DETAILED PROJECT REPORT

For Bauxite, Vanadium and associated mineralization in Lalpursani Block, Dindori District, Madhya Pradesh (UNFC Stage- G3) under NMEDT

(In principle approved in 24th meeting of TCC-II held on 2nd & 3rd March 2026)

Commodity:

Bauxite, Vanadium and associated mineralization

By

S AND S GEOLOGICAL CONSULTANTS

Place: Hyderabad

Date: 11th April 2026

Summary of the Proposed Lalpursani block for G3 stage exploration

Sl No	Features	Details
	Block ID	Lalpursani Block
	Exploration Agency	M/s S and S Geological Consultants
	Previous Exploration Agency	G4 Stage by GSI
	Previous stage Geological Report)	G4 stage GR was submitted by GSI titled "Report on Reconnaissance Survey and Aluminous Laterite Mineralisation Around Vikrampur Mal, Dhanoli Mal Gorakhpur Mal and Mohtara, Dindori District, Madhya Pradesh, October 2023". (Encl: 1.)
	Commodity	Bauxite and vanadium associated mineralization
	Mineral Belt	Amarkantak bauxite belt
	Completion Period with entire schedule to complete the project	7 months
	Objectives	1. Establish the variability of grade in surface and sub- surface 2. Assessment of bauxite resource with assessment of Metal grade bauxite and Vanadium associated mineral content.
	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	Yes. All components will be carried out by the proposed Agency.
	Name / Number of Geoscientists	2 (One in Field, Suri Ravi and One in Office M.A.Samad).
	Expected Field days (Geology, Geophysics, Surveyor)	Geologist party days on field: 100 Days. Geologist party days in HQ: 30 Days.
1	**Location**	
	Latitude	22°43′02.53″ N to 22°44′53.30″ N
	Longitude	81°23′05.89″ E to 81°25′01.49″ E
	Villages	Lalpursani, Manikpur
	Tehsil/ Taluk	Bajag
	District	Dindori
	State	Madya Pradesh
2	**Area (hectares/ square kilometres)**	
	Block Area	4 sq.km
	Forest Area	Yes, Reserve Forest 100%
	Government Land Area	Data not available
	Private Land Area	Data not available
3	**Accessibility**	
	Nearest Rail Head	The nearest railway station is Anuppur Junction (78 km) on Katni-Bilaspur line in Bilaspur railway division of South East Central Railway Zone. Other nearby railway station is Shahdol Junction (80 km) and Mandla Fort railway station (136 km).

	Road	It is approximately 520 km. from state capital Bhopal, 200 km. from Jabalpur and 50 km. from district headquarter Dindori. Important nearby towns are Dindori (M.P.), Gadasarai (M.P.), Bajag (M.P.), Amarkantak (M.P.), Anuppur (M.P.), Rajendragram (M.P.), and Pandariya (Chhattisgarh). State Highway MP SH 22 running from Khategaon, Dewas District to Kabir Chabutra, Dindori District, passes through the north-eastern part of the study area nearby Dongritola and Madhopur villages in toposheet 64F/05. All weather jeepable roads join from state highway and connect important villages in the study area. Other small villages are connected by fair weather unmetalled roads while forest areas and interiors of the plateau are only approachable via small foot tracks. The road connectivity to Jaipur is primarily through National Highway NH-25 and NH-62, which further links to NH- 48, connecting directly to Jaipur. Metalled roads provide smooth access to the site, while jeepable tracks ensure last-mile connectivity for local travel.
	Nearest Airport	Raipur, Chhattisgarh is the nearest airport from the study area which is 180 km away.
4	**Hydrography**	
	Local Surface Drainage Pattern (Channels)	The study area forms part of Amarkantak plateau and is marked by pronounced relief with high central tableland lying amidst low elevation plain area. The central plateau is irregular in shape and is dissected by numerous streams. It has flat top marked by thin soil cover and steep scarps developed along the edges overseeing narrow valleys. The low elevation mounds are occupied by Deccan basalt whereas higher elevations have extensive laterite/bauxite cover.
	Rivers/ Streams	Nil
5	**Climate**	The area has tropical monsoon type of climate due to its closeness with the Tropic of Cancer; however, it experiences pleasant weather for its location at an elevation about 800m above mean sea level. Summer season normally starts from April and continues till end of June. April and May are severe hot months, when the summer season is at its peak. Winter normally starts from mid-November and continues till end of February. December, January, and February are cold months, when the winter season is at its peak. In March climate in most parts of the region is on its bloom because of the spring. Rainy season generally starts from beginning of July and extends up to the mid-September. Autumn season is generally very small from mid-September to mid-November. The extended rainy season is the reason for its short duration. Minimum temperature in the higher areas goes down to 0ºC during December-January. The maximum temperature in the lower areas exceeds even 45ºC during May-June. The average rainfall in the region is nearly 1250mm. The maximum rainfall during south- west monsoon period is from July to September. About 85% of the annual rainfall is received during monsoon season. Only about 15% of the annual rainfall occurs during non-monsoon period, from October to May. Occasional winter rains are not uncommon. The overall climate of the area is characterized by hot summer and general dryness during the winter season.
	Avg. Annual Rainfall	The average rainfall 1250 mm per annum.
	Temperatures Minimum Maximum	0°C. 45°C.
6	**Topography**	
	Toposheet number	64F/06

