Executive Summary of the Environmental Impact Statement

A. Project Description

I. Basic Project Information

Project Name	:	Danao Mining Project
Nature of Project	:	Major Quarrying Project
Proposed Extraction Rate	:	350,000 MTPY
Commodity	:	Pozzolan
Location of Quarry and Facilities	:	Barangays Cabungahan, Manlayag, Sta. Rosa and Guinacot, Danao City, Cebu
Permit	:	MPSA No. 155-2000-VII
Total Project Area	:	102.1 hectares out of the total 336.3782 hectares covered by the MPSA
Mining Method	:	Surface Mining – Quarrying
Mine Life	:	10 Years

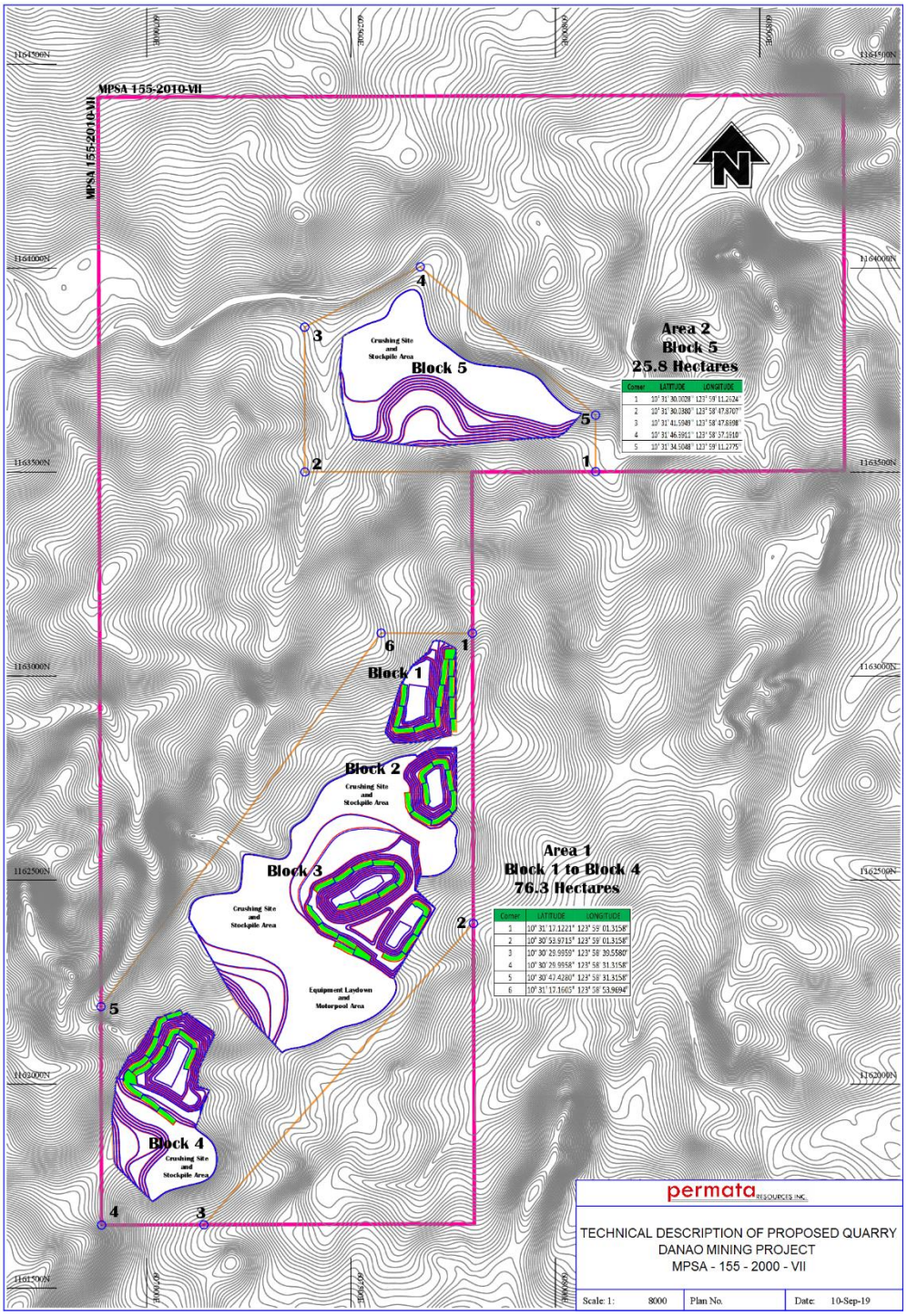
On 10 April 2000, Mineral Production Sharing Agreement (MPSA) No. 155-2000-VII was awarded to Citadel Mining Corporation (CMC); which was then represented by its Vice-President, Mr. Manuel Pastrana and its Board of Directors. Said MPSA covers 336.3782 hectares within Barangays Guinacot, Quisol, Sta. Rosa, Cabungahan and Manlayag, Danao City, Cebu. This was subsequently registered with the Mines and Geosciences Bureau (MGB). On April 2013, as per deed of absolute sale, the previous management of CMC transferred, assigned, sold and ceded all the shares of the approved MPSA to Blu Kuartz Holdings Inc.; represented by its President, Mr. Mark Y. Yu.

