

BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI

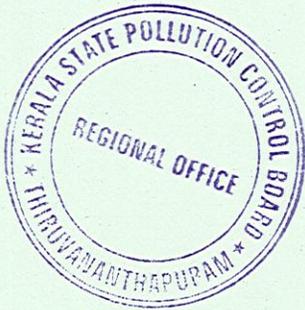
Original Application no. 76/2019

State of Kerala & Others : Respondent(s)

Report filed by the Chief Environmental Engineer,  
Kerala State Pollution Control Board, Regional Office, Thiruvananthapuram on  
behalf of the Kerala State Pollution Control Board,  
in Original Application No. 76/2019

Adv. Jogy Scaria,

ADDITIONAL STANDING COUNSEL



  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL  
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Dated this the 19<sup>th</sup> day of March 2021.

**Jogy Scaria**, Advocate  
Additional Standing Counsel



  
**SINDHU RADHAKRISHNAN**  
Chief Environmental Engineer

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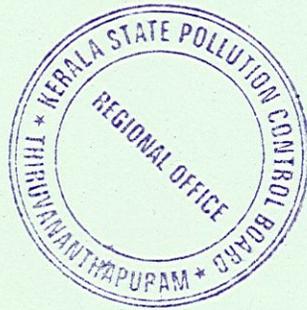
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Dated this the 19<sup>th</sup> day of March 2021.

Jogy Scaria, Advocate  
Additional Standing Counsel



  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

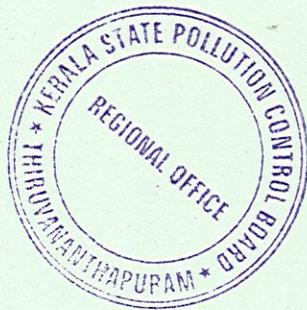
**BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL  
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**Original Application no. 76/2019**

**State of Kerala & Others : Respondent(s)**

**VERIFICATION**

I, Sindhu Radhakrishnan, Chief Environmental Engineer, Kerala State Pollution Control Board, Regional Office, Thiruvananthapuram, do hereby verify on this the 19<sup>th</sup> day of March 2021, that all what is stated above are true and correct to the best of my knowledge information and belief.



  
**Sindhu Radhakrishnan  
Chief Environmental Engineer  
KSPCB**

**SINDHU RADHAKRISHNAN  
Chief Environmental Engineer**

**BEFORE THE HONOURABLE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI**

**Original Application no. 76/2019**

**State of Kerala & Others : Respondent(s)**

**Report filed by Chief Environmental Engineer, Kerala State Pollution Control Board,  
Regional Office, Thiruvananthapuram on behalf of The Kerala State  
Pollution Control Board, in Original Application No. 76/2019.**

1. This report is being submitted in continuation of the report submitted on 08-02-2021 wherein it has been reported that the State Board has issued show cause notice to the industries M/s. IREL and M/s. KMML, prior to levying the cost of environmental damage assessed. M/s IREL has submitted reply to the Show Cause notice issued by the Board on 23-02-2021. In the reply IREL has reported that the company is conducting mining as per the sustainable volume determined by the NCESS based on studies conducted in 1999-2001 and 2010-2011. IREL denies that they have carried out mining in excess of the sustainable mining volume during the years 2001-2019 considered for environmental damage assessment. M/s IREL has also requested time up to 22-03-2021 to have a meeting with their legal adviser. In reply to the Show Cause Notice M/s. KMML has requested 1 month time to submit the reply. A true copy of these letters are produced herewith as **Annexure 1, 2 and 3.**
2. The major contentions of IREL are as follows:
  - a. Mining leases have been granted to IREL to collect /mine the atomic minerals by the Govt. of Kerala in 1970. IREL is an organization functioning under the Department of Atomic Energy to mine the Atomic Minerals which is a permissible activity even as per the CRZ notification and the AMCR-2016. The Atomic Minerals mined by IREL are used for strategic purposes in the nation's nuclear energy



  
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programme. There can be no damage that can be assessed in carrying such exclusive and strategic activities. Hence the damages for the cost of lost opportunities on account of recreational and cultural purposes as assessed by the joint committee are denied.

- b. IREL has taken over the lease hold area exclusively for the extraction of minerals. Hence the removal of coconut plantation within the area before extraction is inevitable. After the completion of mining and refilling, IREL once again carried out re-plantation activity in the refilled area to preserve the Environment. Hence damages assessed towards damage caused to the land that has been previously utilized for coconut cultivation has been denied.
- c. In the year 1999 IREL engaged National Centre for Environmental Studies (NCESS) for Heavy Mineral (HM) budgeting studies for Neendakara - Kayamkulam stretch. In 2002 NCESS submitted the report after a 2 year long study, covering all seasons to assess the near shore sediment transport, HM replenishment and maximum possible accretion that can be harnessed sustainably. This study recommended a sustainable volume of  $60 \text{ m}^3$ / meter of beach stretch/year. The study also came up with the bulk density of  $2.088 \text{ tons/ m}^3$ .
- d. The quantity of beach washing collected by IREL is strictly as per the scientific study carried out by NCESS which recommends the collection of beach washing to the extent of net accretion. Repeated studies show that the entire coast of Kerala is prone to erosion and accretion. Hence the coastline is subject to dynamic changes and is not static due to the action of the ferocious Arabian Sea on the entire length (650 km) of Kerala coast. Many studies also show that other coastal areas in Kerala are also facing severe sea erosion even though there is no mining activity e.g. Eravipuram, south of Kollam beach, Shanghumukham beach in Thiruvananthapuram, Chellanam beach in Ernakulam etc. The shoreline change due to erosion/accretion in the Kerala coast was mapped by Ministry of Environment & Forest, New Delhi and the Institute of Ocean Management, Anna University,



  
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Chennai and the same shows that many locations along the coastal stretch have been identified as “Artificial Coast (eroding coast)” and in all such areas, the Government of Kerala have constructed seawall to prevent the erosion.

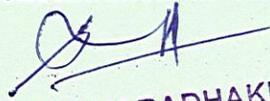
- e. Thus the natural process of erosion and accretion of the coast cannot be attributed to the beach mineral collection activities by IREL. The land in question is covered under the mining lease granted to IREL by the state of Kerala. The surface right of the land was taken over by IREL after paying compensation to the land owners. IREL has taken remedial action to reduce the effect of erosion by constructing groynes as recommended by IIT Madras. IREL has completed the construction of groynes at a cost of Rs. 7.02 crores and positive improvements are seen, which has also been taken note of in the NCESS report of April 2019. Hence, damages to the extent of Rs.6.66 crores towards the cost of lost land as assessed by the Joint Committee is wholly unjustified and is denied.
- f. The tailing sand after recovering heavy minerals is neither hazardous nor leachable and cannot cost land deterioration / destruction. It is used for simultaneous refilling of the back beaches as recommended by NCESS. This is also one of the requirements of the approved mined plan. Hence no other action is required to remove the mine tails.
- g. It is also reported since that the open beach stretch for beach washing was 1500 m length (Including Kovilthottam (500m), and Vellanathuruthu (1000m)), the sustainable mining volume @ 60m<sup>3</sup>/m/year, was 90000 m<sup>3</sup>/ year. The sustainable sand budgeting thus arrived shall amount to 187920 T/ year with the calculated bulk density of 2.088 T/ m<sup>3</sup> of sand. Based on this IREL emphasised that the calculation of Joint Committee arriving the tonnage of mined sand from the mined volumes is wrong as the bulk density considered is 1.799 instead of the 2.088 T/ m<sup>3</sup> as per the above study.



