PROJECT DESCRIPTION FOR SCOPING

Proposed Cement Grinding Plant Project

Abbah King Cement Corporation

Barangay Malbang, Maasim, Sarangani

Submitted to:
Environmental Management Bureau – Central Office

01/03/2022

Leading in
Clean Initiatives.

An Environmental Report By:

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PROJECT DESCRIPTION

Abbah King Cement Corporation was granted an Environmental Compliance Certificate (ECC-R12-2107-0005) for its cement grinding plant with a maximum annual production rate of 40,000.00 metric tons last 27 July 2021. The ECC was issued by DENR-EMB Region XII given that the annual production rate is below 50,000.00 MT. The cement grinding plant in Brgy. Malbang, Maasim, Sarangani is now under construction.

Considering the rising demand for cement in Mindanao, the proponent now intends to increase the capacity of its cement grinding plant from 40,000 metric tons/year to 600,000 metric tons/year. **Table 1** shows the details of the project, the Proponent, and the EIA Preparer.

Table 1: Proposed Project, Proponent, and EIA Preparer Details

Project Name	**Proposed Cement Grinding Plant Project**	
Project Location	Brgy. Malbang, Maasim, Sarangani	
Type of Project	Cement (Clinker) Grinding Process	
Project Size	**Existing (ECC-R12-2107-0005)**	**Proposed (ECC Amendment)**
	40,000 metric tons/year cement	600,000 metric tons/year cement
Project Proponent	**Abbah King Cement Corporation** **Roberto O. Hara** President Unit 1703-B, West Tower, Tektite Towers, Exchange Road Ortigas Center, Pasig City, Metro Manila	
EIA Preparer	**LCI Envi Corporation** **Engr. Jose Marie U. Lim** EIA Team Leader Unit 8L-M Future Point Plaza 3 111 Panay Avenue, South Triangle Quezon City, Metro Manila, Philippines	

1. PROJECT LOCATION AND AREA

1.1. Project Location

The proposed project is in an industrial area in Barangay Malbang, Maasim, Sarangani. The general location map of the proposed project is shown in **Figure 1**. The geographic coordinates defining the boundary of the proposed project site are provided in the table below.

Table 2: Estimated Geographical Coordinates of the Project Site

Point	Latitude	Longitude
1	5°51'47.58"N	125° 1'35.20"E
2	5°51'29.07"N	125° 1'34.27"E
3	5°51'29.18"N	125° 1'27.41"E
4	5°51'42.94"N	125° 1'26.11"E
5	5°51'47.93"N	125° 1'28.78"E

1.2. Project Area

The project is being constructed in a 14.2569-hectare private property located in Barangay Malbang, Maasim, Sarangani **(Figure 1)**. The proposed will be built within the same property owned by **Abbah King Cement Corporation.**

As shown in **Figure 2**, the project site is bounded by open land and agricultural areas planted with mostly coconut trees.

1.3. Accessibility of the Project Site

The project site is approximately 41 kilometers away (or about 1-hour drive) from General Santos International Airport. It is located near the barangay road and can be easily accessed by any type of land vehicle via the South Cotabato-Sarangani Road.

1.4. Vicinity and Impact Areas

According to the Revised Procedural Manual for DENR Administrative Order No. 30 Series of 2003, the direct impact area (DIA) is defined as the area where all the project facilities will be situated and where all operations are proposed to be undertaken. On the other hand, the indirect impact area (IIA) identification considers the extent of the potential project impacts on biophysical (land, water, and air quality) and socio-economic aspects.

The DIA and IIA will be more clearly delineated after the EIA study.

The delineation of the impact areas of the project is graphically presented in **Figures 3. Figure 4** shows the aerial photos of the project site**.**