II. Project Components

Major Components	Quarry
	Mobile crusher
	Haul/access roads
	Stockpile and dumps
Support Facilities	Office building
	Housing facilities and bunk houses
	Security outposts and facilities
	Mechanical repair workshop, inventory warehouse and fuel depot
	nursery
Pollution control facilities	Sedimentation Ponds/Settling Ponds
	Pit drainage

Mining projects are site specific because mineral extraction can only be undertaken where economic deposits occur. Given such, CMC has not considered any alternative project site. For the mining method, given the nature of the deposit, result of the initial feasibility conducted, drilling/geologic results and environmental considerations, the most suitable method of extraction is by open-cut quarry method.

For the quarry facilities, the company looked into the possibility of establishing them surrounding the identified quarry areas that are still within the MPSA that bounds the project. However, further planning and assessment suggest that the identified location of these facilities would be the most economical due to its relative proximity to the quarry areas, minimize environmental impact by limiting footprint within the already disturbed areas, and allow for future expansion of the quarry area. Permanent mine facilities/structures (eg. motorpool, and site office) were placed near blocks 1, 2 and 3 due to the large mineral reserve located in said areas which would, eventually, be the center of the quarry operations.



III. Process/Technology

The development and production of the Project will be through the typical open-cut quarrying method, which involves the following stages:

- Access road preparation;
- Overburden/Topsoil Stripping;
- Ripping/Breaking;
- Stockpiling;
- Loading and Hauling; and
- Screening/Crushing.

Proper benching shall be employed in each quarry sites. Once overburden has been stripped, terrace-like extraction faces are cut from the topmost strata progressing downward to serve as quarry levels for positioning equipment that will conduct excavation and loading activities. The company will construct a main haulage road going in and out of the quarry and to connect the production benches. The series of production benches shall be interconnected to each other by ramps for easier access and to maximize the deposit.

Drilling and blasting shall be utilized in a very minimal degree. Use of explosives will only be limited to reducing the size of boulders/floats which cannot be handled by hydraulic breaker and crusher. Blasting shall be performed with outmost care and highest degree of practice in safety. Blasting contractor that has the most advance blasting technology, duly registered and has the necessary license from the pertinent government agency shall be awarded with the contract.

