EXECUTIVE SUMMARY

FOR

Establishment of Standalone Grinding Unit

AT

Village- Nimgaon Khalu, Tehsil - Shrigonda, District - Ahilyanagar (Ahmednagar), Maharashtra

Total Area: 33.86 ha
Production Capacity: Cement - 6.0 Million TPA (Line - I/Phase-I - 3.0 Million TPA and Line - II/Phase-II - 3.0 Million TPA)

Schedule – 3(b) Category 'B'
Total Cost of the project: Rs. 980 Crores

Reference: TOR issued vide identification no. TO24B1103MH5444994N, File No. SIA/MH/IND1/503165/2024 dated 19.12.2024

PROJECT PROPONENT

M/s Dalmia (Bharat) Green Vision Ltd.
Communication Address- Hansalaya Building,
11th & 12th Floor, 15, Barakhamba Road, New Delhi-110001

ENVIRONMENTAL CONSULTANT

M/s PERFACT ENVIRO SOLUTIONS PVT. LTD.
(NABET Accredited Consultant Organization/ (NABET/EIA/2225/RA 0284 valid upto 26.11.2025 (Rev 01))
NN Mall, Sector-3, Rohini, New Delhi-110085

Executive Summary

1.1. Introduction

Dalmia (Bharat) Green Vision Ltd. is proposing to establish the Standalone Grinding Unit of Cement Production Capacity of 6.0 Million TPA (Line - I/Phase-I - 3.0 Million TPA and Line - II/Phase-II - 3.0 Million TPA) and D.G. Set of 2000 KVA (Line - I/Phase - I - 2 x 500 KVA and Line - II/Phase-II - 2 x 500 KVA) at Nimgaon Khalu, Tehsil Shrigonda, District Ahilyanagar (Ahmednagar), Maharashtra. The project falls under S. No. 3 (Material Production), Project Activity '3 (b)' Cement Plant, Category 'B' project, as per the schedule of EIA notification 2006 and its subsequent amendments.

Terms of Reference (ToR) for the proposed project have been granted by MOEF&CC, New Delhi vide ToRidentification no. TO24B1103MH5444994N, File No. SIA/MH/IND1/503165/2024 dated 19.12.2024.

1.1.1. About the Project

Dalmia (Bharat) Green Vision Ltd. is proposing to establish a Standalone Grinding Unit for manufacturing of varied product mix of cement viz. OPC, PPC, PSC, PCC etc. depending upon the market demand including speciality cement within the Cement Production Capacity of 6.0 Million TPA (Line - I/Phase-I – 3.0 Million TPA and Line -II/Phase-II – 3.0 Million TPA).

The capacity of proposed project is given below:

Table 1: Capacity of proposed project

Details	Proposed Production
Cement (All varieties - OPC/PPC/PSC/PCC Special Cement etc.)	6 Million TPA (Line - I/Phase-I - 3.0 Million TPA and Line - II/Phase-II - 3.0 Million TPA)

Project will be implemented in 2 phases. Line - I will be established in 1st Phase which will require about 15 months for implementation. The Installation of Line - I will be started after getting Environmental Clearance from SEIAA, Maharashtra and Consent for Establish from MSPCB. In 2nd Phase, After the commencement of commercial production from Line - I, implementation of Line - II will start and approx. 10 months will be required for implementation of Line - II. Entire plant will be commissioned within the validity period of EC.

1.1.2. Location & Accessibility

The standalone grinding unit will be established at Village Nimgaon Khalu, Tehsil Shrigonda, District Ahilyanagar (Ahmednagar), Maharashtra. Bounding Box coordinates of the proposed plant are Latitude: **18° 29' 52.229664" N to 18° 30' 40.403" N & Longitude: 74° 34' 43.09058.523" E to 74° 35 '24.080" E**.

Maps showing general location, specific location, & project boundary and project site layout are given in subsequent sections of the report.

The plant site is well connected to the roads and railways.

- **Road connectivity:** NH-160 Baramati-Ahilyanagar (Ahmednagar) Road (0.01 Km in West from Approach road connecting the plant to NH-160), Nimbalkar Farm Road (0.26 Km in North), Punarvasan Road (0.73 Km in NNW), Kashti Railway Station Road (1.07 Km in NNW), PMC Road (2.21 Km in East), Kashti-Ajnuj Road (AHM MD7) (3.18 Km in NE), SH-67 (3.56 Km in South), Ahilyanagar (Ahmednagar)-Daund Road (3.47 Km in South), SH-67 (4.59 km in SSW) and NH - 548 D (~ 9.03 km in North).
- **Rail connectivity**: The nearest railway station is Kashti Railway Station which is approx. 1.75 km, NNE from the plant.
- **Airport**: Nearest airport is International Airport Pune **(Jagadguru Sant Tukaram Maharaj Airport)** which is about 71.16 km in WNW direction from the plant site.
- **Nearest City**: Nearest city to the plant site is Ahilyanagar (Ahmednagar) about 65 km in NNW direction from plant site.

The site is well connected with communication facilities like telephone, fax, wireless and as such, no constraints are envisaged in this aspect as the tehsil and district headquarters are near to the site.The 10 km study area map on SOI toposheet is given below:

