## EXECUTIVE SUMMARY FOR THE PUBLIC (ENGLISH)

### **EAGLE CEMENT CORPORATION**

MPSA No. 245-2007-III Quarry Project

#### I. Project Information

Project Name	Eagle Cement MPSA No. 245-2007-III Quarry Project		
Location	Barangay Akle, San Ildefonso Bulacan, Bulacan and Barangay Talbak,		
	Dona Remedios Trinidad, Bulacan		
Project Type	Quarry Project (Resource Extractive Industry)		
MPSA Area Covered	82.6033 hectares		
Project Area	69.9011 hectares		
Covered			
Production Capacity	7,000,000 MT per year		
Commodity	Limestone		
Project	- Quarry Operation		
Components	- Access and Haul Roads		
	- Siltation Pond		

#### II. Proponent Profile

Company Name	Eagle Cement Corporation
Address	Main Office: 155 EDSA Bgy. Wack Wack, Mandaluyong City, Philippines
	Plant Site: Brgy. Akle, San Ildefonso, Bulacan, Philippines
Contact Number	Phone Number: +63 2 301-3453
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Contact Person	Engr. Rainier D. Reyes
	Mining and Sustainability Manager
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#### III. Project Preparer

## **AXceltechs Inc.**

Address Unit 10C, Lansbergh Place, 170 Tomas N	
	Quezon City
Authorized Representative/	ENGR. PAULO NONI T. TIDALGO
Contact Person(s)	Managing Director
Contact Number	(02) 376-0043

#### **1.0 PROJECT LOCATION AND AREA**

The proposed project is located in Barangay Akle, Municipality of San Ildefonso and Barangay Talbak, Dona Remedios Trinidad both in the Province of Bulacan covered by MPSA 245-2007 with a total area of 82.6033 hectares, the project will cover an area of 69.9011 hectares encompassed by the following geographical coordinates:

Corner	Latitude	Longitude
1	15° 03′ 30.00″	121° 04′ 10.52″
2	15° 03′ 38.35″	121° 04′ 10.78″
3	15° 03′ 42.96″	121° 04′ 07.01″
4	15° 03′ 45.09″	121° 04′ 00.00″
5	15° 04' 00.00"	121° 04′ 00.00″
6	15° 04' 00.00"	121° 04′ 30.00″
7	15° 03′ 30.00″	121° 04′ 30.00″
1	15° 03′ 30.00″	121° 04′ 10.52″



Figure 1 - Location Map



Figure 2 - 360 Degrees Stitched Drone Shot



# **Proposed Quarry Project**





Figure 3 - Project Vicinity

#### 1.1 Impact Area

The area subjected to Environmental Impact Assessment (EIA) is base on the perceived direct and indirect impact area of the proposed project. As stipulated in DAO 2003-30, direct impact areas, in terms of physical environment, are those where all project facilities are to be constructed/situated and the designated project area. On the other hand, areas not directly subjected to any activities/construction and those outside the project area but is within the jurisdiction of the Municipalities of San Ildefonso and Dona Remedios Trinidad (e.g. stretch of river draining the project area, communities along haul roads) is considered as indirect impact areas.

Consistent with the provision of DAO 2010-21, known as the "*Consolidated Implementing Rules and Regulations of the Philippine Mining Act of 1995*", the direct impact barangay are Barangay Akle and Talbak while the indirect impact area are the Municipality of San Ildefonso and Dona Remedios Trinidad.

Aspect	Direct Impact Area	
Water	Based on the EIA study, the identified direct impact areas of the	
	project is the receiving water body (Conlong River) and the	
	underlying aquifer surrounding the proposed operation Error!	
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	There are no water bodies traversing the project area. Conlong	
	River is located approximately 1.5 km north of the proposed project	
	area flowing in a westerly direction.	
Air and Noise	The identification of direct impact area in terms of noise and air	
	quality were based on the worst-case scenario of the proposed	
	quarry operation. As per the EIA study, the direct impact areas are	
	Barangays Akle and Talbak (Error! Reference source not found. and	
	Error! Reference source not found.). Some of the households in	
	Barangay Akle located near the MPSA area will be greatly affected	
	by the noise and air emissions to be produced by the quarry	
	operation especially during blasting and hauling activities.	
	However, the company opted not to concentrate in the said area	
	and utilized it as a buffer zone for the quarry operation.	

Table 1 - Identified Impact Area per Component

Aspect	Direct Impact Area
Terrestrial	The direct impact area in terms of terrestrial ecology is the
	vegetated portion to be occupied by the quarry operation, settling
	ponds and roads Error! Reference source not found
People	Barangays Talbak and Akle are the host barangays for the proposed
	project since the MPSA area is covered by the two barangays. In
	terms of socio-economic, the MPSA 245 quarry project is foreseen
	to increase in local taxes, generation of employment, and livelihood
	programs to assist the community.

