

**Proposal for Reconnaissance Survey (G-4)
For Graphite
(G-4 STAGE)**

Gokhra Block (Cluster 16)

Districts: Kalahandi, State: Odisha

NMET FUNDED PROJECT



सेन्ट्रल माईन प्लानिंग एण्ड डिजाइन इन्स्टीच्यूट लिमिटेड
(कोल इण्डिया लिमिटेड की अनुषंगी कम्पनी / भारत सरकार का एक लोक उपक्रम)
गोन्दवाना प्लेस, कान्के रोड, राँची - 834 031, झारखंड (भारत)
Central Mine Planning & Design Institute Limited
(A Subsidiary of Coal India Limited / Govt. of India Public Sector Undertaking)
Gondwana Place, Kanke Road, Ranchi - 834 031, Jharkhand (INDIA)
CORPORATE IDENTITY NUMBER - U14292.TH1975GOI001223

March – 2026

**Proposal for Reconnaissance Survey (G-4) For Graphite in Gokhra Block (Cluster 16)
(72 Sq.Km), Districts: Kalahandi, State: Odisha**

[Implementing Agency- CMPDI]

	Features	Details
1	Block ID	Gokhra Block (Cluster 16)
2	Exploration Agency	Central Mine Planning and Design Institute Limited (CMPDI)
3	Commodity	Graphite
4	Mineral Belt	Eastern Ghat Mobile Belt
5	Completion Period with entire Time schedule and cost	10 months
5	Objectives	<p>Based on the evaluation of geological data available, the present exploration program has been formulated to fulfil the following objectives:</p> <p>To carry out geological mapping on 1:12,500 scale.</p> <p>To collect surface (Bedrock) and pit/trench samples for analyses of Graphite Mineralization to decide further course of exploration program.</p> <p>To drill scout coring boreholes in case, analytical results of surface/pit/trench samples are positive. The future course of exploration program will be decided after reconnaissance survey (G-4) outcome to G-3/G-2 level of exploration.</p> <p>To estimate reconnaissance resources of Graphite as per UNFC norms and Minerals (Evidence of Mineral Contents) Amendment Rules, 2021 at G-4 level mineral exploration if required.</p>

6	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	Work will be carried out by the proposed agency except drilling which is proposed to be outsourced.
7	Name/Number of Geoscientists	Two
8	Expected Field days(Geology)Geological Party Days	Geologist Party Days: 90 (Field) + 30 Days (HQ)
9	Location	

a	Latitude and Longitude	CORNER POINTS	LATITUDE	LONGITUDE
		A	20° 07' 34.78" N	083° 11' 44.25" E
		B	20° 09' 51.65" N	083° 13' 31.14" E
		C	20° 05' 28.42" N	083° 19' 51.55" E
		D	20° 03' 10.65" N	083° 18' 4.17" E
b	Villages	Gokhra, Fatkabahli, Budhipadar, Laithera, Saria, Kandel, Brahmani, Karlakhunta, Turla, Chian Padar, Khaichuan		
c	Tehsil/Taluk	Narla, Kesinga		
d	District	Kalahandi		
e	State	Odisha		
10	Area(hectares/square kilometres)			
a	Block Area	72 sq.km		

