

**Proposal for Sirmaur -Kevati Block, Rewa District, Madhya Pradesh
State for Reconnaissance Survey (G4 Stage) under NMET.**

Commodity: Bauxite

By

Maheshwari Mining Pvt. Ltd.

Place: Kolkata

Date: 17/05/2023

Summary of the Block for Reconnaissance Survey (G4 Stage) GENERAL INFORMATION ABOUT THE BLOCK

	Features	Details
	Block ID	Sirmaur-Kevati Block
	Exploration Agency	Maheswari Mining Pvt. Ltd.
	Commodity	Bauxite and lateritic bauxite/aluminous laterite
	Mineral Belt	Vindhya
	Completion Period with entire Time schedule to complete the project	12 months
	Objectives	1. To map bauxite and lateritic bauxite areas alongwith the lithologies on which those occur. 2. Assessment of tentative resource in G4 stage of investigation and the grade of bauxite. 3. Attempt to delineate a block or more than one block to upgrade the investigation in G3 stage.
	Whether the work will be carried out by the proposed agency or throughoutsourcing and details thereof. Components to be outsourced and name of the outsource agency	Work will be carried out by Maheshwari Mining Pvt. Ltd.
	Name/ Number of Geoscientists	In field: Two Geologists. At Headquarters: Two Geologists.
	Expected Field days (Geology) Geological Party Days	Expected field days: 5 months (150days each). In field: 300 party days for a party of 2 Geologists. At Headquarters: 2 Geologists (210 days each)
1.	Location	
	Latitude	24 ⁰ 47'23.40'' to 24 ⁰ 52'14.93''
	Longitude	83 ⁰ 19'57.37'' to 81 ⁰ 29'35.19''
	Villages	Sirmaur-Dulahara-Kevati
	Tehsil/ Taluk	Simaria Tehsil
	District	Rewa district
	State	Madhya Pradesh
2.	Area (hectares/ square kilometres)	
	Block Area	150 sq km
	Forest Area	
	Government Land Area	
	Private Land Area	
3.	Accessibility	
	Nearest Rail Head	Manikpur and Satna Rly Stn. of Madhya Pradesh
	Road	
	Airport	Khajuraho 211kms
4.	Hydrography	
	Local Surface Drainage Pattern (Channels)	General drainage pattern is northerly flowing.
	Rivers/ Streams	Tons or Tamasa River is the main river which flows towards north all along outside western boundary of the block. Northerly flowing

		Mahanadi River flows from south to north along the eastern part of the block and it joins Tamasa river outside the northeastern corner of the block.
5.	Climate	
	Mean Annual Rainfall	The area has tropical monsoon climate, faces long spells of dry seasons with very low rainfall(100cm).
	Temperatures (December) (Minimum) Temperatures (June) (Maximum)	The summer is severely hot (99.8 ⁰ F to 107.3 ⁰ F or 38 ⁰ C to 41.8 ⁰ C) and temperature rarely drops below zero during nights of December and January.
6.	Topography	
	Toposheet Number	63H/5
	Morphology of the Area	The result of dry and semiarid climate is seen in Vindhyan plateau. The valleys and plateaus together give 'canyon like' structures. The steep vertical walls or escarpments of the valleys expose the stratigraphic sections.
7	Availability of baseline geoscience data	
	Geological Map (1:50K/ 25K)	1:50K map is available
	Geochemical Map	1:50K Geochemical Map is not available
	Geophysical Map (Aeromagnetic, ground geophysical, Regional as well as local scale GP maps)	Not Available
8.	Justification for taking up Reconnaissance Survey / Regional Exploration	Bauxite cappings occur on a number of plateaus in Rewa and Satna districts of Madhya Pradesh as reported by De and Kalsotra (1969-70) and Srivastava, Kalsotra & Alam (1970-71). Baunra plateau appeared to hold promise and it was taken up for exploration to the western part of present area. Initially a resource of 1.25million tonnes was estimated over an area of 0.2 sq km in Simaria, Kakeri, Rajahuan and Dharkundi. In 1971-72 GSI took up exploration for bauxite in the area bounded by Latitudes 24025' & 25000' and Longitudes 81008' & 81021'in Survey of India toposheet nos. 63H/01 and 63H/05. Resources estimated for Gudia Hillock, Chauriya Hillock, Kariywa hillock, Tamwa Hillock, Barhaiya Hillock, Golwa Hillock, Terhwa Hillock and Batauria Hillock. A total of 2.12 million tonnes resource was reported from these hillocks. In the year 1976 in the final report M.R.Kalsotra and Sheo Prasad have mentioned a number of locations in the area with assessment for resources for bauxite on the basis of available analytical results. They have categorised bauxite into five grades on the basis of analyses. The blocks are Baunra Hill Deposit, Dudhowra Deposit, Geedhain Hill Deposit, Kudwaria Deposit, Dhukhanja Deposit, Kumarin Deposit, Bara Pathar Nimahi Deposit, Bara Pathar Kumarin Deposit etc. In Baunra Hill the resource is estimated as 10.54 mt with range of