Figure 1: General Location Map of the Project

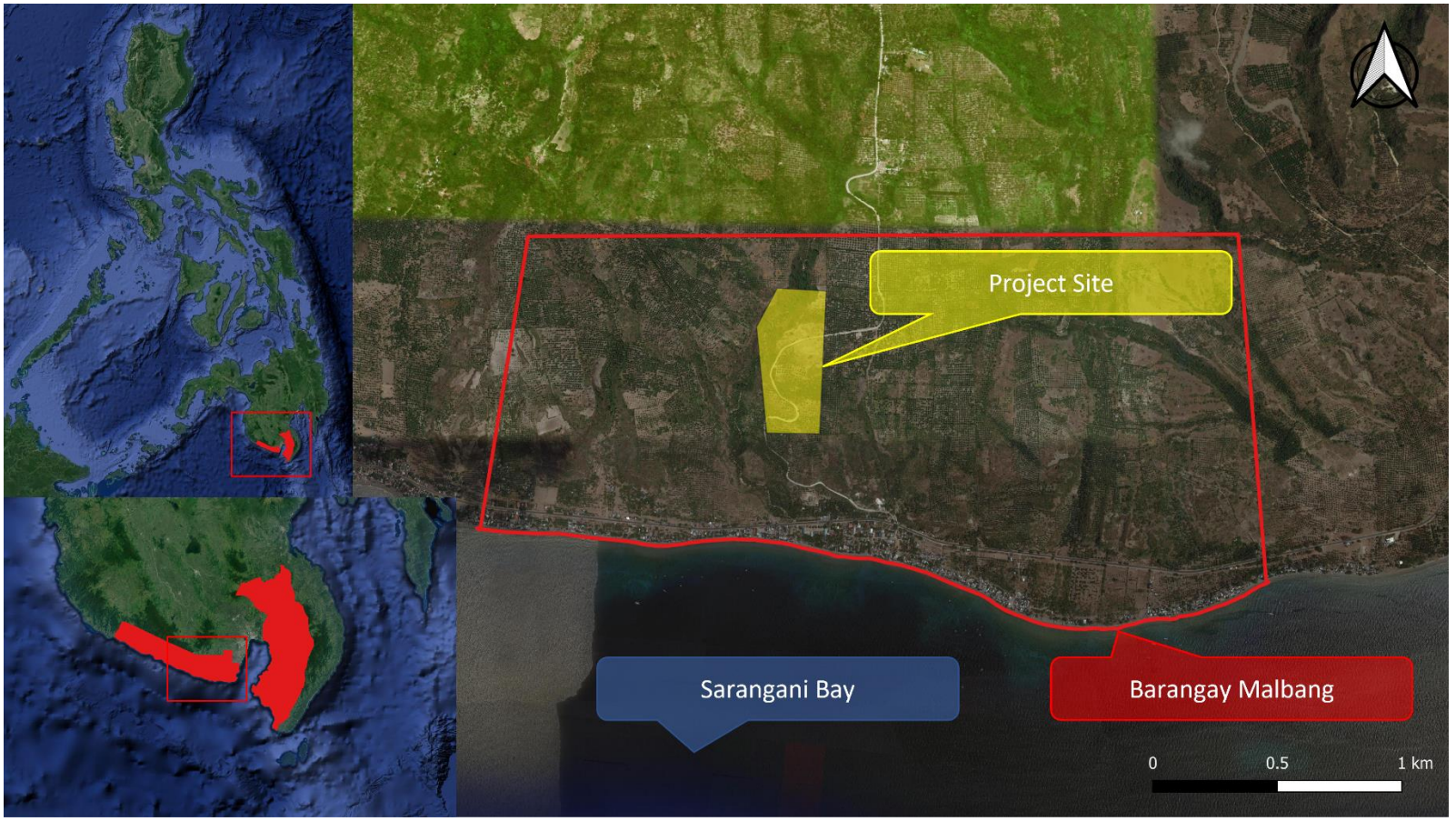

FIGURE NO.:	FIGURE TITLE:
1	**General Location Map of the Project**

PROJECT PROPONENT:	PROJECT NAME & LOCATION:	REPORT PREPARER:
Abbah King Cement Corporation	**Proposed Cement Grinding Plant Project** Brgy. Malbang, Maasim, Sarangani	**LCI Envi Corporation**

