

HEMADRI CEMENTS LTD,
SURVEY NO. 75/5, 195 - 207, 244, 245,
VEDADRI VILLAGE, JAGGAYYAPETA MANDAL,
KRISHNA DISTRICT, ANDHRA PRADESH

Executive Summary

Submitted by

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Submitted to
Andhra Pradesh Pollution Control Board,
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CHAPTER 11.0 EXECUTIVE SUMMARY

11.0 Introduction (Terms of reference No. 1)

Hemadri Cements Ltd (HCL) has obtained consent for operation for cement production from Andhra Pradesh Pollution Control Board (APPCB) vide consent no. 16030/PCB/A/AEE-4/94/4210, dt: September 1994. Now it is proposed to expand the clinker and cement manufacturing capacity at survey numbers 75/5, 195 - 207, 244, 245, Vedadri village, Jaggayyapeta mandal, Krishna district, Andhra Pradesh in the existing site area of 9.31 ha with a capital cost of Rs. 95 crores. The modernization proposal does not require any additional land. The capital cost envisaged for the optimization program is Rs. 95 crores.

11.1 Production Capacity

It is proposed to expand the clinker and cement manufacturing capacity by optimizing the existing kiln facility, cement mills, converting old raw mills to cement mills. The optimization program shall enhance the Clinker production capacity from 198000 - 495000 TPA, Ordinary Portland Cement (OPC) production capacity from 198000 TPA- 521050 TPA or Portland Pozzolana Cement (PPC) of 660000 TPA.

Manufacturing Capacity

Product	Units	Consented	After modernization
Clinker	TPA	198000	495000
Ordinary Portland Cement (OPC)	TPA		521050*
Portland Pozzolana Cement (PPC)	TPA	-	660000*

* The capacity is maximum achievable, products may be manufactured on campaign basis.

11.2 Location of the Project

The project site is located at survey numbers 75/5, 195 - 207, 244, 245, Vedadri Village, Jaggayyapeta Mandal, Krishna district, Andhra Pradesh. The plant site is situated at the intersection of 16°48'39" (N) latitude and 80°08'55" (E) longitude. The site elevation above mean sea level (MSL) is in the range of 65 - 79 m. The site is connected by Gowravaram - Vedadri road in north direction, Hemadri cements colony road is in east direction, open land in south direction and Hemadri mines in

west direction. The nearest habitation from the site is Vedadri village at a distance of 1.2 km in southwest direction. The main road access for project site is Gowravaram – Vedadri road on the northern side of the plant site. National Highway 9 is at a distance of 7.0 km in northeast direction. The nearest railway station from the project is Jaggayyapeta at a distance of 9.4 km in northwest direction. The nearest airport is Gannavaram located at a distance of 75 km in southeast direction. The nearest town from the project is Jaggayyapeta at a distance of 9.4 km in northwest direction. Krishna River flowing from southwest to southeast direction is at a distance of 2.0 km from the project in southwest direction. There are six reserve forests within 10 km radius of the study area from the project; Jaggayyapeta RF at a distance of 0.2 km from the project in south direction, Jaggayyapeta Ext RF at a distance of 0.3 km from the project in north direction, Kuntimaddi RF at a distance of 3.8 km from the project in southwest direction, Ginjupalli RF at a distance of 3.7 km from the project in southwest direction, Venkatayapalem Ext 1 RF at a distance of 4.7 km from the project in southwest direction and Balusupadu RF at a distance of 7.5 km from the project in northwest direction. The interstate boundary of Telanaga and Andhra Pradesh is at a distance of 7.6 km in northwest direction. There is no national park, wildlife sanctuary, ecologically sensitive area, biosphere reserve, wildlife corridor, tiger/ elephant reserve, critically polluted area within the impact area of 10 km radius from the project site.

