

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE,
CHENNAI
ORIGINAL APPLICATION NO.74 OF 2023 (SZ)**

IN THE MATTER OF:

Padma Kumar, Kerala.

...Applicant

v.

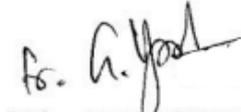
The State of Kerala, through its Chief Secretary and Ors.

...Respondents

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Dated at Chennai on this 8th day of February, 2024



M/s. E.K.KUMARESAN

Standing Counsel for State Government of Kerala - NGT(SZ) Chennai Bench

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, SOUTHERN ZONE,
CHENNAI
OA NO.74/2023
ACTION TAKEN REPORT SUBMITTED BY THE STATE OF KERALA

Petitioner : Sri. Padmakumar
Respondents : The State of Kerala

Suman Billa IAS, aged 52 years, S/o, Sri. Venkiah Billa Principal Secretary to Government, Industries Department & Norka, Kerala Government, Government Secretariat, Thiruvananthapuram

That I am the 2nd respondent in this OA, I am authorized by the 1st respondent to file report on behalf of the State of Kerala in accordance with the Hon'ble NGT Order dated 31/5/2023 in O.A. No.74 of 2023 (SZ).

The Hon'ble National Green Tribunal, Principal Bench, New Delhi had registered a Suo Moto case in O.A No. 502/2022 based on a letter petition received from Sri. Padmakumar regarding pollution caused by M/s. Kerala Minerals and Metals Limited (KMML), a Public Sector Undertaking under Government of Kerala, situated at Chavara in Kollam District. The petitioner alleged that the KMML is polluting the land and water bodies for about 30 years by discharging acid water and the area surrounding the factory has become unfit for any purpose and the villagers were forced to close the drinking water wells which were filled with acid. The petitioner alleged that the industry is pumping acid waste directly to sea and connected lake through canals and also the Vattakkayal in Porookkara is filled with the acid clay waste polluting the environment and endangering life of the villagers.

The Hon'ble NGT vide order dated 29/08/2022 had constituted a Joint Committee comprising of Principal Secretary (Industries & NORKA), Central Pollution Control Board, State Pollution Control Board, State Wetland Authority and District Collector, Kollam and directed the joint committee to file a report after verifying the factual position. The State Pollution Control Board was the nodal agency for co- ordination and compliance.

In compliance with the Hon'ble NGT order dated 29/08/2022 passed in O.A. No. 502/2022, the joint committee conducted a preliminary meeting through video conference on 11/10/2022 in the chamber of Chief Environmental Engineer, Regional Office, Thiruvananthapuram. The Joint committee conducted a site visit on 17/10/2022 to M/s KMML and its premises and collected samples from the affected areas of Ponmana, Chittoor, near the storm water discharge point of M/s. KMML, nearby canal leading to Ashtamudi Estuary, Porookkara and the Vattakkayal. The stagnant water samples and well water samples from the nearby premises of the unit, were also collected during the visit. The

committee also inspected the Effluent Treatment Pond (ETP) and iron oxide sludge ponds of the unit and sample from the effluent discharge point of the unit to the sea and sludge samples and tube well water samples inside the industry were collected for further analysis. Kerala State Pollution Control Board have submitted interim report of the Joint Committee dated 29.11.2022. The meeting of the Joint committee held on 1/12/2022 analyzed Analysis report of sample collected during site visit. As per the direction from the Hon'ble NGT vide order dated 13/12/2022 in the above O.A., the Joint committee had submitted its final report on 31/01/2023. State Pollution Control Board had submitted a report before Hon'ble NGT dated 07/02/2023. State of Kerala filed report before Hon'ble NGT on 4/3/2023 through the Standing Counsel. (Enclosed as R1 & R2(1))

Meanwhile, the Hon'ble NGT, Principal Bench, New Delhi as per order dated 31/05/2023 had renumbered and transferred the above O.A. No.502 of 2022 to Southern, Bench as O.A. No.74 of 2023.

M/s Kerala Minerals and Metals Limited prepared the schedule for both short term and long term measures to mitigate environmental impacts as suggested by M/s NEERI to execute through competent and expert developers/contractors with suitable time frame for completion and presenting the design to the Kerala State Pollution Control Board (KSPCB) for its approval. KSPCB already approved the DPR prepared for short term measures. Action plan and current status in respect of the various term measures taken by KMML is detailed below.

Short Term Measures

Item	Work Status	Target	Remarks
Construction of garland drain around the iron oxide (IOP)/ETP ponds	After open e-tendering, work order for the construction of Garland drain around new ETP/IOP and old ETP/IOP was issued to M/s Ravi Kumar & M/s Biohomes on 08.10.2019 and 08.04.2021 respectively. The period of contract was extended due to events viz, adverse climatic condition, restriction imposed as part of pandemic COVID19 lock down, local labour issues, ETP sludge shifting process	October 2023 (NEW ETP) January 2024 (Old ETP/IOP)	Completed garland drain construction around New ETP. Completed garland drain up to 75% around old ETP/IOP. Installation of pump in the new ETP garland pit has been done.

