EXECUTIVE SUMMARY

OF

DRAFT ENVIRONMENTAL IMPACT

ASSESSMENT REPORT &

ENVIRONMENTAL MANAGEMENT PLAN

FOR

PUBLIC HEARING

OF

Proposed Clinker Grinding Unit of 5.5 Million TPA

Production Capacity (Phase - I: 3.0 Million TPA & Phase - II: 2.5 Million TPA)

and D.G. Sets of 1250 KVA (1000 KVA /2 x 500 KVA & 250 KVA)

Near

Villages - Patas & Kangaon,

Taluka - Daund, District, Pune (Maharashtra)

APPLICANT

M/s. Maharashtra Cement Plant

(A Unit of Shree Cement Ltd.)

Post Box No. 33, Bangur Nagar, Andheri Deori,

Beawar, District - Ajmer (Rajasthan)

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EXECUTIVE SUMMARY

1.0 PROJECT DESCRIPTION

1.1 Introduction

Shree Cement Limited (SCL) is energy conscious and environment friendly business organization, started its journey in the year 1979, and today it is among India's leading cement manufacturing companies. Having witnessed an exponential growth since last three decades, it continues to expand capacity in the cement and power sector.

M/s. Maharashtra Cement Plant (A unit of Shree Cement Ltd.) is proposing Clinker Grinding Unit of 5.5 Million TPA Cement production capacity (Phase - I: 3.0 Million TPA & Phase - II: 2.5 Million TPA) and D.G. Sets of 1250 KVA (1000 KVA / 2 x 500 KVA & 250 KVA).

As per EIA Notification dated 14th Sept., 2006, as amended from time to time; the project falls under Category "B", Project or Activity '3(b)' Cement Plants.

Application (Form-1 and Pre-Feasibility Report) has been uploaded on SEIAA, Maharashtra Portal on 13th September, 2017. First Technical Presentation (for ToR approval) held before SEAC -1, Maharashtra on 18th November, 2017 and the committee has suggested Standard Terms of Reference (ToR) with project specific ToR prescribed for the proposed vide thier Minutes of 144th meeting (Uploaded on 07th Dec., 2017).

1.2 Brief Description of the Project

Brief description about the Project is given in Table - 1.

Table - 1
Brief Description of the Project

S. NO.	PARTICULARS	DETAILS
A.	**Nature of the Project**	Proposed Project
B.	**Size of the Project**	o Clinker Grinding Unit of 5.5 Million TPA (Phase - I: 3.0 Million TPA and Phase - II: 2.5 Million TPA) Cement Production Capacity o D.G. Sets of 1250 KVA (1000 KVA / 2 x 500 KVA and 250 KVA)
C.	**Location Details**	
	Villages	Patas & Kangaon
	Tehsil	Daund
	District	Pune
	State	Maharashtra

S. NO.	PARTICULARS	DETAILS
D.	**Geographical Extent of the Project Site**	
	Latitude	18° 28' 0.79" N to 18° 28' 29.08" N
	Longitude	74° 27' 14.17" E to 74° 27' 34.97" E
	Toposheet No.	47 J/6, 47 J/7, 47 J/10 & 47 J/11
E.	**Area Details**	
	Total Project Area	ꕥ 65.69 Acres (26.58 ha)
	Greenbelt / Plantation Area (ha)	ꕥ 21.68 acres (8.78 ha) i.e. 33% of the total project area will be developed under greenbelt / plantation
F.	**Environmental Setting Details *(with approximate aerial distance and direction from the project site)***	
1.	Nearest Village	Patas (2.0 km in SSE direction)
2.	Nearest Town & City	Daund (13.0 km in ESE direction)
3.	Nearest National / State Highway	NH - 9 (Now, NH - 65; Pune to Solapur) (4.5 km in South direction)
4.	Nearest Railway station	Patas Railway Station (1.0 km in East direction)
5.	Nearest Airport	Pune International Airport (58.0 km in WNW direction)
6.	Archaeological important site	None within 10 km radius study area.
7.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, Protected Forests (PF) within 10 km radius	No National Park, Wildlife Sanctuary, Biosphere Reserve, Protected Forests (PF) falls within 10 km radius from the project site.
8.	Reserved Forests (RF)	○ Reserve Forest (8.0 km in North direction) ○ Reserve Forest (9.0 km in ENE direction) ○ Reserve Forest (9.5 km in North direction)
9.	River / Water Body (within 10 km radius)	○ Bhima River (5.0 km in NE direction) ○ New Mutha Right Bank Canal (4.5 km in SE direction) ○ Athmori Odha (0.5 km in West direction) ○ Janai Odha (5.0 km in NNW direction) ○ Bhagirathi Odha (9.0 km in East direction) ○ Victoria Talab (6.0 km in SW direction)
10.	Seismic Zone	Zone - III [as per IS 1893 (Part-I): 2002]
G.	**Cost Details**	
	Total Cost of the Proposed Project	Rs. 623.7 Crores
	Cost for Environment Management Plan	ꕥ Capital Cost - Rs. 30.0 Crores ꕥ Recurring Cost - Rs. 1.15 Crores / annum