		Al₂O₃ from 42.12% to 53.15%, SiO₂ from 2.16 to 8.62%, Fe₂O₃ from 9.93 to 22.78% and TiO₂ from 6.24 to 8.96%. Resources estimated for other blocks are also encouraging alongwith their analytical results. Keeping in view the same topography and geological set up to the eastern part of Baunra Plateau a G4 stage investigation for bauxite is proposed in Sirmaur-Kevati area (Toposheet no. 63H/5). A team of geologists from Maheswari Mining Pvt. Ltd. visited the area recently and collected some samples during reconnoitry traverses. Analytical results of the samples are very much encouraging. The analyses for the samples are given below:			
		Sample	Al ₂ O ₃ %	Fe ₂ O ₃ %	SiO ₂ %
		1.	55.87	7.83	3.48
		2.	50.04	15.98	3.04
		3.	52.64	6.42	2.98
		4.	48.70	18.30	1.76
		5.	36.16	35.66	1.27

Detailed description

1. Block Summary

Physiography:

The area shows well dissected Vindhyan Plateau. It is dissected by ravines with steep cliffs on both sides. The valleys and plateaus together give 'Canyon Like' structures. The steep vertical walls or cliff sections expose the stratigraphy of the area. Northerly flowing Tamasa River passes all along outside the western border of the block and Mahanadi River flows within the block from south to north. Mahanadi River joins Tamasa River to the northeastern corner of the block.

Background Geology (Regional Geology, Geology of the Block):

Bauxite deposits occur on a number of hills, reported by Dey and Kalsotra (1969-70) and later on by Srivastava, Kalsotra and Alam (1970-71). The Baunra Plateau which is located to the west of present block had accordingly been taken up for exploration. Upper Rewa Sandstone with numerous flat-topped hills and hillocks capped with laterite is main geological unit exposed in the area which is forming extensive escarpments.

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

As revealed by pitting and drilling , a general lateritic profile in a part of the area investigated by earlier workers is given below:

Soil	0.1 to 2m
Pisolitic laterite... ..	0 to 6m
Upper aluminous laterite (low grade bauxite)...	0 to 12m
Bauxite (massive, pisolitic as well as clayey).....	0 to 40m
Lower aluminous laterite (low grade bauxite)	0 to 9m
Lower laterite	0 to 24m
Lithomarge.....	13 to 23m

Soil: Thickness varies from 0.10m to 2m. It is thin towards outer edge of the plateaus, where there are large outcrops of laterite and bauxite.

Pisolitic laterite: This unit is red to reddish brown in colour, occurs immediately above the upper Aluminous Laterite with a gradational contact. Pisolites are of 2cms to 5cms in diameter.

Upper Aluminous Laterite: It is with variable thicknesses and confined to areas of bauxite occurrences.

Bauxite: It is light grey, grey, white and light pink in colour. It is compact and massive, pisolitic and clayey and occurs as lenticular bodies with variable thicknesses.

Laterite: Lower aluminous laterite is underlain by a zone of consistent laterite. It comprises of goethite, haematite and limonite.

Lithomarge: The lowermost horizon of lateritic profile is revealed by boreholes. It is composed of white clay, yellow pink ochreous material and clays of variegated colour. It has a gradational contact with the overlying ferruginous laterite and underlying friable sandstone.

M.R.Kalsotra and Sheo Prasad (1976) reported in the Final Report on Regional Assessment of Bauxite Deposit of Simaria area regarding resources for a number of blocks named Baunra Hill Deposit, Dudhowra Deposit, Geedhain Hill Deposit, Kudwaria Deposit, Dhukania Deposit, Kumarin Deposit, Bara Pathar Nimahi Deposit and Bara Pathar Kumarin Deposit. Besides these a number of smaller prospects are also mentioned by them in the report.