  
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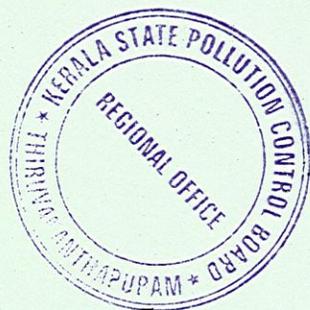
- h. During the meeting with expert agencies held on 28/12/2020 by KSPCB, the Atomic Minerals Directorate (AMD) stressed that any assessment of excessive mining and damage to the environment requires a long term study and short term studies are inadequate. This was also seconded by M/s. NIIST-CSIR, Trivandrum who confirmed the need for a long term study. NCESS has admitted that the study was done for a period of one month only and that a long term study will give more accurate report. This has also been confirmed by NIIST in writing to KSPCB vide email dated 14/01/2021. Despite the same, a show cause notice has been issued calling upon IREL to explain why a direction should not be issued to deposit the compensation for causing damages to the environment.
3. The Joint Committee constituted by Honourable NGT, Dr Deepesh V, Scientist 'C', Regional Directorate, Central Pollution Control Board, Bengaluru, and Smt. Sindhu Radhakrishnan, Chief Environmental Engineer, KSPCB, conducted a meeting on 4-3-2021 in which the Domain Expert Dr. L. Sheela Nair, Scientist F, Head of Marine Geo Science Group, NCESS and General Manager, Sri R.V. Viswanath and 2 other officials of M/s IREL and Sri. Karthikeyan, Head of MS Division of KMML were present. The committee considered the various arguments of IREL and KMML as noted below.
- a. Since, near shore sediment flux and transport phenomena are highly dynamic processes, the HM replenishment rate and sediment fluxes varies on a plethora of natural and anthropogenic factors. The NCESS study was for two years (Actual study period) to arrive at the sustainable sediment volume and the bulk density, and the report was submitted on 2002. Based on this, IREL is insisting on taking the sustainable sand budgeting for the whole period rather than the 90000 m<sup>3</sup>/ year. It is also insisted to consider the bulk density of 2.088 T/m<sup>3</sup> for calculating the tonnage of beach sand mined. Another contention raised was to carry out calculation for a block period and not for each year. It was also highlighted that, during the period of 2000 to 2004 before the Tsunami the heavy mineral concentration in the beach



  
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sand was 75 - 80 %. After the Tsunami, the percentage has reduced considerably. The density of the sand depends on the mineral concentration. When converting sustainable volume to tonnage the heavier density of sand during the period 2000 to 2010 to be used. IREL also disputed the mining quantity mentioned in the NCESS report of 2019. IREL has submitted both copies of the study reports on 02-02- 2021 as proof of argument.

- b. The NCESS Scientist verified the previous reports and agreed to this argument and hence it was agreed that the Joint Committee would rework the calculation based on the bulk density calculated in the above NCESS study provided actual data of mined quantity are provided by each industry. The committee members expressed their view that the sand budgeting studies put forth annual sediment volumes which can be harnessed in a few months of the year cannot be taken as accumulating privilege over a period of years and hence cannot be considered for block periods.
- c. It was also noted that the complete document of approved mine plan was never shared with the committee to get an insight in to the studies/ proposals which arrived at the mining volumes permissible.
- d. The representatives of IREL further expressed that, once the Govt. provided mining lease for the mining of strategic rare earth minerals, there is no question on 'had the land has been used for other purpose' and the environmental damages arrived based on the lost opportunities on account of agriculture, etc. are baseless.
- e. Committee member explained that the idea of calculating environmental damages based on lost opportunities due to some activities resulting in environmental degradation, depriving other resources, environmental free goods, cultural and aesthetic values are standard approaches adopted to assess environmental damages.
- f. Sri. Karthikeyan, HOD, KMML raised the opinion that the companies alone are not responsible for the erosion as there are other eroded beaches in Kerala where no mining activity is being carried



  
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out. During the meeting KMML submitted copy of the NCESS study report conducted in 2014.

- g. Dr. Sheela Nair, Head of Marine Geo Science Group, NCESS commented that it is true that not only mining activity is the reason for beach erosion. Other manmade structures constructed into the sea such as groynes, break-water, harbours etc also results in erosion. Now, there is at least one such structure in every 5 km length of sea. The longer the construction into the sea the more the erosion will be. The sea wall constructed will protect only the back land and not the sea shore area. She also suggested that the KMML and IREL shall highlight the positive impacts with respect to the reduction in background radiation levels in the area as atomic minerals are being separated from the sand deposits.
- h. Company authorities also represented that they are the entrusted companies by the Government who operates as per approved mined plan and hence the activity cannot be considered as one which cause environmental damage. The Chavara coast is the potential mining area for heavy minerals in Kerala on which many industries are depending for the heavy mineral raw material such as Ilminite or their product Titanium. IREL is the supplier of the mineral to many industries. By imposing such heavy penalty on the industry will spell doom to the IREL and other industries depending on IREL for mineral feed stock. It was made it clear that in the event of such heavy financial penalty, IREL has no other choice but to close down its operations and this will have serious implications on the atomic mineral prospect of India. A true copy of the minutes of the Joint Committee meeting dated 04-03-2021 is produced herewith as **Annexure 4.**

4. Based on the request submitted by IREL, the Board Chairman has convened a meeting with the company on 10-03-2021. During this meeting also IREL disputed the mining quantity mentioned in the NCESS report and that excess mining has been done by them. During this meeting it was decided that since the monitoring of quantity of mining



  
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comes under the purview of AMD and Department of Mining and Geology, these departments may be requested to provide clarification on the matter. A true copy of the minutes of the meeting dated 10-03-2021 is produced herewith as **Annexure 5**.

5. Another meeting was conducted on 15-03-2021 with the departments concerned such as Industries Department of Government of Kerala, Atomic Mineral Division of AERB, Department of Mining and Geology, NCESS, the joint committee members and representatives from both the industries. The Chairman requested the departments present to give their specific inputs in the matter especially with regard to violations of the conditions of the clearances issued from the respective departments. The Chairman informed that the Hon'ble court has specifically directed Pollution Control Board to take the assistance of any department, including the mining department and expert body such as the Central Pollution Control Board, the NEERI etc. and hence these departments are to furnish their own detailed assessment. The officials of Department of Mining & Geology informed that they are yet to perform a long duration study on the effects of mining and will need 2 months time to give a detailed report after proper assessment. They said that they would assess the environmental damage occurred in the case of beach mining by KMML and IREL on the Chavara coast and report the details of violation occurred. NCESS officials also requested for more time and required more detailed inputs from the industries for furnishing a detailed and accurate report on the effects of the mining. The Director of Industries Department also said that they will look into the details of various clearances and help in coordinating with the various departments for taking further steps to decide on Environmental Compensation. Thus it has been decided that all concerned departments shall submit the reports comprising of violations to the respective clearances issued and arrive at the Environmental compensation within 2 months upon which the Joint committee shall more precisely rework on the Environmental damage and action taken report will be submitted to the Honourable court. The State Environmental Impact Assessment Authority (SEIAA) was also addressed in this regard. As the involvement of other departments in



  
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properly assessing the details, is required, it was decided to plead for 3 months time to the Honourable court, especially so since this is an issue of environmental concern, owing to sand extraction and not owing to pollution. A True copy of the minutes of the meeting is produced herewith as **Annexure 6**.

