Existing Maruvathur Limestone Mine over an Extent of 3.545 Ha in SF. Nos. 49/1A, 49/1B, 49/8A(P), 69/1B2, 69/1B3, 69/3C, 70/3A(P), 70/3B & 70/4B of Perali (South) Village, Kunnam Taluk, Perambalur District, Tamil Nadu by Thiru.S. Saravanan

(Captive Mine of Dhandapani Cement Plant, Trichy)

Plan Period Production of 1,83,218 Tonnes with Annual Peak ROM Production of 41,850 Tonnes upto a Depth of 22 m BGL

Mining Lease Grant vide GO 3(D) No. 263 dated 20.09.1995 for 20 years - Lease Valid till 17.10.2045 as per MMDR Amendment Act, 2015

Mining Plan Approval by IBM, Chennai Letter No. TN/PBR/LST/ROMP-1768.MDS dated 08.11.2024 (Plan Period 2025-26 to 2029-30) -Valid till 31.03.2030

Environmental Clearance under EIA Notification 2006

Schedule Sl. No. 1(a) & Category 'B' (<250 Ha)

Summary Environmental Impact Assessment Report

(after TOR for Public Hearing)

Awarded TOR Identification No. TO24B0000TN5850953N dated 20.08.2024
Baseline Data Collection : Mar.-May 2024 (Summer Season)

February 2025

EIA Consultant

ABC Techno Labs India Private Limited, Chennai
Accreditation Certificate : NABET/EIA/2225/RA0290 dated 11.06.2023 with Validity till 16.11.2025
(Sl. No. 4 of QCI/NABET List)
Lab Accreditation : NABL Certificate No. TC-5770 dated 03.04.2024-valid till 02.04.2026

Summary Environmental Impact Assessment Report

1.0 Introduction

1.1 Project Proponent

M/s. Dhandapani Cements Private Limited (DCPL) are operating a 900 TPD Cement Plant at Thathamangalam Village near Mannachanallur in Trichy District. DCPL is producing Ordinary Portland Cement (OPC) & Portland Pozzolana Cement (PPC) and marketing the products in the name **Maruthi Cement** in the States of Tamil Nadu and Kerala. Shri.S.Subramanian, is the Chairman. He and his son Mr.S.Saravanan are the Directors of DCPL. Both of them and their Family Members are having Limestone Mines in Perambalur, Ariyalur and Trichy Districts which are Captive Mines to DCPL Cement Plant.

Maruvathur Mining Lease in Perali (South) is one of the Captive Mines of DCPL which has been granted to Mr.S.Saravanan Director-DCPL vide GO 3(D) No. 263 dated 20.09.1995 for 20 Years over an extent of 3.545 Ha at SF Nos. 49/1A, 49/1B, 49/8A(P), 69/1B2, 69/1B3, 69/3C, 70/3A(P), 70/4B & 70/3B of Perali (South) Village, Kunnam Taluk, Perambalur District, Tamil Nadu (**Fig. 1.1**). Lease area is **Own Land** (Ryotwari Dry Land) and in his possession. FMB Sketch is given as **Plate-I**. Lease in Google Earth Imagery & nearby Settlements are shown in **Plate-II**.