The tonnage vis-à-vis average analytical results of Baunra Hill Deposit is given below:

Categories of bauxites	Tonnage	Al ₂ O ₃ %	SiO ₂ %	Fe ₂ O ₃ %	TiO ₂ %	LOI
Grade-I	2.26 million tonne	53.15	2.16	9.93	8.31	25.8
Grade-II	3.15 million tonne	51.08	2.49	11.30	8.96	25.4
Grade-III	4.11 million tonne	50.08	2.55	12.58	7.92	25.15
Grade-IV	0.36 million tonne	47.93	8.62	11.06	6.24	24.2
Grade-V	0.66 million tonne	42.12	4.65	22.78	6.51	22.1

Analytical results for other seven blocks are equally encouraging to be classified under the category of bauxite.

Scope for proposed exploration:

As the Sirmaur-Kevati plateau area is eastern extension of the area in the Vindhya of Rewa District, M.P. and recorded observations by limited field checks by the geologists of Maheshwari Mining Pvt. Ltd helps in launching an exploration of G4 stage in the area. The analytical results of few samples collected by the team are as follows:

2. Previous Work

(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 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).

Available information discussed under previous point.

3. Block description

Block Corner points Cardinal Points	Latitude	Longitude
M	24°52'14.93"N	81°19'57.37"E
N	24°52'13.96"N	81°29'35.19"E
O	24°47'24.22"N	81°29'38.29"E
P	24°47'23.40"N	81°20'03.96"E

4. Planned Methodology: G4 stage guideline of MEMC Rule will be followed.

5. Nature Quantum and Target

Nature and Quantum of work proposed

Components	G4 Stage
Aerial reconnaissance	Nil
Geological Survey	i) 1: 12,500 scale for 150 sq km area. ii) Identification of lithology, structure, surface mineralization, borehole core studies and old history of mining, if any.
Geochemical Survey	Regional Grab / chip sampling from surface and escarpments: 200nos.
Pitting	100 cu m pitting. Sample length from each trench is 1m. Pit samples: 100 nos.
Scout drilling / Systematic drilling	10 boreholes if required with a total of 250m.
Grab and Chip sampling	(10 PS+10 PCS) representative samples from all bed rocks to carry out petrographic studies (PS) and petro chemistry (PCS).
Core sample	250 borehole core samples from bauxite, aluminous laterite and lateritic bauxite zones. Sample length 1 m.
Petrographic and minerographic studies	10 nos. Principal rock types, mineral assemblage, identification of minerals of interest
Synthesis of all available data	i) Integration of regional geological and geochemical data. Synthesis of all available data and Report writing

5 & 6. Manpower deployment and break up of expenditure for Sirmaur-Kevati area (G4 stage)

	Estimated cost of Bauxite investigation in Sirmaur-Kevati Block, Rewa District, MP(G4 Stage) Area : 150 sq km, Period of completion : 12 months						
Sl. Nos	Item of work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item-SI No	Rates as per SoC	Qty.	Total	
1	Geological Mapping (on 1:12,500)						
	(a) Charges for 2 Geologists in field (without labourer)	per day per Geologist	1.2.b	11000	300	3300000	
	(b) Charges for 2 Geologists at Headquarters	per day per Geologist	1.2.a	9000	420	3780000	
	(c) Labour for Geologist (4 Nos)	per day (appxly)	5.7	500	600	300000	
2	Geochemical sampling	Nos			200		
3	Technological Survey						
	(a) Pitting	per cu m	2.1.2	3800	100	380000	
	(b) Drilling	per m	2.2.1.1b	5242	250	1310500	
	(c) Borehole pillaring (construction of concrete pillar) 12 inches x12 inches x 30 inches	per borehole	2.2.7a	2000	10	20000	
	(d) Transportation of Drill Rig and truck(to and from Headquarters or Previous drill site)	per km	2.2.8	36	700	25200	
	(e) Drilling camp setting cost	per drill	2.2.9a	250000	1	250000	
	(f) Drilling camp winding cost	per drill	2.2.9b	250000	1	250000	
	(g) Monthly accommodation charges for drilling camp	per month	2.2.9	50000	3	150000	
	(h) Approach road making to drill site	per km	2.2.10a	22020	5	110100	
4	Laboratory Studies						
	(a) Combined determination of Trihydrate Alumina, Monohydrate	per sample	4.1.17a	6700	550	3685000	

