

**PROPOSAL FOR  
PRELIMINARY EXPLORATION FOR  
BAUXITE IN PARPATIA AREA (G-3)  
MAINPAT PLATEAU  
SURGUJA DISTRICT CHHATTISGARH  
(THROUGH NMET FUND)**



**GOVERNMENT OF CHHATTISGARH  
MINERAL RESOURCES DEPARTMENT**

**PRILIMINARY EXPLORATION FOR BAUXITE, PARPATIA AREA,  
MAINPAT PLATEAU, SURGUJA DISTRICT CHHATTISGARH**

**EXPLORATION -04**

**SUMMARY OF THE BLOCK:**

1	Title of project	Preliminary exploration for bauxite in Parpatia area, Surguja District (C.G.)																					
2	Mineral to be explored	Bauxite																					
3	Objectives	Assessment of metal grade Bauxite in Parpatia block.																					
4	Level of proposed Exploration (G4/G3/G2/G1)	Proposed for G-3 level exploration work ( G-4 level prospecting work already done)																					
5	State/ District/Block/Area	Chhattisgarh/ Surguja/ Lakhanpur/ Mainpat plateau																					
6	Toposheet No.	64 N/1																					
7	a) Total area	5.00 sq km.																					
	b) co-ordinates of the block	<table border="0"> <thead> <tr> <th></th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>22° 51' 09''N</td> <td>: 83° 12' 19''E</td> </tr> <tr> <td>B</td> <td>22° 51' 09''N</td> <td>: 83° 12' 19''E</td> </tr> <tr> <td>C</td> <td>22° 50' 18''N</td> <td>: 83° 12' 19''E</td> </tr> <tr> <td>D</td> <td>22° 50' 18''N</td> <td>: 83° 11' 04''E</td> </tr> <tr> <td>E</td> <td>22° 49' 23''N</td> <td>: 83° 11' 04''E</td> </tr> <tr> <td>F</td> <td>22° 49' 23''N</td> <td>: 83° 10' 00''E</td> </tr> </tbody> </table>		Latitude	Longitude	A	22° 51' 09''N	: 83° 12' 19''E	B	22° 51' 09''N	: 83° 12' 19''E	C	22° 50' 18''N	: 83° 12' 19''E	D	22° 50' 18''N	: 83° 11' 04''E	E	22° 49' 23''N	: 83° 11' 04''E	F	22° 49' 23''N	: 83° 10' 00''E
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8	Status of area (Free hold/ Leasehold)	Freehold																					
9	Background information	<p>1. Agrawal J.P. (1973) Exploration for bauxite in Mainpat plateau was carried out by state D.G.M. during F.S. 1965 – 71, with a view to determine the size and grade of bauxite deposit. Total four blocks i.e. Sapanadand, Nagadand, Kudaridih &amp; Kesra were identified and following geological works were done :</p> <p>Total 2826 Nos. of bore holes were drilled with a total 29729 mts drilling completed , logging of all B.H. , processing of samples and their chemical analysis.</p> <p>Total 232 pits were excavated, wall mapping, sampling and their analysis.</p> <p>Total resources estimated in 04 blocks: 42.69 MT with average Al<sub>2</sub>O<sub>3</sub> 48.78%. (Note: Parpatia block is adjacent to Sapanadand, Nagadand, Kudaridih &amp; Kesra)</p> <p>2. Dhekaware H.D. &amp; Chauhan G.R (F.S. 2002-03) carried out following investigation works: 2.1 Reconnaissance Geological Survey in 71</p>																					

		sq. km. area .scale(1:50,000) 2.2 Surface samples-30 Nos ((Analysis results given in Table-3) 2.3 Detailed Mapping 3.75 sq. km. (scale1:4,000) 2.4 Total 02 Nos. of Borehole were drilled (23.00 meter) (Analysis results given in Table-5a & 5b)
	3. Present status of the block	G-4 level exploration work has already been completed
	4. Mineral concession status (lease)	Free-hold area
10	Status of various clearances	Non forest area
11	Brief account of work proposed in the area and expected outcome	(1) Geological mapping 5.00 sq. km (1:4,000 scale) (2) Total 175 Nos of Boreholes with a total 1750 meter drilling. (3) Logging, sampling and chemical analysis etc. (4)Resource estimation of metal grade bauxite and preparation of auctionable Geological Report
12	Details of work proposed in the area	Given in table 2.

COST ESTIMATE FOR PRELIMINARY EXPLORATION FOR BAUXITE IN PARPATIA AREA MAINPAT (G-3) DIST, SURGUJA, CHHATTISGARH								
SL. No.	Item of work	Unit	Base Rate	Financial Year (2018-19)			Total	
				Esc. Rate (Rs)	Qty.	Amount (Rs)	Qty	Amount (Rs)
<b>A</b>	<b>DRILLING</b>							
1	Surface Drilling (2 Rigs)	m.	1714	6780	1750	11865000	1750	11865000
2	Road making (Flat Terrain)	Km.	7800	18563				
	<b>Sub Total A</b>					<b>11865000</b>		<b>11865000</b>
<b>B</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days (1 party)	day	1180	5840		0	0	0
2	Geologist Party Days (1 Party)	day	1541	7802	20	156040	20	156040
3	Core Sampling Party days (2 parties)	day	525	2809	382	1073038	382	1073038
	<b>Sub Total B</b>					<b>1229078</b>		<b>1229078</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	(i) for Primary Samples 5 radicals (TiO <sub>2</sub> , Ga.V.SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> % LOI)	Nos	414 (76×4+110)	2378	588	1398264	588	1398264
	(ii) Analysis of REE	Nos		7681	10	76810	10	76810
	(iii) for Composite Samples 5 radicals (TiO <sub>2</sub> , Ga.V.SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> % LOI)	Nos	414 (76×4+110)	2378	58	137924	58	137924
	(iv) for Check Samples 5 radicals (TiO <sub>2</sub> , Ga.V.SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> % LOI)	Nos	414 (76×4+110)	2378	58	137924	58	137924
	<b>Sub Total C</b>					<b>1398264</b>		<b>1750922</b>
	<b>Total A+B+C</b>					<b>14492342</b>		<b>14845000</b>
D	Report Writing	Nos	175000	175000	1	175000	1	175000
	Sub Total					175000		175000
	<b>Total A to D</b>					<b>14667342</b>		<b>15020000</b>
E	GST 18%							2703600
	<b>Grand Total: with GST 18%</b>							<b>17723600</b>
							<b>Total in Lacs</b>	<b>177.24</b>
Note:								
1	Revised rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006M.I., dated-02/07/2014 and based on actual escalation as per RBI Indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in revised Rates of Promotional Work of MoM scheduled							
3	**Nityanand Committee Rates with actual escalation as per RBI Index as on 31.03.2017 and the same for subsequent year.							
4	***As approved in the 12th meeting of the Technical Committee & the meeting of Executive Committee of NMET.							
5	****Rate has taken from Schedule of Charges of different activities of GSI on 2014-15 and 40% escalation on the same has been considered for F.Y. 2018-19							

Mineral Exploration and evaluation 18% (SAC Code: 998343)

## **BAUXITE BLOCK PARPATIA AREA MAINPAT PLATEAU, DISTRICT- SURGUJA**

**1. INTRODUCTION:** - Bauxite has played a vital role in the industrial growth of a nation. In India around 75% of demand is met through our own deposit.

India has large resources of about 2.3 billion tones of metallurgical grade bauxite deposits, which ranks fifth highest bauxite resources in world next to Australia, Guinea, Brazil and Jamaica and It contribute 9% of the world's total deposits. In India, bauxite producing states are Orissa, Andhra Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Bihar and Chhattisgarh.

In Chhattisgarh, Mainpat plateau has a large resource of bauxite deposit, carried out exploration work from 1965-71 by state DGM and demarcated blocks, i.e. Sapanadand, Nagadand, Kesra, and Kudaridih etc. Besides these, Parpatia block is one of the potential bauxite block, contains metallurgical grade bauxite located adjacent to above said blocks.

**1.1 LOCATION OF THE BLOCK:-** The study area is bounded by latitude 22°49'23" to 22°51'09" longitude 83°10'00" to 83°12'19", falls in Survey of India Toposheet no 64 N/1(Map no .1)

The block is 35kms from Kamleshwarpur & about 90 kms from district head quarter Ambikapur. The area is connected by fair weather forest road, which connects it with Kamleshwarpur. Kamleshwarpur itself is well connected with district head quarter Ambikapur by all weather roads.

**1.2 PHYSIOGRAPHY AND DRAINAGE:** - The Surveyed area exhibits gently undulated topography. The plateau has steep escarpment along edges. The maximum elevation of the area is about 1155 m, in NW of Parpatiya block. Manchhari River is perennial, flowing from north east to SW direction. The drainage pattern of the area shows a combination of dendritic and radial drainage pattern.

## **2 PREVIOUS WORK**

- a. C.S. Fox. (1923) The Presence of bauxite, in Mainpat Plateau published, in Memoir of GSI a in XLIX –Part-I.
- b. C.P. and Barar Govt. (1948-49) surveyed this area and estimated a reserve of 7.5 million tonnes of bauxite in Mainpat plateau.
1. Roy Chowdhary M.K. (1956) mapped this area in detailed published in G.S.I. Memoir No. 85.
2. Directorate of Geology and Mining Agrawal J.P.(F.S.1965-71) exploration of bauxite Mainpat plateau in Surguja distt had carried out a detailed exploration work in four blocks of plateau viz, Nagadand, Sapanader, Kudaridih, Kesera, carried out from Feb. 65 to April 71 1965 to 1974 and 1994-2001 and established a reserves of 42.69 million tonnes of bauxite containing an average 45% Al<sub>2</sub>O<sub>3</sub>.
3. H.D. Dhekaware & G.R. Chauhan (2002-03) has carried out exploration work “Prospecting of Bauxite in Parpatia area Mainpat plateau, tehsil Sitapur District- Surguja”. 02 Nos. of borehole were drilled within the area to know the depth persistence of bauxite zone. The bauxite and aluminous laterite exists up to depth of 10.00m from the surface. 5(a) & 5(6)

### 3. STRATIGRAPHIC SUCCESSION

The general Stratigraphic succession of the area is as follows:-

#### 3.1 Regional Geology:-

Age	Formation	Lithology
Recent	-	Alluvium, soil, lateritic soil and gravel
Sub recent	-	Laterite and bauxite
Paleocene	-	Deccan Trap
Upper cretaceous	Lameta	Cal. Sandstone
	---- unconformity----	
Upper Carboniferous	Barakar formation <b>GONDWANA</b> Talchir formation	Sandstone of varying grain size  Silt stone, shale with boulder bed
	---unconformity---	
Achaeans	-	Granites, Gneisses, and meta sediments.

