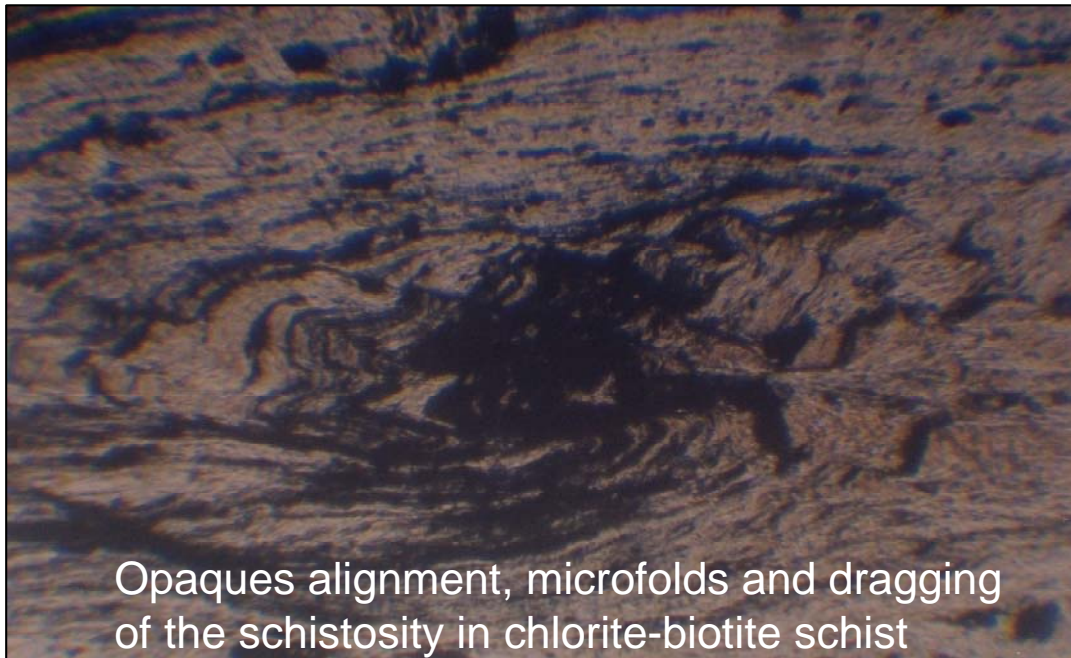


**GEOLOGICAL REPORT ON
DETAILED EXPLORATION FOR GOLD ORE IN
PARASI (CENTRAL BLOCK) GOLD DEPOSIT PHASE-I & II
NORTH OF SONAPET ANTICLINE
DISTRICT-RANCHI, JHARKHAND
EXECUTIVE SUMMARY**



**MINERAL EXPLORATION CORPORATION
LIMITED**

**(A Government of India Enterprise)
EASTERN ZONE,
TUPUDANA, RANCHI, JHARKHAND**

FEBRUARY-2010

GEOLOGICAL REPORT ON DETAILED EXPLORATION FOR GOLD ORE IN PARASI (CENTRAL BLOCK) GOLD DEPOSIT – PHASE-I & PHASE- II, NORTH OF SONAPET ANTICLINE, DIST: RANCHI, JHARKHAND

EXECUTIVE SUMMARY

1.0.0 LOCATION

The Parasi (Central Block) Gold deposit lies at about 12 km south of Tamar, the block head quarter, Ranchi district of Jharkhand State. Tamar is located at 55 km from Ranchi on the National Highway NH-33. The Parasi (Central Block) Gold deposit can be accessible by a fair metal road from Ulidih off NH-33. The block is bounded by Latitude 22° 57' 30" - 23° 00' 00" N and Longitude 85° 40' 30" - 85° 45' 00" E, which is covered by the Toposheet No. 73 F/9 of Survey of India.

2.00 GEOLOGY AND STRUCTURE

Parasi (Central Block) gold deposit falls in the northern part of Sonapet anticline. The deposit falls amidst Iron ore series, whereas the intrusives lie SSW as Dalma lavas. However, the Chhotanagpur granite thrusts the block. The area is mostly covered by Magnetite-quartz-biotite-sericite schist. The phyllite and quartzite biotite schist are the host rocks. The area is occupied by pre-Cambrian metamorphics belonging to Dalma groups represented by ferruginous quartzite, meta basics such as tremolite-actinolite-chlorite schist, quartzo felspathic rocks. Intrusives such as ultramafic, quartz vein, amphibolite also occur. The regional strike of foliation varies between ENE-WSW to NE-SW with varying dip of 70°-75° on either side. Three sets of joints are also noticed.

