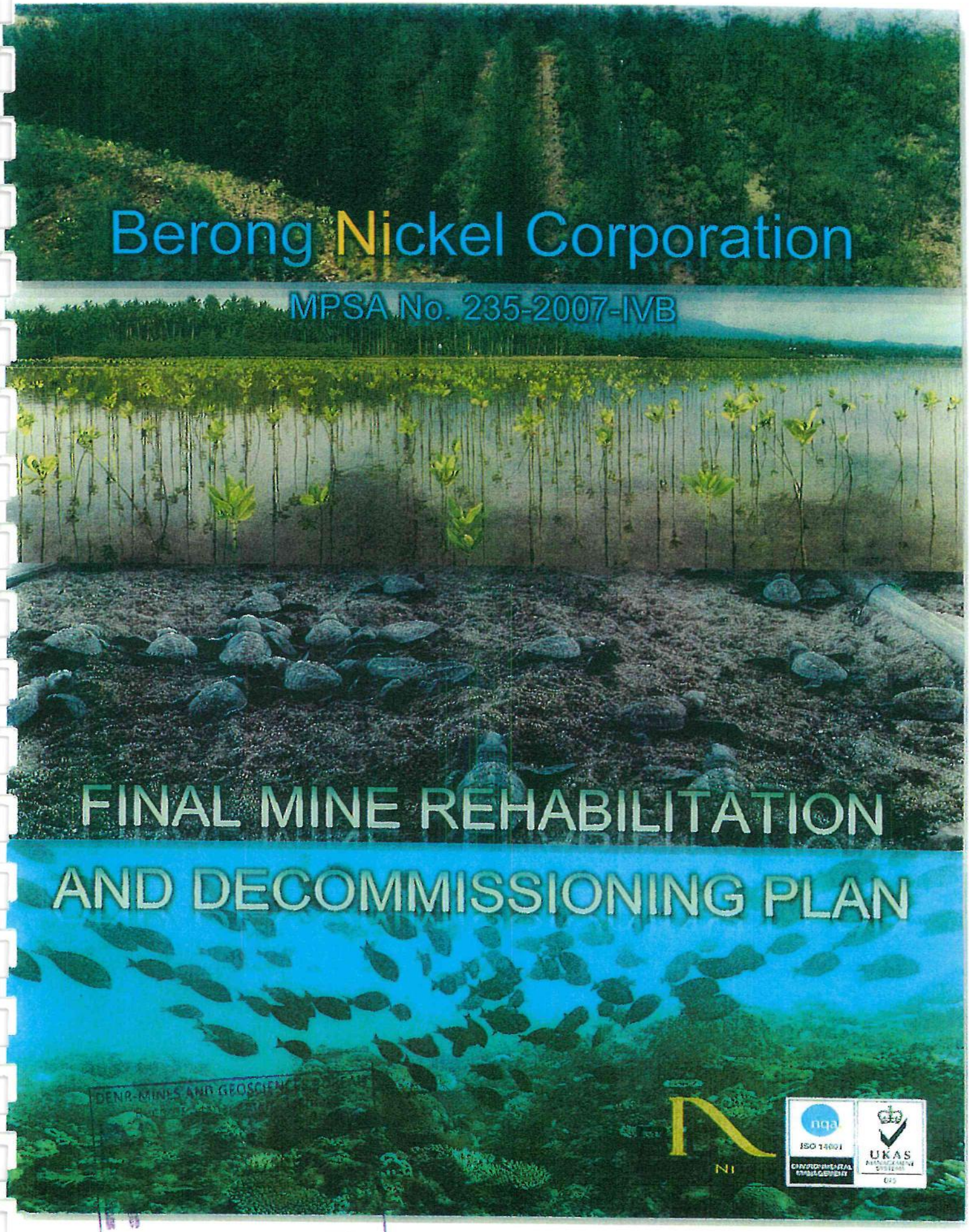

Berong Nickel Corporation

MPSA No. 235-2007-IVB

FINAL MINE REHABILITATION AND DECOMMISSIONING PLAN

Table of Contents

Annexes

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1. Executive Summary

1.1. Introduction

The extraction of mineral resources is relatively a short-term land use considering that it is dependent on its ore reserve. It is inevitable that sooner, when ore reserve is depleted, the mine will definitely be decommissioned. Berong Nickel Corporation in Berong, Quezon remains one of the surviving mines in the country today, is no exception. BNCs operation is projected to be decommissioned by 2022 and for the next six (6) years, rehabilitation of the mine shall be the prime activity. This plan shall only cover the rehabilitation and decommissioning of mining area, settling ponds and mine haul road. Other components such as port facilities, camp admin complex, mechanical workshop, stockyards, forest nursery among others will remain in-situ to support projects under application within the area of Barangay Berong, Quezon, Palawan.

Berong Nickel Corporation (BNC) is a Philippine Securities and Exchange Commission-registered joint venture company established in 2004 by Toledo Mining Corporation and Atlas Consolidated Mining and Development Corporation (ACMDC). BNC has a Management Agreement with David M. Consunji Inc., (DMCI) a wholly owned subsidiary engaged in ore and mineral mining and exploration to supervise and manage its activities especially on technical and financial aspects of mineral exploration and development of nickel laterite in BNC areas of interest. The project is situated in the Ancestral Domain Claim of the Tagbanua Tribe located in Brgy. Berong, Quezon, Palawan with an area of 288 hectares it is covered by a Mineral Production Sharing Agreement (MPSA) No. 235-2007-IVB entered on June 08, 2007 by and between the Government represented by the DENR Secretary and Berong Nickel Corporation. It is within the Timberland/Forestland classification as per Project No.13-A, Block A of Land Classification Map No. 2141 certified on November 15, 1960. Refer to annex 16.

Out of the 288-hectare covered by MPSA, the developed or active area for operation is only 119 hectares or about 41% which include Ancillary Area (25 has. or 9%),

Disturbed Area (38 has. or 13%) and Progressive Rehabilitation Area (56 has. or 19%). The remaining 169 hectares or 59% are Vegetated Areas which include Rehabilitated Area (50 has. or 17%), Undisturbed Area (114 has. or 40%) and Buffer Zone (5 has. or 2%). Please refer to Figure 1. (BNC Land Use Map).

The extraction of mineral resources is relatively a short-term land use considering that it is dependent on its ore reserve. It is inevitable that sooner, when ore reserve is depleted, the mine will definitely be decommissioned. Berong Nickel Corporation in Berong, Quezon remains one of the surviving mines in the country today, is no exception. BNCs operation is projected to be decommissioned by 2022 and for the next six (6) years, rehabilitation of the mine shall be the prime activity. This plan shall only cover the rehabilitation and decommissioning of mining area, settling ponds and mine haul road. Other components such as camp admin complex, mechanical workshop, stockyards, forest nursery among others will remain in-situ to support projects under application within the area of Barangay Berong, Quezon, Palawan.

Based on the stakeholder consultation conducted last November 26, 2020 the participants identify the favorable final land use of the mined-out area. 60% of them suggest that the area be converted into a tourism site and 40% suggest for a model agroforestry farm. For silt control structures such as the settling ponds and sump pits, most of the stakeholders suggested to convert the area into bamboo plantation area by retaining major settling ponds and be planted with bamboo along the perimeter. The stakeholders also suggested that the Mine stockpile/topsoil area be converted into agroforestry area. Plant species include the bamboo, ipil, kasoy, banana, etc. The minor roads will be decommissioned and shall be rehabilitated as part of the mined-out areas. While the major roads shall be maintained throughout the duration of the project, in which perimeters will be improved through tree enhancement, and slope stabilization activities. The facilities such as the Causeway Pier, Stockyards 4 & 7, Camp Admin, Clinic, Mechanical Workshop, Assay Laboratory, Offices, Warehouse and Nursery will remain in-situ and will be utilized during implementation of the FMRDP or could be used/transfer to other BNC

projects within Quezon. Some facilities will be use as training or learning centers for the community as part of the social plan.

BNCs FMRDP implementation is in harmony with the Comprehensive Land Use Plan (CLUP) of the Local Government Unit of Quezon (See Annex 17) which was reviewed by the Provincial Government of Palawan and currently being revised at Municipal level. With the development of west coast road, Bgy. Berong will be directly connected to Puerto Princesa City at a shorter travel distance. This will significantly influence urban development in the area. Other factors that is expected to promote urban development in Berong is the presence of mining activities and the establishment of Municipality of Kalayaan's support facility in Berong which are utilize as a jump-off point. However, since Berong is located at the northernmost part of Quezon, it is projected to develop as a self-sufficient urban community or a separate growth node. With the growing popularity of the tourist destination in Bgy. Berong such as the Balaybayen Falls, Tagbunsaing Lake, Sandy Beaches and Diving Spots the stakeholders wish to develop the mine-out areas of BNC into a tourist destination like the Mines View Park in Baguio City.

In reference to the indicative schedule/timelines for the proposed rehabilitation and decommissioning procedures, the company targeted to complete the FMRD Project in six years' time with a corresponding budget allocation totaling to Php 109,549,475.00. The financial requirement will be provided by the company thru the Final Mine Rehabilitation Fund (FMRDF). Withdrawal from the FMRDF shall be based on the Work and Financial Plan approved by the MRFC.

1.2. Biophysical Closure Issue

1.2.1 Public Safety and Human Health

The various phases of mine closure will carry different types and levels of risk to different groups of people, which include the workers, contractors and community. From decommissioning to post closure period, public safety and human health within the community becomes the prime concern. The public should be protected from possible risks and unsafe conditions.

BNC's vision is to develop and enhance the area in a manner that leaves all sites as safe as possible. Part of the activities to be undertaken is to educate the community in order for them to understand the safety hazards and potential environmental impacts of mine closure. BNC commits to implement best management practices to identify, communicate and minimize potential health and safety risks.

1.2.2 Environmental Impacts

Surface mining is an extractive industry which entails earthmoving consisting of extraction and hauling of ore materials and the subsequent containment of silt material in designated settling ponds and backfilling of the overburden or top soil to mined-out area under rehabilitation. Negative environmental effects include the disturbance of the ground and vegetation on areas directly affected by the mining operations, alteration of original land configuration, change of atmosphere and air quality in the immediate vicinities, disturbance and alteration of wildlife habitats and reduction of water resources.

1.3. Socio Economic Closure Issues

For the last 15 years, BNC continues to contribute to the social and economic life not only for BNC workers but also for its host community. Local industries as well as folks from the impact area, trade their farm products within the mine complex and enjoy other benefits that flow from the mine such as for social services, health and education.

It remains to be one of the major providers of direct and indirect employment in the municipality of Quezon. By the end of 2021, the mine will start decommissioning, many sectors will be affected. Foremost are the workforce, which will be reduced with end of ore extraction and shipment and consequently community population follows. Residents from the host and neighbouring communities relying on the services and livelihood provided by the mine will also be affected. Thus, sustaining a community after mine life shall also be an issue.

BNC is a major contributor of revenue to the Local Government Units, from the barangay level up to the national level. Government revenues will be reduced, thus affecting its delivery of services to their constituents.

Closure of the mine will also have an effect to the industries relying on the existence of the mine such as contractors, suppliers, shareholders, and entrepreneurs.

2. Company Information

2.1. Project Name : Berong Nickel Project

2.2. Company Name : Berong Nickel Corporation

2.3. Company Address :

Head Office Address	Mine Site Address
3rd Floor DMCI Homes Corporate Center, 1321 Apolinario St, Bgy Bangkal, Makati City 1233	So. Badlisan, Bgy. Berong, Quezon, Palawan, 5304
Tel. No: (02) 823 7963 / 831 6237	Tel. No: (048) 434 9599
Fax No: (02) 831 6241 / 831 6242	Email: bncenvi.dmcimining@gmail.com

2.4. Contact Person/Designation : **Mr. Tulsi Das C. Reyes / President**

2.5. Legal Description of the Mine

2.5.1 Mining Tenement

Berong Nickel Corporation (BNC) is a Philippine Securities and Exchange Commission-registered joint venture company established in 2004 by Toledo Mining Corporation and Atlas Consolidated Mining and Development Corporation (ACMDC). See annex 1. BNC has a Management Agreement with David M. Consunji Inc., (DMCI) a wholly owned subsidiary engaged in ore and mineral mining and exploration to supervise and manage its activities especially on technical and financial aspects of mineral exploration and development of nickel laterite in BNC areas of interest. It is located in Bgy. Berong, Quezon, Palawan with an area of 288 hectares, and is covered by Mineral Production Sharing Agreement (MPSA) No. 235-2007-IVB entered on June 08, 2007 by and between the Government represented by the DENR Secretary and Berong Nickel Corporation. See Annex 2.

Out of the 288-hectare covered by MPSA, the developed or active area for operation is only 119 hectares or about 41% which include Ancillary Area (25 has. or 9%), Disturbed Area (38 has. or 13%) and Progressive Rehabilitation Area (56 has. or 19%). The remaining 169 hectares or 59% are Vegetated Areas which include Rehabilitated Area (50 has. or 17%), Undisturbed Area (114 has. or 40%) and Buffer Zone (5 has. or 2%). Please refer to Figure 1. (BNC Land Use Map).

2.5.2 Environmental Compliance Certificate Granted by DENR for BNC

ECC Ref. Code: 0507-008-301ECC June 14, 2006	ECC for Berong Nickel Project
ECC-R4B-1408-0083, August 29, 2014	ECC for BNCs Causeway (Pier) Jettison Project
ECC-4B-214-PA-2236-2005 November 10, 2005	ECC for Industrial Sand and Gravel Extraction Project of ACMDC
ECC-4B-215-PA-2236-2005 November 10, 2005	ECC for Industrial Sand and Gravel Extraction Project of BNC

2.5.3 Other Regulatory Permits/License relevant to Mine Closure

Permit / Clearance / Certificate / Agreement	Legal Basis	Implementing Agency	Permit Number
AEPEP Certificate of Approval	RA 7942, CDAO 2010-21	MGB IV-B	AEPEP No. 2020-05-MIMAROPA
Discharge Permit (Badlisan)	RA 9275 (Sec. 14), DAO 2005-10	EMB IV-B	2015-DP-PAL-02-051
Discharge Permit (SLF)	RA 9275 (Sec. 14), DAO 2005-10	EMB IV-B	2014-DP-PAL-02-122
Discharge Permit (Yard 7)	RA 9275 (Sec. 14), DAO 2005-10	EMB IV-B	2014-DP-PAL-02-179
EPEP/FMRDP Certificate of Approval	RA 7942, DAO 1996-40/DAO 2010-21	MGB CO (CLRFSC)	EPEP & FMR/DP No. 087-2009-03
Hazwaste Certificate of Treatment	RA 6969, DAO 2013-22	EMB IV-B	COT M-M-4B-53-2019-00028 (1-2)
Hazwaste ID	RA 6969, DAO 2013-22 (Cha. 3)	EMB IV-B	OL-GR-R4B-53-001795
Hazwaste Manifest	RA 6969, DAO 2013-22	EMB IV-B	M-M-4B-53-2019-00028
Hazwaste Permit to Transport	RA 6969, DAO 2013-22	EMB IV-B	OL-PTT-R3-14-004552 OL-PTT-R3-14-005616 OL-PTT-R3-54-006136

ISO 14001:2015 Certification	DAO 2015-07	MGB IV-B, NQA	Certificate No. 67322
MMT SO/MOA/Resolution	RA 7942, CDAO 2010-21, DAO 2017-15	MGB IV-B, MRFC	RSO 2015-09
MPSA	RA 7942	DENR CO, MGB IV-B	MPSA No. 235-2007-IVB
MRFC SO/MOA/Resolution	RA 7942, DAO 1996-40/CDAO 2010-21	MGB IV-B, CLRFSC	RSO 2007-001
PCO Accreditation	DAO 2014-02, CDAO 2010-21 (Sec 173)	EMB IV-B	COA No. 2017-R4B-01518
Permit to Operate Air Pollution Source	RA 8749, DAO 2000-81 (Part 6), MC 2007-003	EMB IV-B	2017-POA-D-0453-334
SEP Clearance	RA 7611	PCSD	MEP-022306-003
STCBP 2014	PD 705	DENR IV-B	DENR IV-B MIMAROPA-2014-0007
STCEBP 2016	PD 705	DENR IV-B	DENR IV-B MIMAROPA-2016-001
Water Permit	PD 424/PD 1067	NWRB	Water Permit No. 020884

Provided in annex 3 – 13 the copy of all the regulatory permits / licenses granted to BNC.

2.5.4 Name and Full Details of Person/s Authorized to act/represent the company with respect to the mine closure plan

Name	Position	E-mail
Tulsi Das C. Reyes	President	tulsidasreyes@gmail.com
Ramon Manuel R. Briones	VP-Operations	blackrockores@gmail.com
Deo V. Gatchalian	Compliance Manager	dev.gatchalian@gmail.com
Marc Raymund L. Zamora	Resident Manager	marc.zamora@gmail.com
Jay Pee R. Dela Cruz	MEPEO/PCO	jprodriguezdelacruz@gmail.com
Renato Y. Sabat Jr.	Mine Planning Engineer	renato.sabatjr@gmail.com
Alemar C. Velasco	Safety Engineer	alemar.velasco@gmail.com
Deborah A. Arquio	ComRel Officer	debyarquio@gmail.com

Provided in table 2-1 to 2-5 the complete Organizational Structure of personnel who shall be responsible for the implementation of FMR/DP.