Figure 2: Vicinity Map of the Project

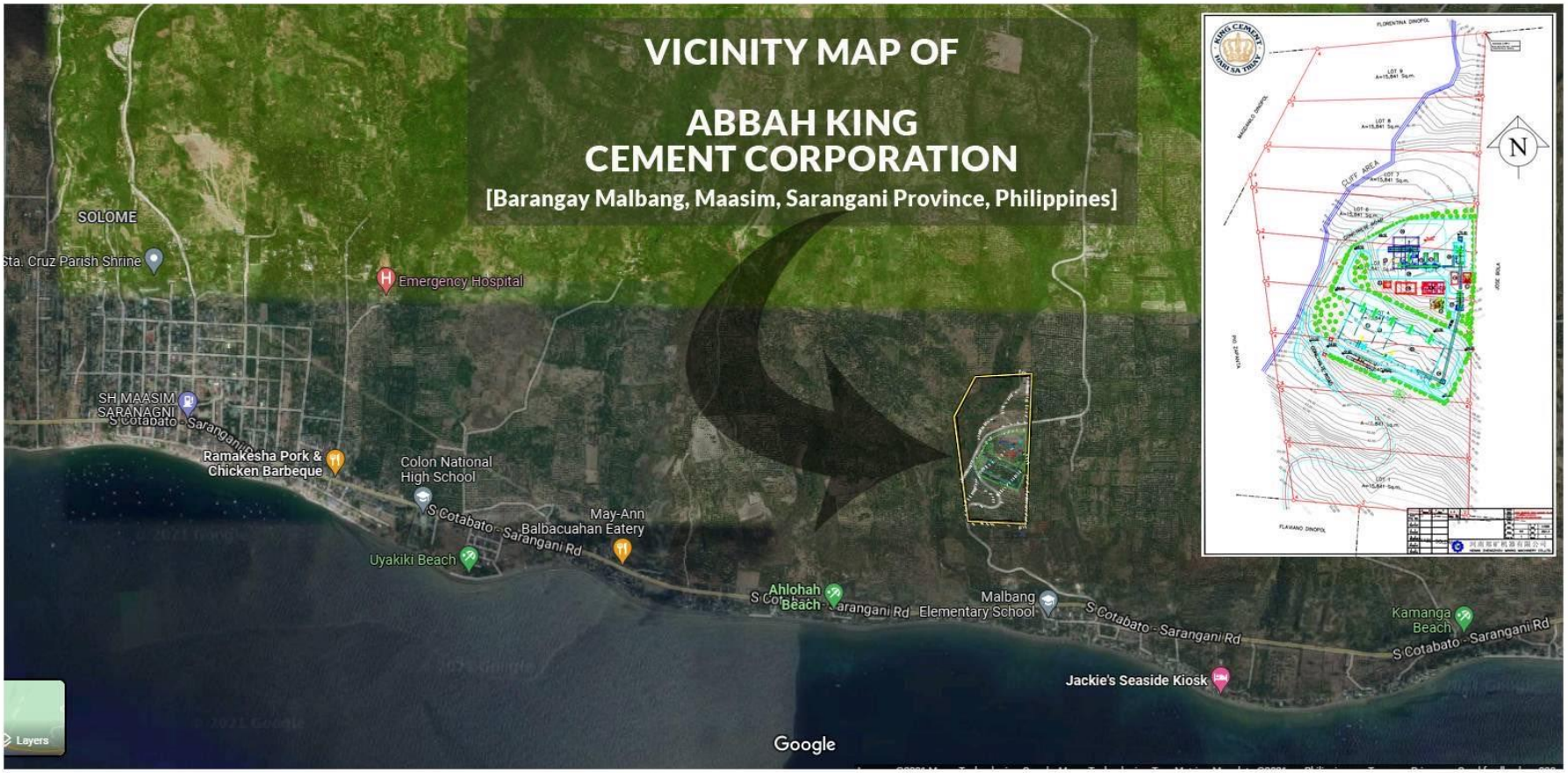

FIGURE NO.:	FIGURE TITLE:
2	**Vicinity Map of the Project**

PROJECT PROPONENT:	PROJECT NAME & LOCATION:	REPORT PREPARER:
Abbah King Cement Corporation	**Proposed Cement Grinding Plant Project** Brgy. Malbang, Maasim, Sarangani	**LCI Envi Corporation**

Figure 3: Primary and Secondary Impact Areas

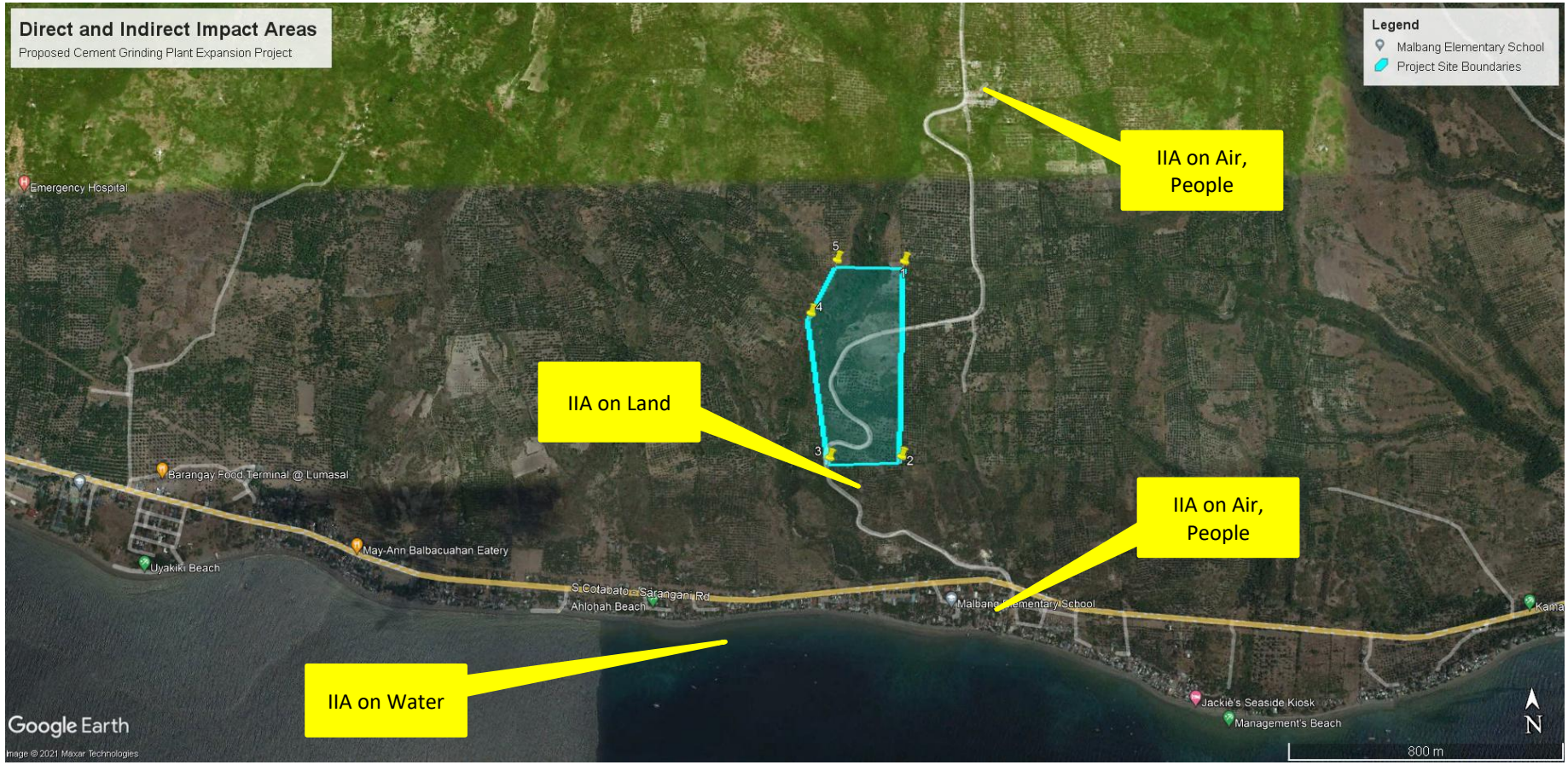

FIGURE NO.:	FIGURE TITLE:
3	**Direct and Indirect Impact Areas**

PROJECT PROPONENT:	PROJECT NAME & LOCATION:	REPORT PREPARER:
Abbah King Cement Corporation	**Proposed Cement Grinding Plant Project** Brgy. Malbang, Maasim, Sarangani	**LCI Envi Corporation**