The host rock is phyllite with schistose quartzite; the major rock type that occur are quartz-magnetite-biotite-sericite schist, ferruginous quartzite, tremolite-actinolite-hornblende schist, tuffaceous quartzose phyllite intercalated with schistose quartzite, grey quartzite, acid tuff, vein quartz and carbonate veins. Fault breccia has also been noticed in most of the boreholes.

The geological succession of the Parasi (Central Block) Gold deposit area is as follows (after Sharan R.R. et.al)

-----Soil Alluvium-----	
Intrusives	Quartz vein & Quartz carbonate veins with limonitic coatings Metabasics Ultramafics
Dalbhum Group	Acid tuff,acidic volcanic breccia & rhyolite, tuffaceous phyllite with intercalated (schistose) quartzite,buff and grey quartzite Carbon phyllite ± (carbonaceous) quartzite
-----Sheared contact-----	
Dalbhum Group	Magnetite-quartz-biotite-sericite phyllite schist
Chaibasa Group	Magnetite-biotite-quartz-sericite schist and intercalated ferruginous quartzite
-----Base not seen-----	

The rock formation of the deposit generally trends ENE-WSW with steep dips on either side and occasionally to NE-SW with 65°-75° southeasterly dip. The shear follows the similar trend. Lineations and crenulations were observed. The plunge direction is N80-85° W with the average pitch of 48° west -northwesterly.

3.0 MINERALISATION

Ancient working / zone of subsidence, which forms the surface manifestation of the gold mineralisation. Limonitisation is quite distinct as found in quartz veins and other lithounits. Gold mineralisation is structurally controlled as noticed by quartzose phyllite± tuff with intercalated quartzite

The auriferous mineralisation is mostly found in sulphide minerals viz. Arsenopyrite, pyrite, rarely pyrrhotite, which are in the descending order of predominance.

The auriferous mineralisation is found as disseminations, specks, streaks, fracture fillings etc. It is found mostly in quartzitic rocks and quite pronounced when arsenopyrites are finer; they are always parallel to foliation. The gold seems to occur as occluded grains. The depth of oxidation/zone of weathering varies between 15-20m.

4.0 QUANTUM OF WORK DONE

MECL has carried out work in two phases. Details of Work done in different Phases is given below:-

QUANTUM OF WORK DONE

S. NO.	ITEM OF WORK	QUANTUM OF WORK		
		PHASE-I	PHASE-II	TOTAL
1	Geological Mapping & Topographical Survey	2.5 Sq. Km.	1.50 Sq.Km.	2.50 Sq.Km.
2	Drilling (m)	2806 (17 BHs)	1962.90 (8 BHs)	4768.90 (25 BHs)
4	Core Logging (m)	2806	1962.90	4768.90
5	Laboratory Studies			
	a) Primary & Check Samples			
	i- For Au (Fire Assay)	2937	1823	4760
	ii) For As	310	60	370
	iii) For W	100	--	100
	b) Composite Samples			
	i- for Au (Fire Assay)	85	40	125
	ii) For Ni, Co & W	20	40	60
	c) Spectroscopic Studies	50	20	70
	d) XRD-Studies on composite samples	20	20	40
	e) Petrographic Studies	40	15	55
	f) Mineragraphic Studies	40	15	55
	b) Specific Gravity Determination	50	30	80
6	Beneficiation Studies	1 No.	-	1 No.
7	Environmental Studies	1 No	-	1 No
8	Report Preparation	1 No	1 No	2 No

Beneficiation studies by Indian Bureau Of Mines on one Bulk sample was also carried out.

5.0 ORE RESERVE ESTIMATION

Auriferous Ore potential of Parasi (Central Block) Gold Deposit were estimated by Longitudinal vertical section method as well as by Geological Cross Section, wherein rule of nearest point was adopted UNFC scheme for mineral reserve estimates forms the basis as has been introduced by Indian Bureau of Mines (IBM) and approved by Ministry of Mines, Govt. of India.

Indicated Mineral Reserves (332-331) and 333 has been assigned. True thickness of 2.00m as minimum stopping width and cut off 0.5 g/t and 1.0 g/t along with parting of 3.00m has been earmarked for delineating the ore shoot boundary. The Sp. Gravity of 2.75 as considered by GSI also has been considered for the reserve computation.