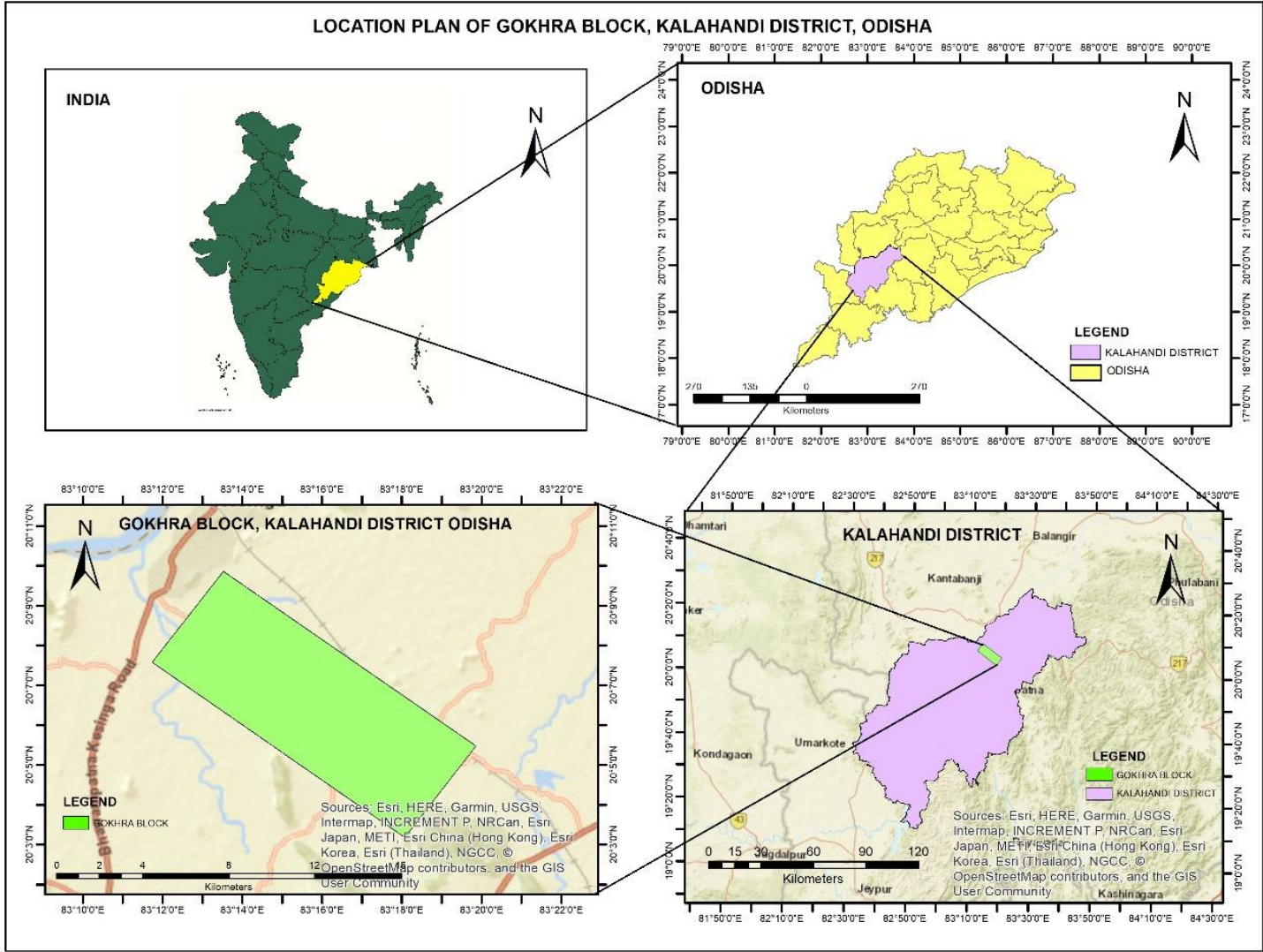
b	Forest Area	Block area is free from ESZ and Wild life sanctuary area. A small patch of about 3-4% of the Block partly falls in forest area.
c	Government Land Area	Data Not Available
d	Private Land Area	Data Not Available
11	Accessibility	
a	Nearest Rail Head	Rupra Road Railway Station is the nearest railway station lies towards the western part of the block and Bhawanipatna railway station is the nearest Rail Head which is about 30-35 km from the block.
b	Road	NH-26 runs at a distance of about 2 km from the western boundary of the block. SH-6A runs about 7-8 km away from the east side of the block.

