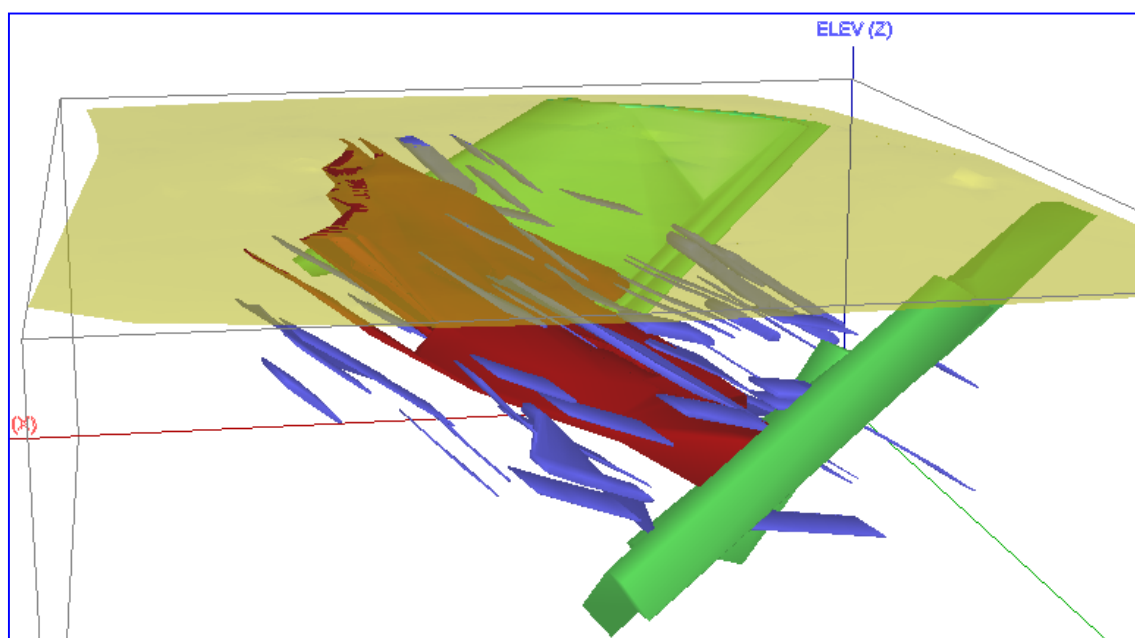


**EXPLORATION REPORT FOR GOLD**  
**DONA EAST BLOCK**  
**JONNAGIRI SCHIST BELT, KURNOOL DISTRICT,**  
**ANDHRA PRADESH**

**EXECUTIVE SUMMARY**



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**GEOLOGICAL REPORT ON EXPLORATION FOR GOLD  
DONA EAST BLOCK  
JONNAGIRI SCHIST BELT, KURNOOL DISTRICT, ANDHRA  
PRADESH**

**EXECUTIVE SUMMARY**

**1.0 LOCATION**

The prospect lies about 4 Km northeast of Jonnagiri Village in Tuggali Mandal of Kurnool District of Andhra Pradesh. The Dona East Block falls between latitude  $15^{\circ} 14' 00''$  to  $15^{\circ} 15' 30''$  N and longitudes  $77^{\circ} 34' 45''$  to  $77^{\circ} 36' 15''$  E which is covered in the Survey of India Toposheet No. 57 E/12.

The block can be approached from Jonnagiri village by a fair weather road. The nearest rail head is Tuggali, which is 12 Km from Jonnagiri on Dronachalam-Guntakal Broad gauge section of South Central Railway and Pagadrayi rail head is about 2 km.

**2.0 GEOLOGY AND STRUCTURE**

The Dona East Block located in the Dharwar Greenstone belt of Archean age under Jonnagiri Group of Formations which can further be divided as follows: 1. The lower Dona formation representing metabasic and meta acidic volcanics and ii) the upper Gavanikonda formations representing meta tuff. The concordant bodies are meta gabbro alongwith meta ultra mafics and cuts the lower formations.