Figure 4: Aerial Photos of the Project Area

FIGURE NO.:	FIGURE TITLE:
4	**Aerial Photos of the Project Area**

PROJECT PROPONENT:	PROJECT NAME & LOCATION:	REPORT PREPARER:
Abbah King Cement Corporation	**Proposed Cement Grinding Plant Project** Brgy. Malbang, Maasim, Sarangani	**LCI Envi Corporation**

2. PROJECT RATIONALE

One of the development needs of the Municipality of Maasim identified in its Comprehensive Municipal Land Use and Development Plan is the need for industrial projects for the benefit of the growing population of the municipality. The said plan indicated the inadequacy of employment-generating projects which are significant for social development in the community.

The demand for cement in the Philippines is expected to grow over the next few years driven by the government's initiatives. Such projects prioritize spending and accelerate public infrastructure development as well as industrial construction. Continued developments in commercial and private construction investments are also expected to contribute to the sustained growth of the country's economy.

In anticipation of the robust growth of the construction sector and cement consumption, the Project aims to boost the domestic cement production capacity by supplying market-competitive cement. Supply of the Project's cement is targeted to the Mindanao region, including its home market, Sarangani, which is currently a net importer of construction materials.

The demand for industrial projects is expected considering the economic growth being experienced in the region. This development may result to the proliferation of commercial and industrial business establishments in the Municipality of Maasim. Also, the construction of more infrastructure and economic institutions has been undertaken to support and sustain the development trend in the area. The increased economic investment and activities in the area has resulted to the demand for new developments.

In general, the project is expected to contribute to the development of the province of Sarangani.

3. PROJECT ALTERNATIVE

As part of project preparatory studies, a study of alternatives was undertaken. All locations considered were subjected to a site assessment analysis. The criteria then considered for determining the preferred options include:

- Complimentarily and compatibility between and with various uses of adjacent lands and associated activities they serve
- Consistency with natural resources plans and policies, and environmental regulations, that guide the affected communities
- Relatively stable peace and order situation in the choice area
- Input and participation from local stakeholders and appropriate regional and national agencies
- Cost effectiveness, referring to the value returned to the proponent for the investments to be made, and the contributions to the national and local governments, and the other stakeholders, including contributions to social development and management, environmental protection and enhancement, safety and health, rehabilitation and decommissioning.

3.1. Site Selection

The site in Barangay Malbang was selected since this was already owned by **Abbah King Cement Corporation**. The site was already converted to an industrial area through DARCO ORDER NO. LUCC 0421 – 0553 SERIES OF 2021. Hence, the project footprint will not be built on agricultural areas.

3.2. Technology Selection

Abbah King Cement Corporation chose to construct and operate a stand-alone cement grinding plant instead of a full cement plant because of the following advantages:

- A cement grinding plant has significantly less air emissions since the process does not require a kiln, therefore eliminating the use of coal for cement production.
- Requirement for raw materials such as limestone and cement additives are less compared to the raw material requirement of full cement plants that produce clinker
- Clinker is easier to transport compared to cement.

3.3. Resources

Water Resource

Abbah King Cement Corporation will construct a deep well for its 3 cubic meter per day water requirement. In addition, a water reservoir will be constructed to serve as a back-up source.

Raw Materials

Possible sources of clinker and cement additives are Vietnam, Indonesia, and Pakistan.

4. PROJECT COMPONENTS

The project components for the project are summarized in **Table 3**. These include the components for cement grinding and support facilities.

There are no additional components to be constructed for the proposed increase in capacity since the above components can already accommodate the additional production.

The proposed facility layout is presented in **Figure 4**.

Table 3: Project Components of the Project

Project Component	Description/Specifications
Raw Materials Storage	
Clinker Storage	1 X 25,000 tons storage capacity
Crushed Limestone Storage with Crusher	5,000 tons capacity
Gypsum Storage	10,000 tons capacity
Flyash Silo	5,000 tons capacity
Raw Material Feeding	
Clinker Transport	120 tons/hour clinker hopper with belt conveyor to clinker feed bin
Limestone Transport	50 tons/hour limestone hopper with belt conveyor to clinker feed bin
Flyash Transport	6 tons/hour pneumatic conveying from flyash bin to dynamic separator
Grinding Circuit	
Cement Grinding Mill	2 x 90 tons/hour Ball Mill
Cement Packaging	
Cement Silo	2,000 tons
Cement Transport	90 tons/hour
Bulk Loading Facility	1 per silo, 60,000 tons / hour
Others	
Water Source	Deepwell – For Domestic Use
Air Pollution Control	Dedusting/Bag Filter
Wastewater Pollution Control	Septic Tanks
Support Facilities	
• **Warehouses**	
• **Administration Building and Staff House**	
• **Parking and Truck Marshalling Area**	
• **Water and Wastewater Treatment Facilities**	
*** Water source and pollution control systems are discussed in detail in the sub-sections.**	

