



Environmental Performance Report and
Management Plan Summary for the Public (ESP)

Solid North Mineral Corporation
Quarry Expansion & 1.5 MMTPY
Limestone Pulverizing Plant

Brgy. Akle, San Ildefonso, Bulacan



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EXECUTIVE SUMMARY

1.0 Project Description

Name of Project	Solid North Mineral Corporation (SNMC) Quarry Expansion & 1.5 MMTPY Limestone Pulverizing Plant				
Project Location	Province of Bulacan, Municipality of San Ildefonso, Barangay Akle				
Project Area	Existing plant site approx. 14.89 hectares with 757-hectare MPSA 161-2000-III				
Nature of Project	<ul style="list-style-type: none"> ▪ Quarrying of limestone, shale and pozzolan ▪ Limestone pulverizing 				
Project Size	<p>Quarry Expansion:</p> <ul style="list-style-type: none"> ▪ Limestone: 7.1 Million Metric Tons Per Year (MMTPY) from 1.2 MMTPY ▪ Shale: 0.81 MMTPY ▪ Pozzolan: 0.75 MMTPY <p>Limestone Pulverizing:</p> <ul style="list-style-type: none"> ▪ Pulverized Limestone: 1.5 MMTPY 				
Environmental Compliance Certificate	CO-0911-0007 issued March 1, 2010				
Summary of Major Project Components (Existing & Proposed)	Major Components	Existing Components (as per ECC)	Components to be Modified	Proposed Updated Components	
	Quarrying	Limestone	▪ 1.2 MMTPY	▪ Additional 5.9 MMTPY	▪ 7.1 MMTPY
		Shale	▪ 0.21 MMTPY	▪ Additional Shale/Pozzolan Extraction Rate	▪ 0.81 MMTPY
		Pozzolan			▪ 0.75 MMTPY
	Limestone Pulverizing		▪ 0.75 MMTPY (cement)	<ul style="list-style-type: none"> ▪ Removal of kiln cement production ▪ Retention of limestone crusher and pulverizer 	▪ 1.5 MMTPY (pulverized limestone)
Rehabilitation		<ul style="list-style-type: none"> ▪ (a) Power Supply & Support Utilities Upgrade ▪ (b) Electromechanical Work at the Production Line ▪ (c) Finish Mill & Auxiliaries ▪ (d) Raw Mill Upgrade & Energization 	<ul style="list-style-type: none"> ▪ (a) Power Supply & Support Utilities Upgrade ▪ (b) Electromechanical Work at the Production Line ▪ (c) No Rehabilitation of Finish Mill & Auxiliaries ▪ (d) Raw Mill Upgrade & Energization 	▪ N/A	
Resource Utilization	Water	<p>The water requirement for the operations of SNMC Quarry Expansion & 1.5 MMTPY Limestone Pulverizing Plant is estimated at about 72 m³/day.</p> <p>Two deepwell facilities with a combined capacity of 27 m³/hr. shall supply the cooling water requirement of the system. There is also a stand-by lagoon that can deliver a water a capacity of 30 m³/hr. in case the deepwell facilities are not available.</p>			

	Power	Manila Electric Company (MERALCO) has a substation power house that supplies the electricity requirement of the plant with 483,000 kW/hr.
Project Alternative	<p>No other sites were considered as the current facility, including MPSA 161-2000-III, is already owned by SNMC. The current plant site is ideal because the existing facilities, such as crushers and storage silos will be utilized. Since the existing facility is within an area where quarrying activities are prevalent, people in the area are used to these kinds of industries. In addition, most of the residents were previously or currently employed by these industries.</p> <p>No other technologies were considered since the crushing facilities to be used for the limestone pulverizing operation is already existing. Furthermore, the limestone pulverizing mill was chosen because it can produce 0.1-1.5mm of pulverized limestone for circulating fluidized bed (CFB) power plants, one of the potential customers of SNMC. This pulverizing mill is efficient because it produces no waste; limestone greater than 1.5mm will be supplied to the nearby Eagle Cement Corporation.</p>	
Project Cost	Php 300,000,000.00	
Construction Period	2017 to 2018	
Commercial Operation Date	2019	

