STATE UNIT: KARNATAKA AND GOA
PROJECT: FERROUS MINERALS
SUPERVISORY OFFICER: S. A. Sufiyan, Director

Mission-IIA	Mineral Resource Assessment				Item No.	112
Field Season Year	FSP Number					
2016-2017	ME		SR	KG	2016	80
	Type Code	Com. Code	Region Code	State Unit	Year of initiation	Sl. No.

Participating Unit(s)/Region(s)						
FM	SR	KG				
Division/Project	Region	State Unit	Division/Project	Region/SU	Division/Project	Region/SU

Geographic Information				
State (Code)	District (s)	Degree Sheet (s)	Toposheet (s)	Mineral / Tectonic Belt / Basin etc.
KAR	**Bellary**	**57A**	**57 A/8**	**Sandur Schist Belt**

Personnel	2G
Name of the Project in Charge	Jayesh Chourasia
Name of the Other Officer	Abhishek Kumar Shukla
Title	**Preliminary exploration for iron ore resource in blocks 13/1 (North) and 6B/CI 16 MMM 2003 of Ramanadurga Hill range Bellary district, Karnataka.**
Stage	G3
Keywords	Sandur Schist Belt, resource assessment
Objective	To establish the grade of the ore bodies and assess the resource

Total duration of the Item	One Year (FS 2016-17)
Item linked with	XIIth (On request of DMG, Govt. of Karnataka)
Whether GPM item is taken up in toposheets already covered by GCM or vice versa	No
Whether the item is spin off any other item	No
Whether the item is collaborative	NA
Whether the item is sponsored	No
If yes, name of the sponsor	NA
Outsourced work component, if any (specify)	Drilling, 1200 m

Nature and quantum of work and time schedule

Nature of work	Total workload envisaged	a) Expected Year of completion b) Circulation of final report	Work already completed	Work proposed for 2016-17
(1)Geological Survey (a) DM 1: 2000 (sq km) Block-13/1^^ (b) DM 1: 2000 (sq km) Block-6B^^	1.21* 1.16*	a) March 2017 b) September 2017	New item	1.21* 1.16*
(2) Technological (Both Blocks 13/1 &6B) (a) Surface exploration PT (Cu m) PTS (Nos.) (b) Subsurface exploration (Both Blocks 13/1 &6B) Drilling (m) Outsource CS (Nos.)	100 100 1200 600			100 100 1200 600
(3) Geochemical Survey (Nos.) (Both Blocks 13/1 &6 B)				

BRS/Channel/Groove samples	150			150
(4) Petrographic/Mineragraphic Studies (Nos.) (Both Blocks 13/1 &6B) PS	15			15
(5) Chemical Analysis** (FeO,Fe_2O_3,CaO, MgO, SiO_2, MnO, V,TiO_2.Al_2O_3 and selected samples for Au also)	725			725

*as provided by DMG, Karnataka;**Chemical Division, Bangalore; ^^Boundary coordinates and borehole locations to be fixed by DGPS .

Timeline proposed for each work component

Field Studies			
Name of the officer	Expected field stay (number of days)	Expected period of field work	
		From	To
Jayesh Chourasia, Senior Geologist	120	April 2016	March 2017
Abhishek Kumar Shukla, Geologist	120	April 2016	March 2017
Supervisory Officer: S. A. Sufiyan, Director	15	April 2016	March 2017

Laboratory Studies		
Activity	From	To
Pre-field laboratory component and reconnaissance for the assignment under consideration, finalization of report of the previous field season and planning for current programmes	April 2016	September 2016
Geological study (fieldwork and collection, processing of samples and their submission)	April 2016	March 2017
Geophysical study (consultation of interpreted geophysical data)	April 2016	March 2017
Chemical study (last date of sample submission)	30th April 2017	
Chemical study (acquisition of analytical data)	April 2016	May 2017

Report Submission	
Submission of the first draft of report	30th June 2017
Scrutiny of the report	1st July to 31st August 2017
Finalization of the report	September 2017
Circulation of the report	30th September 2017

