ENVIRONMENTAL IMPACT STATEMENT SUMMARY FOR THE PUBLIC (English)

Proposed 3.0 MMTPY Cement Plant Complex Project with Quarry

Barangay Baha and Barangay Talibayog

Calatagan, Batangas

Submitted by:

Asturias Industries Inc.

Submitted to:

Environmental Management Bureau – Central Office

4 March 2019

1.0 PROJECT DESCRIPTION

<table>
<tr><td>Project Name</td><td colspan="3">3.0 MMTPY Cement Plant Complex with Quarry</td></tr>
<tr><td>Project Type</td><td colspan="3">Cement Plant with Quarrying</td></tr>
<tr><td rowspan="2">Project Size/Capacity</td><td>Line 1</td><td>Line 2</td><td>Total</td></tr>
<tr><td>1.5 Million Metric Tons per Year (MMTPY) Clinker</td><td>1.5 Million Metric Tons per Year (MMTPY) Clinker</td><td>3.0 Million Metric Tons per Year (MMTPY) Clinker</td></tr>
<tr><td>Summary of Project Components</td><td colspan="3">
<table>
<tr><th>Component</th><th>Line 1
(1.5 MMTPY)</th><th>Line 2
(1.5 MMTPY)</th></tr>
<tr><td colspan="3">Quarry Operations</td></tr>
<tr><td>Limestone crushing system</td><td>1,500 tons per hour (tph) capacity with a double rotor hammer crusher</td><td>1,500 tons per hour (tph) capacity with a double rotor hammer crusher</td></tr>
<tr><td>Stacker</td><td>Rectangular store with 1,500tph capacity</td><td>Rectangular store with 1,500tph capacity</td></tr>
<tr><td>Clay Crusher</td><td>400tph with double-toothed roller crusher</td><td>400tph with double-toothed roller crusher</td></tr>
<tr><td>Reclaimer</td><td>1 unit</td><td>1 unit</td></tr>
<tr><td>Storage Bins</td><td>500 m^3 limestone; 250 m^3 shale, 250 m^3 silica and 100 m^3 pyrite</td><td>500 m^3 limestone; 250 m^3 shale, 250 m^3 silica and 100 m^3 pyrite</td></tr>
<tr><td>Support Facility</td><td colspan="2">• Explosive Storage
• Siltation Ponds</td></tr>
<tr><td colspan="3">Cement Plant Complex</td></tr>
<tr><td>Vertical Roller Mill</td><td>400tph or 2x 200tph roller press system</td><td>400tph or 2x 200tph roller press system</td></tr>
<tr><td>Homogenizing Silo</td><td>Raw meal silo 15,000mt</td><td>Raw meal silo 15,000mt</td></tr>
<tr><td>Clinker</td><td>5,000 TPD clinker</td><td>5,000 TPD clinker</td></tr>
<tr><td>Clinker Silo</td><td>2 units with capacity of 25,000 mt each and 800mt for the off-spec clinker storage</td><td>2 units with capacity of 25,000 mt each and 800mt for the off-spec clinker storage</td></tr>
<tr><td>Cement Proportioning Station</td><td>CPS with 4 bins use for clinker, limestone, pozzolan and gypsum/enhancer storage (400t, 250t, 250t and 200t for each material respectively)</td><td>CPS with 4 bins use for clinker, limestone, pozzolan and gypsum/enhancer storage (400t, 250t, 250t and 200t for each material respectively)</td></tr>
<tr><td>Cement Grinder</td><td>2 unit Vertical Roller Mill with 260tph and >300tph capacity</td><td>2 unit Vertical Roller Mill with 260tph and >300tph capacity</td></tr>
<tr><td>Cement Silo</td><td>4 units x 10,000 MT capacity</td><td>4 units x 10,000 MT capacity</td></tr>
<tr><td>Water Source</td><td>deep well</td><td>deep well</td></tr>
<tr><td>Air Pollution Control</td><td>Bag house filters
Dust collectors</td><td>Bag house filters
Dust collectors</td></tr>
<tr><td>Wastewater Pollution Control</td><td>Siltation ponds</td><td>Siltation ponds</td></tr>
<tr><td>Waste Heat Recovery</td><td>7.5 MW Waste Heat Recovery System</td><td>7.5 MW Waste Heat Recovery System</td></tr>
</table>
</td></tr>
</table>