(after GSI)

#### 3.2 Local Geology:-

Bauxite of the area occurs in lensoid form within the laterite horizon, which comprises various recognizable units. On the basis of observation of outcrops, escarpment section following generalized lithologic sequence has been established for the area.

Age	Formation	Litho-units	Thickness range (average)
Recent		Soil	up to 0.60m
Sub recent		Pisolitic Low grade laterite	0.30 – 3.00m
		Aluminous laterite & bauxite	2.00 – 5.00m
		Ferruginous laterite	2.00 – 4.00m
		Lithomarge	(+_) 1.00m
Upper cretaceous to Eocene	Deccan Trap	Basalt	Not touched

## **DETAILS OF LITHOLOGICAL UNIT:**

### **Lithomarge**

Lithomarge is the lower most unit of laterite profile. It occurs immediately above the Deccan trap flows and thus separates it from the laterite. It is the residual clay left at place of origin by removal of iron and aluminium material by leaching. Its exposures are seen at the nala bed and scarp cutting at north-west of Murtadand. The lithomarge is quite soft, soapy in touch. Colour is generally bluish white but sometime it may be yellowish to reddish.

### **Ferruginous laterite**

The lithomarge is overlain by hard compact ferruginous laterite. The laterite contains high percentage of limonite. At some places it is so hard and fine-grained which resembles massive limonitic iron ore. This ferruginous laterite is generally seen in the low-lying area drained by nalas.

### **Bauxite and Aluminous laterite**

The ferruginous laterite is overlain by aluminous laterite and bauxite. It is observed that where bauxite is less developed i.e. enrichment of iron oxide is more than alumina, aluminous laterite is found. In aluminous laterite, pisoles and oolites of bauxite are cemented in ferruginous matrix. A higher Al content in aluminous-laterite-bauxite horizon is indicated by lighter shade of colour, greater density and better compactness of texture. The aluminous laterite is generally overlain by bauxite. The bauxite varies in colour from gray, greyish white to pinkish. It can be put into two distinct groups, pisolitic bauxite and massive bauxite. The bauxite and aluminous laterite occur in lensoid form within the laterite profile.

The bauxite outcrops are confined to peripheral scarp, whereas the central part is covered by topsoil and cultivated field. There is a quite large zone of bauxitisation in the western part of the block, where prominent outcrops of bauxite and aluminous laterite are found. Large toppled boulders of bauxite are also seen in the southern scarp margin of block.

### **Pisolitic Low grade laterite:-**

The pisolitic laterite, which forms the upper most horizons in the laterite profile, occurs above the bauxite zone. It is hard and compact and dark brown in colour. Generally it is marked by closely packed pisoles of ferruginous material cemented together in a fine-grained matrix. The diameter of these pisoles varies from few millimetres to two centimetres.

### **Soil**

The laterite profile is mostly covered by soil on the plain ground, which is yellow, reddish and at place black in colour. The soil thickness is more towards the central part of the plateau and it is considerable thin towards the margin of the plateau.

#### **4. OBJECTIVE OF THE PROPOSED EXPLORATION PROGRAMME**

Preliminary exploration of bauxite in the Parpatia block is to be carried out for assessment of Metal grade bauxite.

#### **5. PROPOSED SCHEME OF EXPLORATION**

In accordance to the objective set for the block, the exploration programme is formulated. Accordingly, the following scheme of exploration is formulated in order to achieve the objectives. The details of different activities to be carried out are presented in subsequent paragraphs.

**5.1 GEOLOGICAL MAPPING:** - Detailed mapping will be carried out on 1 : 4000 scale by Total station with contouring. Rock types, their contact. Structural features will be mapped. Samples of various litho units for chemical/ petrological studies will be collected during the course of geological mapping.

**5.2 SURFACE SAMPLING:** - During the course of Geological mapping the Bed rock samples shall be collected from the out crops. Approximately 10 nos bed rock samples shall be collected prepare and analyzed.

**5.3 SURVEYING:** - The block boundary will be surveyed by DGPS and Total station in WGS-84 datum for demarcation of block boundary points. Survey will be associated with Bed rock samples collection by taking up points and plotting its location on the map for proper interpretation of the sample data. Survey party will also be associated with geological mapping on 1 : 4000 scale.

During drilling of boreholes fixation and determination reduced level co-ordinates of boreholes will be undertaken. Contouring of the surrounding area would be done at 2.0 meter interval along with survey of surface feature.

#### **5.4 EXPLORATORY MINING- Nil**

##### **SHALLOW TRENCHING / PITTING (EXCAVATION)**

Pitting shall be carried out in the potential zone identified based on the results of geological mapping. Pitting shall be done for correlation of mineralized zone on surface up to depth of bauxite bearing zone. 10 nos pit are required to confirm the continuity of the bauxite zone.

#### **5.5 CORE DRILLING**

A total of 175 boreholes planned within the block at 200 meter grid interval, with an average depth of 10 meters.

#### **5.6 DRILL CORE LOGGING**

The drill core will be logged for rock types, structural features texture and intersection of ore zones, type of mineralization and various type of bauxite.

#### **5.7 DRILL CORE SAMPLING**

During the lithological logging of drill core mineralization zone will be marked based on concentration and lithological variation. All the samples generated through drilling will be analysed.

**5.8 PETROLOGICAL AND MINERALOGICAL STUDIES:** - During the course of core logging and mapping 10 samples of various litho units intersected will be studied for petrography and 20 samples from mineralized zone will be studied for mineral assemblages and their distribution.

### 5.9 QUANTUM OF WORK PROPOSED

**Table No. 1:** The detail of quantum of proposed work is given below:-

<b>Time Schedule (in month) For exploration programme in Parpatia block of Mainpat plateau Surguja district</b>												
<b>Item of work</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
Geological mapping	↔											
Bed rock sampling	↔											
Surveying ( one party)	←	→										
Drilling		←	→									
Survey party for contouring and surface feature	←	→										
Sample preparation		←	→									
Geologist party days for drilling sampling and report work	←	→										
Analytical work Drill core sample			←	→								
Camp winding								←	→			
Geological report						←	→					

**Table No. 2:** Proposed quantum of work in Parpatia, district Surguja, Chhattisgarh

<b>S.NO.</b>	<b>ITEM OF WORK</b>	<b>QUANTUM OF WORK</b>
1	Detailed mapping, (1:4000 scale)	<b>5.80 km<sup>2</sup></b>
2	Topographical survey (1:4000 scale)	<b>5.80 Km<sup>2</sup></b>
3	Drilling (coring)	<b>1750 M</b>
4	<b>Geological work</b>	
	a) Core logging	<b>1750 M</b>
	b) Core sampling	<b>2100 Nos</b>
5	<b>Laboratory studies</b>	
6	Surface sampling (Rock)	-
7	Pit samples with radical as silica Iron Alumina, TiO <sub>2</sub> vanadium and Gallium.	-
8	Core samples with analysis of bauxite for silica Iron Alumina, TiO <sub>2</sub> , vanadium and Gallium.	<b>2100 Nos</b>
9	<b>Physical studies</b>	
	a) Petrological studies	<b>10 Nos</b>
	b) Mineralogical studies	<b>10 Nos</b>
	c) Report preparation As per mineral Rule 2015	-

**Table No 3:** Analysis results of surface samples from Parpatia area

Sn.	Sample No.	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI%	Total
1	P/1	0.80	45.90	15.90	14.00	23.29	88.44
2	P/2	0.84	50.70	12.70	8.60	27.72	99.96
3	P/3	0.40	49.60	14.10	11.30	24.41	99.81
4	P/4	1.40	44.30	18.10	13.00	23.00	99.80
5	P/5	1.16	48.10	16.00	09.50	24.99	99.75
6	P/6	0.38	50.20	14.00	10.20	25.07	99.85
7	P/7	0.88	46.90	18.00	11.40	22.50	99.68
8	P/8	1.08	49.20	13.10	10.30	25.97	99.65
9	P/9	1.36	56.20	04.20	09.70	28.36	99.82
10	P/10	1.74	37.50	23.30	13.60	23.26	99.40
11	P/11	2.54	36.40	23.90	14.30	22.91	99.65
12	P/12	0.18	50.70	06.40	16.30	26.13	99.71
13	P/13	0.88	47.60	10.50	17.00	23.68	99.66
14	P/14	0.62	34.00	26.10	15.20	23.83	99.75
15	P/15	1.58	37.50	26.10	11.50	22.95	99.63
16	P/16	1.26	50.90	08.30	13.20	25.97	99.63
17	P/17	0.76	52.80	5.90	12.90	27.38	99.74
18	P/18	3.00	40.00	28.00	09.40	19.26	99.66
19	P/19	1.24	53.80	09.30	09.50	26.00	99.84
20	P/20	0.96	53.80	09.10	10.20	25.52	99.58
21	P/21	0.90	54.30	10.50	10.40	23.80	99.90
22	P/22	0.86	55.50	06.70	11.90	24.96	99.92
23	P/23	2.84	53.20	07.70	12.30	23.74	99.78
24	P/24	1.00	60.00	4.10	07.00	27.84	99.94
25	P/25	1.12	57.40	06.50	08.20	26.62	99.84
26	P/26	0.66	53.10	07.20	12.80	25.69	99.45
27	P/2	0.58	49.04	05.30	15.30	29.12	99.34
28	P/3	0.78	55.38	5.50	09.80	27.63	99.09
29	P/4	0.30	56.24	06.20	10.00	26.47	99.21
30	P/5	0.56	54.80	6.60	09.00	28.39	99.35