	Morphology of the Area	The area shows undulatory topography with knobby hills and rest area is sand covered.
7	**Availability of baseline geoscience data**	
	Geological Map (1:50K/ 25K)	Available 1:12500 scale map
	Geochemical Map	Not Available
	Geophysical Map (Aeromagnetic, ground geophysical, Regional as well as local scale GP maps)	Not Available
8.	**Justification for taking Preliminary Exploration under G3**	**A. Background Information:** Block lies in toposheet no 64F/06 and is part of Amarkantak Plateau. The Amarkantak Plateau is known to host bauxite/aluminous laterite mineralization in extensive laterite cappings developed over Deccan basalt. Bauxite occurs as pockets within the laterite cappings. The District Resource Map (DRM) of Dindori District, Madhya Pradesh shows presence of such cappings in the northern, central, and southern-eastern parts of the district. The general regional geology of the area comprises Tirodi Gneissic Complex of Archean age, Lameta of Upper Cretaceous age, Amarkantak Group of Deccan Supergroup of Upper Cretaceous to Paleocene age and Bauxite/ Laterite of Cenozoic age. Tirodi Gneissic Complex comprises of migmatite, biotite gneiss, and granite gneiss. These rocks form the core of Maikal Range and are well exposed in the lower slopes of the Amarkantak plateau. Lametas consists of limestone at the base and variegated clays towards the top. The basalt of Amarkantak Group covers most part of the Amarkantak Plateau. It comprises a sequence of basaltic lavaflows of 'Aa', simple and compound 'Pahoehoe' type with a cumulative thickness of about 400m. The flow represents cyclic eruptions. The Amarkantak Group is classified into four formations viz., Mandla, Dhuma, Pipradehi, and Linga based on porphyritic nature of individual flows and presence of inter-trappean beds. Mandla Formation comprises seven simple to compound 'Pahoehoe' flows. Dhuma Formation consists of eight 'Aa' to 'Pahoehoe' flows. Pipradehi Formation comprises three highly porphyritic flows and Linga Formation consists of four non- porphyritic flows. The basalt is light greenish to grey colored and fine grained in nature. Vesicular and amygdaloidal varieties are also commonly noticed and secondary silica, zeolites, and calcite make up the amygdules. The basalt is capped by laterite/ bauxite at higher elevations. Laterite/ bauxite cappings are a common feature of the basalts of the area. Laterite shows variation in color from cherry red to whitish brown and exhibits pisolitic, botryoidal, and tube structures. Small pockets of bauxite within laterite in the eastern part of the area are being mined by various agencies. Bauxite occurs as pockets/lenses within the laterite/aluminous laterite cappings. It is exposed in the form of massive outcrops or insitu boulders present along the slope just below the plateau top at elevations above 970m. At many locations in the study area within Dhanauli Reserve Forest such as west, north- west, and south of Jampani village, south of Dhanras village, west and south-west of Lalpursani village, north-east and west of Lakhanpur

	Justification for taking Preliminary Exploration under G3	village, etc. bauxite in the form of considerable pockets and tabular bodies is exposed. As per Ministry of Mines notification 2018, the threshold value of Bauxite mineral has been classified in following two categories: (i) For Aluminous laterite: Al_2O_3 - 20% (min.) (ii) For Bauxite: Al_2O_3 - 30% (min.) and SiO_2 (Total) - 7% (max.). The analytical results of the bauxite pockets are encouraging with high Al_2O_3 (upto 60%), TiO_2 (upto 11%), Vanadium (upto 1600ppm) and Gallium (upto 100ppm). **B. Justification:** Based on investigated work in the study area by GSI during FS 2022-23, it has been observed that the area holds promise for bauxite and aluminous laterite mineralization. The analytical results of the samples show good grade of bauxite and aluminous laterite with alumina (Al_2O_3) in bauxite ranging from 35.73% to 60.38%, silica (SiO_2) up to maximum of 6.8%, Titanium (TiO_2) values ranging from 3.21% to 11.22%. In aluminous laterite samples, alumina (Al_2O_3) content ranges from 19.65% to 49.15%, silica (SiO_2) from 7.63% to 29.67%, and titania (TiO_2) from 2.25% to 9.81%. The bauxites/aluminous laterites of the study area are also associated with critical elements such as Vanadium and Gallium ranging up to a maximum of 1906.2ppm & 105.07ppm respectively. Pockets of bauxite/aluminous laterite with positive analytical results have been demarcated on the large-scale map. The surficial extent of mineralization (bauxite pockets) is good with considerable thickness of about 2m to 9m. Hence this area was recommended to be upgraded to G-3 stage of investigation based on values of chemical results; however, the area falls under Dhanauli Reserve Forest and requires necessary clearance from forest department for further exploration. The occurrence of associated high value critical metals viz vanadium and Gallium necessities the exploration at G3 stage for resource assessment of Bauxite and associated commodities. In the view of the above encouraging result, the proposed block needs to be explored in G-3 stage.

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

1.0 Block Summary

The block is measuring 4.0 sq.km falling within Amarkatak Plateau in Dindori District of M.P known for Bauxite occurences. (Fig-2)

1.1 Physiography

The Lalpursani Block forms part of the **Amarkantak Plateau**, characterised by a moderately rugged terrain with pronounced relief. The physiography is dominated by a central laterite-capped tableland surrounded by comparatively lower elevation plains. The plateau surface is irregular in shape and dissected by numerous seasonal streams, resulting in steep escarpments and narrow valleys along the margins.

The plateau top is generally flat to gently undulating with thin soil cover, while the edges are marked by steep scarps exposing laterite, bauxite and weathered basalt. The lower elevations are occupied by Deccan basalt forming mounds and gentle slopes. The average elevation of the

area is around 800–1000 m above mean sea level, providing favourable conditions for lateralisation and development of bauxite caps.

Drainage in the area is dendritic to sub-dendritic in nature, controlled mainly by topography and lithology. The physiographic setting is conducive to the formation and preservation of laterite and bauxite horizons over the basaltic parent rock.