IV. Utilities

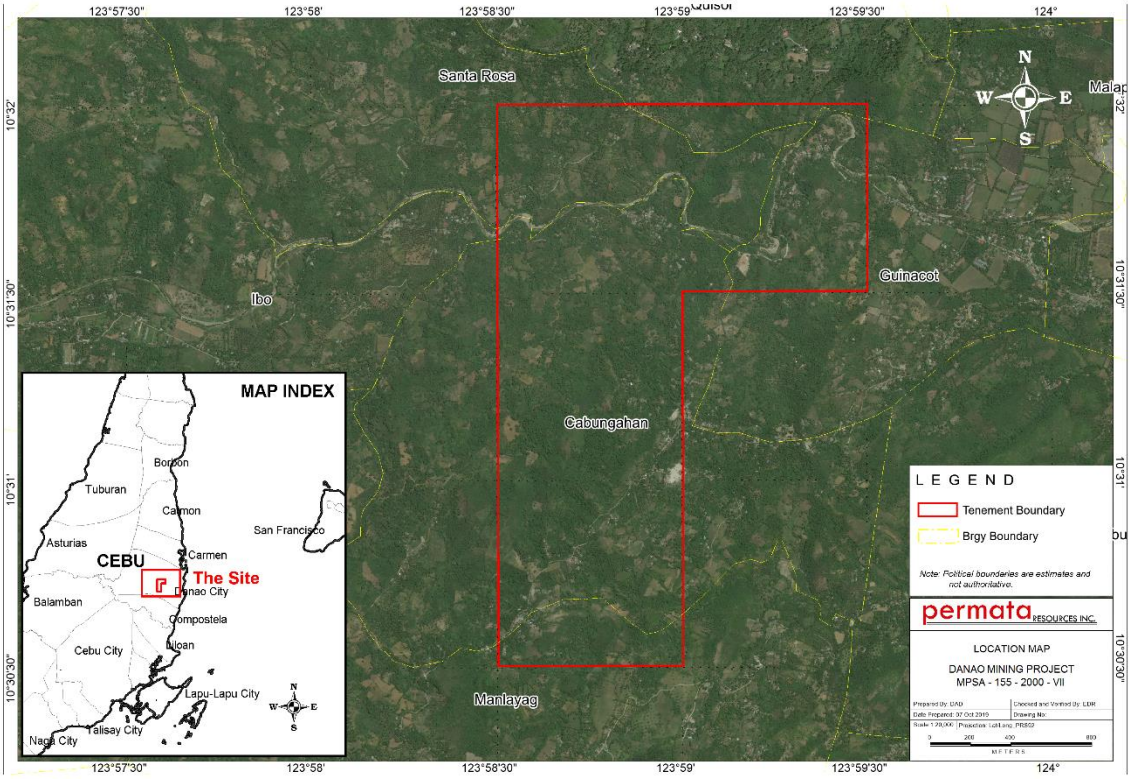
Power	Power supply at Danao is catered by the Cebu Electric Cooperative. Said power is mainly harnessed from geothermal energy that is being supplied to the Visayas-Panay grid.
Water	Danao city has an existing city-based waterworks system (Danao Waterworks). Aside from this, deep wells and springs present are also sources of water in the area.
Fuel	Major fuel distributors like Shell and Petron service the needs of the Danao City area. Most of these fuel distributors are situated at Danao City Proper, making it accessible to cater the needs of the company's fuel and oil requirements for its quarry operation.

B. Project Location

The proposed Danao Mining Project is covered by MPSA No. 155-2000-VII is located at Barangays Guinacot, Quisol, Sta. Rosa, Cabungahan and Manlayag, Danao City, Cebu. Said MPSA encompasses a total area of 336.3782.

Based on the conducted exploration, five (5) blocks designated in two (2) areas within the aforesaid MPSA were initially identified to host the quarry areas and facilities that are located at Barangays

Guinacot, Sta. Rosa, Cabungahan and Manlayag. These blocks cover 102.1 hectares out of the total 336.3782 hectares covered by the MPSA.