Figure 5: Proposed Project Layout

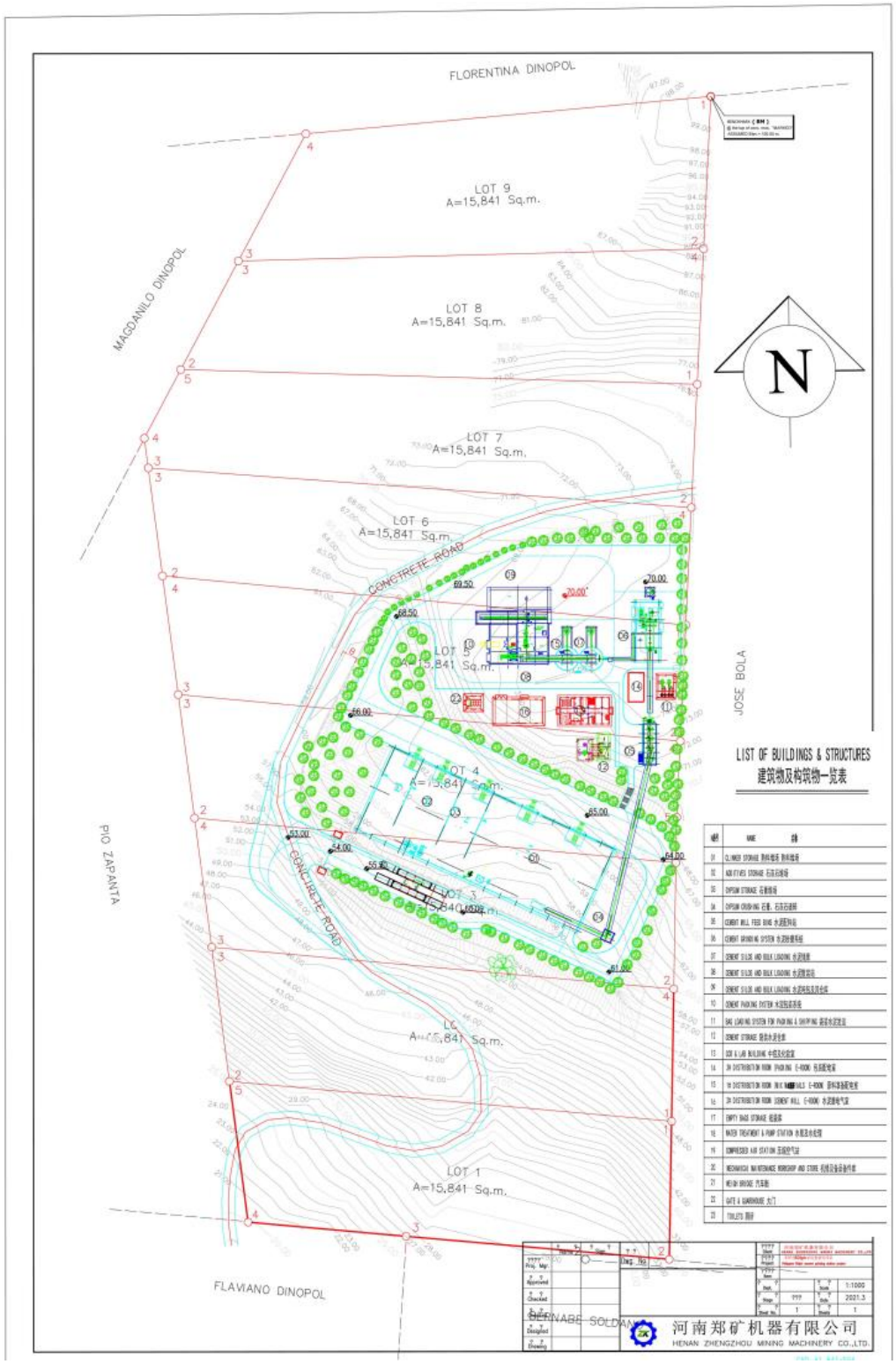

FIGURE NO.:	FIGURE TITLE:	
5	**Proposed Project Layout**	
PROJECT PROPONENT:	PROJECT NAME & LOCATION:	REPORT PREPARER:
Abbah King Cement Corporation	**Proposed Cement Grinding Project** Brgy. Malbang, Maasim, Sarangani	**LCI Envi Corporation**

5. PROCESS/TECHNOLOGY

5.1. Raw Materials Receiving and Storage

The following are the raw materials that will be used by **Abbah King Cement Corporation,** as well as the corresponding sources.

Raw Materials	Source
Local Raw Materials	
• **Fly Ash**	Sarangani Energy Corp. (Maasim)
• **Limestone**	Maasim, Sarangani Province
• **Gypsum**	Philpos, Leyte
Imported Raw Materials	
• **Clinker**	Vietnam, Indonesia, or Pakistan

The raw materials will be delivered by trucks and then conveyed storage units.