2.0 Major Components of the Project

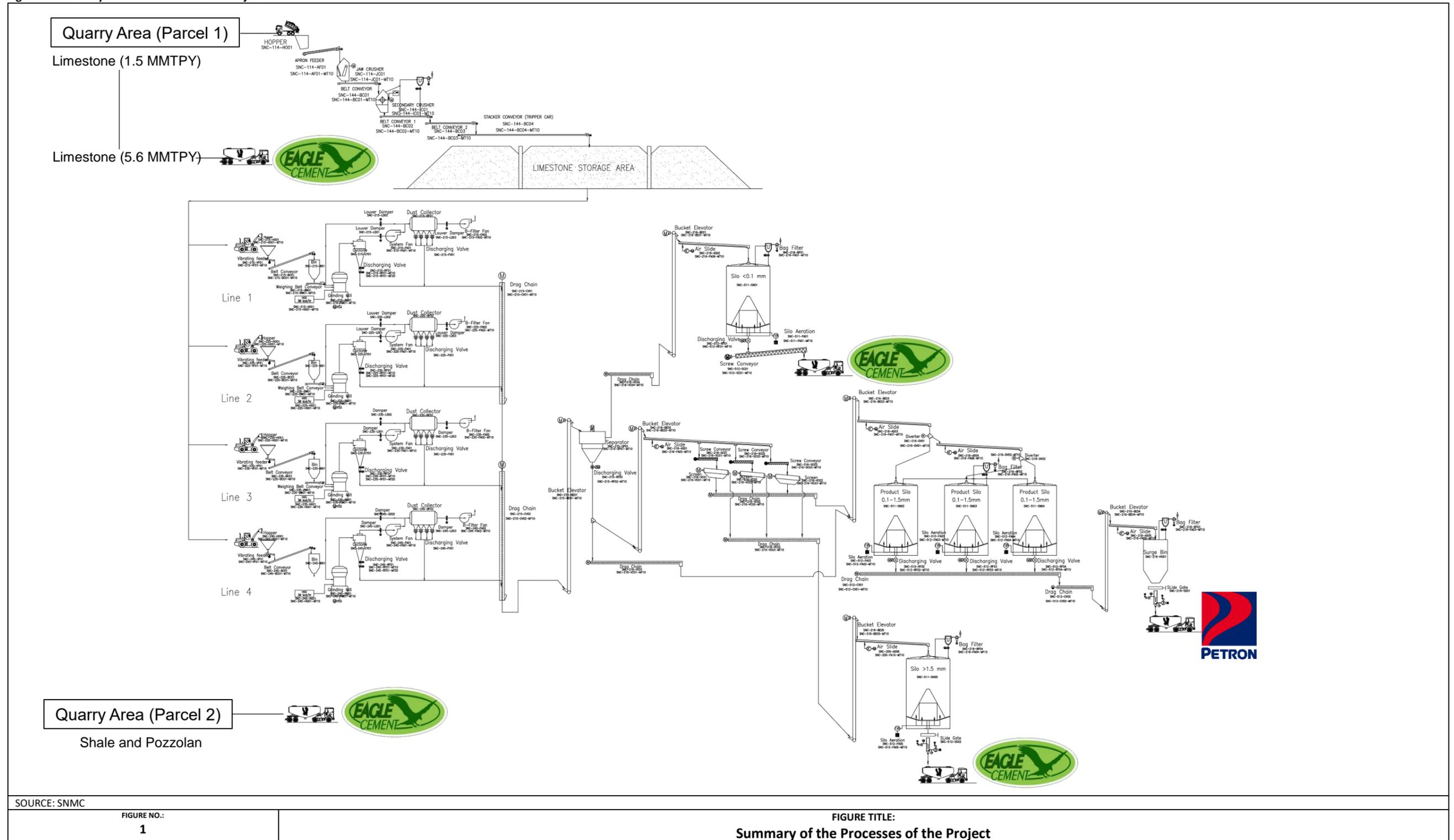
Table 1 presents the major project components and the equipment to be utilized by the project.