6. Reply to the show cause notice submitted by M/s. KMML on 18/03/2021 is being evaluated.
7. Hence it is humbly requested to allow 3 months time to rework the environmental damage caused by the industries M/s KMML and M/s IREL, and to impose the compensation assessed and submit the action taken report.

All that stated above are true to the best of my knowledge and belief.

Dated this the 19<sup>th</sup> day of March 2021.



**Sindhu Radhakrishnan**  
**Chief Environmental Engineer**  
**KSPCB**

Solemnly affirmed and signed by the deponent who is known to me on this the 19<sup>th</sup> day of March 2021.



**SINDHU RADHAKRISHNAN**  
Chief Environmental Engineer



563 (RO)  
25/2/21  
आईआरईएल (इंडिया) लिमिटेड  
**IREL (India) Limited**  
(Formerly Indian Rare Earths Limited)  
(भारत सरकार का उपक्रम)  
(A Govt. of India Undertaking)

ANNEXURE 1



CIN : U15100MH1950GOI008187 Website : www.irel.co.in

ISO 9001:2015, ISO 14001: 2015 & OHSAS 18001 / 2007 Company

630  
25/02/2021

My/CESS RO  
24/2/21

CH/MNG/PCB/2021  
23.02.2021

To  
The Chairman,  
Kerala State Pollution Control Board,  
Pattom PO,  
Thiruvananthapuram.

Sir,

Sub: Response to show cause notice on environmental compensation  
Ref: Show Cause Notice No. KSPCB No PCB/HO/KLM/ICO/15/08 dated 08.02.2021

1. We have been issued a notice cited above to show cause as to why KSPCB should not issue a direction to deposit environmental compensation for the alleged excessive mining done by IREL, as calculated by the Joint Committee constituted by the Hon'ble National Green Tribunal (hereinafter referred to as "NGT") within fifteen days of receipt of the notice.

2. It is seen that the notice dated 8<sup>th</sup> February 2021 proceeds on the presumption that IREL has done mining in excess of sustainable volume during the years 2001-2019.

3. The notice also refers to the report of the Joint Committee constituted by the Hon'ble NGT which places reliance on the NCESS report (April 2019) to conclude that there has been excessive mining by IREL.

4. In this regard, we would like to draw your attention to the following facts:

a. In the year 1999, IREL engaged M/s. NCESS to conduct scientific studies of the coastal stretches of Chavara between Neendakara and Kayamkulam to ascertain the Heavy Mineral (HM) budgeting and its management. NCESS then carried out an extensive study and submitted the report in the year 2002. Based on the extensive field visits and measurements (including beach, offshore and inland) and modelling, the processes involved for replenishment of HM and sediment fluxes in the coastal regions of Chavara were worked out. NCESS proposed the step ladder concept based on an all season study for a period of almost two years to describe the near-shore sediment transport processes along the coast. A numerical model to work out the net replenishment of volume of mineral sand was developed considering the net accretion and erosion processes.

b. This study by NCESS recommended a sustainable volume of net accretion of 60m<sup>3</sup>/m/year. The bulk density was calculated to be 2.088 t/m<sup>3</sup>.

आईआरईएल (इंडिया) लिमिटेड, चवरा, कोल्लम, केरल राज्य, भारत - 691583  
IREL (India) Limited, Chavara, Kollam, Kerala State, India - 691583  
फोन / Tel. : 0476 - 2680701 - 5 फैक्स / Fax : 0476 - 2680141

पंजीकृत कार्यालय: प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी, मुंबई - 400 028.

Regd. Office: Plot No.1207, Veer Savarkar Marg, Near Siddhivinayak Temple, Prabhadevi, Mumbai - 400 028.



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c. To combat the issue of sea erosion, a natural phenomenon in the west coast, the Government of Kerala constructed sea wall along the coast in 1960s and about 1500m of the coastline (including Kovilthottam, Ponmana and Vellanathuruthu) was left open to enable beach wash collection by IREL. The corresponding tonnage calculated as Heavy Mineral Sand budgeting is 90000 m<sup>3</sup>/year for 1500 m stretch of beach ( 1,87,920 t/year).

d. Accordingly, IREL has been carrying on its operation of beach washing collection, strictly adhering to the recommended quantities by NCESS.

e. In the year 2010-11, IREL once again engaged M/s. NCESS to take up a study on "Depletion of Heavy Mineral Content" in beach washing as IREL observed that there was a considerable decrease in Heavy Mineral content after the tsunami in the year 2004. NCESS then submitted a report to IREL in the year 2012. As per this report, the accretion volume of sand was 32.4m<sup>3</sup>/m/year and the corresponding bulk density was 1.799t/m<sup>3</sup>. Accordingly, the sand budgeting calculated for 1500m was fixed at 48,600 m<sup>3</sup>/year (87,431t/year). After receiving this report, IREL's beach washing collection has been as per the revised quantities recommended by NCESS.

The recommended and permissible quantities of beach wash collection for Block II and Block IV viz. a viz. the actual quantities are given in the table below:

Period	Permissible quantity as per NCESS report		Actual quantity collected by IREL	
	Volume in m <sup>3</sup>	Quantity in tons	Quantity from Block II and IV (tons)	Excess quantity collected (ton)
2001-2010	8,10,000 (60 m <sup>3</sup> X 1500 m X 9 years)	16,91,280 (8,10,000 m <sup>3</sup> X 2.088 t/m <sup>3</sup> )	16,43,978	Nil
2010 - 2019	5,20,200 (60 m <sup>3</sup> X 1500 m X 2 years + 32.4 m <sup>3</sup> X 1500 m X 7 years)	9,87,860 (1,80,000 m <sup>3</sup> X 2.088 t/m <sup>3</sup> + 3,40,200 m <sup>3</sup> X 1.799)	9,57,723	Nil

**Note:** The above quantities are recalculated to 2001-10 and 2010-19, matching to the periodicity taken by NCESS while submitting their report to Government of Kerala in April 2019.

From the above table, it is clear that there has been no excessive mining by IREL during the period 2001-10 and 2010-2019. Hence, IREL is not liable to pay any compensation for damage to the environment.

Strangely, NCESS has, contrary to its earlier recommendations given in their reports to IREL, in their report dated April 2019 to the Government of Kerala has arrived at a wrong



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conclusion that IREL has done excess mining without considering proper bulk densities and also without a proper study covering all seasons. A careful examination of the said report also reveals that there are infirmities in the calculation adopted by NCESS. The following comparison of the three reports of NCESS, 2 at IREL's request and 1 at the request of Government of Kerala and the Joint Committee's report would clearly show the shortcomings mentioned above:

Particulars	NCESS report to IREL		NCESS report in Apr 2019		Joint Committee Assessment report	
	2001-2010	2010-2019	2001-2010	2010-2019	2001-2010	2010-2019
Recommended mining volume in m <sup>3</sup> /m/year	60 m <sup>3</sup> /m/yr	60 m <sup>3</sup> /m/yr (2010-2012) 32.4 m <sup>3</sup> /m/yr (2012-2019)	60 m <sup>3</sup> /m/yr	32.4 m <sup>3</sup> /m/yr		
Bulk density kg/m <sup>3</sup>	2.088 kg/m <sup>3</sup>	2.088 kg/m <sup>3</sup> (2010-2012) 1.799 kg/m <sup>3</sup> (2012-2019)	1.799**	1.799 kg/m <sup>3</sup>		
Considering a length of 1500 m, recommended mining quantity in m <sup>3</sup> per year	90,000 per year	90,000/year (2010-2012) 48,600/ year (2012-2019)	75,000 per year*	48,600 per year		
Recommended qty in m <sup>3</sup> for 9 years	8,10,000	5,20,200#	6,75,000	4,37,400		
Actual quantity in m <sup>3</sup>	7,87,344	4,98,971***	9,13,326##	6,53,219###	9,13,326	6,53,219
Excess quantity in m <sup>3</sup>	Nil	Nil	2,38,326	2,15,819	2,38,326	2,15,819

\* Even though the recommended permissible quantity for IREL as per the NCESS report 2002 is 90,000 m<sup>3</sup> per year, it is wrongly considered as 75000 m<sup>3</sup> per year, which has resulted in alleged excess mining by IREL in the JC report.