Source: Pre-Feasibility Study Report

1.3 Location Map

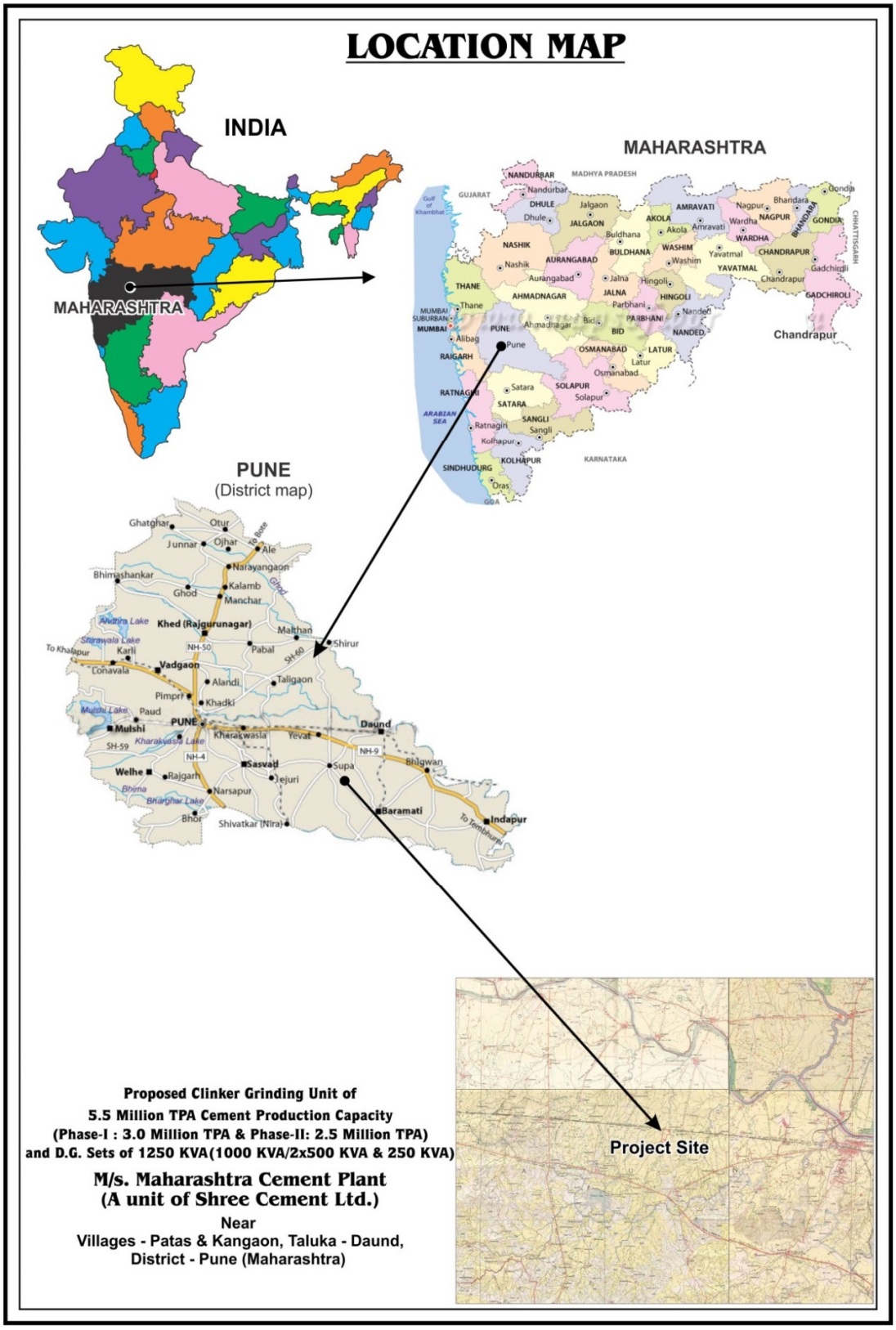

Figure - 1.1: Location Map

1.4 Major Requirements for Proposed Project

1.4.1 Raw Material Requirement

Major raw materials required for cement production are Clinker, Gypsum (Indian & Imported Mineral, Chemical and Synthetic), Fly ash & Slag.

Details regarding quantity of raw material required, their source along with distances and mode of transportation are given in Table- 2 (a) & 2 (b)-

Table - 2 (a)
Raw Materials Requirement for Phase -I (3.0 MTPA)

S. No.	Raw Material	Proportion, % by weight			Quantity (MTPA)			Source	Distance / Mode of Transportation
		OPC	PPC	PSC	OPC	PPC	PSC		
1.	Clinker	95	60	40	2.85	1.8	1.2	Own and other plants (Integrated cement plant at Balodabaza, Chhattisgarh and Kodla, Karnataka etc.)	By Road & Rail, Chhattisgarh / 865 kms, Kodla, Karnataka / 330 kms
2.	Gypsum	5	5	5	0.15	0.15	0.15	Rajasthan Oman and Iran to Mumbai port	By Road & Rail / Rajasthan: 1050 kms Mumbai Port: 160 Kms
3.	Fly ash	-	35	-	-	1.05	-	India bulls Power Plants, Nasik; NTPC Solapur; other TPPs & other sources	By Road Nasik / 180 kms Solapur / 180 kms
4.	Slag	-	-	55	-	-	1.65	Mahaveer Steel, Pune; Kalyani Steel, Satara and other steel plants	By Road, Satara / 100 kms

Source: Pre-feasibility Report