C. Project Proponent

CITADEL MINING CORPORATION

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Authorized Representative/Contact Person	:	Mark Y. Yu President
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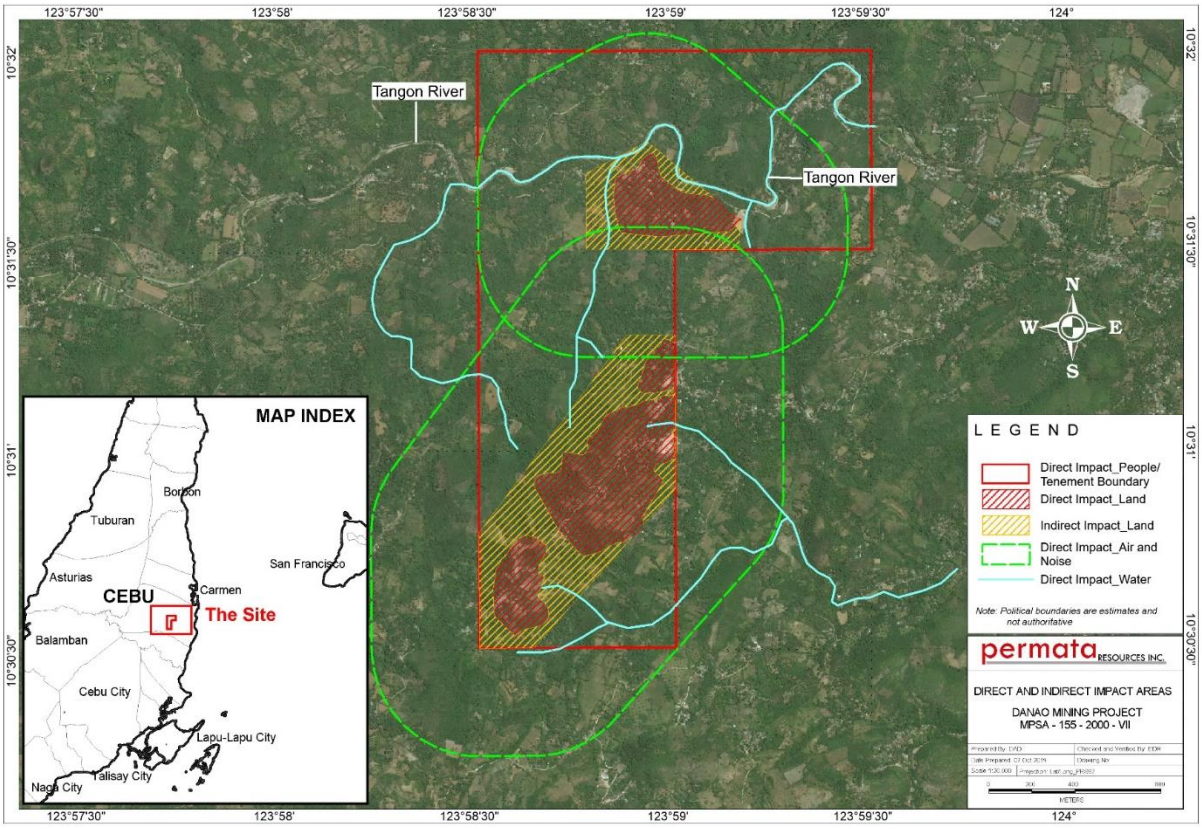
Citadel Mining Corporation is a duly registered Filipino-owned mining company whose corporate holdings is Blu Kuartz Holdings, Inc. On 25 July 2013, CMC amended its Articles of Incorporation for an increase of its Capital Stock to Php 100 Million as required by DENR for mining companies. This was registered at the Securities and Exchange Commission (SEC) on 20 December 2013.

D. Projected Timeframe of Project Implementation

Project Phases	Year																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Pre-Construction - Planning of technical design and finalization of quarry plans and construction method for the installation of facilities; - Soil investigation prior to civil works; and - Securing of necessary permits																					
Construction/ Site Preparation - Hiring of qualified manpower required to complement the workers in the construction works. Hiring of qualified local residents will be prioritized at this stage. Company guidelines and policies on hiring will be imposed; - Site clearing and stripping of over burden; - Access road development; - Establishment of drainage line; - Construction of settling pond, office buildings, housing and other quarry buildings; and - Preparation of loading pad and benches.																					
Operation - Quarrying of pozzolan - Hauling of extracted pozzolan - Progressive rehabilitation; and - Implementation of environmental, safety and health, and social development programs																					
Abandonment - Mobilization of equipment out of the quarry area; - Rehabilitation of remaining mined-out areas, and settling ponds in accordance to the planned land use program of the Local Government Unit (LGU); - Decommissioning of quarry ancillary facilities; - Implementation of post mining social programs; and - Transfer/donation of buildings to interested LGUs																					

E. Identified Stakeholders

The EIA was conducted based on the perceived direct and indirect impact areas of the proposed Danao Mining Project. Direct impact areas, in terms of physical environment, are those where all project facilities are to be constructed/situated. For air and noise, areas within 500 m (0.5 km) parallel to the boundaries of the mine areas that may be directly affected by a) emissions of fugitive particulates emanating from operation of the quarry, if there will be no mitigation measures to control dust emissions particularly when winds are light to moderate during dry periods, and by b) noise emissions from operation of heavy equipment, and the designated mine areas. For water, the direct impact area is the stretch of river within the project area. On the other hand, areas not directly subjected to any activities/construction and those outside the identified mining block of the MPSA (e.g. communities along haul roads) are considered as indirect impact areas. For the social impacts, direct impact communities are those from Barangays Cabungahan, Manlayag, Sta. Rosa and Guinacot; while other communities of Danao City and those outside the MPSA area constitutes the indirect impact communities.



