

**MINISTRY OF MINES
NATIONAL MINERAL EXPLORATION TRUST (NMET)**

SUMMARY OF THE PROJECT PROPOSAL RECOMMENDED FOR 35th EC APPROVAL

EXPLORATION AGENCY : GEOEXPORE PVT LTD, BENGALURU

**TITLE NAME OF THE PROJECT : PRELIMINARY EXPLORATION (G3) FOR REE AND ASSOCIATED
MINERALS IN BORANA BLOCK, DISTRICT RAJSAMAND, RAJASTHAN**

Sl No	Features	Details
I	Block ID	GEO/NMET/RAJ/07/2023-24
II	Exploration Agency	GeoExpOre Private Limited
III	Previous Exploration Agency	G4 Stage by GSI
IV	Previous Stage Geological Report	Reconnaissance Survey for REE Mineralization in and around Borana Area, Rajsamand District, Rajasthan (UNFC Stage: G4) December, 2019
V	Commodity	REE and Associated Minerals
VI	Mineral Belt	Migmatite gneiss of Mangalwar complex
VII	Completion Period with entire time schedule and Cost	Borana Block, 12 months Cost : 146.98Lakhs
VIII	Objectives	<ol style="list-style-type: none">1. Carry out geological and structural mapping on a 1:2000 scale to demarcate REE and associated mineral-bearing formations with the structural features to identify the mineralised zones' surface manifestations and lateral disposition.2. To collect surface (Bedrock/Pitting) samples to analyse REE and associated mineralisation and decide on the further course of the exploration program.3. To drill 5 boreholes up to 50m depth each and one with 150-meter depth (total 6 BH) to prove the strike and depth persistence of ore-bearing formation mapped in the area, which in turn will aid in deciding the future course of the exploration program.4. To estimate preliminary REE resources along with any accessory elements (if any) as per UNFC norms and

		minerals (evidence of mineral contents) rules – 2015 at the G-3 level.
IX	Whether the proposed agency will carry out the work or through outsourcing and details thereof. Components to be outsourced and name of the outsource agency	<p>GeoExpOre will conduct mapping and mineral exploration activities. Drilling and chemical analysis will be conducted through empanelled agencies by NMET / GeoExpOrePvt Ltd.</p> <p>Drilling: GEO TECH EXPLORATION 51, Panchdeep Nagar, Wardha Road, Nagpur - 440024 or any other competent agencies empanelled by NMET/ State Govts.</p> <p>Lab Tests: SHIVA ANALYTICALS (INDIA) PRIVATE LIMITED, Hoskote, Bangalore. PSY PSN MY# Analytical & Quality Services Pvt. Ltd., Vizag. or any other competent agency, Govt labs will be used whenever required (HGML, IBM, NGRI, IIMT (CSIR) & GSI)</p>
X	Name/ Number of Geoscientists	<p>Sr. Geologist: 1 (Field) + 1 (HQ)</p> <p>Jr. Geologists: 2 (Field)</p>
XI	Expected Field days (Geology, Geophysics, Surveyor)	<p>Geologists: 30 (HQ) + 120 days (Field)</p> <p>Geophysicist: 30 days</p> <p>Surveyor: 30 days</p>

1	Location	BORANA BLOCK - Around Borana, Borana ka Khera, Gujjaron ka Khera villages, Rajsamand, Rajasthan.		
	Latitude & Longitude	PROPOSED G3 AREA (1.14 sq.km- BORANA BLOCK)		
		CARDINAL POINTS	LATITUDE	LONGITUDE
		A	25.4335	74.11317
		B	25.43575	74.11832
		C	25.43421	74.12136
		D	25.43170	74.11906
		E	25.43093	74.11990
		F	25.43262	74.12283
		G	25.43263	74.12900
		H	25.42596	74.12900
		I	25.42598	74.11584
		J	25.43111	74.11585
	Villages	Borana, Borana Ka Khera, Gujjaron Ka Khera Villages		
	Tehsil/ Taluk	Raipur		
	District	Rajsamand		
	State	Rajasthan		