c	Airport	Utkela airport (about 7-8 km) from the western part of the block and VSS airport, Jharsuguda (about 245 km) are the nearest from the block. Biju Pattnaik International Airport, Bhubaneswar at the state capital is located around 420Km from the block.
12	Hydrography	
	Local Surface Drainage Pattern(Channels)/ Rivers/Streams	The western part of the block area is drained by the Ret River which is a tributary of the Tel River. The drainage pattern is dendritic pattern. There are no rivers or nalas in the eastern part of the block area. Turla Dam lies towards the centre of the block.
13	Climate	
a	Mean Annual Rainfall	The average annual rainfall is 1378.20 mm.
b	Maximum Temperatures(May) Minimum Temperatures (January)	The temperature starts rising form beginning of February and reaches maximum during the month of May. The daily mean maximum temperature is about 40 ^o C and daily mean minimum is about 26.6 ^o C in May. The maximum temperature is about 45 ^o C and The daily mean maximum temperature is about 25.4-27 ^o C and daily mean minimum is about 12.8-14.0 ^o C in January. The minimum temperature falls below 10 ^o C.
14	Topography	
	Toposheet Number	Part of SOI Toposheet Nos. 64 P/7 and 64 P/8
15	Availability of baseline geosciences data	
a	Geological Map(1:50K/25K)	1:25,000
b	Geochemical Map	Geochemical Map were generated from the data mentioned in the report of NGCM program and also verified from NGDR portal.

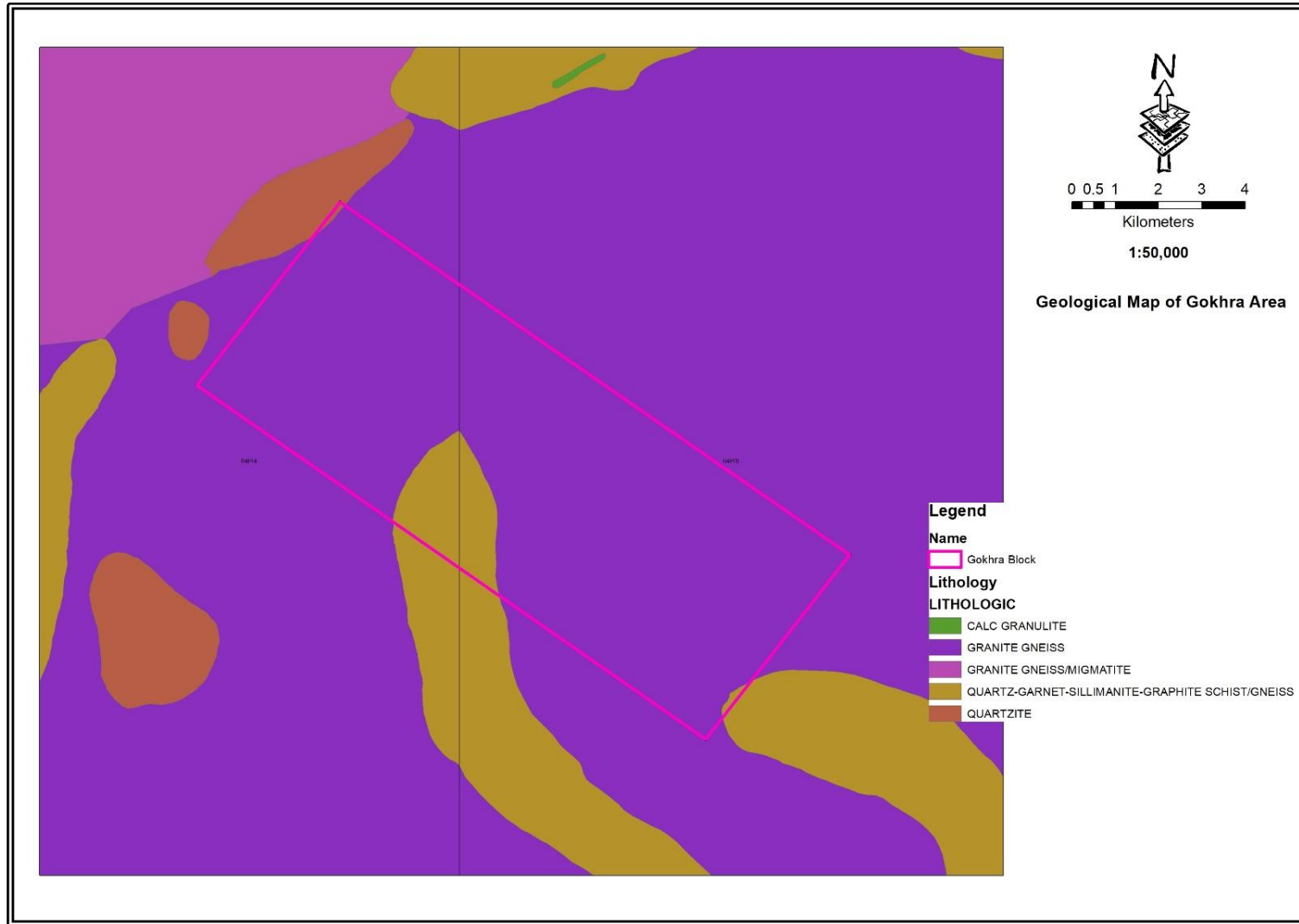
c	Geophysical Map	Area is Covered by NGPM program of GSI. Bouguer Gravity and Magnetic anomaly map is available .