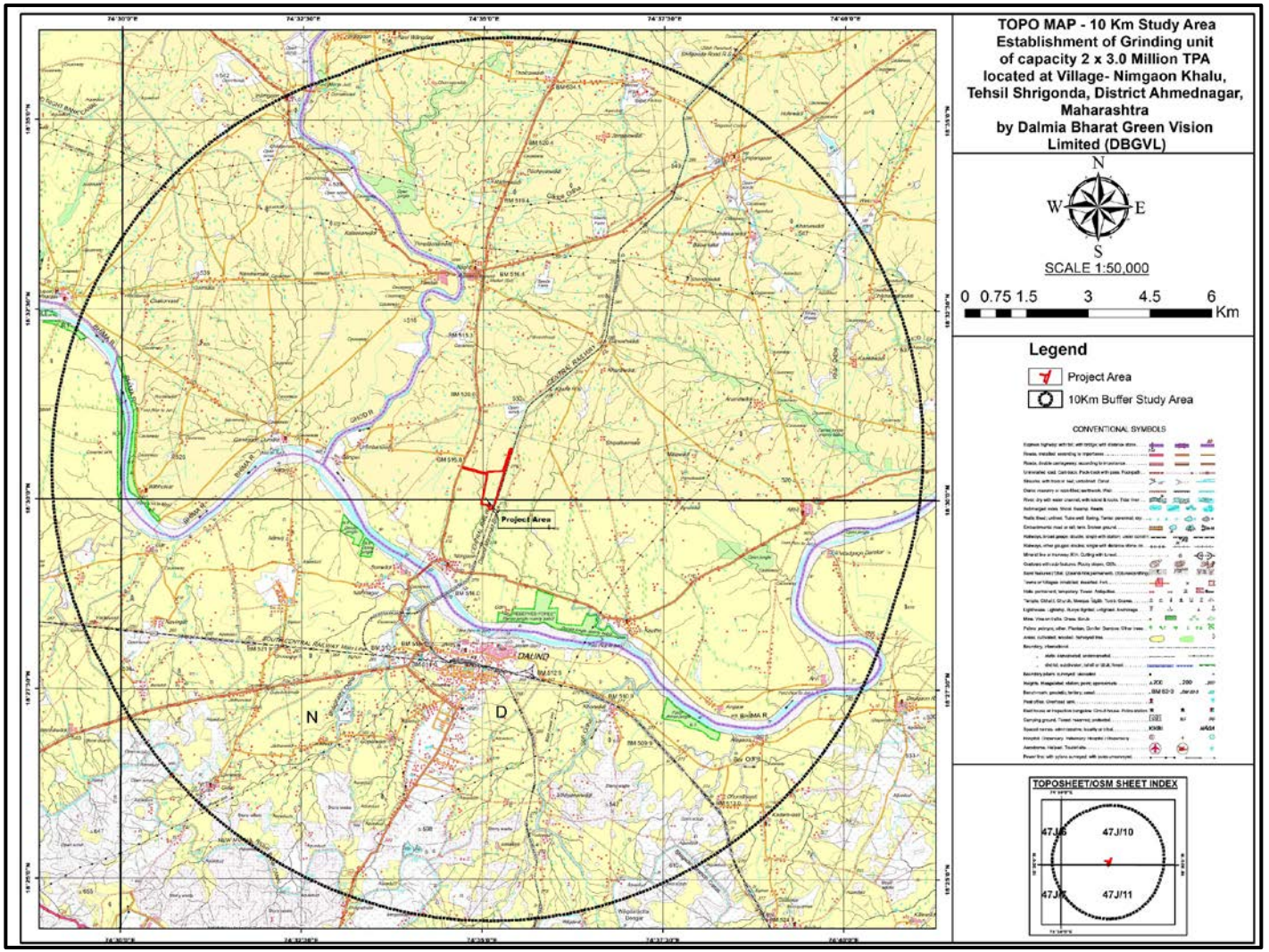

Figure 1. SOI Topographical Map of 10 km radius Study Area from the Plant Site

1.2. Project Description

Table 2: Project description

S.No.	Particulars	Proposed		
1	**General Information**			
1a.	S. No. in the Schedule of EIA Notification, 2006 & Project Sector	Activity: '3 (b)' Cement Plant - Standalone Grinding unit;		
1b.	Category of the Project as per EIA Notification, 2006	B		
1c.	Specific/General Condition applicable	No		
1d.	Proposed Site/Land Details (Plot Area)	33.86 ha (Plant area 12.47 Ha, Approach Road 3.66 Ha, Railway Siding 13.62 Ha		
1e.	Green Belt Details	4.11 Ha (33% of Plant area)		
1f.	Project Cost	Rs 980 crores (Line I - Rs. 550 Cr + Line II - Rs. 430 Cr.)		
1g	Manpower			
	Operation phase (no.)	**Line - I/Phase-I**	**Line - II/Phase-II**	**Total**
	Regular	150	50	200
	Contractual	216	84	300
	Total	**366**	**134**	**500**
	Locals will be given preference in employment as per their eligibility.			
1h.	Details if project falls under the purview of a) FCA, 1980, b) WPA,1972 c) CRZ,2011	None		
1i.	CPA/SPA/ESA/ESZ, if any	None		
1j	No. of working days in a year	345		
2	**Power requirement & Source**			
2a.	Total Power - MW	12 Source - Daund Sub-Station (132 KV) of Maharashtra State Electricity Board (MSEB)		
2b.	D.G. Sets for emergency & start-up	Phase I- 2x500 kVA & Phase II - 2x 500 kVA		
2c.	Fuel -DG Set (avg. KLD)	0.3 HSD		
3	**Air Emission Management**			
3a.	APCS for process stacks emission	Pulse Jet Bag Filters, Nuisance Dust Collectors, Bag House, Vertical Exhaust etc.		
3b.	Management for Fugitive Emission	Various measures such as bag-filters at various transfer points, water sprinkling, covered conveyor belt, covered storage area, concreted road, Greenbelt/plantation etc.		