MECL estimated a total of 7.467 million tonnes Au reserves with an average thickness of 9.27m at 0.5 g/t Au cutoff and 3.714 million tonnes Au reserves with 7.04 average thickness at 1.0 g/t Au cut off.

Since the gold occurs as occluded grains, bio leaching may proved to be of vital factor for freeing the gold. However, the ore body is of quite wide even upto 200.00 m vertical depth, open cast proposition can bring up the Parasi (Central Block) Gold Deposit into a production mine in future.

The Deposit has been classified as Category 'A' of UNFC 331.

The results of beneficiation sample contained 0.56 ppm Au and 5.0 ppm Ag. It also assayed 65.25 % SiO₂, 6.47% Fe(T), 10.36% Al₂O₃, 3.04% CaO, 2.09% MgO, 2.57% Na₂O, 2.34% K₂O, 0.89% S(T)., 0.64% TiO₂, 3.08% LOI, 25.70ppm Cu, 13.91ppm Zn, 52.04 ppm Ni, 15.28 ppm Co and traces of Cd.

The Cyanidation test was conducted for recovering Gold values at different fineness of the sample, indicated that at -150 mesh size of the sample 90.7% Au could be recovered when the reaction / leaching time was 18 hrs. the residue contained 0.05 ppm Au.

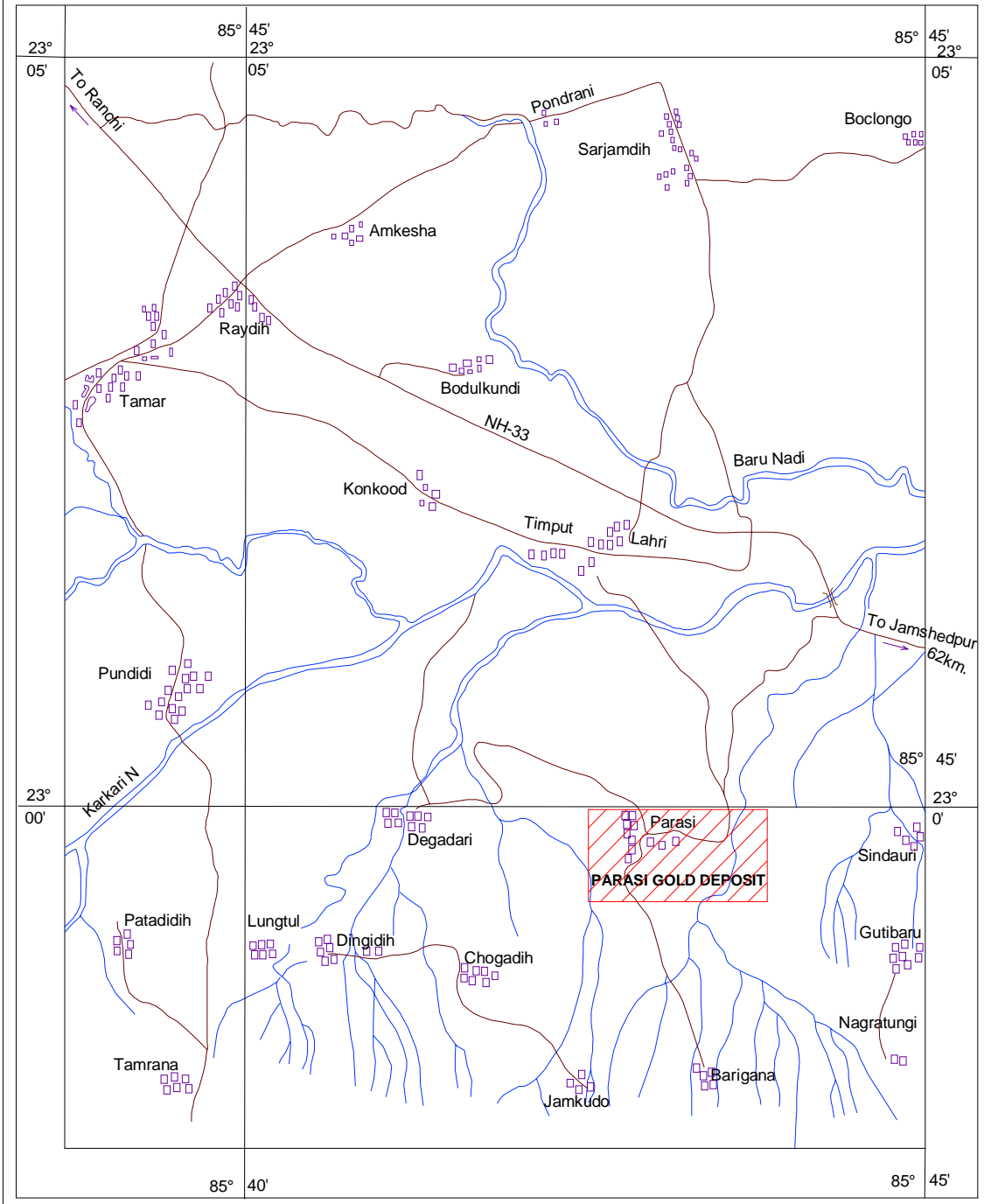
The studies on the baseline data of Environmental studies covering land use / land cover pattern studies have been carried out in the block.

