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**PROPOSAL FOR RECONNAISSANCE SURVEY (G4) FOR GOLD IN MENDERBAHAR-  
BHAGHORA BLOCK (38.58 Sq. Km), DISTRICT- JASHPUR, CHHATTISGARH,  
UNDER NMET**

**COMMODITY: GOLD**

**By**

**MINERAL EXPLORATION CORPORATION LIMITED  
(A GOVERNMENT OF INDIA ENTERPRISE)  
A MINI RATNA COMPANY  
SEMINARY HILLS, NAGPUR-440 006 MAHARASHTRA**

**PLACE: NAGPUR**

**Summary of Block for the Proposal of Reconnaissance Survey (G-4) for Gold in Menderbahar-Bhaghora Block (38.58 Sq. Km), District: Jashpur, Chhattisgarh, Under NMET**

<b>Features</b>	<b>Details</b>																																																		
Block ID :	Menderbahar-Bhaghora Block																																																		
Current Exploration Agency	MECL																																																		
Previous Exploration Agency	GSI, Geomysore Services (India) Pvt. Ltd.																																																		
Geological Report (Previous stage Geological Report)	The area exposes the Precambrian rocks comprising Granite Gneiss as country rock. Gold Mineralisation is reported in Quartzites within Chlorite Schist. The area is invariably traversed by a network of numerous quartz veins varying from mere stringers to about 1.3 km in length. The major quartz vein present in the area has (NNW-SSE) trend, while several Quartz veins trend in divergent directions are present in the area.																																																		
Commodity :	Gold																																																		
Mineral Belt :	Raigarh mobile belt & Part of Singhbhum Craton																																																		
Budget & Time Schedule to complete the project	Rs.151.06 Lakhs & 12 months																																																		
Objectives:	<ol style="list-style-type: none"> <li>1. To identify and demarcate the chert/quartzite bands, quartz veins, older schists, shear zones in granite gneiss, by geological mapping in 1:12,500 scale</li> <li>2. To expose and map the hidden chert/quartzite bands by digging trenches across the strike.</li> <li>3. To prove the mineralized zones by Channel sampling from outcrops and trenches.</li> <li>4. To check the subsurface continuity of the potential mineralized zones by scout drilling.</li> </ol>																																																		
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	The current exploration work will be carried out by MECL.																																																		
Name/ Number of Geoscientists :	Geologist: 01 HQ (60 days) Geologist:02 Field (120 days)																																																		
Expected Field days (Geology, Surveyor)	Surveyor: 180 days																																																		
<b>1.</b>	<b>Location:</b>																																																		
Block boundary coordinates	<table border="1"> <thead> <tr> <th><b>Corner</b></th> <th><b>Easting</b></th> <th><b>Northing</b></th> <th><b>Longitude</b></th> <th><b>Latitude</b></th> </tr> </thead> <tbody> <tr> <td><b>A</b></td> <td>788048.4941</td> <td>2491268.716</td> <td>22° 30' 13.072" N</td> <td>83° 47' 59.305" E</td> </tr> <tr> <td><b>B</b></td> <td>794340.4744</td> <td>2491247.768</td> <td>22° 30' 8.524" N</td> <td>83° 51' 39.25" E</td> </tr> <tr> <td><b>C</b></td> <td>794361.5522</td> <td>2489966.816</td> <td>22° 29' 26.903" N</td> <td>83° 51' 39.13" E</td> </tr> <tr> <td><b>D</b></td> <td>795541.2817</td> <td>2489986.228</td> <td>22° 29' 26.8" N</td> <td>83° 52' 20.38" E</td> </tr> <tr> <td><b>E</b></td> <td>795541.7948</td> <td>2488945.644</td> <td>22° 28' 53" N</td> <td>83° 52' 19.7" E</td> </tr> <tr> <td><b>F</b></td> <td>796298.8457</td> <td>2488960.186</td> <td>22° 28' 53" N</td> <td>83° 52' 46.17" E</td> </tr> <tr> <td><b>G</b></td> <td>796324.658</td> <td>2488406.517</td> <td>22° 28' 35" N</td> <td>83° 52' 46.7" E</td> </tr> <tr> <td><b>H</b></td> <td>797289.9336</td> <td>2488425.345</td> <td>22° 28' 35.008" N</td> <td>83° 53' 20.449" E</td> </tr> <tr> <td><b>I</b></td> <td>797289.9336</td> <td>2486152.083</td> <td>22° 27' 21.17" N</td> <td>83° 53' 18.917" E</td> </tr> </tbody> </table>	<b>Corner</b>	<b>Easting</b>	<b>Northing</b>	<b>Longitude</b>	<b>Latitude</b>	<b>A</b>	788048.4941	2491268.716	22° 30' 13.072" N	83° 47' 59.305" E	<b>B</b>	794340.4744	2491247.768	22° 30' 8.524" N	83° 51' 39.25" E	<b>C</b>	794361.5522	2489966.816	22° 29' 26.903" N	83° 51' 39.13" E	<b>D</b>	795541.2817	2489986.228	22° 29' 26.8" N	83° 52' 20.38" E	<b>E</b>	795541.7948	2488945.644	22° 28' 53" N	83° 52' 19.7" E	<b>F</b>	796298.8457	2488960.186	22° 28' 53" N	83° 52' 46.17" E	<b>G</b>	796324.658	2488406.517	22° 28' 35" N	83° 52' 46.7" E	<b>H</b>	797289.9336	2488425.345	22° 28' 35.008" N	83° 53' 20.449" E	<b>I</b>	797289.9336	2486152.083	22° 27' 21.17" N	83° 53' 18.917" E
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	<b>K</b>	789041.1687	2488710.864	22° 28' 49.38" N	83° 48' 32.33" E
	<b>L</b>	788039.958	2488704.735	22° 28' 49.79" N	83° 47' 57.33" E
Villages :	Parts of Menderbahar, Bhaghora, Jorko, Birhapani etc.				
Tehsil/ Taluk :	Pharsabahar				
District :	Jashpur				
State :	Chhattisgarh				
<b>2.</b>	<b>Area (hectares/ square kilometres)</b>				
Block Area :	38.58 Sq Km				
Forest Area :	Part				
Government Land Area	Data not available				
Private Land Area	Data not available				
<b>3.</b>	<b>Accessibility</b>				
	Nearest Rail Head: Jharsuguda (Odisha) Railway station is about 75 km in SSE direction from the block.				
	Road : Raigarh-Pathalgaon-Jashpur-Ranchi (NH43) & SH-22				
	Airport : Jharsuguda Airport is about 75 km from Pharsabahar				
<b>4.</b>	<b>Hydrography</b>				
Local Surface Drainage Pattern (Channels)	Dendritic to sub dendritic. Part of tributaries/water shed area of River IB and Sonajhari.				
Rivers/ Streams	No Major River is present within the block. IB river is flowing about 5 km east of the present block. Sonajhari Nala is flowing about 2 km south from the block.				
<b>5.</b>	<b>Climate</b>				
Mean Annual Rainfall	150 cm/annum				
Temperatures (January) (Minimum)	4°C				
Temperatures (June) (Maximum)	45°C				
<b>6.</b>	<b>Topography</b>				
Toposheet Number : Part of Toposheet No. 64N/15					
The district covers the western extension of Chhota Nagpur Plateau & can broadly be divided into two major landform units' upland high hills & lowland i.e. locally called Uparghat & Nichghat. The area of the block is low lying pediplain. General elevation ranges from 390m in south to 450 m in north.					
<b>7</b>	<b>Availability of baseline geoscience data</b>				
Geological Map	Bhukosh Map on scale 1:50,000				
Geochemical Map and Geophysical Map					
<b>8.</b>	<b>Justification for taking up G4 stage Reconnaissance Survey</b>	<p>1. Detailed study of GSI (S N Upadhye &amp; P Tarafdar, 1994) shows that gold-arsenopyrite mineralisation is concentrated within the chert bands at their contact with schists and tonalities and also in thin silica and calcite veins occurring as fracture fillings within the chert. In the proposed block, favourable lithology of Chert/quartzite band sandwiched between chlorite schist is persistent over 5.5 Km long ridge.</p> <p>2. During its reconnaissance survey, Geo Mysore has done bed rock sampling in its entire RP area. Within the proposed Menderbahar-Bhaghora block, GMSI has collected 75 rock chip samples out of which 20 samples assayed above 0.5 ppm Au with highest value of 11.7 ppm Au.</p> <p>3. Seventeen (17) nos. of RC boreholes have been drilled by GMSI in the</p>			