	Support Facilities	• Water Treatment Plant • Warehouses • Administration Building and Staff House • Pier Facility (ECC-R4A-1811-0320) • Parking and Truck Marshalling Area • Clinic and Fire Stations • Utility Building
Resource Utilization	Water Requirement • 370 m^3/day will be required for the cement plant operation and domestic use. This will be sourced from deep wells inside the project site. • 1 m^3/hr of make-up water for the Waste Heat Recovery which will be sourced from the nearby coastal water. Power Requirement • 35 MW per Line	
Project Cost	PHP 12,000,000,000.00	
Construction Period	**Phase 1 (Line 1-Cement Grinding Facility)**: 2019-2021 **Phase 2 (Line 1- Completion of Full Cement Plant):** 2022-2023 **Phase 3 (Line 2):** 2024-2026	
Operation Period	**Line 1:** 2022 **Line 2:** 2027	

2.0 PROPOSED LOCATION

The project site (quarry and cement plant complex) will located inside the 464.08-hectare Industrial Park owned by Asturias Industries Inc. in Brgy. Baha and Brgy. Talibayog, Municipality of Calatagan, Batangas. The cement plant complex will occupy a total land area of 22 hectares while the quarry covers an area of about 250 hectares. MPSA 071-97-IV has a total area of 2,337 hectares.

The vicinity map is shown in **Figure 2-1**.