Table 2-1. BNC T.O FMRDP Implementation

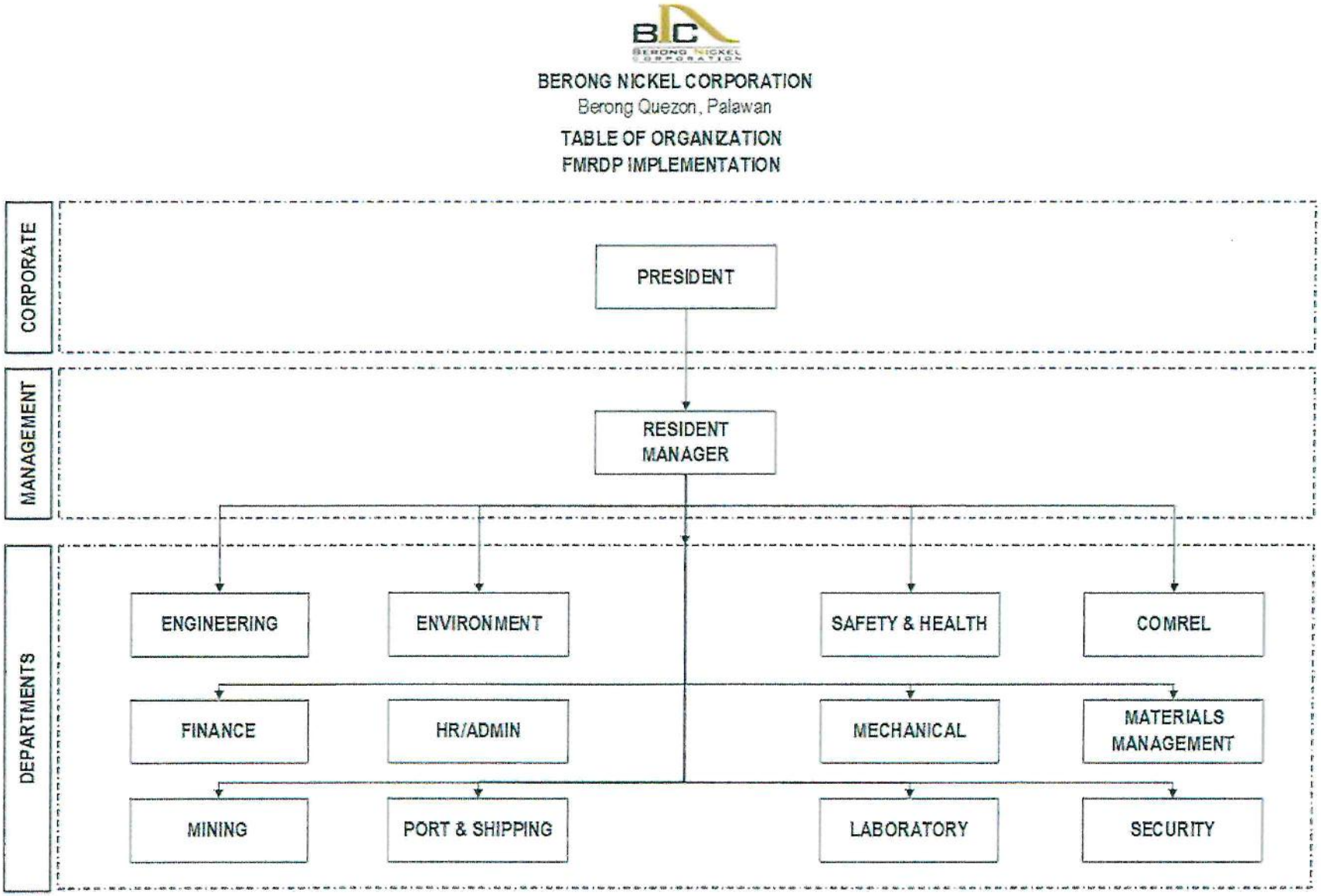
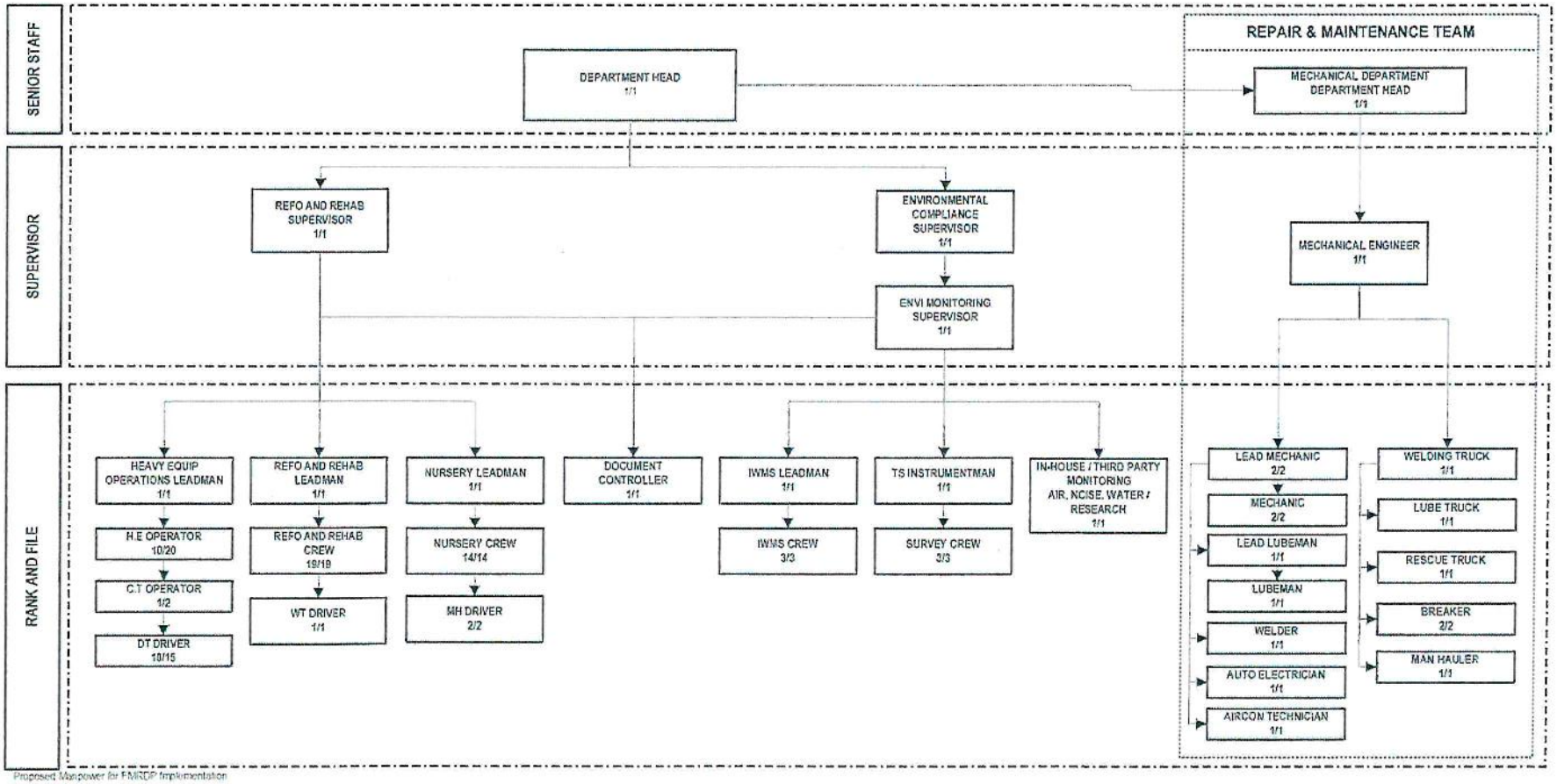


Table 2-2. BNC T.O MEPE (Envi) Department

BERONG NICKEL CORPORATION
Berong Quezon, Palawan

TABLE OF ORGANIZATION
MINE ENVIRONMENTAL PROTECTION AND ENHANCEMENT OFFICE
FMRDP IMPLEMENTATION



Proposed Manpower for FMRDP Implementation

Senior Staff	1
Supervisor	3
Rank and File	66
R&M Team	10
Total	100

Prepared by	Noted by	Reviewed by	Recommended by	Approved by
JAYPEE R. DELA CRUZ MEPE Department Head	HERNANDO D. AGUPITAN NRA Department Head	MARC RAYMUND L. ZAMORA Resident Manager	ALDRIC G. BORLAZA VP HR & Admin	TULSI DAS C. REYES President

Table 2-3. BNC T.O Safety & Health Department

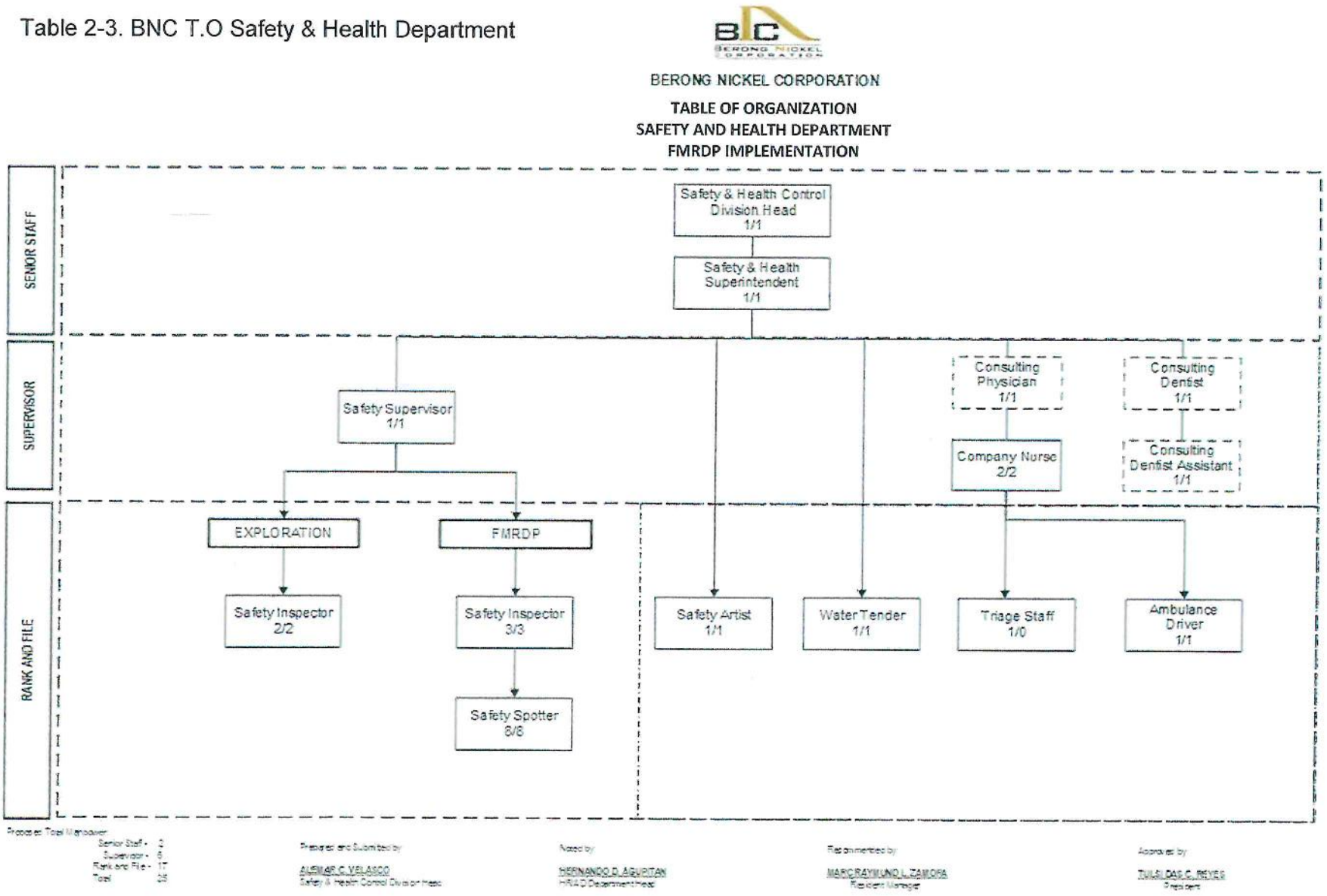
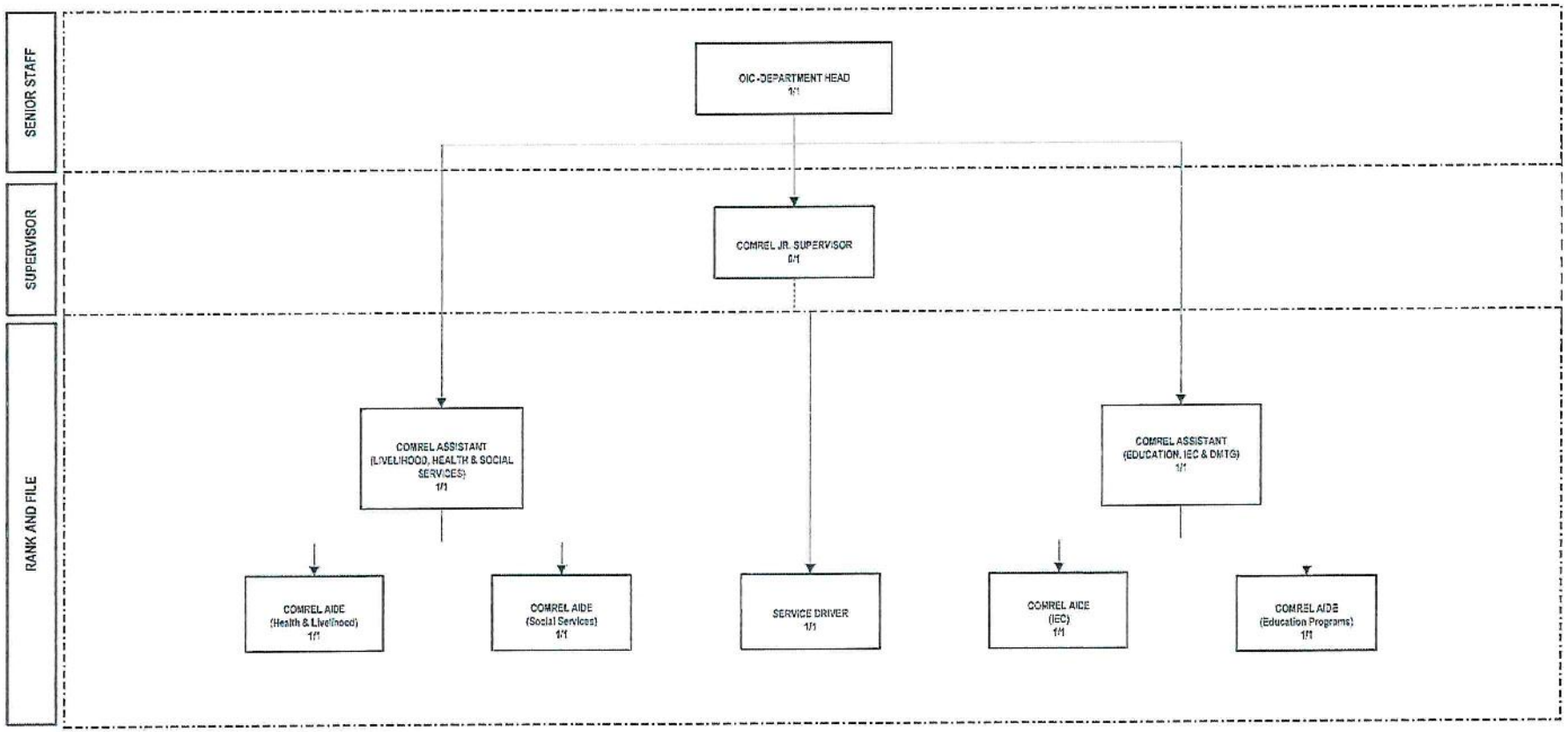


Table 2-4. BNC T.O Comrel Department

BERONG NICKEL CORPORATION
Berong Quezon, Palawan
2021 TABLE OF ORGANIZATION
COMREL DEPARTMENT



Total Manpower as of April 2021
Senior Staff - 1
Supervisor - 0
Rank and File - 7
Total: 8

Prepared and Submitted by:
DEBORAH A. ARQUIO
OIC, COMREL Department

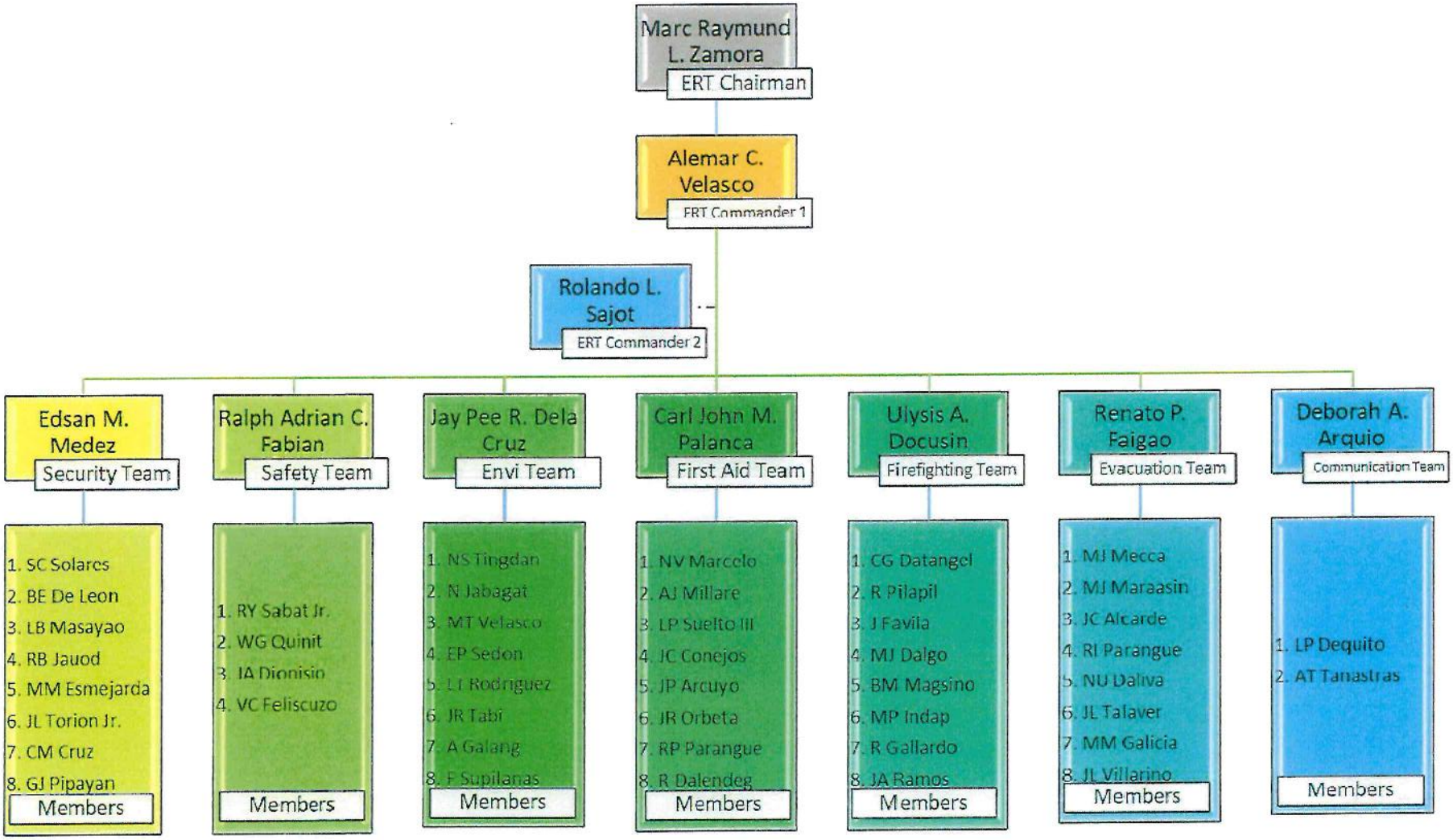
Noted by:
HERNANDO D. AGUIRTAN
HRD Department

Reviewed by
MARC RAYMUND L. ZAMORA
Resident Manager

Recommended by
ALDE C.G. BORLAZA
VP-HR & Admin

Approved by
TULSI DAS C. REYES
President

Table 2-5. BNC Emergency Response Team



3. Background Information

3.1. History of the Mining Operation

Berong Nickel Corporation was registered with the Philippines Securities and Exchange Commission on September 27, 2004, for the purpose of exploring, developing and mining the Berong property located in Barangy Berong, Quezon, Palawan.