11.3 Process Description

The manufacture of cement is highly energy consuming process in terms of both Thermal and Electrical energy. The raw materials of lime stone, coal etc are prepared in crushers followed by storage. These materials are fed to the rotary kiln and the resultant clinker is added with additives like gypsum, and flyash in the cement mill to obtain the required product, which is finally bagged and transported to consumers. The hot gases from the kiln are used for preheating the raw material to reduce energy consumption. The proposal involves optimization of existing kiln, cooler, ESP and cement mill. The existing cement manufacturing line consists of limestone crushers, stacker and raw mill (ball mill), kiln with Pre-heater, coal mills, cement mills and cement packing facilities.

11.4 Water Requirement

The total water requirement after expansion shall be 300 KLD including its cement plant, residential colony and the same shall be met by river Krishna and Storm water runoff stored in mines pit. The unit obtained approval to draw 760 KLD of water from Krishna River.

11.5 Power and Fuels

The Total Power requirement shall be 9.7 MW out of which 4.9 MW is for Optimization/Modernization. It shall be sourced from APSPDCL. The unit has DG sets with the capacity of 1 x 115 KVA.

11.6 Baseline Environmental Data

The baseline data for ambient air quality, surface and ground water quality, noise, and soil quality was collected and analyzed for various parameters. The analysis results show that the values are within the prescribed limits for air quality. The water quality of the area is found to be above the prescribed limits. The noise levels are found to be within limits.

11.7 Identification and Quantification of Impacts

The major contributions of pollution in the proposed plant are emissions from the kilns, apart from utilities and solid wastes from process. The impact assessment report identified various sources of pollution and quantified the pollution loads and has identified the technologies to be adopted for the mitigation and control of the same.

The impacts on air quality due to the project are from the kiln, raw mill, apart from fugitive emissions during transfer, storage and transport of raw materials, cement and solid wastes. The impacts are quantified using ISC-AERMOD based on ISCST3 algorithms of USEPA. The results indicate marginal increase in the ambient air quality parameters and the cumulative concentrations of predicted values and baseline data are within the prescribed limits of CPCB. The noise levels may increase due to running of motors, DG set and other activity. The solid wastes generated in the process and from utilities may have significant negative impacts if

disposed indiscriminately. There are no endangered flora and fauna in the impact area. Employment generation and socio economic development of the back ward area is the major benefit of this project. The area which has low industrial density and medium agricultural activity will have positive benefits due to this project.

11.8 Environment Management Plan

The management plan is drawn in consultation with the project proponents, technical consultants after evaluating various options available for mitigation and control of pollution. The environment management plan is drawn to address the impacts monitored, identified and predicted.

11.8.1 Construction Stage

The potential of pollution during the construction phase will be less when compared to the operational stage as the expansion by optimization does not envisage major construction activity and there is no additional site requirement. During the dry season it is necessary to control uplift of dust during excavation, leveling and transportation by spraying water in the paths, and along the temporary roads. The clearing of plants, shrubs and trees will be kept to minimum so as to leave sufficient space for erection of mechanical units and for few civil constructions. The facilities like toilets, drinking water and proper shelter for the persons staying in the construction site will be provided with utmost importance. Domestic wastewater from construction labor shall be sent to the existing STP for treatment. The construction activity may involve movement of heavy vehicles for earth moving and to move the equipment like dozers and cranes, etc. The vehicles will be maintained properly so as to minimize the emissions from exhaust. The hazardous wastes of waste oil and used batteries will be sold only to authorized recyclers. Wherever needed the construction wastes shall be used for leveling purpose.

11.8.2 Operation Stage

Air Pollution

The sources of air pollution in the Plant are Crusher, Raw Mill, Kiln, Cooler, Cement mill and Packer. The existing equipment provided for control of emissions shall be modernized i.e., bag filters connected to raw mill, Reversible Air Bag House connected to kiln circuit and ESP for cooler. Dust is primary pollutant from cement manufacturing process. The dust sources wherever relatively dry or dusty material is handled, conveyed, pumped or extracted and recycled as such, were provided with bag filters which shall be modernized.

Solid Waste

There is no process waste, other than damaged or waste cement bags, dust collected in pollution control facilities and dust collected during vacuuming the premises, which are returned to the process. The hazardous wastes of spent oil and used batteries are sold to authorized recyclers. General scrap consisting of mainly metal wastes is sold to recyclers.