Figure 2-1: Vicinity Map of the Proposed Project Site

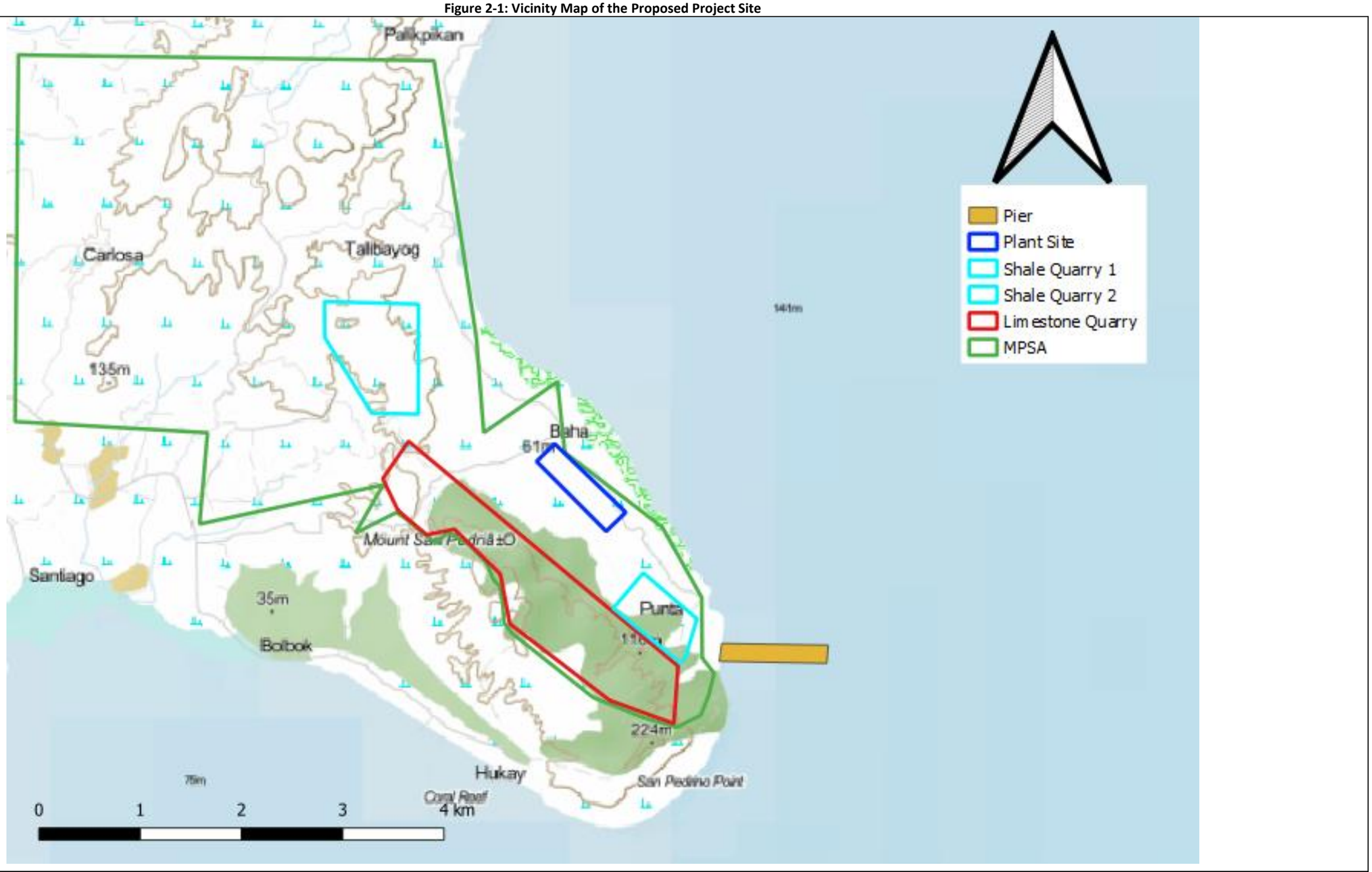


FIGURE NO.:	FIGURE TITLE:
2-1	**Vicinity Map of the Proposed Project Site**

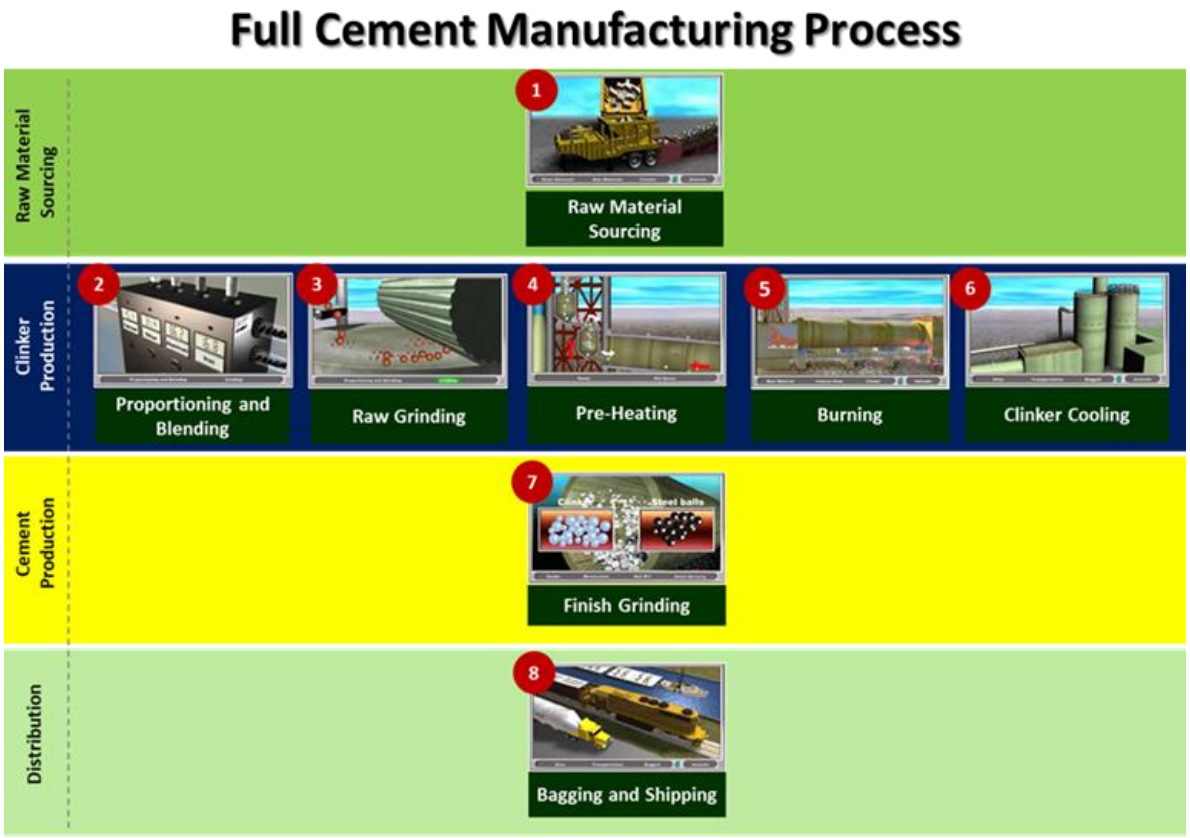
PROJECT PROPONENT:	PROJECT TITLE & LOCATION:	REPORT PREPARER:
ASTURIAS INDUSTRIES, INC.	**3.0 MMTPY CEMENT PLANT COMPLEX WITH QUARRY** Brgy. Baha and Brgy. Talibayog, Calatagan, Batangas	**LCI ENVI CORPORATION**