The company is 60% owned by Nickeline Resources Holdings, Inc. (NRHI), 21.3% owned by Toledo Mining Corporation (TMC) and 18.7% owned by European Nickel Plc (EN). Their parent company is Atlas Consolidated Mining and Development Corporation (ACMDC).

In 2005, BNC was granted a temporary exploration permit by the government and carried out a confirmatory exploration and resampling study in the initial open of area of the project.

In 2006, after establishing sufficient information on the economic viability of the project, the company preceded to develop the area into a commercial mining operation in which a Special Mining Permit (SMP) was issued by the Department of Environment and Natural Resources (DENR), through the Mines and Geosciences Bureau (MGB). The SMP allows the company to commence its mining operation while it completes a feasibility report as part of the requirement of the MPSA.

On June 8, 2007, the government approved MPSA No. 235-2007-IVB in favor of the company as the contractor covering an area of 288 hectares. See annex 2. The area is situated in the Ancestral Domain Claim of the Tagbanua Tribe located in Barangay Berong, Quezon, Palawan. See Figure 3.

3.1.1 Mine Component

Pre-mining Condition

BNC's mineral resource is situated in a rolling terrain where ore is deposited in a stratum like pattern relative to the slope of the ground. The ore sits at an average depth of 10 meters below the surface. The area is covered with vegetation when it was first explored by ACMDC and was part of the traditional use zone for local indigenous community.

Current Situation

BNC's method is through contour/strip mining. This technique is applicable to shallow bearing deposits with large extents. The ore is mined through a step by step clearing - topsoil stockpiling - hauling and loading and final progressive rehabilitation of mined out areas. The current production area was situated on areas 24a, 24b and area 25. See figure 5.

Implication for Mine Closure (Situation at Closure)

Mine area stabilization. Once the area is declared mined out, the slopes will be stabilized following the original contour or shape of the surface, hence, the method called "contour mining". Once the benches are covered with organic topsoil material final tree planting will follow.

Loss of employment. The closure of the mining area will cease BNC's operation, and will trigger reduction of manpower required to implement the FMRDP.

Decrease in paid taxes to the government. The closure will also result to the reduction on paid taxes both in the national and local levels of the government.

Loss of financial funding. Closure will affect company programs such as the Environmental Protection and Enhancement Program (EPEP), Social Development and Management Program (SDMP), Corporate Social

Responsibility (CSR), and other locally supported projects derived from the operation.

Final Land Use (Stakeholders aspiration / Option for Closure)

Based on the stakeholder consultation conducted to identify the favorable final land use of the area, 60% of them suggest that the area be converted into a tourism site and 40% suggest for a model agroforestry farm.

3.1.2 Silt Control

Pre-mining Condition

Before initial mining commence on 2006, BNC had established multiple settlings ponds to capture silt laden rainwater around the mining area, this is a requirement based on the company's environmental compliance certificate. The ponds were strategically constructed within the mine site vicinity to trap silt laden rainfall run-off water before it goes into nearby tributaries.

Current Situation

A total of 100 settling ponds were constructed, which has a volume capacity of 300,000 cubic meters. The pond serves as a silt material catch basin for BNC's mine site. This also serves as a source of water for on-going rehabilitation efforts and water supply for dust mitigating measures. See Figure 4.

Implication for Mine Closure (Situation at Closure)

The pond will serve as a water supply for the progressive rehabilitation efforts of the company. The pond perimeter will be stabilized, backfilled with top soil material, installed with cococoir and tree planted. See Figure 4&8.

Final Land Use (Stakeholders aspiration / Option for Closure)

Based on the stake holder consultation, most of them suggest to convert the area into bamboo plantation along the perimeter, and shall remain as water catchment ponds.

3.1.3 Mine site stockpile / Topsoil

Pre-mining Condition

As part of the initial mining activities of the project, the top organic layer of the mining area was first hauled and stockpiled in a designated area for rehab projects.

Current Situation

BNC has an identified stockpile for top soil material with a total area of 25 hectares. This will be the main source of matting material for the rehab efforts.

Implication for Mine Closure (Situation at Closure)

Once the stockpiled topsoil material is exhausted, the area will be converted into final progressive rehab.

Final Land Use (Stakeholders aspiration / Option for Closure)

The stakeholders suggested that the area be converted into agroforestry area. Plant species include the bamboo, Ipil, and fruit trees, etc.

3.1.4 Mine Haul Road

Pre-mining Condition

The haul road was established with during exploration years, originally constructed by ACMDC. The road traverses a total of 6 kilometers from the main community road up into the mine site.

Current Situation

The road was improved with structure barriers along the side, the company had also planted different tree species to reinforce existing bund wall. Continuous haul road maintenance was undertaken to ensure a safe access to the site.

Implication for Mine Closure (Situation at Closure)

Since the main haul road is the only way access to the site, this will be maintained at the duration of the FMRDP, this might also serve as an access route to neighboring BNC claims.

Final Land Use (Stakeholders aspiration / Option for Closure)

The road shall be maintained throughout the duration of the project, in which perimeters will be improved through tree enhancement, and slope stabilization activities.

3.1.5 Port, Stock Yard, Camp, and Other Facilities

Facilities such as the Causeway Pier, Stockyards 4 & 7, Camp Admin, Mechanical Workshop, Assay Laboratory, Offices, Warehouse and Nursery will remain in-situ and will be utilized during implementation of the FMRDP or could be used/transfer to other BNC projects within Quezon. Some facilities will be use as training or learning centers for the community as part of the social plan.

3.2. Objective and how it relates to the mine and its environmental and social setting

The objective of this project is to formulate and prepare a comprehensive mine rehabilitation and area transition plan pursuant to the law. This is also to enable the people to be affected, such as the employees and the residents of the surrounding communities, to prepare themselves for alternative options of livelihood and the like. BNC management, on the other hand, will have an idea on what resources will be needed.

The mine closure plan aims to look into the following:

a. Rehabilitation of the physical environment affected by the operation. Successful revegetation is defined as having a plant survival rate of 85% and

self-sustaining. Reduce the risk of pollution, restore the area and landscape, improve aesthetics of the area and prevent further degradation so that resulting condition pose minimal risk to people and environment.

b. Socio-economic aspect of the host and neighbouring communities.
c. Preparation for residual care. During the periodic audit/ review of the FMRDP and at the end of the FMRDP implementation. BNC commits to implement residual care that may be required to ensure the success of rehabilitation. Residual care is defined as any minor activities/adjustments that have to be undertaken or implemented after the successful implementation of the FMRDP.

3.3. Lessons learnt from progressive rehabilitation already completed

Progressive mine rehabilitation is religiously being undertaken by BNC since 2008 prior to the implementation its decommissioning plan. In a span of twelve (12) years BNC was able to completely rehabilitate an estimated area of fifty (50) hectares covering Areas 1, 2, 3, 4, 5, 11, 12,13 and 14. See Figure 9.

Because BNCs mining operations are within sloping areas, biological/vegetative and structural/engineered erosion control and slope stabilization were undertaken.

The vegetative measures involve the use of proven technologies such as installation cococoir mesh nets & cococoir logs, vegetative (grass) matting and planting of indigenous and endemic tree species along the slopes. These measures were mostly implemented in the eroding areas within the mined-out area subject for rehabilitation.

The structural measures involve the construction / installation of structures to immediately check the deterioration of active gullies, landslide, road banks and benches. The installation of such structure checks the volume of sediments that may be carried by the water runoff into the river system. Examples are the settling ponds, construction of drainage system and bund walls on rehabilitation areas and mine haul road among others.

The combination of structural and biological measures is usually concentrated in areas susceptible to erosion and along the creeks to trap sediments. Example are the settling ponds and bund walls were planted with trees and grasses. Bench correction and slope stabilization was undertaken in the mined-out areas. Typically for mined-out areas subject for rehabilitation, bench height is about 5 meters, berm width of 5 meters and bench slope of about 45°. These benches will then be subject for top-soil application or re-soiling of about 2-3ft. depending on the slope. Installation of cococoir nets will follow to minimize the rate of soil erosion.

Cococoir nets and logs has also the capacity to store/hold water or moisture which then can be beneficial to planted trees in the rehabilitation areas. BNC prepare a progressive rehabilitation program specifically on mine revegetation of Berong Nickel Project. The proposed plan consists of the following essential steps:

- Substrate amendments and species selection
- Substrate amendments and species trials
- Pilot planting
- Mine-wide revegetation

A. Substrate amendments and species selection

Species selection for mine rehabilitation is a major issue that requires critical evaluation. Factors that were considered during the implementation of this step are the following:

- Environmental conditions such as soil conditions and soil seed bank, residual trees and type of species, distance of the site to intact forest and climate.
- Biophysical limits of the species that will indicate the potential performance of the species in the particular site.
- Expected product or service of the proposed species.

- Monoculture or complementary mixtures of types of species that form complementary mixtures and their management
- Other factors such as community involvement, availability of planting materials and resources for the rehabilitation.

The list of trees suitable for planting in mined-out areas is limited because not many trees can tolerate extreme soil conditions. The initial list of species tried by BNC consists of one bio-fuel source, four high-end fruit crops and 10 forest tree species.

Substrate in mined-out areas are compacted hence there is a problem in aeration; the parent material is exposed, low moisture retention capacity, low fertility and low organic matter content. The substrate amendments tried including addition of topsoil, mulch and inorganic fertilizer in different combinations.

B. Substrate amendments and species trials

BNC established its two-year species and substrate amendments selection trials in small plots at Area 4 from October 2007 to December 2009, which measured the performance of 15 selected species in eight particular substrate amendments. Mass screening of species was done for two years to determine survival and growth since climatic and ecological matching of a new site and the original habitat of a species is rarely enough. It cannot reveal the adaptability of the species to new conditions or its ability to grow satisfactorily in an area. Based on research results, the long list of species was narrowed down to five.

Based on the results sustained productivity and stability of the ecosystem could be achieved through intelligent manipulation of successional and functional diversity, by techniques such as use of legumes (narra) and Casuarinas, the groups of species that can rapidly add humus, nitrogen and other nutrients to the soil.

Emphasis is directed towards use of trees indigenous to the site and/or pioneer forest tree species in combination with economically important species that are adaptable and can survive harsh environmental conditions. In this case, the establishment of grass and legume covers protect the soil from further erosion. These are also expected to produce organic matter and build up soil nitrogen through the leguminous trees such as narra as well as other indigenous species like Palawan agoho, agoho del monte, agoho, saket, tanabag, salamaguen and tikog.

Bamboo will be included as one potential saleable commodity, which was proven to tolerate the exposed and harsh conditions in the project site through the recently concluded species trials research. The species is also suspected to be endomycorrhizal. Bamboo has been tagged as the "green gold". Bamboo products such as handicrafts and furniture are known not only in the Philippines but in other countries as well. Major commercial bamboo species, namely, kawayan-tinik, kawayan-kiling, bayog, and bolo can be propagated by culm cuttings. These may be planted directly in the plantation site or raised in the nursery for mass propagation. See Figure 8.

C. Pilot Planting

Pilot planting using the shortlisted species is an essential intermediate step from a species trial to large scale revegetation. With this, the optimum cultural and managerial techniques can be determined and the vital decision on whether or not to proceed with the complete rehabilitation program using these chosen species can then be made.

BNC established its pilot rehabilitation trial based on the results of species and substrate amendments selection trials undertaken. The pilot plantation was established in the first mined-out area (Area 4) from February to November 2010. The selected species for pilot mine revegetation of Berong Nickel Corporation based on successional and functional biodiversity are as follows:

Indigenous species: narra (legumes); Agoho del monte/agoho/Palawan agoho (mycorrhizal), saket, salamaguen and tanabag

2011 Pilot Rehabilitation Trial Annual Monitoring

In 2011, BNC assess/evaluate the one-year old pilot rehabilitation trial that was planted using the selected species based on the results of the previous research trial. The monitoring activity aimed to assess and evaluate performance of planted seedlings to confirm or disprove the findings during the species and substrate amendments selection trials, as well as to observe the ecological status of the area. The results determine decisions on whether or not to proceed with the large-scale revegetation plan.

The results of monitoring are summarized below:

- Soil analysis revealed that pH is within favorable range for plant growth.
- Soil nutrient analysis revealed inherent low level of soil nitrogen, average level for potassium and phosphorus, which may be attributed to the type of soil added to the rehabilitation area. The added soils may have contained parent materials naturally low in soil nutrients. These results show that although pH level fell within the range favourable for plant growth, the area does not have enough available nutrients for plant utilization.
- The recorded percent soil organic matter (SOM) of the old topsoil/substrate was higher at 2.20 percent compared to the plot with the newly-added topsoil, which was 2.10 percent. This was possibly due to the decayed woodchips used in the previous research trial, and the parent material in the newly-added soil.
- Low organic matter content of the soil (with <2 %) can lead to unfavorable plant growth.
- Growth measurement and evaluation results indicated good growth such that 90% of the agoho seedlings showed positive height growth increments while narra and saket had 100%.
- Considering the impoverished site condition in the mined-out area, narra, and saket recorded 100% survival while agoho had 89.50%.

- Symptoms of nutrient deficiencies were observed such as yellowing of leaves, slow or no growth, leaf edges turned brown and curled with small necrotic spots and withered leaves of some seedlings during field inspection.
- Rill erosion may have affected the growth performance of some planted seedlings within the plots wherein exposed roots of plants were observed along its watercourse.

  The mined-out area will eventually recover. Based on the 2011 monitoring results, pioneer species and colonizers were already observed growing in the area such as grasses, shrubs and herbs.

2012 Pilot Rehabilitation Trial Annual Monitoring

The second monitoring of the pilot rehabilitation trial was undertaken in 2012 with the results summarized below:

- Soil analysis revealed that pH is within favourable range for plant growth.
- Soil nutrient analysis revealed still inherent low level of macronutrients (N, P, K), organic matter and cation exchange capacity (CEC).
- Positive growth and survival of all four planted species were observed despite the impoverished condition of the area.
- Presence of soil biota and other organisms suggests that the mined-out area is well on its way to recovery
- Pioneer species and colonizers were observed growing in the area such as grasses, shrubs and herbs.
- Symptoms of nutrient deficiencies (e.g. yellowing of the leaves, stunted growth) were still observed during the field inspection.
- Rill erosion was still observed that may have affected growth performance of some plants within the plots wherein exposed roots of plants were observed along its watercourse.

D. Mine-wide Revegetation

Results of pilot planting determined whether or not the identified species, together with the early successional colonizers will eventually be planted on a large scale. By this time, the optimum cultural and managerial techniques have been determined and the vital decision to proceed with the complete rehabilitation program using these chosen species is made. Assessment of the pilot plantings served as the pivot point for the species and soil amendment combinations used in intermediate plantings. See Table 4. Seedling inventory.

4. Stakeholder Involvement

Summary of stakeholder involvement activities and other community interaction conducted including stakeholder expectation in relation to mine closure objectives and strategies as well as agreement /s reached.

There are two major components of Mine Transition Plan (MTP). Part I is the Social Auditing and Part II is the Technical / Environmental Audit Planning.

In the social audit component, the residents of the host and neighboring communities including the Indigenous Cultural Communities (ICC) as well as the employees and their dependents and the local government units are consulted on what are their perceptions and future plans when the inevitable time comes. Special attention focuses on:

- Alternative livelihood for the miners/workers and their dependents who opt to stay in the community after cessation of operation
- Impacts on the residents of surrounding communities; how to sustain the maintenance of the existing facilities like the farm to market roads and other socio-economic project that the Company has been extending.

Residents from the host and neighboring communities, the workers and their dependents, and the representative from the local Government Units actively participated in the series of consultation for the purpose of obtaining their aspirations, expectations, and suggestions relative to Mine Closure / Transition Plan. A total of 30 attended said consultation conducted last November 26, 2020.