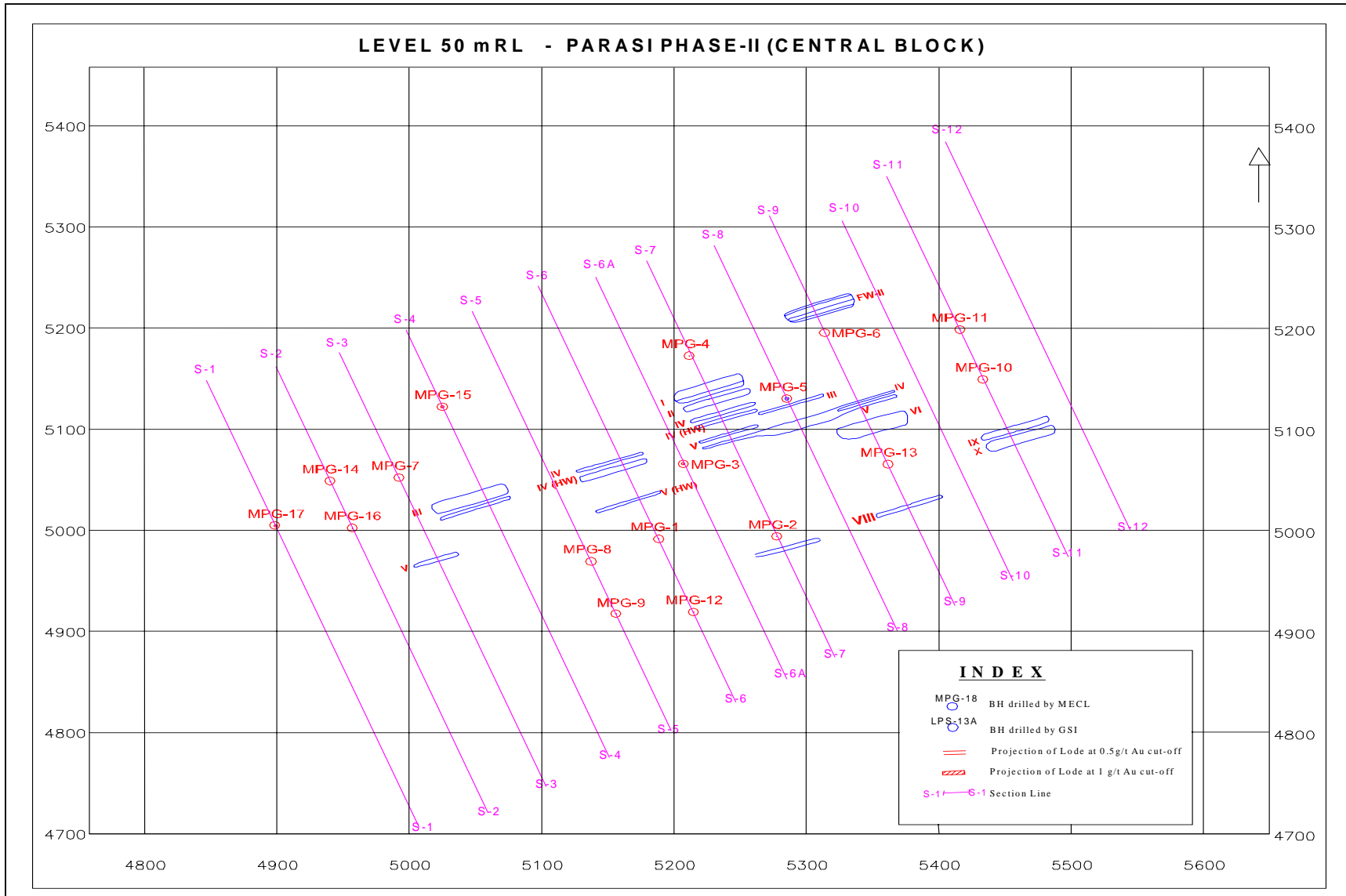
The Total Cost of Exploration is Rs. 424.98* Lakhs.