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

The Lalpursani Block lies within toposheet no. 64F/06 and forms part of the Amarkantak Plateau, which is a well-known bauxite-bearing province. The plateau is characterized by extensive laterite and bauxite cappings developed over Deccan basalt. Bauxite occurs as pockets within these laterite cappings.

The Lalpursani Block is dominated by Deccan basalt of the Amarkantak Group, which is light greenish to grey, fine-grained, and exhibits vesicular and amygdaloidal textures with secondary fillings of silica, zeolites and calcite.

The basalt is overlain by laterite and bauxite cappings at higher elevations. The laterite shows variation in colour from cherry red to whitish brown and displays pisolitic, botryoidal and tubular structures.

Bauxite occurs within the laterite/aluminous laterite as pockets, lenses and tabular bodies, exposed as massive outcrops or in-situ boulders along slopes below plateau tops (>970 m). Significant occurrences are reported in Dhanauli Reserve Forest around Jampani, Dhanras, Lalpursani and Lakhanpur areas.

1.3 Regional Geology

Geological Unit	**Age**	**Lithology / Composition**	**Characteristics / Remarks**
Tirodi Gneissic Complex	Archean	Migmatite, biotite gneiss, granite gneiss	Forms the core of the Maikal Range; exposed along lower slopes of the Amarkantak Plateau
Lameta Formation	Upper Cretaceous	Limestone (base), variegated clays (top)	Represents sedimentary sequence over older basement rocks
Amarkantak Group (Deccan Supergroup)	Upper Cretaceous to Paleocene	Basaltic lava flows (‘Aa’, simple and compound ‘Pahoehoe’)	Covers major part of plateau; ~400 m thick; formed by cyclic volcanic eruptions
Mandla Formation	Part of Amarkantak Group	Basalt flows	One of the subdivisions based on flow characteristics

Dhuma Formation	Part of Amarkantak Group	Basalt flows	Composed of 'Aa' to 'Pahoehoe' flows
Pipradehi Formation	Part of Amarkantak Group	Porphyritic basalt flows	Contains highly porphyritic flows
Linga Formation	Part of Amarkantak Group	Non-porphyritic basalt flows	Represents upper sequence of basalt flows
Laterite / Bauxite	Cenozoic	Laterite and bauxite	Developed as cappings over Deccan basalt at higher elevations

1.4 Geology of the Block (Lalpursani Block)

Component	**Description**
Dominant Rock Type	Deccan basalt of Amarkantak Group
Colour & Texture	Light greenish to grey; fine grained
Rock Features	Exhibits vesicular and amygdaloidal textures
Secondary Minerals	Silica, zeolites and calcite filling amygdules
Overburden / Cap Rock	Laterite and bauxite cappings at higher elevations
Laterite Characteristics	Colour varies from cherry red to whitish brown; shows pisolitic, botryoidal and tubular structures
Mode of Occurrence of Bauxite	Occurs within laterite/aluminous laterite as pockets, lenses and tabular bodies
Form of Exposure	Massive outcrops and in-situ boulders
Topographic Control	Occurs along slopes just below plateau tops (>970 m elevation)
Important Occurrence Areas	Dhanauli Reserve Forest including areas around Jampani, Dhanras, Lalpursani and Lakhanpur villages

Mineral Potentiality (based on geology, geochemistry etc.)

The Lalpursani Block shows good potential for bauxite and aluminous laterite mineralization. The area is part of the Amarkantak Plateau where laterite and bauxite are developed over Deccan basalt. This geological condition is suitable for formation of bauxite.

Bauxite occurs as pockets, lenses and tabular bodies within laterite and aluminous laterite, mainly near plateau top and slope areas. Many such occurrences are seen in Dhanauli Reserve Forest around Lalpursani, Jampani, Dhanras and Lakhanpur areas.

The chemical analysis results from GSI investigation show encouraging values. Alumina (Al_2O_3) content in bauxite is high (up to about 60%) and silica is comparatively low. Titanium values are also significant. In addition, the area is enriched with important elements like Vanadium and Gallium.

The thickness of bauxite bodies is around **2 m to 9 m** and the surface extent is also good. Many mineralized pockets have already been identified and marked.

Based on geological setting, field observations and geochemical results, the area has good mineral potential and is suitable for further detailed exploration.

1.5 Scope for Proposed Exploration

The proposed exploration work in Lalpursani Block is planned at G3 stage to study the bauxite and associated mineralization in detail. The main aim is to establish the continuity of bauxite both on surface and below the ground.

The work will help to understand the variation in grade of bauxite and associated elements like Vanadium. It will also help in finding out the thickness and lateral extent of the bauxite bodies present in the area.

Through this exploration, proper assessment of bauxite resources will be done as per UNFC norms. The study will also give information about distribution and quality of mineralization in the block.

Overall, the exploration will convert the preliminary data into detailed information required for future mining and resource estimation.

1.6 Recommendations of G4 Stage Mineral Exploration Report

The G4 stage exploration carried out by GSI shows that the Lalpursani area has good potential for bauxite and aluminous laterite mineralization. The analytical results of samples show good grade bauxite with high alumina and low silica content.

The study also shows presence of important associated elements like Vanadium and Gallium in significant amounts. The thickness of bauxite bodies is found to be about 2 to 9 metres and the surface extent is also good. Many bauxite pockets have been identified in the area.

Based on these encouraging results, the area is recommended for further exploration at G3 stage for detailed investigation and resource estimation. However, since the area falls under reserve forest, necessary forest clearance is required before carrying out further exploration work.

1.7 Objectives

The main objective of the proposed exploration in Lalpursani Block is to study the bauxite mineralization in detail. The work is planned to establish the variation of grade both at surface and sub-surface level.

