



**Dalmia Cement (Bharat) Limited**

**Kallakudi Limestone Mining Lease under GO No. 263  
(Captive Mine)**

**Extent : 0.285 Ha**

**Minerals : Limestone & Marl**

**Maximum ROM Production : 10,368 Tonnes per Annum**

**S.F. No. 256 of Kallakudi Village, Lalgudi Taluk,  
Trichy District, Tamil Nadu**

**ML Validity : 01.06.1997 to 31.03.2030 as per MMDR Amendment Act, 2015**

**Review of Mining Plan & Progressive Mine Closure Plan Approval by  
IBM, Chennai vide Letter No. TN/TCR/LST/ROMP-1682.MDS dated 02.12.2021  
(ROMP Period 2022-23 to 2026-27)**

**Environmental Clearance under EIA Notification 2006  
Schedule SI. No. 1(a); Category 'B1' (Mining in <100 Ha)  
Violation Proposal**

**Summary Environmental Impact Assessment Report  
(after TOR for Public Hearing)**

**Awarded TOR : SEIAA-TN/F.No. 6409/TOR-495/2018 dated 13.06.2018**

**March 2022**

**EIA Consultant**

**ABC Techno Labs India Private Limited, Chennai**  
**Certificate No.: NABET/EIA/1922/RA0155 valid till 22.05.2022**  
**(SI. No. 3 of QCI/NABET List dated 14.02.2022)**  
**NABL Certificate No. TC-5770 dated 03.04.2020 valid till 02.04.2022**

Dalmia Cement (Bharat) Limited  
Kallakudi Limestone Mining Lease under GO No. 263

## Summary Environmental Impact Assessment Report

### 1.0 Introduction

#### 1.1 Project Proponent

**M/s. Dalmia Cement (Bharat) Limited** are operating Cement Plants at Dalmiapuram & Ariyalur in Tamil Nadu, Kadapa in Andhra Pradesh, Belgaum in Karnataka and Cement Units across Northeast & Eastern Regions. DCBL's Cement manufacturing capacity is now about 31 Million Tonnes per Annum (MTPA).

DCBL had established **Dalmiapuram Cement Plant** in the **Year 1939** (Pre-Independence period). Dalmiapuram Cement Plant is located in Palanganatham Village, Ariyalur Taluk and District. Coal based Captive Power Plant (CPP) of 1x27 MW was established during 2005-06 within the Complex and expanded with another 1x23 MW in the Year 2008 to cater the Cement Plant. DCBL Township is located in Kallakudi Village with 640 Quarters near the Cement Plant. Also, there is a Hospital, Co-operative Society, Dairy Farm, Dalmia HSS (1,637 Students) & Dalmia Vidya Mandir School (836 Students), ITI (150 Students), etc. at Dalmiapuram. DCBL had also established the green field Cement Plant of 3.0 MTPA cement capacity at Govindapuram near Ariyalur during 2009-10 and is at a distance of 35 km from Dalmiapuram.

With the recent Modernization & Expansion, Dalmiapuram Cement Plant Clinker production will be 3.23 MTPA and Cement production will be 5.00 MTPA. Govindapuram Cement Plant Clinker production will be 2.50 MTPA and Cement production will be 4.00 MTPA. Dalmiapuram Cement Plant requires 5.00 MTPA Limestone and Govindapuram Cement Plant requires 4.00 MTPA Limestone. Limestone demand of both Cement Plants are met from existing captive mines of DCBL viz. Kallakudi-Kovandakurichi (KLK-KVK) Mines, Periyathirukonam (PTK) Mines and amalgamated Periyagalur, Aminabad & Khairulabad (PNR Group) Mines. KLK-KVK Mines are cluster of mines located near the Dalmiapuram Cement Plant and also called as Local Mines.

Presently, there are 242 Executives, 270 Staff & Workmen and 1,827 Contract Employees working in Cement Plant, Power Plants and Local Mines. The Plants also generate about 500 Indirect Employments. The communication address is as follows :

The Unit Head,  
Dalmia Cement (Bharat) Limited,  
Dalmiapuram,  
Lalgudi Taluk, Tiruchirapalli District,  
Tamil Nadu-621 651.  
Telephone Nos. : 04329-235123; Fax : 04329-235111  
e-mail : k.vinayagamurthi@dalmiacement.com