**- Tentative cost, cost of Phase-II exploration is to be finalized.*

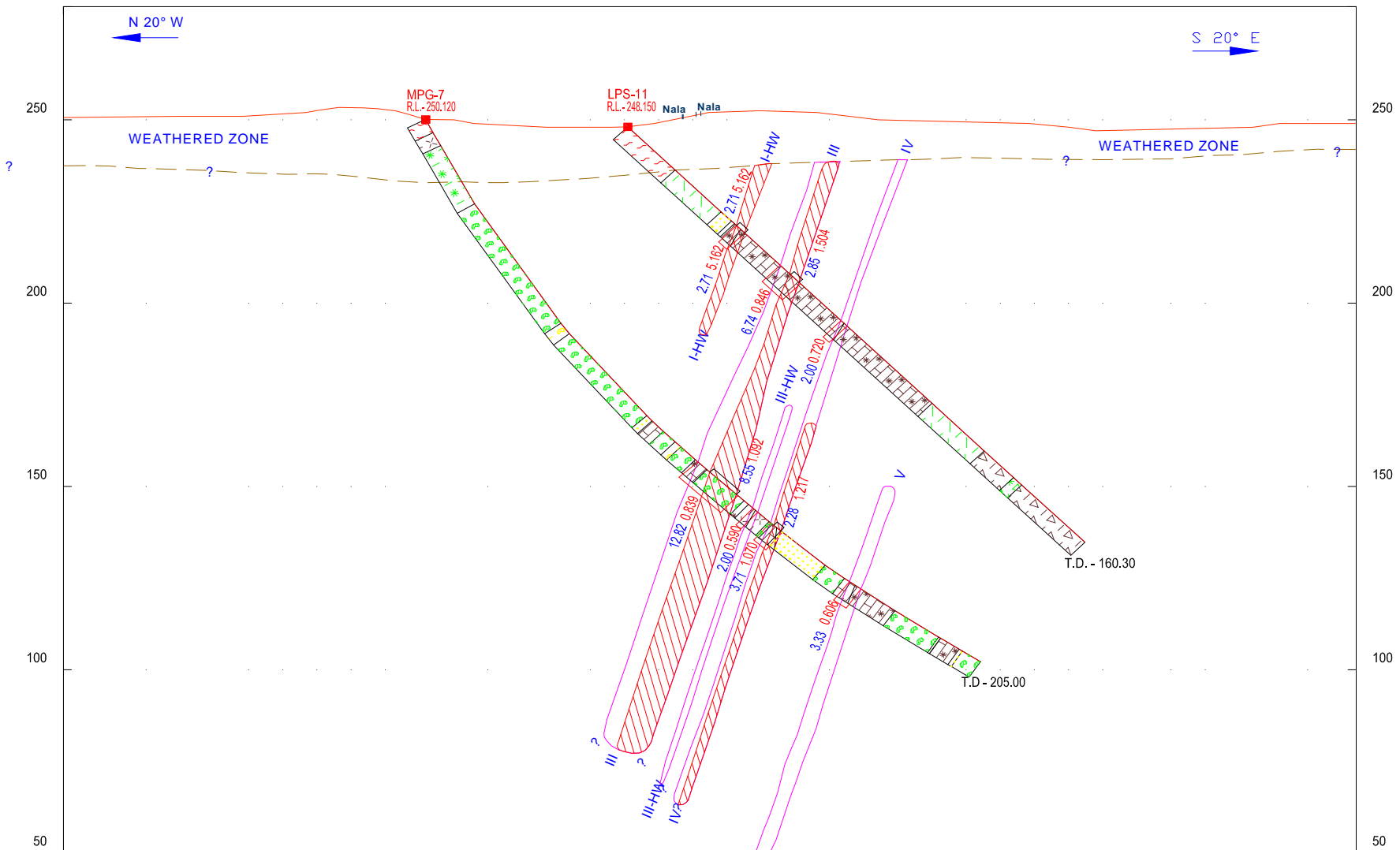
**LOCATION MAP OF
PARASI (CENTRAL BLOCK) GOLD DEPOSIT PHASE - II
NORTH OF SONAPET ANTICLINE
DIST: RANCHI, STATE: JHARKHAND.
Scale 1:50000**