Operational Expenses

Heads	**Amount**	**Drilling (out sourcing)**
POL	NIL	Rs. 60,00,000/- Outsource drilling Rs. 5000 per m x 1200 m
WAGES	Rs. 2,50,000/-	
OC	Rs. 2,00,000/-	

Background Information

The DMG, Karnataka state had requested GSI to assess the iron ore potential of chosen blocks in Sandur area, Bellary district for auction purpose as per the directives of ministry to extend the lease areas. The proposed block, Ramanadurga range-notification Block 6B and Block 13/1 (North), identified by DMG for auction under notification number CI 16 MMM 2003 is located on the western part of Sandur schist belt, which is known for its economic deposits of Iron.

The iron ore deposits occur on top of Ramandurg range in association with metabasalt, ferruginous shale and banded ferruginous chert/quartzite. The ore bands are long and narrow and along the strike are separated from each other by means of fault line valleys and non-ore country rock (Mishra, R.N.et.al 1980). The area has under gone two phases of deformation and metamorphism. The axial trace of F_1 have NNW-SSE trend which is refolded by

open F_2 folds trending in ENW-WSE direction. The primary structure of banded iron ore formation is bedding and pene-contemporaneous faults. Secondary structures such as schistosity and fracture cleavage are also common.

The first estimation of iron ore reserves of the region was made by Venkataram and Dutt (1940) and estimated a total reserve of 130 million tonnes. In Ramandurg range Mishra et.al (1970) estimated iron ore resource of 27.31 million tonnes from selected private leasehold areas. Four iron ore zones had been reported by Mishra, R.N.et.al (1980); designated as I, II, III, and IV from south to north and estimated reserve separately. These iron ore blocks were leased out. The in-situ ore bodies in these ranges were proved down to around 30 to 40m of vertical depth.