proposed block, of which 9 boreholes have been drilled near Bhaghora village. Out of these 9 boreholes, six boreholes have intersected disseminated to massive sulphide zones of which the width varies from 1m to 17m. Several significant intersections were found, details of which are furnished below:

<b>Drill hole No.</b>	<b>Cumulative thickness of the sulphide zones</b>	<b>As (Thickness of Zone)</b>	<b>Au (Thickness of Zone)</b>
BGR-8	14m of sulphide zone		2m @ 30 g/t
BGR-9	6m of sulphide zone and gossanous zone		4m @ 1.38 g/t
BGR-11	6m of massive sulphide zone	6m of As anomaly >100 ppb	2m @ 0.1 g/t
BGR-12	6m of disseminated sulphide zone	4m of As anomaly, ranging from 168 to 1685 ppm	1m @ 0.11 g/t
BGR-15	2m of massive sulphide zone		1m @ 0.21 g/t
BGR-16	5m of massive sulphide zone		5m @ 4.2 g/t

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BHAGHORA BLOCK (38.58 Sq. Km), DISTRICT: JASHPUR, CHHATTISGARH,**

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**1.0.0 INTRODUCTION**

1.1.0 Gold is a relatively scarce metal in the world and a scarce commodity in India. The domestic demand is mainly met through imports. The increasing demand of gold could be eased with the exploration of new gold deposits of economic importance.

1.2.0 The proposed block area exposes the Precambrian rocks comprising Granite (Tonalitic) Gneiss as country rock. Gold Mineralisation is reported in Quartzites within Chlorite Schist. The area is invariably traversed by a network of numerous quartz veins, quartz-tourmaline veins, varying from mere stringers to about 1.3 km in length. The major quartz vein present in the area has (E-W) trend, while several Quartz veins trend in divergent directions are present in the area.

**2.0.0 LOCATION AND ACCESSIBILITY**

2.1.0 The Menderbahar-Bhaghora block which is proposed for G4 Exploration is situated in the Pharsababar tehsil of Jashpur district in Chhattisgarh. The block can be approached by Raigarh-Pathalgaon-Jashpurnagar-Ranchi (NH43) & SH-22. The proposed block is approximately 70 km SW of Jashpur Nagar, the district headquarter of Jashpur District. Jharsuguda Railway station (Odisha), on the South Eastern Railway is the nearest rail-head situated 75 km in SSE direction from the block. Jharsuguda is the nearest Airport from the proposed block.

2.2.0 The block falls in Part of the Survey of India Toposheet No. 64N/15 covering an area of 38.58 Sq. Km. Nearby villages viz. Menderbahar, Pharsababar, Pandripani, Chiknipani, Tamamura, Barjhor etc. are well known for gold occurrences. The co-ordinates of the cardinal points of the block are given in the table below:

<b>Block Boundary Cardinal Point</b>	<b>Easting</b>	<b>Northing</b>	<b>Longitude</b>	<b>Latitude</b>
<b>A</b>	788048.4941	2491268.71 6	22° 30' 13.072" N	83° 47' 59.305" E
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<b>L</b>	788039.958	2488704.73 5	22° 28' 49.79" N	83° 47' 57.33" E

### 3.0.0 GEOLOGY AND STRUCTURE

- 3.1.0 The area under investigation forms the western extension of the Proterozoic metamorphic belt of Jharkhand and Odisha. Regionally, the area is composed of a variety of granitoids represented by migmatitic gneiss, biotite gneiss (tonalite) micaceous gneiss, pink gneissic mylonite, amphibole-biotite-chlorite gneiss, metagabbro, pyroxenite and serpentinite. In the central part of the area, there is a mafic mineral rich granitoid in which hornblende is the principal mafic mineral.
- 3.2.0 There are number of remnants of older schistose rocks, representing narrow elongated older schist belt, which appears to be the westward continuation of the Singhbhum volcano-sedimentary sequences. It is composed of quartz-chlorite schist, diopside and epidote bearing quartz-biotite schist, quartz-muscovite schist with a number of bands of chert and tourmaline. These rocks are traversed by a network of innumerable quartz veins of varying extents and disposition. Chert-tourmalinite bands, quartz-tourmaline veins (with or without scheelite), silicified zones and quartzite reefs are found throughout the area.
- 3.3.0 The region exhibits lower grade of metamorphism. The regional trend of schistosity/foliation in the supracrustal rocks varies from E-W to WNW-ESE. The granitic rocks in the area are traversed by number of shear zones, which trend E-W, NW-SE to NNW-SSE. These shear zones are marked by brittle-ductile and mylonite fabrics. GSI has reported existence of northwesterly shear zones along which gold mineralization is localized, besides auriferous E-W trending quartz-tourmaline rocks, gold mineralisation occurs in quartz veins and associated country rocks as minute disseminations. The geological map is furnished as Plate-III.