Fig: 1

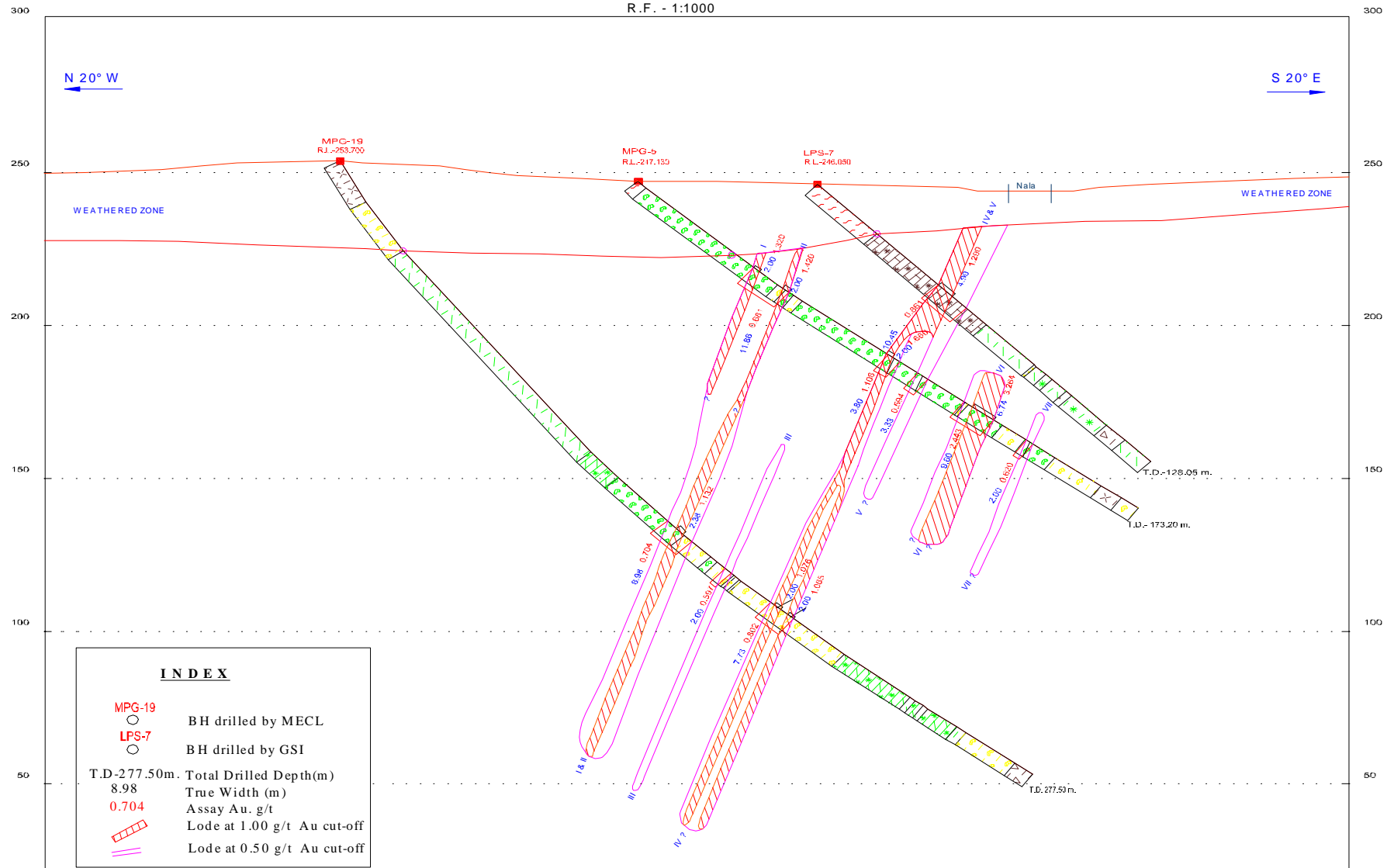




GEOLOGICAL CROSS SECTION : S-3



GEOLOGICAL CROSS SECTION : S-8
R.F. - 1:1000



Schematic representation of Ore shoot