5.2. Material Feeding into the Mill

Clinker will be extracted from the bottom of the silos and conveyed to a feed bin from where it will be dosed by a weighfeeder and then further conveyed to an elevator then fed into the grinding mill.

The other raw materials will be mechanically reclaimed by a reclaimer and conveyed to feed bins from where it will be dosed by weigh feeders for conveying and feeding into the grinding mill.

5.3. Cement Grinding

The well-proportioned raw materials will be fed to a grinding mill. The Vertical Roller Mill simultaneously grinds, dries, and classifies the material in a close circuit. The ground products are conveyed by hot gas flowing into the classifier. While oversize materials fall back on the grinding table, the fine parts are captured in a battery of cyclones. The gases from the cyclones are absorbed by a circulation fan and sent to dusting installation such as bag houses / bag filters. Several variables must be controlled to maintain a suitable product for feeding to the kiln, which are (1) chemical quality; (2) fineness; and (3) moisture content.

5.4. Cement Storage and Dispatch

Cement is withdrawn from the cement silos through bucket elevators and air slides and routed to the Pack House. The transported materials are distributed to different packing bins prior to dispatching. Cement is dispatched by bulk truck, big bags (1000 kilogram) and 40-kilogram multi-walled paper bags.

Bags of cement (40 kilograms) will be transported through trucks stock-piled in a pallet going to the local market. For bulk loading, cement is withdrawn from cement silos and transported in a belt-conveyor.

5.5. Control of Air Pollution

Various bag filters will be installed in addition to the main bag filter in the finish mill. These modular bag filters will prevent air pollution that may come from conveyors, transfer points, silos, air slides, cement bins, elevators, and other sources.

The roads will be swept clean and regularly sprayed with water to prevent fugitive dust from general open spaces.

5.6. Support Facilities

Other support facilities include warehouses, administration building, staff house, utility building, and parking and truck marshalling area will be constructed to support the operation of the proposed project.

Figure 6: Process Diagram of Cement Grinding

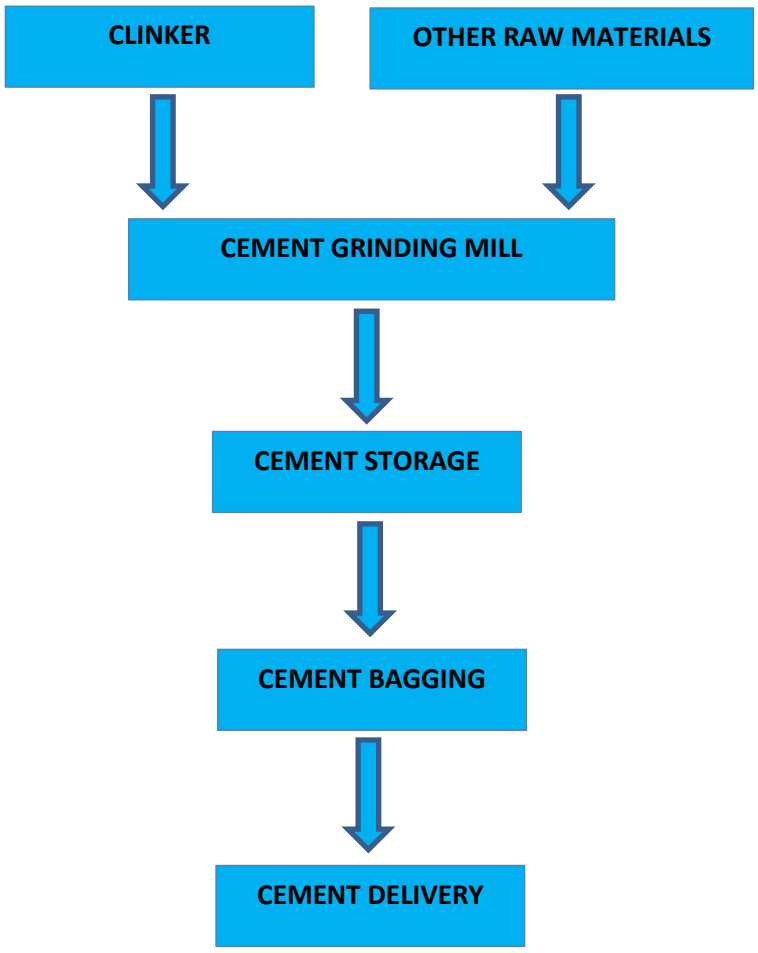

FIGURE NO.:	FIGURE TITLE:
5	**Process Diagram of Cement Production**

PROJECT PROPONENT:	PROJECT NAME & LOCATION:	REPORT PREPARER:
Abbah King Cement Corporation	**Proposed Cement Grinding Project** Brgy. Malbang, Maasim, Sarangani	**LCI Envi Corporation**

6. PROJECT UTILITIES

6.1. Pollution Control Devices

6.1.1. Air Pollution Control

The priority is to minimize the increase in ambient particulate matter levels by reducing the mass load emitted from fugitive emissions and from other sources. Collection and recycling of dust is required to improve the efficiency of the operation and to reduce atmospheric emissions. For control of fugitive particulate emissions, ventilation systems shall be used in conjunction with hoods and enclosures covering transfer points and conveyors. Drop distances shall be minimized using adjustable conveyors. Bag filters shall be installed at various points in the plant to collect the solid particulates escaping from the system. The bag filters have a guaranteed efficiency of 99.99% in eliminating dust. The bag filters are provided with a fan, driven by an electric motor, to regulate volumetric flow, gas temperature, and static pressure.

