



**MINISTRY OF ENERGY AND ENERGY INDUSTRIES
MINERALS DIVISION
MINE DESIGN PLAN TEMPLATE**

Please write legibly in black or blue ink. Your responses are not limited to the spaces available. Supplemental pages are to be inserted where required. Please be advised that incomplete / inadequate submissions shall not be accepted and the Applicant will be required to resubmit a properly completed template.

1. GENERAL INFORMATION

Information on Applicant		
NAME:		TELEPHONE:
ADDRESS:		EMAIL ADDRESS:
FACSIMILE:		
Contact (Person duly authorized by Applicant, <u>leave blank if same as above</u>)		
NAME:		EMAIL ADDRESS:
PHONE:	FACSIMILE:	
MINE / QUARRY LOCATION:	Acreage of Land: (Acres / Hectares)	Land Ownership: <input type="checkbox"/> Private <input type="checkbox"/> State
Certificate of Environmental Clearance Reference Number:		Water Abstraction Licence Number:
Town and Country Planning Approval Number:		Survey Plan Number:

Version 2

2. General Site Description:

List the current land use of the site _____	For all nearby communities, give the following details			
	<i>Name</i>			
	<i>Characteristics (e.g. agricultural, residential, etc.)</i>			
	<i>Location</i>			
	<i>Population Size</i>			

Vegetation Type
 Primary forest Secondary forest Evergreen seasonal forest Semi-evergreen seasonal forest Deciduous seasonal forest
 Grasslands Bush lands Cultivated lands

Acreage covered by vegetation (Ac/Ha): _____ Acreage to be cleared (Ac/Ha): _____
 Acreage to be left undisturbed (Ac/Ha): _____

Topography and Gradient:

Generally flat
 Rolling/Undulating
 Hilly/Mountainous

Please provide the gradient: _____

DRAINAGE:

Type of drainage present on and near the mining site, tick all that apply:

NATURAL SURFACE DRAINAGE:

- Watercourses Natural outfalls Wetlands Perennial Intermittent

MAN-MADE DRAINAGE:

- Roadside drains Perimeter drains Storm-water ponds Silt traps Settling ponds Man-made outfalls
(connected to municipal drainage)

Specify type of outfalls present in relation to settling ponds on site:

- Man-made Outfall to rivers Closed Loop Use of silt traps

Give details of measures in place to control sediment discharge after periods of rainfall.

3. Management of Water Sources: (please liaise with the **Water Resources Agency** for pertinent accurate information)

Groundwater resources: present on and near the mining site, tick all that apply

Aquifer name: _____

Type: Confined Unconfined

Acreage of recharge areas:
(Hectares/Acres)

Water table:
Depth (m)

Give details of measures in place to control contamination of groundwater resources.

Well information for any water-wells within or close to the mining area

Location (northings, eastings) (<i>Naparima Datum</i>)	Type (production/monitoring)	Ownership (private/state)

Water utilization

<i>Source</i>	<i>Rate of abstraction (gallons/month)</i>	<i>Monthly usage (gallons/month)</i>	<i>Method of treatment of raw water</i>
<i>Groundwater</i>			
<i>Surface water</i>			
<i>Potable water</i>			

Official Signature and Stamp from the Water Resources Agency

4. Mine Description:

<p><u>Material to be Mined:</u></p> <p><input type="checkbox"/> Sand</p> <p><input type="checkbox"/> Fill material</p> <p><input type="checkbox"/> Sand and gravel</p> <p><input type="checkbox"/> Hard Rock:</p> <p style="padding-left: 20px;"><input type="checkbox"/> Blue Limestone</p> <p style="padding-left: 20px;"><input type="checkbox"/> Yellow Limestone</p> <p style="padding-left: 20px;"><input type="checkbox"/> Porcellanite</p> <p style="padding-left: 20px;"><input type="checkbox"/> Andesite</p> <p><input type="checkbox"/> Oil / Tar Sand</p> <p><input type="checkbox"/> Other: Please indicate resource of interest</p> <hr style="width: 80%; margin-left: 0;"/> <p><input type="checkbox"/> Open pit <input type="checkbox"/> Hillside</p>	<p>Processing plant on-site</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Type of Processing Plant: <input type="checkbox"/>Wet <input type="checkbox"/>Dry <input type="checkbox"/>Combination</p> <p>If NO is selected, please identify and provide the name and location of any processing plant to be utilized</p> <hr style="width: 95%; margin-left: 0;"/> <hr style="width: 95%; margin-left: 0;"/>
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<i>Deposits to be removed</i>	<i>Average thickness (ft / m)</i>	<i>Volume (cubic yards / cubic metres)</i>
Topsoil		
Overburden		
Mineral of interest		