Another objective is to assess the bauxite resources present in the area. Along with this, the study will also evaluate the metal grade bauxite and the associated Vanadium content.

Overall, the objective is to generate reliable data for proper estimation of mineral resources in the block (G-3 Stage).

2.0 Previous Work

The previous geological work in the study area was carried out by the Geological Survey of India (GSI) during field season 2022–23 at G4 stage. The report titled *"Reconnaissance Survey for Bauxite and Aluminous Laterite Mineralization around Vikrampur Mal, Dhanoli Mal, Gorkahpur Mal and Mohtara, Dindori District, Madhya Pradesh"* has been appended.(Fig-1)

2.1 Previous Exploration in Adjoining (Regional) Area

In the regional area, detailed geological mapping and sampling work were carried out. Bedrock samples, as well as pit and trench samples, were collected from different locations. These sample locations were plotted on large scale geological maps.

Geochemical analysis of these samples shows encouraging results with good alumina content and presence of associated elements like Vanadium and Gallium. The data indicates that the area is favourable for bauxite and aluminous laterite mineralization.

2.2 Previous Exploration in Proposed Block Area

In the Lalpursani block area, bauxite occurrences were identified during G4 stage exploration. Samples were collected from bedrock, pits and trenches, and their locations were marked on geological maps. A total of 17 bed rock samples and 7 pits have been analysed within the block and their locations are shown in the proposed borehole plan. The list of BRS and Pit samples analysed within the block is shown below:

BRS Samples Analysis from GSI report

No.	Sample Reference No.	Lithology	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	CaO (%)	MgO (%)	Na_2O (%)	K_2O (%)	TiO_2 (%)	P_2O_5 (%)	MnO (%)	LOI (%)	V (ppm)	Ga (ppm)
34	34/DN86/BRS/22-23	Bauxite	1.84	52.77	10.7	0.1	0.17	0.02	0	11.2	0.04	0.15	22.9	714.23	104.6
35	35/DN88/BRS/22-23	Bauxite	2.52	50.76	16.2	0.1	0.21	0.02	0	8.91	0.04	0.15	20.2	1347.7	93.87
36	36/DN92/BRS/22-23	Aluminous Laterite	14.9	44.75	20.4	0.1	0.16	0.08	0	5.31	0.09	0.05	12.8	683.5	52.42
37	37/DN93/BRS/22-23	Bauxite	2.94	60.38	4.25	0.1	0.14	0.03	0	6.82	0.04	0.47	24.4	564.75	61.49
41	41/DN112/BRS/22-23	Aluminous Laterite	14.5	38.61	20.7	0.2	0.09	0.03	0	5.55	0.03	0.22	19	758.04	49.53
42	42/DN116/BRS/22-23	Bauxite	1.98	58.54	6.03	0	0.06	0.01	0	8.13	0.04	0.09	25	682.02	72.12
43	43/DN117/BRS/22-23	Bauxite	5.56	48.17	14.1	0.1	0.07	0.02	0	7.72	0.03	0.07	23	417.66	78.25
44	44/DN122/BRS/22-23	Bauxite	3.29	44.97	22.7	0.1	0.15	0.02	0	9.25	0.05	0.13	19.1	1325.6	62.59
45	45/DN128/BRS/22-23	Aluminous Laterite	7.63	49.15	13.5	0.1	0.07	0.02	0	5.15	0.02	0.06	22.5	515.85	52.06
46	46/DN129/BRS/22-23	Ferruginous Laterite	13.3	33.2	35.1	0.2	0.08	0.02	0	4.99	0.02	0.29	12	1142.8	47.08
47	47/DN130/BRS/22-23	Aluminous Laterite	22.5	41.38	3.5	0.2	0.05	0.03	0	6.24	0.03	0.12	23.7	182.39	53.49
48	48/DN140/BRS/22-23	Aluminous Laterite	11.9	49.08	17.5	0.1	0.07	0.06	0	8.44	0.1	0.07	11.4	1142	44.74
49	49/DN149/BRS/22-23	Aluminous Laterite	19.1	47.55	12.7	0.1	0.11	0.08	0.1	5.35	0.04	0.06	13.6	766.82	46.63
50	50/DN151/BRS/22-23	Bauxite	2.95	46.35	21.6	0.1	0.06	0.02	0	8.98	0.04	0.09	19.2	877.45	83.4
54	54/DN150/BRS/22-23	Bauxite	2.89	57.74	6.1	0.1	0.11	0.02	0	8.22	0.06	0.03	23.6	851.7	105.1
56	56/DN161/BRS/22-23	Bauxite	4.82	36.83	30.6	0.1	0.07	0	0	8.05	0.19	0.03	18	1151.5	75.95
60	60/DN174/BRS/22-23	Bauxite	6.8	35.73	32.4	0.1	0.07	0.01	0	7.87	0.15	0.03	15.5	1184.4	65.76