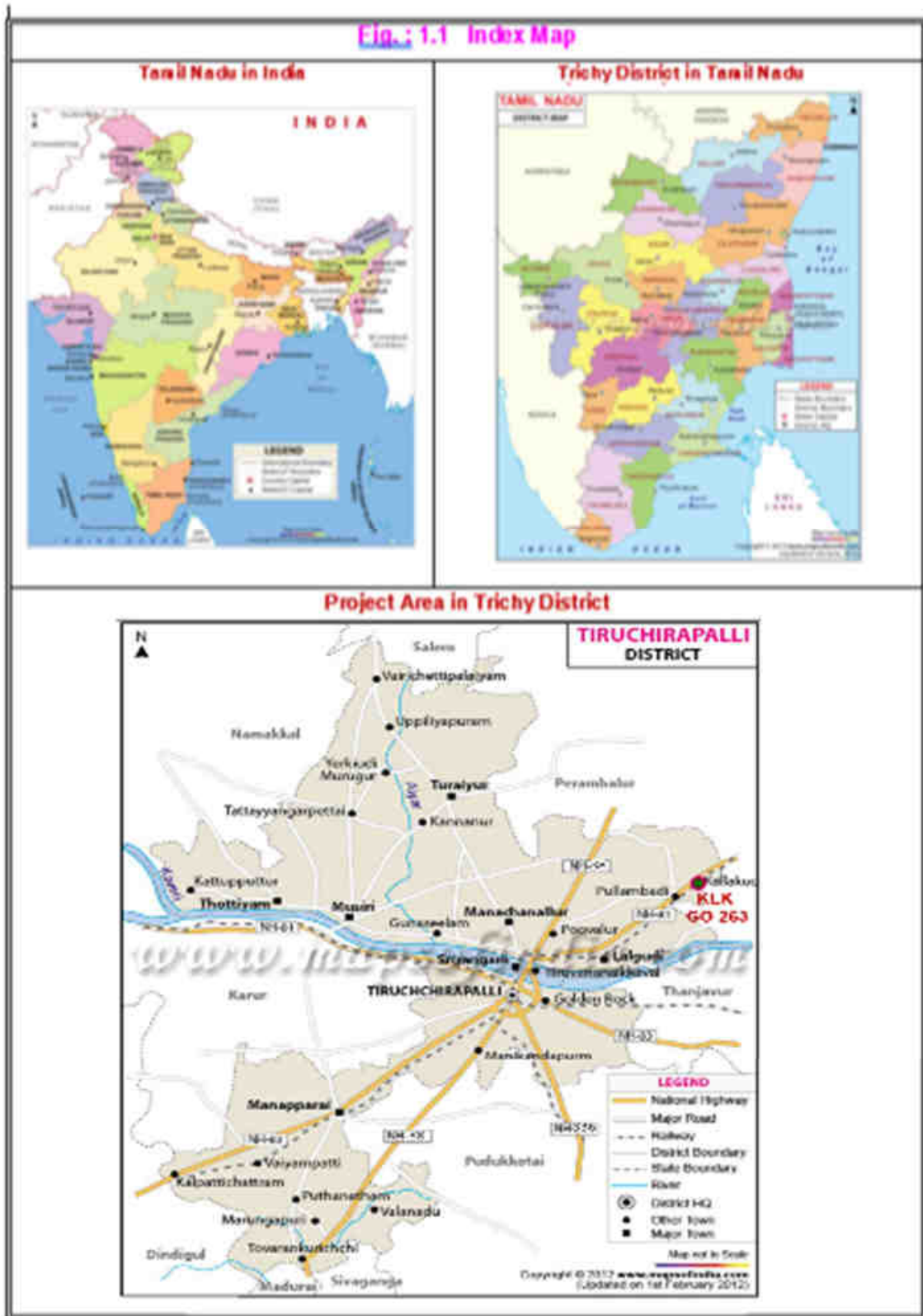
## 1.2 Project Profile

There are 2 Mining Pits (111.985 Ha) at Kallakudi and another 2 Mining Pits (79.28 Ha) at Kovandakurichi and are being operated under 5 Mining Leases. Kallakudi Mining Pit No. 1 is being operated with 4 Mining Leases including two <5 Ha Leases. **Kallakudi Limestone Mining Lease under GO No. 263** is one of the Leases of Pit No. 1 **over an Extent 0.285 Ha** in S.F No. 256 of Kallakudi Village, Lalgudi Taluk, Tiruchirapalli District in Tamil Nadu (**Fig. 1.1**). It is Mining Lease-5 (ML-5) of KLK-KVK Mines. Lease area is **Govt. Poramboke Land**. There is no Rehabilitation & Resettlement (R&R) issue due to this existing Mine. Also, there is no Litigation against the Proposal. Mining Lease is located in north of Dalmiapuram Plant at 600 m (aerial) and 2 km (by road) distance. It is accessible from Trichy-Chidambaram National Highway (NH)-81 which passes adjacent to Lease (west).

This mining lease was originally granted to DCBL in the year 1956, vide GO Ms. No. 4113 (ILC) dated 18.05.1956 for a period of 20 years having validity from 01.06.1957 to 31.05.1977. First Renewal was granted for a period of 5 years vide GO Ms. No. 229 (IND) dated 11.03.1978 having validity from 01.06.1977 to 31.05.1982. Second Renewal of the Mining Lease was granted for a period of 5 years vide GO Ms. No. 1205 (IND) dated 27.09.1983 having validity from 01.06.1982 to 31.05.1987. Third Renewal was granted for 10 years vide G.O. Ms. No. 263 Industries (MMA2) dated 15.11.1995 having validity from 01.06.1987 to 31.05.1997. Lease Deed dated 30.05.1997 was executed on 30.05.1997. Subsequently, application for Fourth Renewal of ML Grant was submitted on 17.05.1996 for 20 years from 01.06.1997 to 31.05.2017. The mine is operated under deemed extension. As per Amended MMDR Act 2015, validity of the Lease is upto 31.03.2030.

Consent to Operate (CTO) Orders were granted by Tamil Nadu Pollution Control Board (TNPCB) and were periodically renewed. Recent CTOs were 150812708525 (Water Act) and 150822708525 (Air Act) dated 24.11.2015 for 0.0125 MTPA which were valid upto 30.06.2016. The Regional Controller of Mines, Indian Bureau of Mines (IBM), Chennai has accorded its Approval for recent Review of Mining Plan (ROMP) for the Period 2022-23 to 2026-27 vide Letter No. TN/TCR/LST/ROMP-1682.MDS dated 02.12.2021.

The commencement of mining in this Lease was in the Year 1957. Existing Pit configuration is 132 (L) x 13.7 (W) x 31 m (Depth). The Mine is now in Temporary Discontinuance from 01.07.2016 for want of EC and Temporary Discontinuance Notice was given to IBM in Nov. 2018. The Mineable Reserves (111 Category) as on 01.06.2021 is Limestone-51,695 Tonnes and Marl-14,135 Tonnes, thus, total 65,830 Tonnes ROM. Presently, Opencast Mechanized Non-Conventional Method of Mining using mega Rock Breakers, without Drilling & Blasting, is adopted. The entire lease area is already fully opened. The entire Top Soil quantity of 1,140 Tons generated was fully utilised for Green Belt development at the boundaries. There was/will be 'No Over Burden (OB)' generation from the Lease and also 'No OB Dump' in the Lease. Approved Surface Plan is given as **Fig. 2.1**.