Based on the consultation, all stakeholders organize BNC as the main provider for employment, business opportunities and community development in the area. Further, they are aware of the effect of decommissioning on the economic and social status of all stakeholders as well as on the effect on the environment. To lessen this effect and considering the existing facilities such as roads and other infrastructures and utilities and necessary for community life, the stakeholder envision the company to be

converted into a tourism and educational center to provide alternative livelihood or employment opportunities.

The Stakeholders expects the Company to maintain and rehabilitate its major facilities to be environmentally sound such as mine area, silt control, mine site stockpile or topsoil and mine haul road. Further they expect BNC to maintain the roads and utilities such as water refilling station and clinical service to sustain the community.

To realize this, the LGUs and the communities including the Indigenous Cultural Community (ICC) of the Tagbanua Tribe are supportive to convert the area to an alternative use as well as to the environmental rehabilitation. On the part of the LGUs, they shall issue legislative measure as well as coordinate with other government line agencies after determining the critical needs in maintaining and developing the area. The community on the other hand is willing to organize and cooperate with the authorities and the ICC Tribal Leaders on how to develop and sustain the area.

5. Risk Assessment

To identify environmental hazards in BNC's business, a process has been developed to provide a means to assess the risk level and periodically review the risk rating allocated to ensure that it is still appropriate and to ensure a formal review of the Risk Registers is conducted to ensure consistency and adequate coverage of ESH risks. Currently, all risks have been identified, risk rated, prioritized and registered on the BNC risk register. Environmental and safety controls are then applied to reduce the risk to an acceptable level. The level of control is commensurate to the level of risk. Residual risk is then registered. The following sections detail the process used by BNC to identify and manage risks associated with the various aspects of its activities.

5.1. Risk Assessment Procedure

5.1.1. Objective:

This is to ensure that all workplace hazards are recognized, evaluated and controlled. This document procedure shall be followed when performing risk assessment in identifying, evaluating and controlling the workplace hazards.

Three (3) types of risk assessment:

1. Baseline risk assessments – is to establish a risk profile or a set of risk profiles. It is an initial risk assessment that focuses on a broad overview in order to determine the risk profile to be used in subsequent risk assessments.

   Examples are Hygiene and Health Surveys (Noise, Lighting, Ventilation, Temperature Extremes), Environmental Impact and Aspect Registers and Fire Risk Assessments.

2. Issue based risk assessments – is to conduct a detailed assessment study that will result in the development of action plans for the treatment of significant risk. This type of assessment is normally focused on at operational activities, processes and systems-based business functions. It focuses the identification

of the risks within a certain task, process or activity and is usually associated with the management of change.

Examples are a new machine is introduced at the site, after an accident or a 'near-miss' has occurred and a system of work or an operation is changed.

3. Continues risk assessments - identify hazards with the purpose of immediately treating significant risk gather information to feed back to issue-based HIRA and gather information to feed back to baseline HIRA. It is performed at an operational level, where the system, process and activities are monitored on a continuous basis by the operational floor management and first line supervisors. It must not be sophisticated and should mainly be conducted by first line supervisors.

   Example are inspections, work permits, toolbox talks and Occupational hygiene measurements.

5.1.2. Procedure

The risk assessment shall be a joint activity of concerned supervisor, superintendent, affected worker and safety personnel. The Risk Assessment (RA) form shall be used.

1. Write down the necessary details in the specified risk assessment form such as risk assessment date, department, section, and activity.
2. Identify the hazard in the workplace. The Hazard Identification Tool should be used to assist in the hazard identification process.
3. Decide who might be harmed and how
4. Assess the risk by looking at the likelihood of the hazard giving rise to problems and the consequent severity of that hazard, should it occur. Please do consider the existing controls in giving rate.
   The table 5-1 and table 5-2 shall be used in determining the level of likelihood and severity of the hazard.

Table 5-1. Likelihood

Level	Descriptor	Description	Frequency	Probability
5	Almost certain	The event is expected to occur in most circumstances.	Once per week	> 90%
4	Likely	The event would occur on recurrent intervals.	Once per month	51 - 90%
3	Occasional	The event occurs on an irregular basis.	Once per year	21 - 50%
2	Unlikely	The event would be an uncommon occurrence and would occur in remote circumstances.	Once per 5-10 years	10 - 20%
1	Rare	The event may occur only in exceptional circumstances. The event is not likely to occur in this location.	Once within 10 years	< 10%

Table 5-2 Severity

Level	Risk Consequence	People (Managers Workers, Visitors)	Community	Environment	Business effect
A	Insignificant	Minor (first aid treatment at most)	No public concern	Minor non-conformance – negligible impact. Minor breach in procedure. Coverage area of < 1 ha.	up to 10,000 PHP
B	Minor	Reversible health effects (may require medical treatment) / Outpatient	Minor reduction in amenity and/or concern by those directly affected	Minimal impact outside the project area. Coverage area of 1-10 ha.	10,000 to 50,000 PHP
C	Moderate	Disability / Lost time incident (1-2 days)	On-going social issues. Moderate reduction in	External to local area, generally contained on-	50,001 to 500,000 PHP

			community amenity and/or local interest/ local media event	site. Coverage area of 10-100 ha.	
D	Major	Permanent partial disability / Irreversible health effects or disabling illness. / LTI of up to 10 days / 3 to 10 affected people	On-going serious issues. Major reduction in community amenity and/or local and/or provincial-level interest/media event	Localized, irreversible harm. Discharge off-site. Breach of permit conditions or obligations. Coverage are of 100-1,000 ha.	500,001 to 1,000,000 PHP
E	Catastrophic	Permanent total disability / Fatality/ies / >10 days LTI / >10 people affected	Very serious widespread social impacts. Significant national media coverage	Long-term, significant legal implications and potential to affect community. Coverage area of > 1,000 ha.	>1,000,001 PHP

5. Determine the risk level using the table 5-3 Risk Matrix by looking at the agreed level of likelihood and severity of the hazard.

Table 5-3 Risk Matrix

Risk Assessment Matrix					
	A	B	C	D	E
5	High	High	Extreme	Extreme	Extreme
4	Moderate	High	High	Extreme	Extreme
3	Low	Moderate	High	Extreme	Extreme
2	Low	Low	Moderate	High	Extreme
1	Low	Low	Moderate	High	High

6. Determine the target action in each risk level using the Table 5-4 Target Action and Target Time.

Table 5-4 Target Action and Target Time

Priority	Risk Level	Target action	Target Time
1	Extreme	Risk is unacceptable. Immediate action is required, activity should not commence until further controls are identified to reduce the risk to an acceptable level.	Now
2	High	Risk is tolerable. Action is required. Identify and implement controls to reduce risk in accordance with the As Low As Reasonably Practicable (ALARP)	2 days
3	Moderate	Risk is tolerable. Action is desirable. Identify and implement controls to reduce risk in accordance with the principles of ALARP. These risks should be captured in the project's environmental management and monitoring plans.	1 week
4	Low	Risk is acceptable. Manage by routine / standard processes.	1 month

7. Then determine the most effective hazard control (using the Table 5-5 Hierarchy of Hazard Control) for each hazard by prioritizing the extreme and high-risk level, then the moderate and low risk level.

   The hazard control measures should state its adequacy on how to control the particular hazards or risk; also, should consider the arrangements to ensure that these control measures are implemented and kept in place. The three (3) main category of hazard control are Technical, Procedural and Behavioral. The hazard control should reduce the risk to an acceptable or tolerable level.

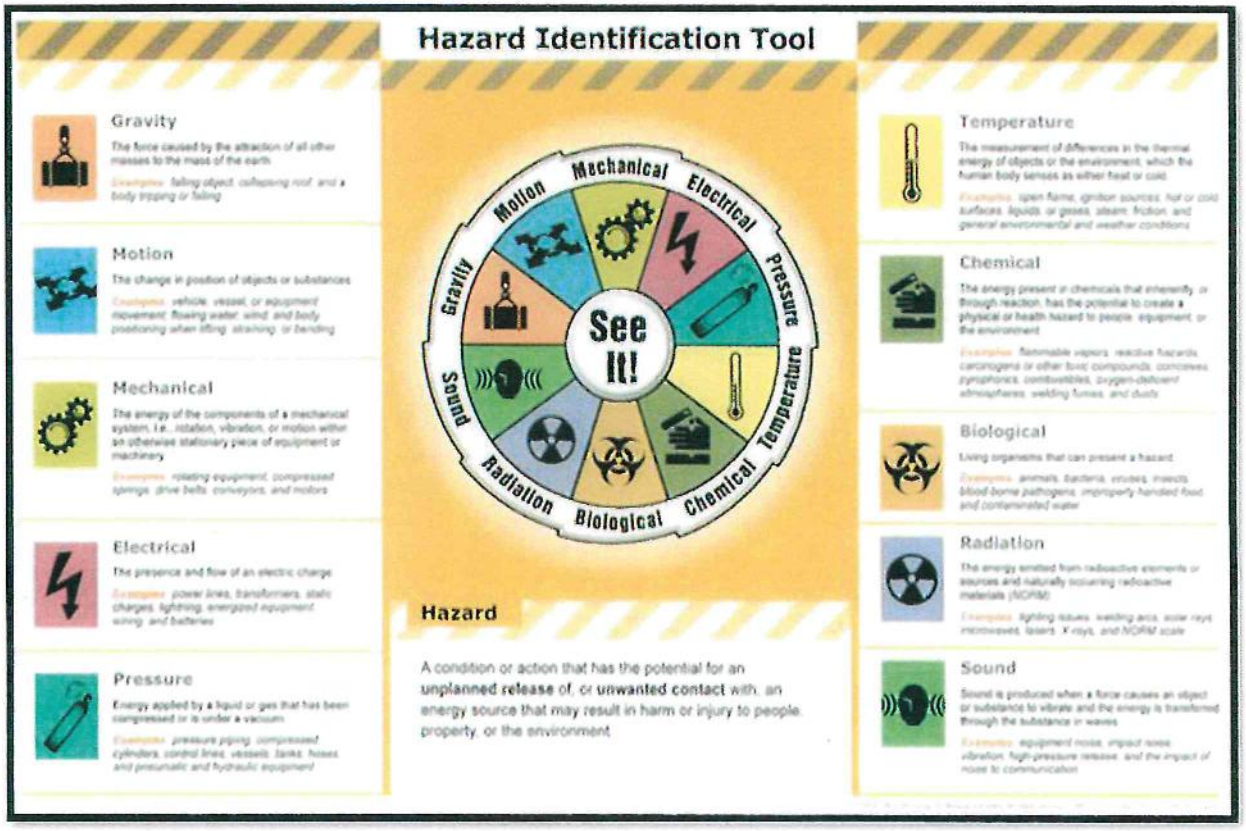
Table 5-5 Hierarchy of Hazard Control

Effectiveness of Controls

	No.	Control	Description / Remarks
Technical	1	Avoidance	- avoiding the activity or process giving rise to the risk
	2	Elimination / Substitution	- eliminating the source of hazard e.g. Hazardous materials to non-hazardous materials e.g. Lifting equipment were used to eliminate the risk of manual handling
			- substituting the hazardous with less hazardous e.g. toxic substance substituted by irritant substance e.g. noisy machine substituted by less noisy machine
	4	Reduction of exposure	- reduction of time exposure to health hazard * the concentration, intensity or magnitude of the hazard present * the (length of) time of exposure
	5	Isolation / Segregation	- Isolate the hazard physically so nobody is exposed to it. e.g. enclosure of noisy machine e.g. isolation of electrical wirings, out of reach, installation of precaution/warning signs - segregation e.g. hazardous area such as radiation room is separated from other working area, only the authorized personnel is allowed.
	6	Engineering	- involve the use of an engineering solution to prevent exposure to the hazard e.g. partial or total enclosure of the hazard
Procedural	7	Safe System of Work (SSW)	- is a formal procedure which defines method of working which eliminates or minimizes the risk associated with them; Result of risk assessment; define safe methods. * Whenever hazards cannot be physically eliminated and some element of risk remains.
		Emergency Preparedness	- If thing goes out of control, incident/accident do happen. A company should establish emergency procedure to minimize the impact.
	8	Training and information	- enabling employee to become competent. A competent employee is equipped with all relevant information and is fully aware of the hazards and the use of appropriate preventive measures.
			- Safety Signs - provide basic health and safety information. 1. Prohibition - directed stopping dangerous behavior e.g. "no smoking" 2. Warning Sign - tell people to be careful of a particular hazard 3. Mandatory Action - instruct people to take a specific action e.g. "PPE must be worn" 4. Safe Condition - identify safe behavior or places of safety e.g. "First Aid Station" 5. Fire-fighting equipment - identify particular items of equipment
Behaviora_	9	PPE	- If the above control measures can be used and there are times when some of them can, but residual risk still remains.
	10	5S Housekeeping	- sort, systematize, sweep, sustain and standardize
	11	Welfare	- Provision of facilities (comfort room, dressing room, dining etc.)
	12	Monitoring and Supervision	-routine inspection and surveillance of workers.

8. The Risk Assessment Committee shall ensure the controls measures meet the standards set by a legal requirement, represent best practice and reduce risks as far as reasonably practicable.
9. List the people designated with responsibility for the implementation of the control measures and target dates for implementation.
10. Hazard control shall be implemented by the responsible person(s) within the specified target date.
11. The RA committee shall determine and implement the date of information and awareness of the affected workers.
12. Risk assessment record shall be kept by the concerned supervisor and shall be monitored by the safety personnel.
13. Review the risk assessment if found necessary.

Reference



5.2. Summary of closure and rehabilitation scenarios, assumptions and uncertainties

5.2.1 Environmental Risk

Structure	Potential Risks	Mitigation Management Measure
Mining Area	Potential scouring and erosion of benches	Control measure is to install / construct structural and vegetative measures such as proper bench correction and slope gradient; construction of drainage system; installation cocoir nets; and tree planting.
	Potential air pollution due operation of heavy equipment during land preparation phase	Control measure is to continue the conduct of air sampling under self-monitoring and quarterly MMT validation.
	Potential contamination of adjacent water bodies	Control measure is to continue the conduct of water sampling under self-monitoring and quarterly MMT validation.
	Potential entry of unauthorized personnel resulting to bodily injury and or death.	Control measure is to retain post guards at the mining area to prevent intruders from entering and get rid of company liability.
Silt Control	Potential overtopping and collapse of decommissioned pond due to floodwater	Construction of spillway and or drainage system to minimize scouring. Planting of grass and trees to hold and stabilize the soil.
	Potential sedimentation	Control measure is to retain settling ponds in strategic locations and properly dredged and maintained as needed arises.
	Public safety resulting to injury or death.	Control measure is to install warning signages and retain post guards at the mining area to prevent intruders from entering and get rid of company liability.
Minesite Stockpile	Potential soil erosion	Control measure is to remove or transfer all remaining ore stockpile from the mining area down to the stockyard area.
	Dust emission during transfer/removal of the stockpile	Control measure is the provision of water truck during the removal operation.
Mine Haul Road	Potential scouring and collapse of road networks	Control measure is to construct retaining walls/bund walls and proper drainage system.
	Potential dust emission	Control measure is to plant the retaining walls / bund walls with trees to minimize further dispersion of dust.

5.2.2 Safety Associated Risk

a. Platforming of Topsoil

No.	Work Area	Hazard (Major)	Hazard (Specific)	Risk	Potential Loss or Damage	Risk Rating			Controls
1.	Plat forming of top soil	Motion Mechanical	Moving trucks/heavy equipment (dozer/excavator)	Struck against other equipment, materials and/or personnel	Property Damage	4	C	High	Only the designated or authorized operator is allowed to use the unit.
									Application and implementation of heavy equipment operation and maintenance procedure.
									(Re-) orientation on heavy equipment operation and maintenance procedure must be conducted at least annually.
									Provision and orientation of safety spotter in all loading and dumping area. Application of safety spotter procedure.
									Provision and implementation of periodic road repair and maintenance.
									Provision and implementation of emergency rescue and response program
					Personal injury, death	4	E	High	Provision and orientation of safety spotter in all loading and dumping area. The spotter must keep a safe distance of at least four (4) meters away from the equipment and stand wherein an operator or driver can see him/her.
									Wearing of PPE (hard hat, reflectorized vest, safety shoes/boots)
									Implementation of Medical Emergency Preparedness and Response Program.
2.	Plat forming of top soil	Gravity	Excavation/ precipice/ravine/cliff or	Fall to lower level	Property Damage	5	C	Extreme	SSW: Only the designated (authorized) operator is allowed to use the equipment.

			height of the bench						Equipment must have at least three (3) meters away from the edge of excavation/precipice/ravine/cliff when working. The track pad of the crawler type equipment must be perpendicular with the cut of excavation. The operator must ensure stable foundation of the ground prior to working.
									Provision of safety signs such as "Danger: Deep Excavation" and "Danger: Steep slope"
									Provision and implementation of emergency rescue and response program
					Personal Injury, Death	5	C	Extreme	Wearing of reflectorized vest, hard hat, safety shoes/ boots.
									Implementation of Medical Emergency Preparedness and Response Program.
			Soil collapse	Struck by falling materials, landslide or collapse	Personal Injury, Death	2	E	Extreme	SSW: Planning and implementation of Mine Plan. The safety engineer and geologist shall conduct assessment and inspection to the waste dumping area. Continuous daily inspection and monitoring shall be conducted by the concerned supervisor, safety inspector, operator, driver and spotter every shift of the day to detect possible soil collapse in the stockpile being work.
									PPE: Wearing of reflectorized vest, hard hat, safety shoes/ boots.
									Implementation of Medical Emergency Preparedness and Response Program.
					Property Damage	2	E	Extreme	SSW: Planning and implementation of Mine Plan. The safety engineer and geologist shall conduct assessment and inspection to every newly opened mine area. Continuous daily inspection and monitoring shall be conducted by the

									concerned supervisor, safety inspector, operator, driver and spotter every shift of the day to detect possible soil collapse. PPE: Wearing of reflectorized vest, hard hat, safety shoes/ boots. Implementation of Medical Emergency Preparedness and Response Program.
3.	Loading and dumping of top soil	Motion	Moving trucks and heavy equipment performing the loading and dumping activity	Struck against other equipment, materials or person	Property Damage and Personal Injury	5	C	Extreme	Only the authorized driver/operator is allowed to operate a unit. Interval defensive driving skills seminar. Provision of spotter at loading and dumping area.
		Mechanical	Running dump trucks on deteriorated road, protruding boulder	Running dump trucks might struck against the deteriorated road with a protruding boulder	Property damage	4	A	Moderate	Provision and implementation of periodic road repair and maintenance. Only the authorized driver/operator is allowed to operate a unit. Interval defensive driving skills seminar.
4.	Benching and re-contouring/ re-sloping	Gravity	Height of the bench due to bench forming	Fall from different level	Property damage	5	C	Extreme	Equipment must have at least two (2) meters away from the excavation, the track pad of the crawler type equipment must be perpendicular with the cut of excavation.
		Gravity	Lifting of top	Personnel might strike	Personal Injury	5	D	Extreme	Personnel in the area must wear reflectorized vest, hard hat, safety shoes/ boots.

			soil/subsoil material using bucket of the excavator, during re-sloping activity	by falling materials from the bucket of the excavator					No ground personnel allowed to enter within the perimeter of working excavator without permission from the operator or without communicating with the operator. Only the authorized driver/operator is allowed to operate a unit. Emergency preparedness – provision of competent medical practitioner (first aider, doctor and nurses) and also medical equipment ambulance
5.	Installation of coco coir, geotextile fabric, laminated sack or coco logs	Gravity	Tripping hazard due to the presence of the materials such as coco coir, geotextile fabric and coco logs that might obstruct the pathway	Fall to different levels	Personal Injury	4	C	High	Personnel must watch their steps while performing activity to avoid tripping. Complacency towards work must be discussed during toolbox meeting
		Motion	Moving of coco coir, geotextile fabric, laminated sack or coco logs, these might hit with	Personnel in the area might struck by coco coir, geotextile fabric, laminated	Personal Injury	4	C	High	Wearing of reflectorized vest, hard hat, safety shoes/ boots. Personnel must be vigilant in their surrounding while performing activity to avoid being hit by the materials used for installation.

			other materials or workers present in the area	sack or coco logs					
		Motion	Prolonged bending due to installation of materials	Back Injury, Muscle strain	Personal Injury	4	C	High	Personnel must have intervals of rest.