F. Summary of Major Impacts and Residual Effects after Mitigation

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
Pre-construction Phase				
Site Preparation	People	- Loss of properties (land and other physical assets)	- Implementation of Resettlement Action Plan Framework	- None as agreements will be finalized/settled prior to commencement of project activities
Development/Construction Phase				
Site preparation (clearing, grubbing and stripping of topsoil) Construction of benches/mine facilities/haul roads Stockpiling of topsoil	Land	- Change in land use of areas occupied by the mine facilities - Loss of topsoil and decrease in soil quality/productivity - Soil contamination	- Planning of rehabilitation will be in accordance with the EPEP and in consultation with stakeholders - Removed soils will be conserved and stockpiled in a pre-determined area and will be used in rehabilitation and backfilling activities - Stockpiles shall be graded to a stable relief - Progressive ground preparation/grubbing to minimize the area removed with soil cover at any one time	- Minimal inexorable topsoil loss due to transport/movement
		- Inducement of land slides	- Safe working slopes and land slide control structures will be established - Train pertinent personnel on recognition of the various slope/ground failure modes, hazard warning signs and standard operating procedures to be observed in the case of ground failure events or impending event	- None as thorough geological studies were and will continuously be implemented relative to the mine plan that will be laid out.
		- Generation of wastes	- Materials recovered from vegetation removal shall be used as: ▪ Trash lines on steep slopes to mitigate soil erosion ▪ Materials for construction and/or composted and used for the fertilization of the seedlings in the nursery, seedling outplanting and field maintenance - Proper disposal of construction debris and solid wastes - Implementation of an Integrated Solid Waste Management Plan: Reduce, reuse, recycle	- None; implementation of an integrated solid waste management plan on the commencement of project implementation

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
	Terrestrial Ecology	- Loss of vegetation and habitat - Increase in noise - Mortality of small, less mobile animals due to project activities - Habitat Fragmentation	- For accessibility, existing roads will be utilized and improved - For new roads to be established, heavily disturbed (e.g., grassland, scrubland, etc.) areas or trails shall be prioritized as the location - Whenever possible, tree-balling and immediate transfer of trees to open areas within the project area will be done (Applicable only to the critically endangered tree species) - Tree cutting permit shall be secured prior to any clearing and cutting - Strictly prohibit poaching of wildlife to mitigate population reduction and allow safe movement - Vegetation removal kept at minimum through planned clearings - Establishing voluntary conservation zones and biological corridors within the Project area	- Minimal unavoidable impact on some vegetation and animals (eg. grasses, small plants) due to equipment movement and stripping activities
	Surface hydrology	- Increase in surface runoff and river discharge - Decline in river carrying capacity due to siltation	- Construction of a drainage system within the project area	- Possible siltation of water body due to onslaught of extreme weather condition on project area
	Air and Noise	- Ambient air pollution - Occupational health effects	- Regular spraying of water in active construction areas - Replacement of vegetation in non-construction areas - Compacting of exposed soil - Provision of tarpaulin cover on trucks transporting construction materials - Immediate hauling of spoils - Impose speed restrictions - Regular maintenance of heavy equipment and motor vehicles	- Minimal fugitive dust and noise generation

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
		- Increased ambient sound levels	- Regular maintenance of heavy equipment mufflers (noise) - Provision of ear mufflers to workers operating noisy equipment - Proper scheduling of noisy activities during day time	
	People	- Employment and Economic Opportunities - Population Influx - Loss of income from agricultural activities due to removal of crops and use of the land for mine development and road works	- Policy on the preferential hiring of locals - Pre-employment training to community residents - Training and development of local service cooperative - Preferential hiring of locals will be announced	- None
		- Exposure to safety and Health Hazards	- Safety and Health Program for workers and impact communities. - Community Health Survey - Assistance to the LGU on traffic management	- None
		- Proliferation of vices that affects the peace and order in the area	- Values orientation seminars to workers and community residents - Conduct of activities that promotes community cohesion - Assistance to the LGU on Peace and Order management	- none
		- Increased income of LGUs due to tax revenues	- Prompt payment of taxes to the Local and National Government	- None
		- Possible unearthing of historical artifacts and/or fossil remains	- Safeguard possible archeological site and immediately inform the National Museum in case of finds	- None
Operation Phase				

