EXECUTIVE SUMARY

FOR

Rapid Environmental Impact Assessment

M/s. DHARMKIRTI CONCRETE PVT. LTD.

SURVEY NO. 83/P-1, ARDOI,
OPP. AJAYRAJ HOTEL,
HADAMTALA IND. AREA,
TA: KOTDA SANGANI, DIST: RAJKOT

(CEMENT CLINKER PROJECT)

Prepared by:

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EXECUTIVE SUMMARY

A. General

"M/s. Dharmkirti Concrete Private Limited" is a new company promoted by the Rajkot based Business group involved in manufacturing and trading of Cement and Cement Clinkers. The company already have a couple of cement manufacturing/grinding units in Saurashtra. To meet the requirement of Clinker in the existing cement grinding unit, the group now intends to install the clinker manufacturing plant at Survey no. 83/P-1, Ardoi, Hadamtala Industrial Area, Opp. Ajayraj Hotel, Ta: Kotda Sangani, Dist: Rajkot.

The promoters are in this field since more than two decades and have very good command over the Cement market in Gujarat and adjoining parts of neighbouring states; i.e. Western MP and Southern Rajasthan.

B. Purpose of the EIA

The proposed manufacturing activity falls under S No 3 (b), B Category of Schedule attached to the Environmental Impact Assessment notification, dated 14th September 2006 under the Environment Protection Act (EPA) 1986 and hence requires prior Environmental Clearance from State Environment Impact Assessment Authority (SEIAA).

The purpose of the EIA study is to critically analyze the manufacturing process of products proposed to be manufactured with reference to types and quantity of different raw material consumption, possible sources of water, change in land use and its effect on biodiversity, generation of wastewater, air emissions, noise pollution and solid wastes and the control measures to reduce the pollution and to delineate a comprehensive environment management plan and risk management plan.

C. Project Details

The project proponents have acquired 4047 m^2 land at Survey no. 83/P-1, Ardoi, Hadamtala Industrial Area, Opp. Ajayraj Hotel, Ta: Kotda Sangani, Dist: Rajkot. The clinker manufacturing unit would be installed at the site due to vicinity of Group Company's and other cement grinding units. The site is selected due to less habitation and vicinity of National Highway for transportation.

D. Location of the Project

The geographical details of the location are as follows:

- Latitude : 22° 04' 25.22" N
- Longitude: 70° 47' 17.74"E
- Elevation above MSL: Approximately 180 meter

- Total area of the site: 4047 m^2.
- Approximately 9.0 km in North East of Kotda Sangani.
- Approximately 24.0 km. South of Rajkot.

E. Production details

Product:

It is proposed to manufacture the cement clinker at site. The maximum capacity shall be 200 MT/day or 6000 MT/Month.

Water requirement:

- Total Water Requirement : 9.0 KL/Day
  - Industrial : 7.5 KL/Day
  - Domestic : 1.0 KL/Day
  - Gardening : 0.5 KL/Day

- Source : Own Bore well

- Industrial wastewater (effluent) generation: NIL

- In scrubber, there would be continuous circulation of water. After certain cycles of operation, the water would be sent to noduliser. Hence, practically there is no effluent.

- Domestic wastewater (Sewage) Generation : 0.8 KL/Day
  - Disposal through: Soak pit

Air Pollution Control

There are various sources of air pollution generation. The details of sources and the Air Pollution control Devices are as follows:

Sr. No.	Source Details	Stack height, m	No. of stacks	Stack diameter, m	Exit gas velocity m/s	Air Pollution Control System
1	Vertical Shaft Kiln	30	4	1.0	10.0	Wet Scrubber
2	Hammer Mill	30	1	0.9	10.0	Bag Filter
3	Raw Mill	30	2	0.9	10.0	Bag Filter
4	Crusher	10	1	0.9	10.0	Bag Filter
5	Raw material silo	28	1	0.3	10.0	Bag Filter

Solid and Hazardous waste Management

The only type of hazardous waste being generated from the clinker manufacturing shall be used oil. The maximum quantity shall be 50 Lit/month, The same shall be re-used in lubrication of machinery or sold to registered recyclers.

