inconsistencies, which is explained below :

(i) The category of the area/zone where the study undertook should be considered as the Industrial Area rather than Residential as there are just few houses in the nearby zones of 50-150m.

(ii) The area/zone should be logically considered as Mixed Area/Zone as both Residential & Industrial areas are involved and the Noise level limits should be of Ambient standards of Industrial Area.

(iii) The noise levels monitored were not of mining related alone. There were contributions from public roads, public spaces, and public & private transportation system etc. the same was also mentioned in the report. Refer Page 28 of the Report, wherein it states *'Noise contributions from public roads, public spaces, and safety sirens were noticed at these locations.'* There could have been many such external noises not related to mining activity which could have been captured either in the ambient noise levels or while the mining operations noise levels were being monitored or both. There has been no definite or scientific measure undertaken to negate the impacts of these external noise influences from the study, thus the current observations need not be accurate of the impact of blasting/mining activities.

(iv) The details of Leq (A), the energy mean of the noise level over a specified period of the noise levels or the time weighted average of sound level, is not mentioned in the report. As per the statutory limits, the maximum noise levels near the construction site should be limited to 75 dB (A) Leg (5 min) in industrial areas and to 65 dB (A) Leg (5 min) in other areas. In this context, it is important to mention that blasting activity is an instantaneous activity which lasts only few seconds, which cannot be taken into account.

(v) If the recorded noise is due to drilling and mucking, it should have been almost similar for all the mines as the activity in all the mines was same, however it is observed that it is different for different mines. This indicate that the noise levels recorded were affected by other noises other than mining.

(vi) Moreover, if the noise levels are a problem there are ways and means to reduce it by placing of acoustic barriers like plantation and other means.

(vii) The safe distance cannot be decided just on the basis of Noise, when all other crucial parameters like PPV, AOP and Flyrock are within the limits. That is the reason why the DGMS vibration as the criterion has not even fixed the statutory limits for Air overpressure.

(viii) A Heavy Truck can generate the noise of 90 dB (A) than a rockdrill 87 dB (A) (at 50 feet). Whereas when there are no issues for Truck to move, it seem illogical that there should be any issues for rock-drill which produces relatively lesser noise.

(ix) Intensity/Attenuation of 'Noise' is affected by many parameters like

- Traffic Conditions
- Roadway Configuration like Grade and Vertical Alignment, Horizontal Alignment
- Altitude of site
- Wind direction
- Shielding and Ground Cover

The above are different for different mines and hence categorising all the mines into one and having a single standard is not appropriate and the conclusions / recommendations should be mine & site specific.

(x) Indian statutory body DGMS on the basis of scientific studies, accords permission under Regulation 196 (3) of the Coal Mines Regulations, 2017 for near field blasting upto 100 m distance from structures. DGMS also accords permission under Regulation 196(3) of the Coal Mines Regulations, 2017 for blasting upto 50 m distance from structures in case electronic delay initiation is used.

(xi) Rock blasting is being conducted at the closed distances of 20-50m in Metro Rail Projects by controlling all the above blast effects of Vibration, Air-overpressure and Flyrock. Similarly, it can be conducted at 50-100 m distances as per the DGMS guidelines by adopting controlled blasting measures suggested by scientific institutes.

(xii) Nowhere in world, the safe distance criteria is based on the 'Noise' as it is not a significant parameter which can cause structural damage. Moreover, the local public grievances are not related to 'Noise' levels.

For all the reasons stated above, determining a safety distance of 150M based on the noise level observations made by the Joint Committee seem to be fraught with errors and inconsistencies and not aligning with the existing standards and statues. The current safety distance of 50M is sufficient when considering the zone of mining as Industrial Area/Zone when considering noise level pollution. As mentioned before, it is also important to reiterate that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting, hence need not be reflective of the standard practices used by mine owners in Kerala which could also lead to inaccurate and exaggerated readings and results.

7. Dust pollution and safety distance criteria

In the report of the joint committee on Page 28, the following is observed:
'Effect of particulate matter/ dust is limited to a distance of 100 m from the blasting point, though dust generation can happen anywhere in the lease area. Due to the undulating topography the placement of instruments was challenging and the structures inside the quarry also act as barriers or deposition surfaces. Based on the assessment, the influence zone of

dust/ particulate matter is up to 100 m, beyond this point there were no drastic increases in the dust concentration. The micro weather conditions in quarry area also changes instantaneously and heavily influences the pollution transport phenomena.'