\*\* Even though the Bulk density of mineral sand in NCESS report 2002 is 2.088 kg/ m<sup>3</sup>, it is wrongly considered as 1.799 t/m<sup>3</sup>, which has also resulted in alleged excess mining by IREL in the JC report

# The recommended quantity for the period 2010-2019 has to be arrived, based on 2002 NCESS report up to 2012, since the second report was received in November 2011 and is in effect from 2012 onwards.

## For deriving the actual quantity mined in m<sup>3</sup>, NCESS have wrongly considered the bulk density as 1.799 t/m<sup>3</sup> instead of 2.088 t/m<sup>3</sup> as per 2002 NCESS report



*(Handwritten signature)*

**SINDHU RADHAKRISHNAN**  
Chief Environmental Engineer

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\*\*\* For deriving the actual and right quantity mined in m<sup>3</sup>, the bulk density is considered as 2.088 t/m<sup>3</sup> for the period 2010-12 and 1.799 t/m<sup>3</sup> for the remaining period

### The quantity considered for the period is arbitrary and higher than the actual quantity mined by IREL

Unfortunately, the Joint Committee has referred to the NCESS report dated April 2019 to calculate the alleged excessive mining and conclude that IREL should be made liable to pay environmental compensation on the principle of "polluter pays".

Further, the damage has been calculated on the following grounds:

**(1) Damage caused by land reserve destruction (Tailings):**

The report states that tailings is the solid waste generated from beach mining / washings. The black sand rich in Ilmenite and other heavy minerals are processed on or off-site to separate heavy mineral rich fractions and tailings consisting of silica sand are deposited in surrounding areas in mounds or trenches in the industry premises.

It is also stated that NCESS recommends tailings should be deposited back on the shore to prevent further erosion of beach and to reclaim the lost beach.

The report further states that excessive extraction of beach sand using heavy earth moving equipment and non-deposit of tailings on the beach front has caused loss of beach area and has assessed the damage caused to the environment because of the deterioration of the land surface with mine tailing and associated activities by IREL during the period 2001-2019 at Rs. 30.995 Crores.

**Response by IREL**

The collection of beach washing does not involve any drilling or blasting. The minerals are in liberated form. The process doesn't require any chemicals. In case of beach wash collection from the beaches and beach sand mining in the inland area which involves wet operations, the same are carried out using spiral separators for pre-concentration, where tailings (silica sand) and concentrate (atomic minerals) are collected separately. There is no solid waste generation and instead there is physical separation only. The tailing sand is neither hazardous nor leachable and cannot cause land deterioration and destruction. On the other hand, the tailing sand is used for simultaneous refilling of the back beaches as recommended by NCESS. This is also one of the requirements of the approved mining plan and mining lease which requires the lessee to do the reclamation of mined area and progressive closure of mine as per the plan.

Though the spiral separation plant at Vellanathuruthu area commenced its operation from the year 2016 only, the calculation has been done from the year 2001 onwards. The assessed tails sand quantity of 1565436.99 tonnes is wrong. The tailing sand from spiral separation units/mineral separation plants is used for refilling the mined-out land/back beach as recommended by NCESS and as per the mining plan. Hence no other action is required to remove the mine tails using HEMMs as observed by the Joint Committee.

The assessment of damages at Rs. 30.995 crore towards land reserve destruction (tailings) is incorrect and wholly unjustified.



  
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## 2. Cost of land affected by unsustainable beach mining:

"The extent of beach area lost/affected by unsustainable beach mining by IREL is taken from Google earth satellite historic data with respect to the 2000 shoreline determined by NCESS in their April 2019 report. The extent of beach mining was determined by the geomorphologic changes observed in the Google earth historic satellite imagery over a period from 2003 to 2019. Accordingly, area of 29047.8 and 105924.66 m<sup>2</sup> were affected due to beach mining activities of IREL near Kovilthottam (NK Block II) and Vellanathuruthu (NK Block IV) respectively."

The damages for the cost of lost land as assessed by the Joint Committee has been fixed at Rs. 6.66 Crores.

### Response by IREL:

As explained above, the quantity of beach washings collected by IREL is strictly as per the scientific study carried out by NCESS, which recommends the collection of beach washing to the extent of net accretion. Repeated studies show that the entire coast of Kerala is prone to erosion and accretion. Hence the coastline is subject to dynamic changes and is not static due to the action of the ferocious Arabian sea on the entire length (650km) of Kerala coast. Many studies also show that other coastal areas in Kerala are also facing severe sea erosion even though there is no mining activity e.g Eravipuram, south of Kollam beach, Shanghumukham beach in Thiruvananthapuram, Chellanam beach in Ernakulam etc. It is pertinent to mention here that the shoreline change due to erosion/accretion in the Kerala coast was mapped by Ministry of Environment & Forest, New Delhi and The Institute of Ocean Management, Anna University, Chennai and the same shows that many locations along the coastal stretch have been identified as "Artificial Coast (eroding coast)" and in all such areas, the Government of Kerala has constructed a seawall to prevent the erosion. The maps showing status of shoreline change due to erosion/accretion - Kerala coast by Institute of Ocean Management, Anna University, Chennai and MoEF is attached as Annexure 1.

The tabulation below gives some of the areas described as artificial (eroding) coast in Thiruvananthapuram, Alappuzha, Ernakulam and Thrissur districts where no beach mineral collection is being done (the table refers to the various sheets of the map showing the shoreline changes)

Sheet No	Index no.	Location of Artificial coast (eroding coast)	District	Approx. Length in kms
1	2,3,4	South East of Neyyar river	Thiruvananthapuram	1.5
2	2,3,4	North west of Kovalam upto North west of Punnathura	-do-	3.5
3	4,5	South of Punthura to Sankumugam	-do-	7
7	10,11	Stretch of Thiruvambadi upto North of Punnaimodu, South and North of Kappil(near Paravur), series of Groyene field located at Vettur	-do-	7
13	17,18	Entire stretch of coastal line	Alappuzha	8



SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

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		extending North of Mouth of Kayamkulam Kayal upto North of Nallanikkalthura		
14	18,19	Entire coastal stretch from kallikattupura to North of Thrikkunapuzha	-do-	7.5
21	25,26	Majority of coastal extension Kannathusseri to Mannathukodamkadappuram	-do-	9
22	26,27	99% of coastal line extending from Pallithodu upto Northwest of Mayilarkadu(including Chellanam)	-do-	9
23	27	99% of coastal line extending from South of Kandalkadavu in the south upto Northwest of Manserri in North	-do-	9
24	28,29	Dominates both south and northern part of coastal stretch-South and North of Cochin port	Ernakulam	6
25	29,30	A small patch south of Puduvaipu and dominates the central and northern part of coastal stretch extending from Vallappo upto west of Nayarambalam	-do-	5.5
28	32,33	99% of this coast is dominated by ripraps-extending from southwest of Eriyad upto west of Emmad	Thrissur	16

Apart from the locations tabled above, some other coastal stretches are also mapped as Artificial Coast (eroding coast) in other coastal districts of Kerala.