After individual Lease production commencement, 38,550 Tonnes of Limestone was mined out from this Lease during 2009-10 to 2020-21. The proposed maximum production from this Lease during ROMP Period is 10,368 Tonnes ROM (Table 2.1).

**Table : 2.1 Proposed Production during ROMP Period**

Period	Working RLS, m	Top Soil, cu.m	OB, cu.m	Production, Tonnes			Mineral Rejects, Tonnes	Ore:OB Ratio
				Limestone	Marl	Total ROM		
2022-23	57.0-50.5 (6 <sup>th</sup> Bench)	0	0	10368	0	10368	0	1:0
2023-24	50.5-46.5 (6 <sup>th</sup> & 7 <sup>th</sup> Benches)	0	0	5869	0	5869	0	1:0
2024-25	46.5-41.5 (7 <sup>th</sup> Bench)	0	0	6270	0	6270	0	1:0
2025-26	41.5-36.0 (7 <sup>th</sup> & 8 <sup>th</sup> Benches)	0	0	5999	0	5999	0	1:0
2026-27	36.0-32.0 (8 <sup>th</sup> & 2 <sup>nd</sup> Benches)	0	0	3819	1936	5755	0	1:0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>32,325</b>	<b>1,936</b>	<b>34,261</b>	<b>0</b>	<b>1:0</b>

The balance 31,569 Tonnes ROM will be mined out during successive Plan/Scheme Period. Balance Life of the Mine is 10 Years. No Top Soil and Over Burden generation is envisaged. No Waste Dump is proposed. Ultimate Pit Depth will be 56 m BGL. Ground Water-table in the Mine vicinity is found to be at 45 m BGL during Postmonsoon Season and 50 m BGL during Premonsoon Season. Thus, the Mining will intersect the ground water table.

Existing Mining Pit Size	:	132 (L) x 13.7 (W) x 31 m (D)
Mineral	:	Limestone & Marl
Mineable Reserves - 01.06.2021	:	Limestone-51,695 T and Marl-14,135 T Total 65,830 Tonnes
Mx. Production- ROMP Period	:	10,368 TPA ROM
No. of working days per annum	:	240 (3 shifts)
Life of the Mine	:	10 years
Ore:OB Ratio-ROMP Period	:	1:0
Bench Height	:	6.5-8.0 m
Bench Width	:	10 m
Bench Slope	:	70° to 80°
Pit Limit-ROMP Period	:	56 m BGL (Top RL 88 m; Bottom RL 32 m)
Ultimate Pit Limit-Conceptual	:	132x17.3x56 m BGL (RL 88 m to RL 32 m)
Ground Water-table	:	Postmonsoon Season - 45 m BGL Premonsoon Season - 50 m BGL

'No prior Environmental Clearance (EC) is required for the Mines with <5 Ha Extent' in the context of the Ministry of Environment, Forest and Climate Change (MoEF&CC), Office Memorandum (OM) No. J-11013/182/2012-IA-II(M) dated 04.01.2013. However, the existing Mining Lease requires EC as per MoEF&CC Notification SO 141(E) dated 15.01.2016 under EIA Notification 2006. As per MoEF&CC, 'the mine leases which continue to operate without obtaining EC after 15.01.2016 shall be considered as Violation Cases and the leases which were in operation till 15.01.2016 and stopped the production after 15.01.2016 shall be considered for EC'.

DCBL has operated Kallakudi Limestone Mine under GO 263 after 15.01.2016 till 30.06.2016 and produced 1,662 Tonnes of Limestone during Violation Period of 5.5 months. Operating the Lease without EC is in Violation of EIA Notification 2006 (as amended). The mining activities were stopped on 01.07.2016 and there is no production from this Mine.

DCBL has applied for EC to SEIAA-TN vide Online Proposal No. SIA/TN/MIN/23828/2018 on 07.04.2018. The Proposal under Sl. No. 1(a), Category B1 was deliberated under Violation Category in State Level Expert Appraisal Committee-Tamil Nadu (SEAC-TN) in its 109<sup>th</sup> Meeting held on 26.04.2018 and in 301<sup>st</sup> & 306<sup>th</sup> SEIAA-TN Meetings held on 17.05.2018 & 13.06.2018. Terms of Reference (TOR) has been awarded for preparing Environmental Impact Assessment (EIA) Report vide Letter SEIAA-TN/F.No.6409/TOR-495/2018 dated 13.06.2018 with Public Hearing.

The EIA Consultant, M/s.ABC Techno Labs India Private Limited, Chennai has been accredited for various Sectors including Sector-1 (Mining Projects) for Category 'A' by the National Accreditation Board for Education & Training (NABET), Quality Council of India vide Certificate NABET/EIA/1922/RA 0155 with validity 22.05.2022 (Sl. No. 3 of QCI/NABET List dated 14.02.2022). ABC Techno Labs India Private Limited Laboratory is accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL) vide Certificate No. TC-5770 dated 03.04.2020 valid till 02.04.2022. The Lab is also recognised by MoEF&CC vide Letter F. No. Q-15018/04/2019-CPW dated 14.10.2019 with validity of 5 years.

EIA Report has been prepared and submitted as per awarded TORs with Additional Chapter No. 13 for Ecological Damage Assessment, Remediation Plan and Natural Resource Augmentation & Community Resource Augmentation Plan. The Summary EIA Reports (both in English and Tamil) along with Draft EIA Report are submitted for the Public Consultation & Public Hearing.

Meanwhile, DCBL has received Demand Notice from the District Collector, Trichy for 100% cost of Mineral value of Limestone quantity of 1,662 Tonnes produced without EC vide Rc. No. 313/G&M/1996 dated 08.07.2019 for Rs.6,62,664/-. Accordingly, DCBL has remitted Rs.6,62,664/- on 19.07.2019 vide TNTC9 Chalan No. 14934 through State Bank of India, Trichy. Now, the Mine will be operated only after obtaining all Statutory Clearances.