Plate : I Lease Area in Village FMB

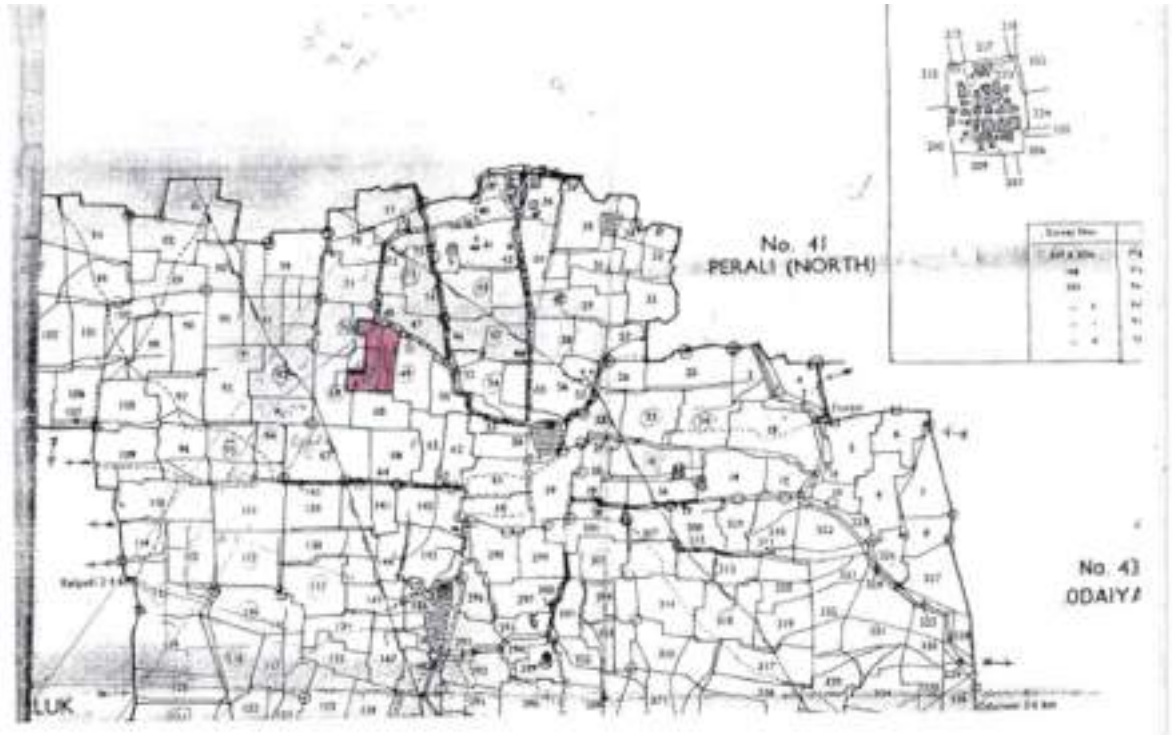


Fig. : 1.1 Index Map

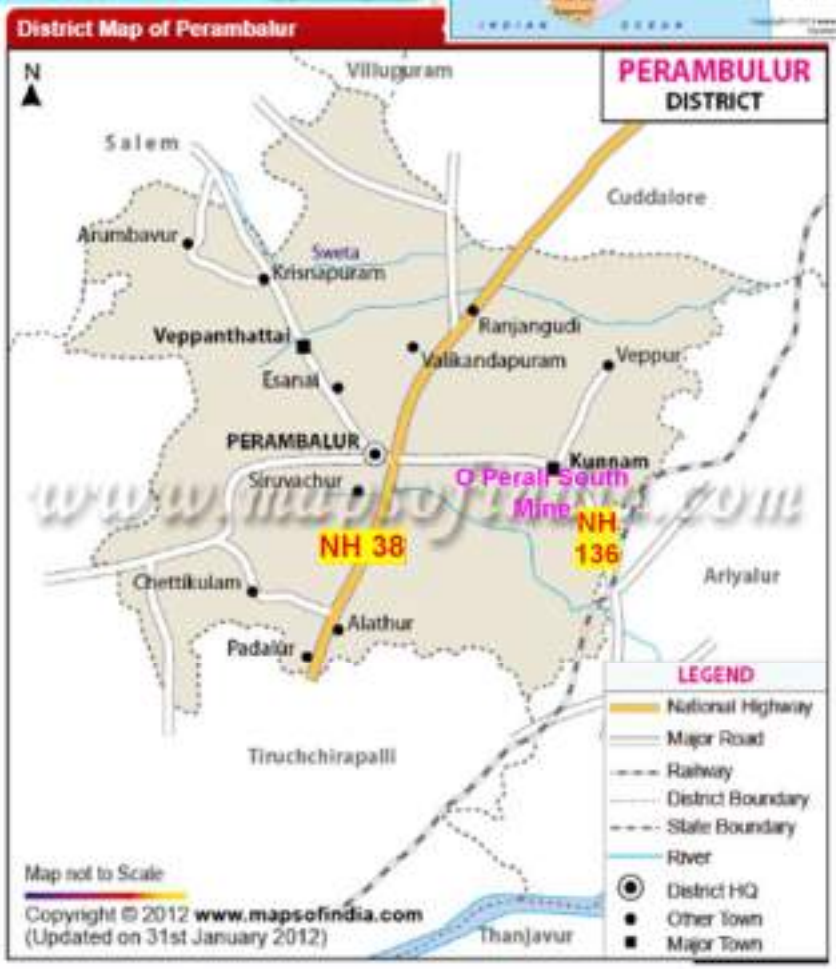
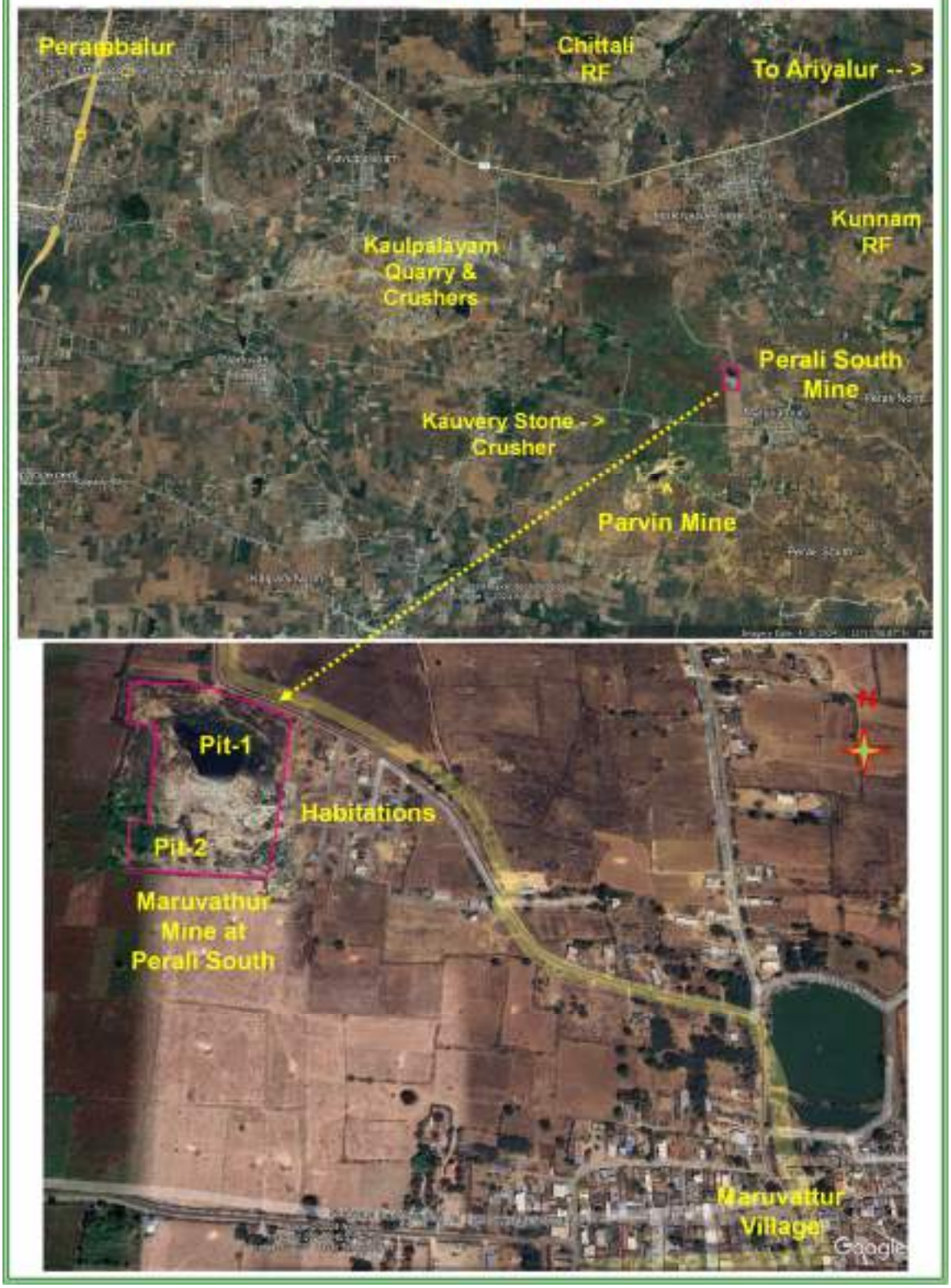


Plate : II Lease & its Environs in Google Earth Imagery



The Lessee's communication address is:

Shri. S.Saravanan,
Director, Dhandapani Cements Private Limited,
69, Ganapathy Nagar,
Tiruvanai Kovil, Trichy -620 005.
Tel. No. : 94892 01004
e-mail : dcplmaruthi@gmail.com

1.2 Project Profile

Project Name : Existing Maruvathur Limestone Mine over an Extent of 3.545 Ha at SF. Nos. 49/1A, 49/1B, 49/8A(P), 69/1B2, 69/1B3, 69/3C, 70/3A(P), 70/3B & 70/4B of Perali (South) Village, Kunnam Taluk, Perambalur District, Tamil Nadu by Thiru.S. Saravanan.