**Table No.4** Analysis results of bauxite samples of pits from Parpatia area

S. No.	Pit	Spl.No.	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	Tio <sub>2</sub>	LOI	Total
<b>1</b>	<b>Pit sample</b>	PT/1	0.36	46.80	16.10	10.90	25.51	<b>99.67</b>
<b>2</b>	<b>Pit sample</b>	PT/2	2.48	40.80	22.20	10.20	23.93	<b>99.61</b>
		AV	2.39	43.36	20.48	10.74	24.86	<b>99.65</b>

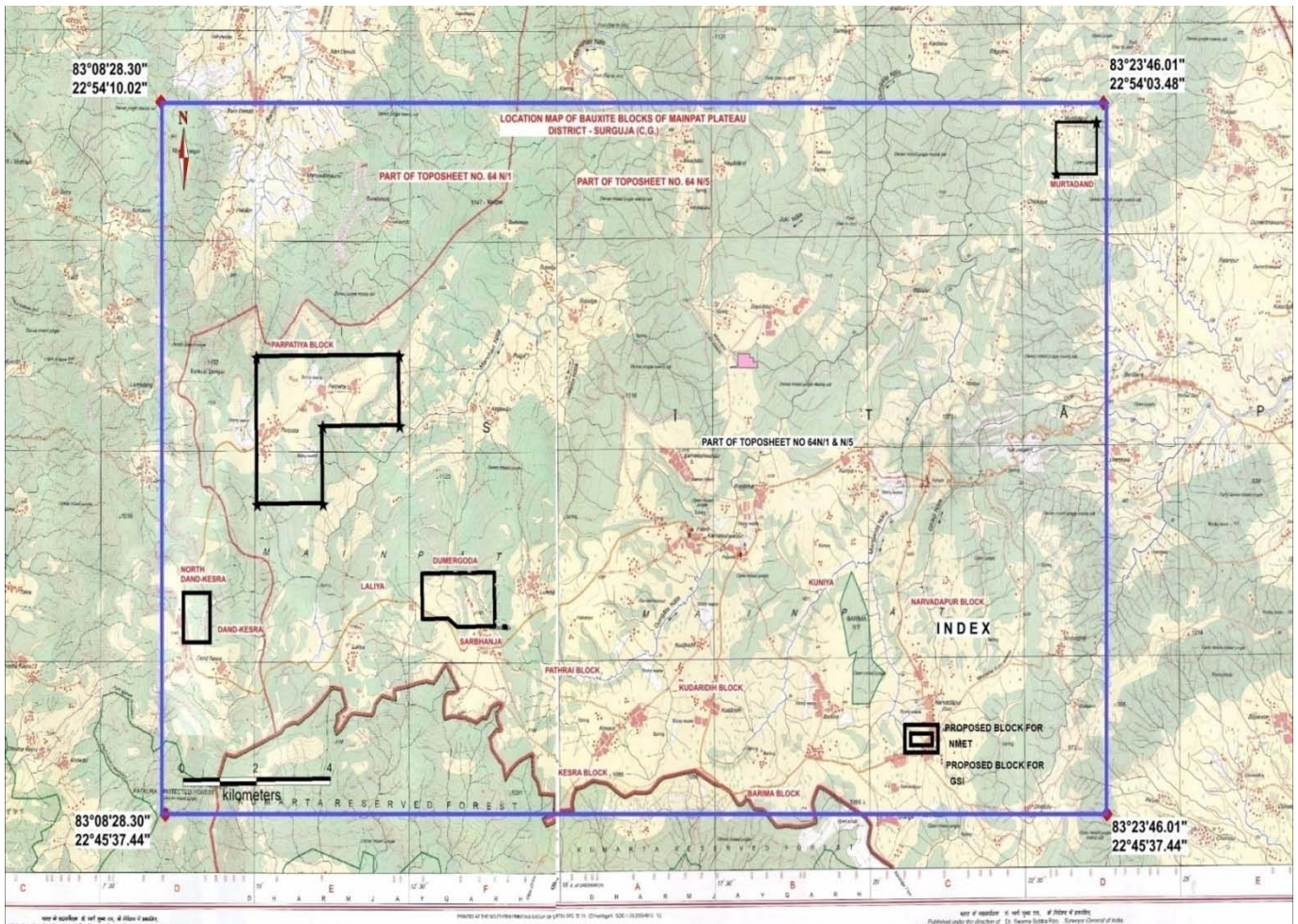
**Table No.5 (a)** Lithological description and analysis results of bauxite samples drawn from boreholes in Parpatia area Distt. Surguja

From (m)	To (m)	Run (m)	Core (m)	Core Recovery	Lithological description	SplNo.	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI%	Total%
0.00	2.00	2.00	Nil	-	Lateritic Soil	-	-	-	-	-	-	-
2.00	3.00	1.00	0.33	33%	Yellowish red laterite	-	-	-	-	-	-	-
3.00	4.00	1.00	0.52	52%	Laterite, cavity 3.52 to 4.00, sandy soil	-	-	-	-	-	-	-
4.00	5.00	1.00	0.40	40%	Laterite, cavity 4.00 to 4.60, sandy soil	-	-	-	-	-	-	-
5.00	6.00	1.00	0.90	90%	Ferruginous laterite with pockets of aluminous laterite	-	-	-	-	-	-	-
6.00	7.00	1.00	0.47	47%	Ferruginous laterite with pockets of aluminous laterite cavity 7.45 to 8.00	1	9.12	44.32	18.60	11.20	16.04	99.28
7.00	8.00	1.00	0.45	45%	Ferruginous laterite with pockets of aluminous laterite cavity 7.45 to 8.00	-	-	-	-	-	-	-
8.00	9.00	1.00	0.90	90%	Ferruginous laterite with pockets of aluminous laterite cavity 7.45 to 8.00	2	6.20	38.60	26.20	10.90	17.70	99.06
9.00	10.00	1.00	0.27	27%	Greyish pink bauxite boulders and westhered bauxite	3	5.80	42.90	16.90	11.80	21.60	99.65
10.00	11.00	1.00	Nil		Cavity, fine grained sandy soil	-	-	-	-	-	-	-
11.00	12.00	1.00	0.36	36%	Loose sandy with weathered ferruginous laterite	-	-	-	-	-	-	-
12.00	13.00	1.00	0.24	24%	Yellowish clay (Lithomarge)	-	-	-	-	-	-	-
Bore hole closed at 13.00mts.												

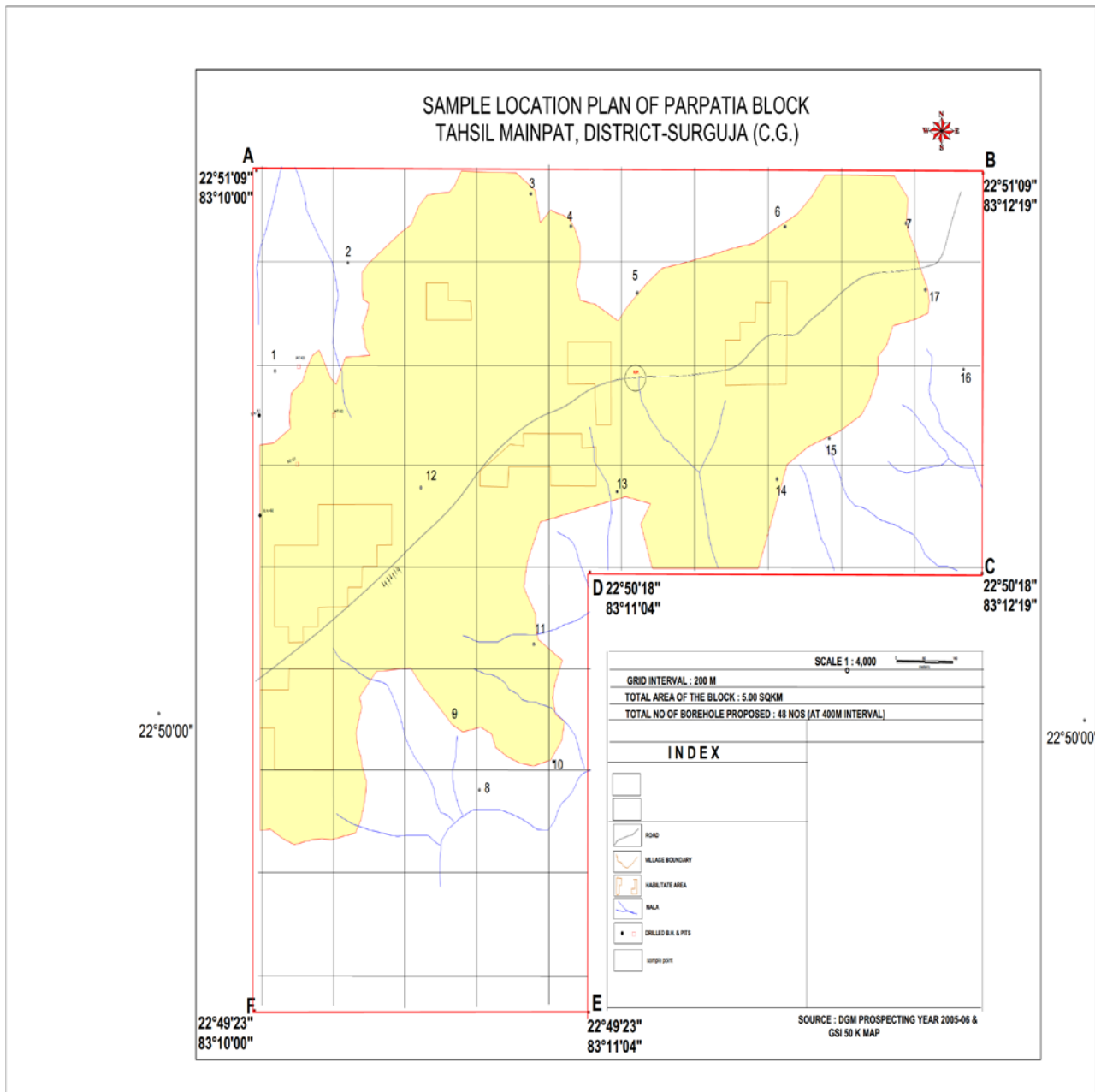
**Table No.5 (b)** Lithological description and analysis results of bauxite samples drawn from boreholes in Parpatia area Distt. Surguja