Table - 2 (b)
Raw Materials Requirement for Phase -2 (2.5 MTPA)

S. No.	Raw Material	Proportion, % by weight			Quantity (MTPA)			Source	Distance / Mode of Transportation
		OPC	PPC	PSC	OPC	PPC	PSC		
1.	Clinker	95	60	40	2.375	1.5	1.0	Own and other plants (Integrated cement plant at Balodabaza, Chhattisgarh and Kodla, Karnataka etc.)	By Road & Rail Chhattisgarh / 865 kms, Kodla, Karnataka / 330 kms

S. No.	Raw Material	Proportion, % by weight			Quantity (MTPA)			Source	Distance / Mode of Transportation
		OPC	PPC	PSC	OPC	PPC	PSC		
2.	Gypsum	5	5	5	0.125	0.125	0.125	Rajasthan Oman and Iran to Mumbai port	By Road & Rail / Rajasthan: 1050 kms Mumbai Port: 160Kms
3.	Fly ash	-	35	-	-	0.875	-	India bulls Power plants, Nasik, NTPC Solapur, other TPPs & other sources	By Road Nasik / 180 kms Solapur / 180 kms
4.	Slag	-	-	55	-	-	1.375	Mahaveer Steel, Pune; Kalyani Steel, Satara and other steel plants	By Road Satara / 100 kms

Source: Pre-Feasibility Report

1.4.2 Fuel Requirement

Coal & Petcoke is required for Hot Air Generator, which is used for removal of moisture from Gypsum & Fly ash and proper functioning of dust collectors; whereas HSD is used in D.G. Sets. Details regarding quantity of fuel required, their source along with distance and mode of transportation are given in Table - 3.