B. **Tree Planting**

No.	Work Area/Flow	Hazard (Major)	Hazard (Specific)	Risk	Potential Loss or Damage	Risk Rating			Controls
1.	Hauling of seedlings from nursery to rehab site - manual handling (lifting and carrying)	Motion - Ergonomics	Improper body positioning upon lifting and carrying of seedlings	Back injury, Sprain, Strain due to improper positioning	Personal Injury/ Illness	5	A	High	Practice proper manual lifting and carrying techniques. Train and educate workers regarding Proper Manual Handling Techniques during toolbox meeting.
	Transportation of seedlings from nursery to rehab	Motion	Running vehicle, no pathway for pedestrian, driver is lack of knowledge &	Vehicular accident	Personal Injury, death	5	C	Extreme	Provision of pathway for the employee. Pedestrian must use the provided pathway. Identify & provide pathway for the employee. Conduct defensive driving seminar for all drivers. Do not enter in the equipment perimeter without the knowledge of the driver. Establish eye to eye contact.

			awareness, entering the blind spot of the equipment or mechanical failure.						PPE: wearing of reflectorized vest, hard hat, safety shoes/boots Emergency preparedness – provision of competent medical practitioner (first aider, doctor and nurses) and also medical equipment ambulance.
2.	Hole Digging	Chemical	Presence of dust in the area	Eye Injury and Respiratory Illness	Personal Injury and Illness	3	A	Low	Personnel must wear PPE such as goggles & dust mask.
		Mechanical	Sharp edges of hole digger used for digging	Personnel might get cuts and other wounds while working	Personal Injury	3	A	Low	Personnel must wear PPE such as rubber coated gloves. Personnel must be careful when using hole digger to avoid getting wounded.
		Biological	Presence of venomous/ poisonous snakes, centipedes, scorpion or other insects	snake bites and other insect bites	Personal Injury	4	C	High	Survey the project area for the possible habitat of snakes & other harmful insects before commencing with the activity, avoid if seen. Do not kill nor interfere with the fauna. Wearing of long sleeves, bonnet, hard hat, safety shoes/boots, gloves Emergency preparedness – provision of competent medical practitioner (first aider, doctor and nurses) and also medical equipment ambulance
3.	Planting	Chemical,	Presence of dust in the area	Eye Injury and Respiratory Illness	Personal Injury and Illness	3	A	Low	Personnel must wear PPE such as goggles & dust mask

		Biological	Presence of snakes, centipedes, scorpion or other insects	snake bites and other insect bites	Personal Injury	4	C	High	Survey the project area for the possible habitat of snakes & other harmful insects before commencing with the activity, avoid if seen. Do not kill nor interfere with the fauna. Wearing of long sleeves, bonnet, hard hat, safety shoes/boots, gloves Emergency preparedness – provision of competent medical practitioner (first aider, doctor and nurses) and also medical equipment ambulance.
4.	Planting	Gravity	Slope or slanting area	Fall to lower level	Personal injury	4	C	High	Using of lifeline when necessary. Installation of danger barricade in slope or slanting area.

C. Costal Facilities

No.	Work Area/Flow	Hazard (Major)	Hazard (Specific)	Risk	Potential Loss or Damage	Risk Rating			Controls
1.	Coastal Facilities	Chemical	Paint leaching	Water pollution	Damage or disturbance to marine life	1	B	Low	Compliance with the requirements of the government agencies such as Philippine Ports Authority (PPA) and Philippine Coast Guard (PCG). PPA and PCG Audit. Chemicals shall be handled according to the BNC Chemical Procedure. Only chemical handlers are allowed to work with chemicals. Provision and implementation of emergency preparedness and response for environmental emergency (chemical/oil spill).

									Organization of Emergency Response Team (ERT). Conduct of periodic drill. Provision of materials and equipment to be used for emergency. Spill boom, absorbent materials, etc. were provided. Further, MARPOL structure was established at the Pier to ensure all necessary materials and equipment for the response is readily available when emergency occurs. Coordination with concerned government agencies during emergency.
2.	Coastal Facilities	Motion and chemical	Vessel collision, heavy swell, bad weather condition, typhoon, chemical/oil /ore spill	Water pollution	Damage or disturbance to marine life, property damage, personal injury and/or death	1	B	Low	Ensure that all vessel for the operation is compliant with the requirements of government agencies. PPA and PCG Audit. Daily monitoring of weather through weather forecast. Stop the barge loading activity upon observing of bad weather or experiencing heavy sea swell. Secure the vessels in the designated shelter area (Catuayan). Provision and implementation of emergency preparedness and response for environmental emergency (chemical/oil spill). Organization of Emergency Response Team (ERT). Conduct of periodic drill. Provision of materials and equipment to be used for emergency. Spill boom, absorbent materials,

									etc. were provided. Further, MARPOL structure was established at the Pier to ensure all necessary materials and equipment for the response is readily available when emergency occurs. Coordination with concerned government agencies during emergency.
3.	Coastal Facilities	Chemical	Sabotage, explosion, and chemical/oil /ore spill	Water pollution	Damage or disturbance to marine life, property damage, personal injury and/or death	1	B	Low	Ensure that all vessel for the operation is compliant with the requirements of government agencies. PPA and PCG Audit. Provision of security guards in the area. Provision and implementation of emergency preparedness and response for environmental emergency (chemical/oil spill). Organization of Emergency Response Team (ERT). Conduct of periodic drill. Provision of materials and equipment to be used for emergency. Spill boom, absorbent materials, etc. were provided. Further, MARPOL structure was established at the Pier to ensure all necessary materials and equipment for the response is readily available when emergency occurs. Coordination with concerned government agencies during emergency.

4.	Pier/ Breakwater	Artificial structure	Pier /Breakwater	Disturbance to marine life	Damage or disturbance to marine life, property damage, personal injury and/or death	1	B	Low	The Pier and Breakwater were coordinated to the concerned government agencies before its construction. Installation of warning sign (markings) to serve as guide of maneuvering vessels. Provision and implementation of emergency preparedness and response for environmental emergency (chemical/oil spill). Organization of Emergency Response Team (ERT). Conduct of periodic drill. Provision of materials and equipment to be used for emergency. Spill boom, absorbent materials, etc. were provided. Further, MARPOL structure was established at the Pier to ensure all necessary materials and equipment for the response is readily available when emergency occurs. Coordination with concerned government agencies during emergency.

6. Final Mine Rehabilitation and/or Decommissioning Plan or Mine Closure Plan

6.1. Final Land Use of the Site

Mine rehabilitation is a combination of structural measures and vegetation re-establishment. Embarking on rehabilitation schemes should have a carefully planned and executed experimental program to avoid costly failures. The target is to get the right activities in the right places in order to conserve biodiversity and enhance options for people's livelihoods at the landscape level. The BNC mining area is located within steep topography, soil erosion within the area is expected especially during heavy rainfall. The project is situated in the Ancestral Domain Claim of the Tagbanua Tribe located in Brgy. Berong, Quezon, Palawan with an area of 288 hectares it is covered by a Mineral Production Sharing Agreement (MPSA) No. 235-2007-IVB entered on June 08, 2007 by and between the Government represented by the DENR Secretary and Berong Nickel Corporation. It is within the Timberland/Forestland classification as per Project No.13-A, Block A of Land Classification Map No. 2141 certified on November 15, 1960. Refer to annex 16. There will be disturbances in the landform and instability of the slopes but this is only temporary. Out of the total claimed area for mining and exploration of 288 hectares, the areas developed or active areas which include mined-out areas, ancillary areas (settling ponds, parking areas and road networks) and progressive rehabilitation areas of about 119 hectares.

Once the operation will cease, the FMRDP will immediately commence. The areas subject for decommissioning were the previously mined area, settling ponds and mine haul roads. As proposed by the LGU-Berong during the public consolation these areas can be used for eco-tourism and agro-forestry purposes. Infrastructures such as the Port facilities, Forest Nursery, Warehouse, Mechanical workshop, heavy equipment, Clinic and offices among others will not be subjected for decommissioning but will be utilized during the implementation of the FMRDP. As suggested by LGU-Quezon, BNC technical personnel with accreditation to TESDA and DOLE and

existing equipment and facilities can be used as skill training facility to train and re-train personnel on a certain skill such as Hydraulic Excavator Operators, Wielders and Mechanic among others.

6.2. Mine closure criteria and performance standards for all identified mine components

The completion criteria are set of indicators which, upon being met, will demonstrate the success of rehabilitation. The criteria presented are specific to the project component being rehabilitated or closed.

The Company is aiming for a post-land use similar or closed to the pre-mining state. Hence, revegetation through progressive rehabilitation of the affected areas is proposed and the focus of this FMRDP. Minimum Standard includes a stable and revegetated mine area. The provisions by law for the periodic review of the FMRDP every two (2) years will provide the necessary tool to ensure the success of progressive rehabilitation. See figure 9.

Table 6-1. Closure criteria and performance standards

Criteria	Performance Standards
Tree health	More than 75% of trees are healthy and growing
Leaf nutrient analysis	Nutrient analysis conducted on representative trees indicate minimal deficiencies
Presence of treeless areas	No treeless areas greater than 1 ha are present
Absence of significant erosion gullies	No erosion gullies >2m deep and/or 2m wide are present on the outer slopes
Soil fertility	Levels of soil macro- and micro-nutrients are likely to be sufficient to ensure that trees do not experience nutrient deficiencies

6.3. Details of Decommissioning Plan

Decommissioning is the transitional stage period between cessation of operations and actual closure that begins near or at the cessation of production and ends with the removal of all unwanted infrastructures.

Listed below are the following Areas that require decommissioning with the corresponding rehabilitation strategy, timing and the technique chosen to meet the rehabilitation success and the closure criteria.

6.3.1 Areas for Decommissioning / Final Land use per area

Areas for Decommissioning	Decommissioning Strategy, Timing, and Technique Including Mitigating Measures	Final Land Use	Area Covered (has)
Mining Area	After the mine production cease its operations, FMRDP shall immediately be implemented. Slope stabilization through benching and construction of proper drainage during the dry season will be undertaken to minimize scouring and erosion of stabilized bench. Planting of endemic and indigenous tree species such as Agoho, Palian, Almaciga and Bamboo including rattan will be timed during rainy season.	As proposed by the LGU-Berong during the public consolation these areas can be used for eco-tourism and agro-forestry purposes and may be place under DENR-CENRO's Community Based Forest Management (CBFM) program or National Greening Program.	109
Silt Control Structures	After the mine production, some silt control structures will be maintained until full rehabilitation of the mined-out parcels. As rehabilitation is progressive. Maintenance through dredging and construction of proper drainage to eliminate if not lessen potential siltation and contamination of adjacent river	Decommissioned and rehabilitated with marketable timbers such as Gmelina, Mahogany and Bamboo and may be place under DENR-CENRO's Community Based Forest Management (CBFM) program or National Greening Program.	20.9

	system will timed during dry season. Settling pond bundwalls and slopes will be planted with Bamboo and Tikog-tikog grass for added stabilization of the pond. Settling ponds rented and constructed on private property shall be retained for two more years and may be converted to Tilapia fishpond. Settling ponds that are no longer required will be decommissioned and rehabilitated.	May be converted as inland fish pond for Tilapia and Catfish production.	
Mine Stockpile / Top soil	Top soil and subsoil were purposely set aside for rehabilitation purposes. All Stabilized benches are subject for re-soiling prior to tree planting works. Re-soiling work shall be done only during dry season.	Rehabilitated and may be place under DENR-CENRO's Community Based Forest Management (CBFM) program or National Greening Program.	25.0
Mine Access Road	Major access roads will remain in situ during the implementation of the FMRDP and for the use of the community as well.	Considered useful by the community during the public consultation and shall be maintained during FMRDP implementation. Mine haul road bundwalls will be planted with Agoho,	14.0

	Progressive rehabilitation will be implemented until the area is stabilized. Roads leading to the mine site will be maintained to allow access to areas until full recovery of the area is achieved. Mine haul road bundwalls will be planted with Agoho, Acacia Mangium and Batino for further stabilization and shall act as dust control measure. Signs and convex mirrors will be retained during the implementation of FMRDP. Minor access roads shall be decommissioned and rehabilitated.	Acacia Mangium and Batino for further stabilization and shall act as dust control measure. Signs and convex mirrors will be retained during the implementation of FMRDP	
Facilities such as the Causeway Pier, Stockyards 4&7, Camp Admin, Mechanical Workshop, Assay Laboratory, Offices, Warehouse and Nursery		Facilities will remain in-situ and will be utilized during implementation of the FMRDP or could be used/transfer to other BNC projects within Quezon. Some facilities may be use as training or learning centers for the community as part of the social plan.	58.2

6.3.2 Equipment/Facilities for Decommissioning

A. Heavy Equipment

Majority of the heavy equipment such as Hydraulic Excavators, Crawler Tractors and Dump Trucks will be utilized in the rehabilitation of the mined-out area. Some will be safekept for transfer to other prospective BNC projects or can be sold to prospective outside buyers. Subject to BNC safety rules and policies the decommissioning of those equipment owned by the Hauling Contractors will be under their responsibility. Provided in Table 9 the full list of equipment to be decommissioned.

B. Other Light Vehicles

Some of the light vehicles such as man-haulers and service vehicles will be utilized during FMRDP implementation to cater personnel and material necessary for the project. Some will be safekept for transfer to other prospective BNC projects or can be sold to prospective outside buyers. Provided in Table 9 the full list of equipment to be decommissioned.

C. Infrastructure facilities

Infrastructures such as forest nursery, warehouse, hazardous waste facility, mechanical workshop, port facilities, accommodation buildings and water re-filling station will remain in-situ and will be utilized during implementation of the FMRDP or could be used/transfer to other BNC projects within Berong.

D. Other Equipment & Instruments

Clinical equipment/instruments such as ambulance, dental chair and weighing scale among others, shall be safekept for possible use to other mining projects within Berong or could be donated to the Local Government Units depending upon the need and subject for approval of the management.

Table 6-2. List of Equipment for Decommissioning

Equipment Type	Machine Population	Operational	Down	Availability (%)	FMRDP Implementation
I. Construction					
Hydraulic Excavator	49	40	9	82%	10
Bulldozer	5	4	1	80%	2
Wheel Loader	2	2	0	100%	
Road Grader	4	2	2	50%	1
Vibratory Compactor	2	2	0	100%	1
Total					
II. Vehicular					
Boulders Truck	7	0	7	0%	
Dump Truck	37	28	9	76%	10
Water Truck	7	4	3	57%	1
Fuel Truck	2	2	0	100%	1
Lube Truck	2	2	0	100%	1
Welding Truck	1	1	0	100%	1
Fire Truck	1	1	0	100%	1
Utility Truck	2	2	0	100%	
Rescue Truck	1	1	0	100%	
Sample Truck	1	0	1	0%	
Hauling Truck	2	2	0	100%	
Man Hauler Truck	12	9	3	75%	3
Service Vehicle	15	13	2	87%	3
Total					
III. Support					
Hyd. Breaker (Attachment)	3	1	2	33%	2
Brush Chipper	1	1	0	100%	
Forklift Truck	1	1	0	100%	
Generator Set	8	5	3	63%	2
Welding Generator	1	1	0	100%	
Tower Light	13	11	2	85%	
Seacraft	2	2	0	100%	1
Total	187	137	44	75.7	40

6.4. Details of the Final Mine Rehabilitation Plan

6.4.1 Rehabilitation and Reforestation / Revegetation

a. Reforestation of Mine site and Vicinities

Aside from target areas, previous plantation areas with low survival will be replanted for enhancement. After the operation, the reforestation / rehabilitation of the mined-out areas and silt control structures will follow. The preparation of the area will be done by using heavy equipment such as hydraulic excavators, crawler tractors and dump trucks. As designed, the final configuration of the area will incorporate road network for accessibility and proper drainage system to minimize potential soil erosion. See table 6-3 for areas subject for rehabilitation per year. The parameters considered in the rehabilitation plan to control potential soil erosion and sedimentation prior to revegetation are the following:

1. Bench correction and stabilization of the mine slope areas.
2. Construction of proper drainage system
3. Spreading of top soil on the affected areas
4. Installation of cococoir mesh nets
5. Tree planting of endemic / indigenous tree species

Table 6-3. Rehabilitation Areas/year

Rehab per Year	Location	Area
2021	Areas 12 & 12a	11.94
2022	Areas 6,7,8,9,15,16,17 & 20	26.1
2023	Areas 18a,18b, 19 & 21	26.25
2024	Areas 23a & 23b	24.11
2025	Areas 24a, 24b & 25	20.6
Total		**109**

b. Settling Pond rehabilitation/Decommissioning Plan

When all mined-out and disturbed areas are completely rehabilitated, water run-offs will then be diverted away from the settling ponds to avoid collapsed when left. Settling ponds will be backfilled, stabilized and planted with Bamboo and others forest trees such as Agoho and Batino.