Project Location : The Mine is accessible from Perambalur-Ariyalur Section of NH-136 (earlier SH-27) at Perali by Perali-Maruvathur Road. It is at 2.0 km from NH-136 and 4.0 km by road. The mine is at a distance of 0.35 km in northwest of Maruvathur village. Dhandapani Cement Factory is located at a distance of 38 km in southwest (51 km by road).

Statutory Approvals : GO 3(D) No. 263 dated 20.09.1995 is granted for 20 Years. Lease Deed was executed and registered on 18.10.1995. As per MMDR Amendment Act, 2015 existing lease is valid for 50 years i.e. upto 17.10.2045. Mining operations with Opencast Conventional Mining Method was commenced in the Mine on 28.10.1995. Limestone raised from the Lease was supplied to Dhandapani Cement Plant near Trichy at a distance of 38 km in southwest (51 km by road). 'Temporary Discontinuance Notice' for the Lease was given to IBM on 01.02.2016 and the **Mine is not in operation** since then. Present Review of Mining Plan (ROMP) has been approved by IBM, Chennai vide Letter No. TN/PBR/LST/ROMP-1768.MDS dated 08.11.2024 for Plan Period 2025-26 to 2029-30 and is **valid till 31.03.2030**.

Mine Proposal : Mineable Reserves ('111' Category) is 1,83,218 Tonnes ROM as on 02.07.2024. As approved by IBM, the Mine will be worked by **Non-Conventional Opencast Mechanised Method of Mining** by deploying Rock Breakers **without Drilling & Blasting**. ROM Production of 41,850 Tonnes per Annum (TPA), maximum, will be on 1-Shift basis for 300 days in a Year. Limestone will be recovered @ 65% (27,203 TPA) and transported by 20 T Tippers to the Cement Plant via NH-136 and NH-38. Mineral Rejects @ 35% of ROM (14,648 TPA) will be temporarily stored in a Dump for future utilisation. Ore:Waste Ratio will be 1:1.48. Ultimate Pit Limit will be **22.0 m BGL.** Ground Water-table is at 38 m (Postmonsoon) & 40 m BGL (Premonsoon). **Mining will not intersect ground water-table. Life of the Mine is 5 Years only.** No Beneficiation/Screening is required.

The Mine Layout is given as **Fig. 2.1**. Mine Particulars are detailed in **Table 1.1**.

