

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
SOUTHERN ZONE, CHENNAI

Original Application No. 124/2021

Sibi Joseph

Applicant

Versus

Union of India, Ministry of
Environment, Forests and Climate Change
and Others

Respondents

REPORT FILED BY THE ENVIRONMENTAL ENGINEER, KERALA STATE
POLLUTION CONTROL BOARD, DISTRICT OFFICE, PALAKKAD FOR AND
ON BEHALF OF THE 7TH RESPONDENT KERALA STATE POLLUTION
CONTROL BOARD

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
SOUTHERN ZONE, CHENNAI

Original Application No. 124/2021

Sibi Joseph

Applicant

Versus

Union of India, Ministry of

Environment, Forests and Climate Change

and Others

Respondents

INDEX

SL NO.	Particulars	Page No.
1	REPORT	3-8

Dated this the 7th February, 2022

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,
SOUTHERN ZONE, CHENNAI

Original Application No. 124/2021

Sibi Joseph

Applicant

Versus

Union of India, Ministry of
Environment, Forests and Climate Change
and Others

Respondents

REPORT FILED BY THE ENVIRONMENTAL ENGINEER, KERALA STATE
POLLUTION CONTROL BOARD, DISTRICT OFFICE, PALAKKAD FOR AND
ON BEHALF OF THE 7TH RESPONDENT KERALA STATE POLLUTION
CONTROL BOARD

I, Krishnan M N, S/o M S Narayanan, am the Environmental Engineer, Kerala State Pollution Control Board, District Office, Palakkad. I am duly authorized by the 7th respondent Member Secretary of Kerala State Pollution Control Board to represent the Board in the O.A. I do hereby solemnly affirm and state as follows.

1. The Hon'ble National Green Tribunal (NGT) vide its order dated 29.10.2021 in the above OA, directed the respondents to file independent reports.
2. This respondent had submitted before the Hon'ble Tribunal the details of the Consent granted to the respondent quarry units in the affidavit filed dated 31st July, 2021. The quarry of the 8th respondent Royal Sand and Gravels Pvt. Ltd. had obtained Consent to Operate of the Board on 27-12-2014. This Consent to Operate was renewed on 03-05-2019 and is valid up to 01-12-2023. The 9th respondent quarry Mary Matha Granites also has valid Consent to

Operate of the Board. The present Consent to Operate of the quarry of the 9th respondent was issued on 25-05-2018 valid up to 31-07-2022.

3. The quarry of Royal Sand and Gravels Pvt. Ltd. was inspected along with the joint inspection team on 2-9-2021. The petitioner Sri. Sibi Joseph was heard before the start of inspection. There were other nearby residents also along with the petitioner expressing their grievances. Among the grievances they voiced, those which were directly related to environmental pollution follows.
 - I. The petitioners alleged that there are natural streams which enter the quarry area. These streams are allegedly disturbed by the quarrying activity. Dust and silt from the quarry premises reach the natural streams flowing from the area and polluted water reaches downstream. This water used to be utilized for drinking and bathing but during the years after quarrying started, the water has become allegedly unusable.
 - II. During the dry months, air pollution from quarrying area is allegedly grave.
 - III. Surface runoff from the premises of the crusher adjacent to the quarry is allegedly polluted by the presence of dust and silt from the raw materials and products heaped in these premises. This polluted water also reaches downstream.

4. The quarry area was inspected. The important observations follow.
 - I. Three natural streams could be seen entering the quarry area from the surrounding hills. During the days prior to the inspection, there were frequent monsoon rains in the region. During the inspection also, intermittent rains were falling.
 - II. These streams enter the large quarry pit in the area which is being quarried now. From this quarry pit, it is pumped into another quarry pit, called Settling Tank 1, by the proponent. From this pit, it reaches, by gravity, a check dam constructed in concrete. This portion is called Settling Tank 2. The overflow from the check dam reaches a concrete tank, circular in plan, called Settling Tank 3.
 - III. The proponent claimed that dust and silt in the water settles down in all these settling tanks. From Settling Tank 3, water flows through a pipe. The pipe is placed under the overburden storage. The overburden is stabilized by planting various plant-species.
 - IV. The pipe opens into a pond, called 'kokkarni' in Malayalam, which is named Settling Tank 4. Finally the water from this settling tank overflows into its natural course out of the quarry area.
 - V. It was decided to take samples of the influent natural stream, overflow of each settling tank and final outlet later, to ascertain any contamination is happening in the quarry

area and whether contamination is persisting or not while flowing out of the quarry area.