Thus the natural process of erosion and accretion of the coast cannot be attributed to the beach mineral collection activities by IREL.

This aspect of natural process of erosion and accretion of the coast has been completely lost sight of and mining activities by IREL cannot be held responsible for loss of land on account of sea erosion.

The land in question is covered under the mining lease granted to IREL by the State of Kerala. The surface right of the land was taken over by IREL after paying compensation to the land owners. IREL has taken remedial action to reduce the effect of erosion by constructing groynes as recommended by IIT Madras. IREL has completed the construction of groynes at a cost of Rs.7.02 crores and positive improvements are seen, which has also been taken note of in the NCESS Report of April 2019.

Hence, damages to the extent of Rs.6.66 crores towards the cost of lost land as assessed by the Joint Committee is wholly unjustified and is denied.



*SINDHU RADHAKRISHNAN*  
Chief Environmental Engineer

**3. Damage caused to the land that had been previously utilised for coconut cultivation:**

IREL has taken over the land, within the lease hold area, for the extraction of minerals. Since this land has been taken over exclusively for the extraction of minerals, the removal of coconut plantation within that area before extraction of minerals is inevitable. Moreover after the completion of mining & refilling, IREL once again carries out re-plantation activity in the refilled area to preserve the environment.

Hence, damages of Rs. 0.86 Crores assessed towards damage caused to the land that had been previously utilised for coconut cultivation is untenable and is denied.

**4. Total cost of lost opportunities on account of recreational and cultural purposes (2001-2019)**

Mining Leases have been granted to IREL to collect/mine the atomic minerals by the Government of Kerala in 1970. Once the area has been allotted for mining purpose, through a mining lease by the Government, the calculation of damage by considering "had it been not utilized for mining" is meaningless and hypothetical.

IREL is an organization functioning under the Department of Atomic Energy to mine the atomic minerals which is a permissible activity even as per the CRZ notification and the AMCR- 2016. The atomic minerals mined by IREL are used for strategic purposes in the nation's nuclear energy programme having critical elements as declared by the NITI Ayog. There can be no damage that can be assessed in carrying such exclusive and strategic activities.

The damages for the cost of lost opportunities on account of recreational & cultural purposes ( 2001-2019) as assessed by the Joint Committee at Rs. 30.61 Crores is yet again untenable and is denied.

**5. Value of excess extraction of mineral resources for the period 2001-2010 and 2010-2019:**

As explained above, (refer pg 2 & 3), there is no excess extraction of mineral resources during the period 2001-2010 & 2010-2019. There can thus, be no compensation payable towards excess extraction of minerals for the period 2001-2019, Rs.223.82 crores and hence the same is unjustified and is denied.

In this regard, we refer to our letter dated 17.06.2020 submitted during the hearing held on 18.06.2020 by KSPCB and denied the damages assessed by the Joint Committee. (Copy enclosed as Annexure 2).

This has been reiterated vide letter dated 24.12.2020 (Copy enclosed as Annexure 3) which was submitted during the meeting held by KSPCB on 28.12.2020 that IREL has not done any excessive mining. However it has been wrongly recorded in the Minutes of the Meeting dated 28.12.2020 as well as in the present Show Cause notice dated 08.02.2021 that IREL has done excessive mining. Since the beginning of the proceedings, IREL has been denying with records about the excessive mining.



*Sindhu Radhakrishnan*  
SINDBHU RADHAKRISHNAN  
Chief Environmental Engineer

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During the meeting with expert agencies held on 28.12.2020 by KSPCB, the Atomic Minerals Directorate (AMD) stressed that any assessment of excessive mining and damage to the environment requires a long term study and short term studies are inadequate. This was also seconded by M/s NIIST-CSIR, Trivandrum who confirmed the need for a long term study.. NCESS has then admitted that the study was done for a period of one month only and that a long term study will give an accurate report. This has also been confirmed by NIIST in writing to KSPCB vide email dated 14.01.2021(Copy enclosed as Annexure 4). Despite the same, a show cause notice has now been issued calling upon IREL to explain why a direction should not be issued to deposit the compensation for causing damage to the environment.

It is once again submitted that IREL has not done any excessive mining and all mining activity has been strictly as per the quantities recommended by NCESS in their two reports submitted to IREL. The untiring efforts taken by IREL to ensure sustainable mining by constructing groynes, undertaking periodical repair & maintenance of sea wall , refilling, re-plantation of coconut groves & return of mined out land for rehabilitation ,etc. should also be considered before any order is passed.

We trust that in the light of the above reply, it is requested that proceedings to recover the (i) interim damage assessment and compensation for temporary restoration activities for the period 2001-2019 for Rs.69,12,76,280/- and (ii) for the total value of excess mining Rs.223,81,60,851/- be dropped and a long term study be undertaken to assess the damage, if any , caused to coastline of Chavara. We also request you to grant us an opportunity of personal hearing before a final decision is taken in the matter.

Kind Regards,

For IREL (India) Limited, Chavara

*S. Surya Kumar*  
23/2/2021

S. Surya Kumar  
Chief General Manager & Head

Enclosures:

- 1) Annexure 1- Maps showing the status of shoreline changes due to erosion / accretion Kerala coast
- 2) Annexure 2 – Copy of IREL letter CH/MNG/PCB/2020 dated 17-6-2020 to KSPCB
- 3) Annexure 3 – Copy of IREL letter CH/MNG/PCB/2020 dated 24-12-2020 to KSPCB
- 4) Annexure 4 – Copy of mail dated 14-01-2021 from CSIR-NIIST to KSPCB



*Sindhu Radhakrishnan*  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer



637 (RO)  
2/3/21

आईआरईएल (इंडिया) लिमिटेड  
**IREL (India) Limited**  
(Formerly Indian Rare Earths Limited)  
(भारत सरकार का उपक्रम)  
(A Govt. of India Undertaking)



CIN : U15100MH1950GOI008187 Website : www.irel.co.in

ISO 9001:2015, ISO 14001: 2015 & OHSAS 18001 : 2007 Company

695  
03/03/2021

CH/MNG/PCB/2021  
Dated: 2-3-2021

To  
The Chairman,  
Kerala State Pollution Control Board,  
Pattom,  
Thiruvananthapuram - 695 004

MS / CBE - R.O.  
2/3/21

CHAIRMAN

Sir,

Sub:- OA No. 76/2019 of Hon'ble NGT - Environmental Compensation - reg

Ref:- (1) Show Cause Notice No. PCB/HO/KLM/ICO/15/08 dated 08-02-2021  
(2) IREL reply vide letter CH/MNG/PCB/2021 dated 23-02-2021  
(3) KSPCB letter No. PCB/RO/GEN/NGT Order - OANo. 76/2019 dated 26-02-2021

Further to IREL's reply referred (2) above, to the Show Cause Notice, Chief Environmental Engineer, Regional Office, KSPCB, Thiruvananthapuram has convened a meeting on 4<sup>th</sup> March 2021. Since IREL would like to attend the meeting along with our Legal Advisors, who are located at Chennai, it is requested to reschedule the proposed meeting to 22<sup>nd</sup> March 2021.