From (m)	To (m)	Run (m)	Core (m)	Core Recovery	Lithological description	Spl No.	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	LOI %	Total %
0.00	0.60	2.00	Nil	-	Yellowish grey soil	-	-	-	-	-	-	-
0.60	1.00	1.00	0.33	33%	Aluminous Laterite, with pinkish grey bauxite and patches of grey bauxite	1	1.35	47.20	17.40	10.20	23.53	99.71
1.00	2.00	1.00	0.52	52%	Ferruginous laterite with patches of aluminous laterite (1.10 to 1.80 lateritic soil)	-	-	-	-	-	-	-
2.00	3.00	1.00	0.40	40%	Ferruginous laterite with patches of aluminous laterite (2.10 to 3.00 lateritic soil)	2	4.78	37.30	28.20	10.90	18.43	99.61
3.00	4.00	1.00	0.90	90%	Cavity with sandy soil	-	-	-	-	-	-	-
4.00	5.00	1.00	0.47	47%	Aluminous Laterite, with grey bauxite (4.10 to 5.00) cavity sandy soil	3	2.98	44.70	18.40	11.50	22.20	99.68
5.00	6.00	1.00	0.45	45%	Cavity laterite soil	-	-	-	-	-	-	-
6.00	7.00	1.00	0.90	90%	Cavity laterite soil	-	-	-	-	-	-	-
7.00	8.00	1.00	0.27	27%	Ferruginous and aluminous laterite (cavity 7.00 to 7.85)	4	35.54	28.60	14.90	5.70	14.83	99.57
8.00	9.00	1.00	Nil		Weathered dull white Lithomarge with small bauxite boulders.	-	-	-	-	-	-	-
9.00	10.00	1.00	0.36	36%	Yellowish white lithomarge	-	-	-	-	-	-	-
Bore hole closed at 10.00mts.												

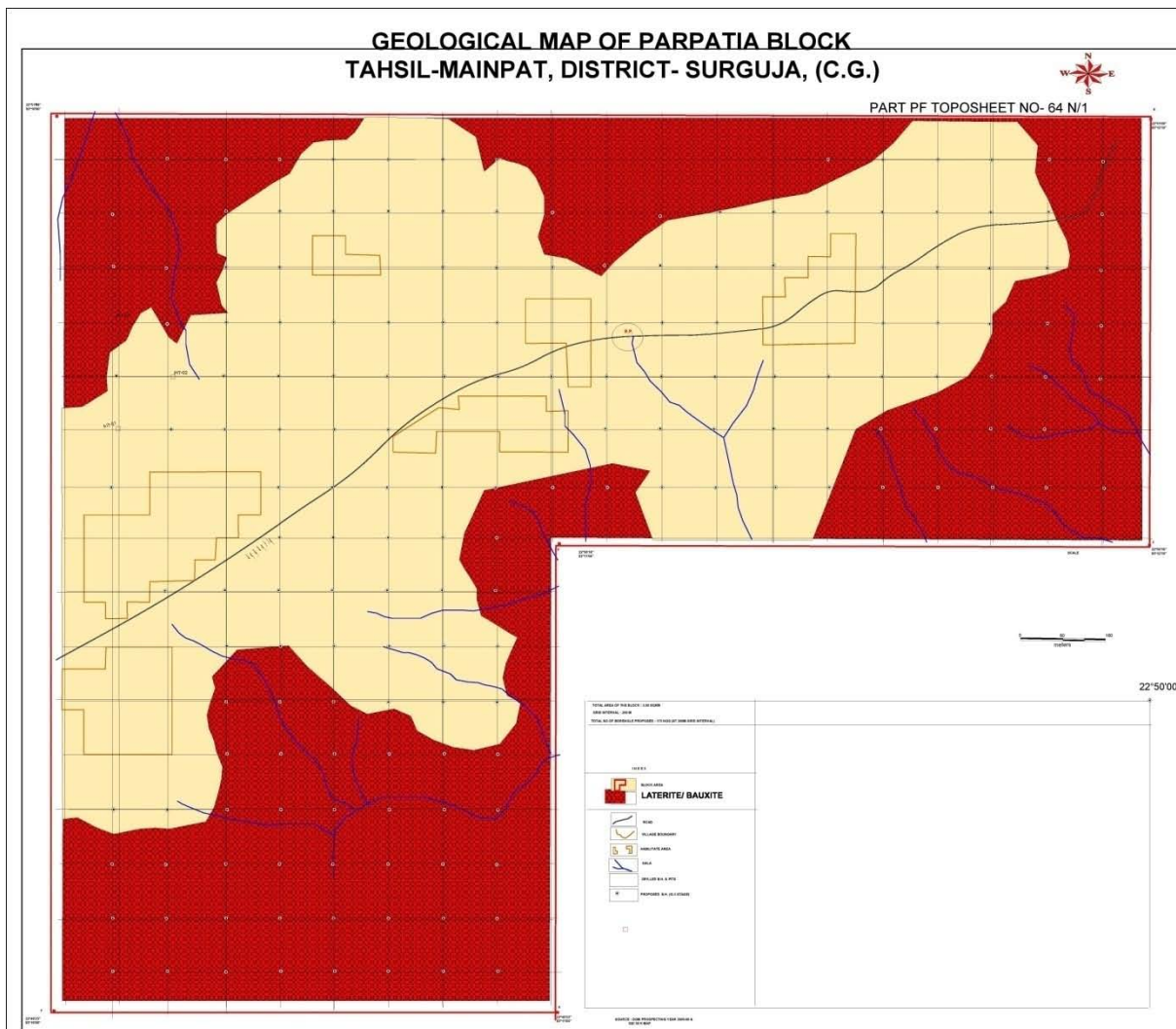
### Map No. 1 Location Map of Parpatia Area