6.1.2. Water Pollution Control

The cement grinding plant employs a dry process; hence, the wastewater generated by the facility is limited from domestic sources and run-offs from drainage.

6.2. Water Supply and Demand

Water will be sourced from deep well/s to be installed in the area or from existing nearby water sources. A water reservoir will be constructed for water storage.

The process water of the proposed is mainly for the cooling of slide shoe bearing. This works in a closed-circuit system that passes through a forced draft cooling tower to dissipate the heat from the bearings. The cement grinding plant will not have any emissions, however there will be a small amount of water that will evaporate during operation. The project is estimated to use 3 cubic meters of water per day. The water consumption during the operation will be for domestic use, dust control and make-up water.

6.3. Power Supply and Demand

For the operation, the facility is expected to consume about 68,800 kilowatts (kW) for 24 hours, equivalent to 2,866 kilowatt hours (kWh), of electricity to be supplied by the local power utility.

7. PROJECT SIZE

7.1. Cement Grinding Capacity

The proposed cement grinding plant project will have a rated capacity from 40,000 to 600,000 metric tons per year. The proposed facility will be constructed in a 14.2569 hectare property owned by the proponent and situated inside the proposed industrial area in Malbang, Maasim, Sarangani.

8. PROJECT PHASES

8.1. Pre-Construction

Site preparation and clearing are already started which include the enhancement of road networks for increased accessibility and easier transport of materials and supplies. This phase of the project will also involve the acquisition of the necessary documents before actual construction, such as the amended Environmental Compliance Certificate (ECC), Building Permits, and Permit-to-Operate (PTO) Application.

8.2. Construction

Immediately thereafter, the development of the area shall follow. This involves construction/installation of the cement grinding and support facilities. The equipment to be used will be purchased and assembled on site. Proper occupational safety and health procedures will be implemented to ensure the welfare of the workers.

8.3. Operations

Major activity of the plant entails the 24/7 operation of the cement production. The same strict observation of occupational health and safety during construction will be followed.

8.4. Abandonment

The proposed project is not expected to be abandoned within the next 30 years of its planned operations. However, the abandonment of the facility may be necessary due to the following potential scenarios:

- Unsustainable business operations due to economic downturns;
- Changes in zoning and other related ordinances of Maasim;
- Transfer of operations to other sites;
- Accidents and emergencies, either natural or man-made, that resulted to severe facility damage and loss of human life; and
- Closure order from government agencies.

9. PROJECT TIME SCHEDULE

The target project schedule for the proposed cement plant is shown in **Table 4**.

Table 4: Proposed Project Schedule

Activities	Proposed Timeline							
	2022				2023			
	1	2	3	4	1	2	3	4
Preliminary Engineering/Major Equipment Orders								
Equipment Manufacturing								
Detailed Engineering								
Site Preparation								
Buildings and Silos Construction								
Equipment Delivery								
Equipment Installation								
Commissioning and Commercial Operation								

10. MANPOWER REQUIREMENTS

Table 5 summarizes the manpower requirements throughout the development phases of the project. As shown, around 200 workers will be employed for the construction of all necessary project components and facilities, and an estimate of 50 personnel, inclusive of engineers and skilled workers, will be hired to run the power plant facility on a 24/7 operation.

Table 5: Manpower Requirement

Project Phase	Estimated Manpower Requirements	Tasks to Perform	Skill Requirement/s
Construction	200	• Civil works, architectural, and electro-mechanical works.	Engineers, project managers, skilled and non-skilled laborers
Operation	50	• Oversee the entire operations of the proposed project, including emergency situations; Ensuring the safety and welfare of its personnel • Maintain conformity of the proposed project to relevant government regulations, including tax payments, ECC compliance, etc. • Promote and uphold a harmonious relationship with the host community	Management and administration skills; over-all knowledge on the operation including key environmental, labor, and local ordinances
Abandonment	10	• Implement the abandonment plan	As required

Abbah King Cement Corporation will prioritize hiring of locals whose skills and experience match the specific needs of the project. The proponent will also provide the necessary training of locals for possible hiring as the need arises.

11. PROJECT COST

Indicative cost for the proposed project is estimated to be **Php 800,057,142.00**. These will include the following:

- Detailed engineering studies and designs, including the feasibility study (FS) and acquisition of necessary government permits and licenses;
- Site preparation;
- Construction of project components and facilities;
- Procurement of necessary equipment and materials;
- Environmental management and protection, air pollution devices, and water treatment facilities; and
- Environmental monitoring activities.

12. PRELIMINARY IDENTIFICATION OF ENVIRONMENTAL ASPECTS

To address the potential environmental impacts of the proposed project, an environmental management plan will be prepared, presenting the proposed mitigation and/or enhancement measures that can be employed during the different phases of the project development.