A word of confirmation is highly obliged.

With regards,

For IREL (India) Limited,

*S. Surya Kumar*  
2/3/2021

S. Surya Kumar,  
Chief General Manager & Head

Copy to Chief Environmental Engineer, RO, KSPCB, Thiruvananthapuram

आईआरईएल (इंडिया) लिमिटेड, चवरा, कोल्लम, केरल राज्य, भारत - 691583  
IREL (India) Limited, Chavara, Kollam, Kerala State, India - 691583  
फोन / Tel. : 0476 - 2680701 - 5 फैक्स / Fax : 0476 - 2680141

पंजीकृत कार्यालय: प्लॉट नं. 1207, वीर सावरकर मार्ग, सिद्धिविनायक मंदिर के पास, प्रभादेवी, मुंबई - 400 028.  
Regd. Office: Plot No.1207, Veer Savarkar Marg, Near Siddhivinayak Temple, Prabhadevi, Mumbai - 400 028.



*Sindhu Radhakrishnan*  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

618 (CRD)  
1/3/21629  
25/02/2021

**The Kerala Minerals and Metals Ltd.**  
(A Govt. of Kerala Undertaking)

Mineral Separation Unit,  
Kovilhottam, Chavara,  
Kollam - 691 583, Kerala, India.  
Ph: 0476-2680047, 2680048, 2682727, 2682700  
E-mail: hodms@kmml.com, md@kmml.com  
CIN: U14109KL1972SGC002399

KMML/MS/NGT-KSPCB/04  
24.02.2021

**The Chairman,  
KSPCB,  
Pattom, P.O,  
Thiruvananthapuram-695 004.**

Sir,

Sub: Mining operations of KMML -reg

- Ref: 1. your letter No: PCB/ HO/KLM/ICO/15/08; dated 08.02.2021  
2. Our letter No. KMML/MS/Mines/NGT-KSPCB/; dated 17.06.2020  
3. Our letter No. KMML/MS/ NGT-KSPCB/02; dated 28.12.2020

On receipt of your letter cited (1) above on 11.02.2021, we submit the following pray for your kind consideration.

This is to bring to your notice that the reply for your show cause notice has to be precise and based on facts and figures since the penalty is of huge financial implication for a PSU like KMML. Data collection and analysis has to be exercised in order to furnish a fool proof reply.

Since the committee report is based on production details from the year 2001 to 2019, the old records belonging to that period would have to be referred and are voluminous. As you are aware, the data assimilation and compilation is time consuming. Therefore it is requested to grant us a period of one month from today, for the submission of the reply.

Thanking you,

Yours faithfully,  
for The Kerala Minerals & Metals Ltd.,

Managing Director

Regd. Office: Sankaramangalam, Chavara - 691583, Kollam District  
Phone : 0476-2686722 to 2686733  
E-mail: contact@kmml.com



SINDHU RADHAKRISHNAN  
Chief Environmental Officer

**Minutes of the meeting held on 04/03/2021 regarding OA 76/2019 – Alappad****mining**

The meeting commenced at 11.15 am in the conference hall of the Regional Office, KSPCB, Trivandrum. Smt. Sindhu Radhakrishnan, Chief Environmental Engineer (CEE), Regional Office, Thiruvananthapuram, Dr. Deepesh V, Scientist 'C', Regional Directorate, Central Pollution Control Board, Bengaluru; the members of the Committee constituted by the NGT for the Environmental Damage assessment in the matter of OA 76/2019, representatives from Kerala Minerals and Metals Ltd (KMML), Indian Rare Earth Limited (IREL), and domain expert Dr. Sheela Nair, Head of Marine Geo Science Group, NCESS, Trivandrum, participated in the meeting. List of participants is attached.

Chief Environmental Engineer welcomed everyone to the meeting. CEE started the meeting with the background of the issues, earlier meetings and the decision of the meeting held on 28/12/2020 to reconsider the quantity of excess sand mined as per the request of the company authorities with respect to claimed variations with the assumed/ assessed bulk density used for the conversion of mined volume to tonnage.

The General Manager of IREL Sri. R V Viswanath raised their objection that their request to postpone the meeting was not considered and that their contentions raised vide letter dated 17/06/2020 were not considered even after 6 months. Objection was raised for not rescheduling the meeting to involve IREL's legal advisor.

Chief Environmental Engineer replied that this meeting cannot be postponed as the action taken report of the Board is due on 24/03/2021 before the Hon'ble NGT. This meeting is as per the instruction of Chairman to have a discussion on the reworking of quantity of mined sand based on changed bulk density reported by M/s IREL. It was also made clear that this meeting is to discuss the scientific/ technical issues and not with respect to the legal issues. She also said that the



  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

matter referred there in the company letter dated 18/06/2020 couldn't be considered as it was submitted too late and just before the date of submission of report before Hon'ble NGT. Also the replies were not provided with adequate proof for reconsideration.

IREL representatives told that the committee report is based on the report of National Centre for Earth Science Studies (NCESS) 2019 in which quantity of sand mining was based on a uniform bulk density of  $1.799 \text{ t/m}^3$ . Objection was raised against this as the heavy mineral concentration varies annually and seasonally and it was insisted to use the bulk densities assessed in the previous NCESS studies. The contention was that the sustainable mining quantity is arrived based on the calculation involving bulk density and mined volume to arrive at the tonnage. Another contention raised was to carry out calculation for a block period and not for each year. It was also highlighted that, during the period of 2000 to 2004 before the Tsunami the heavy mineral concentration in the beach sand was 75 - 80 %. After the Tsunami, the percentage has reduced considerably. The density of the sand depends on the mineral concentration. When converting sustainable volume to tonnage the heavier density of sand during the period 2000 to 2010 to be used. M/s IREL has submitted copies of study report dated 2002 and 2012 by NCESS on 02/02/2021 as a proof for the arguement.

Sri. Karthikeyan, HOD, KMML raised the opinion that the companies alone are not responsible for the erosion as there are other eroded beaches in Kerala where no mining activity is being carried out. During the meeting KMML submitted copy of the NCESS study report conducted in 2014. The committee members expressed their view that the sand budgeting studies put forth annual sediment volumes which can be harnessed in a few months of the year cannot be taken as accumulating privilege over a period of years and hence cannot be considered for block periods.



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SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

Dr. Sheela Nair, Head of Marine Geo Science Group, NCESS commented that it is true that not only mining activity is the reason for beach erosion. Other manmade structures constructed into the sea such as groynes, break-water, harbours etc also results in erosion. Now, there is at least one such structure in every 5 km length of sea. The longer the construction into the sea the more the erosion will be. The sea wall constructed will protect only the back land and not the sea shore area.

Since, there are contentions on the mined volume taken by KMML and IREL, the committee enquired about the details regarding the quantity of daily/monthly mined sand and tailing sand deposited back in to the beach/company premises. However, the representatives of KMML and IREL told that the daily beach collections are not quantified and it is only accounted into once it is transported for further processing. The committee members suggested that there should be some mechanism to monitor the quantity of harvested beach sands and there should be some proof for handling the mined volume before transportation. It was also suggested by the committee member, that the bulk density of the mined sand can be monitored regularly to understand the heavy metal content and accordingly the beach harvest quantities can be regulated.