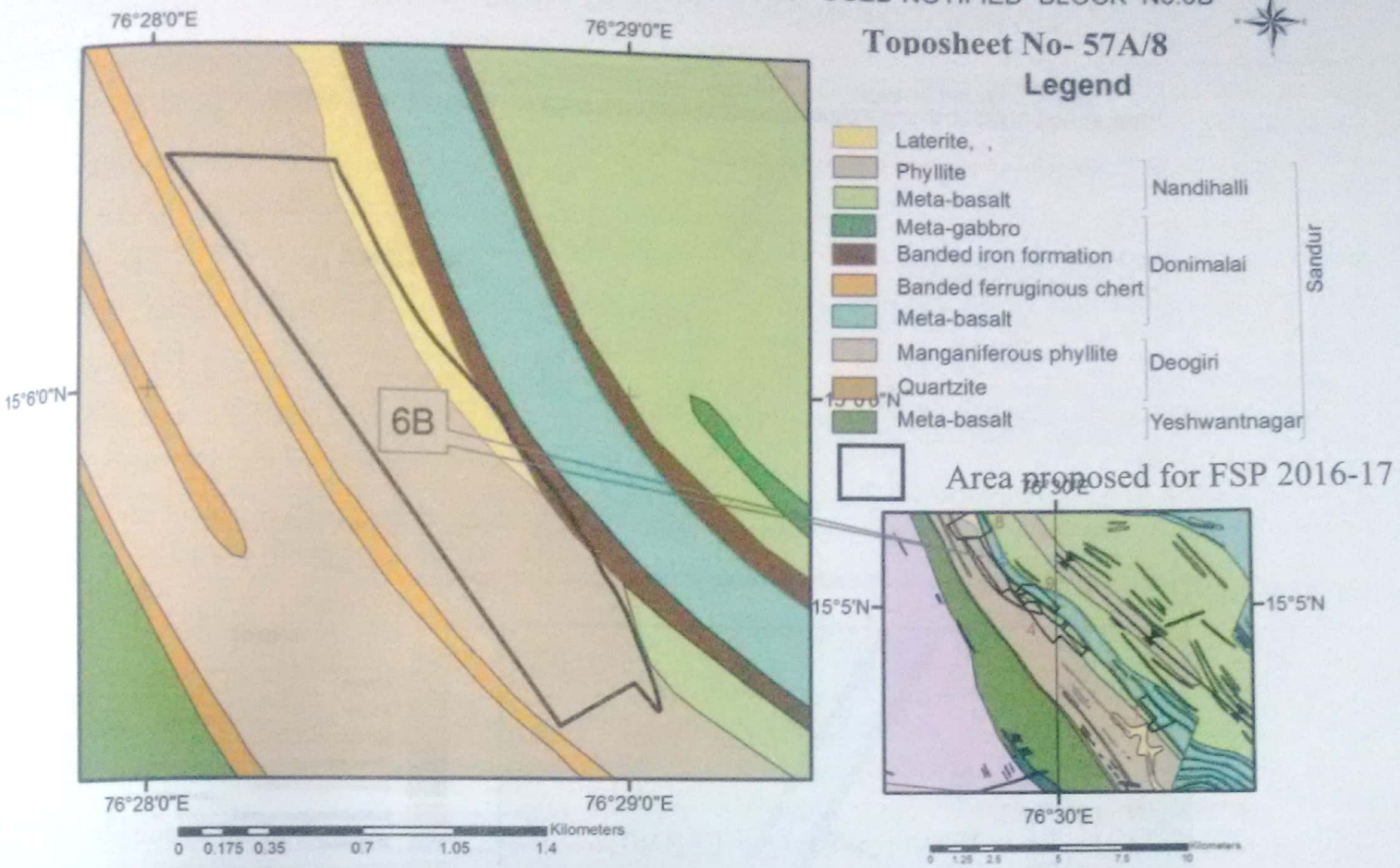
Keeping in view the request of the DMG, Karnataka State, it is proposed to commence a project to assess the iron ore potential in DMG identified block in Ramandurg range. The survey of India toposheet No. 57A/8 covers the proposed blocks and block-13/1 is bounded by geographical coordinates 15^0 06'27.4"N – 15^0 07'08.1"N and 76^0 27'42.1"E- 76^0 28'37.7"E and block- 6B 15^0 05'17.8"N – 15^0 06'29.7"N and 76^0 28'02.0"E- 76^0 29'03.9"E. These proposed blocks forms the southern part of leased area, which has been investigated by Mishra, R.N.et.al (1980). In view of established ore zones in northern part, as designated by previous authors as ore zone I, II, III, IV, detailed mapping on 1:2000 scale with bed rock/Channel/Groove sampling and trenching is proposed.

To establish depth continuity and to estimate the block wise resource/grade as separately up to 50 m vertical depth a total of 1200 m drilling is proposed in the blocks 13/1 (North) and 6B of Ramandurg hill range. The borehole spacing will be selected at 200m interval to intersect the ore body at 50 m vertical depth. Drilling will commence only after evaluating data *viz*. number of ore zones, strike length of ore zone and average thickness as per detailed mapping.