3.0 PROJECT ALTERNATIVES

ALTERNATIVES	ANTICIPATED ENVIRONMENTAL IMPACTS
Wet Process Cement Plant	• Land: Site preparation and earthworks for a wider tract of land may entail considerable changes in the surface landform/terrain/slope and threat to terrestrial ecology due to vegetation removal and loss of habitat. Solid waste generation may be high due to use of more resources and employment of more personnel. • Water: Operation will require higher water supply requirement that may, in turn, result to competition in water use and higher wastewater generation. • Air: Dust emissions from the cement processing may adversely affect ambient air quality in the project area if not properly mitigated. Emissions from the engines may also adversely affect ambient air quality in the project area if not properly mitigated. • People: Local benefits from the large-scale project (i.e., increased employment, social and economic activities, tax revenues, and basic social services) may be greater. However, dust generated from the cement plant may cause adverse health effects to the community and workers if not properly mitigated.
Dry Process Cement Plant	• Land: Site preparation and earthworks for a wider tract of land may entail considerable changes in the surface landform/terrain/slope and threat to terrestrial ecology due to vegetation removal and loss of habitat. Solid waste generation may be high due to use of more resources and employment of more personnel. • Water: Water supply requirement is limited to domestic use and may pose little to no competition in water use. Wastewater generation is expected to be low. • Air: Dust emissions from the cement processing may adversely affect ambient air quality in the project area if not properly mitigated. Emissions from the engines may also adversely affect ambient air quality in the project area if not properly mitigated. • People: Local benefits from the large-scale project (i.e., increased employment, social and economic activities, tax revenues, and basic social services) may be greater. However, dust generated from the cement plant may cause adverse health effects to the community and workers if not properly mitigated.
No-Project Scenario	• Land: The land use in the area will still be allotted for industries, according to the 2017-2026 CLUP of Calatagan. • Air: Current ambient condition will remain to be affected by the soon-to-be operated industrial park. Low levels of air pollutants such as SO2, NOx, CO, and TSP will still be experienced; changes in the micro-climate will be minimal in the absence of the proposed project. • Water: Ambient water quality of the Balayan Bay will remain the same, while elevated levels of Nitrates and Fecal Coliform will remain in the groundwater. • People: The no-project scenario entails loss of local employment and service opportunities. If the project is not pursued, the supply of cement will be affected, especially with the Duterte Administration's push for infrastructure development under the "Build, Build, Build" program.

4.0 PROCESS/TECHNOLOGY

Figure 4-1: Proposed Cement Plant Process/Technology



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4-1	Proposed Cement Plant Process/Technology	
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5.0 SUMMARY OF MAJOR IMPACTS AND RESIDUAL EFFECTS AFTER MITIGATION

POTENTIAL IMPACTS	PROJECT PHASES	MITIGATING MEASURES	RESIDUAL IMPACTS
LAND			
Generation of solid wastes	Construction, Operation, Abandonment	Implementation of a solid waste management plan	Residual waste will be hauled off by accredited off-takers. Wastes will not be stocked in the area.
There may be some soil erosion due to the earth movement	Construction, Operation	Limitation of earth movement to areas where site development is necessary	There will be no soil movement outside the project site
Change in existing terrain due to quarry operations	Operation	Limit the bench slopes at 75 degrees while quarry slopes to 45 degrees	Minimized areas with altered terrain
There is a risk of soil contamination due to the maintenance of heavy equipment	Construction, Operation, Abandonment	Use sawdust, rice hulls, or coir dusts to absorb the oil spills	Contamination of land due to oil spills will be minimized with the use of absorptive materials
WATER			
Accidental oil spills from heavy equipment and delivery trucks	Construction/ Operation	Use sawdust, rice hulls, or coir dusts to absorb the oil spills Maintain drainage in the maintenance and repair area of vehicles and equipment	Concentration of oil & grease in the receiving body of water should comply with appropriate standards
Ground and coastal water contamination from improper disposal of wastes, percolated wastewater, sludge and fecal matter	Construction/ Operation	Provision of sanitation facilities for workers (e.g. toilets, showers, etc.) Provision of Sewage Treatment Plant	Concentration of fecal coliform in the receiving body of water should comply with appropriate standards
Possible siltation and surface runoff Increase in turbidity of coastal water due to quarry operations	Construction/ Operation	Establishment of sediment traps and erosion barriers Regular removal of silt and sediments Installation and maintenance of drainage system within the plant and the pier Coastal water monitoring	While siltation may still be present, this impact is expected to be minimized by erosion barriers and sediment traps.
Accidental oil spill from ship	Operation	Oil spill contingency plan	Effects of oil spill will be minimized