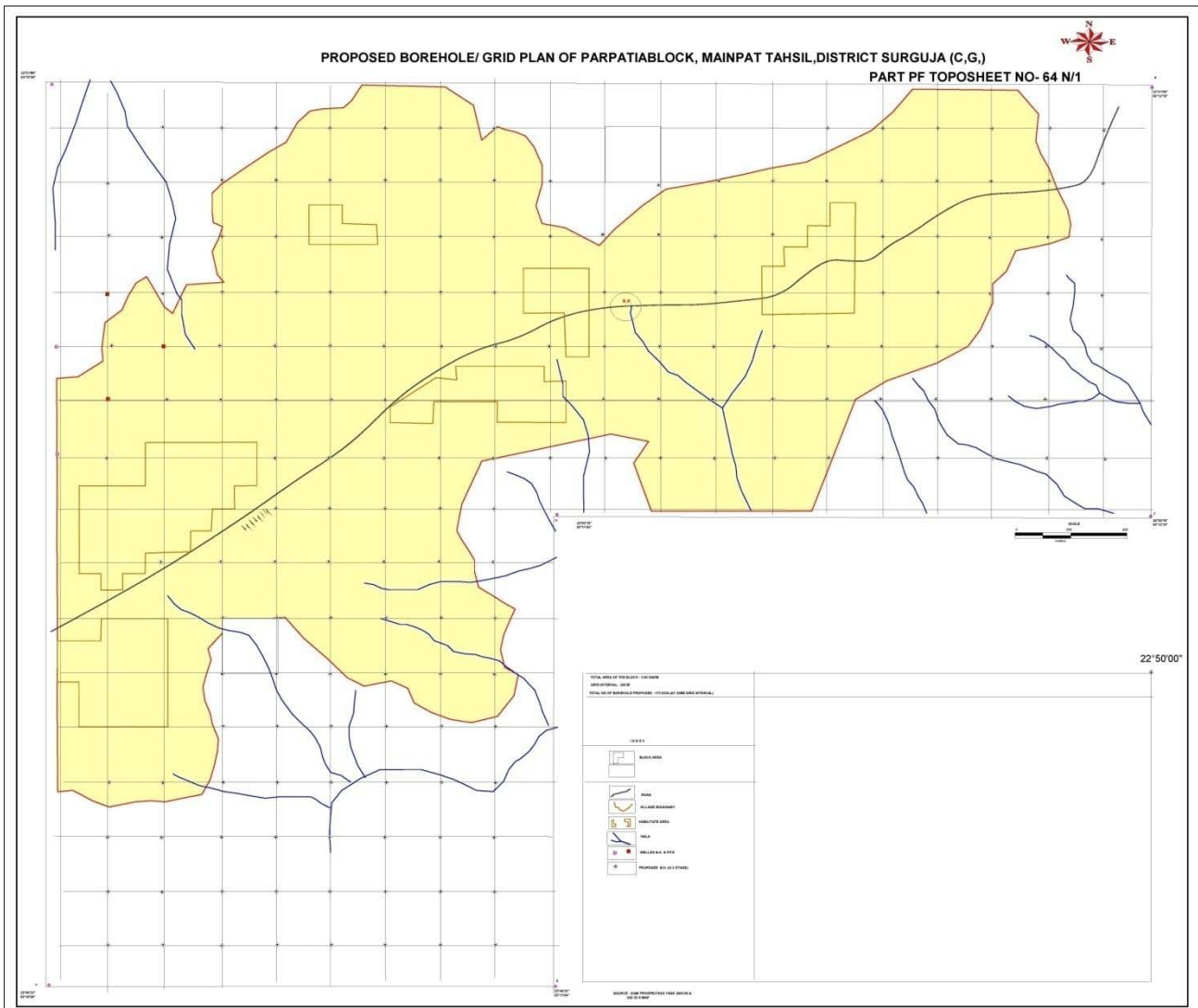
**Map No. 2 :**



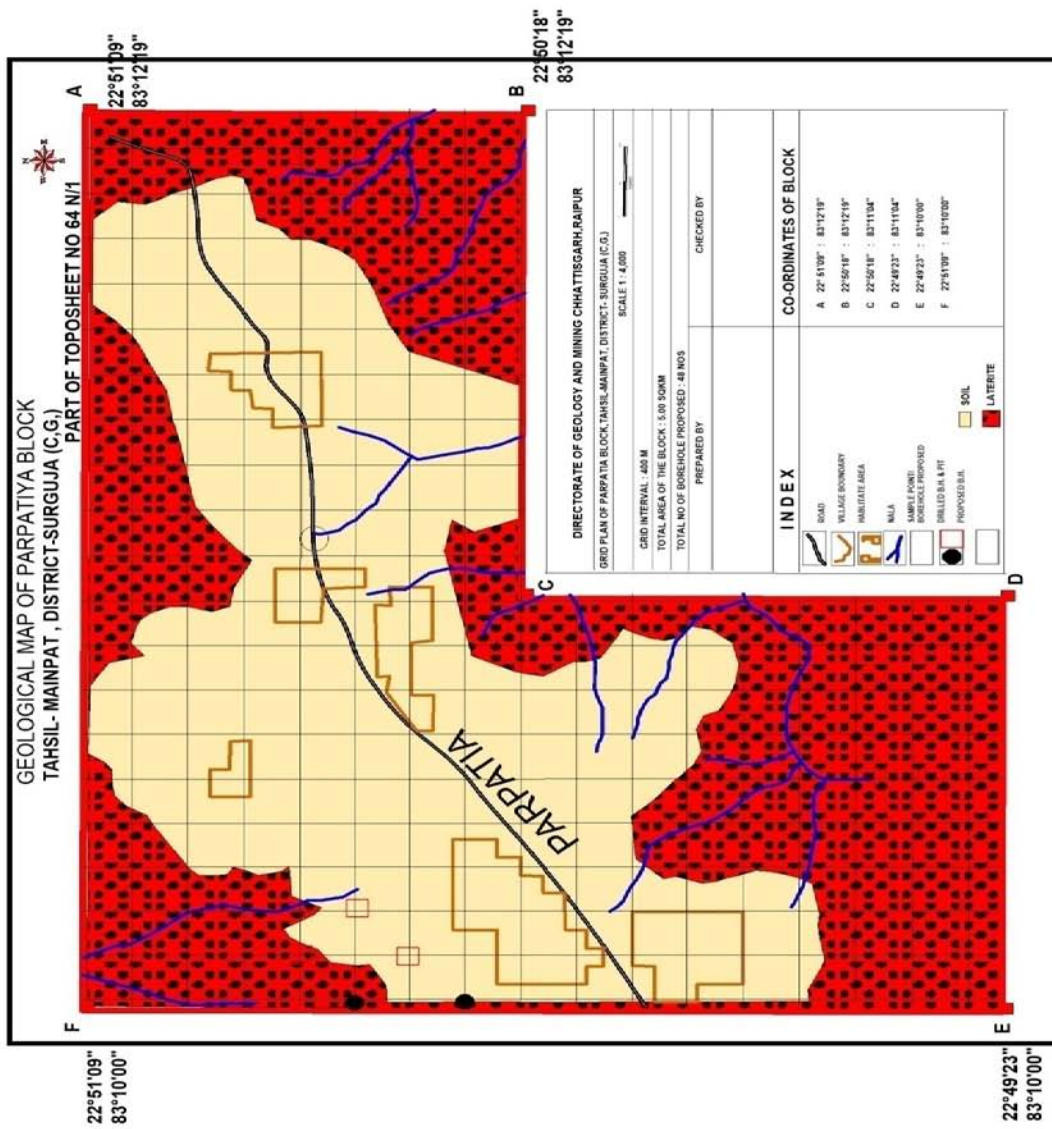
### Map No. 3



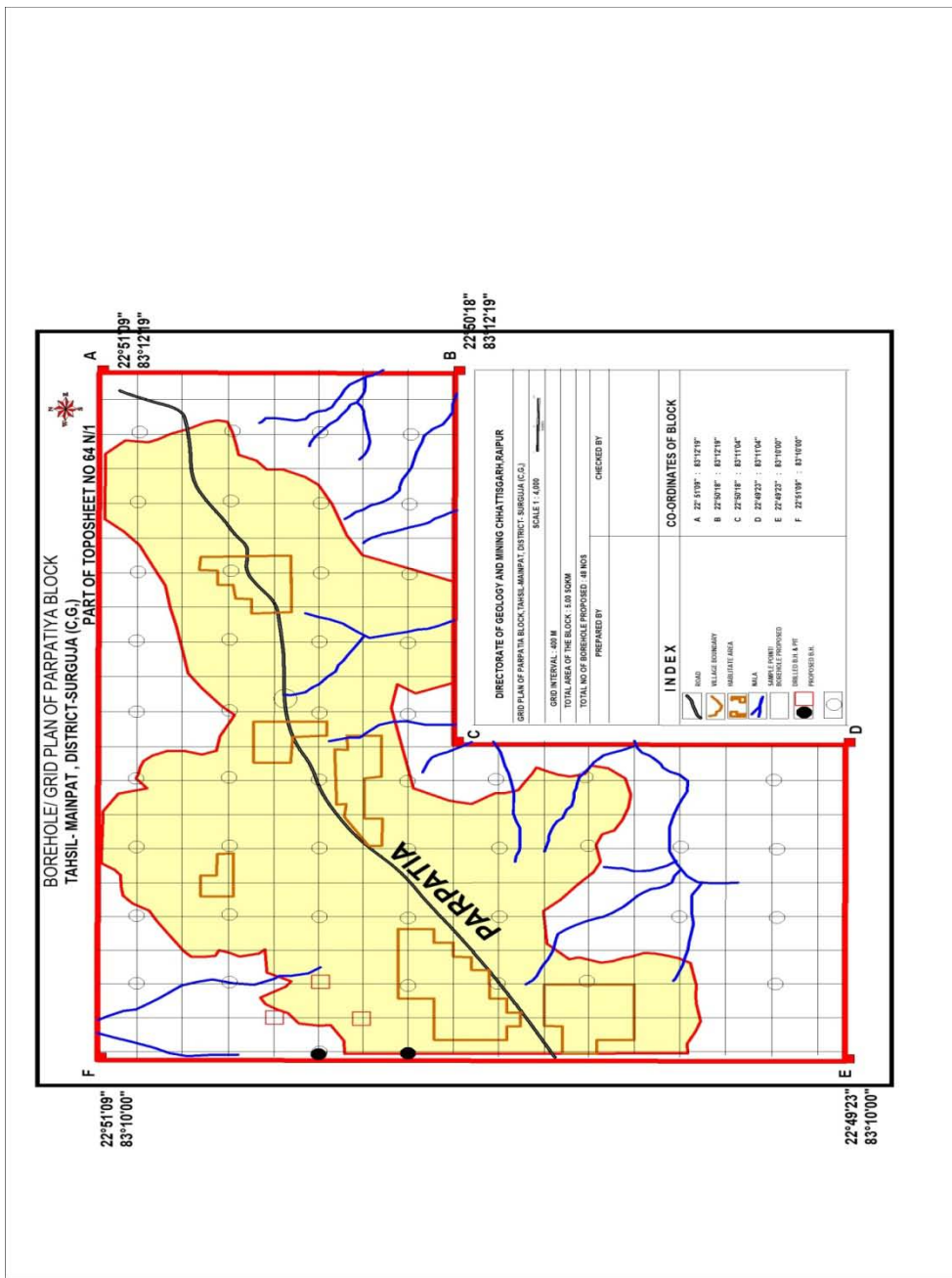
### Map No. 4



Map No. 5



### Map No. 6



New Delhi, the 21<sup>st</sup> June, 2018

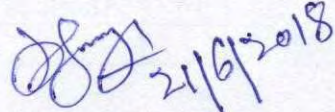
**OFFICE MEMORANDUM**

**Subject: Approval of mineral exploration projects in 14 blocks of DMG Chhattisgarh.**

On the recommendation of Technical-cum-Cost Committee (TCC) of NMET, the Executive Committee in its 8<sup>th</sup> meeting, held on 12<sup>th</sup> June, 2018 approved mineral exploration projects in 14 blocks of DMG Chhattisgarh. The list of projects is enclosed as **Annexure-I**.

2. These 14 mineral exploration projects will be funded by NMET as per the costing recommended by the TCC and approved by the Executive Committee. The Implementing Agency shall complete the same as per the approved cost estimates and time schedule, enclosed in **Annexure II to XV**.

3. The work execution shall be monitored by DMG Chhattisgarh. The TCC, NMET shall review the progress of projects and provide update every six months to the Executive Committee. The Implementing Agencies shall submit progress on monthly basis to NMET.



(Pradeep Singh)  
Director, NMET

To  
The Director,  
Directorate of Geology and Mining  
Govt. of Chhattisgarh,  
Indravati Bhawan, Block No-4, 2<sup>nd</sup> floor,  
Naya Raipur- 492002.

Copy to:

1. Sh. D. Mohanraj, ADG, NM-II& Chairman, NMET TCC, Geological Survey of India, Seminary Hills, Nagpur- 440 006.
2. The Member Secretary, NMET TCC, MECL, Dr. Babasaheb Ambedkar Bhawan, Seminary Hills, Nagpur- 440 006.