The dust/solid particles collected from the Air Pollution control devices shall be unreacted raw material and/or finished/semi-finished products. This shall be fed with the raw material for feeding to kiln.

F. Baseline Environment Status

For assessing the baseline Environmental status, the area falling within 10.0 km radius from the source was surveyed. In study area, a comprehensive study of Ambient Air, Noise, water, solid, ecological survey and socio-economic study was carried out. The findings of the baseline environmental analysis are as follows.

Meteorology

During the study period, the wind speed was ranging from 4 km/hr to 28 km/hr during the day time and 6 km/hr to 22 km/hr during the night time. It is observed that lowest temperature was 8.7 ^{O}C and highest temperature was 38.5 ^{O}C. The Relative humidity was ranging from 17 % to 98 %. There was no rainfall observed during the study period of October to December. Normally, the rain falls in study area during the months of July to September.

Air Environment

Ambient air quality of the area has been assessed through a network of 6 monitoring stations. The 98th percentile concentration of the PM_{10} and $PM_{2.5}$ is in the range of 41.39 – 60.82 µg/m^3 and 26.38-31.82 µg/m^3 respectively. The 98th percentile concentration of SO_2 and NO_X were in the range of 14.80 to 23.44 µg/m^3 and 18.15– 21.50 µg/m^3 respectively. This is well within the limit of 60 µg/m^3 and 100 µg/m^3 respectively.

Noise Environment

The sources of noise pollution within the study area are vehicular traffic on the highway and scattered industrial units. Day – Night equivalent values computed for the recorded noise level in the study area showed day equivalent values range between 52.5 to 57.6 dB(A) With night equivalent values are in the range between 42.3 to 50.7. This is well within the limit of 65 dB (A) and 55 dB (A) respectively.

Water Environment

The site is located in Saurasthra region; which is not very good in water quantity and quality. The average ground water table in the study area is varying between 15 m to 25 m during post monsoon season. The quality of ground water was assessed by collecting and analysing 6 water samples. The TDS was in the range of 192 to 1410 mg/lit and the hardness was in the range of 100 to 720 mg/lit. Due to less rainfall during the monsoon of 2012, there was no surface water available (during the study period) to be analysed for assessing the surface water quality.

Soil Environment

The representative soil analysis from the study indicates that the pH of soil is neutral and soil is not contaminated.

Biological Environment

The detailed survey of bio-diversity study of flora and fauna in the study area was carried out. The report prepared on primary site visit data collection and the assessment of secondary sources of biological diversity shows that there is no endangered species within the study area.

Socio-Economic Environment

The socio-economic survey conducted in the study area shows that average population density is 2.13 per Ha. Sex Ration is ranging from 567 in Shapar to 1062 in Anandpar. The literacy rate was maximum in Panchiya vadar 88.8 % and minimum in Anandpar, 49.5 %. Panchiya vadar has only 96 households, whereas Veraval has 3029 households.

The site is nearby National Highway 8-B; and hence connected by raod to other parts of the country. The disctrict head quarte Rajkot is connected woth other parts of country by road, rail and air. All villages have pucca approach raoads and also havecommunicaiton facilities like mobile, internet and fax.

G. Prediction of Impacts and Mitigation Plan:

Impacts on Air Environment

There are few point sources and several fugitive emission sources in the proposed manufacturing unit. The Vertical Shaft Kiln would have height of 30 m from Ground Level. The stacks attached to Raw Mill/Ball Mill and hammer mill should also be of 30 m height. Efficient Air Pollution Control devices like, Bag filter and Wet scrubber would be installed to keep the concentration of dust emission (Particulate matter) within the permissible limits. The area sources of fugitive emission; like silos would also be equipped with Bag filter.

The Ground Level Concentration was assessed based on the mathematical modelling; which shows that the incremental concentration of Particulate Matter would be 18.4 µg/m^3 at 500 m from the source; which shall be within the premises.

Impact on Noise Environment

There are few sources generating noise, such as loading/unloading of the material, transportation by loaders, crushing of limestone, hammer mill and belt conveyor/ bucket elevator operation etc.