7. References:

- (i) De, A.K. and Ram, M. 1970 (FS:1969-70): Progress Report of GSI (unpublished).**
- (ii) Srivastava, A.K. and Kalsotra, M.R. (FS: 1970-71): Progress Report of GSI (unpublished).**
- (iii) Kalsotra, M.R. and Alam J.M.(FS:1971-72): Progress Report on the detailed exploration for bauxite in Vindhyan terrain in parts of Rewa District, M.P., adjoining Banda District, U.P. Unpublished Progress report of GSI.**
- (iv) Kalsotra, M.R. and Prasad, S.: Final Report on the Regional Assessment of bauxite deposit in Simaria area in parts of Rewa and Satna Districts, M.P. and adjoining Banda District, U.P., Vol-I text, 1976(compilation of reports of FSs: 1970-71 to 1972-73 & 1972-73 to 1974-75)**

List of Plates

Plate I: Proposed block boundary over topographic map on 1:50,000.

Plate II: Proposed block boundary over Geological map on 1:50,000.

Plate III: Sampling Points over Geological Map on 1:50,000.

Proposed Timeline for different work components of in Sirmaur-Kevati Block, Rewa District, MP(G4 Stage)													
Item of work	Months												
	1	2	3	4	5	6		7	8	9	10	11	12
Geological Mapping (1:12,500) with BRS collection							R E V I E W						
Pitting & Sampling													
Drilling													
Chemical analysis of sample													
Petrographic Study													
Preparation of Geological report & its submission													



TEST REPORT

Test Report No. : IGI/BBSR/TR/2023/BH057299 ULR-TC676623000002568F

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DATE: 02.03.2023

Chemical Testing

Ores & Minerals

Job No. :	BH057299
*NAME & ADDRESS OF CUSTOMER :	M/S. MAHESHWARI MINING PRIVATE LIMITED. CORPORATE OFFICE: 21, C.L.M LANE, P.O.-RANIGANJ-713347, -, W.B. BURDWAN, INDIA
*CUSTOMERS REFERENCE : (POST/COURIER/FAX/E-MAIL)	REF-MMPL/2023/WO-4 DATE: 25.02.2023
SAMPLE PARTICULARS : (MATERIAL TO BE TESTED)	Bauxite
SAMPLE RECEIPT DATE :	25.02.2023
NO. OF SAMPLE(S) :	5
SAMPLE DESCRIPTION :	SAMPLE RECEIVED FROM CUST : M/S. MAHESHWARI MINING PRIVATE LIMITED
CONDITION OF SAMPLE :	RAW (05 X 200 GMS)
*PARAMETERS TESTED :	Al ₂ O ₃ , Fe ₂ O ₃ , SiO ₂ , P ₂ O ₅
TEST METHOD : (ASTM / IS / ISO / OTHERS)	Al ₂ O ₃ - IGI/TPM/L/BSR/33.2 (WD XRF) Fe ₂ O ₃ - IGI/TPM/L/BSR/33.2 (WD XRF) SiO ₂ - IGI/TPM/L/BSR/33.2 (WD XRF) P ₂ O ₅ - IGI/TPM/L/BSR/33.2 (WD XRF)

TEST RESULTS

Analysis Commencement Date: 01.03.2023		Analysis Completion Date: 01.03.2023							
SAMPLE REF/ID (Customer)	SAMPLE CODE (Laboratory)	TEST PARAMETERS							
		Al ₂ O ₃ %	Fe ₂ O ₃ %	SiO ₂ %	P ₂ O ₅ %				
		(db)	(db)	(db)	(db)				
SAMPLE ID - L -35	3504499	55.87	7.83	3.48	0.245				
SAMPLE ID - L -35 (B)	3504500	50.04	15.98	3.04	0.229				
SAMPLE ID - L -39	3504501	52.64	6.42	2.98	0.282				
SAMPLE ID - L -42	3504502	48.70	18.30	1.76	0.213				
SAMPLE ID - L -44	3504503	36.16	35.66	1.27	0.126				

REMARKS:

Samples tested on dry basis. (db). Submitted by the party.

*Indicates information supplied by the customer for which the laboratory has no control.