**List of mineral blocks of DMG Chhattisgarh approved in 8<sup>th</sup> Executive Committee on  
12.06.2018**

Sl. No.	Block Name	Commodity	Stage	Duration	Estimated Cost (Rs. in Lakh)
1	Dumarguda Block, Dist. Surguja	Bauxite	G-3	10 months	65.51
2	Murtadand Block, Dist. Surguja	Bauxite	G-3	8 months	47.58
3	Dandkesra North Area Mainpat Dist. Surguja	Bauxite	G-3	8 months	37.98
4	Parpatia Area Mainpat Dist. Surguja	Bauxite	G-3	10 months	177.24
5	Khamardih-Gatadih Area, Distt. Raigarh	Limestone	G-3	6 months	34.97
6	Khairha Area, Distt. Raigarh	Limestone	G-3	6 months	36.82
7	North Bailadila Area, Dist.-Raigarh	Iron Ore	G-4	12 months	91.48
8	Hurtarai Area Block, Dist.-Kanker	Iron Ore	G-4	12 months	90.77
9	Rowghat Block, Dist. Kanker	Iron Ore	G-4	12 months	90.77
10	Rajhara Block, Dist. Balod	Iron Ore	G-4	12 months	91.48
11	Salhewara Block, Dist. Rajnandgaon	Iron Ore	G-4	12 months	91.48
12	Narayanapur Block, Dist. Narayanapur	Iron Ore	G-4	12 months	73.15
13	Notified Area Block, Dist. Kanker	Iron Ore	G-4	12 months	63.55
14	Aturbeda Area Block, Dist. Kanker	Iron Ore	G-4	12 months	79.19
				<b>Total</b>	<b>1071.97</b>

## Annexure-III

COST ESTIMATE FOR PRELIMINARY EXPLORATION FOR BAUXITE IN DUMARGUDA AREA (G-3) DIST. SURGUJA, CHATTISHGARH								
SL. No.	Item of Work	Unit	Financial Year (2018-19)				Total	
			Base Rate	Esc. Rate	Qty.	Amount	Qty.	Amount
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780	490	3322200	490	3322200
2	Road Making (Flat Terrain)	Km	7800	18563		3322200		3322200
	Sub Total A							
<b>B</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840				
2	Geologist Party days (1 party)	day	1541	7802	10	78020	10	78020
3	Core Sampling Party days(2 parties)	day	525	2809	100	280900	100	280900
	Sub-Total B					358920		358920
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	588	1398264	588	1398264
	ii) Analysis of REE	Nos	-	7681	10	76810	10	76810
	iii) for Composit Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	iv) for Check Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	Sub-Total C					1398264		1750922
	Total A+B+C					5079384		5432042
<b>D</b>	<b>Report Writing</b>	Nos	120000	120000	1	120000	1	120000
	Sub Total					120000		120000
	TOTAL A to D					5199384		5552042
<b>E</b>	<b>GST 18%</b>							999368
	Grand Total : with GST 18%							6551410
								Total IN Lacs
								65.51
<b>Note:</b>								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	***Nityanad Committee Rates with actual escalation as per RBI index as on 31.3 2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committee of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

B.P. Ratan

B.P. Ratan  
member secretary  
TCC, NMET

5.8 QUANTUM OF WORK PROPOSED

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Dumarguda block, Mainpat plateau distt. Surguja										
Item of work	1	2	3	4	5	6	7	8	9	10
Geological mapping	↔									
Bed rock sampling	↔									
Surveying ( one party)	←	→								
Drilling		←	→							
Survey party for contouring and surface feature	←			→						
Sample preparation		←	→							
Geologist party days for drilling sampling and report work	←				→					
Analytical work Drill core sample		←				→				
Camp winding						←	→			
Geological report							←	→		

Ratun  
BP. Ratun

## Annexure-III

COST ESTIMATE FOR PRELIMINARY EXPLORATION FOR BAUXITE IN MURTADAND AREA (G-3) DIST. SURGUJA, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc. Rate	Qty.	Amount	Qty.
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780	290	1966200	290	1966200
2	Road Making (Flat Terrain)	Km	7800	18563				
	Sub Total A					1966200		1966200
<b>B</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840		0	0	0
2	Geologist Party days (1 party)	day	1541	7802	10	78020	10	78020
3	Core Sampling Party days(2 parties)	day	525	2809	63	176967	63	176967
	Sub-Total B					254987		254987
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	588	1398264	588	1398264
	ii) Analysis of REE	Nos	-	7681	10	76810	10	76810
	iii) for Composit Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	iv) for Check Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	Sub-Total C					1398264		1750922
	Total A+B+C					3619451		3972109
<b>D</b>	<b>Report Writing</b>	Nos	60000	60000	1	60000	1	60000
	Sub Total					60000		60000
	TOTAL A to D					3679451		4032109
<b>E</b>	<b>GST 18%</b>							725780
	Grand Total : with GST 18%							4757889
								Total IN Lacs
								47.58
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committee of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

B.P. RaturiB.P. Raturi  
member secretary  
TCC, NMET

5.6 QUANTUM OF WORK PROPOSED

Table 2: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Murtadand block, Mainpat plateau distt. Surguja										
Item of work	1	2	3	4	5	6	7	8	9	10
Geological mapping	↔									
Bed rock sampling	↔									
Surveying ( one party)	←	→								
Drilling		←	→							
Survey party for contouring and surface feature	←	→								
Sample preparation		←	→							
Geologist party days for drilling sampling and report work	←	→								
Analytical work Drill core sample		←	→							
Camp winding										
Geological report					←	→				

B.P. Ratan

B.P. Ratan

## Annexure-III

COST ESTIMATE FOR PRELIMINARY EXPLORATION FOR BAUXITE IN DANDKESRA NORTH AREA MAINPAT (G-3) DIST. SURGUJA, CHATTISHGARH								
SL. No.	Item of Work	Unit	Financial Year (2018-19)				Total	
			Base Rate	Esc. Rate	Qty.	Amount	Qty.	Amount
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780	180	1220400	180	1220400
2	Road Making (Flat Terrain)	Km	7800	18563		1220400		1220400
	Sub Total A							
<b>B</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840				
2	Geologist Party days (1 party)	day	1541	7802	10	78020	10	78020
3	Core Sampling Party days(2 parties)	day	525	2809	39	109551	39	109551
	Sub-Total B					187571		187571
<b>C</b>	<b>LABORATORY STUDIES</b>							
	Chemical Analysis							
1	Primary + Check Samples							
	i) for Primary Samples 5 radicals (TiO <sub>2</sub> , Ga,V.SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	588	1398264	588	1398264
	ii) Analysis of REE	Nos	-	7681	10	76810	10	76810
	iii) for Composit Samples 5 radicals (TiO <sub>2</sub> , Ga,V.SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	iv) for Check Samples 5 radicals (TiO <sub>2</sub> , Ga,V.SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	Sub-Total C					1398264		1750922
	Total A+B+C					2806235		3158893
<b>D</b>	<b>Report Writing</b>	Nos	60000	60000	1	60000	1	60000
	Sub Total					60000		60000
	TOTAL A to D					2866235		3218893
<b>E</b>	<b>GST 18%</b>							579401
	Grand Total : with GST 18%							3798294
								Total IN Lacs
								37.98
Note:								
1	Revised Rates of Promotional Work done by MEC, on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

B. P. Raturi  
B.P. Raturi  
Member Secretary  
TCC, NMBT

## 5.9 QUANTUM OF WORK PROPOSED

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Dandkesra North, Mainpat plateau distt. Surguja										
Item of work	1	2	3	4	5	6	7	8	9	10
Geological mapping	←→									
Bed rock sampling	←→									
Surveying ( one party)	←	→								
Drilling		←	→							
Survey party for contouring and surface feature	←	→								
Sample preparation		←	→							
Geologist party days for drilling sampling and report work	←	→								
Analytical work Drill core sample		←	→							
Camp winding					←	→				
Geological report					←	→				

B. P. Ratan

B. P. Ratan

## Annexure-III

COST ESTIMATE FOR PRELIMINARY EXPLORATION FOR BAUXITE IN PARPATIA AREA MAINPAT (G-3) DIST. SURGUJA, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc. Rate	Qty.	Amount	Qty.
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m	1714	6780	1750	11865000	1750	11865000
2	Road Making (Flat Terrain)	Km	7800	18563				
	Sub Total A					11865000		11865000
<b>B</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840				
2	Geologist Party days ( 1 party)	day	1541	7802	20	156040	20	156040
3	Core Sampling Party days(2 parties)	day	525	2809	382	1073038	382	1073038
	Sub-Total B					1229078		1229078
<b>C</b>	<b>LABORATORY STUDIES</b>							
	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	(i) for Primary Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	588	1398264	588	1398264
	(ii) Analysis of REE	Nos		7681	10	76810	10	76810
	(iii) for Composit Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	(iv) for Check Samples 5 radicals (TiO <sub>2</sub> , Ga, V, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	414 (76x4+110)	2378	58	137924	58	137924
	Sub-Total C					1398264		1750922
	Total A+B+C					14492342		14845000
<b>D</b>	<b>Report Writing</b>	Nos	175000	175000	1	175000	1	175000
	Sub Total					175000		175000
	TOTAL A to D					14667342		15020000
<b>E</b>	<b>GST 18%</b>							2703600
	Grand Total : with GST 18%							17723600
								Total IN Lacs
								177.24
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphonite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GST as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

B.P. RaturiB.P. Raturi  
member Secretary  
TCC, NMET

5.9 QUANTUM OF WORK PROPOSED

Table No. 1: The detail of quantum of proposed work is given below:-

Time Schedule (in month) For exploration programme in Parpatia block of Mainpat plateau Surguja district												
Item of work	1	2	3	4	5	6	7	8	9	10	11	12
Geological mapping	↔											
Bed rock sampling	↔											
Surveying ( one party)	←	→										
Drilling		←	→									
Survey party for contouring and surface feature	←	→										
Sample preparation		←	→									
Geologist party days for drilling sampling and report work	←	→										
Analytical work Drill core sample			←	→								
Camp winding								←	→			
Geological report						←	→					