Fig. : 2.1 Surface Plan

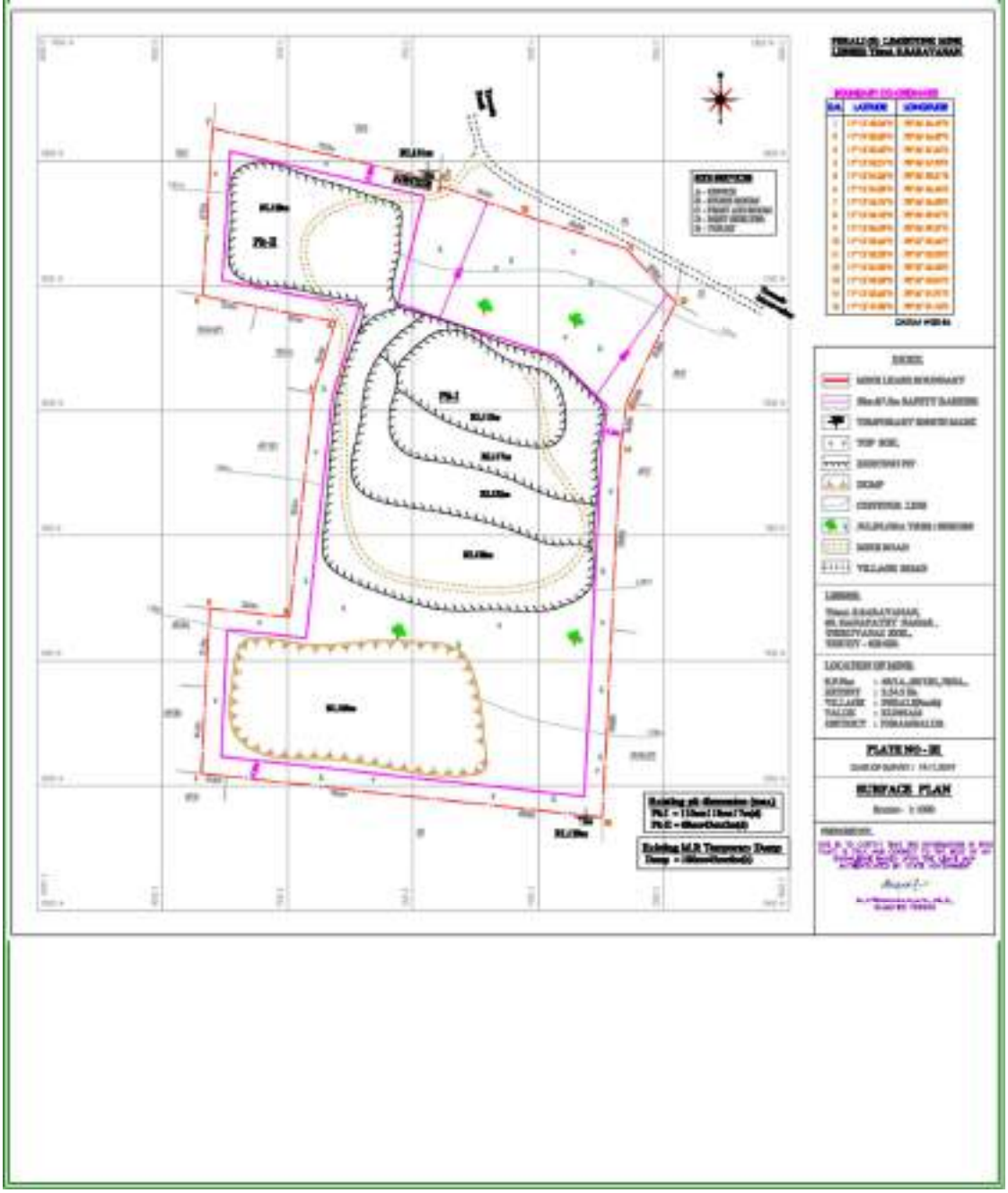


Table : 1.1 Mine Particulars

<table>
<tr><th>Sl. No.</th><th>Details on</th><th>Particulars</th></tr>
<tr><td>1</td><td>Name of the Lease</td><td>Existing Maruvathur Limestone Mine at Perali (South)
GO 3(D) No. 263 Industries (MMA2) Dept. dated 20.09.1995</td></tr>
<tr><td>2</td><td>Lease Owner</td><td>Mr.S.Saravanan, Director, DCPL, Trichy</td></tr>
<tr><td>3</td><td>Extent of Lease</td><td>3.545 Ha</td></tr>
<tr><td>4</td><td>Dead Execution</td><td>Lease Deed was executed & registered on 18.10.1995.</td></tr>
<tr><td>5</td><td>Lease Validity</td><td>20 years i.e. upto 17.10.2015. As per MMDR Amendment Act, 2015 existing lease is valid for 50 years i.e. upto 17.10.2045.</td></tr>
<tr><td>6</td><td>Lease Location</td><td>S. F. Nos. 49/1A, 49/1B, 49/8A(P), 69/1B2, 69/1B3, 69/3C, 70/3A(P), 70/4B & 70/3B of Perali (South) Village, Kunnam Taluk, Perambalur District, Tamil Nadu. The mine is at a distance of 0.35 km in northwest of Maruvathur village.</td></tr>
<tr><td>7</td><td>Land Ownership</td><td>Own Land (Ryotwari Dry Land) in his possession</td></tr>
<tr><td>8</td><td>Lithology</td><td>Topsoil is black cotton soil up to a depth of 1 m BGL. Clay is below topsoil with thickness of 8 m. Below which, Limestone bed exists with 7-13 m thickness over Charnockites. There is no other Minerals/resources like sand in the Lease.</td></tr>
<tr><td>9</td><td>Permitted Mineral</td><td>Limestone (as ROM)</td></tr>
<tr><td>10</td><td>Commencement on</td><td>28.10.1995</td></tr>
<tr><td>11</td><td>Mining Plan / Scheme Approvals</td><td>i. First Mining Plan (1995-96 to 1999-2000) approval vide IBM Ltr. TN/PCR/MT/LST-804-MDS dt. 01.05.1995.
ii. First Scheme of Mining (2000-01 to 2004-05) approval vide IBM Ltr. TN/PBR/LST/MS-90-MDS dt. 15.01.2001.
iii. Plan periods 2005-06 to 2009-10 & 2010-11 to 2012-13 – No mining.
iv. SoM Approval (2013-14 to 2015-16) approval vide IBM Ltr. TN/PBR/LST/MS-1076-MDS dt. 04.07.2014
v. Mining Plan (2015-16 to 2019-20) approval vide IBM Letter No. TN/PBR/MP/LST-1934.MDS dated 02/03.12.2014.
vi. Review of Mining Plan (2020-21 to 2024-25) approval vide IBM Letter No. TN/PBR/LST/ROMP-1577.MDS dated 10.12.2019 – No mining.
vii. ROMP approval (2025-26 to 2029-30) vide IBM Letter No. TN/PBR/LST/ROMP-1768.MDS dated 08.11.2024-valid till 31.03.2030.</td></tr>
<tr><td>12</td><td>Past Production (since Commencement)</td><td>
<table>
<tr><th>Plan/ Scheme</th><th>Period</th><th>ROM, Tonnes</th><th>Dispatch, Tonnes</th></tr>
<tr><td>1st MP</td><td>1995-96 to 1999-2000</td><td>1,17,280.44</td><td>1,16,207.61</td></tr>
<tr><td>1st SoM</td><td>2000-01 to 2004-05</td><td>2,305.00</td><td>2,214.89</td></tr>
<tr><td>-</td><td>2005-06 to 2012-13</td><td>No Mining</td><td>-</td></tr>
<tr><td>2nd SoM</td><td>2013-14 to 2015-16</td><td>16,830.00</td><td>16,822.68</td></tr>
<tr><td>MP</td><td>2015-16 to 2019-20</td><td>0</td><td>130.00</td></tr>
<tr><td>ROMP</td><td>2020-21 to 2024-25</td><td>No Mining</td><td>0</td></tr>
<tr><td colspan="2">Total</td><td>1,36,515.44</td><td>1,35,476.24</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Sl. No.</th><th>Details on</th><th>Particulars</th></tr>
<tr><td></td><td></td><td>Balance qty. at Pit Head is 1,039.2 Tonnes. The mine is now in temporary stoppage since 01.02.2016 and there was no Production from 15.01.2016 to till date.</td></tr>
<tr><td>13</td><td>Assessed Reserves</td><td>3,19,733 Tonnes ROM</td></tr>
<tr><td>14</td><td>Production so far</td><td>1,36,515.44 Tonnes @ maximum 51,910 TPA (1996-97)</td></tr>
<tr><td>15</td><td>Dispatch Quantity</td><td>1,35,476.24 Tonnes & balance 1,039.20 Tonnes at Pit Head</td></tr>
<tr><td>16</td><td>Mineable Reserves</td><td>1,83,218 Tonnes ROM as on 02.07.2024</td></tr>
<tr><td>17</td><td>Process Description</td><td>As approved by IBM, the Mine will be worked by Non-Conventional Opencast Method of Mining by deploying Rock Breakers without Drilling & Blasting. ROM Production of 41,850 Tonnes per Annum (TPA), maximum, will be on 1-Shift basis for 300 days in a Year. Limestone will be recovered @ 65% (27,203 TPA) and transported by 20 T Tippers to the Cement Plant via NH-136 and NH-38. Mineral Rejects @ 35% of ROM (14,648 TPA) will be temporarily stored in a Dump for future utilisation. No Beneficiation/Screening is required. Life of the Mine is 5 years only.</td></tr>
<tr><td>18</td><td>Proposed Production</td><td><u>Plan Period (2025-26 to 2029-30) :-</u>
<table>
<tr><th>Year</th><th>Proposed ROM Production, Tonnes</th></tr>
<tr><td>2025-26</td><td>20,936</td></tr>
<tr><td>2026-27</td><td>40,412</td></tr>
<tr><td>2027-28</td><td>38,368</td></tr>
<tr><td>2028-29</td><td>41,652</td></tr>
<tr><td>2029-30</td><td>41,850</td></tr>
<tr><td>Total</td><td>1,83,218</td></tr>
</table></td></tr>
<tr><td>19</td><td>Ground water table intersection</td><td>Nil. Ultimate Pit Limit will be 22.0 m (BGL). Ground Water-table is at 38 m bgl (Postmonsoon) & 40 m (Premonsoon). Mining will not intersect ground water-table-No Hydrogeological study</td></tr>
<tr><td>20</td><td>Project Cost</td><td>Rs.10.00 Lakhs</td></tr>
<tr><td>21</td><td>Project Schedule</td><td>Existing mine will be operated immediately on receipt of EC & CTOs-Commencement from 01.07.2025 & Mine life is 5 years.</td></tr>
<tr><td>22</td><td>R & R Issue</td><td>Nil</td></tr>
<tr><td>23</td><td>Litigation/Case Details</td><td>Nil</td></tr>
<tr><td>24</td><td>CER Budget</td><td>2% of Project Cost</td></tr>
<tr><td>25</td><td>Financial Assurance</td><td>Financial assurance works out to Rs.8,74,800/-. Lessee has submitted BGs of Rs,10,00,000/- & another Rs.2,00,000/-</td></tr>
<tr><td>26</td><td>Violation, if any</td><td>No violation & No penalty levied for any purpose.
<table>
<tr><th>Criteria</th><th>As on Date</th><th>Approved Qty.</th></tr>
<tr><td>Existing pit dimension</td><td>Pit1-110x118x18 m
Pit2-68 x 45 x 2 m</td><td>As approved by IBM</td></tr>
<tr><td>Quantity achieved</td><td>1,36,515.44 T</td><td></td></tr>
<tr><td>Balance quantity</td><td>1,83,218 T</td><td></td></tr>
<tr><td>Mined out depth</td><td>22 m BGL</td><td>As approved</td></tr>
<tr><td>Illicit mining, if any</td><td>Nil</td><td>-</td></tr>
<tr><td>Condition of Safety zone/benches</td><td>Safe & Stable</td><td>-</td></tr>
</table></td></tr>
</table>