16	Justification for taking up Reconnaissance Survey (G- 4) in the area.	<ul style="list-style-type: none"> • The proposed area is located in Eastern Ghat Mobile belt Zone. Several occurrences of Graphite mineralization have been found inside the block area and nearby areas. • Previous exploration works in nearby areas have revealed the presence of old workings and favorable geological setting of graphite mineralization in the block area. • Towards the eastern part of the block occurrence of graphite has been observed. • Occurrence of Graphite Mineralization: Occurrences of graphite was found in some old abandoned quarries in Gokhra, Fatkabahali, Budhipadar and Litera villages. The host rock schist occurs as linear bands and the graphite occurrences in the host rock is flacky body and some time as pockets within schists of Eastern Ghat Mobile belt in the area of investigation. • Graphite mineralization in the Eastern Ghat Mobile belt is mainly associated with the schists and Charnockite Rocks. The charnockite rock is represented by quartzo felspathic gneiss. This indicates high grade metamorphism. • The block is surrounded by Titlagarh Graphite Belt. Reconnaiance survey (G4) for Graphite in Lamer Panga Block located towards the eastern side of Gokhra block is already done by OMC, Odisha. Therefore, graphite mineralization may also be continued within Gokhra Block. • Three number of bedrock samples were collected from the old quarries located in the present block, viz. Laithera abandoned quarry (sample no. KOCH-111), Budhipadar old/ abandoned quarry (sample no. KOCH-112 & 113) has given FC% of 30.1, 2 34.6 and 26.9 respectively. • In view of above facts proposal for Reconnaissance Survey (G- 4) for Graphite mineralization in the Gokhra Block (Cluster-16) Area has been formulated.