- VI. On the day of inspection, there was no blasting or operation of jack hammers in the quarry. Hence there was no dust emanation from the premises. The crusher plant was also not operational. Hence a comprehensive observation of the quarrying-crushing operations to know their effects could not be made.
 - VII. It could be seen that in the present monsoon season, air pollution will be minimal even if quarrying is there, due to continuing rains. Monitoring in a dry climate can only give any conclusive evidence of dust emanation. The quarry premises and sides of the haul roads were found fitted with water-sprinklers to suppress dust.
 - VIII. The overburden and top soil could be seen in heaped with flattened top. On the top, a plantation of various plants has been created which stabilizes the heap, preventing erosion of this heap.
5. The quarry of Marymatha Granites was also inspected as a part of the joint inspection on 2-9-2021. The petitioner Sri. Sibi Joseph and nearby residents were heard at that site also before proceeding with inspection. Among the grievances they voiced, those which were directly related to environmental pollution follows.
 - I. Dust and silt from the quarry premises allegedly reaches the natural streams flowing from the area and polluted water reaches downstream.
 - II. During the dry months, air pollution from quarrying area is allegedly grave.
 - III. Surface runoff from the premises of the crusher adjacent to the quarry is allegedly polluted by the presence of dust and silt from the raw materials and products heaped in these premises. This polluted water also reaches downstream.
 6. Then the quarry area was inspected. The important observations follow:
 - I. The contour map of the area was referred and the lower portion through which the runoff from the area will flow out was identified. At the point, it was seen that a *kuchcha* drain has been made which takes the water to an abandoned quarry-pit.
 - II. Surface runoff from other portions also reach this quarry pit. From the quarry-pit, water flows out into adjacent property where it get settled into natural depressions.
 7. On the next day, 3-9-21, the influent stream, settling tanks and outflow form Royal Sand and Gravels was sampled. The outflow from Marymatha Granites Quarry was also sampled. Total suspended solids (TSS), total dissolved solids (TDS), chemical oxygen demand (COD) pH, electrical conductivity (EC), calcium, sodium, potassium, silica, copper, iron, manganese, nickel, lead, zinc and sodium absorption rate (SAR)

were analyzed in these samples. The results of analysis are given in Table 1 (a) and 1 (b).

Table 1 (a)- Water Quality Characteristics of samples from Royal Sand and Gravel

Date of Sampling: 03-09-2021

Sample Code	PAS 3318/1	PAS 3318/2	PAS 3318/3	PAS 3318/4	PAS 3318/5	PAS 3318/6	PAS 3318/7
Station Name	Natural Stream	Quarry Pit	Settling Tank I	Settling Tank II	Settling Tank III	Pipe Outlet	Final Outlet
pH	7.12	7.18	7.25	7.22	7.24	7.18	7.32
EC, $\mu\text{S/cm}$	49.31	88.52	88.02	85.11	85.53	92.6	132.3
TDS, mg/L	32	57	56	54	55	59	85
Total Suspended Solids, mg/L	8	25.2	12.1	BDL	BDL	BDL	BDL
COD, mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Calcium, mg/L	2.4	8	6.4	6.4	6.4	6.4	16.8
Sodium, mg/L	3.97	4.18	4.21	4.27	4.56	4.53	4.86
Potassium, mg/L	0.48	2.39	2.55	2.52	2.59	2.51	2.2
Silica, mg/L	36.3	26.62	29.38	28.95	30.68	28.52	35.86
Copper, mg/L	0.06	0.06	0.13	0.12	0.1	0.11	0.11
Iron, mg/L	0.23	0.71	1.11	1.29	1.31	0.9	1.12
Manganese, mg/L	0.05	0.09	0.14	0.12	0.11	0.18	0.17
Nickel, mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Lead, mg/L	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Zinc, mg/L	0.02	0.03	0.06	0.05	0.08	BDL	0.1
SAR	0.28	0.32	0.31	0.33	0.29	0.33	0.25

Table 1 –(b) Water Quality Characteristics of samples from Mary Matha Granites

Date of Sampling: 03-09-2021

Sample Code	PAS 3317
Station Name	Surface water from Mary Matha Granites
pH	7.43
EC, μS/cm	392.6
TDS, mg/L	251
Total Suspended Solids, mg/L	BDL
COD, mg/L	2.88
Calcium, mg/L	47.2
Sodium, mg/L	10.1
Potassium, mg/L	1.45
Silica, mg/L	12.53
Copper, mg/L	0.09
Iron, mg/L	0.52
Manganese, mg/L	0.27
Nickel, mg/L	BDL
Lead, mg/L	BDL
Zinc, mg/L	0.07
SAR	0.36

8. The results were compared with standards for drinking water source without conventional treatment after disinfection (IS:2296:1982) and the standards were found within limits, except a slightly high value for Iron.
9. Both the quarries were not in operation on the preceding day (02-09-2021) of sampling and analysis results may vary considerably if sampling was done when mining operations are in full swing. Though the above analysis results indicate the effect of mining on the runoff water, there are no specific water quality standards to compare. If the receiving body is a surface water stream/ channel, which is being utilized downstream, then designated best use class could be ascertained. But even in the designated best use standards for surface water as per the Environment (Protection) Rules, 1986, the parameters COD, TDS, sodium, potassium, calcium or heavy metals are not included. Hence these salient values, for which standards are available only, were compared with the Drinking Water Specifications IS 10500 of 2012 notified by

Bureau of Indian Standards. The results are tabulated in Table 2. It can be seen that all the parameters except Iron are well within the limit.

TABLE 2. COMPARISON OF SALIENT PARAMETERS OF WATER QUALITY WITH DRINKING WATER SPECIFICATIONS

Sl. No.	Parameter	Unit	Observed value in water flowing out		Permissible limit
			Royal	Marymatha	
1	pH	-	7.32	7.43	6.5 – 8.5
2	TDS	mg/l	85	251	2000
3	Calcium	“	16.8	47.2	200
4	Iron	“	1.12	0.52	0.3
5	Manganese	“	0.17	0.27	0.3

10. It is submitted that the results will be discussed in the Joint Committee which will arrive on a conclusive inference, and that will be produced before the Hon’ble Tribunal.

Dated this the 7th of February, 2022.



DEPONENT