3.4.0 The stratigraphic succession of the area is given Table below:

**Regional Stratigraphic sequence of Litho units (After GSI)**

PRECAMBRIAN	Granitoids– Tonalite , granite	
	Basic & ultrabasic intrusive	
	-----Intrusive contact-----	
	Chiknipani Formation	Quartz-biotite schist, diopside-epidote bearing biotite schist, calc-silicate rocks, quartz-muscovite schist with tourmalinite.
	-----Gradational contact-----	
	Pandripani Formation	Greywacke, quartz-chlorite schist, chert and tourmalinite, minor tuffs
-----Base not seen-----		

#### 4.0.0 GOLD MINERALIZATION

4.1.0 **Primary gold mineralisation** is mainly associated with the chert bands which occur as part of relict schist belt within tonalites. Detailed study shows that gold-arsenopyrite mineralisation is concentrated within the chert bands at their contact with schists and tonalities and also in thin silica and calcite veins occurring as fracture fillings within the chert. The quartz vien intrusives within the granites away from chert band do not show gold mineralisation, whereas micro veins of quartz intrusives within granite in close association with auriferous chert bands show gold mineralisation (Upadhye et. al., GSI, 1994).

4.2.0 Weathering and erosion of mineralised zones and concentration of gold in Recent and Quaternary placers of Ib and Mainly drainages is the **secondary gold mineralization**. The panning activity is mainly confined to Sonajori river. Many other localities of panning for gold are active along Ib, Maini, Utial, Talda, Bharari, Makarkunda rivers and their tributaries. Besides this, panning of colluvial placers in the vicinity of different chert bands is carried out during monsoon.

#### 5.0.0 PREVIOUS WORK

5.1.0 Parts of area in the toposheet nos. 64N//9, 64N//10, 64N/13, 64N/14 and 64N//15, covering Pandripani area, were mapped during 1935-36 by A.K.Dey (Dey, 1983). J. Narayanmurthy (1955) carried out preliminary survey for locating gold mineralistion around Bagbahar in the western part of the area. H. Nandi (1953) in his unpublished report has given a brief account of the geology of part of Raigarh metamorphic belt. S.K. Shrivastava and K. Srinivasa Rao (1966), and K. Srinivasa Rao (1967-69) carried out geological mapping in Pathalgaon and Pandripani areas in the toposheet nos. 64N/6, 64N/10 and 64N/14 and have described the metamorphites and granitoids of the area. R.K.Chowdhary (1972) mapped a small area in the toposheet no.64N/11.

- 5.2.0 J. L. Narang et al. (1981-83) and M.R. Kalsotra et al. (1981-85) carried out reconnaissance mapping over a total area of 1500 sq km in toposheet nos. 64N/06, 64N/10, 64N/11 and 64N/14 and they identified a number of mineralized silicified shear zones for taking up preliminary exploration for associated (primary) gold mineralization. Exploration for gold by drilling has been carried out by M.R. Kalsotra and S.N. Upadhye (1989-90), and S.N. Upadhye and P. Tarafdar (1990-92) in some of the prospective blocks in Pharsabaha-Ludeg area.
- 5.3.0 The Directorate of Geology and Mining, Government of Madhya Pradesh carried out preliminary investigations over an area of 315 sq km in erstwhile Jashpur Tehsil intermittently during the period 1970-1980. Since then, the Directorate in collaboration with U.N.D.P. is conducted regional "Banka" drilling operations along Sonajori nala in parts of 64N/14 and 64N/15 in order to locate buried channels and placers. V.P. Mishra and S. Chandra (1981) of the Project MP - III made reconnaissance traverses around Tapkara-Pharsabaha areas and suggested systematic geological investigations for gold.
- 5.4.0 S. N. Upadhye and P. Tarafdar (1992-93) carried out investigation work To evaluate geological and structural framework of gold mineralisation in Semarkachhar-Menderbaha area, Raigarh District and an area of 300 sq. km was mapped on 1:25,000 scale in Toposheet Nos. 64N/10, 64N/14 and 64N/15 to decipher the lithostratigraphy of the Proterozoic metamorphites of part of the Raigarh belt, the nature of emplacement of the basic intrusive and granitoids, and the regional structure of this metamorphic belt as well as the litho-structural control on the gold mineralization.
- 5.5.0 S. N. Upadhye and P. Tarafdar (1992-93) had identified three blocks for detailed mapping of a total of 0.2 sq km, viz. Loker, Pandripani-Pharsabaha and Tamamura. These blocks are mainly occupied by sheared chert band/bands along their central part, sandwiched within quartz-chlorite schist, which in-turn forms a large enclave within the tonalite in the northern sector of the Pandripani metamorphic belt.
- 5.6.0 In 2002-2005, Reconnaissance exploration work has been carried out by Geomysore Services (India) Pvt. Ltd. (GMSI) in its Pathalgaon RP area of about 1475 sq. km in Jashpur district of Chhattisgarh. During its tenure of RP, GMSI has carried out systematic geological, geochemical and geophysical exploration which culminated with test drilling in some of the potential prospect areas. Out of RP area, about 62 sq. km areas holds promise for discovery of gold mineralization and they applied for prospecting License over this area as Pharsabaha PL (at present, their PL not exist due to the amendment in MMDR) which includes several

prospects of varying dimension in Menderbahar, Bhagora, Sonjhari Nala, Tamamunda, Pharsabahar, Bangaon, Garaibandh, Semarkachhar and Barjor.

5.7.0 In the entire area of RP block of 1475 Sq. Km of Geomysore Services (India) Pvt. Ltd.(GMSI) , about 149 Stream Sediment Samples, 11 Soil Samples, 309 Rock chip samples was collected and analysed. A total of 24 RC holes were also drilled in the entire RP area of Geomysore Services (India) Pvt. Ltd. (GMSI). However, in the presently proposed Menderbahar-Bhaghora (G4) Block, 75 Rock chip samples has been collected and analysed and 17 RC holes (BGR-1 to 16 and SN-1) has been drilled.

## **6.0.0 BACKGROUND INFORMATION**

6.1.0 The Pathalgaon block was granted to M/s Geomysore Services (India) Pvt. Ltd. (GMSI) as Reconnaissance Permit (RP) over an area of 1475 Sq. Km. in parts of Jashpur district, Chhattisgarh.