POTENTIAL IMPACTS	PROJECT PHASES	MITIGATING MEASURES	RESIDUAL IMPACTS
Possible siltation that may disturb nearby reefs	Construction	Installation of silt curtain.	Disturbance of the reef shall be minimized
AIR			
AMBIENT AIR QUALITY AND NOISE			
NO_x, SO_2, and CO emissions from heavy equipment that will be used during construction and quarry operation	Construction/ Operation	Proper maintenance on heavy equipment	Gaseous emissions in the area should be compliant with appropriate standards
TSP and PM_{10} emissions from the cement plant is of primary concern.	Operation	Installation of bag filters that will control at least 90% of the emissions from the cement plant Road watering within the plant site to control dust	Fugitive dust, while still prevalent but will significantly be less.
Noise will be generated by heavy equipment during construction and quarry operations The cement plant will generate some noise	Construction/ Operation	Maintenance of engines and other mechanical parts of the equipment Installation of exhaust mufflers Constructing enclosures surrounding the project site Maintenance of vegetation surrounding the area to serve as natural noise barriers.	Noise from the facility will be lessened.
PEOPLE			
Dust may cause negative health effects (i.e., respiratory) to the community and workers if not properly mitigated	Construction Operation	Provision of PPEs to workers Conduct of medical missions and regular check-ups to workers and host barangay Coordination with Municipal Health Officer (MHO) and barangay health units to address health-related needs of the community	Health effects of the proposed project can be lessened Health effects of the proposed project can be monitored. Health of the community can improve because of the medical missions and regular check-ups.
Generation of additional source of income and livelihood Additional revenue for the local government	Operation	Implementation of social development programs that are responsive to local needs in the impact area	The community will reap the benefits of the project through social development programs and corporate social responsibility projects.

POTENTIAL IMPACTS	PROJECT PHASES	MITIGATING MEASURES	RESIDUAL IMPACTS
Increased basic social services Addition and improvement of local residential dwelling			
Increase in traffic generation in the area due to delivery trucks coming in and out of the Plant	Construction Operation	Coordination with LGU on scheduling and handling the flow of traffic near the project area Provision of private road with interface to the National Road	The project may still generate traffic on the National Road only.

6.0 IDENTIFIED STAKEHOLDERS

Stakeholders	Name
Local Government Unit	Municipal LGU of Calatagan, Batangas (host municipality) • Provincial Environment and Natural Resources Office (PENRO Batangas) • Municipal Environment and Natural Resources Office (MENRO Calatagan) Brgy.Baha and Brgy. Talibayog (host barangays)
Government Agencies	DENR Region IV-A (CALABARZON) Bureau of Fisheries and Aquatic Resources (BFAR) Philippine Coast Guard (PCG)
Sector Representatives within Barangay Baha and Barangay Talibayog	Women Organization Talipapa Community Tindahan ni Juan Vegetable Farmers Association Neighborhood Association Senior Citizens

7.0 STATEMENT OF COMMITMENT AND CAPABILITY TO IMPLEMENT NECESSARY MEASURES

The institutional organization of **Asturias Industries Inc** for the proposed Cement Plant Complex with Quarry Project is shown in **Figure 7-1**. The organization is formed to achieve the following:

- Economical and safety operations and maintenance of the proposed cement plant components;
- Implementation of the company policies;
- Environmental compliance and sustainability; and
- Promotion and enhancement of the social acceptability of the proposed project.

