

Proposal for _____Block, _____District,
_____State for G3 or G2 Stage Mineral Exploration
under NMET.

**(Basemetals/ Ferrous/ Non-Ferrous/ Industrial/
Strategic & Critical/ Precious metals etc.,)**

By

_____Agency

Place:

Date:

Summary of the Block for G3 or G2 stage exploration

	Features	Details
	Block ID	
	Current Exploration Agency	For G3 or G2
	Previous Exploration Agency	G4/ G3 stage GR Producing Agency
	G4 stage Geological Report (Previous stage Geological Report)	G4 stage GR should be submitted for G3 stage proposal and G3 Stage GR for G2 proposal
	Commodity	
	Mineral Belt	
	Completion Period with entire Time schedule to complete the project	
	Objectives	
	Whether the work will be carried out by the proposed agency or through outsourcing and details thereof. Components to be outsourced and name of the outsource agency	
	Name/ Number of Geoscientists	
	Expected Field days (Geology, Geophysics, Surveyor)	
1.	Location	
	Latitude	
	Longitude	
	Villages	
	Tehsil/ Taluk	
	District	
	State	
2.	Area (hectares/ square kilometres)	
	Block Area	
	Forest Area	
	Government Land Area	
	Private Land Area	
3.	Accessibility	
	Nearest Rail Head	
	Road	
	Airport	
4.	Hydrography	
	Local Surface Drainage Pattern (Channels)	
	Rivers/ Streams	
5.	Climate	
	Mean Annual Rainfall	
	Temperatures (December) (Minimum)	
	Temperatures (June) (Maximum)	
6.	Topography	
	Toposheet Number	
	Morphology of the Area	
7	Availability of baseline geoscience data	

	Geological Map (1:50K/ 25K)	Available / Not Available
	Geochemical Map	Available / Not Available
	Geophysical Map (Aerogeophysical, Ground geophysical, Regional as well as local scale GP maps)	Available / Not Available
8.	Justification for taking up G3 or G2 stage mineral exploration	Details should be furnished with surface, subsurface geological, geochemical, Geophysical data along with resource data (resource, average grade, cut-off, strike length, depth extension already proved with the confidence level). In case of exploration proposed near the active mine area, sufficient justification should be given by collecting surface samples in suitable location which represent the mineralisation from the area proposed for current exploration work along with analytical data

Detailed description on the following titles to be made in the proposal.

1. Block Summary

Physiography

Background Geology (Regional Geology & Geology of the Block).

Mineral potentiality based on geology, geophysics, ground geochemistry etc.

Scope for proposed exploration

Recommendations of G4 Stage Mineral Exploration Report.

Objectives

2. Previous Work

Attach Complete Previous Geological Report (G4 Stage); G4 and G3 stage reports for G2 stage.

Previous Exploration in adjoining area (Regional area): All the sample (bed rock/trench/groove/soil), borehole location should be plotted on the geological map and analytical data should be discussed briefly

Previous Exploration details in the proposed block area All the sample (bed rock/trench/groove/soil), borehole location should be plotted on the geological map and analytical data should be discussed briefly

3. Block description

Block corner points / Cardinal Points	Latitude	Longitude
A		
B		
C		
D		
E etc.		

4. Planned Methodology

5. Nature Quantum and Target

G4 stage GR should be submitted for G3 stage proposal and G3 stage GR for G2 proposal Succinct details of the previous stage exploration

Nature and Quantum of work proposed

Components	G3	G2
Aerial reconnaissance	Required if not covered in previous stage	Use G3 stage work
Geological Survey	RF 1:5,000/2,000	Use G3 stage 1:2,000 maps
Geochemical Survey	Geochemical sampling (Chip/Channel/Pit/Trench/Core/Soil)	Detailed Geochemical sampling Channel/Pit/Trench/Core/Soil) insystematic manner
Geophysical Survey	Detailed ground geophysical work, borehole geophysical logging. (Refer another table below)	Borehole geophysical logging Special geophysical traverses for problem solving, if required (Refer another table below)
Pitting/ Trenching	Pitting/ trenching to expose mineralized zone	Refine: Systematic pitting and trenching at regular interval along each borehole profile for surface/subsurface correlation, resource calculation and also to define the ore