6.2.0 During its tenure of RP (2002-2005), GMSI carried out geological, geophysical and geochemical exploration aided with test drilling in some of the potential prospect area for Gold. According to M/s GMSI, out of total RP area, about 62 Sq. Km area holds prospective for discovery of gold mineralization in which GMSI applied for Prospecting Lease as Pharsabahar PL. At present, this PL is under lapse category as per Mines & Mineral (Development and Regulation) Amendment Act, Dated 28.03.2021.

6.3.0 Directorate of Geology and Mining (DGM), Chhattisgarh studied the cancelled PL area of 62 Sq. Km and in accordance with GSI memorandum; the area has been curtailed to 36.61 Sq. Km. DMG, Chhattisgarh requested MECL to study and explore the potential areas in the said block for Gold Mineralisation and has provided the Reconnaissance survey report of Geomysore.

6.4.0 Accordingly, MECL has studied the report and willing to explore in the potential areas within. MECL had prepared Preliminary exploration proposal (G-3 Stage) of Pharsabahar block and presented in 36<sup>th</sup> TCC of NMET and communicated the plan to explore the northern and southern part in G4 level. However, TCC suggested to modify the Pharsabahar block in accordance with GSI data. As discussed with DGM, CG authorities, modified proposals to be formulated.

6.5.0 For 37<sup>th</sup> TCC of NMET, MECL has prepared G4 level exploration proposal in the southern part of Pharsabahar block for Reconnaissance survey in Menderbahar-Bhaghora block.

## 7.0.0 PRESENT SCOPE OF WORK

7.1.0 Objective of the present exploration work is formulated as below:

1. To identify and demarcate the chert/quartzite bands, quartz veins, older schists, shear zones in granite gneiss, by geological mapping in 1:12,500 scale
2. To expose and map the hidden chert/quartzite bands by digging trenches across the strike.
3. To prove the mineralized zones by Channel sampling from outcrops and trenches.
4. To check the subsurface continuity of the potential mineralized zones by scout drilling.

## 8.0.0 JUSTIFICATION OF TAKING UP RECONNAISSANCE SURVEY

8.1.0 The available literature on the area and previous work done by the Geological Survey of India (GSI), DMG, C.G. and reconnaissance survey of Geomysore, it is evident that the gold mineralization is invariably present in the area.

8.2.0 Detailed study of GSI (S N Upadhye & P Tarafdar, 1994) shows that gold-arsenopyrite mineralisation is concentrated within the chert bands at their contact with schists and tonalities and also in thin silica and calcite veins occurring as fracture fillings within the chert. In the proposed block, favourable lithology of Chert/quartzite band sandwiched between chlorite schist is persistent over 5.5 Km long ridge.

8.3.0 During its reconnaissance survey, Geo Mysore has carried out bed rock sampling in its entire RP area. Within the proposed Menderbahar-Bhaghora block, GMSI has collected 75 rock chip samples out of which 20 samples assayed above 0.5 ppm Au with highest value of 11.7 ppm Au.

8.4.0 Seventeen (17) nos. of RC boreholes have been drilled by GMSI in the proposed block, of which 9 boreholes have been drilled near Bhaghora village. Out of these 9 boreholes, six boreholes have intersected disseminated to massive sulphide zones of which the width varies from 1m to 17m. Several significant intersections were found, details of which are furnished below:

Drill hole No.	Cumulative thickness of the sulphide zones	As (Zone thickness)	Au (Zone thickness)	Remarks
BGR-8	14m of sulphide zone		2m @ 30 g/t	
BGR-9	6m of sulphide zone and gossanous zone		4m @ 1.38 g/t	
BGR-11	6m of massive sulphide zone	6m of As anomaly >100	2m @ 0.1 g/t	

		ppb		
BGR-12	6m of disseminated sulphide zone	4m of As anomaly, ranging from 168 to 1685 ppm	1m @ 0.11 g/t	
BGR-15	2m of massive sulphide zone		1m @ 0.21 g/t	
BGR-16	5m of massive sulphide zone		5m @ 4.2 g/t	In continuation of zone at BGR-8

## 9.0.0 PROPOSED SCHEME OF EXPLORATION

9.1.0 **Geological Mapping:** Geological mapping will be done in the entire 38.58 Sq. Km area on 1:12,500 scale. Rock types, their contact, structural features, shear zones will be mapped. Surface manifestations of the ore bodies available along with their surface disposition will be marked on map.

9.2.0 **Pitting & Trenching:** Pits/Trenches will be excavated across the chert/quartzite bands, quartz veins to expose the concealed litho unit and establish the strike continuity. The location and direction of trenches on ground will be decided by the field geologist on the basis of geological observations. The trench walls will be mapped on 1:200 scale. After exposing the buried litho unit, samples will be collected from the trench bottom and walls at 1m interval.

9.3.0 **Channel Sampling:** Channel sampling will be done on the outcrop of sheared chert/quartzite bands at regular interval. The shear zones in the tonalitic gneiss will also be channelled across the shear direction and sampled.

9.4.0 **Chemical Analysis of Pit/Trench and Channel samples:** Samples collected from trench and channel will be crushed and powdered to -200 mesh. The powdered material will be mixed thoroughly and successively reduced to 100 gm by coning and quartering method. This representative 100gm sample will be sent to MECL laboratory for analysis of Au and As by fire assay method. The rest powdered sample (-200 mesh) will be preserved for future reference.

9.5.0 **Exploratory Drilling:** Exploratory core drilling will be carried out to prove the subsurface continuity of mineralized lode. The drilling work will be taken up only after geological mapping, trenching, channel sampling and positive indication in chemical analysis. The location, direction and closure of drill hole on ground will be decided by the field geologist on the basis of geological observations. The generated drill cores will be aligned in book pattern with proper depth markers and preserved in GI core boxes. After successful completion of the

exploration work, the core filled GI boxes will be handed over to Directorate of Geology and Mining, Chhattisgarh.

9.6.0 **Core Logging:** The generated drill cores will be logged systematically run-wise, with consideration of Lithology, colour, structure and mineralization. Recovery length of every run will be recorded and if less core is recovered, the core loss will be extrapolated with geological prudence. Rock Quality Designation (RQD) will be recorded for entire length of the core recovered.