Further, the committee members asked for the scientific studies which arrived the mining volumes in the approved mine plan. It was also noted that the complete document of approved mine plan was never shared with the committee to get an insight in to the studies/ proposals which arrived at the mining volumes permissible.

The company representatives reported that they are having details of the transported material from the beach with weighing slips from the weigh bridge and that at many times the mined sand couldn't be transported due to local protest and other public issues especially in the case of KMML. IREL representative highlighted that the mining of atomic minerals is of great importance to the nation



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SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

and Niti Ayog and other authorities are keen in the mining of monozite and other valuable rare earths.

It was contented that, if the silica sand separated out from the mineral has to be put back into the beach, the heavy metal content of the further accretions will be affected and companies are putting these tailings into pits in the beach and inland mining pits. Domain expert opined that the sand should be used for the replenishment of back beach. IREL representative highlighted that the silica sand after separation heavy minerals are made into a bund and in the months erosion, the sand bund act as a buffer in the beach.

Company authorities also represented that they are the entrusted companies by the Government who operates as per approved mined plan and hence the activity cannot be considered as one which cause environmental damage. The Chavara coast is the potential mining area for heavy minerals in Kerala on which many industries are depending for the heavy mineral raw material such as ilmenite or their product Titanium. IREL is the supplier of the mineral to many industries. By imposing such heavy penalty on the industry will spell doom to the IREL and other industries depending on IREL for mineral feed stock. It was made it clear that in the event of such heavy financial penalty, IREL has no other choice but to close down its operations and this will have serious implications on the atomic mineral prospect of India.

M/s IREL also reported that the tail sand is being deposited on the beach as a bund for protecting the beach. The company authorities also pointed out that as the beach profile is highly dynamic and as the study conducted was only for a short term period, the report of NCESS cannot be completely relied upon and hence an extensive study is required to get a clear picture of beach erosion.

Dr. Sheela Nair verified the document and agreed that their argument for increased bulk density and sustainable tonnage of sand can be considered. She also



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SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

added that the 2019 report itself have highlighted that the study was conducted only for a short duration and not an extensive/exhaustive one.

The representatives of IREL further expressed that, once the Govt. provided mining lease for the mining of strategic rare earth minerals, there is no question on 'had the land has been used for other purpose' and the environmental damages arrived based on the lost opportunities on account of agriculture, etc; are baseless. Committee member explained that the idea of calculating environmental damages based on lost opportunities due to some activities resulting in environmental degradation, depriving other resources, enviornmental free goods, cultural and aesthetic values are standard approaches adopted to assess environmental damages.

The domain expert suggested that the KMML and IREL shall highlight the positive impacts with respect to the reduction in background radiation levels in the area as atomic minerals are being seperated from the sand deposits. Further it was suggested that the positive impacts from the construction of groynes also shall be brought in to the purview.

It was also discussed extensively, that many parts in coastal Kerala, face unusual beach erosion due to several factors apart from mining and the point highlighted was that the mining is not the only reason for beach erosion in Alappad area and it is one of the several factors usually encountered in the Konkan coastal stretches.

On the onset of remarks that Pollution Control Board has not made any intervention/ regulatory works in the sustainable mining practices earlier and now the committee projecting the activities as illegal/ excess mining; it was clarified that there are several authorities to regulate mining and sustainable mining is never under the purview of Pollution Control Boards.

It was decided to rework the calculation based on the details submitted by the companies. On hearing, the following decisions were taken.

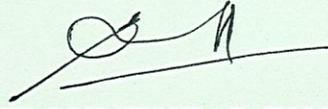


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SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

1. The company authorities shall submit the details of sand mined per month. (or any available daily records)
2. The document proof or daily records to prove that transportation of mined sand was being affected by public protest and other local issues.
3. The details including quantity of tailing sand deposited back during the study period.

The meeting concluded at 01.15 pm.



**CHIEF ENVIRONMENTAL ENGINEER**



**SINDHU RADHAKRISHNAN**  
Chief Environmental Engineer

6

**List of Members Who Attended the Committee Meeting Regarding O.A. No. 76/2019**  
**Alappad Mining Environmental Damage Assessment**  
**KSPCB, Regional Office, Thiruvananthapuram**  
**04.03.2021**

Sl No.	Name	Designation
1.	Sindhu Radhakrishnan	CEE, KSPCB, Regional Office, Thiruvananthapuram
2.	Deepesh. V	CPCB, RD, Bengaluru
3.	Sreetha A.M	AEE, KSPCB, Regional Office, Thiruvananthapuram
4.	L. Sheela Nair	Head, Marine Geoscience Group
5.	T. Karthikeyan	HoD (MS), KMML
6.	A. Jeyapalan	DGM, IREL (I) Ltd, Chavara
7.	C. Sundar	CM (Mining), IREL(I) Ltd , Chavara
8.	R.V. Viswanath	GM (R&M), IREL (I) Ltd, Chavara



A handwritten signature in blue ink, appearing to be 'Sindhu Radhakrishnan'.

**SINDHU RADHAKRISHNAN**  
Chief Environmental Engineer

**MINUTES OF THE MEETING CONDUCTED ON 10/03/2021 IN CONNECTION WITH THE ISSUE OF LEVYING ENVIRONMENTAL COMPENSATION FROM M/S IREL, KOLLAM ON THE ISSUES RELATED TO BEACH MINING IN THE CHAMBER OF THE CHAIRMAN OF THE BOARD.**

The meeting started at 11am. The meeting was presided by Chairman. The Member Secretary was also present. The following officers attended the meeting.

- |                               |   |   |
|-------------------------------|---|---|
| 1. Shri. S Surya Kumar        | : | Chief General Manager & Head, IREL                                |
| 2. Shri. R. V Viswanath       | : | General Manager (R &M), IREL                                      |
| 3. Shri. A Jeyapalan          | : | Deputy General Manager (Legal & ER), IREL                         |
| 4. Smt. Sindhu Radhakriahnan  | : | Chief Environmental Engineer, Regional Office, Thiruvananthapuram |
| 5. Shri. Thrideep Kumar. M. P | : | Environmental Engineer -1, Head Office, Thiruvananthapuram.       |
| 6. Kum. Meenu Sree S.         | : | Assistant Engineer, Head Office, Thiruvananthapuram.              |

Chairman welcomed all the officers and asked the Chief Environmental Engineer, Regional Office, Thiruvananthapuram to brief the issues related to the meeting. Chief Environmental Engineer, Regional Office, Thiruvananthapuram informed that the expert committee held a meeting on 04/03/2021 with both M/s. IREL & M/s. KMML officials and also with Dr. Sheela Nair of NCESS regarding the re-calculation of Environmental damage assessment based on actual bulk density as decided in the earlier meeting held on 28/12/2020. The Chief Environmental Engineer commented that as per all the NCESS reports there has been excess mining from the beach beyond the sustainable limits, by both the companies. The IREL officials reiterated that they have not done any excess



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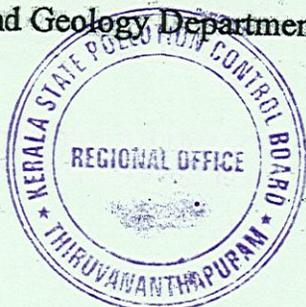
  
**SINDHU RADHAKRISHNAN**  
 Chief Environmental Engineer

mining and have not done any substantial environmental degradation activities. According to them the NCESS submitted three reports, two at M/s. IREL's request and one at the request of Government of Kerala and the permissible quantities are different in these reports. Variation in bulk density was also pointed out.