Those settling ponds located near the community area or being rented by the company will remain in-situ and will be continuously rented and utilized by the company for the period of three (3) years or until such time that the earthmoving works are completely done.

6.4.2 Materials, Operational and Financial Resources

The materials for backfilling or topsoiling will be sourced from the stockpiled topsoil set aside during operation stage. Seedlings will be sourced from the company nursery and wildling collection from the community. The financial requirement will be provided by the company thru the Final Mine Rehabilitation Fund (FMRDF). Withdrawal from the FMRDF shall be based on the Work and Financial Plan approved by the MRFC.

6.4.3 Monitoring Program

The Multi-partite Monitoring Team (MMT) deputized by the Mine Rehabilitation Committee (MRFC) shall conduct the monitoring and evaluation activities to ensure that the objectives are being achieved or attained. The frequency of monitoring shall be on a quarterly basis and/or as needed arises.

The implementation of the decommissioning / rehabilitation plan shall follow the community-based management approach. The company shall be the lead institution to coordinate all relevant activities with the participation from the community, the local government units concerned, the DENR and other

government entities. The MRFC shall be tapped to assist in the planning and management aspect of the project while the monitoring and evaluation shall be undertaken by the MMT. On the other hand, the community will also play the active role as beneficiaries to manage and benefit from the operations of the land use plan. The company through its Compliance Team and Tenements Team shall also play important roles in the achievement of the plan envisioned in the FMR/DP.

The Mine Rehabilitation Fund Committee (MRFC) through its Multi-partite Monitoring Team (MMT), the Contingent Liability Rehabilitation Fund – Steering Committee (CLRF-SC) and the Mines and Geo-sciences Bureau (MGB) shall monitor and/or audit the implementation of the FMR/DP.

6.5. Details of Social Plan

6.5.1 Stakeholders Involve:

The influence of Berong Nickel Corporation in socio-economic term can be divided into two groups of stakeholders: workers and their dependents; and host communities.

A. Employees.

For remaining life of BNCs operation, there will be no expected tapering of the production program. The work activities in the various department are expected to remain over the next year (2021) as the BNC end its operation. Thus, manpower staffing is not expected to decrease yet especially in the production division / department.

In preparation for mine closure, the following strategies will be adopted however to mitigate its impact:

1. **Normal Attrition**

   As a general rule, optional and mandatory retirees shall no longer be replaced. Instead, the vacated position shall be merged / distributed among the remaining employees, subject to job re-evaluation, if warranted.

2. **Conduct of Departmental Audit**

   A manpower audit shall be undertaken to determine necessary manpower staffing in the various departments. Affected employees may be either be transferred to other positions or offered an early retirement program. Also being considered are positions that can be outsourced.

3. **Retrenchment / Retirement Program**

   With the projected closure of the company by 2022, majority of the labor force will be retrenched / retired. A retirement package / severance package shall be prepared and based on employee's length of service with the company or Manpower Agencies mandated by the Philippine Labor Code.

   With the current manpower fleet of 574 personnel, an estimated 474 or 82% will be re-trench and the remaining 100 or 18% shall be retain to facilitate the rehabilitation and decommissioning plan. See Table 5 &5a.

B. Host Communities.

Relative to strengthening its commitments to its host communities, it has adopted the Social Development and Management Program as an instrument for the implementation of community development programs. From 2007 to 2021, Berong Nickel Corporation will be entering into its 4th 5-year SDMP

based on the minimum basic needs conducted by the government as well as the public consultation and the strategic planning with community leaders and residents, the identified needs, problems and concerns of the residents is the general poverty of the people due to lack of infrastructure supports and delivery of the basic services on health and education and lack of employment and livelihood opportunities. As part of social plan after the last year of SDMP, the company will continue to support the community by ensuring sustainability of the livelihood programs. In addition, the company shall continuously support the community in terms of health services and social services. Details of additional support to the community will be included on SDMP for 2022.

6.5.2 Labor Support Policies and Programs

In coordination with the Department of Labor and Employment and TESDA, the following plans will undertake:

A. Project Objectives

1. Identify the beneficiaries' training needs
2. Train / re-train target beneficiaries on skills and capability towards employability in areas of wage employment as well towards gainful self-employment
3. Set-up special employment facilitation assistance project/activity for the displaced workers and their dependents
4. Empower the displaced workers and their dependents to be more competitive to other wage employment through skill upgrading, as well as to be self-sufficient thru enterprise development and product development, designing and labelling
5. Enable the displaced workers with entrepreneurship potentials to establish a livelihood project / enterprise of their own.
6. Assist the beneficiaries land a job overseas and local through job fairs.

B. Expected Outputs

1. Skills and Capability trainings and re-trainings of displaced workers and their dependent towards possible wage employment
2. Skills enhancement/upgrading of displaced workers / dependents with existing knowledge and skills for more employment competency
3. Training for Production / livelihood for possible self-employment as an alternative
4. Training for IT enable home industries (Telemarketing, Medical Transcription) for mine's displaced/unemployed women and young workers.
5. Employment Facilitation with the following activities:
    - Skill registration and assessment
    - Job matching
    - Job counselling
    - Job referrals to wage employment, training or microfinance institutions
    - Job placements to wages, self-employment and overseas
    - Conduct of local jobs fair
    - Career guidance

The Community Relations Officer shall be responsible for the implementation of the Community Relations Plan (CRP) See Table 10-1 to 10-3. Organization of the CRP will be included in the Social Development Management Plan for 2022. See table 2-4. The main objective of the plan is to ensure that the identified projects and programs shall be implemented appropriately and strategically.

Multi-partite Monitoring Team consists of identified MMT members, municipal and barangays local government and stakeholders, will regularly monitoring the CRPs accomplishments during FMRDP implementation.

7. Closure Scenarios for Berong Nickel Operations

7.1. Planned Closure

7.1.1. Agreed Criteria on Closure

Closure is finally complete when all elements of the mine and its operations have reached a safe, stable, self-sustaining, rehabilitated state. This is defined to have been reached when:

- The mine area slopes are shown to be stable,
- Any water discharging from the site, and any groundwater under the site, will be of a quality that will not affect aquatic life, or other users of the water resource,
- The structures are shown to be stable,
- All re-vegetation is complete, and
- Monitoring demonstrates that the site is sustainable.

The closure period therefore is estimated to be four years in duration, In practice, however, much of the site will have been rehabilitated and will meet the closure objectives well within life of operation period. Once closure of the site is complete, the post closure period (2 years) commences. At this point in time, the Final Rehabilitation and Decommissioning Fund (PhP 110,664,970) will be used to manage final land use handovers, and monitoring of the success of the rehabilitation strategies.

BNC will remain responsible for monitoring and maintaining the facilities that are freehold until turnover to the community. Section 8 details each area and what is planned for its final closure or handover to landowners, the public or the Government.

7.2. Temporary Closure

BNC does not envisage any temporary closures; however, it is possible as a result of the following risks:

- Typhoon and associated damage;
- Legal dispute;
- Legislative direction;
- Threat from insurgents;
- Collapse of the market.

BNC will comply with the Guidelines for the Care and Maintenance Plan pursuant to MGB MC 2020-001 and shall initiate the following strategies until such time as the mine becomes operational:

7.2.1. Skeleton Staff

All full-time and selected rotational personnel (depending on skill sets) would be maintained during any temporary closure. However, only essential rotational personnel would be maintained. During this period environmental personnel would concentrate on the following:

- Nursery Management;
- Environmental maintenance;
- Equipment maintenance; and
- ESHMS development and training.

7.2.2. Equipment

All equipment during this time would be parked and stored in a safe manner. Only essential equipment would be operational such as for environmental or emergency response. During this time a planned maintenance of all equipment would be undertaken so to be in a state of readiness for a resumption of operations.

7.2.3. Environmental Control

All environmental controls that were pre-emptively placed prior to the commencement of mining activities would be maintained by the environmental team. Depending on the time of the year. the level of maintenance would be pre-requisite with the conditions of the weather, conditions of the controls and the existing environmental outcomes.

7.2.4. Security

Security forces at the site would be maintained at the same level as per operational.

7.2.5. Emergency Response

With the selection of a Skeleton team (all full-time personnel) to remain on site, and Emergency Response Team would be in place as all members of the ERT are full time personnel. The Emergency Response Plan would be maintained by the Safety Superintendent.

7.2.6. Financial Management

As the closure of the site is temporary, normal budgetary processes would be maintained until such time as an indication is given on the length of closure. However, all the activities above are included in the annual and life of mine budgets.

7.2.7. Community Communications

A Plan would be developed to inform the community on the existing status of the mining operations, employment and the likelihood of commencement of operations. The communications would be dependent on the rationale for temporary closure. All community relations personnel would be maintained to deal with community concerns and external affairs.

7.2.8. Government Communication

All communications with the National Government would be managed out of Makati Office. However, Provincial and Municipality issues may be dealt with by the Site Resident Manager, depending on the issue needed to be addressed.

7.3. Sudden Unplanned Closure (Permanent)

As the mine has progressively rehabilitated, the environmental aspect of closure would be the same as it would be for a planned closure. However, the main impact would be in the management of the community as a result of the loss of direct and indirect jobs

7.3.1. Community Communications

A Plan would be developed to inform the community on the sudden closure status of the mining operations, employment and the likelihood of commencement of operations. The communications would be dependent on the rationale for temporary closure. All community relations personnel would be maintained to deal with community concerns and external affairs.

7.3.2. Government Communications

All communications with the National Government 00 the closure would be managed out of Makati Office. However, Provincial and Municipality issues may be dealt with by the Site Resident Manager, depending on the issue needed to be addressed.

7.3.3. Financial Management

Even with the closure of the site being permanent, the life of mine progressive rehabilitation and community consultation processes would be activated. Budgetary processes would be maintained until such time as an indication is given on the length of closure. However, all the activities above are included in the annual and life of mine budgets. The budget for the sudden closure of the mine should not differ from the planned closure of the operation, which differs

from conventional mining operations such as pit or vertical mining operations where the access to the ore body is exposed as time passes. With horizontal mining, once an area is mined, it has been "sterilized" and ready for rehabilitation immediately, as all of the necessary equipment is located in the vicinity of the area, as it is the same equipment used in mining. There are no waste dumps, tailings or operational plant to contend with.

7.3.4. Risk Management

The risk management process would be undertaken on foreseeable risks associated with the operation. The risk register would be consulted and an assessment of existing controls undertaken. As progressive rehabilitation is part of the mining process, all necessary controls should be already in place. but where new or potential risks are identified. the necessary controls would be permanently positioned, and the next part of the process will be with maintenance of controls post closure. These issues are dealt with in Section 8.

7.3.5. Environmental Controls

As the majority of the controls are in place, little would be required to ensure the maintained environmental performance of the operation during closure as no mining would be undertaken, less exposed soils would be present. Previously rehabilitated areas would be protected by diversion drains to allow for these catchments to be protected against potential erosion during extreme rain events. All other downstream water management systems would be maintained until such time as a stable and covered land form is established.

7.3.6. Mine Site Rehabilitation: Cleared or mined land

As previously mentioned, and explained throughout this document, the final land form would be dependent on agreement with the community on what the land form should represent (i.e: farm land, Plantation, endemic species etc). This would also be dependent on the following:

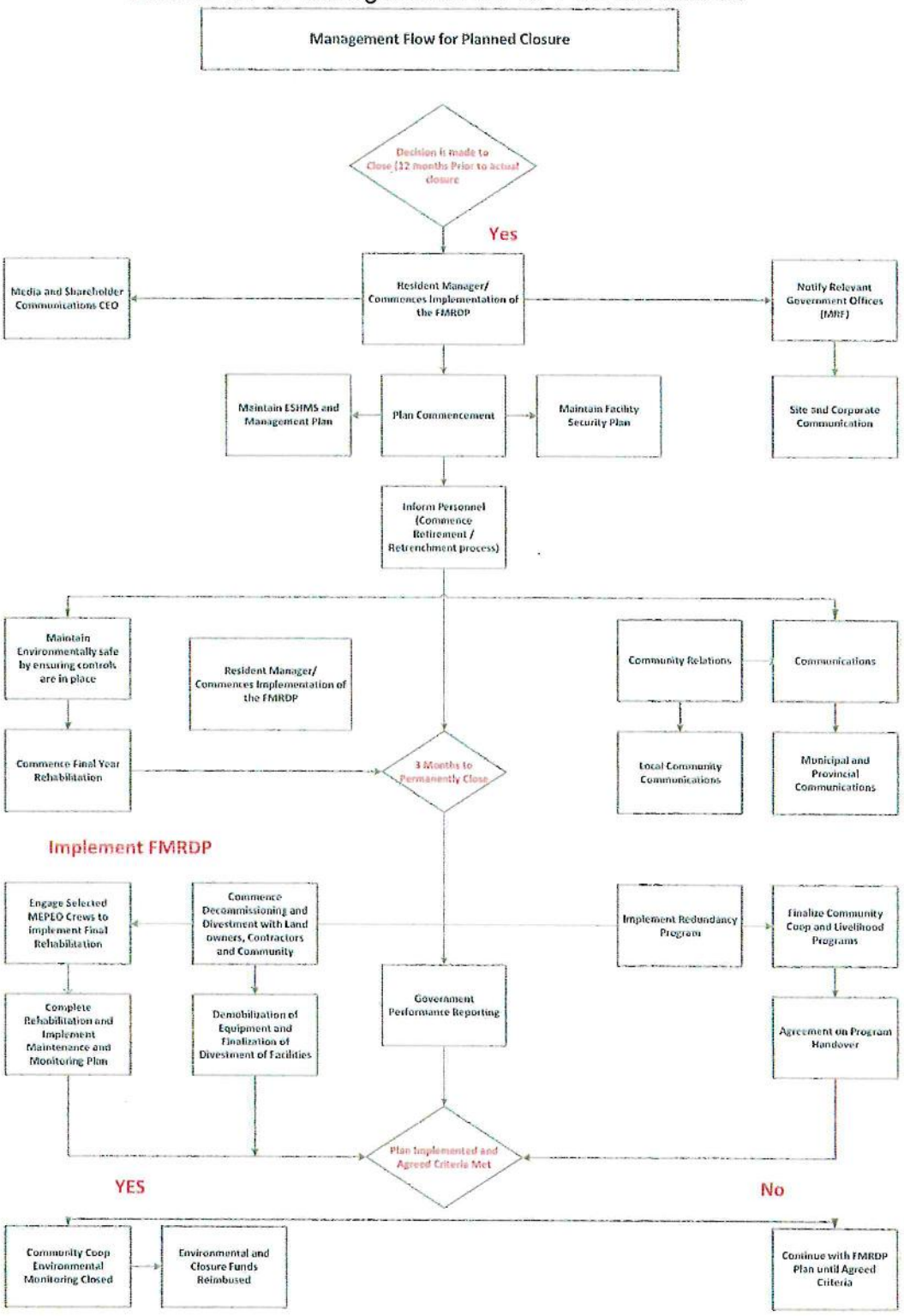
- Logistics;
- Is the land and soil type suitable for a selected purpose;
- Does the community consider th is a long term viable option.

The decision on final land form will be determined by the needs and desires of the community, as well as the scientific data provided by the Rehabilitation Research established in the 2007 I 2008. This consultation forms part of the BNC rehabilitation Strategy as outlined in the life of Mine EPEP.