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## **2.0 Description of the Environment**

### **2.1 Environmental Setting**

Mining Lease is located inbetween 10°58'37.26"-10°58'39.60" North Latitude & 78°56'40.02" - 78°56'47.64" East Longitude (Survey of India Topo Sheet No. 58 J/13) (**Fig. 1.2**). Karaivetti Bird Sanctuary, Notified Eco Sensitive Area (ESA) vide S.O. 1909(E) dated 31.05.2019, is located at a distance of 9.6 km in east direction from the Lease. The shortest Eco Sensitive Zone (ESZ) of Karaivetti Bird Sanctuary is 8.7 km in ENE direction. As the ESZ is notified, no NOC from National Board for Wildlife (NBWL) is required for the Project. Other than Karaivetti Bird Sanctuary, there are no other Eco Sensitive Areas like National Parks, Wildlife Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar Sites, Tiger/Elephant Reserves, Reserved Forests, etc. (existing as well as proposed) within 10 km from the Lease.

The general elevation of the study area ranges from 40 m to 120 m above MSL (aMSL). The Seasonal River Coleroon is the major river course flowing west to east at southern side (8.5-10 km distance). River Cauvery flows at 11.5 km in south direction. The seasonal nallahs which drain the area are : Uppar Odai/Andi Odai, Man Odai and Nandiyar Nallah. Pullambadi Canal runs in the southern side of the Mines.

Mine is accessible from adjacent National Highway NH-81 connecting Chidambaram with Trichy. Southern Railway BG Line connecting Chennai Egmore-Trichy-Kanniyakumari runs at a distance of 1.0 km in east and Kallakudi Palanganatham is the nearest railway station. Trichy is the nearest Airport at a distance of 30 km in the southwest. The major settlements with in the area are Kallakudi Town Panchayat (Population-11,604; 2011 Census) @ 0.2 km (E) and Pullambadi Town Panchayat (Population-10,241) @ 4.4 km (SSW).

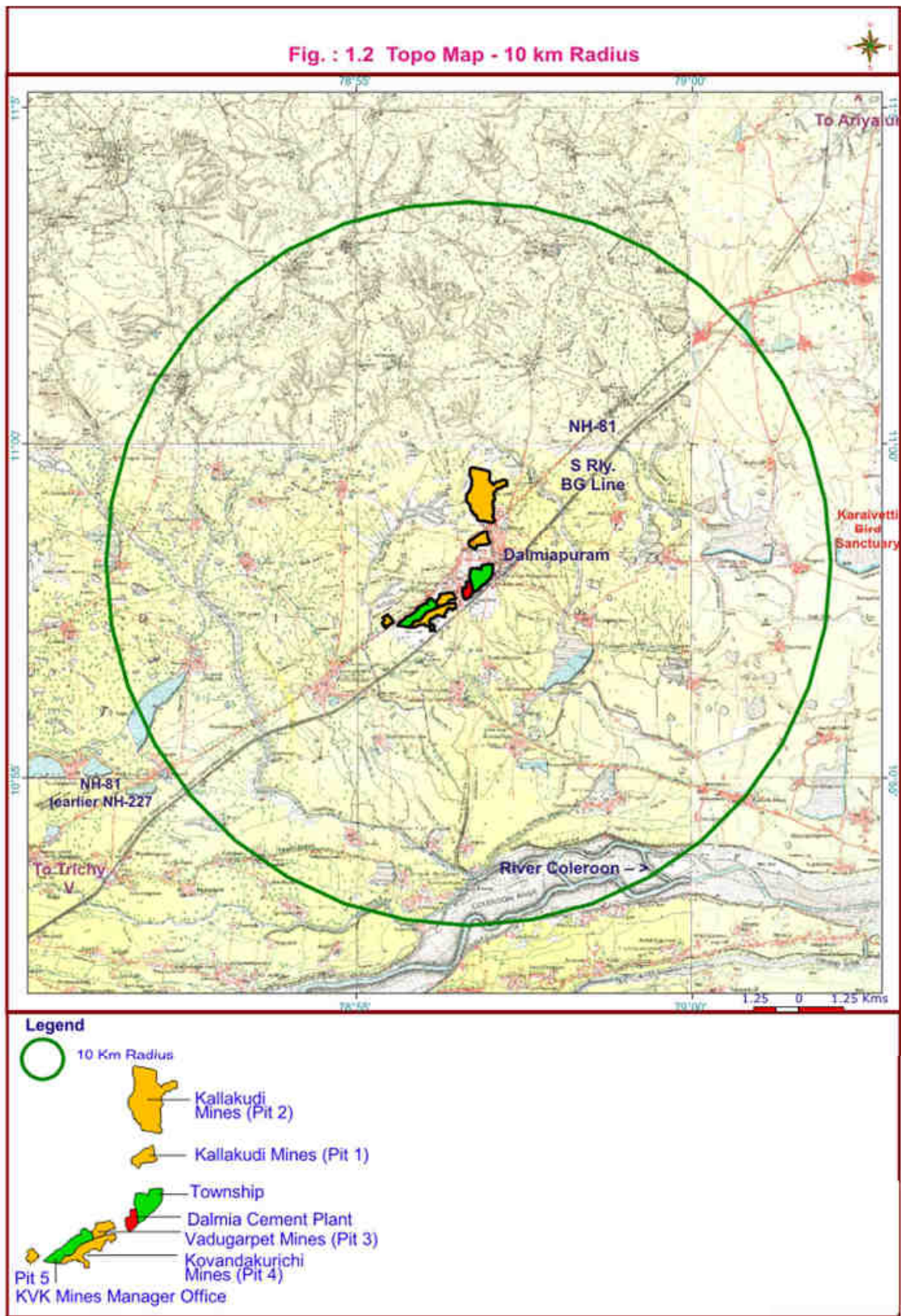
Industries in 10 km Radius : Dalmiapuram Cement Plant along with its Captive Power Plants and KVK-KVK Mines are the major industries in the Study Area. DCBL Kallakudi Pit No. 2 is at 0.4 km in north, Kavandakurichi Pit-3 (Vadugarpet & Kovandakurichi) is at 1.5 km (SSW). KVK Mines Office is at 2.5 km in SSW direction. Dalmia Refractories Ltd. is located adjacent to Dalmiapuram Cement Plant. Dhandapani Cement's Venkatachalapuram & Pullambadi Mines are located at 3.9 and 4.3 km in SW.