		body in soil covered area
Scout drilling / Systematic drilling Only Systematic drilling	Refer – another table below	Refer – another table below
Grab and Chip sampling	Systematic sampling of few representative samples to be subjected to Davis tube recovery test in case of BMQ	Refine Sampling: Systematic sampling
Petrographic and mineralogical studies	Rocks of the deposit (host rock for mineralisation), alterations connected with mineralisation, target mineral phases (ore and gangue metal/mineral), paragenesis, primary secondary zones	Petrographic character of rocks including grain size, texture, controls of mineralisation etc.
Synthesis of all available data Not required in the quantum of work	<ul style="list-style-type: none"> i) Integration of regional/ detailed geophysical, geological and geochemical data, if not done earlier. (should be given in soft copy in shape file) ii) Synthesis of all available data and Report writing 	<ul style="list-style-type: none"> i) Integration of detailed geophysical, geological and geochemical data, if not done earlier. (should be given in soft copy in shape file) ii) Synthesis of all available data and Report writing

Borehole spacing (As per MEMC, 2015)

Type of deposit	Bedded Stratiform and Tabular deposit of regular habit (Minerals to be identified)	Bedded stratiform and tabular deposits of irregular habit (Minerals to be identified)	Lenticular bodies occurring en echelon Lenses, pockets. (Different minerals)
G3 Stage	800 m to 400 m	400 m or closer	Borehole spacing along strike may be kept 200-100 m or closer interval
G2 Stage	200 m or closer	200 m to 100 m or closer	Borehole spacing along strike may be kept 100-50 m or closer
Remarks	<ul style="list-style-type: none"> i) For shallow surficial deposits continuing to a depth of up to 6 m from surface pitting in grid spacing for various levels of prospecting may suffice. For deposits continuing further in depth drilling is recommended. ii) Abiotic geo-environmental studies, Geo-technical studies and bulk Beneficiation studies 	<ul style="list-style-type: none"> i) For shallow surficial deposits continuing to a depth of up to 6 m from surface pitting in grid spacing for various levels of prospecting may suffice. For deposits continuing further in depth drilling is recommended. ii) Abiotic geo-environmental studies, Geo-technical studies and bulk Beneficiation studies to be conducted at G2 stage. iii) 10% internal check samples of drill cores is 	<ul style="list-style-type: none"> i) Exploratory mine openings-open pit or underground with bulk determination of grades wherever necessary at G2 stage. ii) Abiotic geo-environmental studies, Geo-technical studies and bulk Beneficiation studies to be conducted at G2 stage. iii) 10% internal check samples of drill cores is recommended at G2 stage.

	<p>to be conducted at G2 stage.</p> <p>iii) 10% internal check samples of drill cores is recommended at G2 stage.</p> <p>iv) 5% external check samples of drill cores is recommended at G2 stage.</p>	<p>recommended at G2 stage.</p> <p>iv) 5% external check samples of drill cores is recommended at G2 stage.</p>	<p>iv) 5% external check samples of drill cores is recommended at G2 stage.</p>
	<p>(Vertical depth of intersection of mineralised zone for different level boreholes should be specified, number of boreholes (first, second, third), borehole spacing, approximate length of different level of boreholes may also be specified)</p>		

Geophysical Studies

General specifications of geophysical studies for various commodities is practiced by GSI are as below, however, the parameters likely to vary depending on the local geological set-up and nature and behaviour of ore body.