Further, on page 39 of the report, in *Figure 4: Difference in PM 2.5 values at 50 and 100 m stations* are given and page 40 of the report, *Figure 5: Difference in PM 10 values at 50 & 100m stations* are given.
Please refer **Annexure 2**, which is the summary of the actual values of the dust levels recorded at the quarry units as per graphical representation in above Figures 4 & 5. These actual values have been taken from detailed part of the report itself under study results of each quarry unit. **On closer perusal of the actual values related to these graphs taken from the later parts of the report, it is clear that the observational values mentioned in these graphs seem inconsistent and fraught with errors. While the dust quality values should improve with increase in safety distance, this is not happening in many of the observed values in the report in many of the locations.**

Few inconsistencies are mentioned below :

- The PM 10 values recorded at 200M is higher than recorded at 100M in 3 out of the 9 quarry units.
- The PM 10 values recorded at 200M is higher than recorded at 50M 3 out of the 9 quarry units.
- The PM 2.5 values recorded at 200M is higher than recorded at 100M in 3 out of the 9 quarry units
- The PM 2.5 values recorded at 200M is higher than recorded at 50M 5 out of the 9 quarry units.

Hence, if the dust quality is worse at 200M than 50M during the mining operation, it could be other factors than mining contributing to increased dust in outer areas like dust generated by vehicular traffic from nearby roads, other factories and establishments in the area, or maybe even micro weather conditions that could be contributing to these as well. The study has not taken into account these factors when determining the safety distance criteria based on these inconsistent readings.

Based on the above inconsistent results, the joint committee in its recommendation in its report has mentioned : '*Effect of particulate matter/ dust is limited to a distance of 100 m from the blasting point, though dust generation can happen anywhere in the lease area'.*
However, there are cases in the study report (Eg. - Quarry owned by George Kochuparambil at Vazhithala in Idukki District), wherein the effect of particulate matter/ dust is limited to permissible limit even at a distance of 50M from the blasting point in both the case of PM 2.5 and PM 10. **Hence, it is possible that with adequate dust suppression and control measures, safety distance of 50M is sufficient in the case of Dust Pollution. As mentioned before, it is also important to reiterate that the blasting studies were conducted at a much higher level of intensity of worst-case scenario blasting, hence need not be reflective of the standard practices used by mine owners in Kerala which could also lead to inaccurate and exaggerated readings and results.**

Our member stakeholders are prepared to follow any instructions suggested by Pollution Control Board to control propagation of dust particles to limit to 50M. Our member stakeholders are also willing to install air quality monitoring equipment of latest technology approved by pollution control board at their mine boundaries to ensure that dust from our mining operations are not carried away to nearby habitations.

Conclusion

Taking all the above matters into consideration, the Report of the Joint Committee should be rejected based on the factual mistakes and inconsistencies in the report. **However, if current established standards are followed and inconsistencies in the report rectified, it is evident from the observations in the Report itself that current safety distance of 50M is sufficient**. The joint committee recommendation seem to be based on outdated general precautionary principle rather than proposing mitigation measures using technological advancement for operating stone quarries. The joint committee seem to have proposed a crude recommendation of 150 m as safety distance for stone quarries to defend the initial erroneous report submitted by CPCB to NGT of 200M distance criteria without any scientific study conducted anywhere in India. In might also be worthwhile to point out that in a state like Kerala, where land ceiling laws allows a company or individual to hold a maximum of 15 acres of land, if this irrational 150M safety is implemented, no mining will be possible by any individual or a single company. Hence, this would be in violation of the PRINCIPLE OF SUSTAINABLE DEVELOPMENT & CONSERVATION OF MINERALS and vitiates Sec 18 of MMDR Act and the PRINCIPLE OF SUSTAINABLE DEVELOPMENT enshrined in Sec.20 of The NGT Act.

Yours sincerely,

RMCU President

Copy to :

1. The Hon'ble National Green Tribunal, New Delhi (Email: judicial-ngt@gov.in)
2. The Chairman, Central Pollution Control Board, New Delhi (Email: ccb.cpcb@nic.in)
3. Regional Director, Central Pollution Control Board, Reginal Directorate, Bengaluru (Email: jcb.cpcb@nic.in)
4. The Chairman, Kerala State Pollution Control Board (Email: chn.kspcb@gov.in)
5. The Hon'ble Minister for Industries, Kerala (Email: min.ind@kerala.gov.in)
6. The Chief Secretary, Government of Kerala (Email: chiefsecy@kerala.gov.in)