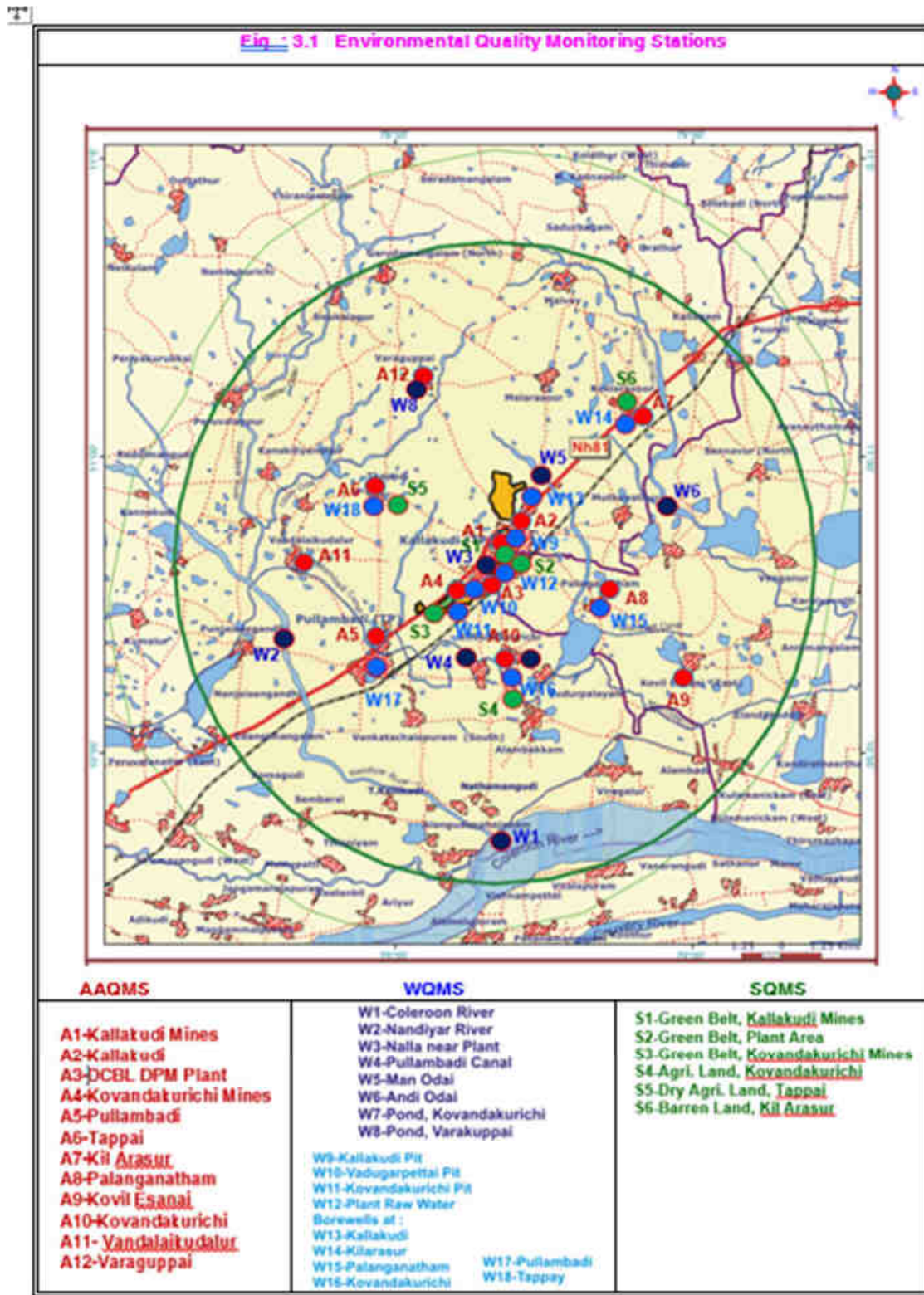
### **2.2 Baseline Environmental Status**

The monitoring stations were identified in the study area of 10 km radius from centre of Cumulative Impact Zone (**Fig. 3.1**). The monitoring stations were selected in such a way that the baseline environmental data reflects the Cumulative Impact of existing Mines and Industries in the Study area.

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Considering the Environmental setting of the project, project activities and their interaction, environmental regulations and Standards, following Environmental Attributes have been included in EIA Study.

- ❖ Site specific Micro-meteorological Data from Core Zone for a Season on wind speed, wind direction (wind rose), temperature, humidity, cloud cover, atmospheric pressure, rainfall, etc.
- ❖ Ambient Air Quality Monitoring at 12 locations on 24-hourly basis, continuously for 2 days in a week for 4 weeks in a month for a season for the parameters as per Revised NAAQ Norms.
- ❖ Noise Level Measurements at all air quality monitoring station for Leq, L day and L night values once in the season.
- ❖ Water Quality Monitoring – grab sampling of Surface Water (8 locations) and Ground Water (10 Locations) including existing Plant Raw Water - once in the Season.
- ❖ Soil Quality Monitoring at 6 locations once in the Season for Textural & Physical Parameters & Nutrients.
- ❖ Land use pattern based on recent available Satellite Imagery.
- ❖ Biotic Attributes for : Flora & Fauna in Core & Buffer Zones.
- ❖ Socio-Economic Profile, based on 2011-Census and Need Based Assessment, once in the study period for: Total Population / Household Size, Gender Composition, S.C / S.T Population, Literacy Levels, Occupational Structure, etc.