#### 2.0 PROJECT RATIONALE

Eagle Cement Corporation is one of the biggest cement producing company in the Philippines, with the advancing economy of the country, the demand for cement products are continuously growing.

The advent of industrialization gave rise to the construction of various infrastructures such as high-rise buildings, roads, commercial centers, housing units, etc. In the establishment of these concrete structures/products, cement serves as the major ingredient for its creation.

The "build, build, build" policy of the current Duterte Administration further fuels the demand for cement on a greater scale.

In order to support the growing demand of cement products in the country, Eagle Cement will conduct a series of quarry expansion which include this proposed quarry project to provide the raw materials requirement of the existing cement plant.

The project will contribute to national economy by way of:

- Generation of employment especially to the people of Barangays Akle and Talbak; Municipalities of San Ildefonso and Dona Remedios Trinidad; and Province of Bulacan;
- Increase in local taxes and licenses;
- Allotment of Social Development and Management Plan expenditures;
- Business enterprises development; and
- Extend much needed assistance to the immediate community in terms of health, training, livelihood programs, education and technology.

#### **3.0 PROJECT ALTERNATIVE**

#### 3.1 Alternative Site Location and Process Selection

The project will solely cover quarry operation, the depth of the pit and its location will depend on the exploration activities conducted by the company, thus no other site alternative considered in terms of quarry area. The location of the haul road to be constructed will be connected to the existing haul road of MPSA 181. The opposite side of the designated quarry block of MPSA 245 cannot be considered as an alternative site since the slope in specific area is very steep. Further, considering the type and location of mineral to be extracted, the only feasible mining/quarry method for the project is surface mining method, thus, there were no other alternative method considered for the project.

#### 3.2 Alternative Source of Fuel

If in the event that fuel supply in the plant is not efficient, the project will source its fuel in the nearest Petron Station which is located outside the Cement Plant .

#### 3.3 Environmental Impact

The major environmental impact that will be brought about by the project operation considering all the alternatives and the nature of project are dust emission, implementation of community development programs through Social Development Management Plan and generation of revenues from taxes, permits and LGU share in the quarrying activities

Dust generation is foreseen to arise during construction and operation phase; however, environmental management plan such as water sprinkling and provision of buffer area thru planting of trees will be undertaken to alleviate its probable occurrence. The implementation of SDMP will enhance the socio-economic welfare of the community. Further, the company will ensure the prompt payment of taxes and fees to the government.

#### 3.4 Consequences of not Proceeding with Project

In terms of physical environment, the MPSA area will remain unchanged and undisturbed. As regards with, socio economic, continues opportunity for employment provided by Eagle Cement Corporation that extends to other places in the Municipalities of San Ildefonso and Dona

Remedios Trinidad and the entire Province of Bulacan other than of Barangays Akle and Talbak will not be probable. Additional revenues from taxes, with no "project option", the opportunity for additional SDMP assistance and tax revenue are not possible.

#### 4.0 PROJECT COMPONENTS AND PROCESS

#### 4.1 Quarry Operation

Method of operation to be utilized by the project is quarrying using conventional heavy equipment. The quarry operation will be divided into three (3) stages; the quarry development, the production stages and rehabilitation.

Development phase is the stage in quarrying where preparation for full blasts production will be carried out. It will involve stripping, removal of vegetative covers and the overburden, drill and blasting, establishment of bench face and a floor, drainage canals and access roads to the deposit. The production bench will be divided into a series of slices of ten (10) meter high and a 70° bench slope during production stage and five (5) meters in development areas. Development work will generally start from the uppermost portion of the area and progresses downward. A portion of the deposit will be sliced until a bench face with a slope of about 70° and a floor width of 30 meters, will be formed enough to sustain the safe movement of quarry equipment. Once a bench is formed, a new working level below (10m) will be worked out to form another set of production bench. Should topography warrant, the cycle of creating a new working level (benches) at lower elevation will continue until desired target is reached. Limestone will be extracted while access and benches are being established. Generally, the working parameters of the limestone quarry will be the following:

<u>Devt</u>	<u>Final Pit</u>	
Bench slope	70° - 75°	30°
Bench height	10m	5m
Bench width	5m (min.)	15m
Pit slope	60° (max.)	45°

The extraction or production stage is the actual removal of the deposit from the developed (cleared) benches. The major activities in this stage are drilling for quality control and blasting, ripping and dozing on ground followed by loading and hauling.

Blasted limestone materials from the bench will be loaded by either a wheel loader or power shovel excavator into a 35 and 50-ton Off Road Highway Truck and will be transported to the

Cement Plant (with an existing ECC). The cycle of drilling for quality control, blasting, excavation, loading and hauling continues until all programmed benches have been subjected for production and resource exhaustion.