Enclosures ()



SHYAMAL KUMAR MALLIK
(TECHNICAL MANAGER)
AUTHORISED SIGNATORY

SAMPLING NOT DONE BY THE LABORATORY. RESULTS RELATE TO THE SAMPLE TESTED ONLY
THE CONTENTS OF THE REPORT SHALL NOT BE REPRODUCED EITHER IN FULL OR IN PART WITHOUT PRIOR WRITTEN CONSENT OF THE ISSUING AUTHORITY

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DATE: 06/04/2023

Plate:I

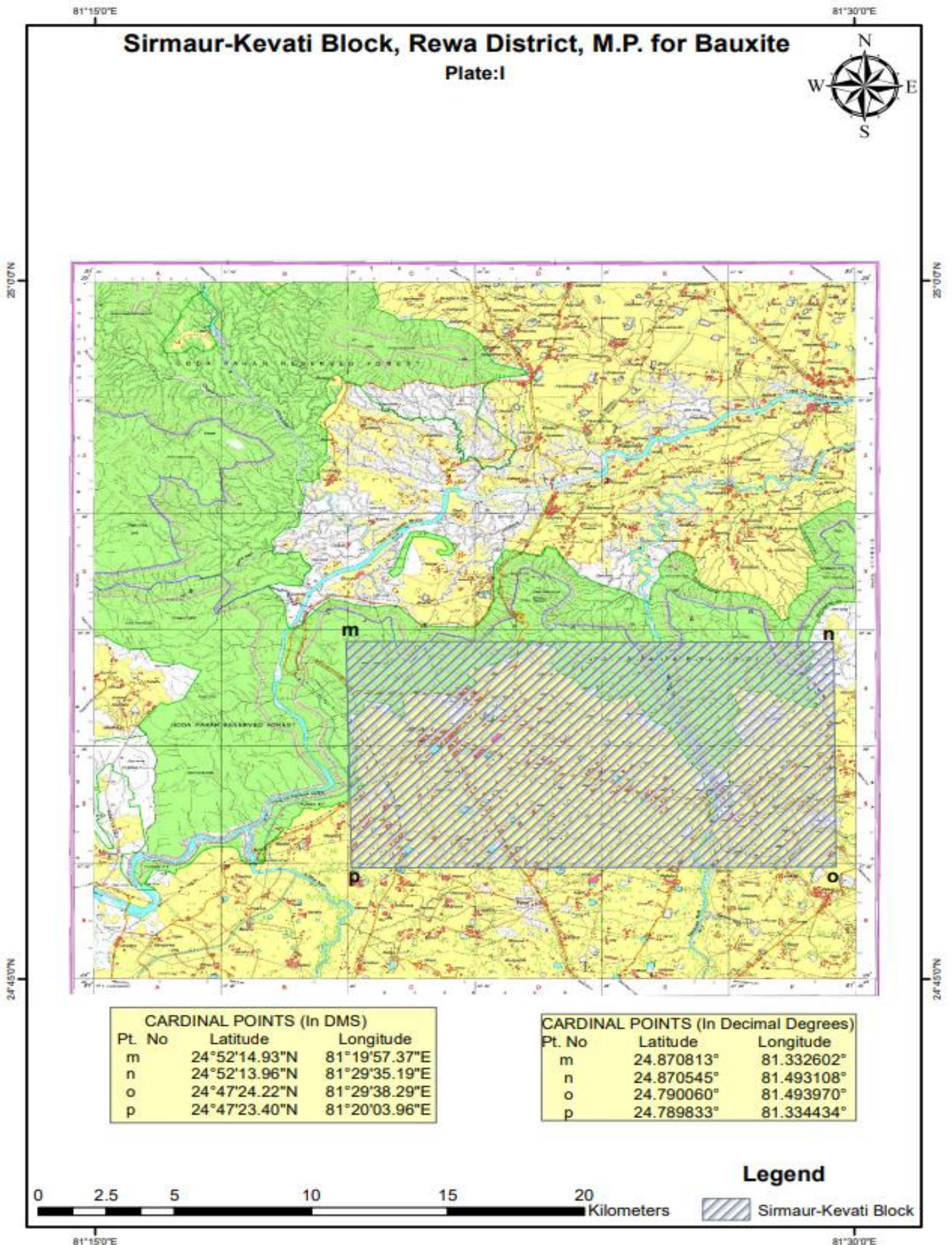


Plate:II

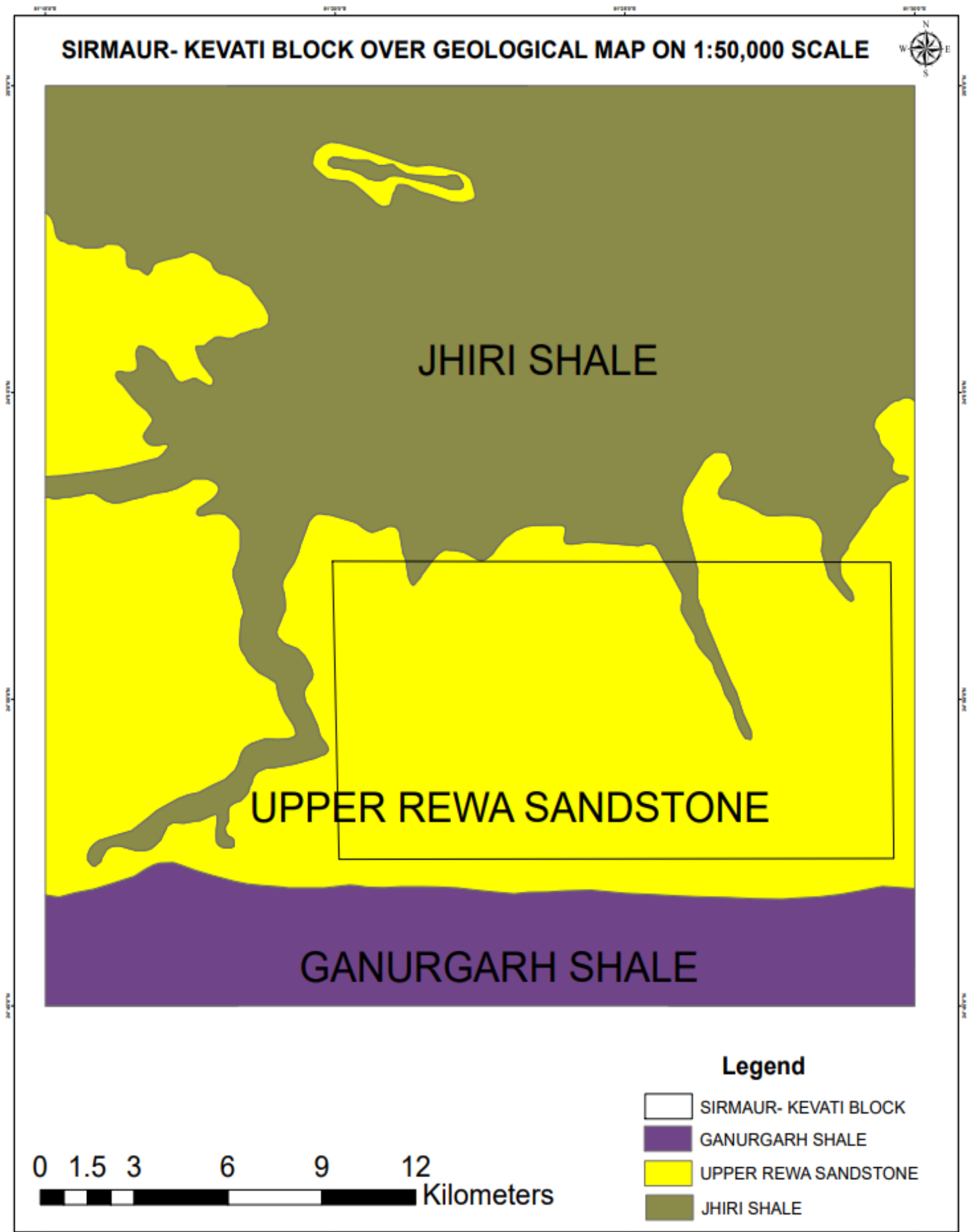
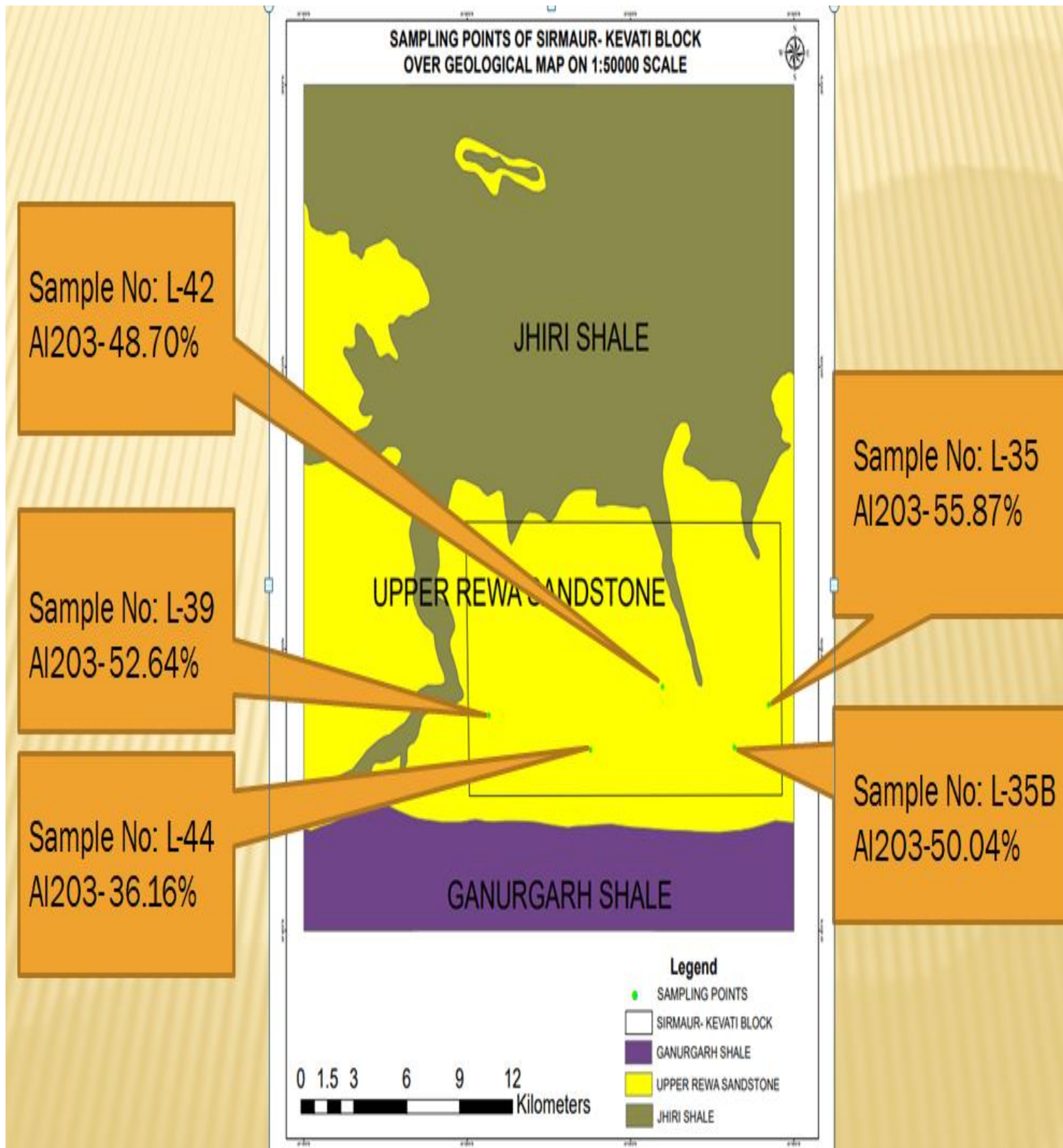


Plate:III



Maheshwari Mining Private Limited

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CIN No.: U14294WB1994PTC062325

To
The Director & HoD
National Mineral Exploration Trust (NMET)
Ministry of Mines
F-114, Shastri Bhavan
New Delhi-110001

It is certified that:

1. Project titled "Proposal for Sirmaur-Kavali Block, Rewa District, Madhya Pradesh state for Reconnaissance Survey" along with estimated cost Rs. 1.79 Crores is submitted for consideration of NMET funding.
2. The project proposal is prepared following the guidelines prescribed in Minerals (Evidence of Mineral Contents) Rules, 2015 in case of mineral exploration project proposals.
3. The proposal has been duly examined and concurred by associate finance in accordance with canons of financial propriety.
4. The same project proposal or project proposal with similar objectives has not been submitted to any other funding agency by this organisation and the project proposal bears no duplication with existing work/ ongoing project undertaken by this agency.



[Name & designation of Head of the Organisation]
[DG/Principal Secretary/Secretary (Geology & Mining)/CMD/CEO/MD]

Name: Ambika Prasad Samantaray, CEO

Date: 17/05/2023
Place: Kolkata