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
Quarry	Land	- Generation of open areas with greater potential for runoff, erosion and landslides	- Establishment of safe working slopes and installation of land slide control structures - Implementation of a suitable and appropriate slope/ground failure monitoring plan to detect instability at an early and non-critical stage (eg. drone survey) - Train pertinent personnel on recognition of the various slope/ground failure modes, hazard warning signs and standard operating procedures to be observed in the case of ground failure events or impending event; - Identification, early recognition and monitoring of warning signs of potential and impending slope stability problems - Progressive rehabilitation of disturbed areas - "Vengineering" (i.e. planting of vegetation with high rainfall intercepting capacity and high transpiration rate characteristics to serve as re-evaporators/biological pumps, respectively) - Utilization of removed topsoil for backfilling low-lying areas and service roads - Formulate a topsoil management plan (TMP) to address topsoil removal, stockpiling, and archiving of topsoil inventory for the project's progressive rehabilitation activities	- None; open areas during operation phase are only those where active mining operations revolve
	Air and Noise	- CO2 generation - Dust generation - Noise generation	- Implement regular inspection and preventive maintenance of heavy equipment, machineries and service vehicles - Use electric or fuel-efficient equipment, machineries and vehicles and maximize its operation, if possible - Water spraying - Mining activities to be confined during daytime	- Minimal fugitive dust and noise generation

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
	Water	- Increase in surface runoff and river discharge - Decline in river carrying capacity due to siltation - Water pollution - Water resource use	- Establishment of siltation ponds and implementation of sediment and erosion control plan - Provision of drains to access roads to contain and limit sedimentation downstream of the quarry - Strengthen water monitoring system by keeping a record of daily water extraction and consumption. - Rainwater Harvesting through decentralized impoundments	- Possible siltation of water body due to onslaught of extreme weather condition on project area
	Terrestrial Ecology	- Removal of ecologically and economically important species and wildlife habitat - Removal of photosynthesizing plants - Mortality of small, less mobile animals due to project activities - Accessibility of area to illegal hunters and poachers of animals	- Priority conservation for ecologically and economically important species identified in the area - Establishment of a nursery to propagate the seeds/propagules of these species, which will provide seedlings for future rehabilitation requirements - Tree plantation development using the indigenous species and assisted natural regeneration (ANR) techniques - Enhancement of Agro-forestry technologies suitable for the area - Prevention of unnecessary clearing of vegetation - Strictly prohibit poaching of wildlife to mitigate population reduction and allow safe movement. - Personnel, heavy equipment, other vehicles, etc. shall be confined only to pre-determined designated areas and shall not occupy other areas to avoid further disturbances - An active and continuous wildlife protection and conservation campaign will be pursued with the participation of all key stakeholders (e.g., communities, LGUs, etc.) within and around the project site.	- Minimal unavoidable impact on some vegetation and animals (eg. grasses, small plants) due to equipment movement and mining activities
	People	- Safety and health risks to workers	- Provision of PPE to every personnel - Conduct of safety orientation and training	- None
	Land	- Soil erosion	- Proper and strategic siting of stockpiles	- None

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
Stockpiling of waste rock Hauling of pozzolan			- Progressive reclamation of exposed waste rocks - Stockpiling below angle of repose - Stockpiling in benches - Provision of rock facing and installation of large boulders along the toe line increase stability	
	Water	- Siltation of nearby water body	- Proper management of stockpile - Addition of soil amelioration and seeding of stockpiled topsoil - Provision of drainage	- Possible siltation of water body due to onslaught of extreme weather condition on project area
	Air and noise	- Ambient air pollution - Occupational health effects - Increased ambient sound levels	- Regular spraying of water in active mine areas - Replacement of vegetation in non-construction areas - Compacting of exposed soil - Provision of tarpaulin cover on trucks transporting pozzolan - Impose speed restrictions - Regular maintenance of heavy equipment and motor vehicles - Regular maintenance of heavy equipment mufflers (noise) - Provision of ear mufflers to workers operating noisy equipment - Proper scheduling of noisy activities during day time	- Minimal fugitive dust and noise generation
	People	- Safety and health risk to workers and communities near the haul roads	- Provision of PPE to every personnel - Conduct of safety orientation and training - Implementation of speed limit and other relevant safety procedures	- None
Operations of motorpool	Land	- Contamination of soil	- Provision of procedures for proper handling, storage, and transport of used oils, lubricants and chemicals - Provision of relevant pollution control devices (i.e. oil and water separator, auto shutoff valves)	- None
	Water	- Contamination of water		- None