Table 6: Key Environmental Aspects Identified and Preliminary Impact Assessment

	Environmental Aspect	Environmental Component Likely to be Affected	Potential Impact/s	Prevention/Mitigation/Enhancement Measures
CONSTRUCTION PHASE	**LAND**			
	Cut and fill activities	Land Use and Classification	Change/inconsistency in land use	▪ The proposed project site is situated within the proposed industrial area; No land use change issues perceived
			Encroachment in an environmentally critical area (ECA)	▪ The proposed project site does not encroach an ECA
		Geology/ Geomorphology	Change in surface landform/terrain/slope	▪ Formulation and implementation of proper grading plan
			~~Change in sub-surface underground geomorphology~~	~~▪ Onsite excavations are expected to cause permanent but low level of disturbance~~ ~~▪ Strict adherence to geotechnical study recommendations~~
	Site preparation and earthworks	Pedology	Soil erosion	▪ Implementation of appropriate soil erosion control measures
		Terrestrial Ecology	Vegetation removal and loss of habitat	▪ The proposed project is located within an industrial area and alienable and disposable (A&D) lands. No ecologically sensitive habitats observed.
			Threat to existence and/or loss of important local species	
			Threat to abundance, frequency and distribution of important species	
			Hindrance to wildlife access	
	WATER			
	Water consumption during construction	Hydrology/ Hydrogeology	Depletion water resources/ competition in water use	▪ Implementation of water conservation measures
	Mobilization of construction equipment and materials; Generation of construction wastes	Water Quality	Degradation of groundwater quality	▪ Formulation and strict implementation of waste management plan ▪ Water quality monitoring
	AIR			
	Mobilization of construction equipment and materials	Air Quality and Noise Levels	Degradation of air quality	▪ Formulation and implementation of construction impact management plan

	Environmental Aspect	Environmental Component Likely to be Affected	Potential Impact/s	Prevention/Mitigation/Enhancement Measures
				▪ Ambient air quality and noise level monitoring
	PEOPLE			
	Hiring of workers	Local Employment	Increase in local employment	▪ Prioritized hiring of qualified local residents; GAD sensitivity
	Increase in taxes and revenues	Local Economy	Improvement in local infrastructure and social services	▪ Diligent imbursement of taxes and revenues
	Accidents	Public Safety	Possible occurrence of construction-related hazards	▪ Provision of environmental health and safety training prior to construction
OPERATIONAL PHASE	**LAND**			
	Accidental oil spill	Pedology	Soil contamination	▪ Formulation and strict implementation of emergency management plan ▪ Soil quality monitoring
	WATER			
	Generation of domestic wastewater	Water Quality	Degradation of groundwater quality	▪ Provision of wastewater treatment system ▪ Formulation and strict implementation of waste management plan ▪ Water quality monitoring
	AIR			
	Dust generation during cement processing	Air Quality	Degradation of air quality	▪ Ambient air quality monitoring and emissions testing ▪ Operate and maintain filter bags and separators in the equipment.
	Increased levels of TSP brought about by vehicle and equipment emissions	Air Quality	Degradation of air quality	▪ Proper maintenance should be done for the vehicles and equipment ▪ Implement carbon sink programs
	PEOPLE			
	Hiring of workers	Waste Management	Generation of sewage/solid waste	▪ Formulation and strict implementation of waste management plan
		Population	Change in population size and distribution	▪ Prioritized hiring of qualified local residents ▪ Coordination with the local public employment service office
		Social Services	Overburdening of public social services	▪ Prioritized hiring of qualified local residents

	Environmental Aspect	Environmental Component Likely to be Affected	Potential Impact/s	Prevention/Mitigation/Enhancement Measures
		Health	Introduction of disease between migrant and local workers	▪ Medical certificate as part of employment requirements ▪ Formulation and implementation of safety and health program ▪ Provision of health and sanitation facilities within the plant site ▪ Monitoring of occurrence of unusual health problems that may be associated with the project
	Effect of operations on economy	Local Economy	Increased social and economic financial activities	▪ Positive impact; No mitigation required
	LAND			
ABANDONMENT PHASE	**Decommissioning**	Pedology	Soil contamination	▪ Formulation and strict implementation of Abandonment Plan with emphasis on control of sedimentation and prevention of soil contamination
		Terrestrial Ecology	Increase in biodiversity due to rehabilitation activities	▪ Positive impact; No mitigation required
	Disposal of wastes	Groundwater Quality	Possible occurrence of spills and contamination	▪ Formulation and implementation of waste management plan
	AIR			
	Demolition and abandonment activities	Air Quality and Noise Levels	Generation of dust and noise	▪ Watering during dismantling activities to minimize dust generation ▪ Proper vehicle maintenance ▪ Limiting noise-generating activities during daytime ▪ Ambient air quality and noise level monitoring
	PEOPLE			
	Decommissioning activities	Local Community	Possible local disturbance or damage through increased road traffic, noise, etc.	▪ Formulation and implementation of decommissioning impact management plan
	Hiring of workers for demolition and abandonment activities	Local Employment	Increase in local employment during abandonment; Development of new skills	▪ Prioritized hiring of qualified local residents

	Environmental Aspect	Environmental Component Likely to be Affected	Potential Impact/s	Prevention/Mitigation/Enhancement Measures
	Loss of jobs/employment	Local Economy	Reduction in service opportunities for local contractors with established contracts with the project (e.g., maintenance service providers, site transport services, etc.)	▪ Formulation and implementation of Abandonment Plan ▪ Effective human resources management through consultative planning and communication
		Demography	Out-migration of affected project staff to seek job opportunities elsewhere	
NOTHING FOLLOWS				