#### 9.7.0 **Chemical Analysis**

9.7.1 **Primary Core Sampling:** Mineralization zones in the recovered drill core will be marked on the basis of visual sulphides, alteration zones, shear zones and zone of felsic intrusive and secondary infillings. The marked mineralized zone along with 3m above and 3m below will be sampled in 0.5m interval. However, the sample length may vary on the basis of variation in the parameters of mineralized zone.

9.7.2 The sampled core will be splitted in two equal halves by using core splitter. One half will be pounded/crushed to -200 mesh size by using pestle-mortar/crusher and the other half will be preserved in GI core boxes for future references. The powdered material will be mixed thoroughly and successively reduced to 100 gm by coning and quartering method. This representative 100gm sample will be sent to MECL laboratory for analysis of Au and As. The rest powdered sample (-200 mesh) will be preserved for future reference.

9.7.3 **Check Sample:** In order to ascertain reproducibility 10% and 5% of primary samples will be subjected for external and internal check sample analysis respectively.

9.7.4 **Petrographic Sample:** To know the lithological variation in drill core as well as in surface, 10 nos. of petrographic samples will be sent to Petrological Lab of MECL.

9.7.5 **Mineragraphic Sample:** To know the physical characteristics of ore minerals, 10 nos. of drill core samples from the mineralised zones will be sent to Petrological Lab of MECL.

9.7.6 **Whole Rock Analysis:** To determine the rocks, 10 nos. of samples will be sent for Whole Rock Analysis.

## 10.0.0 PROPOSED QUANTUM OF WORK

### Quantum of work Proposed in G4 stage Reconnaissance Survey in Menderbahar-Bhaghora Gold block, District- Jashpur, Chhattisgarh

Sl. No.	ITEMS OF WORK	UNIT	PROPOSED QUANTUM
			G4
1	<b>Geological Mapping</b>	Sq.Km	38.58 Sq. Km
2	<b>Channel Sampling</b>	Nos.	100
3	<b>Pitting/Trenching</b>	Cu.m	200
4	Chemical Analysis of Channel and Trench Samples (For Au and As)	Nos.	200
5	Chemical Analysis of Channel and Trench Samples (For As, Cu, Pb, Zn & Ni)		200
5	<b>Exploratory Drilling</b>	m.	500
6	<b>Primary Sample</b> (Core) for 2 radicals (Au and As) by Fire Assay	Nos.	100
7	Chemical Analysis of Core Samples (For As, Cu, Pb, Zn & Ni)	Nos.	100
8	<b>Check Sample</b> (15% of Primary) for 2 radicals (Au and As) by Fire Assay	Nos.	15
9	<b>Check Sample</b> (15% of Primary) for As, Cu, Pb, Zn & Ni	Nos.	15
10	<b>Petrographic Study</b>	Nos.	10
11	<b>Mineragraphic Study</b>	Nos.	10
12	<b>Whole Rock</b>	Nos.	10
13	<b>Exploration Report [As per Mineral (Evidence of Mineral Contents) Rule-2015] /UNFC</b>	Nos.	1

## 11.0.0 TIME SCHEDULE

11.1.0 The proposed exploration programme envisages geological mapping, trenching, channel sampling and laboratory studies, which will be completed within 5 months. After review (1 month), 2 drill rigs will be deployed and associated sampling and Laboratory studies will be completed in 3 months. Geological report preparation will consume 4 months with time overlap of 1 month with Laboratory studies. Therefore, a total of 12 months is planned for completion of the entire programme.

Time schedule (in months) for Reconnaissance Survey (G-4) for Gold in Menderbahar-Bhaghora Block, District: Jashpur, Chhattisgarh															
Sl. No.	Activities	Unit	MONTHS												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
1	Camp Setting	Month													1 month
2	Geological Mapping (1: 10,000 scale)	Month													3 months
3	Pitting/Trenching and Channel Sampling	Month													3 months
4	Chemical analysis of Trench and Channel Sample	Nos.													300 Samples
5	Review of Field data														
6	Exploratory drilling (2 rigs)	m.													500 m
7	Geologist Party days in field (2 Party)	day	60	60	60	30				30	30				270 days
8	Labour (2 Nos) for Geologist	day	120	120	120	60				60	60				540 days
9	Survey Party days (1 Party)										15				15 days
10	Labour (4 Nos.) for Survey Work										60				60 days
11	Sampling Party days, (1 party)	day		30	30	30				30	30				150 days
12	Labours (4 Nos) for Sampling work	day		120	120	120				120	120				600 days
13	Chemical analysis of Core samples & Laboratory Studies	Nos.													180 Samples
14	Camp Demobilisation	Month													1 month
15	Geologist Party days in HQ (1 Party)										30	30	30	30	120 days
16	Geological Report Writing	Month													4 months

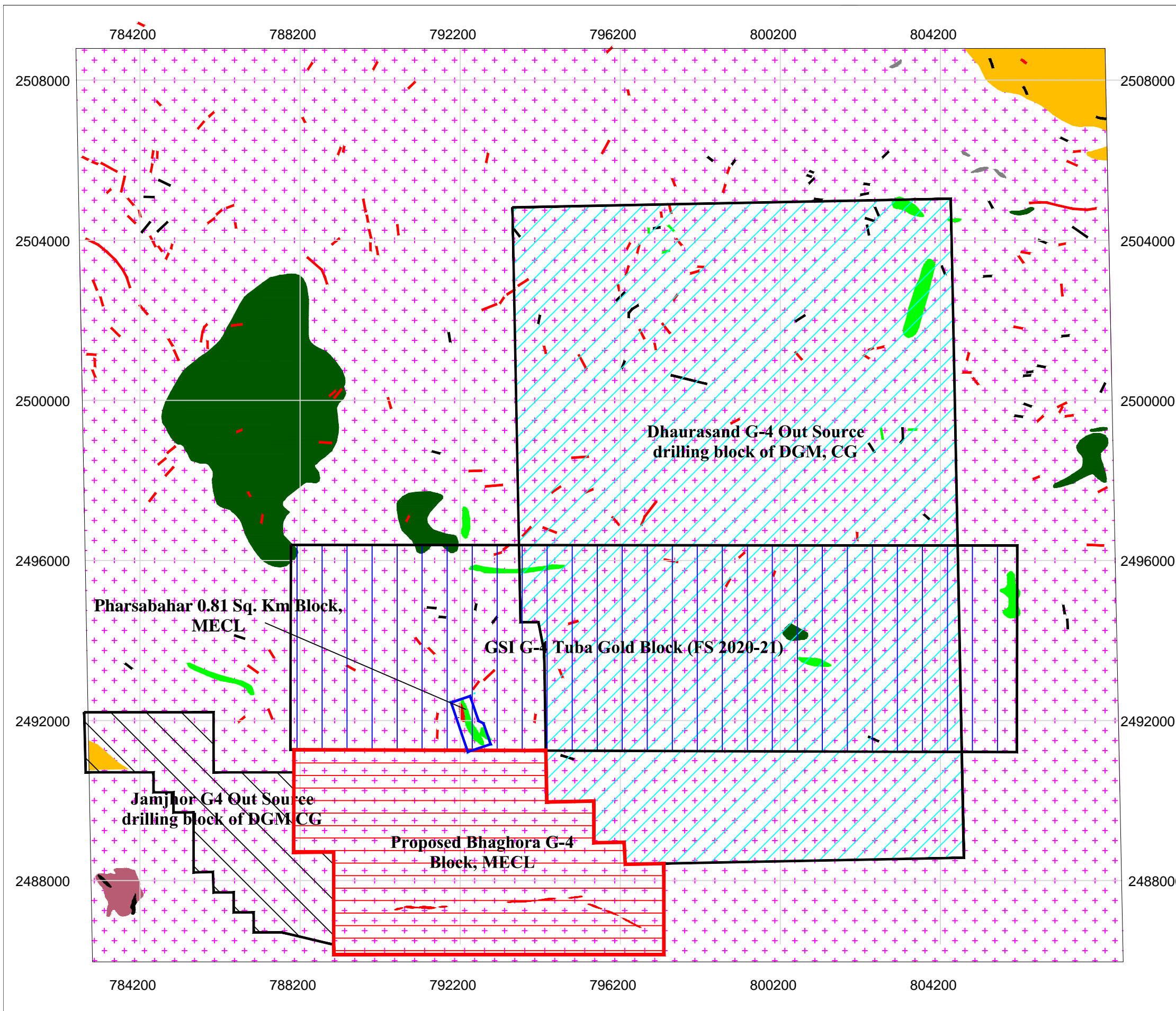
**Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.**