S.No.	Particulars	Proposed
4	**Water Requirement & Wastewater Generation**	
4a.	Total Water Requirement	480 KLD (Line - I/Phase-I: 300 KLD + Line - II/Phase-II: 180 KLD)
4b.	Fresh Water Source	Surface Water/Ground Water & Rainwater Harvesting
4c.	Waste water generation	18 KLD
4d.	STP capacity	2 x 10 KLD
4e.	Treated water	17 KLD
5	**Waste Generation**	
5a.	Hazardous waste, E-waste & Battery Waste	• **Used Oil/grease-**30 KLPA, Sold to CPCB authorised recyclers • **Contaminated cotton rags and other cleaning material**- 0.5 TPA, Sold to CPCB authorised recyclers • **Empty Barrels/Containers/liners contaminated with hazardous chemicals /wastes** - 10 TPA, Sold to CPCB authorised recyclers • **Waste or residues containing oil**- 10 TPA, Sold to CPCB authorised recyclers • **Battery waste** ~ 15 TPA, Return to Manufacturers/ dealers on buy back basis or sold to registered vendors as per prevalent rules • **Biomedical waste** ~ 0.1 TPA, to be collected by Authorized vendor. • E-Waste ~0.1 TPA, Sell/dispose to authorized vendor
5c.	Solid Waste	• **Biodegradable (Organic Waste)-** 84 kg/day, composted and used as manure for plantation • **Non-Biodegradable** (Plastic, paper, wood, glass, etc.)**-** 56 kg/day, the generated waste is handed over to authorized vendor or burnt in Kiln after taking necessary permission
5d.	Non- Hazardous Waste	• **STP Sludge-** 4.14 TPA, Used as manure for plantation. Regular monitoring will be carried out to assess its suitability for greenbelt development/plantation • **Dust from APCS/Bag filter-** 120000 TPA & 100 % dust collected & will be recycled in unit • **Plastic bag & other packing materials**- 3000 TPA & sell to Authorized vendor. • **Bags & Containers**-2000 TPA & Sell to the authorized recyclers • **Construction & fabrication waste**- 5000 TPA, sold to scrap dealers or used for land levelling/ road construction

Resource Requirements

- **Land:** Total land area required for the proposed project is about 33.86 ha (83.66 Acre). Present Land use of the project site is Private Agricultural land. Establishment of Proposed Grinding Unit will result in permanent change of land use pattern to industrial land and its conversion into Industrial land use will be done prior to the implementation of the project. No forest land is involved in the project area.
- **Raw Material**:

Table 3: Raw Material details

S. No.	Name of Raw Material	Proposed Consumption (MTPA)- Dry basis	Source	Distance & Mode of Transportation
1.	Clinker	2 x 2.85	Cement Plants of DCBL viz. cement plant at Yadwad, Karnataka & other nearby cement plant etc.	350 km, By Rail
2.	Fly Ash (Dry Fly ash, Pond ash, Conditioned Fly ash)	2 X 1.1	Nearby TPS viz. NTPS Solapur, Bhusaval TPS etc.	300-900 Km, By Rail/Road
3.	Slag	2 x 1.95	JSW Steel Plant-Dolvi, Sunflag Steel-Bhandara etc.	200- 900 Km, By Rail/Road
4.	Gypsum (both mineral & chemical gypsum)	2 x 0.2	Open market from local traders	1200 km By Rail/Road
5.	Coal	0.570	Imported Coal through Jaigarh Port/ Indian Coal through E-Auction /Purchase etc.	500 Km, By road

Fuel Requirement:

Table 4: Details of fuel

Name of Fuel	Proposed Quantity Required (Million TPA)	Calorific value (Kcal. /kg)	% Ash	% Sulphur	Source
Imported Coal/Indian Coal	0.570	4000-5000	15 - 40	<1	Jaigarh Port/ Indian Coal through E-Auction /Purchase
Diesel	0.3 KLD	--	--	--	Direct purchase from market

Technology Description of Grinding Unit/Operational activity

The Proposed Grinding Unit will be based on Dry Process Technology for manufacturing all varieties of Cement.

Process Description

- Clinker Storage & Handling
- Gypsum, Fly Ash & Slag Storage, Handling along with Crushing
- Coal Crushing and Hot Air Generator
- Clinker Grinding - Cement Production and Storage
- Cement packing, Loading and Dispatch

1. Clinker Storage & Handling:

Clinker will be received at plant site by truck/wagon and unloaded by truck tippler/wagon and transported to storage by a conveyor belt and will be stored in Clinker Silo. From the silo, Clinker will be conveyed to mill hopper by a combination of extraction equipment and conveyor belts. Clinker will be extracted from clinker silo through openings provided with needle gates and clinker discharge sector gates. Set of Conveyor belt will be provided for clinker extraction from silo and feeding to cement mill hoppers.

2. Gypsum, Fly Ash & Slag Storage, Handling along with Crushing:

The project envisages use of additives and correctives like Gypsum, Fly Ash, Slag etc. for manufacturing different varieties of cement depending upon the market demand. A common crushing system for additives has been considered for the project. Additives will be received at the plant site by dump trucks and will be unloaded in BRU. From BRU, additives shall be fed to additive crusher and then to stockpile by a system of impact belt conveyors. Crusher will have bypass provision for bypassing material that need not to be crushed.

Slag will be received by road and unloaded by truck tippler and transported to storage by a belt conveyor and will be stored in stockpile by stacker. Slag will be reclaimed by re-claimer for further conveying to Mill hoppers by conveyors. Fly ash shall be received in plant through bulkers and pumped through pneumatic system to fly ash storage silo.

3. Coal Crushing with Hot Air Generator:

Coal will be received by road and unloaded by truck tippler in coal storage shed and fed to the coal mill for grinding and use in HAG for generate hot air to absorb the moisture in the raw materials and proper functioning of Air Pollution Control Equipments.

4. Clinker Grinding:

Cement Production and Storage: A mix of clinker, Gypsum and additives (as per the cement type) will be fed to the grinding table and grinded to manufacture different varieties of Cement. The Cement is stored in Cement Silo.

5. Cement Packing Loading & Dispatch:

There will be RCC Inverted Cone Silos for cement storage. Cement will be transported to silos with the help of a set of air slides and bucket elevators. Cement packing will be done by rotary packers. Floor Mounted / Hanging Type automatic truck loaders will be envisaged.