The summary of baseline status is given in **Table 2.1**.

**Table : 2.1 Environmental Baseline Status**

Envl. Component	Main Parameters	Minimum	Maximum	Mean	Desirable Norms
Ambient Air Quality, ug/m <sup>3</sup>	PM2.5	10	48	<b>22.0</b>	<b>60</b>
	PM10	16	71	<b>37.6</b>	<b>100</b>
	SO <sub>2</sub>	6	23	<b>11.5</b>	<b>80</b>
	NO <sub>x</sub>	6	27	<b>13.7</b>	<b>80</b>
Ambient Noise, dB(A)	Leq-Day	41.5	51.2	<b>43.9</b>	<b>55</b>
	Leq-Night	39.6	47.8	<b>41.6</b>	<b>45</b>
Surface Waters	TDS, mg/l	200	340	-	<b>500/2100</b>
Ground Waters	TDS, mg/l	230	370	-	<b>500-2000</b>
Soil Status	EC, mmhos/cm	1.09	1.38	-	<b>0.2-0.5</b>
	SAR	2.16	2.99	-	<b>&lt;5</b>

Legend : PM2.5-Particulate Matter size less than 2.5 um; PM10- Particulate Matter size less than 10 um; SO<sub>2</sub>-Sulphur dioxide; NO<sub>x</sub>-Oxides of Nitrogen; Leq-Day & Leq-Night - Equivalent Noise Levels during Day & Night Times; TDS-Total Dissolved Solids; EC-Electrical Conductivity & SAR-Sodium Absorption Ratio.

The findings of baseline environmental status of the study area are summarized below :

- ❖ The collected meteorological data during this season represented the local weather phenomena.
- ❖ The monitored ambient air quality in the study area was found to be in compliance with the National Ambient Air Quality (NAAQ) 24-hourly Norms for Industrial, Residential, Rural and other areas.
- ❖ Monitored Ambient Noise Levels (Leq) during day and night times were found to be well within the MoEF&CC Norms.
- ❖ The water quality of surface waters were found to be in compliance with CPCB/BIS Norms.
- ❖ The ground water quality was found to be in compliance with the BIS:10500-2012 Norms.
- ❖ The soil in the study area would very well support vegetation after amending it suitably.
- ❖ Karaivetti Bird Sanctuary is in the Study Area and its ESZ is at 8.7 km from the Lease. No Reserved Forests in the Region. Domesticated animals only exist.
- ❖ The area is thinly populated and basic amenities are available almost in all villages.

Thus, there is **adequate buffer** for the proposed Proposal in the physical, biological and edaphic environments of the study area.

### 3.0 Anticipated Environmental Impacts

Identification of all potential environmental impacts due to the Proposal are critically examined and major impacts (both beneficial & adverse) are assessed. The impacts have been divided into two categories, viz. Localised and Cumulative. Being an existing Mine, it does not involve any major establishment or construction. Thus, Construction Phase impacts are not there. For **Cumulative Impact Assessment**, existing industrial activities in the Study Area are considered and their contribution are also assessed (**Table 3.1**).

**Table : 3.1 Industrial Activities considered for Cumulative Impact**

Sl. No.	Industry / Mine	Consented Production/ Extent	Bearing & Contribution for Cumulative Impact
1	DCBL DPM Cement & Power Plants along with Kallakudi-Kovandakurichi (Local) Captive Mines	DPM Cement Plant existing operation: Clinker : 2.304 MTPA Cement : 3.40 MTPA CPPs : 50 MW Local Captive Mines : 5 Leases. Total Extent-191.265 Ha & Total Consented Prodn. : <b>2.97 MTPA</b> <b>KLK-KVK Mines :-</b> GO No. 76 –166.005 Ha in all 4 Pits & 2.0 MTPA	Activities are considered cumulatively as Core Zone.



Sl. No.	Industry / Mine	Consented Production/ Extent	Bearing & Contribution for Cumulative Impact
		GO No. 1158 – 13.295 Ha & 0.75 MTPA GO No. 143 - 10.545 Ha & 0.20 MTPA <b>GO No. 262 – 1.135 Ha &amp; 10,000 TPA</b> <b>GO No. 263 – 0.285 Ha &amp; 10,368 TPA</b> <b>Apportioned Production considered :</b> KLK Pit No. 1 : 0.308 MTPA KLK Pit No. 2 : 1.208 MTPA KVK Pit Nos. 3 & 4 : 1.454 MTPA	
2	Dalmia Refractories Ltd.	-	Adjacent to DPM Plant and covered in the Baseline Status.
3	Dhandapani Cement's Venkatachalapuram & Pullambadi Mines	Venkatachalapuram MLs Extent & (Production) : 3.253 Ha (73,250 TPA) & 2.235 Ha (28,850 TPA) Pullambadi ML: Extent : 1.870 Ha Production : 61,000 TPA	<b>Non-operative Mines</b> in Downwind Direction and not contributing.

Cumulative Impact has been assessed for identified Industries and assumed that **pollution due to existing Industrial and Mining activities have already been covered under baseline environmental status** and continue to remain same till operation of the Project.

**Land Use :** There is no additional Land requirement for the Proposal. The total extent of the Cement Plant Complex is 65.725 Ha. Local KLK-KVK Mines are located in a total extent of 191.265 Ha. Thus, Industrial activities are being carried out in an extent of 256.990 Ha in the Core Zone. There is no Drilling and Blasting proposed and thus, no vibration impact due to mining. Also, as there is no Solid Waste generation and no Waste Dump proposed now, there will not be any significant change to existing Land Environment due to the Proposal.

**Traffic Impact :** The existing traffic volume in the Project vicinity was found to be 6,173 PCU/day. In the Post-Project Scenario, there will be an addition of 6 Vehicles (in 2 ways) due to GO 262 and GO 263 Leases to the existing traffic. Cumulatively, the traffic volume in the Project vicinity will be 6,186.1 PCU/day. The net increase (cumulative) will be 13.2 PCU/day only. The existing Roads/NH are adequate to handle the proposed traffic volume due to the Project.