Commodity	Parameters	Technique	G3 stage (Preliminary Exploration)	G2 stage (General Exploration)
Chromite	Method	Gravity	1-0.5 km grid / 500-200 m	Along traverses at 50-20 m Station interval
	Spacing			
	Method	Magnetic		Along traverses at 50-20 m Station interval
	Spacing			
Manganese	Method	Gravity	1-0.5 km grid / 500-200 m	Along traverses at 50-20 m Station interval
	Spacing			
	Method	Magnetic Resistivity		Along traverses at 50-20 m Station interval
	Spacing			
Basemetals	Method	Gravity	200 m-500 m grid / 200-100 m	----
	Spacing			
	Method	Magnetic	200 m-500 m grid / 200-100 m	-----
	Spacing			
	Method	Electrical, IP, SP, Resistivity	Profiles as per objective	
	Spacing			
Method	Seismic	Profiles as per objective		
Spacing				
Iron Ore	Method	Magnetic Gravity	200 m-1 km grid, Semi Regional 500-200 m	50 m-100 m traverse interval, 10-20 m station interval
	Spacing			
REE & RM	Method	Gravity	200 m-1 km grid, Semi Regional 500-200 m	50 m-100 m traverse interval, 10-20 m station interval
	Spacing			
	Method	Resistivity	200 m-1 km grid, Semi Regional 500-200 m	Traversing, 50 m-100 m traverse interval, 10-20 m station interval
	Spacing			
	Method	Radiometric	200 m-1 km grid, Semi Regional 500-200 m	Traversing, 50 m-100 m traverse interval, 10-20 m station interval
	Spacing			
Gold/ PGE & Ni/ Basemetals	Method	IP / Resistivity	Traversing, 100 m-200 m (50-25 m) traverse interval, 10-20 m (3-5 m) station interval	Traversing, 50 m-100 m (25 m or lesser) traverse interval, 10-20 m (3-5 m or closer) station interval
	Spacing			
	Method	Magnetic	Traversing, 100 m-200 m traverse interval, 10-20 m station interval	Traversing, 50 m-100 m traverse interval, 10-20 m station interval
	Spacing			
	Method 3	SP	Traversing, 100 m-200 m traverse interval, 10-20 m station interval	Traversing, 50 m-100 m traverse interval, 10-20 m station interval
	Spacing			
Graphite	Method	SP	Traversing, 100 m-200 m traverse interval, 10-20 m station interval	Traversing, 50m-100 m traverse interval, 10-20 m station interval
	Spacing			
	Method	Magnetic	Traversing, 100 m-200 m traverse interval, 10-20 m station interval	Traversing, 50 m-100 m traverse interval, 10-20 m station interval
	Spacing			

	Method Spacing	Resistivity	Traversing, 100 m-200 m traverse interval, 10-20 m station interval	Traversing, 50 m-100 m traverse interval, 10-20 m station interval
Diamond	Method Spacing	Gravity	Random grid, 1 km – 500 m / 500-200 m	Traversing, 50 m-100 m Traverse interval, 10-20 m Station interval
	Method Spacing	Magnetic	Random grid, 1 km – 500 m / 500-200 m	Traversing, 50 m-100 m Traverse interval, 10-20 m Station interval
	Method Spacing	Resistivity	Random grid, 1 km – 500 m / 500-200 m	Traversing, 50 m-100 m Traverse interval, 10-20 m Station interval
	Method Spacing			
Gemstone	Method Spacing	Methods, profiles, spacing will be as per the nature of host rocks		
Potash and Phosphorite	Method Spacing	Methods, profiles, spacing will be as per the nature and association of these deposits. Seismic /2D Seismic / 3D Seismic/Radiometric survey		
Tin, Tungsten and Molybdenum	Method	Methods, profiles, spacing will be as per the nature of host rocks and nature of these deposits To delineate the shear zones & lithological boundaries		

Note: if further refinement or closer interval data is required at G2 stage exploration it will be decided based on the inference made from G3 stage exploration with proper justification.

6. **Exploratory Drilling** (Refer another document on exploratory drilling)
7. **Manpower deployment**
8. **Break-up of expenditure**
9. **References**

List of Plates

- Plate 1: Geological map on 1:50K and 1:25K/ 12.5K/ 10K with location index.**
Plate 2: Geochemical map/s on 1:50K and 1:25K/ 12.5K/ 10K. (any other sample data collected in random or local grid may be plotted over geological map)
Plate 3: Ground geophysical map/s (NGPM) on 1:50K and 1:25K/ 12.5K/ 10K.
Plate 4: Aeromagnetic map/s.
Plate 5: Proposed block boundary over existing Geological map.
Plate 6: Proposed Borehole Location Map.
Plate 7: Tentative Geological Borehole Sections.
Plate 8: Proposed block boundary over land use/ Accessibility map
Plate 9: Proposed block boundary over topographic map on 1:50,000.

Any other relevant plates.