Proposed Quantum of Works

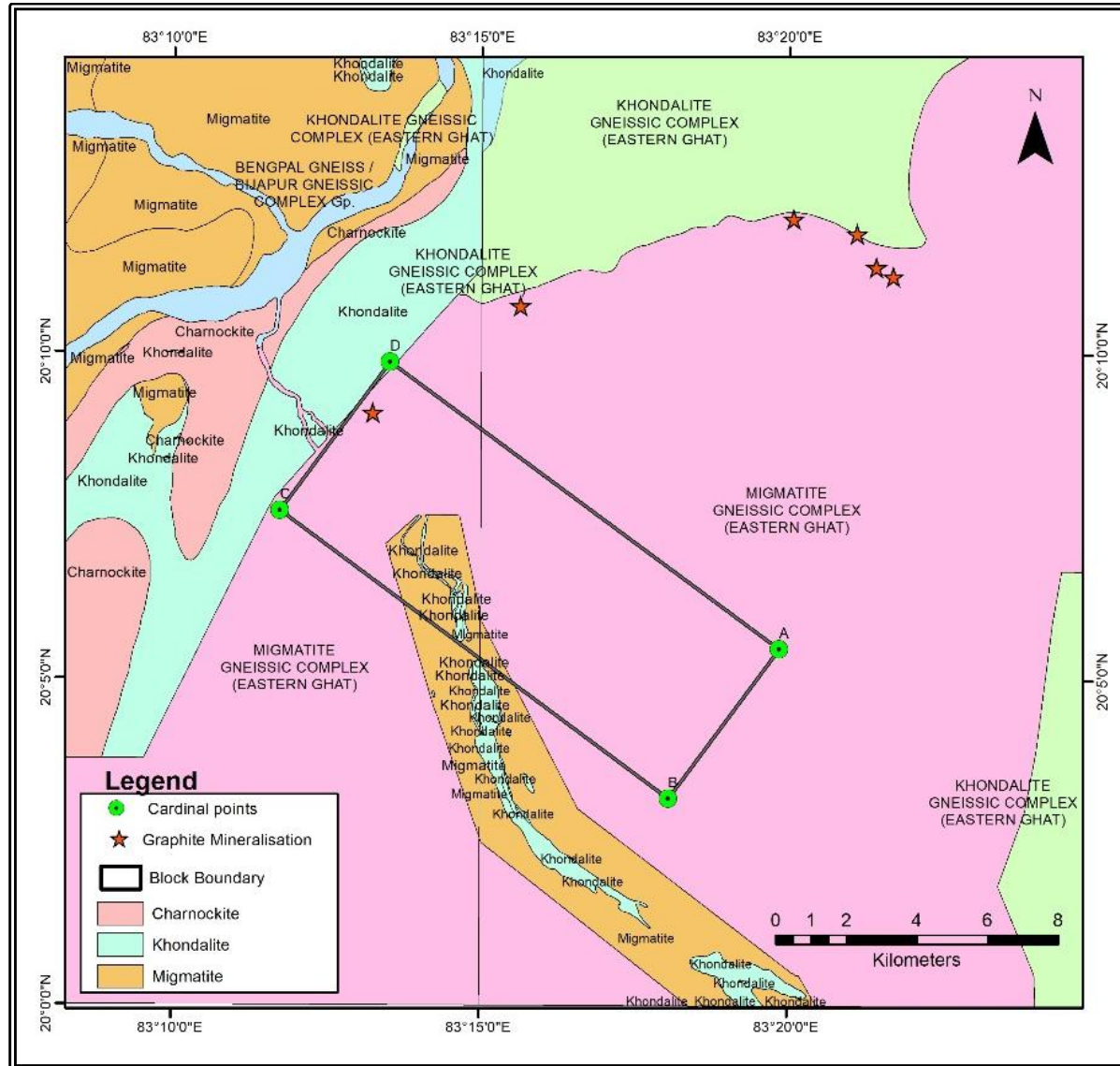
Sl no.		Particulars	Unit	Proposed Quantity
1		<i>Geological Mapping (on 1:12,500 Scale).</i>	Sq. Km	72
2		<i>Trenching and Pitting</i>	Cu.Meter	70
3.		<i>Core Drilling (5 scout boreholes)</i>	m	350
4.		<i>Geophysical Survey (Self-Potential (SP))</i>	Line km	20
5.		<i>Sample Preparation and Laboratory Studies</i>		
	A.	BRS/Trench/Borehole samples		
	i.	Proximate Analyses for Graphite	No	160 (BRS:50, Trench: 60, BH:50)
	ii.	External Check samples (10% of Primary samples)	No	16 (BRS:5, Trench: 6, BH:5)
	iii.	Whole Rock Analysis for Major Oxides	No	20 (BRS:10, Trench: 10)
	iv.	ICPMS for Trace (14)/REE(9) Elements	No	15
	B.	Pit/Trench Samples		
		<i>Petrographic Studies</i>		
	(a).	Preparation of Thin Section	No	15
	(b).	Study of Thin Section	No	15
		<i>Mineragraphic Studies</i>		
	(c).	Preparation of Polished Section	No	10
	(d).	Study of Polished Section	No	10
6.		<i>SEM/EDX</i>	No	5
7.		<i>Geological Report Preparation</i>	No	1
8.		<i>Exploration Scheme Preparation</i>	No	1