The Dona East Block is mostly soil covered with scanty outcrops of intrusive granitoids (Granodiorite – tonalite suite), which lie at the south eastern fringe of regional 'S' type folds of second deformation.

The predominant rock type is Granodiorite – Tonalite suite, which is grey in colour, massive and sheared.

The mineralised zone trends N-S and veneers to NNW-SSE or NNE-SSW with the general dip of  $30-40^{\circ}$  westerly.

The Basic dyke occupies the northwestern and southern part of prospect. In the northern part, the dyke trends NE-SW while in the southern part, the basic dyke trends WNW-ESE, which dips towards east and north east respectively.

### 3.0 MINERALISATION

The host rock, of auriferous mineralisation, is granodiorite-tonalite which is feebly sheared in the vicinity of grey to bluish grey quartz. The mineralisation related to the zone of deep seated high temperature metamorphism. The wall rock alteration is manifested in the form of silicification, chloritisation, carbonatisation, biotitisation, mylonitisation and epidotisation. Mylonitisation is the hallmark of wall rock alteration, wherein the mineralisation is well pronounced. Generally sulphides occur as disseminations in the zone with pyrite being the predominant ore mineral. The width of mineralised zone varies from 1.50 m (MJD-2, JD-52) to 59.42 m (MJ 53 and JD 48) with pinch and swell nature; the ore zones are seen exhibiting an enechelon pattern. Native gold is fine grained (6-72 microns).

### 4.0 QUANTUM OF WORK

MECL has carried out Geological Mapping covering 0.50 sq.km.area. MECL's exploration work involved drilling 8501m in 55 boreholes, 64m of deep pitting (3 pits), 6655 numbers of primary and check samples for fire assay of gold, 137 nos of composite samples for gold and silver, 100 nos of composite samples for Mo and W, spectroscopic studies on 90 samples for trace and minor elements. Petrographic and Minerographic studies on 128 and 93 specimens respectively. Beneficiation studies on 2 bulk samples and environmental studies covering 10 Sq.km.area from center of exploration blockwere also carried out. Based on the above data 3D Ore Body Modelling studies was also done for the evaluation of grade and tonnage in the block.

The succinct details of ore beneficiation study conducted by Indian Bureau of Mines (IBM), Bangalore on about 400 Kg samples from three pits, are given below:

The sample assayed 2.71 ppm Au, 26.92 ppm Ag, 67.52 % SiO<sub>2</sub>, 3.36 % Fe (T), 12.75 % Al<sub>2</sub>O<sub>3</sub>, 1.39 % MgO, 3.78 % CaO, 4.44 % Na<sub>2</sub>O, 1.65 % K<sub>2</sub>O, 0.15 % S (T), 0.42 % TiO<sub>2</sub>, 75 ppm V and 2.09 % LOI.

The cyanidation studies showed that the ore was amenable to cyanide leaching without pre treatment. Cyanidation tests indicate the optimum conditions of - 150 mesh grind, 3.0 kg/t of Sodium cyanide and 24 hours leaching time at a pH of 11.0 by lime. At this optimum leaching conditions, the gold recovery in the solution was maximum at 96.4 % and the residue after cyanidation assayed 0.10 ppm Au.

Dry magnetic seperation was conducted to recover Vanadium. A feebly magnetic product assaying 122 ppm V with 55.4 % recovery (weight % yield37.4) could be obtained by dry magnetic seperation of -35 mesh.