Table - 3

Fuel Requirement

S. No.	Name of Fuel	Quantity Required	Calorific value (Kcal. /kg)	% Ash	% Sulphur	Source	Distance & Mode of Transportation
1.	Coal / Petcoke (MTPA)	0.027 / 0.02	4000 / 8000	41.7 / 0.8	0.5 / 3.5	Local Market/ Indian and imported & other sources	Road & Rail 50-100 kms
2.	HSD (KLD)	5	10,000	0.01	0.05	Local market	60 to 160 km / Road

Source: Pre-Feasibility Report

1.4.3 Other Basic Requirement

Other basic requirements for the proposed enhancement project are given in Table - 4.

Table - 4

Basic Requirements for the Project

S. No.	Particular	Total requirement			Source
		Phase -1	Phase -2	Total proposed Capacity	
1.	Water (KLD)	230	120	350 KLD	Ground Water
2.	Power (MW)	10.8	9.2	20 MW	Maharashtra State Electricity Distribution Co. Ltd. (Grid) and D.G. sets (1250 KVA) (for back-up)
3.	Manpower (No. of Persons)	225	183	408 Persons	Locals will be given preference as per eligibility, skills & requirement

Source: Pre-feasibility Report

1.5 Manufacturing Process

The type of cement that will be manufactured is OPC, PPC and PSC. Major steps involved in the process of Clinker Grinding Unit are given as below:

- Clinker storage & handling
- Fly Ash & Pond Ash storage & handling
- Gypsum storage & handling
- Coal & Petcoke storage, handling, grinding and hot air generator
- Cement production and storage
- Cement packing and dispatch.

2.0 DESCRIPTION OF ENVIRONMENT

2.1 Presentation of Results (Air, Noise, Water and Soil)

Baseline study of the study area was conducted during Post Monsoon Season (Oct. to Dec., 2017). Ambient air quality monitoring has been carried out at 8 stations in the study area on 24 hourly bases. The concentration of $PM_{2.5}$ ranges between 30.2 to 51.2 µg/m^3, PM_{10} ranges between 68.7 to 90.7 µg/m^3, SO_2 ranges between 5.7 to 12.6 µg/m^3 and NO_2 ranges between 12.3 to 26.8 µg/m^3.

Ambient noise levels were measured at 8 locations around project site. Noise levels varies from 48.6 to 52.9 Leq dB (A) during day time and from 37.8 to 42.6 Leq dB (A) during night time.

The ground water analysis for all the 12 sampling stations shows that pH varies from 7.28 to 7.98. Total hardness varies from 161.60 to 1212.10 mg/l. Total dissolved solids varies from 450 to 1235 mg/l.

Soil monitoring was carried out at 12 locations and the analysis results show that soil is neutral to slightly alkaline in nature; pH value ranging from 7.45 to 8.52 with organic matter from 1.06 to 1.43. Soil texture is silty loam & sandy loam. Available nitrogen ranges from 132.25 to 376.16 kg/ha. Phosphorous ranges from 30.86 to 166.61 kg/ha whereas the Potassium ranges from 137.16 to 916.61 kg/ha.

Biological Environment

Flora: Most common species found in the area are *Cassia fistula* (Amaltas), *Lagerstroemia parviflora* (Bhondara), *Phoenix sylvestris* (Khajur), *Albizia lebbeck* (Siris), etc.

Fauna: Commonly found species in the study area are Common Langur (*Semnopithecus entellus*), House Rat (*Rattus rattus*), Common Garden Lizard (*Calotes versicolor*), Indian Rat Snake (*Ptyas mucosa*) etc.