Table 1: Major Project Components

Component	Specifications	
Quarry Operations		
Quarrying <ul style="list-style-type: none"> ▪ Excavation ▪ Explosives Blasting ▪ Extraction of limestone, shale and pozzolan ▪ Transfer of limestone, shale, and pozzolan from quarry area to plant site 	EQUIPMENT	NO. OF UNITS
	Hydraulic drills	2
	Bulldozers, D9 or equivalent	2
	Rock breaker	1
	Loaders, 2 m ³ capacity	4
	10-wheeler trucks	9
	Road grader	2
	Water truck	2
	Road compactor	2
	Hydraulic excavator, 1 m ³ capacity	1
	Fuel lorry	1
	Utility trucks	3
Service vehicles	6	
Limestone Pulverizing		
Limestone Crushing and Conveying	<ul style="list-style-type: none"> ▪ 3 units 250 tons per hour (TPH) Double-Stage Reduction System composed of Jaw Crusher and Impact Hammer 	
Limestone Grinding	<ul style="list-style-type: none"> ▪ MTW215 European Type Trapezium Mill composed of 4 units with a rated capacity of 40 TPH each 	
Limestone Storage	<ul style="list-style-type: none"> ▪ 9,953 MT capacity 	
Pulverized Limestone Storage & Bulk Loading	<ul style="list-style-type: none"> ▪ 900 x 4 MT capacity 	

3.0 Process/Technology

Figure 1: Summary of the Processes of the Project



SOURCE: SNMC

FIGURE NO.:
1

FIGURE TITLE:

Summary of the Processes of the Project

4.0 Summary of Major Impacts and Residual Effects After Mitigation

Table 2 presents a concise summary of environmental impacts caused by the operation, as well as the corresponding mitigating measures and residual impacts.

Table 2: Summary of Major Impacts, Mitigating and Enhancement Measures, and Residual Impacts

Module	Impact	Mitigating/Enhancement Measures	Residual Impact
Land	More waste (hazardous and residual) will be produced with the construction and operation of Limestone Pulverizing Plant	SNMC applies a waste management procedure as part of its environmental management plan. This procedure encompasses solid waste management, hazardous waste management, and scrap management.	Residual and hazardous waste are hauled off by accredited off-takers. Wastes will not be stocked in the area.
	Loss of flora and fauna in the areas to be developed as quarry sites.	As part of the EPEP, SNMC commits to monitoring and evaluation of species survival within identified habitat. SNMC will also establish buffer zones around the quarry areas. These areas will be allocated for planting of fast growing indigenous tree species such as acacia and ipil-ipil and fruit bearing trees. A nursery will also be established to provide required seedlings for the buffer zones.	Flora and fauna within the quarry areas are expected to be lost. However, vegetation within buffer zones is expected because of the efforts of SNMC . Furthermore, SNMC will diligently follow progressive rehabilitation plans as outlined in the EPEP and FMRDP. The company will set aside enough funds for rehabilitation.
Water	Water consumption	Since a dry process will be applied, less water will be consumed by the pulverizing facility. SNMC may opt to adopt a water sustainability program or a water reuse program to further reduce water consumption.	Water will still be consumed by the facility. Water is also allotted for domestic purposes and for watering to mitigate fugitive emissions.
	Siltation in water bodies.	Installation of siltation ponds in plant and quarry areas. Proper maintenance of siltation ponds.	The siltation due to the operations of SNMC will be minimized.
	Water contamination due to oil spills and leaks.	SNMC implements spill management procedures.	Implementation of spill management procedure shall greatly minimize the risk of contamination due to oil spills and leaks.
Air	Fugitive dust	Regular road watering is conducted. Bag filters will be installed as part of the limestone pulverizing facility.	Fugitive dust, while still prevalent, will significantly be lessened.
	Noise	Heavy equipment is muffled. Workers use appropriate PPE. Noisy activities are performed only during daytime. Sound barriers and sound proofing are installed.	Noise from the facility will still be emitted.
People	Blasting may cause ground vibration and presence of fly rocks.	Optimum blasting design through optimum blast holes pattern and optimum explosives	Vibration and noise will be eliminated.
	Exposure of workers to occupational hazards	SNMC currently follows a Safety and Health Program, which is observed throughout the operation of the plant.	Accidents may still occur, but the safety and health guidelines currently in place significantly lowers the