## **5.0 ORE RESERVES ESTIMATION**

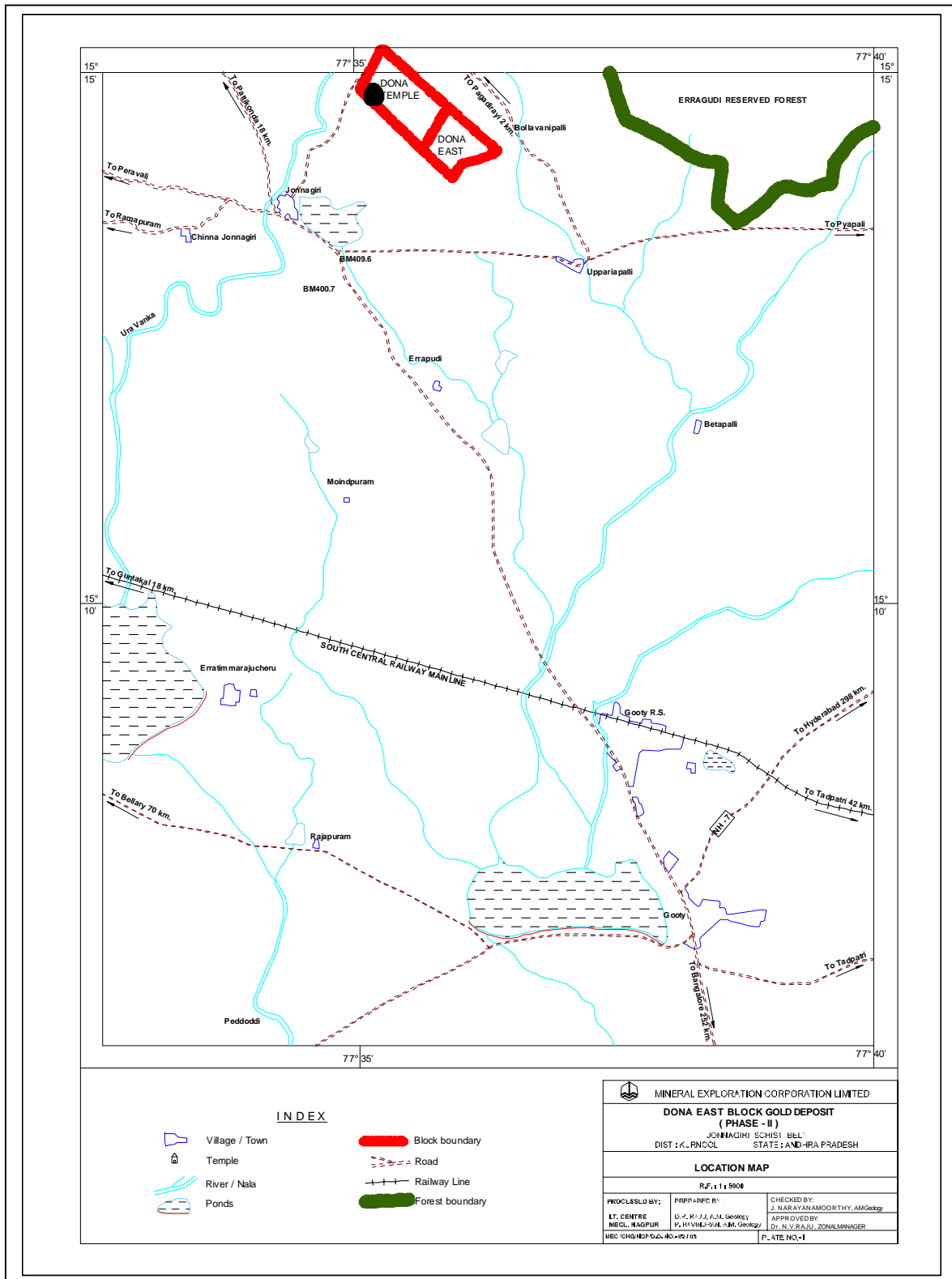
A minimum stoping width of 1.50 metres and a parting of 3.0 metres are the deciphering tools for delineating the ore-shoots alongwith the toning factor of 75 g/t. The reserves have been computed upto a vertical depth of 225 meter from surface.

The total geological insitu reserves of the rich ore shoots are 3.356 million tonnes of 3.660 g/t Au with the average width of 13.734 m over 650 m strike length estimated at 1 g/t cut-off. The deposit can also be exploited for open cast mining with the ore potential of 7.768 million tonnes of ore at an average grade of 2.041 Au g/t within the average width of 21.531 m over the same strike length of 650 m. at 0.5 g/t cut off.

**The deposit has been placed under Category 'A' of UNFC 331.**

The total cost of exploration is Rs. 501.29 Lakhs.