Socio-Economic Environment

The population as per 2011 Census records is 95174 (for 10 km radius). Scheduled Caste fraction of the population of the study area is 11852 (12.45%) and Scheduled Tribe 2248 (2.36%). Literacy rate of the area is 68.44 %. Population of the workers engaged in occupation is 58 %. Of these 53 % are main workers and 4 % are marginal workers. Remaining, 42 % of the total population is considered as non-workers.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Anticipated environmental impacts due to proposed project along with mitigation measures are given in Table - 5:

Table - 5
Anticipated Environmental Impacts and Mitigation Measures

Discipline	Anticipated Impact	Mitigation Measures
Construction Phase		
Air	Increase in dust and gaseous pollutant concentration due to Leveling activity and Heavy vehicular movement.	* Sprinkling of water in the construction area and on unpaved roads. * Proper maintenance of vehicles will be done. * Use of vehicles meeting PUC norms.
Noise	Increase in noise level due to Construction Equipment.	* Equipment will be maintained to keep the noise level within permissible limit. * Workers will be provided necessary protective equipments e.g. ear plugs, earmuffs.
Water	Increase in suspended solids due to soil run-off during heavy precipitation due to loose soil at construction site	☙ Adequate drainage system for runoff water during construction phase.

Discipline	Anticipated Impact	Mitigation Measures
Operation Phase		
Air	Increase in concentration of Particulate Matter Emissions	➢ Better maintenance and installation of pollution control equipment like Bag Filters / Bag House etc. ➢ Dry fly ash will be transported in closed tankers and trucks. ➢ Clinker, Cement and Fly Ash will be stored in silos and Slag & Gypsum in covered sheds. ➢ All the roads inside the plant premises will be concreted. ➢ Greenbelt will be developed within the premises of the project. ➢ Water sprinkling to reduce the PM emission level. ➢ CPCB & CREP guidelines will be followed.
Noise	Increase in noise level within the plant area	* Equipment to be installed is designed to conform to occupational noise levels prescribed by regulatory agencies. * Earmuffs/ Earplugs are provided to persons working in high noise zone. * Properly insulated/closed building enclosures will be provided to equipments making excessive noise. * Greenbelt development/ plantation will help in attenuating noise.
Water	Generation of waste water	* Domestic waste water generated from the plant office will be initially disposed in soak pit via septic tank. After completion of project work, STP will be installed for the treatment of domestic waste water and treated water will be used for greenbelt development/ plantation. * No effluent will be discharged outside the plant premises. * Rain Water Harvesting will be practiced within the plant premises.
Soil	Degradation of soil quality due to settling of air borne dust	➢ Use of efficient pollution control systems ➢ Maintained proper stack height.
Biological Environment	Positive as greenbelt of appropriate width will be developed and maintained by Maharashtra cement Plant in the area.	More plantations will improve the ecological balance of the area.
Socio-economic Environment	Overall development of the area in respect of the infrastructure development, educational growth, health facilities etc.	CSR Activities will be carried out in the local area which will improve the social-economic status of the local people.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Details of the environmental monitoring schedule / frequency, which will be undertaken for various environmental components, as per conditions of EC / CTE are given in Table - 6.

Table - 6

Post Project Monitoring

S. No.	Description	Frequency of Monitoring
1.	Micro - Meteorological Data	Hourly
2.	Ambient Air Quality	Twice a week monitoring for PM2.5 & PM10 at Plant Site at three locations (plant boundary) & as per EC / CTO conditions
3.	Stack Monitoring	Continuous monitoring for PM level at cement mill stack
4.	Noise Level Monitoring	Monthly at three locations (plant boundary)
5.	Water Level & Quality monitoring	Two locations, quality twice a year and monthly level at Nearby Ground water sources
6.	Medical Checkup of Employee	Yearly

5.0 ADDITIONAL STUDIES

Additional Studies conducted as per the Standard Terms of Reference (ToR) with project specific ToR prescribed by SEAC - 1, Maharashtra vide their Minutes of 144th meeting for installation of Clinker Grinding Unit of 5.5 Million TPA (Phase - I: 3.0 Million TPA & Phase - II: 2.5 Million TPA) Cement Production Capacity and D.G. Sets of 1250 KVA (1000 KVA/2 x 500KVA & 250KVA) are Hydro-geological Study and Rain Water Harvesting Plan and Risk Assessment and Disaster Management Plan.