Adequate noise control measures such as Housing / casing shall be provided for all noise generating machines like crushers, belt conveyors etc. Extensive oiling and lubrication and preventive maintenance shall be carried out to reduce noise generation at source within the permissible limit. Attenuation by absorption effects of landscaping (trees, bushes and shrubs) will also help in controlling noise pollution.

However, at places where noise levels may exceed permissible limit, Earplugs will be provided to those working in such area. The impacts on noise environment will be short-term and limited to local area only.

Impact on Water Environment

The water requirement of the proposed activities shall be met from own existing bore well. The unit proposes to make 2 percolation wells for ground water recharging within the premises. Based on average rainfall of this region and considering the area of premises, approx. 948 m^3 water can be recharged to ground within the premises.

There is no generation of any industrial wastewater from the proposed activities. The domestic sewage would be disposed off through soak pit arrangement.

Looking at the adequate effluent management system, there would not be any significant impact due to water usage and/or disposal.

Impact on Land Environment

The land has been already occupied and NA permission obtained. Hence, there would be no negative impact on land environment.

Impact on Occupational Health

For safeguarding the occupational health, following measures are proposed:

- Workers shall be provided with Personal Protective Equipment (PPEs) like helmet, dust mask, goggles and gloves, barrier cream for skin protection etc.
- The workers working in the high noise shall be provided ear muffs.

- First aid-kit shall be kept ready & required bandage/medicines will be refilled regularly.
- At least one vehicle shall be available in the premise, so that it can be utilized in case of medical emergency.
- Some of the staff members shall be trained for rendering first-aid to fellow workers.
- List of important telephone numbers shall be available and displayed near main gate.
- Periodical health check up of all the employees should be done.

Impact on Ecological Environment

The impact due to the proposed activity on the ecological parameters like natural vegetation, crops, fisheries and aquatic life, forests and species diversity is summarized below:

- The proposed activity is in the industrial area; hence, there will not be any clearing of natural vegetation due to proposed project.
- For Kilns and Mills, required Air Pollution Control devices would be installed; resulting in very less air pollution is proposed to be emanated.
- Since the proposed project is on non-agricultural land, it is not likely to alter the crop production and pattern in the area. The air pollution modelling done show that there will not be increase in SPM in ambient air beyond permissible limits so it is not likely to cause adverse effect on the crop in the surrounding area.
- Proper mitigative measures have been taken to reduce the dust emission and adequate stack height is provided for proper dispersion of pollutants so there is very negligible impact envisaged due to propose project on the flora and fauna in the study area.

H. Environmental Management Plan

An environment management plan has been prepared for the mitigation measures. The plan will ensure that the adverse environmental impacts are minimized and the beneficial impacts are maximized.

Wastewater Management

There is no industrial wastewater generation. The sewage generated from domestic activities shall be disposed off through soak pit. Hence, there would be negligible negative impact on water environment.

Air Pollution Management

The source of emission i.e. Flue Gas Emission from Kilns and the fugitive emissions from Mills, Crushers and Silo would be released through adequately

designed stack only. The required Air Pollution Control Devises; like Bag filters, wet scrubber etc. would be installed

Solid & Hazardous Waste Management

The only type of hazardous waste being generated from the clinker manufacturing shall be used oil. The maximum quantity shall be 50 Lit/month and the same shall be re-used in lubrication of machinery or sold to registered recyclers.

Green Belt Development

Greenbelt/Plantations (Total Area Allocated = 1250 m^2) at the periphery & within the premises is planned. This will reduce noise levels and dust levels by acting as a barrier between the outside environment and the inside environment of the premises.

Expenditure for Environmental Activities

M/s. Dharmkirti Concrete Pvt. Ltd. shall spend Approximately Rs. 15 Lac as capital expenditure on environmental management. The recurring cost could be Approximately Rs. 6.5 Lacs per annum.

In general, from all the discussion undertaken above and in the Rapid Environmental Impact Assessment study carried out in the Post monsoon season regarding the project, it can be concluded that the proposed Cement Clinker manufacturing activity will not have any significant adverse impact on environment. Whatever impact generated however, shall be within the statutory norms.