The Process flow chart is given ahead:

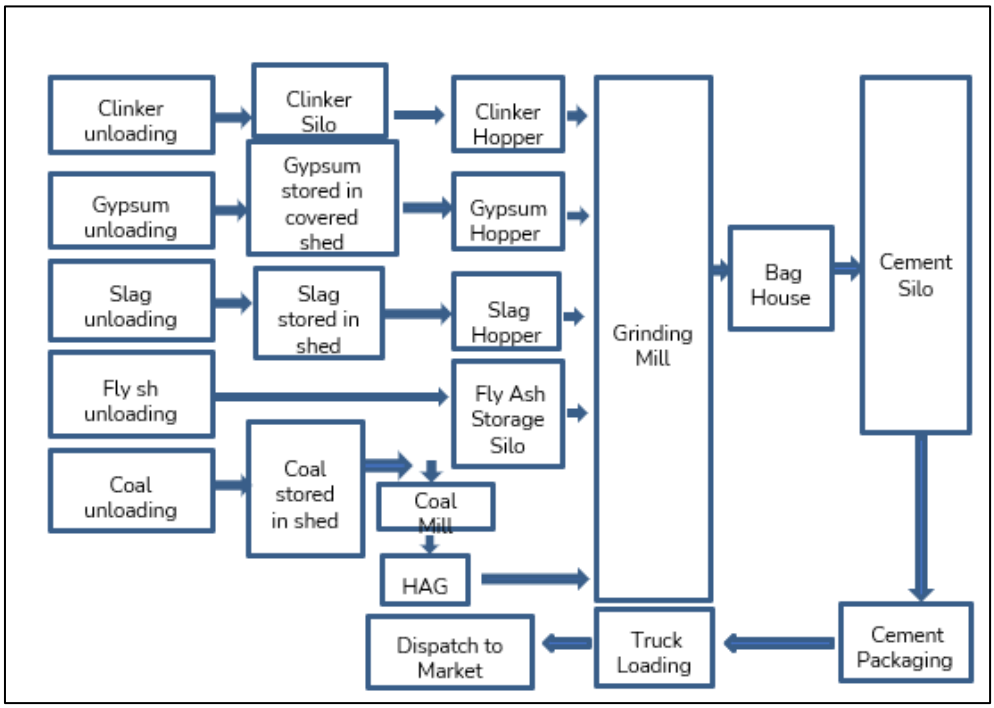

Figure 5. Process Flow Diagram

1.3. Description of Environment

Table 5. Environment Sensitivity

S. No.	Particulars	Details
1.	Nearest Town / City	• Daund Town (3.3 Km in S direction) • Shrigonda Town (15.95 Km in NE direction)
2.	Nearest National Highway / State Highway	• NH-160 (0.6 Km in West)
3.	Nearest Railway station	• Kashti Railway Station (approx. 1.75 km in NNE direction)
4.	Nearest Airport	International Airport Pune (~71.16 km in WNW direction)
5.	National Parks, Wildlife Sanctuaries, Biosphere Reserves within 10 km radius	No National Park, Wildlife Sanctuary, Biosphere Reserve, Protected Forest (PF) falls within 10 km radius of the plant site. Reserved Forests within 10 Km radius of the plant site are given below: • Reserved Forest near Gar- 2.24 Km SSE • Reserved Forest near Sonwadi- 2.73 Km WSW • Reserved Forest near Sonwadi- 2.84 Km WSW • Reserved Forest near Kauthe- 6.24 Km SE • Reserved Forest near Babhulsar- 7.34 Km WSW • Reserved Forest near Balalewadi- 8.13 Km WNW • Reserved Forest near Mandavgaon Pharata- 9.59 Km WNW
6.	River / Water Body (within 10 km radius)	Storm water along the railway line (0.08 Km, East) & drain adjacent to Project site (West) **Nala/Odha:** • Seasonal Dry nala (1.10 Km, E direction) • Nala near Ganeshwadi (4.14 km in NE direction) • Nala near Pimplachamala (~4.97 Km in NNW direction) • Nala near Domalewadi (~6.29 Km in NNW direction) • Nala near Gar (~8.08 Km in WSW direction) • Bhagirthi Odha (2.54 km in SSW direction) • Gadge Odha (4.61 Km in NNW direction) • Son Odha (5.21 Km in SSE direction) • Khar Odha (7.36 Km in ENE direction) • Bor Odha (8.31 Km in SE direction) **River:** • Bhima River (1.96 km in SW direction) • Ghod River (2.27 km in NW direction) **Canal:**

S. No.	Particulars	Details
		• New Mutha Right Canal (8.63 km in SSW direction) • Bhigwan Branch Canal (9.35 km in SSE direction) • Ghod Left Canal (9.71 Km ENE) • Ghod Right Bank Canal (12.38 Km NW) **Pond:** • Pond near Limpan gaon (8.45 Km in NE direction) **Lake:** • Limpan Gaon Lake (8.46 Km in NE) • Daund Lake (8.85 Km in SSW) The project site is located upstream of Ujani dam which is at 72.75 Km (SE direction) from the site.
7.	Seismic Zone	Zone - III [as per IS 1893 (Part-I): 2002]
8	Critically Polluted area (CPA)	The project site is not located in a Critically Polluted Area or cluster (CPA).

Baseline Monitoring

The baseline data is generated through field study within the impact zone (Core Zone and Buffer Zone i.e. 10 Km from Project Boundary) for various components of the environment viz. Air, Noise, Water, Soil, Land, Traffic, Ecology and Socioeconomic. The baseline environmental quality has been assessed for Post monsoon Season (October 2024-December 2024) (by NABL accredited laboratory Perfact Researchers Pvt Ltd, New Delhi) for the study area of 10 Km radius from the project site.

Micro- meteorological data:

- **Temperature:** Temperature of the area varies from 7.83^{0}C to 31.15^0 C for dry bulb temperature & 7.63^{0}C to 26.9^0 C for wet bulb temperature.
- **Relative Humidity:** The relative humidity varies from 26.88% to 100%.
- **Wind Speed:** Wind speed found in the range of 0.18 m/s to 7.11 m/s.

The predominant wind direction is from WNW.
The baseline data analyzed is summarized below:
Study Period: Post monsoon Season from October 2024-December 2024. The results have been summarized below:

- **Land Use:**
  Out of the total 10 km radius study area, the Agricultural Land area is about 30627.78 hectares which is 85.99 % of the total 10 km radius study area. The total Built up area

is about 2033.44 hectares which is 5.71% of the total study area, Barren Land area occupies around 1360.31 ha which is 3.82% of the study area, Forest Land area occupies around 304.59 ha which is 0.86% of the study area & the total area covered by wetland/ water bodies is 1292.39 ha which is 3.63% of the total study area.