Mine Profile :

Pit Configuration-Existing	**:**	**Pit-1 : 110 x 118 x 18 m & Pit-2 : 68 x 45 x 2 m (d)**
Reserves '111' Category	:	1,83,218 Tonnes ROM
Proposed Production	:	1,83,218 Tonnes @ 41,850 TPA ROM (Maximum)
No. of Days	:	300 days on 1-Shift operation
Life of the Mine	**:**	**5 years**
Ore:Waste Ratio	:	1:1.48
Pit Configuration-Conceptual	:	**Pit-1 : 180 x 110 x 22 m (d) & Pit-2 : 68 x 45 x 16 m (d)**
Bench height	:	4 m
Bench width	:	6 m
Bench slope	:	60° (from horizontal)
Ultimate Pit Limit-Conceptual	:	**22.0 m (BGL)**
		Top RL – 131 m & Bottom RL – 109 m
Ground Water-table at	:	38 m BGL (Postmonsoon) & 40 m (Premonsoon)

Mining will not intersect the ground water-table.

EIA Study : 'No prior EC is required for Mine with <5 Ha Extent' in the context of MoEF&CC Office Memorandum No. J-11013/182/2012-IA-II(M) dated 04.01.2013. The existing Mining Lease requires EC as per MoEF&CC Notification SO 141(E) dated 15.01.2016. There was no Violation as per EIA Notification 2006. Accordingly, EC Application was filed to SEIAA-TN vide Proposal No. SIA/TN/MIN/27577/2018 dated 08.05.2017 for a production of 80,000 Tonnes per Annum over an extent of 3.545 Ha. Terms of Reference (TOR) was awarded under Non-Violation Category vide Lr. No. SEIAA-TN/F.No.6275/TOR-381/2017 dated 18.05.2018. Public Hearing was not happened on account of COVID-19 pandemic and operational constraints. The validity of awarded TOR was expired on 17.05.2023.

The mineral Limestone to be mined out from this Lease is a Major Mineral over an extent **of <250 Ha** and falls in **Category 'B'** of Sl. No. 1(a) of EIA Notification 2006, as amended vide Notification SO 1886(E) dated 20.04.2022, for prior EC from SEIAA-TN. Thus, a fresh TOR Proposal has been filed vide Online Proposal No. SIA/TN/MIN/481764/2024 on 16.06.2024 and hard copy on 25.06.2024. The Proposal was deliberated by SEAC-TN in its 481st Meeting held on 01.08.2024 and SEIAA-TN in its 748th Meeting held on 13.08.2024. **Fresh TOR** has been awarded vide TOR Identification No. TO24B0000TN5850953N dated 20.08.2024, under **File No. 11024**/2024, with Public Hearing.

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**) vide Certificate NABET/EIA/2225/RA0290 dated 11.06.2023 with validity till 16.11.2025 (Sl. No. 4 of List). ABC Laboratory is accredited by the National Accreditation Board for Testing & Calibration Laboratories (**NABL**) vide Certificate No. TC-5770 dated 03.04.2024 - valid till 02.04.2026.

Baseline Data (BLD) has been collected during **Mar.-May 2024 (Summer Season)** for Environmental Impact Assessment (EIA) Study in compliance with MoEF&CC Office Memorandum No. J-11013/41/2006-IA-II(I)(Part) dated 29.08.2017. Draft EIA Report has been prepared in compliance with awarded TORs and submitted along with Summary EIA Reports (both in English and Tamil versions) for Public Consultation & Public Hearing.

2.0 Description of the Environment

2.1 Environmental Setting

The Mine is located in between **11°12'47.83"- 11°12'56.76" N Latitude & 78°56'56.46"-78°57'02.68" E Longitude** (Survey of India Topo Sheet No. 58 I/16) (**Fig. 1.2**). There are no eco sensitive areas like National Parks, Biosphere Reserves, Wildlife Sanctuaries, Elephant Corridor, Archaeological/Historical Monuments, Heritage sites, etc. within 10 km from the Mine boundary. There are 2 Reserved Forests within 10 km radius area viz. Kunnam RF @ 1.5 km in east & Chittali RF @ 3.3 km in north.

Seasonal River Marudaiyar drains the region which flows at 2.5 km south from the Mine. A seasonal Odiyam Odai flows at a distance of 2.9 km in the east and joins the Marudaiyar River in southeast. Another Seasonal Nalla Elumur Ar originates (2.7 km) from Chithali RF and flows towards North in the Study Area. Area is with elevation of 80-140 m above MSL and the Mine area elevation is of about 137 m. It is almost flat with gentle gradient towards south.

Surrounding mining activity : Kaulpalayam Rough Stone quarries with their Stone Crushers are located in the western parts of ML Area. **Non-operating Mines** viz. DCPL Perali (South) Mine (1.92 Ha @ 1.0 km in ESE), Parvin Mines (0.7-0.9 km in SSW), Chettinad Cement Azur Mine (@ 7.4 km in NE), Ramco Cement Varagupadi Mine (@ 7.8 km in SW) and Ultratech Varagupadi Mine (@ 9.7 km in SW) are located within the Study Area.

The nearest Airport is Trichy at a distance of 55 km in the south-southwest. The nearest Ports are at Karaikkal (105-SE), Cuddalore (104 km-NE) and Chennai (225 km in NE).

2.2 Baseline Environmental Status

The study area of 10 km radius (from ML boundary) (**Fig. 3.1**) has been considered for assessing the baseline environmental status. The monitoring stations are selected in such a way that the baseline environmental data reflects the **Cumulative Impact of existing Mines** in the Study area. The summary of baseline status is given in **Table 2.1**.