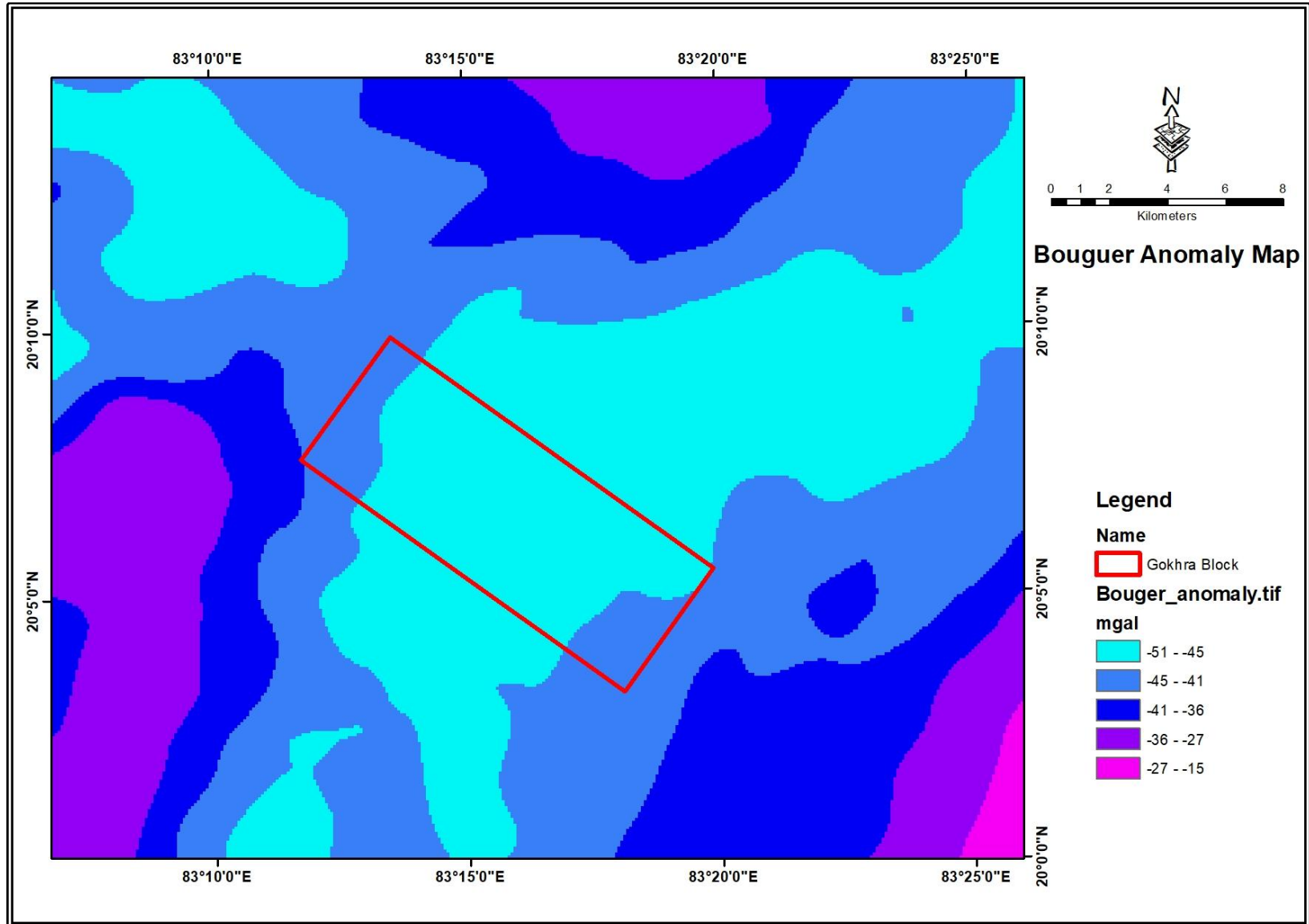
Geological Map of Gokhra Block (1:50000 Scale)
(Source: NGDR)