Typical quarry cycle involves the following:



The process flow diagram of the quarry operation involves the following:



Basically, the topsoil extracted from the quarry area will be used as mixing materials in the cement plant, thus, generation of waste materials is considered to be very minimal.



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Figure 4 - Quarry Plan

#### 4.2 Access and Haul Roads

Quarry development will start from the construction of access/haul road within the quarry site, which is designed to facilitate opening of benches. The haul roads will be maintained at a width of 15 meters or three times the width of the largest quarry equipment with a maximum grade of 8-12%. Pre-emptive measures through implementation of appropriate slope/ground failure monitoring plan will be adopted to identify any instability at an early, non-critical stage so that safety measures can be initiated to prevent or minimize impacts.

#### 4.3 Support Facilities

#### 4.3.1 Fuel Requirements

The fuel requirement for the 11 years quarry operation is 27,750,000 Liters.

	Annual Capacity	Fuel Requirement at est. 0.5L/ton
Year 1	3,000,000.00	1,500,000.00
Year 2	3,500,000.00	1,750,000.00
Year 3	4,000,000.00	2,000,000.00
Year 4	4,000,000.00	2,000,000.00
Year 5	4,000,000.00	2,000,000.00
Year 6	5,000,000.00	2,500,000.00
Year 7	5,000,000.00	2,500,000.00
Year 8	6,500,000.00	3,250,000.00
Year 9	6,500,000.00	3,250,000.00
Year 10	7,000,000.00	3,500,000.00
Year 11	7,000,000.00	3,500,000.00
Total	55,500,000.00	27,750,000.00

Table 2 - Fuel Requirement

#### 4.3.2 Pollution Control Devices

#### 4.3.2.1 Siltation Pond

Siltation pond will be constructed within the project area (MPSA 245-2007). The ponds shall be made of compacted earth, rock, and strategically placed adjacent to the quarry active area. The quarry's surface run-off will be directed to a 2-stage siltation pond with approximate area of 10,800 sq m (120 m x 90 m), through a 114 meters channel line and open culvert from the quarry

siltation pond. The effluent coming from the pond will be monitored for Total Suspended Solids (TSS), Color, and pH. Based on the existing operation the run-off coming from the quarry site is only observed during wet season. Water recovered from the settling pond is utilized in road sprinkling.

Siltation ponds will be desilted as the need arises. To minimize the silt load, siltation traps along the drainage system will be built inside the active areas. Also, diversion canals will be regularly maintained to assure efficiency. The construction of these structures will conform to engineering practices and will be kept at a minimal area so as to limit the impacts on land.



Figure 5 - Design of the 2-stage siltation pond.



Figure 6 - Site Development Map

#### 5.0 MAJOR IDENTIFIED IMPACTS AND MITIGATING MEASURES

EIA Study Module	Impact	Mitigation
Terrestrial Ecology	Loss of vegetation due to site	– Progressive rehabilitation of
	clearing	disturbed areas
Land	- Loss of top soil due to	<ul> <li>Rehabilitation/revegetation</li> </ul>
	ground/site preparation	planning will be conducted in
	activities	accordance with the EPEP
	- Increase in surface erosion	- To minimize the impact on the
	and down slope	will be conducted in conformance
	by quarry development	with the mining plan and bench
	activities	parameter of at least 3m bench
	– Top soil removal	width and minimum of 10m bench
	- Change in topography due to	height.
	blasting activity	
		– Erosion/ sedimentation controls
		will be installed to mitigate surface
		erosion and the consequent down
		slope or downstream
		sedimentation.
Water Quality	Siltation / degradation of	– Construction of a drainage system
	surface water quality	connecting all drainage canals to a
	particularly Conlong River	series of adequately-sized settling
		ponds.
		- Construction of drainage canais at
		or reads
		Pogular desilting of sottling ponds
		especially before and during the
		wet season
		- Enhancement of the rinarian
		ecosystem if applicable.
Air ad Noise	- Local increase in TSP, SOx,	<ul> <li>Proper and regular maintenance of</li> </ul>
	NOx and noise levels	equipment
	- Air pollution due to Quarry	
	operation	

EIA Study Module	Impact	Mitigation
		– Water spraying; quarry activities
		to be confined during daytime as
		much as possible
		– Strictly implement covering of
		hauling trucks and water spraying;
		- Preventive maintenance of vehicles
		and equipment
		<ul> <li>Imposition of speed limits</li> </ul>
		- Provision of dust and noise PPEs to
		employees

### 6.0 LIST OF STAKEHOLDERS

- Barangay Talbak
- Barangay Akle
- Municipality of Dona Remedios Trinidad
- Municipality of San Ildefonso
- Province of Bulacan