B. P. Ratan

B. P. Ratan

## Annexure-III

COST ESTIMATE FOR PRELIMINARY EXPLORATION OF LIMESTONE IN KHAMARDIH-GATADIH AREA (G-3) DIST. RAIGARH, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base Rate	Financial Year (2018-19)			Total	
				Esc. Rate	Qty.	Amount	Qty.	Amount
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>					0	0	0
1	Survey Party Days (1 party)	day	1180	5840				
2	Geologist Party days (1 party)	day	1541	7802	50	390100	50	390100
3	Core Sampling Party days(2 parties)	day	525	2809	44	123596	44	123596
	Sub-Total A					513696		513696
<b>B</b>	<b>DRILLING</b>							
1	Surface Drilling (2 Rigs)	m	1714	6780	240	1627200	240	1627200
2	Road Making (Flat Terrain)	Km	7800	18563		0	0	0
	Sub Total B					1627200		1627200
<b>C</b>	<b>LABORATORY STUDIES</b>							
	<b>Chemical Analysis</b>							
1	Primary - Check Samples							
	i) for 6 radicals (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	490 (76x5+110)	2580	240	619200	240	619200
	ii) Composite Samples (10%) (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> & LOI)	Nos	566 (76x6+110)	2982	24	71568	24	71568
	iii) Check Samples (10%)	Nos	566 (76x6+110)	2982	24	71568	24	71568
	Sub-Total C					619200		762336
	Total A+B+C					2760096		2903232
<b>D</b>	<b>Report Writing</b>	Nos	60000	60000	1	60000	1	60000
	Sub Total					60000		60000
	<b>TOTAL A to D</b>					2820096		2963232
<b>E</b>	<b>GST 18%</b>							533382
	<b>Grand Total : with GST 18%</b>							3496614
							<b>Total IN Lacs</b>	34.97
<b>Note:</b>								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphonite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & 1st meeting of Executive Committee of NMET.							
5	**** Rate has taken from Schedule of Charges of different activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

*B.P. Rautan*  
B.P. Rautan



## Annexure-III

COST ESTIMATE FOR PRELIMINARY EXPLORATION OF LIMESTONE IN KHAIRHA AREA (G-3) DIST. RAIGARH, CHATTISHGARH								
SL. No.	Item of Work	Unit	Financial Year (2018-19)				Total	
			Base Rate	Esc. Rate	Qty.	Amount	Qty.	Amount
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840		0	0	0
2	Geologist Party days (1 party)	day	1541	7802	30	234060	30	234060
3	Core Sampling Party days(2 parties)	day	525	2809	49	137641	49	137641
	<b>Sub-Total A</b>					<b>371701</b>		<b>371701</b>
<b>B</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780	270	1830600	270	1830600
2	Road Making (Flat Terrain)	Km	7800	18563		0	0	0
	<b>Sub Total B</b>					<b>1830600</b>		<b>1830600</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for 6 radicals (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	490 (76x5+110)	2580	270	696600	270	696600
	ii) Composite Samples (10%) (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> & LOI)	Nos	566 (76x6+110)	2982	27	80514	27	80514
	iii) Check Samples (10%) (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> , P <sub>2</sub> O <sub>5</sub> & LOI)	Nos	566 (76x6+110)	2982	27	80514	27	80514
	<b>Sub-Total C</b>					<b>696600</b>		<b>857628</b>
	<b>Total A+B+C</b>					<b>2898901</b>		<b>3059929</b>
<b>D</b>	<b>Report Writing</b>	Nos	60000	60000	1	60000	1	60000
	<b>Sub Total</b>					<b>60000</b>		<b>60000</b>
						<b>0</b>		<b>0</b>
	<b>TOTAL A to D</b>					<b>2958901</b>		<b>3119929</b>
<b>E</b>	<b>GST 18%</b>							<b>561587</b>
	<b>Grand Total : with GST 18%</b>							<b>3681516</b>
								<b>Total IN Lacs</b>
								<b>36.82</b>
<b>Note:</b>								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphonite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GST as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

*B.P. Ratur*  
 B.P. Ratur  
 member secretary, TCC NMET

Table No.3: The detail of quantum of work proposed:-

Time Schedule (in month) For exploration programme in Khairha block, distt. Raigarh												
Item of work	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Geological mapping	←											
Bed rock sampling	←											
Surveying ( one party)	←	→										
Drilling	←	→										
Survey party for contouring and surface feature		←	→									
Sample preparation	←	→										
Geologist party days for drilling sampling	←	→										
Analytical work	←	→										
Camp binding			←	→								
Geological report	←			→								

*B.P. Pattnaik*  
B.P. Pattnaik

## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE IN NORTH BAILADILA AREA (G-4) DIST. RAIGARH, CHATTISHGARH								
Time Schedule								
SL. No.	Item of Work	Unit	Base Rate	Financial Year (2018-19)			Total	
				Esc. Rate (Rs)	Qty.	Amount (Rs)	Qty.	Amount (Rs)
<b>A GEOLOGICAL WORK</b>								
1	Survey Party Days ( 1 party)	day	1180	5840		0	0	0
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	500	300000	500	300000
4	Reconnaissance Geological							
<b>Sub-Total A</b>						<b>1080200</b>		<b>1080200</b>
<b>B DRILLING</b>								
1	Drilling iron	m.		9947	500	4973500	500	4973500
2	Road Making (Flat Terrain)	Km	7800	18563		0	0	0
<b>Sub Total B</b>						<b>4973500</b>		<b>4973500</b>
<b>C LABORATORY STUDIES</b>								
<b>a Chemical Analysis</b>								
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn% SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%.)	Nos	490 (76x5+110)	2580	50	129000	50	129000
<b>Petrographic Studies</b>								
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
<b>Sub-Total C</b>								<b>1578900</b>
<b>Total A+B+C</b>						<b>6053700</b>		<b>7632690</b>
D	Report Writing	Nos	60000	120000	1	120000	1	120000
<b>Sub Total</b>						<b>120000</b>		<b>120000</b>
						<b>0</b>		<b>0</b>
<b>TOTAL A to D</b>						<b>6173700</b>		<b>7752690</b>
E	GST 18%							<b>1395484</b>
<b>Grand Total : with GST 18%</b>								<b>9148174</b>
						<b>Total IN Lacs</b>		<b>91.48</b>
<b>Note:</b>								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

*Balun*  
B. P. Rauturi

## 10. Quantum of Work Proposed:

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in North Bailadila area of Dantewada District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping	←													
Drilling		←												
Sample preparation		←												
Geologist party days for drilling sampling and report work	←													
Analytical work Drill core sample			←											
Camp winding										←				
Geological report										←				

*BP-Railin*  
BP-Railin

## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE IN HURTARAI AREA (G-4) DIST. KANKER, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc.Rate	Qty.	Amount	Qty
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day						
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	400	240000	400	240000
4	Reconnaissance Geological							
	<b>Sub-Total A</b>					<b>1020200</b>		<b>1020200</b>
<b>B</b>	<b>DRILLING</b>							
1	Drilling iron	m.		9947	500	4973500	500	4973500
2	Road Making (Flat Terrain)	Km						
	<b>Sub Total B</b>					<b>4973500</b>		<b>4973500</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
a	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn% SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%,)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>							<b>1578990</b>
	<b>Total A+B+C</b>					<b>5993700</b>		<b>7572690</b>
<b>D</b>	<b>Report Writing</b>	Nos	60000	120000		120000	0	120000
	<b>Sub Total</b>					<b>120000</b>		<b>120000</b>
	<b>TOTAL A to D</b>					<b>6113700</b>		<b>7692690</b>
<b>E</b>	<b>GST 18%</b>							<b>1384684</b>
	<b>Grand Total : with GST 18%</b>							<b>9077374</b>
						<b>Total IN Lacs</b>		<b>90.77</b>
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

Barton

B.P. Barton

Annexure - IX/2

10. Quantum of Work Proposed

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Hurtarai area of Kanker District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping	←						→							
Drilling		←							→					
Sample preparation		←							→					
Geologist party days for drilling sampling and report work	←								→					
Analytical work Drill core sample			←									→		
Camp winding										←		→		
Geological report										←		→		

*B.P. Ratan*

B.P. Ratan

## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE IN ROWGHAT (G-4) DIST. KANKER, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc.Rate	Qty.	Amount	Qty
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
2	Core Sampling Party days(2 parties)	day	525	600	400	240000	400	240000
	<b>Sub-Total A</b>					1020200		1020200
<b>B</b>	<b>DRILLING</b>							
1	Drilling iron	m.		9947	500	4973500	500	4973500
	<b>Sub Total B</b>					4973500		4973500
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn% SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%,)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>							
	<b>Total A+B+C</b>					5993700		7572690
<b>D</b>	<b>Report Writing</b>	Nos	60000	120000	1	120000	1	120000
	<b>Sub Total</b>					120000		120000
	<b>TOTAL A to D</b>					6113700		7692690
<b>E</b>	<b>GST 18%</b>							1384684
	<b>Grand Total : with GST 18%</b>							9077374
							<b>Total IN Lacs</b>	90.77
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(l) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

*B.P. Raturi*  
B.P. Raturi

10. Quantum of Work Proposed

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Rowghat (Notified area) of Kanker District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping		←					→							
Drilling			←						→					
Sample preparation			←						→					
Geologist party days for drilling sampling and report work		←							→					
Analytical work Drill core sample				←								→		
Camp winding										←		→		
Geological report										←			→	

*Ratum*

Bp. Ratum

## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE IN Rajhara (G-4) DIST. BALOD, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc. Rate	Qty.	Amount	Qty.
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840				
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	500	300000	500	300000
4	Reconnaissance Geological							
	<b>Sub-Total A</b>					<b>1080200</b>		<b>1080200</b>
<b>B</b>	<b>DRILLING</b>							
1	Drilling iron	m.		9947	500	4973500	500	4973500
2	Road Making (Flat Terrain)	Km	7800	18563				
	<b>Sub Total B</b>					<b>4973500</b>		<b>4973500</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
a	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn% SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%.)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>							<b>1578990</b>
	<b>Total A+B+C</b>					<b>6053700</b>		<b>7632690</b>
<b>D</b>	<b>Report Writing</b>	Nos	60000	120000	1	120000	1	120000
	<b>Sub Total</b>					<b>120000</b>		<b>120000</b>
	<b>TOTAL A to D</b>					<b>6173700</b>		<b>7752690</b>
<b>E</b>	<b>GST 18%</b>							<b>1395484</b>
	<b>Grand Total : with GST 18%</b>							<b>9148174</b>
						<b>Total IN Lacs</b>		<b>91.48</b>
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