Acreage used for topsoil stockpile (Ac/Ha): _____

Acreage used for overburden stockpile (Ac/Ha): _____

Acreage used for aggregate stockpile (Ac/Ha): _____

Acreage used for settling ponds (Ac/Ha): _____

Number of mining pits: _____

Acreage used for mining pits or strips (Ac/Ha): _____

State the method for the storage of topsoil and overburden:

If applicable, state the method and rate of de-watering of the mine:

State the method of extraction of aggregate:

State the **RATE** of extraction of aggregate (cubic yards/cubic metres per day/month) :

<u>Parameter</u>	<u>For any BERMS to be constructed</u>	<u>For any BENCHES to be constructed</u>
Maximum height (<u>ft / m</u>)		
Maximum width (<u>ft / m</u>)		
Minimum width (<u>ft / m</u>)		
Maximum gradient / slope (<u>ratio / angle in degrees</u>)		

6. Diagrams and Plans:

i. Layout Plan of the Mining Operations- Please produce a detailed scaled drawing showing the location of the following, where applicable:

- Land boundaries
- Mine boundaries
- Vegetative buffers
- Offices and buildings
- Hard ground surface area(s)
- Fuelling site (showing the location of storage tanks and bunds)
- Processing Plant
- Settling ponds
- Silt Traps
- Catchments
- Benches
- Pits
- Check Dams
- Storm-water drains
- Natural and man-made watercourses, and associated berms to be constructed
- Stockpiles for unprocessed minerals
- Stockpiles for processed minerals
- Berms
- Roadways in the vicinity and on the site
- Garage for storage and maintenance of equipment
- Known groundwater recharge area(s)
- Metered and un-metered water abstraction point(s)
- Water-abstraction wells
- Water pumps
- Water discharge points
- Any other feature(s) on the site

ii. Topography

- Topographic map of the site (to be prepared by a Land Surveyor)
- Profile of mine site prior to mining activity along a North-South transect
- Profile of mine site prior to mining along an East-West transect

iii. Geology

- A Geological Map of the proposed mining site
- Geological cross-sections from the surface to the base of the mineral of interest in the
 - North-South direction and
 - East-West direction
- Isopach Maps of the
 - Topsoil
 - Overburden and
 - Movable minerals

If a CEC has not been obtained, please provide:

- i. A conceptual **Storm-water Management Plan** for the site stating:
 - The temporary and permanent measures that will be implemented during the site preparation, construction and post-construction phases to ensure that there is no net increase in peak runoff for a 1:25 rainfall event from the pre-development to the post-development phase
 - The pre-development flow value (Q m³/s) for the proposed site such that the existing volume of surface runoff for the site can be quantified
 - The description of any onsite measures that would be instituted to maintain the pre-development flow value during the construction and post-construction phases of the proposed development
 - The proposed storm-water management measures can accommodate the post-development flow value and reduce it to the pre-development flow value (Q m³/s)
 - Calculations for determining the pre-and post-development flow value (Q m³/s) for the proposed site
 - The drainage mechanisms
 - The storm-water retention/detention ponds, catchments, landscaping, etc
 - The proposed plans for the inspection and maintenance of any physical structures (e.g. detention/retention ponds, catchments, etc.) that may be constructed on the site.

- ii. A **Sediment and Erosion Management Plan** for the site stating the:
 - Temporary and permanent measures that will be implemented during the site preparation, construction and operational phases of the development
 - Possible measures such as, but not limited to, phased clearing, settling pond(s), filtering devices placed within drains and re-vegetation, that will be implemented to minimise or prevent the movement or migration of sediments off site due to the proposed site activities.

- iii. A **Monitoring and Reporting Plan for the Quality of Water Discharged** from the site

- iv. The **Mitigation Measures** to be applied for dust pollution, noise pollution, emissions from equipment/vehicles, soil pollution, and fuel and oil spills

Date

Authorised Signature

Name (block letters)