- **Geology:** The area is occupied by the Basaltic lava flows of the Deccan Trap of the late Cretaceous to Palaeognee age. The Basaltic flows are of 'Aa' and 'Pahoehoe' type. A typical 'pahoehoe' unit comprises a basal vesicular part with pipe amygdules, a middle massive part, and a top vesicular part with spherical vesicles. The Aa flows are massive with a fragmentary top and impersistent clinkary base. The pahoehoe type of flows is dominant in the western part whereas Aa type flows are more predominant in the eastern part.

- **Hydrology:** In the core zone, the two drains are adjacent to either side of the proposed grinding unit, one in the east and the other in the west. The drain in the west is for irrigation purposes, while the drain in the east is a stormwater channel. It flows across the railway line and primarily carries runoff from the project site. The area's major River Bhima River flows from west-northwest to east. The area is situated on the north of the Bhima River. The Bhima River is located at about 1.96 km SW of the site. The confluence of the Bhima and Ghod Rivers lies about 3.24 km west of the site. The Ghod River is a tributary of the Bhima River, which comes from the NNW of the site. The buffer zone comprises various water bodies such as Rivers, Odha, Nala, Ponds, lakes, canals, etc. The area has a dendritic drainage pattern with first-to-fourth-order streams. By and large, drainage ultimately flows towards the buffer area's east part.

- **Ambient Air Quality:**
  Samples were collected from 12 sampling locations:
  Study Period: Post monsoon Season from Oct-December 2024. The results have been summarized below:
  Core zone: The mean value of PM_{10} at core zone location is 29.25 µg/m^3 & $PM_{2.5}$ is 11.99 µg/m^3, SO_2 is 9.38 µg/m^3, NO_2 is 29.82 µg/m^3 & CO is 0.44 mg/m^3, are within the limits of National Ambient Air Quality Standards (NAAQS). As per the Air Quality Index by CPCB, the air quality of the core zone is found to be Good and Satisfactory during the sampling period (October – December) 2024.
  Buffer zone: The mean value of PM10 ranges from 32.92 to 71.40 µg/m3, PM2.5 ranges from 13.49 to 29.27 µg/m3, SO2 ranges from 9.95 to 14.66 µg/m3, NO2 ranges from 31.64 to 46.60 µg/m3 & CO ranges from 0.51 to 0.98 mg/m3 and THC ranges from 0.47 to 0.72 which are within the limits of National Ambient Air Quality Standards (NAAQS). As per the Air Quality Index by CPCB the air quality of the buffer

zone is found to be Good and Satisfactory during the period (October - December) 2024.

- **Ambient Noise levels:**

  Core Zone (Industrial Area): N1 & N2: The ambient noise level during daytime at the project site varies from 53.4 dB (A) to 61.8 dB (A) which are within the daytime standard limit of industrial area ~ 75 dB (A). During night the noise level at the project site ranges from 46.2 dB (A) to 57.9 dB (A) which are also within the nighttime standard limit of industrial area ~ 70 dB (A).

  Buffer Zone:

  Residential Area: N3 to N8: The ambient noise level in residential area ranges from 53.4 dB (A) - 56.8 dB (A) during daytime which is higher within the daytime noise standard limit of Residential area of ~ 55.0 dB (A) and from 43.7 dB (A) to 46.9 dB (A) during nighttime which is higher within the nighttime noise standard limit of Residential area of ~ 45.0 dB (A). The slight increase in noise levels is due to the increased vehicular activity.

  Commercial Area: N9 & N10: The ambient noise level in commercial area i.e. Approach Road and NH- 160 ranges from 56.8 dB (A) to 64.7 dB (A) which is within the daytime noise standard limit of ~ 65.0 dB (A). During the nighttime noise level was recorded which ranges from 51.5 dB (A) to 58.9 dB (A) which is higher than the night-time noise standard limit of commercial area ~ 55 dB (A). The increased noise level is due to heavy dumper & vehicular movement on the highway.

- **Soil Quality:**

  Core Zone (S1): The sample collected from the onsite - S1 shows that the soil moisture content in the core zone is 1.8%, pH is 7.96. Amount of primary nutrients like Organic matter is 0.88%, the available Nitrogen is 89.6 mg/kg is very low, available Potassium is 39.7 mg/kg is low while the available Phosphorus is 11.6 is medium in range. Therefore, the Primary nutrient profile shows that soil is average fertile in the core zone.

  Buffer Zone (S2- S11): The samples collected from the site S2- S11 shows that the soil moisture content in the buffer zone is between 1.6-3.5 %, pH is 7.6-8.9. Amount of primary nutrients like Organic matter is 0.61-1.22%, the available nitrogen 75.6-142.8 mg/kg is low, available Potassium 39.8-109.3 mg/kg is low to medium while the available Phosphorus 10.6-14.6 mg/kg is in medium-high range. Therefore, the Primary nutrient profile shows that soil is average fertile in the buffer zone.

- **Surface Water Quality:** Surface water samples were derived from 9 locations in different surface water bodies within study area, analysis results of the same revealed that pH values amongst all samples varied in the range of 6.28 - 7.99, Total Hardness concentration varied in the range of 142 mg/l to 870 mg/l & TDS concentration varied

in the range of 452 to 2687 mg/l. Electrical Conductivity was found to be ranging in between 710 to 4180 mS/cm. All the surface water locations fall under **Class "D"**, i.e. Propagation of Wildlife & Fisheries except for **Bhima River downstream (SW3) & Bhima River near Alegaon (SW9)** falls under **Class "B"**, i.e. Outdoor bathing (Organised) as per CPCB surface water quality- Designated Best Use Water Quality Criteria.

- **Ground Water Quality:** The water quality of the buffer zone (GW1- GW8) shows that the **Total Dissolved Solids (TDS)** of the sampling locations ranges from 148 mg/l to 4460 mg/l. The TDS of all sampling locations are above the prescribed permissible standards, i.e., 2000 mg/l except GW2 & GW3 locations. The **Total Hardness** of the sampling locations ranges from 18 mg/l to 1800 mg/l. The total hardness of all sampling locations is above the prescribed permissible standard limits, i.e., 600 mg/l except GW3 & GW7 locations.

