

FOR SAND AND GRAVEL PROJECTS
ENVIRONMENTAL MANAGEMENT PLAN

POTENTIAL IMPACT PER PROJECT ACTIVITY PER PROJECT PHASE	MITIGATING MEASURES	RATING/ PERFORMANCE OF MITIGATING MEASURES
A. Construction Phase		
A.1 Site Development (Site Clearing, Road Network Development (ISAG), Construction of processing and other Related Facilities (with crushing plant))		
Degradation of surface water quality due to contamination from domestic wastewater (with crushing plant)	<ul style="list-style-type: none"> Provide (indicate number) of portalets for construction workers <p><i>Note: at least one (1) portalet for 60 workers where the number of male workers exceeds 500 (as per IRR-Industrial Hygiene, PD 856 Amending Administrative Order 111 Series of 1991)</i></p> <p><i>Note: at least one (1) portalet for 25 workers where the number of male workers exceeds 100 (as per IRR-Industrial Hygiene, PD 856 Amending Administrative Order 111 Series of 1991)</i></p> <ul style="list-style-type: none"> Provision of temporary septic tank or wastewater collection system for workers <p>Hauling of wastewater from portalets/septic tank by third party shall be covered by a licensed/permit from LGU and with valid Discharge Permit for the wastewater treatment facility</p>	100% complaint with RA 9275
Potential siltation of nearby drainage system/ water bodies due to soil erosion (with crushing plant)	<ul style="list-style-type: none"> Provision of drainage systems to minimize and control infiltration of sediments to the nearby water bodies Provision of an easement from water bodies at least three (3) meters in urban areas, twenty (20) meters in agricultural areas, and forty (40) meters in forest areas in compliance to the Water Code of 	100% compliance to DAO 2016-08 and RA 9275

	the Philippines	
Generation of dust from site preparation	<ul style="list-style-type: none"> • Maintain a misty access road surface within project site by sprinkling of water at least (2x) twice a day during dry season • Vehicles transporting aggregates/ construction materials should be adequately covered with tarpaulin canvass or jute sacks at all times 	100% compliance to RA 8749
Generation of noise due to operation/ construction <i>(for crushing plant)</i>	<ul style="list-style-type: none"> • Use of mufflers, silencer, and exhaust pipes for construction equipment • Provision of appropriate noise mitigating measures (such as construction of fences, enclosure of stationary work areas and equipment, maintenance of equipment, etc.) whenever applicable 	100% Noise within standard (NPCC MC 002 Series of 1980)
Generation of spoils such as excess fill materials from grading and excavation activities <i>(for crushing plant)</i>	<ul style="list-style-type: none"> • Excess spoils to be hauled by third party hauler for proper disposal • Trucks should be thoroughly washed before leaving the project site to avoid the transfer of mud/dirt in the road • Spoils shall be stockpiled on flat areas and away from the adjacent access roads, drainage routes and nearby water body 	100% RA 9003
Generation of construction debris <i>(for crushing plant)</i>	<ul style="list-style-type: none"> • Proper collection of construction debris Solid Waste Management Program in compliance to RA 9003 • Collection of construction debris by third party hauler with valid permit/clearance from LGU 	100% RA 9003
Generation of used oil, batteries, and other hazardous materials <i>(for crushing plant)</i>	<ul style="list-style-type: none"> • Provision of storage for hazardous wastes with proper labelling • Collection of hazardous wastes by DENR accredited 3rd party hauler and treater 	100% compliance to RA 6969
B. Operational Phase		
B.1 Delivery and transfer of raw (SAG) materials and finished goods, processing Administrative Operation and other Facilities for with crushing project		
Degradation of surface water quality	<ul style="list-style-type: none"> • Provide (indicate number) of portalets for construction workers 	100% complaint with RA 9275

due to contamination from domestic wastewater (with crushing plant)	<p><i>Note: at least one (1) portalet for 25 workers where the number of male workers exceeds 100 (as per IRR-Industrial Hygiene, PD 856 Amending Administrative Order 111 Series of 1991)</i></p> <ul style="list-style-type: none"> • Provision of temporary septic tank or wastewater collection system for workers <p>Hauling of wastewater from portalets/septic tank by third party shall be covered by a licensed/permit from LGU and with valid Discharge Permit for the wastewater treatment facility</p>	
Degradation of surface water quality due to contamination from oil, fuel or other lubricant agents leaks from heavy equipments	<ul style="list-style-type: none"> • Provision of spill boom; • Use of properly maintained theavy equipments 	100% complaint with RA 9275
Potential siltation (turbidity) during Extraction	<ul style="list-style-type: none"> • Provision of temporary sand barrier from the active site/area of extraction (if applicable); • Provision of silt curtain (if applicable) • Appropriate method of extraction as identified by MGB 	100% complaint with RA 9275
Generation of Process Wastewater (with Crushing)	<ul style="list-style-type: none"> • Provision of Settling Pond in Series (atleast 3 chamber) • Provision of Drainage Canal 	100% compliance with RA 9275
Generation of noise from equipments (crushers, screens etc.)	<ul style="list-style-type: none"> • Provision of enclosures or muffling devices on engines and equipments • Use of sound absorbing liners (e.g. rubber) • Daytime operation only, or secure permit/clearance from concerned barangay if operating at nighttime 	100% Noise within standard (NPCC MC 002 Series of 1980)
Generation of air pollutants from	<ul style="list-style-type: none"> • Use of mufflers, silencer, and exhaust pipes; 	100% compliance with RA 8749

delivery trucks/ generator set		
Generation of solid wastes	<ul style="list-style-type: none"> • Provision of Materials Recovery Facility (MRF) • Segregation of wastes with proper labelling, and wastes materials manifest indicating the volume of waste and date of collection/segregation • Hauling of domestic wastes by third party contractor with permit/clearance from LGU for proper disposal of wastes . • Compost materials (if any) shall be made available to community for distribution through its Corporate Social Responsibility (CSR) 	100% compliant to RA 9003
Generation of used oil (from motorpool) and other hazardous materials (ie. used batteries, fluorescent lamps) (with Crushing)	Provision of storage facility/area and collection of hazardous wastes by DENR accredited 3 rd party hauler and treater	100% compliant to RA 6969
Generation of hazardous wastes (with Crushing)	<ul style="list-style-type: none"> • Provision of storage facility/area and collected by hazardous wastes DENR accredited third party hauler and treater • Provision of PPE for proper handling 	100% compliant to RA 6969
Generation of Used Oils from heavy equipment	<ul style="list-style-type: none"> • Proper disposal of generated used oils 	100% compliant to RA 6969
River Bank Erosion/Scouring	<ul style="list-style-type: none"> • Planting of Bamboos or applicable tree species along nearest riverbank, disturbed areas, or in steep slopes to prevent soil erosion • Uniform depth method of SAG Extraction • Provision of buffer zone to protect the riverbank 	100 No erosion caused by the project
Impacts on Infrastructure (Bridges and Irrigation Canals)	<ul style="list-style-type: none"> • No extraction within one (1) kilometer radius from any government infrastructure project(s) 	

Generation of effluents due to wastewater generation	<ul style="list-style-type: none"> Monitoring of the following significant effluent quality parameters: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Total Suspended Solids 	100% compliance with DENR effluent standards (RA 9275); (i.e.DAO 2016-08 and DAO 2021-19)
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