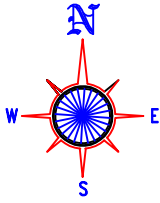
**2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.**


















## 12.0.0 COST ESTIMATE


12.1.0 Tentative Cost has been estimated based on Schedule of Charges (SoC) of projects funded by National Mineral Exploration Trust (NMET) w.e.f. 01/04/2020. The total estimated cost for Reconnaissance Survey is Rs. 151.06 Lakh. The summary of cost estimates is given in table below:

Sl. No.	Item	Cost (in Rs.)
1	Drilling	6235080.00
2	Geology & Survey	2385040.00
3	Laboratory	2668790.00
5	Excavation	666000.00
	<b>Sub Total (1 to 5)</b>	<b>11954910.00</b>
6	Preparation of Proposal	239098
7	Exploration Report	597746
	Peer reviewer Cost	10000.0
	<b>Grand Total</b>	<b>12801753.70</b>
8	GST 18%	2304315.67
	<b>Total:</b>	<b>15106069.37</b>
	<b>Say Rs. in Lakhs</b>	<b>151.06</b>




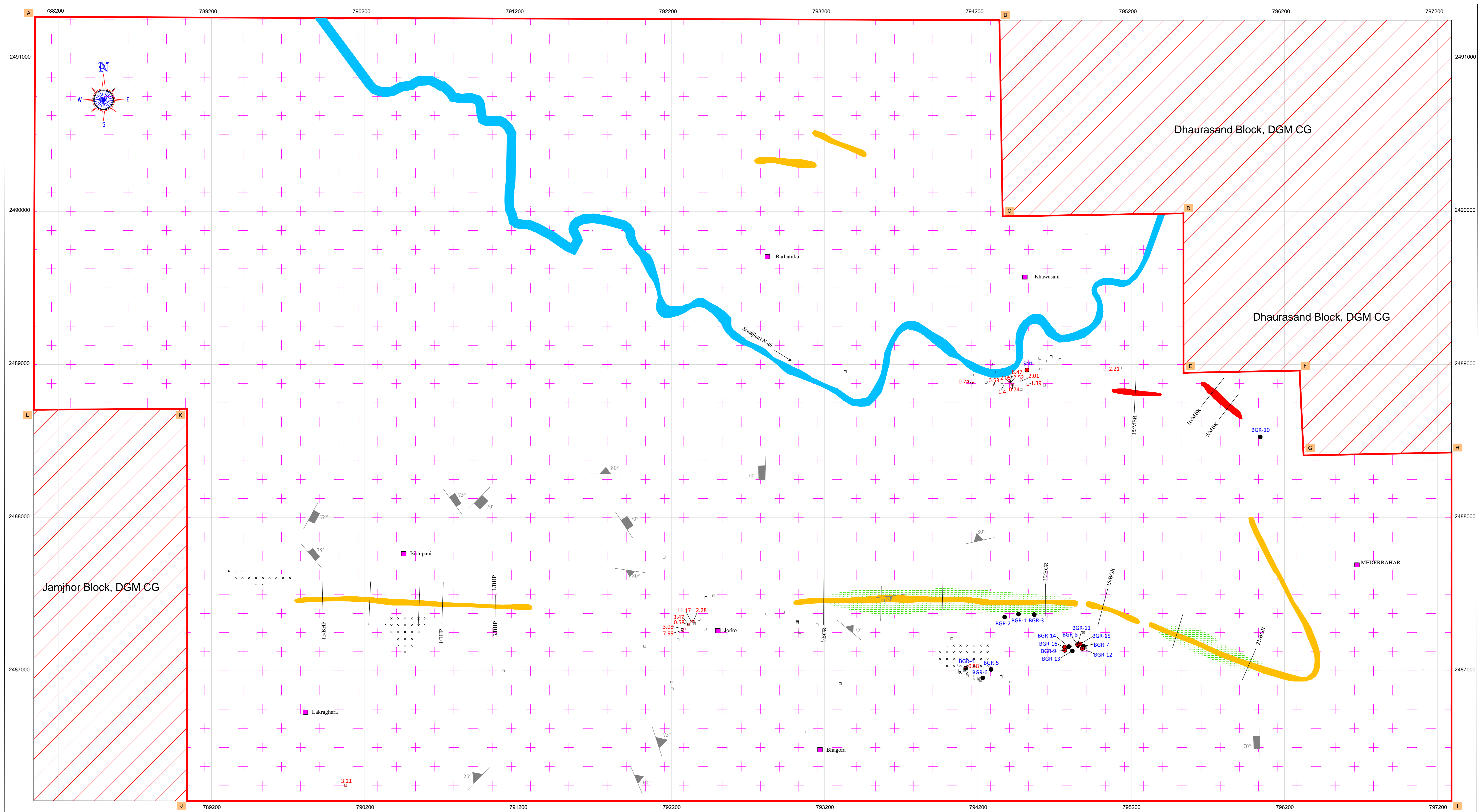


	Laterite
	Granite
	Granite gneiss
	Amphibolite
	Metapyroxenite
	Meta Basalt
	Chlorite schist
	Mica Schist
	Magnetite Tremolite Schist
	Hornblende Schist
	Quartz vein
	Metadolerite
	Vein quartz with epidote
	Dhaurasand G-4 Block, DGM CG
	Pharsabahaar-Tuba Gold Block, GSI
	Jamjhor G-4 Block, DGM CG
	Proposed Bhaghora G-4 Block, MECL