  Magnesium content in the sampling locations ranges from 1.32 mg/l to 238.14 mg/l. Magnesium content in GW3, GW5, GW6 & GW7 locations are within the prescribed permissible limit and GW1, GW2, GW4 & GW8 locations are above the prescribed limit, i.e. 100 mg/l. The **Alkalinity** of the sampling locations ranges from 20 mg/l to 1756.99 mg/l. All sampling locations are above the prescribed drinking water permissible standard i.e. 600 mg/l except GW3, GW6 & GW7 locations.

  The **Calcium** Concentration of the sampling locations ranges from 5.20 mg/l to 336 mg/l. The Calcium levels are for all sampling locations are within the prescribed permissible drinking water standards i.e., 200 mg/l except GW1, GW4 & GW8 locations. The **Chloride** Concentration of all the sampling locations ranges from 14 mg/l to 930 mg/l. The Chloride levels of all sampling locations are above the prescribed permissible limits of drinking water standards, i.e. 250 mg/l except GW3 location.

- **Biological Environment:**

  Flora and Fauna of Core Zone: In the core zone, the initial survey revealed significant presence of flora but minimal presence of fauna in the area. Currently, the plantation of about 27925 trees will be carried out having tree species such as *Azadirachta indica, Delonix regia, Ficus religiosa, Polyalthia longifolia, Tamarindus indica etc.* The fauna in the vicinity is restricted to a few common species.

  Flora of Buffer Zone: About 61 species of trees, 42 species of herbs, 13 shrubs, Climbers, Ferns and Grasses have been recorded within the 10 km study area. Most common species found in the area are Neem, Khair, Banyan tree, Custard apple, Peepal, Gulmohar, Tamarindus, Guava etc.

  Fauna in Study area: Fauna in the study area are common species as per actual sighting. Based on actual sighting, no Schedule-1 species were observed in the study

area. However, the list of schedule-I species have been prepared based on the secondary evidences in Ahmednagar & Pune district of Maharashtra. Letter has been submitted to the Deputy Conservator of Forest, Ahilyanagar (Ahmednagar) Maharashtra for verification & indication of the presence of the Schedule-I species, if any, in the Study area (i.e. 10 km) of the proposed project in order to prepare a conservation plan for their conservation & mitigation

- **Traffic Studies:** There is a well-developed National Highway-160. NH-160 is further merging with MH-SH-65. V/C ratio of the NH-160 is observed to be 0.15 which falls under LOS category "A". Having a performance of Excellent. After Commissioning of the project LOS category of Project will remain the same Category "A". There is proposed Railway siding within the Plant which will ultimately reduce the impact of transportation on National Highway. To accommodate transportation trucks, there are adequate parking facilities within the Site. Thus, it can be concluded that the present Carrying Capacity of roads is good to bear the proposed increased traffic load.

1.4. Environmental Monitoring Programme

M/s DBGVL will ensure that the environmental performances of all the activities will be monitored throughout the execution of the various project activities. Monitoring will include all the aspects and parameters related to the process emissions from the grinding unit, storage area, work zone area, quantities of waste generated, effluent generation and its characteristics, Environmental quality of components like Air, water, Soil, Noise will be verified that meet the prescribed standards. Occupational health and safety monitoring will include Effective Health and safety management of the workers engaged, periodic health checkup, reporting of all the incidents in the plant during the installation and operation phase. All the reports will be periodically submitted to the regulatory authorities concerned as compliance, audit reports etc.

1.5 Additional Studies

The project is situated in the Seismic zone-III area. Proper measures will be taken during the construction to avoid damage and loss. All measures will be taken as per the applicable law.

Risk Assessment

Risk analysis provides severity of harm from a particular type of hazard. As it is a cement Grinding unit all the precautionary measures while handling and storage of raw material and coal will be taken.

The onsite emergency plan consists of the following key elements:

- Planning as per hazard analysis
- Preventive measures
- Emergency response procedure
- Recovery procedure

A detailed plan as well as on-site and off-site management plan will be developed for the plant.

Occupational Health & Safety management plan

- To control any impact of working in high-thermal zone & high noise/vibration zone of plant, working timing of workers will be restricted, shielding surfaces and PPE will be mandatory.
- Occupational health surveillance programs will be done Six-monthly and their records will be maintained.
- Medical dispensary comprising a qualified doctor, male nurse, and Pharmacist in general shift will be available at the plant and the hospital facility will be available nearby.
- Ambulance Services: The Dispensary / health center will be provided with an ambulance or signed a contract with the nearest health center/hospital for the ambulance services to take the patients to hospital in case of emergency.
- Health check-up camps will be organized on a regular basis at company's dispensary/nearby locations for nearby people.
- Proper medical facility arrangements will be provided in case of any accident.
- Label Precautions and First Aid facilities will be provided.
- Emergency plans will be prepared, and mock drills of the on-site emergency will be conducted.
- Employers and employees will be made aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses.
- An inspection of the industrial activity will be done at least once in a year and an annual status report on the compliance with the Rules will be submitted.
- An Environment, Health and Safety (EHS) Manager will be appointed, which handles all the safety issues related to man, machine & materials.
- Exterior refuge or safe areas including parking lots, open fields or streets which will be located along boundary of the site not within the operation site and which provide sufficient space to accommodate the employees.
- Coal storage mitigation – Proper ventilation will be provided around the coal storage shed.
- Specific written instructions will be obtained before any welding, burning, grinding or other flame heat producing work commences in coal processing areas.

Personal Protective Equipment

The level of risk of exposure to dust will dictate the appropriate personal protective equipment (PPE) required such as side dust mask and appropriate gloves, footwear, respiratory protection, fire-resistant clothing, helmet.