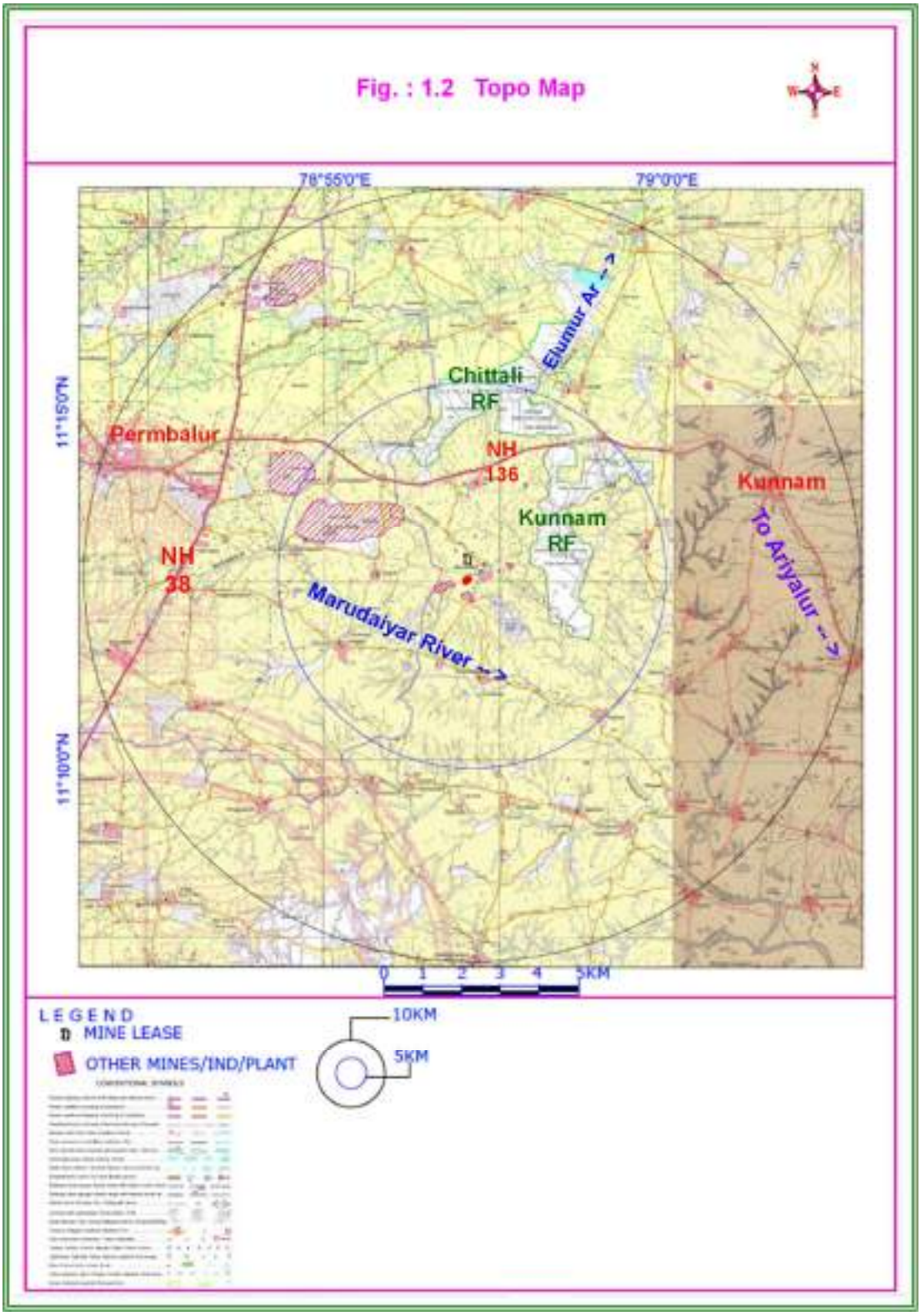


Fig. : 1.2 Topo Map
78°55'0"E
79°0'0"E
11°15'0"N
11°10'0"N
Elumur Ar
Chittali RF
Perambalur
NH 136
Kunnam
To Ariyalur
Kunnam RF
NH 38
Marudaiyar River
0 1 2 3 4 5KM
LEGEND
MINE LEASE
OTHER MINES/IND/PLANT
10KM
5KM