**Air Quality :** AERMOD View Software is used for Predicting the maximum Ground Level Concentrations (GLCs) including Transportation Impact. The predicted maximum GLCs for cumulative operation of Plants & Mining activities are : PM<sub>10</sub> - 1.20 ug/m<sup>3</sup>, SO<sub>2</sub> – 12.76 ug/m<sup>3</sup> and NO<sub>x</sub> - 9.23 ug/m<sup>3</sup> and found to be confined locally i.e. within 0.8 km radius from the boundaries. Also, adequate Buffer Level available in the Air Environment for the Proposal.

**Noise Levels :** In the Mines, Vibro silenced model of Rock Breakers are used. In general, noise generated by these sources is within the limit of 90 dB(A) prescribed by Director General of Mines

Safety (DGMS), Dhanbad. The work force is exposed to <85 dB(A) levels during the 8-hours Shift. Noise level at the nearest Lease boundary will be <55 dB(A) during day times and <45 dB(A) during night times and which will be within the MoEF&CC Norms for Residential Areas.

**Water Environment** : Fresh water demand of the Plant is 2,705 KLD which is presently drawn from permitted 3,200 KLD from Coleroon River through the existing water supply system. Also, there is no effluent discharge from the Plants. 'Zero Effluent Discharge' is being maintained in the Complex. There is no impact due to the Seasonal Discharges of Man Odai due to DCBL activities in the vicinity. Mining Lease requires about 4.0 KLD raw water which is being met out from rain water harvested in mine pit. There will be Ground Water-table Intersection due to the Mining in the Lease. Mine Pit Seepage Water quantity will be 19,982 KL/Annum and Rain Water Realisation in the Mine Pit will be 2,127 KL/Annum, thus, total 22,109 KL/Annum i.e. 60.6 KLD. The influence zone due to mine pit dewatering is about 287.5 m which will be within Mine Pit area and thus, no significant impact on the Ground Water regime. There is no effluent discharge from the Lease. Only, domestic sewage of 0.4 KLD is generated which is being biologically treated in a Septic Tank followed by a Dispersion Trench.

**Solid Waste-Land Environment** : There is no Top Soil or OB generation from Kallakudi Pit No.1. There is no Waste Dump also. On future Expansion of GO No. 76, Solid Wastes generation in the form of OB, Conglomerate Gneiss and Sub Grade materials will be there which will be dumped in the eastern side of Pit Nos. 2 & 3 for further utilisation in future.

**Biological Environment** : There is no habitat fragmentation or blocking of migratory corridors due to Project activities. DCBL has developed an effective Green Belt in Plants & Mines which will have significant long term positive impact on the environment. About, 47,287 trees (predominantly local species) are planted in Local Mines @ 1,650 trees/Ha and maintained with survival rate of 90%.

**Socioeconomics** : Based on the CSR Committee and declared CSR Policy of the Company, the following CSR activities will be covered and Reported :

- ❖ Eradicating extreme hunger and poverty.
- ❖ Promotion of education & vocational skills.
- ❖ Ensuring environmental sustainability.
- ❖ Contribution to the Prime Minister's National Relief Fund or any other fund set up by the Central Government or the State Governments for socioeconomic development and relief.

**Occupational Health** : Occupational Health Centre (with qualified Occupational Health Specialist) is established at Dalmiapuram. Adequate care will be exercised to detect early incidences of occupational diseases for prompt treatment and cure. Safety aspects are also ensured to reduce incidents, if any.

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#### 4.0 Environmental Monitoring Programme

DCBL has EMP Monitoring Cell. The quality of air, noise, water, soil, etc. are being monitored at the identified locations as per MoEF&CC, IBM & TNPCB Norms by appointing an accredited external agency. For the Lease, periodical monitoring of Ambient Air Quality (3 locations), Fugitive emissions/Workzone Air Quality (4 locations), Ambient & Workzone Noise Levels (4 locations), Water (4 Surface & 4 Ground waters along with Mine Pit water) and Soil Quality (3 Locations) shall be undertaken and reported to the Authorities.

#### 5.0 Additional Studies

Detailed Risk Assessment and mitigative measures are delineated and an effective Disaster Management Plan, for natural and man-made disasters, is also submitted.

#### 6.0 Project Benefits

**Environmental Benefits :** The proposal ensures the continuous limestone supply to the Cement Plants. Effective utilization of the Mineral for Cement manufacturing is a Mineral Conservation Measure.

**Financial Benefits :** As per MMDR Act 2015, 30% of Royalty Amount (about **Rs.15.80 Lakhs**) will be earmarked for **District Mineral Foundation (DMF)** and the amount will be spent for benefit of local villager in the Lease Area.

**Social Benefits :** Project will employ about 10 persons directly and 15 persons indirectly. The direct & indirect employment, CSR/CER activities, etc., will have a positive impact on the Socioeconomic Structure of the area.

#### 7.0 Environmental Management Plan

Environmental Management Plan (EMP) is suggested to mitigate the possible negative impacts that may be caused to various attributes of environment due to the proposed mining operations.

##### 7.1 EMP for Construction Phase

Being existing Mine, there will be **no Construction Phase** for the Project.

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## 7.2 EMP for Operation Phase

Mining operations will be carried out scientifically as per approved Mining Plan, stipulated EC & CFO Conditions, IBM Approvals, DGMS Norms, etc. EMP Measures for Operation Phase are proposed below :

### Land Use :

- ❖ Green Belt has to be developed and maintained along Lease boundary and Safety Barriers.
- ❖ Earthen bunds are to be strengthened along the boundaries to arrest wash-offs.
- ❖ Garland drains are to be maintained around the Lease.
- ❖ Desilting of garland drains shall be carried out periodically.