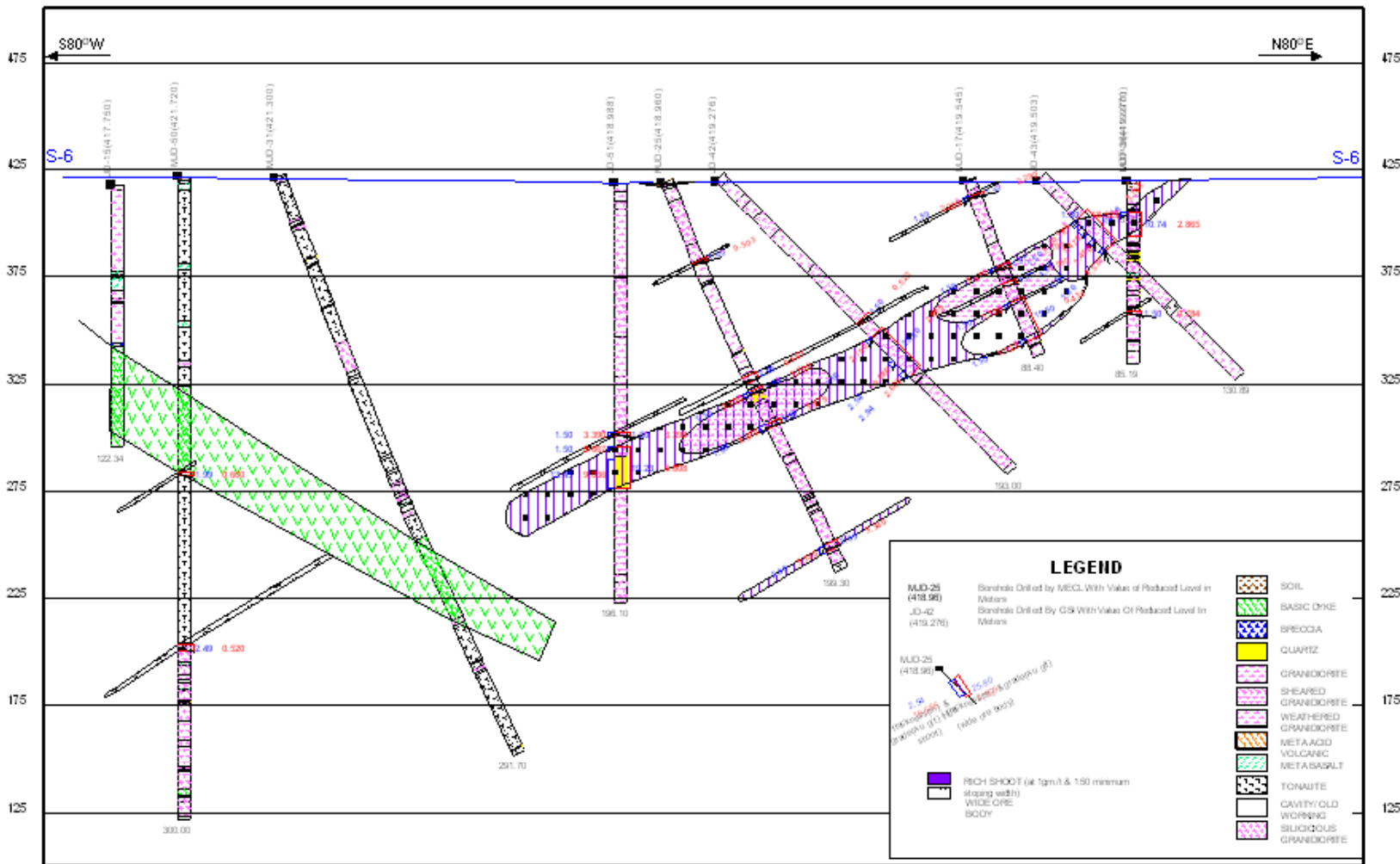
# Location Map of Dona East Block





# Geological Cross Section of Dona East Block

R.L. (M)



**3D ORE-BODY MODEL OF LODES (AT 0.50% Cu CUTOFF)  
DHADKIDIH BLOCK , SINGHBHUM COPPER BELT  
(VIEWING ANGLE 315° HORZ & 90° VERT)**