- **Respirators:** An effective respiratory protection program will be established and maintained. A dust mask with appropriate filters will be provided to workers. Portable or supplied air (fixed lines) in oxygen deficiency cases.
- **Clothing:** Workers wear appropriate protective clothing, body suits, aprons etc. of appropriate materials to prevent skin exposure.
- **Skin Protection:** Workers wear gloves and clothing/body suits to protect their skin.
- **Eye & Face Protection:** Workers wear safety glasses with side shields, protective shades.
- **Eyewash facility:** Common workplaces will be equipped with an Eyewash facility.
- **Head protection:** Helmet will be mandatory in plant premises.
- **Hearing protection**: Hearing protectors (ear plugs or earmuffs) will be mandatory.
- **Foot Protection**: Safety shoes and boots will be mandatory for protection against liquids and chemicals or any hot object.

1.6. Project Benefits

The proposed unit will also bring benefits in various sector for the people in surrounding villages, such as,

- The project will cater to the increasing demand of cement in the country as well as increase export capacity of the country.
- The industry will spend on social welfare activities in the area including activities for rural development and livelihood development.
- Employment opportunities will lead to a rise in income and an improved standard of living. It will provide direct and indirect employment to local youth. The industry would also generate jobs for the laborers during the construction phase as well as during the operation phase. Indirect employment opportunity is envisaged by enhanced transportation, workshops, petty contractors and shopkeepers, network of retailers (Cement Stockists) throughout the state and in its marketing regions.
- The company will organize various vocational training sessions from time to time; entrepreneur development programmes to the locals/nearby villagers preferably women's for starting their suitable small-scale industry/enterprises for their own subsistence and livelihood. Various Socio-economics developmental activities based on the outcome of the public hearing will be carried out by the Dalmia Bharat Foundation (DBF), DBF is a registered not-for-profit organization setup under the

Indian Trust Act, 1882. The Foundation was set up to expand the programmes & projects of the Dalmia Bharat Group's CSR division.

- As per OM dated 30th Sept. 2020, and OM dated 20th Oct. 2020, Socio-Economic developmental programmes will be customized based on the issues raised during Public Hearing and implemented in a time bound manner with commissioning of the project for the betterment of the locals.
- The basic requirements of the community will be strengthened, as per the issues raised during Public Hearing which will help in uplifting the living standards of local communities.
- DBGVL will implement rainwater harvesting practices inside the plant premises to harvest rainwater from different sections of the plant.
- DBGVL will contribute substantially to the overall economy through Increment of revenue to the State & Central exchequer from the proposed project by way of taxes, royalty etc.
- Cement plant will be utilizing process waste generated by other industries i.e., fly ash from Thermal Power plant & Slag from Steel plants and help them in getting rid of voluminous waste in most sustainable manner by converting into useful product i.e., PPC, PSC and other special grade of Cement.
- About 33% of total plant area will be developed as green area thus will help in improvement in the quality of the environment.

1.7. Environment Management Plan

Air Quality Management Plan

During Construction Phase

- Water sprinkling shall be done at the location where dust generation is anticipated.
- No excavation of soil shall be carried out without adequate dust mitigation measures in place.
- No loose soil or sand for construction & demolition waste or any other construction material that causes dust shall be left uncovered.
- Sprinkling shall be done every hour.
- Construction material and waste should be stored only within earmarked areas and roadside storage of construction material and waste shall be prohibited.
- Only covered vehicles carrying construction material and machinery and waste shall be permitted.

During Operation Phase

High efficiency Pollution control equipment will be installed in the proposed grinding unit.

A. The fugitive emission will be controlled by:

- The raw materials will be stored in covered sheds/silos and finished product will be stored in silos and covered sheds.
- Water tankers will be deployed for water sprinkling.
- Fly ash transportation will be done by Bulkers/ closed tankers.
- Covered unloading hoppers with an atomized water spray system.
- Water sprinklers will be installed in coal yards, RMH area cement bag loading areas to prevent fugitive emission.
- MDSS (Mechanised Dust Suppression System) will be provided.
- Roads will be Concreted and will be swept by vacuum machines.
- It would be ensured that all the vehicles plying in the working zone are properly tuned and maintained to keep emissions within the permissible limits.
- Greenbelt development/plantation will control and contain the fugitive emission.
- Movement of heavy trucks/vehicles on the unmetalled road generates substantial quantities of dust emission. This is due to the presence of dust over the road, which is carried away by wind. For dust emissions from roads, all loading and unloading areas, Road Sweeping machines will be deployed for cleaning dust.

B. Emissions from Transportation & mitigation measures:

- Asphalting/Concreting of roads will be constructed within the plant to reduce dust emissions from unpaved surfaces & Road sweeping machines will be deployed for cleaning dust from the internal road.
- Railway siding with wagon loader-tippler will be made available at the plant site for transportation of raw-material and product. This will not only reduce the emission load but also will reduce road traffic.
- Vehicles with valid Pollution Under Control (PUC) certificates will be used for transportation and proper maintenance of vehicles will be undertaken.
- Separate parking areas will be earmarked.
- Overloading will be avoided, and trucks will be fully covered.
- Sprinkling of water will be carried out to reduce dust generation.
- Training programs for drivers on road safety, including speed limits and safe driving practices will be conducted.
- Emergency response plans will be implemented for transportation-related incidents.

Noise Level Management Plan

For Construction Phase

- The noise will be limited only to specified periods of construction and most of the activities will be carried out in the daytime only.
- Provision of protective devices like earmuffs/ plugs to the workers will be done.
- Ready Mix concrete will be used instead of a concrete mixer so no noise generation will be there due to it.
- Proper training will be given to the workers regarding the handling of construction materials. Workers will not be allowed to throw construction materials from height like bricks, debris, etc..
- Loading and unloading of C&D waste will be done from loaders/excavators directly to tippers/trucks to ensure minimal noise generation.
- Machines and equipment will be properly greased, lubricated and regularly maintained and shall be provided with vibration isolators and noise damping, construction will be done during the daytime only, proper barricading of the project site will be done and maintained during the construction.
- Appropriate PPEs like ear helmet, mask, plugs and muffs will be provided to the workers at the project site. Also, acoustic flooring using tiles will be done in the admin building so that it acts as a noise absorber.
- Proper barricading will be done around the project site, which will help in controlling noise emission to & from the site to some extent.