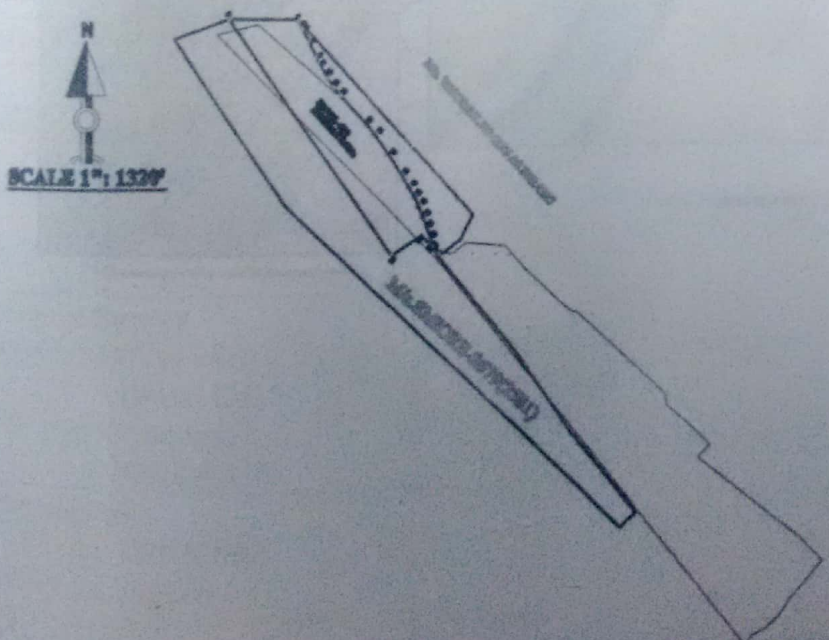
BIBLIOGRAPHY

- Mishra, R.N. and Parthasarathy, J. (1970); Report on reconnaissance as an advance action for exploration ores in private sector of the Bellary-Hospet iron ore belt. Unpub.Report, GSI and IBM.
- Biswas S.K. and Roy A., (1976); Geology of parts of Hospet, Sandur and Bellary Taluks, Bellary District, Karnataka. Unpub. Report, GSI, FS 1975-76.
- Mishra, R.N., Gopinath K., Biswas S.K. and Kotiyal P.L. (1980); Final report on exploration of iron ore deposits in leaseholds in Bellary-Hospet area, Bellary district, Karnataka. Unpub. Report, Part-I-V, GSI, FS 1976-77.

GEOLOGICAL MAP OF SANDUR SCHIST BELT WITH PROPOSED NOTIFIED BLOCK No.6B



SKETCH SHOWING AREA OF SERIAL No :6 OF NOTIFICATION No:CI 16 MMM 2003 FOR MANGANESE AND IRON ORE IN RAMANADURGA RANGE SANDUR (Tq) BALLARI(Dt)



GPS READINGS OF BLOCK[6-B]
DATUM:WGS-84

STATION	LATITUDE	LONGITUDE
1	N15 05 23.3	E76 29 00.8
2	N15 05 17.8	E76 28 51.3
3	N15 05 29.7	E76 28 02.0
4	N15 06 28.9	E76 28 23.1
5	N15 06 27.5	E76 28 23.6
6	N15 06 05.1	E76 28 24.7
7	N15 05 22.4	E76 28 26.3
8	N15 06 17.7	E76 28 28.5
9	N15 06 16.1	E76 28 29.4
10	N15 06 11.4	E76 28 32.1
11	N15 06 08.5	E76 28 33.8
12	N15 06 06.3	E76 28 35.6
13	N15 05 57.1	E76 28 43.9
14	N15 05 54.1	E76 28 46.2
15	N15 05 47.9	E76 28 50.4
16	N15 05 40.3	E76 28 55.2
17	N15 05 37.3	E76 28 56.8
18	N15 05 34.6	E76 28 58.4
19	N15 05 31.9	E76 29 00.7
20	N15 05 28.5	E76 29 01.0
21	N15 05 26.7	E76 29 02.2
22	N15 05 22.5	E76 29 03.3
23	N15 05 20.0	E76 29 03.9
24	N15 05 19.7	E76 29 03.6

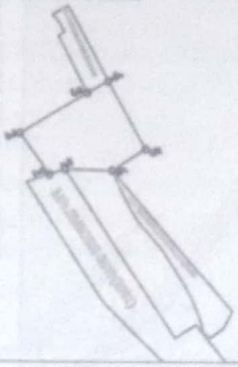
AREA AS MENTIONED IN NOTIFICATION SKETCH = 426.50 Ha
AREA AFTER DIGITIZATION OF NOTIFICATION SKETCH = 427.00Ha.