PTS Samples Analysis from GSI report

Pit No.	Sample Reference No.	Lithology	SiO_2 (%)	Al_2O_3 (%)	Fe_2O_3 (%)	CaO (%)	MgO (%)	Na_2O (%)	K_2O (%)	TiO_2 (%)	P_2O_5 (%)	MnO (%)	LOI (%)	V (ppm)	Ga (ppm)	Zr (ppm)	Nb (ppm)
5	05/PT2/02/PTS/22-23	Aluminous Laterite	9.96	37.82	26.24	0.08	0.07	0.02	0.04	7.23	0.11	0.05	17.8	1081.6	58.02	455.6	41.31
6	06/PT3/01/PTS/22-23	Ferruginous Laterite	20.95	26.53	36.44	0.34	0.07	0.04	0.03	3.53	0.13	0.02	11.3	929.63	35.23	215.7	18.74
10	10/PT4/02/PTS/22-23	Aluminous Laterite	11.1	38.02	25.97	0.14	0.05	0.02	0.02	7.99	0.1	0.02	16	964.58	55.75	509.1	46.05
11	11/PT5/01/PTS/22-23	Aluminous Laterite	8.03	38.11	24.43	0.28	0.41	0.08	0.02	7.27	0.31	0.05	20.9	911.37	74.03	554.4	47.16
12	12/PT5/02/PTS/22-23	Bauxite	5.07	43.73	20.81	0.14	0.24	0.04	0.01	7.72	0.2	0.04	21.6	725.24	79.67	690.9	52.71
13	13/PT5/03/PTS/22-23	Bauxite	6.47	42.04	20.87	0.14	0.21	0.05	0.03	7.57	0.22	0.06	21.3	583.77	73.85	593.3	49.61
14	14/PT6/01/PTS/22-23	Bauxite	3.71	47.52	16.3	0.08	0.16	0.04	0.03	8.67	0.24	0.06	22.8	943.93	82.07	910.8	65.77

The analytical results of these samples show high alumina content and low silica, indicating good quality bauxite. The study also shows presence of Vanadium and Gallium in appreciable amounts.

Based on these results and field observations, several bauxite pockets have been identified in the block area, which indicates good potential for further detailed exploration.

3.0 Block Description

Block Corner Points / Cardinal Points

The Lalpursani Block is located within the following geographic coordinates:

Point	Latitude (N)	Longitude (E)
A	22°44′16.51″ N	81°23′05.89″ E
B	22°44′53.30″ N	81°23′53.27″ E
C	22°44′39.41″ N	81°24′02.23″ E
D	22°44′20.76″ N	81°23′50.17″ E
E	22°44′21.12″ N	81°24′34.70″ E
F	22°44′09.13″ N	81°24′30.35″ E
G	22°44′04.67″ N	81°24′09.54″ E
H	22°43′52.72″ N	81°23′59.21″ E
I	22°43′36.98″ N	81°24′06.34″ E
J	22°43′34.32″ N	81°24′30.10″ E
K	22°43′17.58″ N	81°25′01.49″ E
L	22°43′08.90″ N	81°24′58.21″ E
M	22°43′02.53″ N	81°24′22.14″ E
N	22°43′28.96″ N	81°23′31.02″ E
O	22°44′07.87″ N	81°23′42.40″ E
P	22°44′09.17″ N	81°23′17.45″ E

The block lies between latitude 22°43′02.53″ N to 22°44′53.30″ N and longitude 81°23′05.89″ E to 81°25′01.49″ E. It covers an area of about 4 sq. km and includes parts of Lalpursani and Manikpur villages.

4.0 Planned Methodology

The proposed exploration work in Lalpursani Block will be carried out at G3 stage in a systematic manner. First, detailed geological mapping will be done to understand the surface distribution of bauxite and laterite.

After that, pitting (4 Pit samples) and 11 BRS samples will be collected in mineralized zones to study the continuity of bauxite bodies. Samples collected from pits and bedrock will be analysed for Al2O3 and associated minerals.

Drilling work will be taken up to study the sub-surface extension of mineralization and to know the depth and grade variation. The borehole locations will be selected based on geological mapping and surface indications. A tentative proposed borehole location plan is enclosed. A total of 21 boreholes are proposed with cumulative meterage of 300m.

All collected samples will be analysed to determine chemical composition, especially alumina, silica and associated elements like Titanium, Vanadium and Gallium.

Based on mapping, sampling, and drilling data, the bauxite resources will be estimated as per UNFC norms. (Fig-3)

As part of initial reconnaissance survey, the team of Geologists visited the block under proposal for G3 investigations on March 25th 2026. The approach to block was possible through a trekkable path which is full of vegetation in the foot hill portion near to Lalpursani village. Two samples viz. BRK 1 and 2, were collected from the visible outcrops located on top of hill at 22º 43' 43.77" N, 81º 23' 53.71" E and at 22º 44' 6.52" N, 81º 23' 58.02" E. The samples collected were sent to M/s Lucid Laboratories, Hyderabad for analysing all the elemental oxides present within the sample. The results are awaited and the same will be presented at the time of discussion (PPT Presentation). The locations of these two points are shown in the plan showing the proposed drilling and pitting plan to be taken up for G3 exploration work. (Site visit Photos)

5.0 Nature, Quantum, and Target

The previous exploration work in the study area was carried out by GSI at G4 stage during field season 2022–23. During this stage, reconnaissance survey was done over the area of 50 sq.km to identify bauxite and aluminous laterite mineralization. Geological mapping on RF1:12,500 scale was carried out and different mineralized zones were identified.

During G4 stage, different types of samples such as bedrock samples, pit and trench samples were collected from the study area and sent for chemical analysis. The analytical results showed good alumina content along with presence of associated elements like Titanium, Vanadium and Gallium.

Based on this work, several bauxite pockets with good thickness and surface extent were identified and marked on maps.

The present proposal is for G3 stage exploration, where detailed work like pitting, trenching and drilling will be carried out to establish continuity of mineralization, study grade variation and estimate mineral resources as per UNFC norms.

The main target of this exploration is to convert reconnaissance level information into detailed data and to assess bauxite resources along with associated minerals as per required norms.