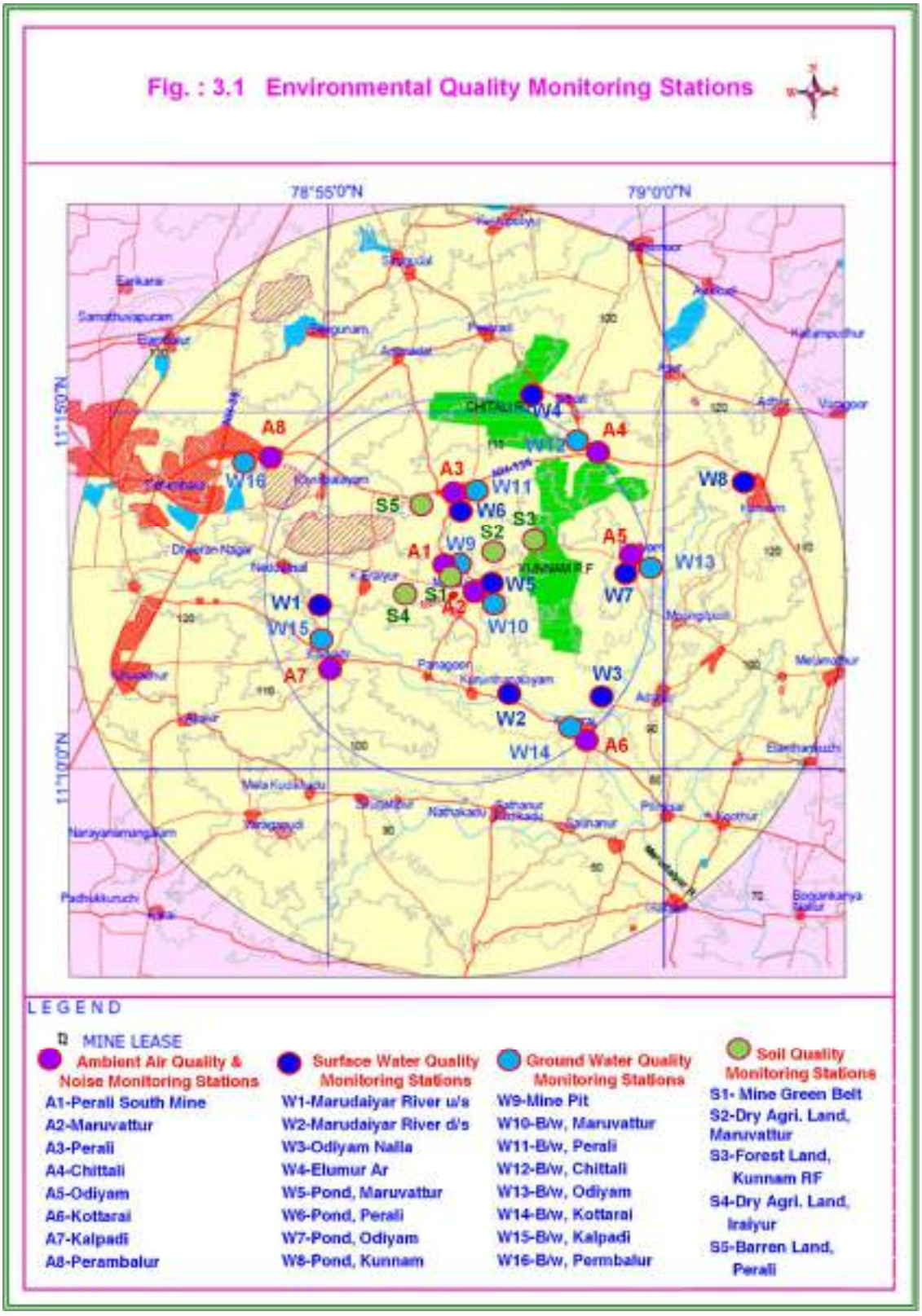


Fig. : 3.1 Environmental Quality Monitoring Stations
78°55'0"N
79°0'0"N
11°15'0"N
11°10'0"N
A1
A2
A3
A4
A5
A6
A7
A8
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
W12
W13
W14
W15
W16
S1
S2
S3
S4
S5
LEGEND
MINE LEASE
Ambient Air Quality & Noise Monitoring Stations
A1-Perali South Mine
A2-Maruvattur
A3-Perali
A4-Chittali
A5-Odiyam
A6-Kottarai
A7-Kalpadi
A8-Perambalur
Surface Water Quality Monitoring Stations
W1-Marudaiyar River u/s
W2-Marudaiyar River d/s
W3-Odiyam Nalla
W4-Elumur Ar
W5-Pond, Maruvattur
W6-Pond, Perali
W7-Pond, Odiyam
W8-Pond, Kunnam
Ground Water Quality Monitoring Stations
W9-Mine Pit
W10-B/w, Maruvattur
W11-B/w, Perali
W12-B/w, Chittali
W13-B/w, Odiyam
W14-B/w, Kottarai
W15-B/w, Kalpadi
W16-B/w, Pernbalur
Soil Quality Monitoring Stations
S1- Mine Green Belt
S2-Dry Agri. Land, Maruvattur
S3-Forest Land, Kunnam RF
S4-Dry Agri. Land, Iralyur
S5-Barren Land, Perali

Table : 2 .1 Environmental Baseline Status

Envl. Component	Main Parameters	Minimum	Maximum	Mean	Desirable Norms
Ambient Air Quality, ug/m^3	PM2.5	10	37	**19.5**	**60**
	PM10	17	68	**37.7**	**100**
	SO_2	6	24	**11.4**	**80**
	NOx	6	27	**13.3**	**80**
Ambient Noise, dB(A)	Leq-Day	39.5	46.2	**42.1**	**55**
	Leq-Night	38.5	43.8	**40.4**	**45**
Surface Waters	TDS, mg/l	400	480	-	**500/2100**
Ground Waters	TDS, mg/l	410	940	-	**500-2000**
Soil Status	EC, mmhos/cm	1.23	1.54	-	**0.2-0.5**
	SAR	2.09	3.15	-	**<5**

Legend : PM2.5-Particulate Matter size less than 2.5 um; PM10- Particulate Matter size less than 10 um; SO_2-Sulphur dioxide; NOx-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 local weather phenomena.
- The monitored ambient air quality in the study area was found to be in compliance with the Revised National Ambient Air Quality (NAAQ) 24-hourly Norms for Industrial, Residential, Rural and other areas.
- Ambient equivalent noise levels (Leq) during day and night times were found to be well within the MoEF&CC Norms.
- The water quality of surface waters was found to be in compliance with CPCB Norms.
- The ground water quality was found to be in compliance with the IS:10500-2012 Norms.
- The soil in the study area would very well support vegetation after amending it suitably.
- There is no eco sensitive area exists in the study area and only domesticated animals exist.
- The area is thinly populated and basic amenities are available almost in all villages.

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

3.0 Anticipated Environmental Impacts

Being an existing Mine, it does not involve any major establishment or construction. Thus, Construction Phase Impacts are not there for Impact Assessment and Environmental Management Plan (EMP). The impacts during Operation Phase have been divided into two categories, viz. Localised and Cumulative. The identified Impacts are given in **Table 3.1**.

Table : 3.1 Identified Impacts

Sl. No.	Environmental Component & Anticipated Impacts
1	**Land Environment :** Out of 3.545 Ha, at Conceptual Stage, 2.286 Ha will be the mine-out pit which will be partly backfilled (0.306 Ha) and balance pit (1.980 Ha) will be left as Water Reservoir for harvesting rain water. About 0.34 Ha will be Mineral Rejects Dump, 0.010 Ha will be under Infrastructures and 0.020 Ha under Roads About 0.260 Ha will be covered under Green Belt – **7.33% Coverage**.
2	**Traffic Volume** : Mine will deploy 2 Tippers, 2 trips/day (one way) to Limestone from the Lease. MDR runs adjacent to the Lease for transportation to DCPL Cement Plant via NH-136 (at 4 km road distance) & Perambalur NH-38. The existing Traffic Volume at the Mine Area is 84 Passenger Car Units (PCU)/day and will be 96 PCU/day during Operation Phase. The existing Roads are adequate to handle the proposed traffic volume due to the Project.
3	**Air Quality** : The Mining, Loading and Transporting activities would generate both fugitive dust emissions and smoke from HEM Machineries/Equipments & Transporting Tippers. AERMOD View Software is used for Predicting the maximum Ground Level Concentrations (GLCs) including Transportation Impact. The predicted maximum GLC-PM2.5 for cumulative activities is 0.11 ug/m^3 and GLC-PM10 for cumulative activities is 0.37 ug/m^3 and found to be confined locally i.e. within 0.1 km radius. Also, adequate Buffer Level available in the Air Environment for the Proposal. Other pollutants SO_2 and NOx emissions due to mining activities are found to be low and are not reported.
4	**Noise Levels** : There will be **no Drilling and Blasting** in the Mine. Excavation, Loading and Transportation activities are the sources of Noise. In general, work force will be exposed to <85 dB(A) levels during 8-hours Shift. Noise level at nearest Lease boundary will be <55 dB(A) during day times and <45 dB(A) during night times as stipulated by MoEF&CC- Leq Noise Norms for Residential & Rural Areas.
5	**Water Environment** : **Impact on Surface Waters :** The ML Areas have the MDR as Northern Boundary and other areas are surrounded by Dry Agricultural Lands. There is **no Mine Pit Water Discharge**. Thus, there will not be any impact on the Surface Waters due to the Mine. **Impact on Ground Waters :** There is **no ground water-table intersection** due to mining. Due to poor transmissivity, there will be no impact on nearby borewells. The mine requires about 3.0 KLD water and will be met from **the rainwater harvested in the mine pit**. **No workshop** and thus there is **no effluent generation** from the Mine. Domestic sewage generation is 0.9 KLD and is biologically treated in a Septic Tank followed by a Dispersion Trench.
6	**Biological Environment** : There is no habitat fragmentation or blocking of migratory corridors due to Project activities since there is no wild life movement or migratory birds movement in the study area. Thus, there will not be any significant impact on