Module	Impact	Mitigating/Enhancement Measures	Residual Impact
			exposure of workers to occupational hazards.
	Higher fund allocation for social development programs	SNMC conducts yearly IEC activities with various barangay representatives to formulate SDMP activities.	The community will continue to reap benefits of social development programs
	Job opportunities	The company continues to prioritize local hiring.	Higher employment rates in the community
	Higher local tax to be paid owing to higher revenue of company	SNMC will continue to pay taxes.	Higher local tax.

5.0 Identified Stakeholders

Table 3 presents the identified stakeholders for the project:

Table 3: Identified Stakeholders

Stakeholders	Name
Local Government Unit	Municipality of San Ildefonso Barangay Akle (Direct Impact Area) Barangay Alagao (Indirect Impact Area) Barangay Talbak (Indirect Impact Area)
Sector Representatives within Barangay Akle	Education Health Livelihood Religious Business Owners Senior Citizens Women
Non-Government Organization	APO SIBAAO

6.0 Statement of Commitment and Capability to Implement Necessary Measures to Prevent Negative Impacts

SNMC 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 host communities;
- Promote sustainable use and responsible development of resources by adopting appropriate technologies;
- Develop livelihood programs and upgrade skills of host communities to contribute and enhance the quality of life; and
- Develop training programs for its employees which will ensure that they will be continually prepared for the tasks assigned to them.