5.1 Nature and Quantum of Work Proposed

Components	G3 Stage
Topographic Survey	Topographic survey will be carried out by drone.
Geological Mapping	Geological Mapping will be taken up on RF 1:5,000
Geochemical Sampling (Chip/Channel/Pit/Trench/Core/Soil)	11 BRS and 4 PTS is proposed in the block
Geophysical Survey	No Geophysical surveys are proposed in the block.
Scout Drilling / Systematic Drilling	Systematic Drilling will be taken up at 400x400m grid. A total of 21 boreholes of 10-

	15m depth are proposed with a cumulative metreage of 300m.
Petrographic	10 samples are proposed for petrographic studies.
Synthesis of All Available Data	Will be taken up with submission of Geological Report

5.2 Borehole Spacing (As per MEMC, 2015)

Type of Deposit	**Bedded Stratiform and Tabular Deposit of Irregular Habit**	**Lenticular Bodies (En-echelon, Lenses, Pockets)**
G3 Stage	400 x 400m	

5.3 Geophysical Studies

No geophysical surveys are proposed in the block.

6.0 Exploratory Drilling (Concise)

Exploratory drilling is the key component of G3 stage exploration to establish subsurface continuity, thickness, and grade variation of bauxite mineralization in the Lalpursani Block. Based on encouraging G4 results, **systematic core drilling (diamond drilling)** is proposed.

Boreholes will be planned based on geological mapping, surface occurrences, and pitting/trenching data, and drilled along profiles for proper correlation. As the deposit is of **lenticular/pocket type**, borehole spacing will be **400**x400**m grod (as per MEMC, 2015)**. A total of 21 boreholes is proposed of 10-15m each accounting to metreage of 300m.

Drilling will be carried out up to complete intersection of the bauxite horizon and upto underlying basalt, with depths generally ranging up to 10-15**m** depending on the thickness of Bauxite/Aluminous Laterite.

Continuous core logging will record lithology, thickness, texture, and structure. Core samples for every one meter will be analysed for **Al_2O_3, SiO_2, Fe_2O_3, TiO_2** and associated elements like Titanium, **Vanadium and Gallium**. Borehole geophysical logging may be carried out, if required.

Quality control will be ensured through systematic sampling and proper core recovery, with check sampling at later stages as per guidelines.

The drilling programme will help to establish subsurface continuity, determine thickness, and grade variation, prepare geological sections, and estimate mineral resources as per UNFC norms.

The G4 stage has already identified bauxite pockets (2–9 m thickness) with good extent; hence, systematic drilling is essential to upgrade the exploration to **G3 stage resource estimation**.

7.0 Manpower Deployment

7.1 General

The proposed G3 stage exploration in the Lalpursani Block will be carried out by **M/s S and S Geological Consultants** with qualified and experienced geoscientists and supporting technical staff.

The manpower deployment has been planned to ensure systematic execution of geological mapping, sampling, drilling supervision, and data interpretation.

7.2 Deployment of Personnel

Sl. No.	Designation	No. of Personnel	Role / Responsibility
1	Project Geologist (Field In-charge)	1 (100 days)	Supervision of field work, geological mapping, sampling, logging, and coordination of exploration activities
2	Geologist (Office / Interpretation)	1 (30 days)	Data compilation, interpretation, preparation of maps, sections and report writing
3	Field Assistants / Technicians	As required	Assistance in field work, sampling, trenching and drilling activities
4	Drilling Crew (Outsourced / Contractual)	As required	Execution of drilling operations and core recovery
5	Surveyor	1 (20 days)	Survey of borehole locations, preparation of plans and sections

8.0 Break-up of Expenditure

8.1 Summary of Cost

Sl. No.	Activity	Unit	Quantity	Rate (Rs.)	Amount (Rs.)
	A. GEOLOGICAL WORK				
1	Geological Mapping (1:5,000 / 1:2,000)	Per sq. km	4	18,300	73,200.00
2	Charges for one Geologist - Field	Per day	100	14500	1450000.00
3	Charges for one Geologist - HQ	Per day	30	10500	315000.00
4	2 Labours	Per day	200	541	108200.00
5	Charges for one sampler	Per day	34	7850	266900.00
6	Labour charges for sampler (4 Labourers)	Per day	136	541	73576.00
				Sub-Total-A	**2286876.00**
	B. SURVEY WORK				
1	DGPS Survey-fixation of Bhs and boundary points. (21+16)	Per point observation	37	24000	888000.00
2	Drone Topographic Survey	Per sq.km	4	70000	280000.00
3	One Surveyor Charges	Per day	20	10500	210000.00
4	Labourers (4 nos)	Per day	80	541	43280.00
				Sub-Total-B	**1421280.00**
	C. DRILLING (In house)				
1	Drilling soft rock	Per meter	300	5500	1650000.00
2	Construction of pillar	Per borehole	21	2000	42000.00
3	Borehole plugging by cement	Per borehole	21	10000	210000.00
4	Miscellaneous charges	Lumpsum			412500.00
5	Drill core preservation	Per meter	200	1590	318000.00
				Sub-Total-C	**2632500.00**
	D. PITTING				
1	Pitting	Per cu.m	4	4725	18900.00
				Sub-Total-D	**18900.00**
	E. LABORATORY CHARGES				
i	Major oxides (WD-XRF) - (oxides+traces-24 elements) +(189 core samples+15(BRS+PTS) +20 check samples	Per sample	224	4200	940800.00
ii	Analysis of one rock/soil sample for quantitative	Per Sample	22	7,400	162800.00

	analysis 14 free elements + 9 trace element (U, Ta, Ge, Be, Hf, Sn, As, Rb, Th) by ICP-MS (Sequential technique). (20+2 check sample)				
iii	Reactive silica analysis	Per Sample	5000	21	105000.00
E.1. Petrographic Studies					
i	Preparation of thin polished sections	Per Sample	800	10	8000.00
ii	Study of thin sections	Per Sample	2800	10	28000.00
iii	XRD	Per Sample	4000	5	20000.00
iv	Bulk Density	Per Sample	2500	5	12500.00
				Sub-Total-E	**1277100.00**
F	**Miscellaneous Charges**				
1	Preparation of Exploration Proposal	Lumpsum	—	—	152733.00
2	Geological Report Preparation	Lumpsum	—	—	250000.00
3	Peer review Charges	Lumpsum	—	—	30000.00
				Sub-Total-F	**432733.00**
			Total estimated cost without GST (A+B+C+D+E+F)		**8069389.00**