### Traffic Impact :

- ❖ Adequate parkings are provided in the Plant.
- ❖ Facilities for drivers (rest room, toilet, etc.) are also provided.
- ❖ Green Belt with thick foliage along the Plant/Ore Haulage/Transportation roads.
- ❖ Security Guards at Road Junction to handle the inward and outward vehicles from Highway.
- ❖ All Trucks are to be fully covered with Tarpaulin to avoid any spillage on transportation.
- ❖ Restriction of over loading of Trucks/Tippers shall be enforced.
- ❖ Speed restrictions shall be enforced.
- ❖ No Truck parking in the Highway and Public Roads shall be enforced.
- ❖ Regular and preventive maintenance of transport vehicles are to be ensured.
- ❖ Compliance to 'Pollution under Control' Certification has to be ensured and to be checked periodically.

### Air Environment :

- ❖ Non-Conventional method of mining is adopted. Rock breakers are utilised for the mining.
- ❖ Eco friendly mining shall be continued.
- ❖ Water sprinkling on the Mining areas, loading point, haul roads, etc. has to be carried out.
- ❖ Covering of Trucks/Tippers with tarpaulin shall be ensured during Mineral transportation.
- ❖ Over loading of Tippers has to be avoided to control the spillages during transportation.
- ❖ Periodical maintenance and replacement of worn out accessories in the mine equipments.
- ❖ Effective Green Belt with thick foliage has to be developed along boundaries and haul roads.
- ❖ Periodical Air Quality Monitoring shall be carried out and Reports submitted to the Authorities.

### Noise Levels :

- ❖ No drilling and blasting will be done as proposed.
  - ❖ Deploying mining equipments shall be with in-built mechanism for reducing noise.
  - ❖ Providing sound proof operator's cabin of equipments.
  - ❖ Provision of ear muffs/ear plugs to the workers in higher noise zones.
  - ❖ Periodical Noise Monitoring shall be carried out and Reports submitted to the Authorities.
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**Water Environment :**

- ❖ Proper Mine Pit Water management on Ground Water-table intersection shall be adopted.
- ❖ Settling Pond has to be provided to garland drains, to settle the Suspended Solids.
- ❖ The water collected in the garland drains shall be utilized for green belt and dust control measures.
- ❖ The mined out Pit shall be converted into a Water Reservoir to harvest Rain Water and to recharge the Ground Water-table in the vicinity. Mine Pit water shall be gainfully utilised.
- ❖ Periodical monitoring of mine pit water shall be carried out and Reports submitted.

**Land Environment – Solid Wastes :**

- ❖ Construction and maintenance of garland drains at foot of dump and around mine areas shall be done.
- ❖ Saplings will also be planted along the foot and unused slopes to arrest / prevent erosion.
- ❖ After the mine reaches the ultimate depth, developmental wastes and rejects stacked, if any, shall be backfilled and topsoil shall be spread and afforested.
- ❖ Organic wastes (dry leaves, food wastes, etc.) shall be subjected to vermi composting and used as manure for the Green Belt.
- ❖ Inorganic wastes (papers and other wastes) are to be properly disposed of.

**Biological Environment :**

- ❖ Effective Green Belt has to be developed all along the boundaries, haul roads, waste dumps, etc. and maintained with good Survival Rate till Conceptual Stage.
- ❖ Native species shall be preferred for Green Belt development.
- ❖ Fruit bearing trees may also be preferred.
- ❖ Afforestation in backfilled & reclaimed areas shall be undertaken.

**Social Measures :**

- ❖ CSR activities shall be carried out by providing social and welfare measures for the local residents and nearby villages around the mine area.
  - ❖ The prime focus will be on the creating and maintaining of drinking water facilities for the students at the nearby Government Schools, establishing toilets especially for girl students at the schools, setting up of computer centres, maintenance of village roads & ponds, providing solar street lights, conducting free medical camps, etc.
  - ❖ Joining Hands with District Administration in implementing Govt. Schemes.
  - ❖ Development of Infrastructure Facilities in the Region.
  - ❖ Provision of Ambulance for the villages.
  - ❖ Medical Camps and extending medical facilities.
  - ❖ Contribution to Education.
  - ❖ Drinking Water Supply.
  - ❖ Supporting to Sports development.
  - ❖ Extending support during natural calamities.
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- ❖ An amount of Rs.5.00 Lakhs per Annum has been earmarked for Corporate Social Responsibility (CSR)/Corporate Environmental Responsibility (CER) Budget for covering Public Hearing issues.

**Occupational Health Measures :**

- ❖ All employees undergo check-up on recruitment and periodically during employment.
- ❖ Maintenance of Pre, during & Post Employment Records.
- ❖ Provision of all Personal Protective Equipments for the employees at Mines.
- ❖ Standard operating procedures for all occupations and operations with respect to occupational safety and health.
- ❖ Provision of illumination facilities at proper places for ease of working during night times.
- ❖ Work comfort and its periodic review by a committee.
- ❖ Provision of Rest Shelter at mines.

**Plastic Waste Management :** There will be ban on one time use and throw away Plastic usage in the Plant in compliance with Tamil Nadu, Environment and Forests (EC-2) Department, G.O.(D) No. 84 dated 25.06.2018. DCBL will encourage the use of eco friendly alternative such as banana leaf, areca nut palm plate, stainless steel glass, porcelain plates / cups, cloth bag, jute bag etc.

**7.3 EMP Budget**

The capital cost of the Project is **Rs.11.51 Lakhs**. A budget of Rs.5.00 Lakhs has been earmarked as Capital Cost for EMP measures and **Rs.15.32 Lakhs per Annum as EMP Operating Cost** towards EMP measures, Green Belt development & maintenance, Environmental Monitoring, etc.

The violation falls under **Low Level Ecological Damage** category. An amount of **Rs.0.30 Lakhs** towards Ecological Remediation Plan and Natural & Community Resource Augmentation Plans is allotted for approval.

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