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
			- Contaminated soils will be removed and disposed off-site. - Provision of Refuse storage facility with oil and water separator to contain any accidental spill.	
	People	- Safety and health risks to workers	- Provision of procedures for proper handling, storage, and transport of used oils, lubricants and chemicals - Provision of PPE - Implementation of proper housekeeping	- None
Operationalization of administrative complex	Land, water, people	- Contamination of soil and water - Health risks to workers and the community	- Implementation of proper housekeeping - Provision of proper domestic waste and wastewater handling (eg. septic tanks) and disposal - Provision of a materials recovery facility for wastes - Implementation of segregation	- None
Abandonment Phase				
Decommissioning of equipment Rehabilitation of disturbed areas Dismantling of structures	Land	- Erosion of newly replaced soils - Difficulty in plant establishment within footprints due to soil compaction	- Establishment of newly restored areas with proper drainage and soil erosion control structures - Soil amelioration	- None
		- Permanent land use change - Generation of wastes	- Rehabilitation of the project area to the agreed and approved final land use embodied in the FMR/DP - The final perimeter and cover of the quarry area will have an undulating profile to facilitate drainage and future land use - Recyclable materials will be sold to recyclers. Residual wastes will be hand over to the municipal garbage collectors. Hazardous waste will be transported to accredited disposal companies - Decommissioning of infrastructures and rehabilitation of quarried out areas will be conducted in accordance with the project FMR/DP	- None

Project Activity	Environmental /Social Component to be Affected	Potential Impacts	Options for Prevention, Mitigation or Enhancement	Residual Effects after Mitigation
	Water	- Contamination of water quality due to failure of the siltation ponds	- Design impoundment structures relative to seismic and structural parameters - Monitoring of structural integrity for the duration of operation of these facilities and beyond mine closure - Development of an Emergency Response Plan to handle possible siltation pond failure	- Possible siltation of water body due to onslaught of extreme weather condition on project area
	Air and Noise	- Ambient air pollution - Occupational health effects - Increased ambient sound levels	- Regular spraying of water in active areas - Provision of tarpaulin cover on trucks transporting decommissioned materials - Impose speed restrictions - Regular maintenance of heavy equipment and motor vehicles - Regular maintenance of equipment mufflers (noise) - Provision of ear mufflers to workers operating noisy equipment - Proper scheduling of noisy activities during day time	- Minimal fugitive dust and noise generation
	People	- Termination of LGU revenues - Loss of employment/livelihood opportunities - Discontinuation of the social services offered by CMC through CSR and SDMP	- Extensive IEC prior to decommissioning - Implementation of a post-mining Social development plan	- None

For mining projects, a financial mechanism called the Contingent Liability and Rehabilitation Fund (CLRF) is established. This CLRF is an environmental guarantee fund mechanism that ensures the just and timely compensation for damages and progressive and sustainable rehabilitation for any adverse effect a mining operation or activity may cause. This fund is further broken down as follows: Environmental Trust Fund (ETF), Mine Rehabilitation Fund (MRF), MWTF Reserve Fund (MWTFRF), and Final Mine Rehabilitation and Decommissioning Fund (FMRDF).

The MRF is established and maintained by each operating mine as a reasonable environmental deposit to ensure the availability of funds for the satisfactory compliance with the commitments and performance of the activities stipulated in the EPEP/Annual EPEP and this comes in two (2) forms: the Monitoring Trust Fund (MTF), which covers the maintenance and other operating budget for the transportation and travel expenses, cost of laboratory analysis, and other reasonable expenses incurred by the multi-partite monitoring team in the amount of PhP150,000.00 which is replenishable every quarter; and the Rehabilitation Cash Fund (RCF), which is being used to ensure compliance with the approved rehabilitation activities and schedules for specific mining phase including research as defined in the EPEP/AEPEP in the amount equivalent to ten per cent (10%) of the total amount needed to implement the EPEP or Php 5 Million, whichever is lower.

Alternatively, the FMRDF is the cost used to implement the final mine rehabilitation and decommissioning plan which is after the life of the mine. Indicative proposed FMRDF for the project is php 22,000,000.00

The MWTFRF are pertinent costs collected based on the amount of mine waste and tailings generated by a mining project and are used for payment of compensation for damages caused by mining operations. The proposed project's mine wastes costs Php 0.05/MT. Conversely, the ETF is used for payment to mining-related compensable damages other than those caused by mine waste and tailings and should be at least Php 50,000.00.

For the implementation of the Social Development and Management Program, an SDMP fund shall be established by the company. This fund shall be 1.5% of the operating cost.

CMC is committed in establishing the above needed funds after approval of all pertinent permits/documents.

G. Additional Information

PREPARER

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