9.0 Time Schedule

The total duration of the proposed G3 stage exploration programme is estimated to be **7 months** from the date of approval. The tentative time schedule for various exploration activities is as follows:

Preliminary Exploration Work (G-3) for Bauxite and Associated Minerals, Lalpursani Block, District: Dindori, Madhya Pradesh											
Sl.No.	**Description**		**1**	**2**	**3**		**4**	**5**		**6**	**7**
1	**Forest Permission**	**MONTHS**				**REVIEW**			**REVIEW**		
2	**Camp setting**										
3	**Geological Mapping + BRS Sampling**										
4	**Survey work**										
5	**Laboratory studies of BRS & PTS**										
6	**Drilling**										
7	**Sampling**										
8	**Laboratory studies**										
9	**Report Writing**										

MONTHS-WISE WORK DAYS OF SURVEYOR, FIELD AND OFFICE GEOLOGIST, LALPURSANI BLOCK								
Sl.No.	**PERSONNEL**	**MONTHS**						**TOTAL**
		1st	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**
1	FIELD GEOLOGIST	10	20	10	30	30	0	0	100
2	OFFICE GEOLOGIST	0	5	0	5	5	5	10	30
3	SURVEYOR	0	5	0	5	10	0	0	20

10. Figures

Fig-1

TOPO SHEET to be inserted showing GSI and Lalpursani Block

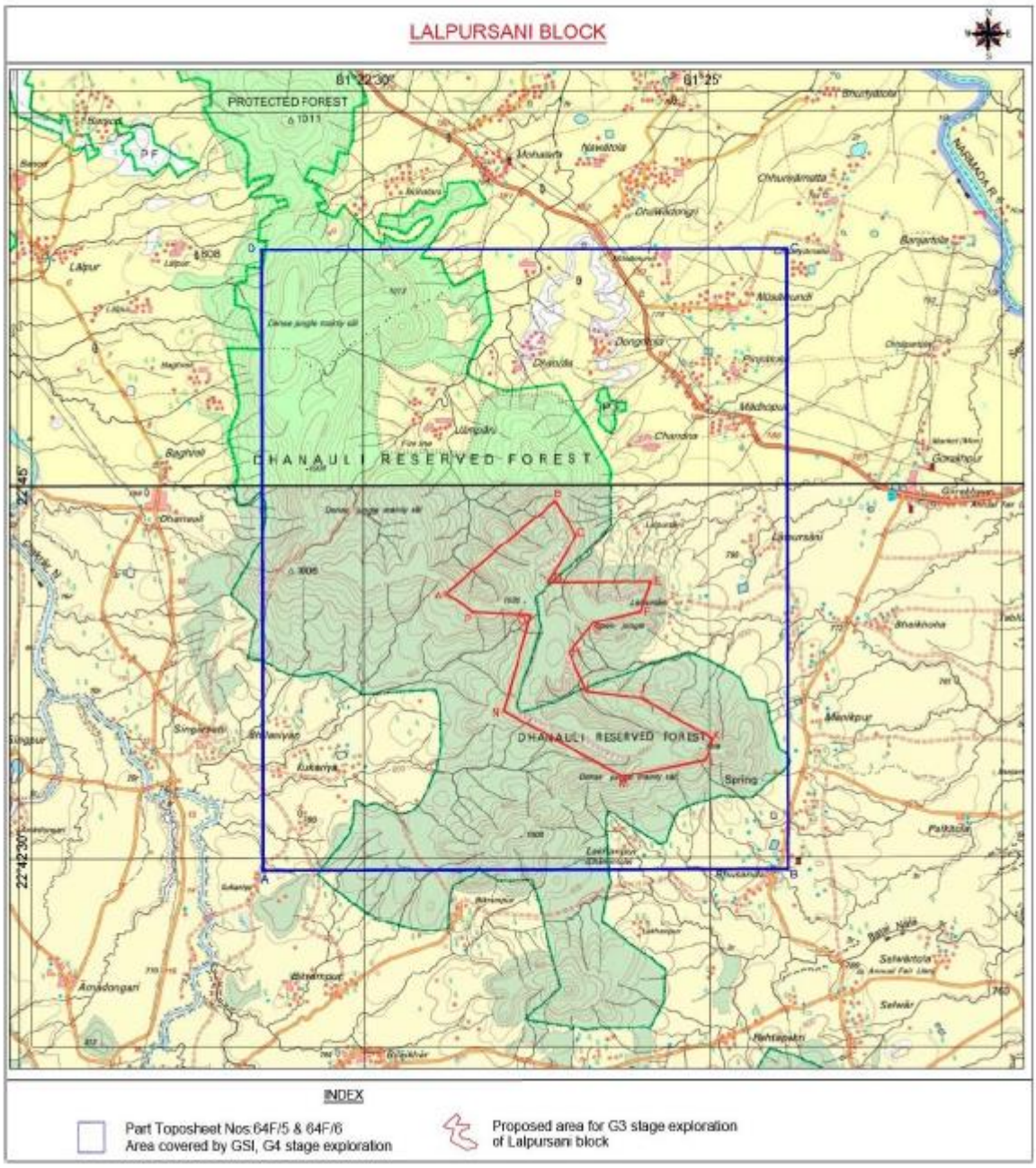


Fig-2

LALPURSANI BLOCK SHOWING ON GOOGLE EARTH

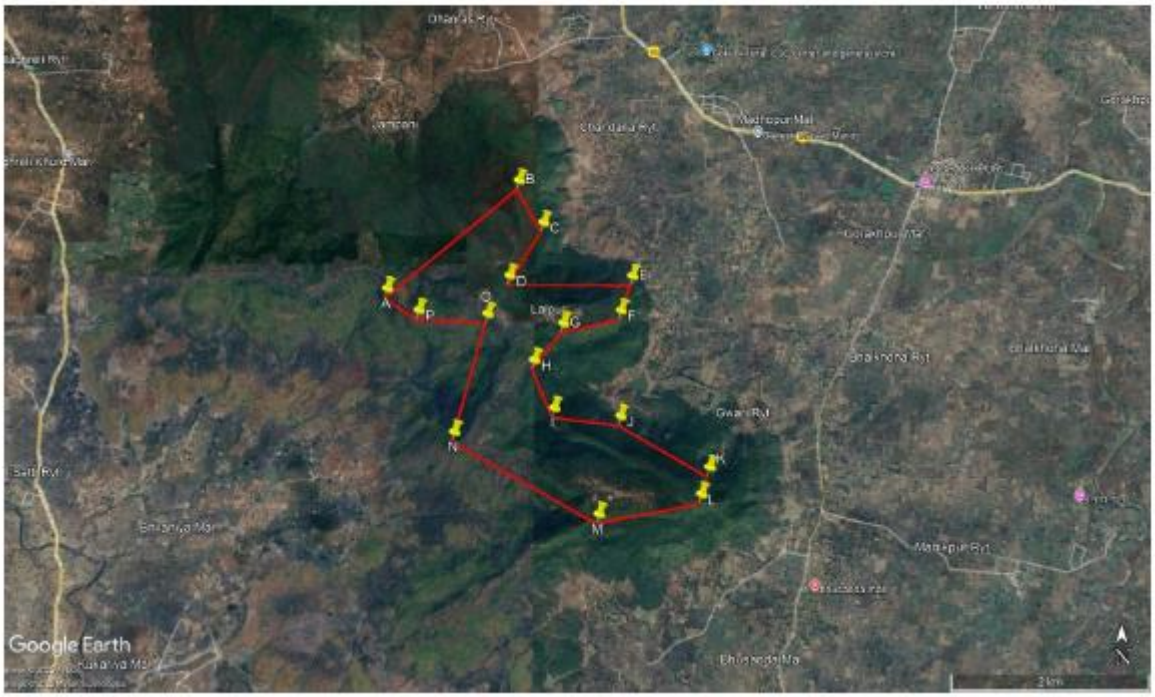
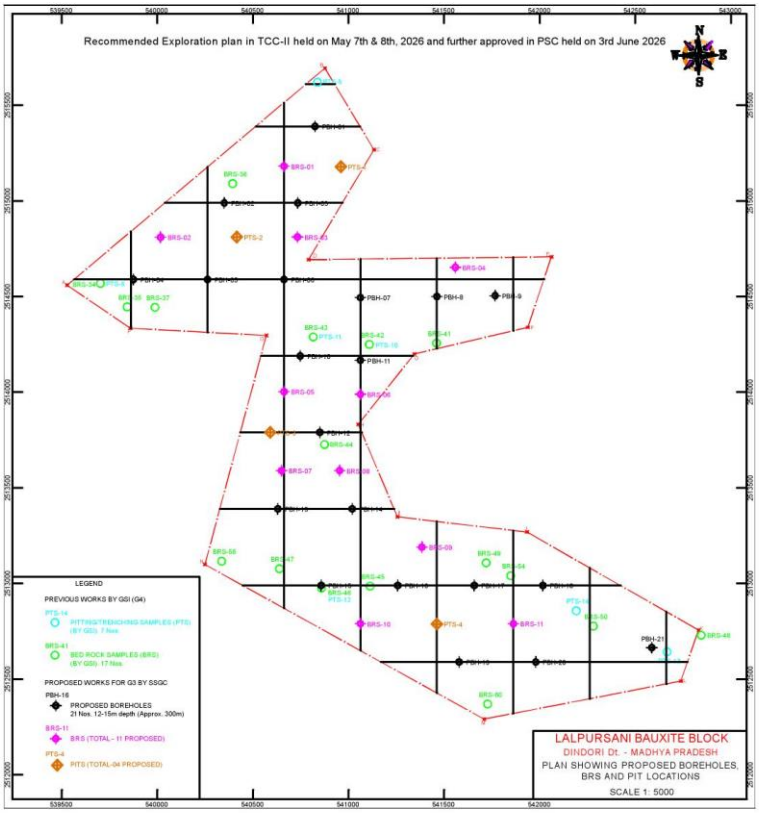


Fig-3



Lalpursani Site visit Photos

11.0. References

1.Geological Survey of India (GSI), 2023

Report on Reconnaissance Survey for Bauxite and Aluminous Laterite Mineralization around Vikrampur Mal, Dhanoli Mal, Gorakhpur Mal and Mohtara, Dindori District, Madhya Pradesh (FS 2022–23).

2.Detailed Project Proposal for G3 Stage Exploration (Lalpursani Block)

Submitted by M/s S and S Geological Consultants to National Mineral Exploration Trust (NMET), Ministry of Mines.

3.Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC Guidelines)

Ministry of Mines, Government of India.

4.District Resource Map (DRM), Dindori District, Madhya Pradesh

Geological Survey of India.

5.Toposheet No. 64F/06 Survey of India.