2	Block Area (hectares/ square kilometres)	1.14 sq. km.
	Forest Area	2% (0.028 Sq.km)
	Government Land Area	43% Freehold Govt. Land
	Private Land Area	55% Private (Agriculture)Land
3	Accessibility	The area can be reached by State Highway No 75 Bhindar-Ramgarh Road. The block is located 6.64 Km NW of Raipur, a small town in the area. The neighbouring villages are interconnected by single-lane metaled roads and a few cart tracks.
	Nearest Rail Head	Bhilwara railway station is the nearest, located at a 5 km distance towards the east.
	Road / Airport	Maharana Pratap Airport, Udaipur Airport is located 75 Km from Rajsamand.
4	Hydrography	The area is devoid of major rivers; it is mainly drained by the north-easterly flowing Kothari River and its network.
	Local Surface Drainage Pattern (Channels)	The drainage of the area is mainly controlled by the north-easterly flowing Kothari River, along with a large number of ravines and gullies of this river network developing a sub-dendritic to dendritic drainage pattern.
	Rivers/ Streams	North-easterly flowing Kothari River.
5	Climate	The area experiences a dry climate with large temperature variations and scanty rainfall. Hot winds blow in summer, and winter is severe. The area has a hot, dry summer from March to June, followed by the southwest monsoon from July to September and a bracing winter from December to February.
	Mean Annual Rainfall	The average annual rainfall of the area is 682 mm.
	Temperatures (December) (Minimum) Temperatures (June) (Maximum)	5 °C. 46 °C.
6	Topography	The area has gentle undulating topography with isolated ridges. The highest elevation in the area is 560 m above the mean sea level.

	Topo-sheet Number	45K/03
	Morphology of the Area	The area forms gentle undulating topography.
7	Availability of baseline geoscience data	Available details were described in the Reconnaissance Survey for REE Mineralization in and around Borana Area, Rajsamand District, Rajasthan (UNFC Stage: G4) December 2019 Item No. M2ASMIF-MEP/NC/WR/SU-RAJ/2018/18594
	Geological Map (1:50K/25K)	1:12,500 Scale Map
	Geochemical Map Geophysical Map (Aeromagnetic, ground geophysical, Regional as well as local scale GP maps)	12,500 Scale Map During the National Geophysical Mapping Programme (NGPM), Geophysical studies were carried out in the Survey of India top-sheets 45K/3, K/4, K/7, K/8, and K/12. The investigation was aimed at achieving a minimum station density of one station per 2.5 km ² . A total of 1402 gravity and magnetic stations were established in these topo-sheets.
8	Justification for taking Preliminary Exploration under G3	<p>A reconnaissance study for REE mineralization was conducted by GSI in F.S. 2018–19 in and around the Borana area in toposheet 45K/03, which covers portions of the Rajasthani districts of Bhilwara and Rajsamand (Das and Ahmad, 2019). Using large-scale mapping (LSM), a 100 sq km area has been mapped at a 1: 12,500 scale. In order to assess the REE potentiality, a total of 401 bedrock samples, 50 petrochemical samples, 25 pitting/trenching samples, and 10 stream sediment samples have been gathered and examined. Intruded by syenite/alkali feldspar syenite and pegmatite are a variety of litho units mapped in this area, including amphibolite, mica schist and migmatite, quartzite, migmatite gneiss, and amet granite. According to the analytical results for the 401-bed rock samples, the total REE values in migmatite gneiss range from 29.60 to 3434.93 ppm, while in alkali syenite/syenite, they range from 83.03 to 2336.27 ppm.</p> <p>According to the geochemical dispersion map of all rare earth elements, the anomalous REE concentration is observed over migmatite gneiss and alkali syenite/syenite bodies of the Mangalwar Complex in two regions, viz., the northern part of the area near the Chatrawanmata temple in Borana and the migmatite gneiss in the southwest corner of the area near Kemuniya village. Further, GSI has recommended a detailed mapping during the higher level of investigation in the above-said anomalous zones.</p>

		<p>The gravity survey carried out during the National Geophysical mapping programme by GSI indicates a high-density body at shallow depth in toposheet no. 45K/3 near Borana and Raipur areas. The proposed block is a part of the Borana area, which again justifies the objectives of the proposed study.</p> <p>Dostal (2017) states that the alkali igneous rock deposits represent one of the most economically important resources of REE. Many studies, including those by Guha et al. (2020), Balaram (2019), Baidya et al. (1999), Barakos et al. (2018), and others, have shown that migmatite gneisses that include allanite and monazite may be prospective REE mineralised zones. Furthermore, the GSI report states that the presence of allanite and monazite in the migmatite gneiss of the suggested location is suggestive of the possibility of REE possibilities in the area.</p> <p>Thus, based on the evaluation of the previous GSI reconnaissance survey (G4) for REE in the area, a potential area with Total REE (TREE) >1500 TREE has been identified for G3 stage exploration. It is proposed that a preliminary exploration of the G3 Stage around Borana, Borana Ka Khera, and Gujjaraon Ka Khera villages in an area of 1.14sq. km will be carried out for the delineation of REE mineralisation. The preliminary exploration includes a detailed geological mapping (1:2000 scale), geochemical mapping, pitting and exploratory drilling for delineation of potential REE deposits in the area and resources estimation along with any accessory elements (if any) as per UNFC norms and minerals (evidence of mineral contents) rules – 2015 at the G-3 level.</p>
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