**Source: Bhukosh Map (After GSI)**

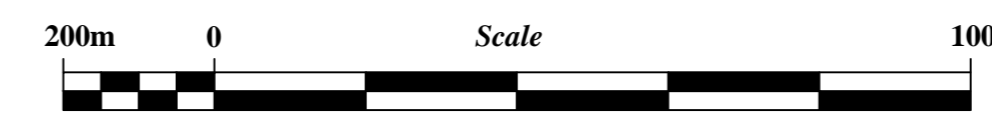
	MINERAL EXPLORATION CORPORATION LIMITED
<b>REGIONAL GEOLOGICAL MAP SHOWING PROPOSED BLOCK BOUNDARY (After GSI)</b>	
<b>RECONNAISSANCE SURVEY (G-4) FOR GOLD IN MENDERBAHAR-BHAGHORA BLOCK</b>	
DISTRICT : JASHPUR      STATE : CHHATTISGARH	
R.F. - 1 : 1,00,000	
AREA: 38.58 Sq. Km	TOPOSHEET: 64N/15 (PART)
Processed At IT Cell (Non-Coal), MECL, Nagpur	<b>Prepared by Exploration Division MECL, Nagpur</b>
MECL/EXPL./JAN-2022	PLATE No.: II



**INDEX**

	Location of BRS collected by GMSI during 2002-2005	
	Location of BRS (>0.5 ppm Au) collected by GMSI	

Block Boundary Cardinal Point	Easting	Northing	Longitude	Latitude
A	788048.4941	2491268.716	22° 30' 13.072" N	83° 47' 59.305" E
B	794340.4744	2491247.768	22° 30' 8.524" N	83° 51' 39.245" E
C	794361.5522	2489966.816	22° 29' 26.903" N	83° 51' 39.135" E
D	795541.2817	2489986.228	22° 29' 26.878" N	83° 52' 20.387" E
E	795541.7948	2489955.644	22° 28' 45" N	83° 52' 19.77" E
F	796298.8457	2488960.186	22° 28' 53" N	83° 52' 46.17" E
G	796324.658	2488466.517	22° 28' 35" N	83° 52' 46.77" E
H	797289.9336	2488425.548	22° 28' 35.068" N	83° 53' 20.449" E
I	797289.9336	2486152.083	22° 27' 21.17" N	83° 53' 18.917" E
J	789040.6701	2486151.867	22° 27' 26.256" N	83° 48' 30.635" E
K	789041.1687	2488710.864	22° 28' 40.38" N	83° 48' 32.33" E
L	788039.658	2488704.735	22° 28' 40.79" N	83° 47' 55.33" E