PROPOSED AREA IN SL.NO:6 [BLOCK6(B)] & ADDITIONAL AREA IN RAMAGADA RANGE IS ABOUT AN EXTENT OF 116.60Ha

SKETCH SHOWING PART AREA OF 13/1 - NOTIFICATION No:CI 33 MMM 2003 FOR MANGANESE AND IRON ORE IN RAMANADURGA RANGE SANDUR (Tq) BALLARI(Dt)

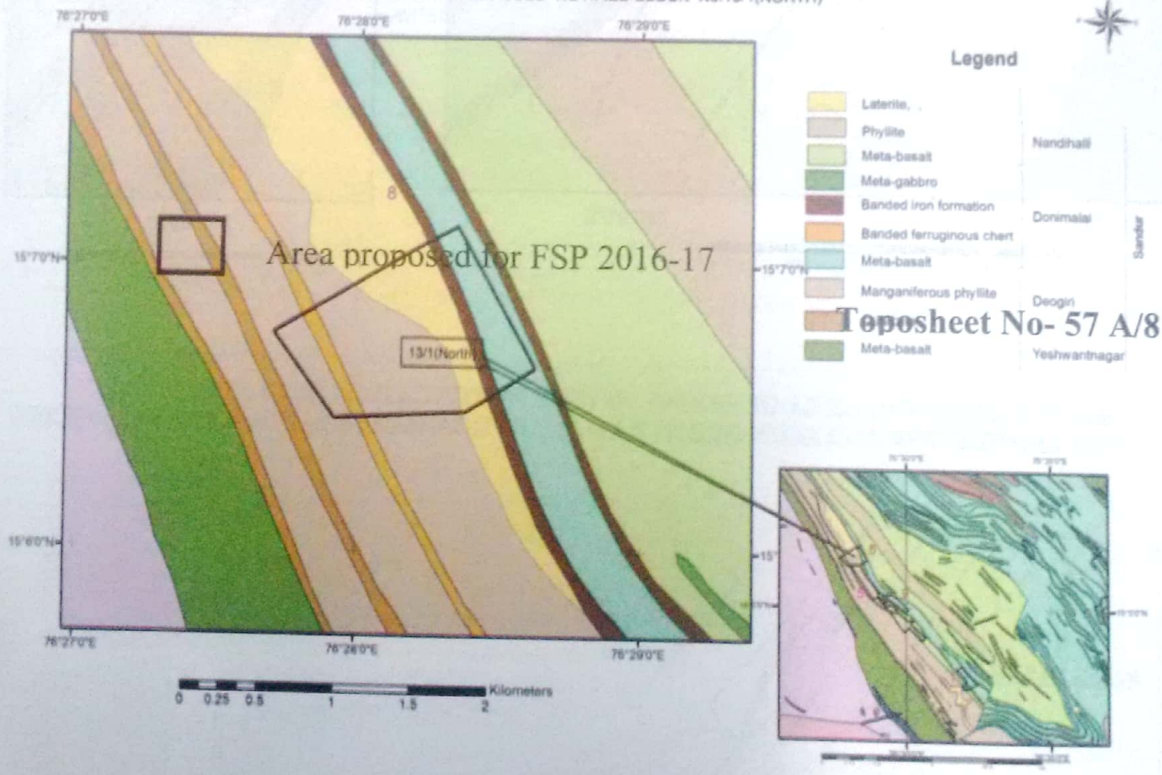
PROPOSED AREA IN 13/1 DEREGERVED ZONE IN ABOUT AN EXTENT OF 111.00 Ha

GPS READIGS:DATUM:WGS-84		
CORNER POINT	LATITUDE	LONGITUDE
1	N15 06 27.4	E76 27 55.2
2	N15 06 45.4	E76 27 42.1
3	N15 07 03.0	E76 28 13.8
4	N15 07 08.1	E76 28 21.0
5	N15 06 38.2	E76 28 37.7
6	N15 06 28.9	E76 28 23.1



SCALE 1"= 1320'

GEOLOGICAL MAP OF SANDUR SCHIST BELT WITH PROPOSED NOTIFIED BLOCK No.13/1(NORTH)



Toposheet No- 57 A/8