Solid Wastes Generated and Disposal facilities

Description	Units	Consented	Proposed	Total	Disposal
Waste bags, damaged bags	TPA	8	50	58	Sold to manufacturer
Spent Oil	L/Year	150	2000	2150	Sent to authorized Recyclers/Sec
Used lead acid batteries	Nos./Year	8	75	83	Sent to authorized
General Scrap (Rubber, Metal and Electrical)	TPA	7	30	37	Sold to recyclers

Wastewater

There will be an increase in the domestic wastewater generation from 66.4 KLD to 79.4 KLD after expansion. The domestic wastewater is sent to STP and the treated wastewater is reused for onland irrigation. The capacity of STP shall be enhanced from 80 to 90 KLD.

Noise Pollution

Noise is anticipated from material transfer points, raw mill, cement mill and DG set. The DG set shall be kept in a separate enclosed room with acoustic enclosure. The compressors and blowers shall be provided with silencers and shall be mounted adequately to ensure the reduction of noise and vibration. The employees working in noise generating areas shall be provided with earmuffs. The employees shall be trained in the mitigation measures and personal protection measures to be taken to avoid noise related health impacts.

11.9 Occupational Safety and Health

Workers in raw material handling yard and packing house that generates fugitive dust shall wear nose masks/dust filters. Personal protective equipment viz. Hand gloves, safety goggles, nose masks, and safety helmets are provided to all the employees working in the plant. Company has a policy of providing protective equipment for all personnel including contract and casual workers. In order to safeguard the health of the employees, all the employees undergo periodic health checkup. All the employees will be trained and educated periodically.

11.10 Prevention, maintenance and operation of Environment Control System

The environmental monitoring results will be evaluated to identify the problems/under performance of the equipment. Necessary steps will be taken to rectify the identified problems/defects. The management agrees that the evaluation of the performance of pollution control measures and occupational safety measures to arrive at their efficiency and proposes to adopt new measures for efficient pollution control which will be a regular exercise.

11.11 Transport Systems

Limestone, coal, gypsum and cement are mainly transported by trucks. Trucks transporting raw materials from the mines and from the suppliers to plant are covered with tarpaulin so as to reduce emissions to the surrounding environment. Sufficient parking facilities are provided for vehicles loading and unloading of goods. The vehicles are provided with parking space near the gate, and traffic signs are placed in the battery limit.

11.12 Green Belt Development

Green belt is recommended as one of the major components of Environmental Management Plan. The industry have green belt and the management emphasizes the development of further greening of the site to enhance environmental quality through; mitigation of fugitive emissions, attenuation of noise levels, balancing eco-environment, prevention of soil erosion, and creation of aesthetic environment. The density of green belt in an area of 3.10 ha in plant site shall be enhanced.

11.13 Post Project Monitoring - in plant

Environmental monitoring for water, air, noise and soil quality shall be conducted periodically either by the proponent or a third party. The frequency of monitoring and the quality parameters shall be as suggested by the Ministry of Environment and Forests, Government of India as explained in the environmental monitoring chapter. The monitoring results are assessed periodically to identify compliance related deviations if any, to be informed to the site head and corporate environment division to take immediate remedial action.

11.14 Environment Management Cell

The environment management cell at the plant level is headed by plant head who is assisted by environment officer, safety officer and medical officer. The chief function of each of these officers is to monitor the compliance with the statutory regulations, and to monitor the safety, health and environmental aspects of the plant activity. The pollution control equipment maintenance and operation is supervised by Asst.

11.15 Cost Estimate for Environment Management

The cost estimate for the environment management proposed above is presented in the following table;

Cost Estimate for Environment Management - Proposed

S. No	Description	Capital Cost in Rs. Lakhs	Recurring cost in Rs. Lakhs/year
1	Air pollution Control	135	20
2	Water pollution Control	13	5
3	Noise pollution Control	22	3
4	Environment Monitoring and Management	5	12.6
5	Occupational Health	25.5	10
6	Green Belt	5	5
7	Solid waste	2.5	12
	Total	208	67.6