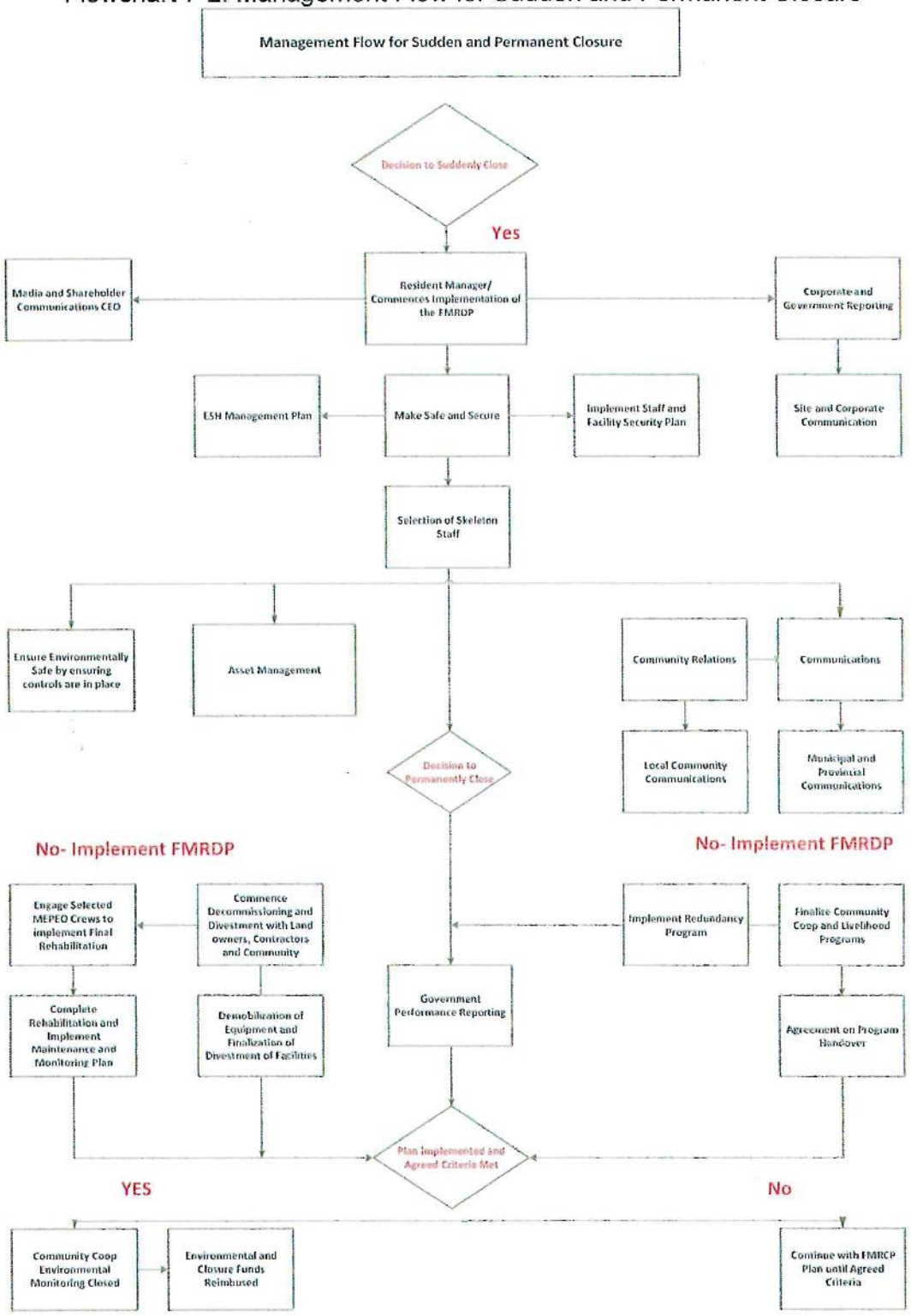
7.3.7. Fate of Infrastructure

Fate of infrastructure is discussed in detail in the following sections.

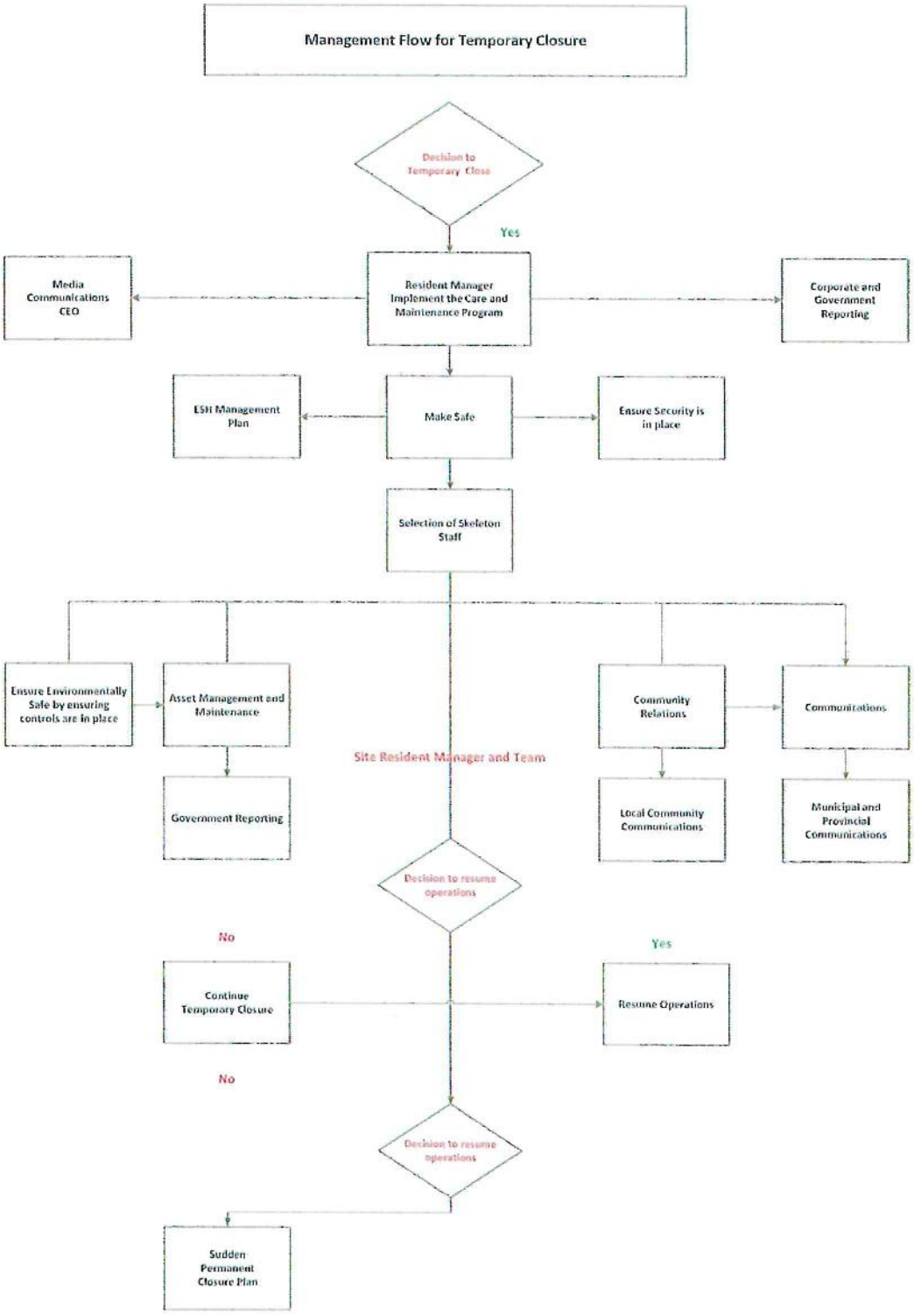
Flowchart 7-1. Management Flow for Planned Closure



Flowchart 7-2. Management Flow for Sudden and Permanent Closure



Flowchart 7-3. Management Flow for Temporary Closure



8. Project Facilities and Infrastructure

Table 8-1 provides the physical facilities that would be require decommissioning, or would be reverted to another community or land use. It is the intention of BNC to undertake a program of continuous community engagement to determine an agreed final land use, on determination of this, accurate costs for each of the facilities or services can be ownership transferred, donated, divested, decommissioned and removed. This process is to be progressively planned throughout the life of the operation. These assumptions have been made in the life of mine planning and budgets.

8.1. Asset / Facility Divestment Solutions and Costs

The table below summarizes each of the facilities, divestment strategies and cost of those strategies.

Table 8-1. Description of Facilities and Equipment and Cost of Divestment Strategies

Facility / Service / Activity	Divestment Solution	Cost
Mine Access Road Brgy & Sorex Roads	Remain in Situ Remain in Situ	0.0
Port Facilities	Will be turned over to the community as no port facilities exist in Berong or surrounding Barangays for assistance in the fishing and other growth industries embedded in the future.	0.0
Power Supply	Power supply will remain in situ for the support of the community. Negotiations on power supply such as generator will for part of SDMP Project in future years.	0.0
Mining Equipment	All mining equipment will be demobilized and taken to other BNC operations such as the proposed Longpoint Nickel Project in the municipality of Aborlan or sold to the community or at auction. Negotiation on the donation of some equipment to the local community to assist in	300,000

	livelihood projects will form part of future consultation with the community. As most of the equipment used on site is owned by Contractors. It is the responsibility of the contractor to demobilize their equipment. The fate of this equipment Is dependent on its age, state and suitability to other operations.	
Staff and Workforce Housing	Existing accommodations were made out of container vans and are demountable will either be moved to another BNC operation or donated or sold to the community.	100,000
Offices, Warehouse, and Other Facilities	Business equipment will either be moved to another BNC operation or donated or sold to the community.	0.0
Medical Facilities	Existing buildings are demountable and will be removed to another BNC Operation. Medical equipment and consumables win be used within other BNC operations in Palawan or donated to Charitable Originations on Palawan.	10,000
Motor pools and Workshops	Mechanical equipment will either be moved to another BNC operation or donated or sold to the community.	300,000
Potable Water Systems	The systems will be either used at another BNC managed operation or donated to the community as part of an SDMP project. Management of the system would then be the responsibility of the community.	10,000
BNC Nursery	Nursery facilities and equipment will either be moved to another BNC operation or donated or sold to the community.	0.0
Coastal Stockpile Area and Settling ponds	All ore from this stockpile shipped out. The area will be converted into	50,000

	a coconut plantation. The ponds will be retained to provide irrigation.	
Badlisan Stockpile and Drying Pads	All ore from this stockpile shipped out. The area will be converted into fruit tree or timber plantation as 18,000 Mahogany trees already exists. The ponds will be retained to provide irrigation.	30,000
Fuel Storage Facility	Fuel storage facilities and equipment will either be moved to another BNC projects or can be sold to prospective outside buyers.	300,000
Hazardous Waste Facility	All hazardous waste stored in this facility will be transported and treated by a DENR-Accredited transporter and treater. The structure will be dismantled and will be transferred to other BNC operations or projects.	100,000
Assay Laboratory Facility	Laboratory equipment and facilities will be transferred to another BNC operations or projects.	10,000
Mining Equipment	All Mining equipment will be decommissioned and demobilized from the site including those owned by contractors. Some will be safekept for transfer to other BNC projects or can be sold to prospective outside buyers.	300,000
Light Vehicles	All light vehicle will be decommissioned and demobilized from the site. Some will be safekept for transfer to other BNC projects or can be sold to prospective outside buyers or be donated to the community.	10,000

9. Maintenance and monitoring plans

9.1. Maintenance Details of Maintenance and Monitoring Plan

9.1.1. The Environmental Monitoring and Evaluation System (EMES):

1. Objective

Tap locally relevant processes for gathering, analyzing, and using information. To build on local community activity to increase their capacity to record and analyze local conditions.

2. Results / Output of EMES:

a. Analysis of performance for the period in review
b. Identified issues and concerns, recommendations and commitments
c. Identified strengths and weaknesses and solutions; and
d. Complied with the conditions in the AEPEP, EPEP and ECC

3. Uses of the EMES information:

EMES is used to assess the project implementation of its environmental programs.

4. Processes:

a. Compile basic information concerning the mining community
b. Identify priorities for EME
c. Training, Orientation Seminar and Workshops on how to undertake the EMES for members of the MMT
d. Establish the EMES where the MMT determines the most important activities, the source and impact area and the resources to be monitored and methods to be used.
e. Compile data using the field method
f. Analyze data and identify word

g. Validate and verify results
h. Present findings and recommendations to the MRFC
i. Make decisions to improve EMES
j. Revise and strengthen the EMES

9.2. Maintenance and monitoring programs and procedure

During the implementation of the FMRDP, the BNC Closure Team will oversee the implementation of the maintenance and monitoring plans. Environmental monitoring works such as water quality, ambient air & noise monitoring, and annual biodiversity assessment such as coastal resource assessment and flora & fauna assessment will be continuously implemented throughout the duration of the FMRDP. The Community health and socio-economic assessment will be conducted twice during FMRDP implementation. The environmental, community relations, safety and health personnel of BNC will spearhead the maintenance and monitoring.

This will be in addition to the monitoring and/or audit conducted by the Mine Rehabilitation Fund Committee (MRFC) through the Multi-partite Monitoring Team (MMT) and the Contingent Liability Rehabilitation Fund - Steering Committee (CLRF-SC) and the Mines and Geosciences Bureau (MGB).

In compliance with regulation, BNC will likewise submit a progress report containing details of fully, partially, and on-going rehabilitation activities relative to the implementation of the FMRDP. The report will be submitted to the MRF Committee for review and evaluation within thirty (30) days from the end of the term of the preceding work and financial plan. The results of the review and evaluation shall be integrated in the succeeding years work and financial plan.

The maintenance and monitoring plans will be prepared by the BNC Closure Team in coordination with the MMT and third-party service providers. This will be conducted annually. The intent is to have a realistic plan based on actual scenario as possible.

9.3. Long-term management and maintenance

At the end of the FMRDP implementation and based on the assessment of BNC that the objectives of project closure, as contained in the approved FMRDP have been achieved, BNC will prepare and submit a Final Rehabilitation Report with third party Environmental Audit for pre-evaluation by the MRF Committee and final approval by the CLRF Steering Committee.

The MRF Committee and/or CLRF Steering Committee, after due review and evaluation of the FRR with EA, may issue a Certificate of Final Relinquishment to BNC signifying approval of the FRR with EA and freeing BNC from any further obligations insofar as the rehabilitated area/s are concerned.

If residual care is still needed, BNC will submit a Site Management Plan detailing how the identified residual rehabilitation commitments are to be managed along with the corresponding funding requirement.

10. Schedule of Operations and Costs

Table 10-1. Schedule of Operation and Costs

Activities	Goal	Year-1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
1. MINE CLOSURE									
A. FMRDP IEC Plan									
1. Mine Site Visit									
a. Barangay Berong Councils		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
b. Barangay Aramaywan Councils		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
c. LGU Officials of Quezon		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
d. IP Community Officials		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
2. Barangay Stakeholders Meeting									
a. CRP/SDMP Planning		10,000	10,000						20,000
b. Distribution of Flyers		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
c. Semi-annual update LGU-Berong / Aramaywan		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
3. IEC & update to LGU - Quezon		5,000	5,000	5,000	5,000	5,000	5,000	5,000	35,000
B. Re-trenchment of Employees									
2. SOCIO-ECONOMIC									
A. Re-employment Counseling			50,000	50,000					100,000
B. Skill Development Trainings/Seminar			50,000	50,000					100,000
C. Meetings and consultations with Community			20,000	20,000	20,000	20,000	20,000	20,000	120,000
3. HEAVY EQUIPMENT OPERATIONS/ RENTAL (Acel Rate which include labor Cost)									
Slope Stabilization, Drainage System & Surface Preparation	102 Has Under FMR		32,094,400	32,094,400	25,396,800				89,585,600
4. MINE-WIDE REHABILITATION (including labor Cost)									
A. Seedling Propagation / Procurement	510,000 @ P4.00/s		340,000	340,000	340,000	340,000	340,000	340,000	2,040,000
B. Plantation Establishment									
1. Site Preparation (procurement & installation of cococoir net)	1000 @ P4,700/s		783,333	783,333	783,333	783,333	783,333	783,333	4,700,000
2. Holing (15cm x 15cm @ 2m x 1m)	510,000 @ P1.00/s		85,000	85,000	85,000	85,000	85,000	85,000	510,000
3. Planting (including seedling transport)	510,000 @ P1.75/s		148,750	148,750	148,750	148,750	148,750	148,750	892,500
C. Plantation Maintenance									
1. Ring weeding	510,000 @ P0.50/s		42,500	42,500	42,500	42,500	42,500	42,500	255,000
2. Replanting (15% mortality / Seedling procurement)	76,500 @ P4.00/s		51,000	51,000	51,000	51,000	51,000	51,000	306,000
3. Seedling transport/holding & planting	76,500 @ P2.75/s		35,063	35,063	35,063	35,063	35,063	35,063	210,375
4. Fireline/Fire break Establishment			16,667	16,667	16,667	16,667	16,667	16,667	100,000
5. Patrol Works			5,000	5,000	5,000	5,000	5,000	5,000	30,000
5. POST-CLOSURE MAINTENANCE, MONITORING AND INSPECTIONS									
Annual Terrestrial Flora and Fauna Assessment	1 /yr		450,000	450,000	450,000	450,000	450,000	450,000	2,700,000
Annual Coastal Resource Assessment	1 /yr		450,000	450,000	450,000	450,000	450,000	450,000	2,700,000
Quarterly Monitoring of air, water and noise quality	4/yr		600,000	600,000	600,000	600,000	600,000	600,000	3,600,000
Community health and socio-economic Assessment	2 Assessment				300,000			300,000	600,000
Preparation of Final Rehabilitation Report (FRR)								1,000,000	1,000,000
Contingency Fund			352,217	352,217	287,241	30,273	30,273	43,273	1,095,495
TOTAL		45,000	35,618,930	35,608,930	29,046,354	3,092,586	3,092,586	4,405,586	110,909,970