6.0 PROJECT BENEFITS

The proposed project will help in combating the growing demand of cement in the market and hence will help in the economic growth of the country. Shree Cement Limited will be actively involved in the ESC activities in the nearby villages of the project site. Infrastructure development in the nearby villages, creating education promotion, Health& Family welfare, Community Infrastructure Development and Religious and social Development are some of the activities further to be undertaken under ESC plan for the development and upliftment of the society.

7.0 ENVIRONMENT MANAGEMENT PLAN

The major sources of pollution in Clinker Grinding Unit are Particulate Matter. Air pollution is the major concern to be looked upon for the project activity. No major water, noise & soil pollution is envisaged from the proposed project activity.

Various mitigation measures have been proposed to take care of the environment in respect of air, water, noise, soil and the green cover of the project site and nearby villages.

Particulars	Details
Air Quality Management	ꕥ Cement Mills will be provided with bag house to maintain the emission level within limits of < 30 mg/Nm3. ꕥ Bag filters will be provided at all material transfer points to control dust emitted from various dust generating points in the plant. ꕥ Dry fly ash will be transported in closed tankers and trucks. ꕥ Clinker, Cement and Fly Ash will be stored in silos and Slag & Gypsum in covered sheds. ꕥ Roads within the plant premises will be concreted and regular cleaning by sweeping machine will be done to control fugitive dust emissions. ꕥ Greenbelt will be developed within the premises of the project. ꕥ Proper maintenance of vehicles will be done to reduce gaseous emissions. ꕥ CPCB and CREP guidelines will be followed. ꕥ Regular ambient air quality and stack emission monitoring will be carried out as per CPCB / SPCB norms to ensure that ambient air quality standards will be met all the time.
Water Management	ꕥ No waste water will be generated from the Clinker Grinding Unit. ꕥ Domestic waste water generated from the office toilets will be initially disposed off in soak pit and septic tanks until the competition of the project work; thereafter, STP will be installed and treated water will be used for greenbelt development / plantation. ꕥ Rain Water Harvesting will be practiced within the plant premises.
Noise Management	ꕥ Proper maintenance, oiling and greasing of machines at regular intervals will be done to reduce generation of noise. ꕥ Personal protective equipment viz. Earplugs / Earmuffs will be provided to all operators and employees working near the machinery. ꕥ Greenbelt will be maintained all along the boundary to attenuate noise levels. ꕥ Regular monitoring of noise level will be carried out and corrective measures will be taken.
Solid & Hazardous Waste Management	ꕥ No solid waste generation from cement manufacturing process in Grinding Unit. ꕥ Dust collected from various pollution control equipments like Bag house, Bag filters etc. will be recycled in the process. ꕥ STP Sludge will be used as manure for greenbelt development / plantation. ꕥ Used oil generated from plant machinery will be sold to CPCB registered recycler.
Greenbelt Development / Plantation	ꕥ 33% of the total project area (i.e. 8.78 / 26.58 ha) will be developed under greenbelt / plantation. ꕥ Survival rate of 80% will be maintained. ꕥ Plantation of local plant species will be done. ꕥ Greenbelt will be done all around the plant boundary.

8.0 CONCLUSION

The proposed project will prove beneficial to the local people as more infrastructure development, improvement in education and health facilities, roads, etc. in near-by villages will be done. There will be increase in revenue generation to the Government by way of excise and government taxes etc.

There will be no significant impact on the area, as adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Regular monitoring of all the components of environment will be done. Increased social welfare measures taken by the company will lead to development in the nearby villages.

Greenbelt development will be done around the plant area; this will help to mitigate the pollutants released from the premises of Maharashtra Cement Plant.