Sl. No.	Environmental Component & Anticipated Impacts
	the existing flora-fauna of the area. ML area is surrounded by barren lands and dry agricultural lands within 1.0 km area. As the baseline AAQ are in lower levels as well as Predicted GLC is very low/insignificant, there will not be any impact on the surrounding dry agricultural lands due to the Project.
7	**Socio-economics** : Project employs 30 persons directly and 20 persons indirectly. The direct & indirect employment, CER & CSR activities, etc., will have a positive impact on the Socioeconomic Structure of the area.
8	**Occupational Health :** DCPL is committed to provide a Safety & Healthy working conditions. The **first aid box**es will be made available in the Mine Office for immediate treatment. **Occupational health surveillance programme** will be carried out for all the employees regularly.
9	**Climate Change :** The mining activities are carried out during day times only and thus, **there is no power demand**. There is no standby DG set also. HSD @ 500 lits./day is required for the mining equipments. About 0.260 Ha will be covered under Green Belt – **7.33% Coverage**. Predominantly local species like Neem, Pungan, Teak, etc., will be planted and maintained with about 90% survival rate.

4.0 Environmental Monitoring Programme

For effective implementations of Environmental Cell will be there under the overall supervision of the Chairman. The quality of air, noise, water, soil, etc. will be monitored at identified locations as per MoEF&CC/TNPCB Norms by appointing an accreditated external agency. The status reports will be submitted periodically to TNPCB on monthly basis, IBM on quarterly basis and IRO, MoEF&CC Chennai on six monthly basis.

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. Safety aspects will also be ensured to reduce incidents, if any.

6.0 Project Benefits

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

Financial Benefits : Project cost is Rs.10.00 Lakhs. Mineable Reserves from the Lease is 0.183 Million Tonnes. As per MMDR Act 2015, 30% of Royalty Amount will be earmarked for District Mineral Foundation (DMF). Royalty to the Exchequer will improve local and regional economy.

Social Benefits : Project employs 30 persons directly and 20 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 the various attributes of environment due to the proposed mining operations. Being Existing Mines, there will be **no Construction Phase** for the Project. The EMP Measures proposed for Operation Phase are given in **Table 7.1**.

Table : 7.1 Proposed EMP Measures

Sl. No.	Environmental Component & Proposed EMP Measures
1	**Land Environment :-** ❖ Earthen bunds are to be strengthened along the boundaries to arrest wash-offs. ❖ Garland drains are to be maintained periodically around the Lease. ❖ Green Belt has to be developed and maintained along Lease boundary. ❖ No. of **trees planted shall be numbered** and referenced for review. ❖ The mined out Pits shall be converted into a Water Reservoirs to harvest Rain Water and to recharge Ground Water-table in the vicinity.
2	**Transportation :-** ❖ Regular wetting of haul roads has to be undertaken to arrest fugitive emissions. ❖ Tippers are to be fully covered with Tarpaulin to avoid any spillage. ❖ No overloading of Tippers is allowed strictly. ❖ A strict Speed Limit of 30 km/hr. has to be enforced and monitored continuously. ❖ Compliance to 'Pollution under Control' Certification has to be ensured. ❖ Restriction of Truck parking in the Public Road has to be implemented. ❖ Security Guards to be posted at the public road junction.
3	**Air Quality** :- ❖ Water sprinkling at mining areas, loading, haul roads, etc. has to be carried out. ❖ **Tyre washing facility** shall be installed. ❖ Periodical maintenance of mining equipments has to be carried out. ❖ Effective Green Belt with thick foliage has to be maintained along the boundaries. ❖ Periodical Air Quality Monitoring shall be carried out and Reports submitted.
4	**Noise Levels** :- ❖ 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. ❖ Green Belt with thick foliage shall be maintained around lease boundary as acoustic barriers. ❖ Periodical Noise Monitoring shall be carried out and Reports submitted to the Authorities.

Sl. No.	Environmental Component & Proposed EMP Measures
5	**Water Environment** :- ❖ Mine Pit Water shall not be directly discharged without ensuring its quality. ❖ Garland Drains and Settling Tanks are to be maintained and desilted periodically. ❖ Ground Water Levels and Water Quality are to be periodically monitored at identified Borewells & Dugwells in the Mine vicinity. ❖ Monitored Water Quality data are to be periodically submitted to IBM, SEIAA-TN & IRO-MoEF&CC, Chennai.
6	**Biological Environment** :- ❖ Effective Green Belt has to be developed and maintained, with the guidance of DFO, with about 90% Survival Rate. ❖ Native species shall be preferred for Green Belt development. ❖ Fruit bearing trees may also be preferred. ❖ The primary way that carbon is stored in the soil is as **soil organic matter (SOM).** Climatic conditions, natural vegetation, soil texture, and drainage all affect the amount and length of time carbon is stored.
7	**Socio-economics** :- 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.
8	**Occupational Health :-** ❖ All employees are to undergo Medical Check-up on recruitment and periodically during employment. ❖ Maintenance of Pre, during & Post Employment Records are to be kept for periodical review. ❖ Required Personal Protective Equipments for the employees are to be provided. ❖ Provision of ergonomically designed seats for drivers/operators has to be ensured.

Plastic Waste Management : There will be ban on one-time use and throw away Plastic usage in the Lease. Encourage the use of eco friendly alternatives such as banana leaf, areca nut palm plate, stainless steel glass, porcelain plates / cups, cloth bag, jute bag etc.

EMP Budget : The Project Cost is **Rs.10.00 Lakhs**. An amount of Rs.7.00 Lakhs has been earmarked as Capital EMP Budget and Rs.10.00 Lakhs per Annum as Operating Cost. Public Hearing issued will be addressed and the **Action Plan with Budget will be included** in the EMP Budget for executing the Physical Activities as per MoEF&CC OM dated 30.09.2020.

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