	<p>etc. The works are now progressing at site. Work is getting delayed due to incessant rain and elevated water table. Pump also get installed in the collection pit.</p>		
<p>Remediation of affected land near KMML premises</p>	<p>Tender was invited for the Test patch for remediation of contaminated area inside KMML premises and its consultancy works on 09.07.2019. No parties quoted. Action for limited tender for consultancy work taken on 07.08.2019. Two parties quoted the tender. Work order was issued to M/s FEDO on 05.12.2019 for consultancy and supervision of the test patch area for contaminated land in KMML premises.</p> <p>M/s FEDO have submitted a detailed project report with schematic drawing and lay out of the contaminated land remediation work. Tendering for test patch invited done in three occasions i.e, 25.02.2020 (single offer), 24.06.2020 & 19.08.2020 (no party quoted).</p> <p>Due to non receipt of offers, action for doing the activity on trial basis has been initiated. Accordingly Land preparations for land remediation sample Test patch area development activities</p>	<p>Time frame is one year (June 2024)</p>	<p>Land preparation for the Test Patch unit completed. Initial discussions on bio-remediation is done. M/s State Horticulture Society based on sampling analysis forwarded a proposal to the company which have to be evaluated. Detailed EOI on bio-remediation can be invited immediately after finalizing a suitable technology in in-situ- bio remediation.</p>

	<p>started on trial basis inside KMML. Since land remediation (In-Suite flushing) inside KMML premises involved huge investment and due to non availability of competent agency to execute the same, KMML is also exploring the possibility of remediating the test patch area by Bioremediation process. In this regard, it is decided to explore the service of M/s State Horticulture Society and sampling analysis is completed. State Horticulture Society forwarded proposal to the company and the company have been evaluating the same. Technical discussions have been conducted in the matter.</p>		
<p>Solid waste management in KMML (In-situ/Ex-situ storage) – Geotube as a trial implementation</p>	<p>Considering the constraint for shifting the entire quantity of sludge to newly proposed containment system and limitation of vacant land availability, another technological option was identified by KMML through US based Titanium technology consultant.</p> <p>The new technology involves dewatering and storage of solid waste using GEOTUBES which was presented to KSPCB and in principle</p>	<p>Time set is One year after getting approval from CPCB/KSPCB and subsequent ordering</p>	<p>Awaiting necessary approvals</p>

<p>approval was received and directed to submit details of the proposal. Tendering action for the Geotube iron oxide containment from New elevated iron oxide pond was done. KMML received two offers. But KMML have to get environmental clearance to submit offer. Company submitted request to KSPCB on 23.02.2022 for Environmental clearance approval to go ahead with the collection and containment of Iron oxide slurry in Geotubes from the elevated new iron oxide pond as trial phase activity. De-watered Iron oxide solids can safely be transferred to offsite after the containment. A presentation of solid waste management using Geotubes was conducted at the chamber of Chairman, KSPCB. KMML officials visited CPCB, New Delhi and submitted the request letter for obtaining authorization for conducting trial geotube filling and containment of iron oxide from new elevated iron oxide pond. VC meeting/technical presentation was conducted on 03.01.2023 with CPCB officials and queries were addressed, clearance from CPCB is being awaited. Work can be started only with technical</p>		
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	concurrency of CPCB/KSPCB and necessary approvals thereafter.		
Utilization of Iron Oxide by Making Iron Sinter - Value addition of Iron Oxide	<p>In-house Value addition of Iron oxide</p> <p>With an intention to give value addition to the iron oxide and more specifically using this iron oxide as raw material from industry, KMML has developed an in-house technique. R&D studies proved that it can be converted to iron sinters (Sponge Iron), which is expected to be used as feed material for Iron TMT industry. Initially, company conducted plant trial and produced 3.0MT of sponge iron. Analysis results are positive. Company conducted trial at two TMT manufacturing facilities at Palakkad and validated that it can be used as raw material for induction furnaces.</p> <p>To proceed with the validation and stabilization of the utilization and to confirm the quality till the final TMT product, these companies require more quantity of sponge iron material. Company conducted second trial and produced around 10 to 15 MT of material with</p>	Time frame is minimum 2-3 years	The project is at initial stage. Trials have to be done.

	<p>better quality and the separation process of the same is underway. Further trials/ Commercial proceedings with the material at the TMT facilities in near future and looking for positive outcome . TMT manufactures visited KMML for technical discussion and for future plan.</p>		
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Long Term Measures