The institutional organization will involve **Asturias Industries Inc 's** top-level management, who is responsible for providing the corporate direction and policies of the company. The policies shall then be disseminated to the department heads and managers for implementation of the company personnel, including those who will be working on the operations of the proposed project.

Asturias Industries Inc will also establish a partnership with relevant government agencies, various stakeholders, and local host communities in relation to the project. This partnership is necessary to maintain a transparent and positive relationship for the proposed project and its stakeholders, as well as to ensure that the environmental protection and enhancement measures are complied with.

The key stakeholders of the proposed project will be identified as the following:

- Municipality of Calatagan, Batangas;
- Brgy. Baha and Brgy. Talibayog;
- Residents and community organizations that will be affected by the proposed project;
- Various industry organizations;
- Local peace-and-order councils (i.e., PNP, Barangay Police); and
- Other concerned non-government organizations.

Asturias Industries Inc. commits to:

- Comply with the conditions that will be stipulated in the ECC and other related environmental laws;
- Foster mutually beneficial partnership and cooperation with the host community;
- Promote sustainable use and responsible development of resources by adopting appropriate technologies;
- Develop livelihood programs and upgrade skills of host community to contribute and enhance the quality of life; and
- Develop training programs for its employees to ensure that they will be continually prepared for the tasks assigned to them.

Figure 7-1: Organizational Chart for the Institutional Plan

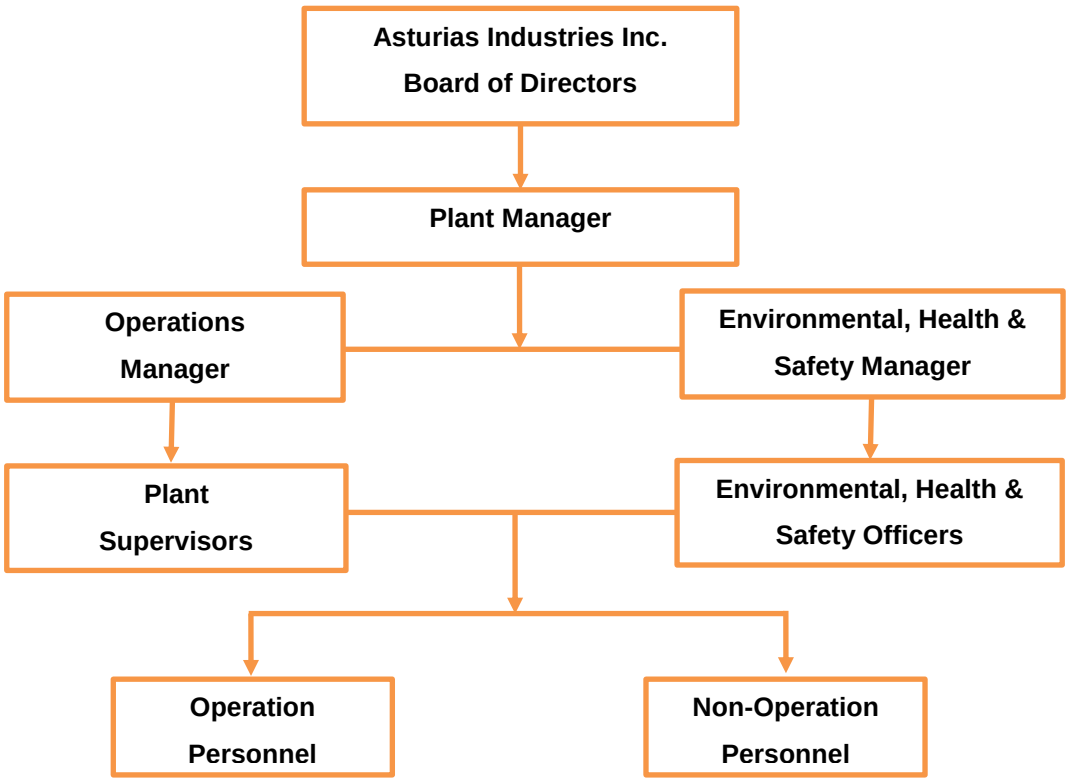

FIGURE NO.:	FIGURE TITLE:	
7-1	Organizational Chart for the Institutional Plan	
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8.0 PROPONENT AND PREPARER DETAILS

For more information about the project, please contact the following people:

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Tel: (02)-920-2240

The full EIS report is accessible in the DENR-EMB Website.