The Member Secretary opined that since assessment of mining quantity comes under the purview of Atomic Minerals Division, Indian Bureau of Mines and Department of Mining and Geology, they should be consulted in this matter. The Chief Environmental Engineer, Regional Office, Thiruvananthapuram reported that even though they were requested in this regard during the meeting held on 28/12/2020 they did not give any reply, but reported that they had not conducted monitoring. The Chief Environmental Engineer also informed that the unit has not furnished the correct quantity mined for both the mining sites, even though they are objecting to the NCESS reported quantities. The joint committee is ready to work on the excess quantity with respect to changed density, once the correct values are given.

M/s. IREL argued that the firm has not caused erosion of coast and erosion occurring cannot be attributed to the beach minerals collection activities by M/s. IREL. The damage of 0.86 Crores assessed caused to the land that had been previously utilized for coconut cultivation is untenable. M/s. IREL said that the atomic minerals mined by M/s. IREL are used for strategic purpose in the nation's nuclear energy program and hence the cost of lost opportunities on account of recreational and culture purpose is not justifiable.

The Member Secretary opined that a meeting of Atomic Minerals Department, Mining and Geology Department, NCESS, Department of Industries and Central Pollution

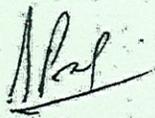


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SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

Control Board shall be held immediately to clarify the claim on sustainable mining done by M/s. IREL as the firm is of the view that they had not done excess mining. The Member Secretary said that they are to be informed of the Show Cause Notice and the reply given by M/s. IREL and get a specific reply from them whether any excess mining/ violation had been done and whether they are doing any monitoring in this regard. The Chairman opined that the damage if any caused in this case is not due to pollution, but excess mining and the applicability of "Polluter Pays" principle is doubtful. The Chairman also opined that in the consent of the Board, the conditions relevant for abating pollution problem is included and not the sustainable quantity of mining. He asked to convene another meeting on 15/03/2021, and to invite all the other agencies, who give clearances to these industries for mining purpose.

Meeting came to an end at 12.30 pm.

  
CHAIRMAN



  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer

**MINUTES OF THE MEETING CONDUCTED ON 15/03/2021 AT 11.00 AM  
IN CONNECTION WITH THE NGT CASE O.A. NO. 76/2019 RELATED  
TO BEACH MINING BY M/s. IREL & M/s. KMML IN THE  
CHAMBER OF THE CHAIRMAN OF THE BOARD**

The meeting started at 11.00 am with the Chairman, Kerala State Pollution Control Board presiding. At the outset, Chairman welcomed the representatives of all the Departments and industries present. Representatives from M/s. Kerala Minerals and Metals Limited, M/s. Indian Rare Earth Limited, Mining & Geology, NCESS and officers of the Board were present in the meeting. The Member Secretary, Kerala State Pollution Control Board and other members attended the meeting through video conference. The details of officers who attended the meeting are as follows:

- |                         |   |  |
|-------------------------|---|--|
| 1) Dr. Sajikumar S      | - | Geologist, Department of Mining & Geology  |
| 2) Dr. N. B. Preeja     | - | Geologist, Department of Mining & Geology  |
| 3) Dr. L Sheela Nair    | - | Head, Marine Geoscience Group, NCESS       |
| 4) Sri. T.N Prakash     | - | Senior Consultant, NCESS                   |
| 5) Sri. Ajaykrishnan V  | - | General Manager, KMML                      |
| 6) Sri. T. Karthikeyan  | - | Additional General Manager, (MS), KMML     |
| 7) Sri. S. Surya Kumar  | - | Chief General Manager & Head, IREL         |
| 8) Sri. R. V. Viswanath | - | General Manager (R& M), IREL               |
| 9) Sri. A. Jeyapalan    | - | Deputy General Manager. (Legal & ER), IREL |
| 10) Sri. Baburajan P.K  | - | Chief Environmental Engineer, Head Office  |



**SINDHU RADHAKRISHNAN**  
Chief Environmental Engineer

- 11) Smt. Sindhu Radhakrishnan - Chief Environmental Engineer,  
Regional Office,  
Thiruvananthapuram.
- 12) Sri. M. P. Thrideep Kumar - Environmental Engineer,  
Head Office, Thiruvananthapuram.
- 13) Smt. Sreetha. A. M - Assistant Environmental Engineer,  
Regional Office,  
Thiruvananthapuram.
- 14) Smt. Meenusree - Assiatant Engineer,  
Head Office, Thiruvananthapuram.

The following officers attended through video conference.

- 1) Smt. S. Sreekala - Member Secretary,  
Kerala State Pollution Control Board.
- 2) Smt. Simi. P - Environmental Engineer,  
District Office, Kollam.
- 3) Dr. Deepesh. V - Scientist B, CPCB, Zonal Office,  
Banglore.

Chairman explained that the issue is predominantly environmental degradation due to mining, more than any pollution issue and hence this matter has to be evaluated and managed by various departments such as Mining & Geology, SEIAA, Indian Bureau of Mines, Atomic Mineral Division etc. and any other agencies whose clearances are mandatory for mining. Chairman stressed that "Polluter Pays" principle can not apply in this case as there is no known pollution or violation of conditions of consent issued by the Board. At the same time there is environmental degradation due to mining and related activities.

M/s. Kerala Minerals and Metals Limited informed that they are yet to obtain the clearance of SEIAA, M/s. Indian Rare Earth Limited has already got the clearance. M/s. Kerala Minerals and Metals Limited was directed to obtain the Environmental Clearance at the earliest since the lack of it shall also lead to Environmental Compensation.

The Chairman requested the departments present to give their specific inputs in the matter especially with regard to violations of the conditions of the clearances

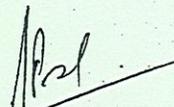


*Sindhu Radhakrishnan*  
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issued from the respective departments. The Chairman informed *that the Hon'ble court has specifically directed Pollution Control Board to take the assistance of any department, including the mining department and expert body such as the Central Pollution Control Board, the NEERI and hence these departments are to prepare their own detailed assessment.* The officials of department of Mining & Geology informed that they are yet to perform a long duration study on the effects of mining and will need 2 months time to give a detailed report after proper assessment. They said that they would assess the environmental damage occurred in the case of M/s. Kerala Minerals and Metals Limited and M/s. Indian Rare Earth Limited and report the details of violation occurred. NCESS officials also requested for more time and required more detailed inputs from the industries for furnishing a detailed and accurate report on the effects of the mining. The Director of Industries Department also said that they will look into the details of various clearances and help in coordinating with the various departments for taking further steps to decide on Environmental Compensation.

In the meantime Board can request 3 months time before the NGT for accurate report filing as a concerted effort from whole departments are required for proper and accurate assessment. The departments concerned shall hence put in a coordinated effort with the cooperation of NCESS and furnish their reports within 2 months time. M/s. IREL and M/s. KMML shall provide all required data. The reports of all the departments shall be considered by the Joint Committee and a final report compiled on the assessment of damage, and Environmental Compensation shall be submitted to the Hon'ble Court by Pollution Control Board.

The meeting came to an end at 12.00 pm.

  
CHAIRMAN



  
SINDHU RADHAKRISHNAN  
Chief Environmental Engineer