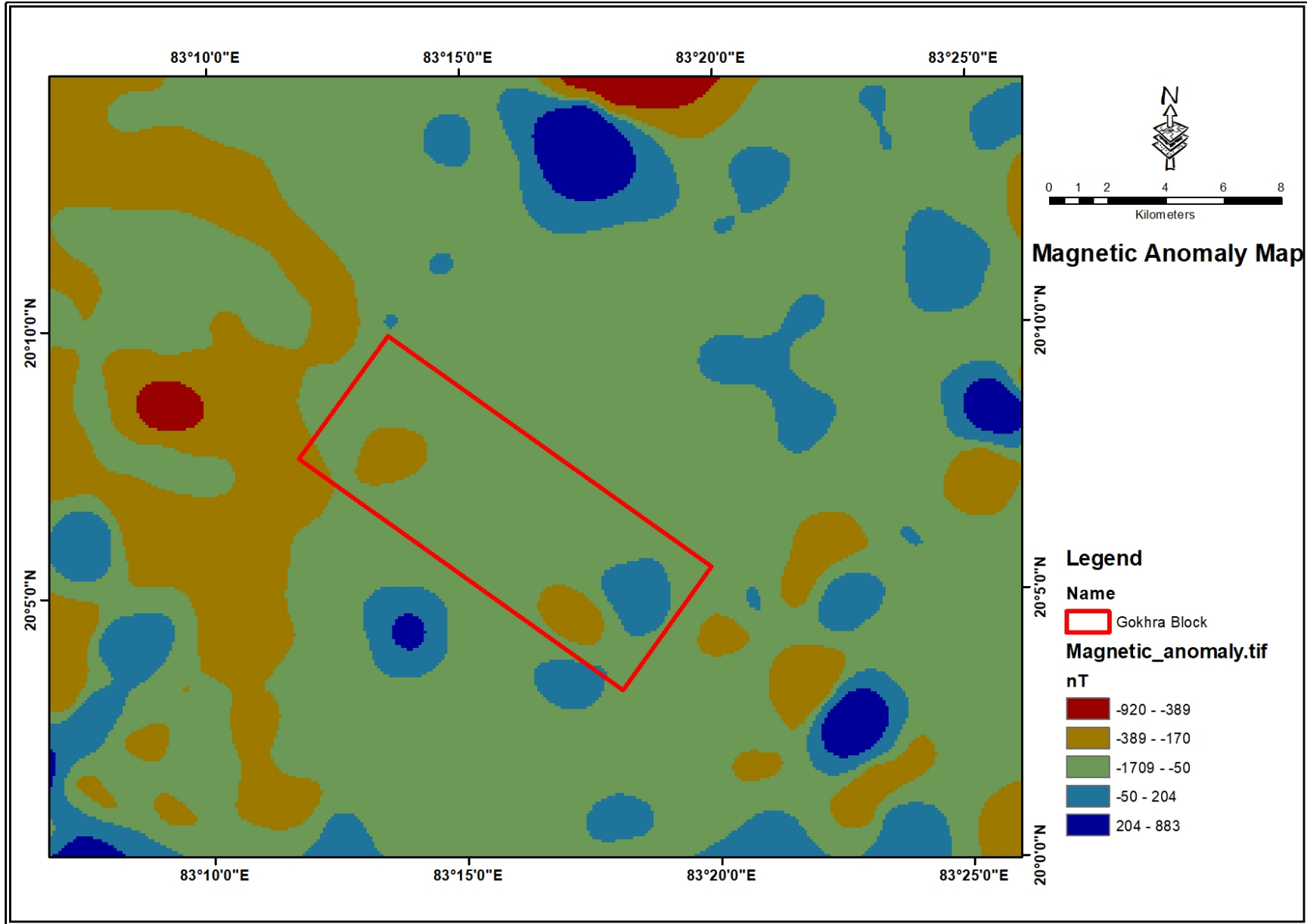
Geological Map of Gokhra Block (1:25000 Scale)
 (Source: NGDR)



Bouguer Anomaly Map (Source: NGDR, GSI)



Magnetic Anomaly Map (Source: NGDR, GSI)



Location of Samples Collected by CMPDI