Annexure-1

NOISE POLLUTION SURVEY SUMMARY

Name of the quarry	Location of the quarry	Highest Noise Levels During Mine Operation indB(A) Distance			Permissible limit
		50 m	100 m	200 m	As per clause 7 (1) of Noise Pollution Rules 2000 (During Day-time) :
Adukadu Granites Pvt. Ltd., Payyanamon P.O, Konni, Pathanamthitta Dist., Kerala - 689692	Pathanamthitta	70.74	70.82	64.24	
Quarry owned by Muhammed Roshen, Kottukkal Village, Kottarakkara Taluk, Kollam Dist.	Kollam	69.14	75.05	57.32	Industrial area – 75 Commercial area – 65
Poabs Granites Pvt. Ltd. Kuthirakalam P.O, Vellanadu, Trivandrum,Kerala - 695543	Trivandrum	63.77	65.35	62.19	Residential area – 55 Silent zone – 50
Quarry owned by P.K. Prasad @ Varapetty	Ernakulam	72.53	72.50	64.03	
Quarry owned by George Kochuparambil @ Vazhithala, Idukki	Idukki	65.09	61.66	58.20	Any increase in Ambient noise by 10dB (A) shall be deemed as violation.
KKJ Group International India Pvt. Ltd @ Puvakkulam	Kottayam	73.03	73.64	63.05	
Penta Granites & Kizhakkenchery grama panchayat	Palakkad	74.49	71.25	63.16	
Quarry owned by Sudheesh A T & Vengappally grama Panchayat	Wayanad	61.55	58.63	56.57	
Quarry owned by P M Abdul Rahman & Kodombellor Panchayat	Kasargod	71.09	69.29	57.93	

Note: The above values are the actual values depicted in Fig 3 on Page 37 of the Report. These values have been extracted from later parts of the report.

- Clause 7 (1) of The Noise Pollution (Regulation and Control) Rules, 2000, the permissible limit for Ambient Noise is 75dB (A) for Industrial area (During Day-Time) and the above table shows all the noise levels recorded (at 50m, 100m, 200m) are within the Industrial limit.
- Noise level measured should decrease as distance increases, but as per the above table at some of the sites, it has increased with the distance from 50M to 100M.

Annexure-2

DUST POLLUTION SURVEY SUMMARY

Name of the quarry	Location of thequarry	Particulate matter 10 (PM 10)			Particulate matter 2.5 (PM 2.5)			Permissible limit
		50 (Mtrs)	100 (Mtrs)	200 (Mtrs)	50 (Mtrs)	100 (Mtrs)	200 (Mtrs)	National Ambient Air quality standards Rule 3(3B) NAAQS:- 1. Particulate matter 2.5 (PM 2.5) = 60 µg/M^3 (24 hrs Average) 2. Particulate matter 10 (PM 10) = 100 µg/M^3 (24 hrs Average)
Adukadu Granites Pvt. Ltd., PayyanamonP.O, Konni,Pathanamthitta Dist., Kerala -689692	Pathanamthitta	55.09	45.72	61.86	62.10	68.25	64.45	
Quarry owned by Muhammed Roshen, Kottukkal Village,Kottarakkara Taluk, Kollam Dist.	Kollam	139.28	89.50	71.34	69.46	56.15	87.39	
Poabs Granites Pvt. Ltd. KuthirakalamP.O, Vellanadu,Trivandrum, Kerala -695543	Trivandrum	108.94	73.27	62.47	58.12	65.99	64.48	
Quarry owned by P.K. Prasad & Varapetty	Ernakulam	55.09	45.72	61.86	62.10	68.25	61.50	
Quarry owned by George Kochuparambil & VAzhithala	Idukki	74.17	76.97	51.34	41.20	20.03	64.48	
KKJ Group International India Pvt. Ltd & Puvakkulam	Kottayam	313.35	126.52	106.98	71.90	38.00	65.37	
Penta Granites & Kizhakkenchery grama panchayat	Palakkad	55.09	45.72	61.86	62.10	68.25	64.45	
Quarry owned by Sudheesh A T & Vengappally grama Panchayat	Wayanad	79.21	67.95	55.13	68.62	52.22	50.52	
Quarry owned by P M Abdul Rahman & Kodombellor Panchayat	Kasargod	144.47	104.82	82.26	64.28	68.67	58.83	

Note: The above values are the actual values depicted in Fig 4 on Page 39 & Fig 5 on Page 40 of the Report. These values have been extracted from later parts of the report.

- While the dust quality values should improve (lower values should be observed) with increase in safety distance, this is not happening in many of the observed values as per the above table in many of the locations. Values observed at 200M is higher than 100M & even 50M in many cases