**MINERAL EXPLORATION CORPORATION LIMITED**

**GEOLOGICAL MAP SHOWING PROPOSED BLOCK BOUNDARY (After GSI)**

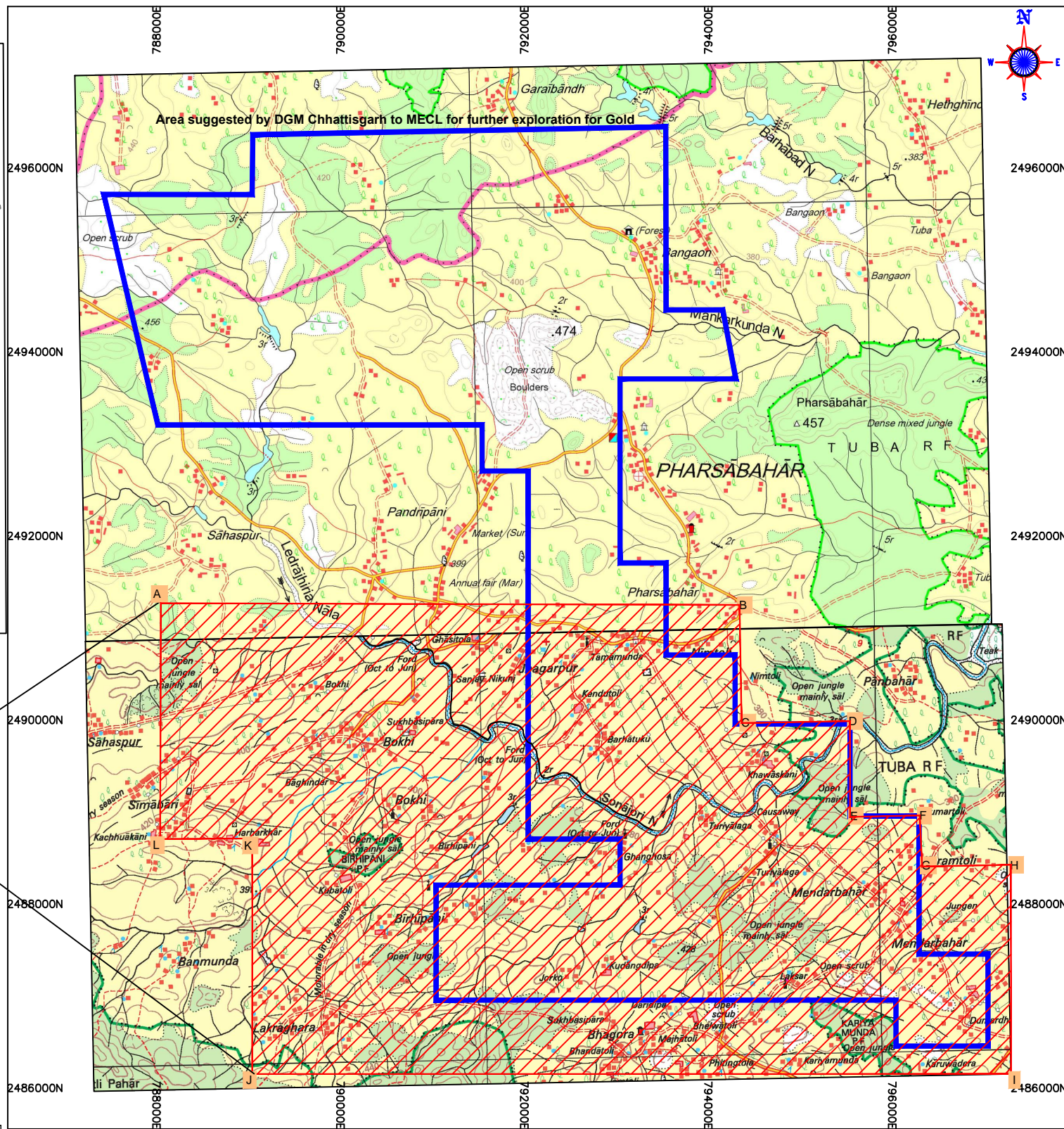
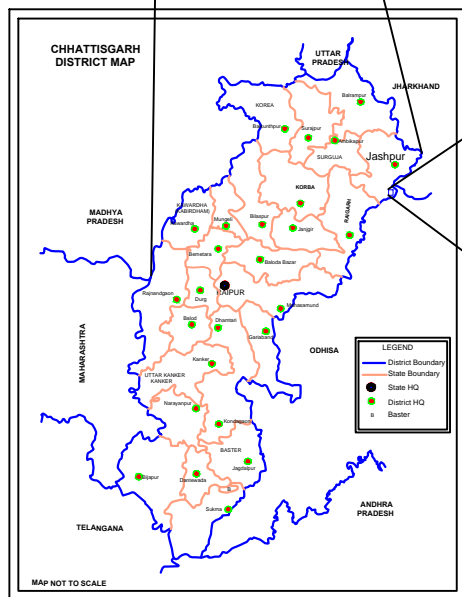
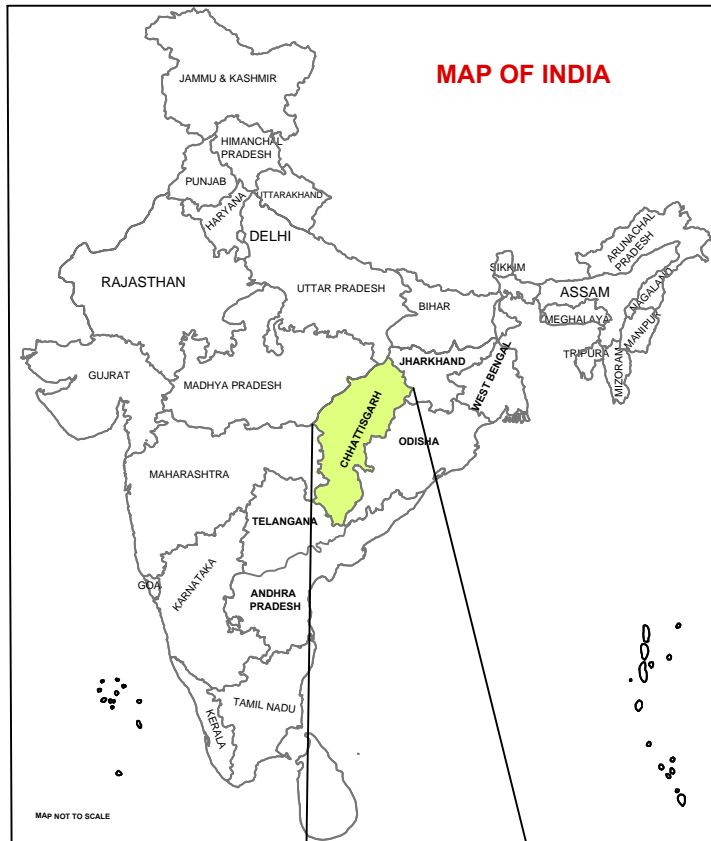
**RECONNAISSANCE SURVEY (G-4) FOR GOLD IN MENDERBAHAR-BHAGHORA BLOCK**

DISTRICT : JASHPUR STATE : CHHATTISGARH

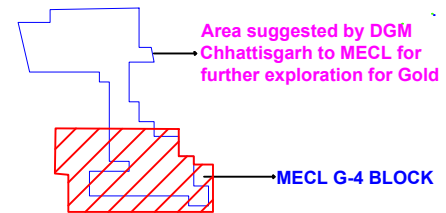
AREA: 38.58 Sq. Km R.F. : 1 : 10,000 TOPOSHEET: PART OF 64N/15

Processed At: IT Cell (Non-Cost), MECL, Nagpur Prepared by: Exploration Division, MECL, Nagpur

MECL/EXPL./JAN-2022 PLATE No.: III



Block Boundary Cardinal Point	Easting	Northing	Longitude	Latitude
A	788048.4941	2491268.716	22° 30' 13.072" N	83° 47' 59.305" E
B	794340.4744	2491247.768	22° 30' 8.524" N	83° 51' 39.25" E
C	794361.5522	2489966.816	22° 29' 26.903" N	83° 51' 39.13" E
D	795541.2817	2489986.228	22° 29' 26.8" N	83° 52' 20.38" E
E	795541.7948	2488945.644	22° 28' 53" N	83° 52' 19.7" E
F	796298.8457	2488960.186	22° 28' 53" N	83° 52' 46.17" E
G	796324.658	2488406.517	22° 28' 35" N	83° 52' 46.7" E
H	797289.9336	2488425.345	22° 28' 35.008" N	83° 52' 20.449" E
I	797289.9336	2486152.083	22° 27' 21.17" N	83° 53' 18.917" E
J	789040.6701	2486151.867	22° 27' 26.256" N	83° 48' 30.635" E
K	789041.1687	2488710.864	22° 28' 49.38" N	83° 48' 32.33" E
L	788039.958	2488704.735	22° 28' 49.79" N	83° 47' 57.33" E



**MINERAL EXPLORATION CORPORATION LIMITED**

**LOCATION MAP**

**RECONNAISSANCE SURVEY (G-4) FOR GOLD IN MENDERBAHAR-BHAGHORA BLOCK**

DISTRICT : JASHPUR STATE : CHHATTISGARH

AREA: 38.58 Sq. Km NOT TO SCALE PART OF TOPOSHEET 64N/15

Processed At IT Cell (Non-Coal), MECL, Nagpur

Prepared by Exploration Division MECL, Nagpur

MECL / EXPLORATION / JANUARY-2022 PLATE NO - I