For Operation Phase

To reduce Ambient Noise level the following measures will be adopted-:

- Properly insulated enclosures will be provided for equipment generating excessive noise.
- Proper training will be given to the workers for handling raw materials. PPE will be provided to the workers.
- Process machinery will be provided with Improved mufflers & silencers will be provided in the machinery generating high noise
- Machinery reputedly make and produce less noise will be purchased.
- Installation of compressors and turbine in closed building.
- Stationary machinery and equipment will be properly enclosed by enclosures and will be provided with dampeners for minimizing noise generated due to vibration of machinery.
- It is re-checked and assured that muffler systems, vibration damping systems etc. will be installed in the engines of machinery, which will help with the reduction of noise.
- Less noisy machinery/equipment will be installed.

- Proper oiling and lubrication will be done to all the parts of the machinery to ensure that minimal noise is generated.
- Greenbelt development will be done along the plant boundary to attenuate the noise generated by the cement plant.

Solid & Hazardous Waste Management plan

Proper care of waste will be taken while handling & transportation, appropriate PPEs will be

Construction & fabrication waste generated (5000 TPA) will be sold to scrap dealers or other construction waste will be used for land levelling/ road construction

For Operation Phase- Domestic solid waste generated from the plant which will be stored in separate bins. Biodegradable waste (~20 TPA) will be composted and used for manuring while non-biodegradable waste (~12 TPA) will be sent to authorized recyclers.

Hazardous, Non-Hazardous & Other Waste management

- No wastewater will be generated from the cement grinding unit, as it is based on dry process technology.
- Domestic wastewater generated from Plant will be treated in STPs and treated water will be used for greenbelt development/ plantation.
- Dust collected from various air pollution control equipment will be recycled completely in the process.
- Used or Spent Oil (Cat. 5.1) (~30 KL/Annum), Contaminated cotton rags or other cleaning materials (Cat. 33.2) (~0.5 TPA), Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (Cat. 33.1) (~10 TPA) and Waste or residues containing oil (Cat. 5.2) (~10 TPA) will be stored at a separate storage area as designated and maintained as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 which will be sold to CPCB authorized recyclers.
- Used Lead Acid batteries (15 TPA) will be generated which will be stored in the designated storage area and disposed-off/sold to registered vendors as per prevalent rules.
- E-Waste (1 TPA) will be generated from cement plant in the form of Discarded electrical equipment, Cables, CFL/ LED Lights etc. will be sold to registered vendors as per E-Waste Management Rules, 2016.
- Bags & Containers (2000 TPA) will be sold to Authorised vendors.
- Plastic bag & other packing materials (3,000 TPA) will be Sold to Authorized vendor.

Wastewater & Effluent Management Plan

For Construction Phase

- During the construction period, runoff from the construction site will not be allowed to stand (water logging) or enter the roadside or nearby drain.
- The runoff due to rainwater from the site will be collected and reused.

For Operational Phase

- The plant will be designed with zero liquid discharge concept. ZLD as the unit will be based on dry process technology.
- Domestic wastewater generated from the Plant will be treated in STP of capacity 2 x 10 KLD. STP will be MBBR technology. Treated water will be used for greenbelt development/ plantation & dust suppression.
- No wastewater will be discharged outside the unit.
- A Rainwater harvesting pit will be developed to harvest rainwater and to reduce the usage of fresh groundwater.
- The rainfall runoff within the plant site will be diverted through the drains to the recharge pit.
- All Stacking/ storage areas will be covered and provided with proper garland drains to prevent the washing off.

Biological Environment Management Plan

- 33% of the plant area will be developed under greenbelt / plantation.
- tree saplings will be planted considering 80% of survival rate.
- Estimated budget for greenbelt/plantation will be 33.51 lakhs.

Socio Economic Environment management plan

- The industry will require raw materials, skilled and unskilled laborers. It will be available from the local area. Due to increasing industrial activities, it will boost the commercial and economic status of the locality, to a positive extent.
- The proposed project will provide direct and indirect employment to local youth. The industry would also generate jobs for the laborers during the construction phase as well as during the operation phase. Indirect employment opportunity is envisaged by enhancing transportation, workshops, petty contractors and shopkeepers, network of retailers (Cement Stockists) throughout the state and in its marketing regions along with various vocational training, entrepreneur development programs etc.
- The industry will take up social welfare activities in the area based on issues raised during Public Hearing.

1.8. Cost & EMP Implementation Budget

The total cost of the project is Rs. 980 Crores. The estimated capital cost for the EMP Budget will be Rs. 30 crores and recurring cost will be Rs 3.0 Crores/Year.

Table 6: Cost Summary

S. No.	COST Summary	Cost for Total (Rs. in Crores)
1	Project Cost	980 (Line I - 550 + Line II - 430)
2	Capital cost for Environment Management Plan	30
3	Recurring cost for Environment Management Plan	3
4	Occupational Health and Safety and Public Health & Safety	1.5

As per OM dated 30th Sept. 2020, and OM dated 20th Oct. 2020 implementation of various Socio-Economic Developmental activities based on the issues raised during public hearing will be part of EMP cost.

1.9. Conclusion:

The EIA/ EMP study was conducted as per the approved ToR. Baseline data of land, air, water, noise, biological and socio-economic environment was duly assessed by conducting field investigation as well as by having access to the available secondary information. The predictions of impacts were identified & evaluated and are suggested to mitigate the environmental concerns. An EMP prepared, which is dynamic, flexible and subject to periodic review.

Operation of the plant may add to Gross Domestic Product. The community has been a key stakeholder in business and environmental issues are a matter of utmost priority for the company. The Management believes it to being catalyst in the transformation of the communities around its business operations through partnership with local communities, Government NGOs and other stake holders. With the proposed development in & around the area, there will be supporting facilities/infrastructure eventually leading to the development of the area. The proposed project will also generate much-needed employment (direct & indirect) for the local people. The economy of the area will get a boost and there will be overall growth of the region in terms of education, health, training, transport, automobile, industry. The Company will also continue its efforts to implement the various socio-economic developmental activities for the overall development of the area. The standard of living will also get an uplift on the positive side accordingly. Thus, the proposed projects of the company will contribute to social and economic benefit to local people and region.

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