Item	Work Status	Target	Remarks
Acid Regeneration plant (ARP)- Technology modification to generate saleable iron oxide	<p>Tender was invited and opened in September 2019 & only one party quoted. As there is only single bid, Government of Kerala, directed to retender the project and retendering was done during June 2021. There was no sufficient number of qualified bids. Government directed the company to work out the price reasonableness of the bid received. Cost analysis study has been conducted and Government is examining the cost escalation on the tenders received in previous instances.</p>	18 months from order	Under consideration of Government
Value addition of by products (Iron	KMML identified M/s Renuka Equipments Pvt Ltd,	18-24 months from	Under consideration of

oxide/ETP sludge)	<p>Nagpur, with the help of M/s the date of NEERI, as the competent Order/Statuto technology provider for they clearance management of iron oxide stored in the old pond, by converting the same in to usable product. 234th Board meeting of the company held on 04.04.2018 had given permission in principle for receiving a detailed techno- commercial offer for setting up a pilot plant from M/s REPL Company have received an offer from M/s REPL . Offer have been evaluated. The proposed technology is not a field proven one and also involves investment around Rs. 400 Crores on commercial scale set up.</p> <p>In order to select potential agencies to carry out value addition of iron oxide & ETP sludge on a total responsibility basis with suitable technology, company have published a global Expression of Interest. Offers received from parties . CSIR-NIIST, Thiruvananthapurarn was appointed as consultant to carry out the technical evaluation of the proposal. CSIR-NIIST submitted study report. Tender was invited. The proposal of the</p>	Government
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	company to award successful tender and to allocate land of the company on lease basis is under consideration.		
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Other actions initiated by KMML

Item	Work Status	Target	Remarks
Iron Oxide residue Sales	<p>KMML invited e-tender for the sales of iron oxide residue for further process/value addition at end user on 19.12.2019. M/s Miracle sands and Chemicals, Tuticorin quoted for the tender and sales order was issued to the party on 09.06.2020, for shifting 10,000 MT to the end user .</p> <p>Sales order of iron oxide sludge was extended for obtaining statutory approvals from TNPCB and KSPCB. M/s Miracle sands and Chemicals, Tuticorin has already submitted a detailed project proposal for manufacturing Iron oxide concrete bricks along with the consent order from TNPCB which is valid up to March 2025 .The sale order of Iron Oxide residue (10,000 MT) issued by KMML on 09.06.2020.</p> <p>KMML requested KSPCB to</p>	18 – 24 months from the date of statutory clearance	CPCB concurrence to transfer trial quantity is to be received.

	<p>accord sanction to shift 10,000 MT of iron oxide to carry out trial runs as per Hazardous Waste Management and Transboundary movement Rules 2016 Chapter II, Section No:9, Sub division:2. KSPCB informed KMML that KSPCB has forwarded letter to CPCB on 24.09.2022 for seeking advice on conducting a trial.</p> <p>Officials of KMML visited CPCB on 28.11.2022 and made follow up for obtaining authorization for trial production of Iron Oxide bricks by M/s Miracle Sands and Chemicals, Tuticorin. CPCB officials informed that authorization request from KMML will be included in the next committee meeting.</p>		
ETP sludge sales	<p>e-tender was invited by KMML for shifting 10,000 MT of ETP sludge from ETP pond on 04.02.2020 and subsequently the quantity enhanced from 10000 MT to 50000 MT on 17.02.2020. Sales order was issued to M/s Miracle sands and Chemicals on 09.06.2020 for 10,000 MT. A new sales order was issued to M/s Miracle sands and Chemicals for 40,000 MT on 08.04.2022.</p>	Ongoing	<p>Shifting of sludge 10,000 MT of ETP sludge from ETP pond is completed and shifting started for 40000 MT (approx 3500 MT completed) which is valid up to 31/03/2024</p>

	<p>Completed the shifting of 10000 MT of ETP sludge from KMML and started shifting of ETP sludge for 40000 MT as per the new sales order.</p> <p>Permission granted to M/s Miracle Sands & Chemicals from KSPCB for collection and transportation of ETP sludge from KMML which is valid up to 31.03.2024.</p>		
ETP Revamping / Modernization	<p>E- tendering for DPR preparation ETP revamping/modernization was done on 10.02.2022. No offer received. Contacted parties for budgetary quote. The parties conveyed that they can proceed further only after signing an MoU. KMML decided to go for re-tendering. Re -tendering was done for DPR preparation of ETP revamping/modernization. Three offers were received and work order was awarded to M/s SBA Enviro System, Delhi. Draft report got submitted by the party and the same was presented by the party on 26.07.2023. DPR corrections/ comments were sent to the party by KMML on 1/9/2023. Revised DPR is awaited.</p>	Time frame set for final DPR submission is November 2023.	After finalization of DPR, e-tendering will be done for ETP revamping/modernization with necessary approvals

	Action is being initiated for installing a tertiary tank for the existing treatment plant for increasing the reaction delay time.	Time frame set is one year after getting Budget Approval	The scheme will be placed before the board of the Company for approval.
Capping of existing storage ponds	Capping of eastern side area (4400 M ²) of settling pond 1 is done. Purchase order issued for procuring 15,000 M ² of LDPE for temporary tapping. Company received material for capping.	Time frame for tendering and capping is May 2024	Tendering activity is in progress.

The short term & long term measures undertaken by KMML will be implemented in a time bound manner and the company will also take steps to comply with the recommendations of Joint Committee.

All the facts stated above are true to the best of my knowledge , information and belief.

Dated this the 30 th day of October 2023.

Suman
SUMAN BILLA IAS
Principal Secretary
Industries & NORKA Dept.
Government of Kerala
Secretariat, Thiruvananthapuram