Table 10-2. Cost Estimate

EQUIPMENT RENTAL (Acel Rental Rate)					
ITEM	QTY.	DESCRIPTION	RATE/HR	EST. HRS.OF OPERATION	TOTAL
1	6	*Hydraulic Excavator	2,420.00	3120	45,302,400.00
2	2	*Crawler Dozer	3,220.00	2080	13,395,200.00
3	6	*Dump Truck	1,650.00	3120	30,888,000.00
SUB-TOTAL					89,585,600.00
MINE-WIDE REHABILITATION					
ITEM	QTY.	DESCRIPTION	UNIT	UNIT COST	TOTAL
1	510,000	Seedling Propagation / Procurement	Pcs	4.00	2,040,000.00
2	1,000	Site Preparation (procurement & installation of cococoir net)	Pcs	4,700.00	4,700,000.00
3	510,000	Holing (15cm x 15cm @ 2m x 1m)	Holes	1.00	510,000.00
4	510,000	Planting (including seedling transport)	Pcs	1.75	892,500.00
5	510,000	Ring weeding	Pcs	0.50	255,000.00
6	76,500	Replanting (15% mortality / Seedling procurement)	Pcs	4.00	306,000.00
7	76,500	Seedling transport/holding & planting	Pcs	2.75	210,375.00
8	50,000	Fireline/Fire break Establishment	Sq.m	2.00	100,000.00
9	102	Patrol Works	Has	295.00	30,000.00
SUB-TOTAL					9,043,875.00
POST-CLOSURE MAINTENANCE, MONITORING AND INSPECTIONS					
ITEM	QTY.	DESCRIPTION	UNIT	UNIT COST	TOTAL
1	6	Annual Terrestrial Flora and Fauna Assessment	Assessment	450,000.00	2,700,000.00
2	6	Annual Coastal Resource Assessment	Assessment	450,000.00	2,700,000.00
3	24	Quarterly Monitoring of air, water and noise quality	Assessment	150,000.00	3,000,000.00
4	2	Community health and socio-economic Assessment	Assessment	300,000.00	600,000.00
5	1	Preparation of Final Rehabilitation Report (FRR)		100,000.00	1,000000.00
6		Socio-Ecomic expenses		320,000.00	320,000.00
SUB-TOTAL					7,300,000.00
Contingency Fund			1,095,495.00		
GRAND TOTAL (PhP)			**Php 110,644,970.00**		

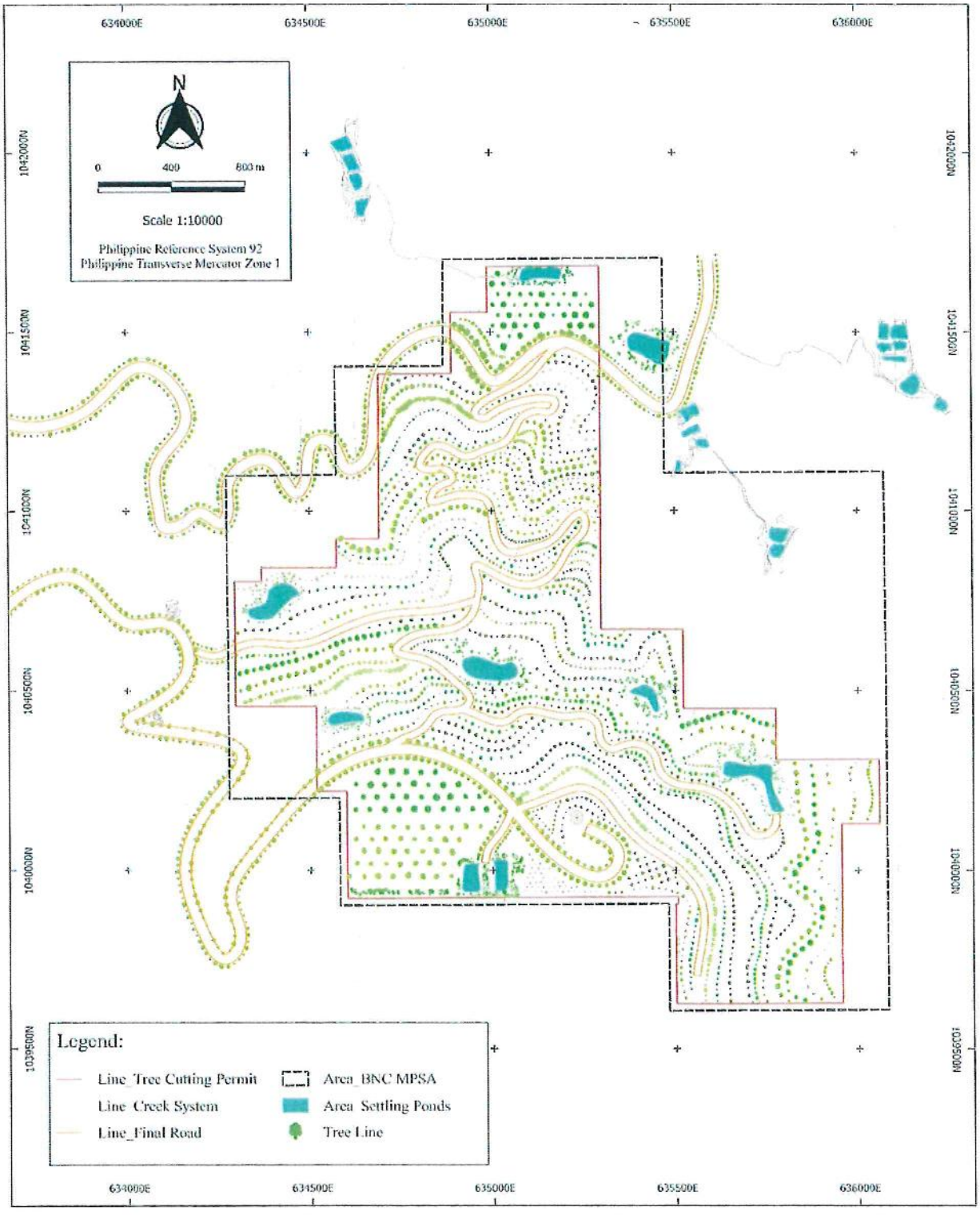
*Based on BNCs actual Construction Equipment Rate

*Average 5 Hrs. daily operation at a maximum of 8 months operation per year or equivalent to 3,120 Hrs of operation

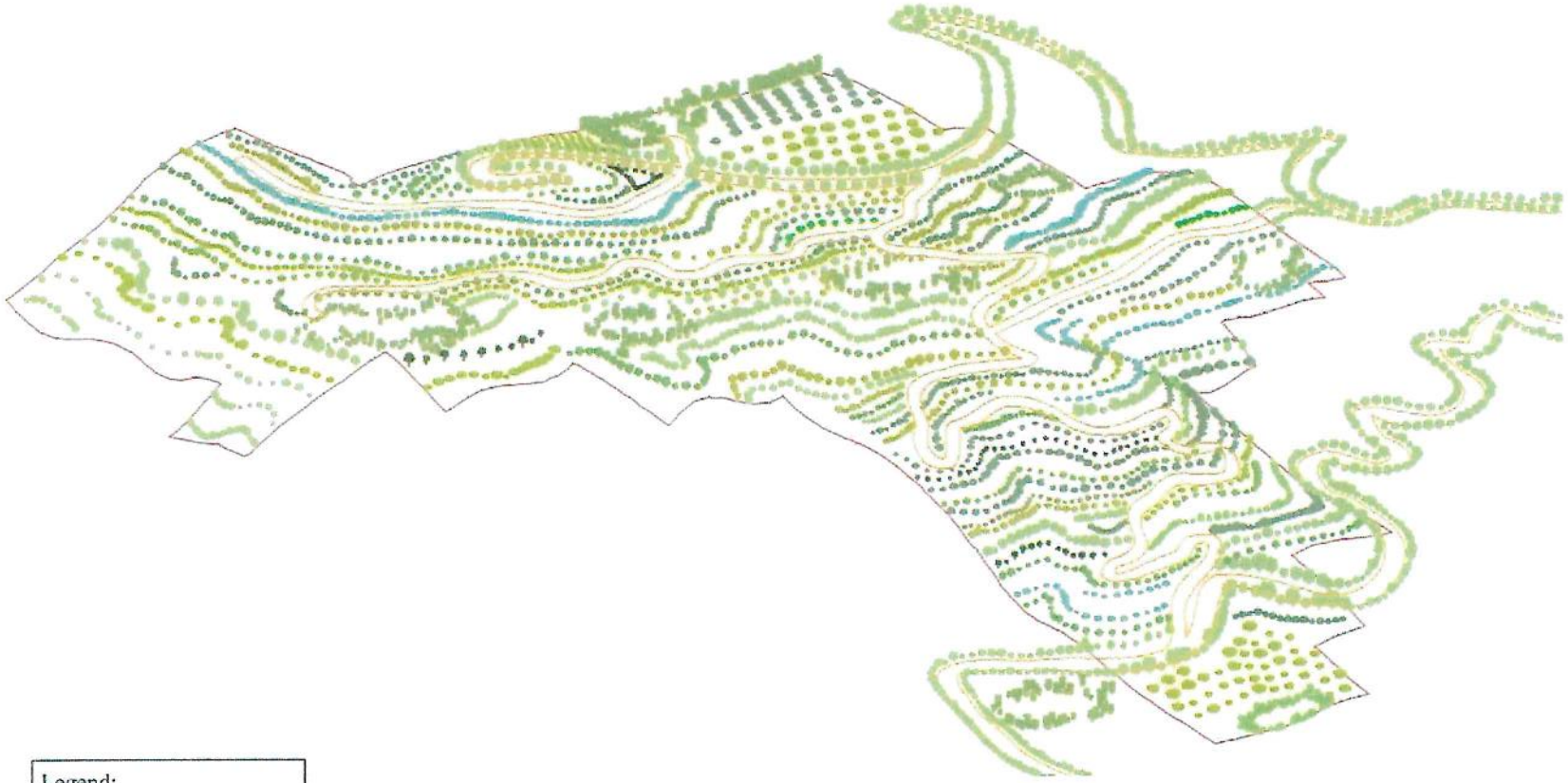
Table 10-3. Indicative schedule/timelines for the rehabilitation and decommissioning procedures

Activities		Years from closure							
		Pre-FMRDP Implementation	Closure Planning	Closure, Decommissioning and Rehabilitation		Maintenance and Monitoring		Relinquishment	Number of Years of Implementation
		-4	-3	-2	-1	1	2	3	
1. MINE CLOSURE									
A.	FMRDP IEC Plan								
	1. Mine Site Visit	x	x	x	x	x	x	x	7
	a. Barangay Berong Councils								
	b. Barangay Aramaywan Councils								
	c. LGU Officials of Quezon								
	d. IP Community Officials								
	2. Barangay Stakeholders Meeting	x	x	x	x	x	x	x	7
	a. CRP/SDMP Planning								
	b. Distribution of Flyers								
	c. Semi-annual update LGU-Berong / Aramaywan								
	3. IEC & update to LGU - Quezon	x	x	x	x	x	x	x	7
B.	Re-trenchment of Employees	x							1
2. SOCIO-ECONOMIC									
	A. Re-employment Counseling		x	x					2
	B. Skill Development Trainings/Seminar		x	x					2
	C. Meetings and consultations with Community		x	x	x	x	x	x	6
3. HEAVY EQUIPMENT OPERATIONS/ RENTAL									
	Slope Stabilization / Benching / Drainage System & Surface Preparation		x	x	x				3
4. MINE-WIDE REHABILITATION									
	A. Seedling Propagation / Procurement		x	x	x	x	x	x	6
	B. Plantation Establishment								
	1. Site Preparation (procurement & installation of cococoir net)		x	x	x	x	x	x	6
	2. Holing (15cm x 15cm @ 2m x 1m)		x	x	x	x	x	x	6
	3. Planting (including seedling transport)		x	x	x	x	x	x	6
	C. Plantation Maintenance								
	1. Ring weeding		x	x	x	x	x	x	6
	2. Replanting (15% mortality / Seedling procurement)		x	x	x	x	x	x	6
	3. Seedling transport/holding & planting		x	x	x	x	x	x	6
	4. Fireline/Fire break Establishment		x	x	x	x	x	x	6
	5. Patrol Works		x	x	x	x	x	x	6
4. POST-CLOSURE MAINTENANCE, MONITORING AND INSPECTIONS									
	A. Annual Terrestrial Flora and Fauna Assessment		x	x	x	x	x	x	6
	B. Annual Coastal Resource Assessment		x	x	x	x	x	x	6
	C. Quarterly Monitoring of air, water and noise quality		x	x	x	x	x	x	6
	D. Community health and socio-economic Assessment				x			x	2
	E. Preparation of Final Rehabilitation Report (FRR)								
5. FINAL RELINQUISHMENT									
	A. Preparation of Final Rehabilitation Report (FRR)							x	1
	B. Issuance of Certificate of Final Relinquishment							x	1

11. Artist's Perspective of the Final Land Use



BERONG NICKEL CORPORATION	Project: Final Mine Rehab and Decomissioning Plan		Name(s)	Signature(s)	Sheet No
		Drawn	BY SABAT JR		1 of 1
	Sheet Content: Rehabilitation Plan View	Modelled	BY SABAT JR		
		Checked	BM MARSINO		
		Concurred	IP DELA CRUZ		
		Approved	MRL ZAMORA		



Legend:
- Line_Tree Cutting Permit
- Line_Creek System
- Line_Final Road
- Area_BNC MPSA
- Area_Settling Ponds
- Tree Line

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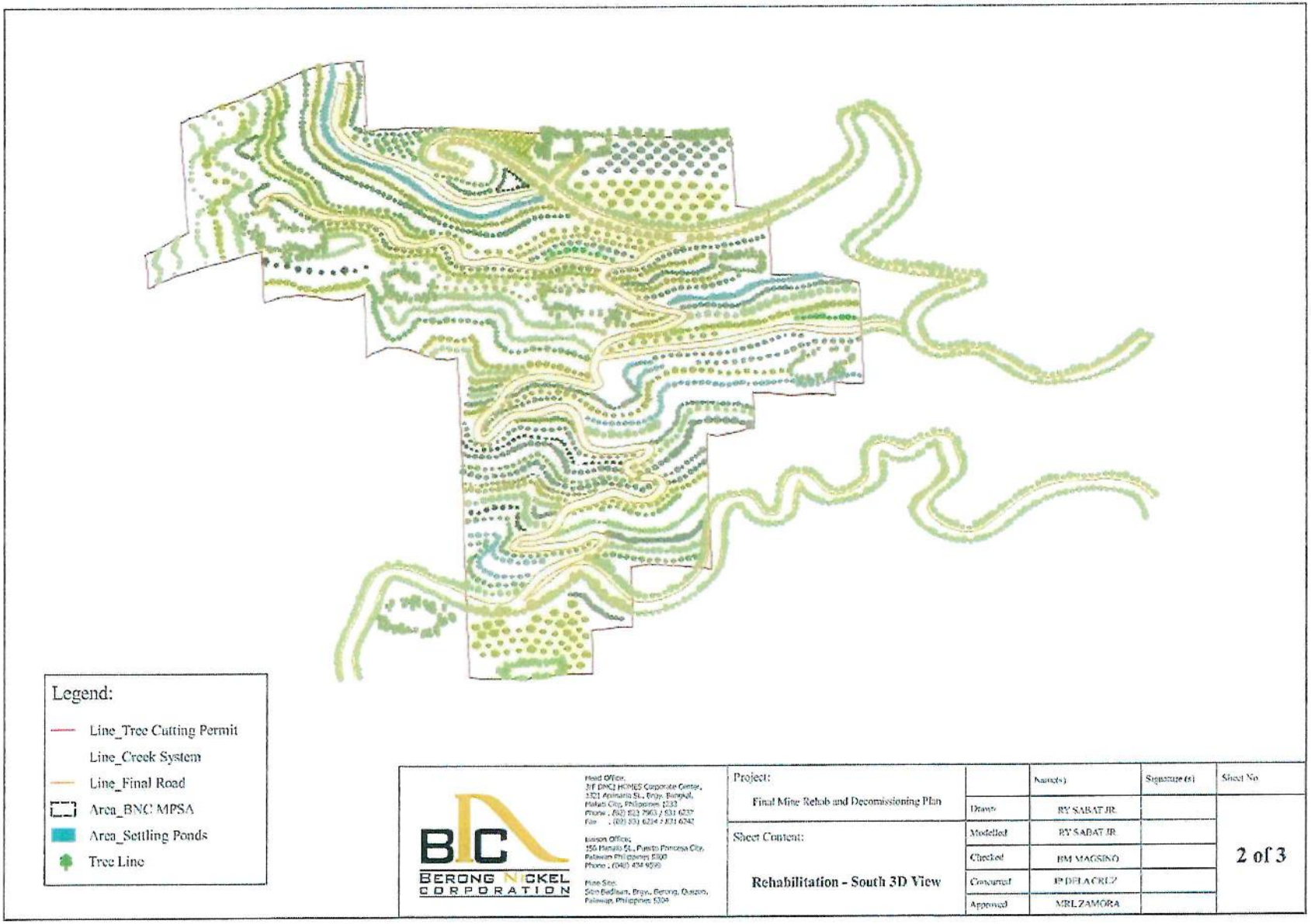
Palawan, Philippines 5304

Project:		Name(s)	Signature (s)	Sheet No.
Final Mine Rehab and Decomissioning Plan	Drawn	RY SABAT JR.		1 of 3
Sheet Content:	Modelled	RY SABAT JR.		
	Checked	BM MAGSINO		
Rehabilitation - Southwest 3D View	Concurred	JP DELA CRUZ		
	Approved	MRL ZAMORA		



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Project:		Name(s)	Signature (s)	Sheet No
Final Mine Rehab and Decomissioning Plan	Drawn	BV SABAT JR.		2 of 3
Sheet Content:	Modelled	BV SABAT JR.		
	Checked	RM MAGSINO		
Rehabilitation - South 3D View	Concurred	R DELA CRUZ		
	Approved	MRL ZAMORA		

Legend:

- Line_Tree Cutting Permit
- Line_Creek System
- Line_Final Road
- Area_BNC MPSA
- Area_Settling Ponds
- Tree Line

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Project:		Name(s)	Signature (s)	Sheet No.
Final Mine Rehab and Decommissioning Plan	Drawn	BY SABAT JR		3 of 3
	Modified	BY SABAT JR.		
Sheet Content:	Checked	BM MAGSINO		
Rehabilitation - Southeast 3D View	Concurred	JP DELA CRUZ		
	Approved	MRL ZAMORA		

12. Name and Signature of Person(s) preparing and FMRDP

Prepared by:

JAY PEE R. DELA CRUZ
MEPEO/PCO

RENATO Y. SABAT JR.
Mine Planning Engineer

Noted by:

MARC RAYMUND L. ZAMORA
Resident Manager

Approved by:

RAMON MANUEL R. BRIONES
VP - Operations