*Balrao*  
*B.P. Rautan*  
*B.P. Rautan*  
 member secretary  
 TCC, NMET

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Dallirajhara area of Balod District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping	←	→												
Drilling		←	→	→	→	→	→	→	→					
Sample preparation		←	→	→	→	→	→	→	→					
Geologist party days for drilling sampling and report work	←	→												
Analytical work Drill core sample			←	→	→	→	→	→	→	→				
Camp winding										←	→			
Geological report										←	→			

Table No. 2: proposed quantum of work in Dallirajhara area district Balod, Chhattisgarh

B.P. Rath

B.P. Rath

## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE IN SALHEWARA (G-4) DIST. RAJNANDGAON, CHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc. Rate	Qty.	Amount	Qty.
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840		0	0	0
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	500	300000	500	300000
4	Reconnaissance Geological							
	<b>Sub-Total A</b>					<b>1080200</b>		<b>1080200</b>
<b>B</b>	<b>DRILLING</b>							
1	Drilling iron	m.		9947	500	4973500	500	4973500
2	Road Making (Flat Terrain)	Km	7800	18563		0	0	0
	<b>Sub Total B</b>					<b>4973500</b>		<b>4973500</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%.)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>							<b>1578990</b>
	<b>Total A+B+C</b>					<b>6053700</b>		<b>7632690</b>
<b>D</b>	<b>Report Writing</b>	<b>Nos</b>	<b>60000</b>	<b>120000</b>	<b>1</b>	<b>120000</b>	<b>1</b>	<b>120000</b>
	<b>Sub Total</b>					<b>120000</b>		<b>120000</b>
	<b>TOTAL A to D</b>					<b>6173700</b>		<b>7752690</b>
<b>E</b>	<b>GST 18%</b>							<b>1395484</b>
	<b>Grand Total : with GST 18%</b>							<b>9148174</b>
						<b>Total IN Lacs</b>		<b>91.48</b>
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

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B.P. Bartun

### 8. Quantum of Work Proposed

The details of Quantum of proposed work are given below:-

Table No. 1: The detail of quantum of proposed work is given below:-

Time Schedule (in month) Preliminary Survey from Iron ore Salhewara area of Rajnandgaon District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping	←					→								
Drilling		←							→					
Sample preparation		←							→					
Geologist party days for drilling sampling and report work	←								→					
Analytical work Drill core sample			←									→		
Camp winding										←		→		
Geological report										←		→		

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## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE NARAYANAPUR (G-4) DIST. NARAYANAPUR, CHATTISHGARH								
SL. No.	Item of Work	Unit	Financial Year (2018-19)				Total	
			Rate	Esc. Rate	Qty.	Amount	Qty	Amount
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840		0	0	0
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	550	330000	550	330000
						0	0	0
	<b>Sub-Total A</b>					<b>1110200</b>		<b>1110200</b>
<b>B</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780	500	3390000	500	3390000
2	Road Making (Flat Terrain)	Km	7800	18563		0	0	0
								0
	<b>Sub Total B</b>					<b>3390000</b>		<b>3390000</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn% SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> , P%, S%.)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>							<b>1578990</b>
	<b>Total A+B+C</b>					<b>4500200</b>		<b>6079190</b>
<b>D</b>	<b>Report Writing</b>	Nos	60000	120000	1	120000	1	120000
	<b>Sub Total</b>					<b>120000</b>		<b>120000</b>
	<b>TOTAL A to D</b>							<b>6199190</b>
<b>E</b>	<b>GST 18%</b>							<b>1115854</b>
	<b>Grand Total : with GST 18%</b>							<b>7315044</b>
						<b>Total IN Lacs</b>		<b>73.15</b>
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

*B. P. Ratan*  
B. P. Ratan

## 10. Quantum of Work Proposed:

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Iron Ore in Narayanpur (Notified area) of Narayanpur District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping	←													
Drilling		←												
Sample preparation		←												
Geologist party days for drilling sampling and report work	←													
Analytical work Drill core sample			←											
Camp winding														
Geological report										←				
										←				

NMET/Iron/Narayanpur/Nagpur/21.05.2018

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## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE NOTIFIED AREA (G-4) DIST. KANKER, CHHATTISHGARH								
SL. No.	Item of Work	Unit	Base		Financial Year (2018-19)		Total	
			Rate	Esc. Rate	Qty.	Amount	Qty	Amount
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840				
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	400	240000	400	240000
						0	0	0
	<b>Sub-Total A</b>					<b>1020200</b>		<b>1020200</b>
<b>B</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780	400	2712000	400	2712000
2	Road Making (Flat Terrain)	Km	7800	18563				
	<b>Sub Total B</b>					<b>2712000</b>		<b>2712000</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for Primary Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn% SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%,)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>					<b>1290000</b>		<b>1578990</b>
	<b>Total A+B+C</b>					<b>5022200</b>		<b>5311190</b>
<b>D</b>	<b>Report Writing</b>	Nos	60000	74644	1	74644	1	74644
	<b>Sub Total</b>					<b>74644</b>		<b>74644</b>
	<b>TOTAL A to D</b>					<b>5096844</b>		<b>5385834</b>
<b>E</b>	<b>GST 18%</b>							<b>969450</b>
	<b>Grand Total : with GST 18%</b>							<b>6355284</b>
							<b>Total IN Lacs</b>	<b>63.55</b>
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(i) /2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

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B.P. Batum

## 10. Quantum of Work Proposed

Table No. 1: The detail of quantum of proposed work is given below:-

Time Shedule (in month) For exploration programme in Iron Ore in <del>Atur</del> bedu area of Kanker District Notified														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping		←					→							
Drilling			←							→				
Sample preparation			←							→				
Geologist party days for drilling sampling and report work		←								→				
Analytical work Drill core sample				←									→	
Camp winding										←		→		
Geological report										←			→	

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B.P. Batum

## Annexure-III

COST ESTIMATE FOR RECONNAISSANCE SURVEY FOR IRON ORE ATURBEDA AREA (G-4) DIST. KANKER, CHHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2018-19)			Total	
				Rate	Esc. Rate	Qty.	Amount	Qty.
			1.4.90	(Rs)		(Rs)		(Rs)
<b>A</b>	<b>GEOLOGICAL WORK</b>							
1	Survey Party Days ( 1 party)	day	1180	5840				
2	Geologist Party days (1 party)	day	1541	7802	100	780200	100	780200
3	Core Sampling Party days(2 parties)	day	525	600	400	240000	400	240000
	<b>Sub-Total A</b>					<b>1020200</b>		<b>1020200</b>
<b>B</b>	<b>DRILLING</b>							
1	Surface Drilling ( 2 Rigs)	m.	1714	6780				
2	Road Making (Flat Terrain)	Km	7800	18563				
3	Drilling iron	m.		9947	400	3978800	400	3978800
	<b>Sub Total B</b>					<b>3978800</b>		<b>3978800</b>
<b>C</b>	<b>LABORATORY STUDIES</b>							
<b>a</b>	<b>Chemical Analysis</b>							
1	Primary + Check Samples							
	i) for 6 radicals (CaO, MgO, SiO <sub>2</sub> , Al <sub>2</sub> O <sub>3</sub> , Fe <sub>2</sub> O <sub>3</sub> & LOI)	Nos	490 (76x5+110)	2580	500	1290000	500	1290000
	ii) for Composit Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	iii) for Check Samples 6 radicals(Fe%, Mn%, SiO <sub>2</sub> %, Al <sub>2</sub> O <sub>3</sub> %, P%, S%.)	Nos	490 (76x5+110)	2580	50	129000	50	129000
	<b>Petrographic Studies</b>							
	Thin Section Preparations	Nos	100	538	10	5380	10	5380
	Polished Section Preparation	Nos	100	538	10	5380	10	5380
	Minerographic Studies	Nos	364	2023	10	20230	10	20230
	<b>Sub-Total C</b>					<b>1290000</b>		<b>1578990</b>
	<b>Total A+B+C</b>					<b>6289000</b>		<b>6577990</b>
<b>D</b>	<b>Report Writing</b>	Nos	60000	131559.8	1	131559.8	1	131560
	<b>Sub Total</b>					<b>131560</b>		<b>131560</b>
	<b>TOTAL A to D</b>					<b>6420560</b>		<b>6709550</b>
<b>E</b>	<b>GST 18%</b>							<b>1207719</b>
	<b>Grand Total : with GST 18%</b>							<b>7917269</b>
						<b>Total IN Lacs</b>		<b>79.17</b>
Note:								
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I)/2006-M.I. dated- 02/07/2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.							
2	Phosphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule							
3	**Nityanad Committee Rates with actual escalation as per RBI index as on 31.3.2017 and the same for subsequent year.							
4	*** As approved in the 12th meeting of Technical Committee & th meeting of Executive Committe of NMET.							
5	**** Rate has taken from Schedule of Charges of differen activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.							

Mineral Exploration and evaluation 18%(SAC Code: 998343)

B.P. Raturi

B.P. Raturi

## 10. Quantum of Work Proposed

Table No. 1: The detail of quantum of proposed work is given below:-

Time Schedule (in month) For exploration programme in Iron Ore in Aturbeda area of Kanker District														
Item of work	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Geological mapping	←													
Drilling		←												
Sample preparation		←												
Geologist party days for drilling sampling and report work	←													
Analytical work Drill core sample			←											
Camp winding														
Geological report														

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B.P. Barton