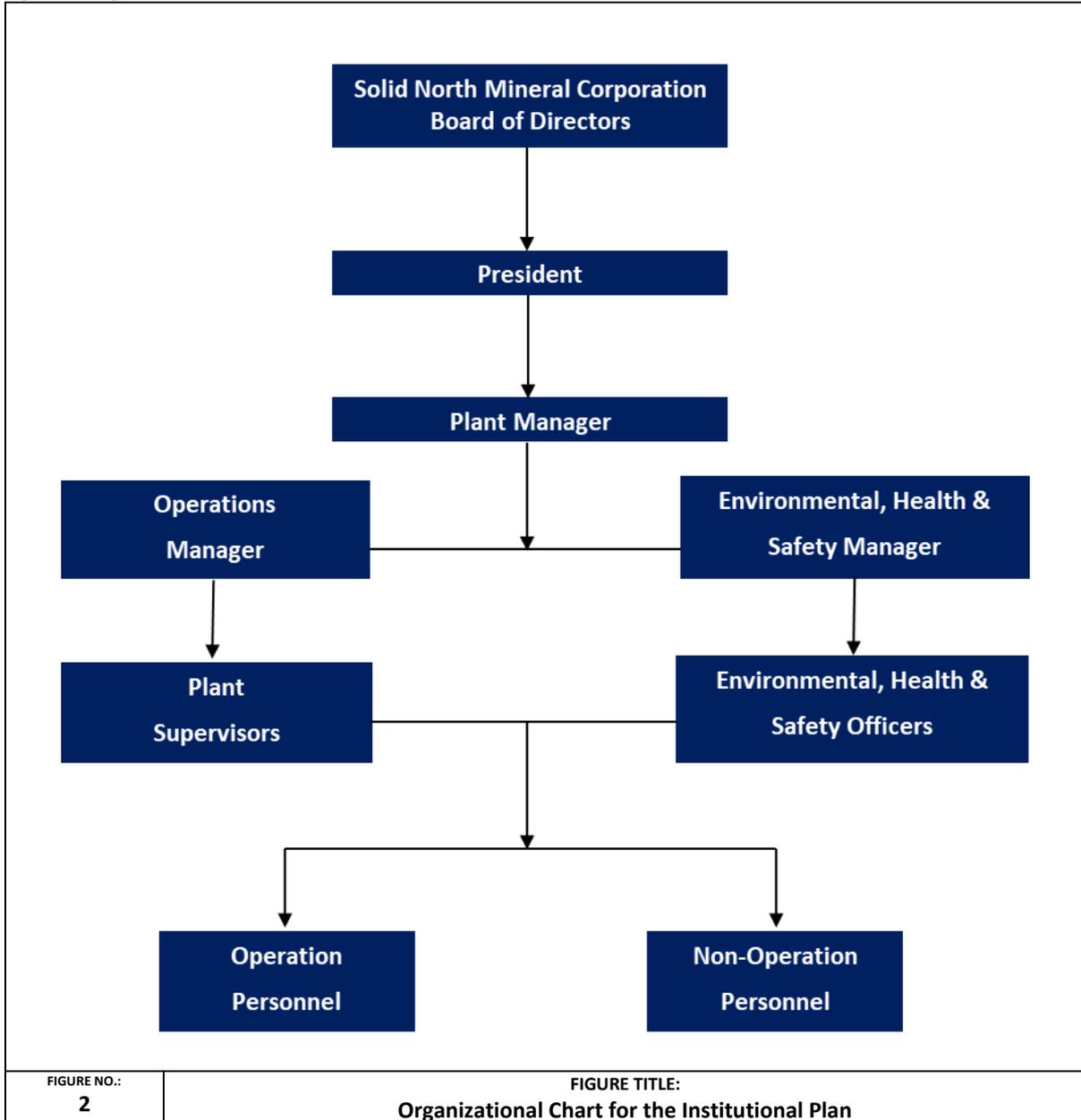
The institutional organization of the quarry expansion and 1.5 MMTPY limestone pulverizing plant as shown in **Figure 2** contains people with their assigned responsibilities that require interaction among **SNMC's** different departments. The objective of this organization is to achieve the following:

- Economical and safety operations and maintenance of the proposed project's components;
- Implementation of company policies;
- Environmental compliance and sustainability; and

- Promotion and enhancement of the social acceptability of the proposed project.

The institutional organization will involve **Solid North Mineral Corporation’s** top-level management, since this group is responsible for providing the corporate direction and policies of the company. The policies shall then be disseminated to department heads and managers for implementation of the company personnel, including those who will be working on the operations of the proposed project.

Figure 2: Organizational Chart for the Institutional Plan



7.0 Proponent and Preparer Details

For more information about the **SNMC Quarry Expansion & 1.5 MMTPY Limestone Pulverizing Plant**, the following people may be contacted:

Proponent Name	Solid North Mineral Corporation (SNMC)
Proponent Authorized Representative	Mr. Erdulfo A. Arañas President
Proponent Address and Contact Details	Solid North Mineral Corporation Unit 3505-B Summit One Tower, 530 Shaw Blvd., Mandaluyong City, NCR, The Philippines, 1550 Tel No.: (+632) 535-0245
EPRMP Preparer (Consultant)	LCI Envi Corporation
Preparer Contact Person	Engr. Jose Marie U. Lim, MSc. Managing Director
Preparer Address and Contact Details	LCI Envi Corporation Unit 8LM Future Point Plaza 3 111 Panay Avenue, South Triangle Quezon City, NCR, The Philippines, 1103 Telephone no.: (+632) 442-2830 Fax No.: (+632) 961-9226