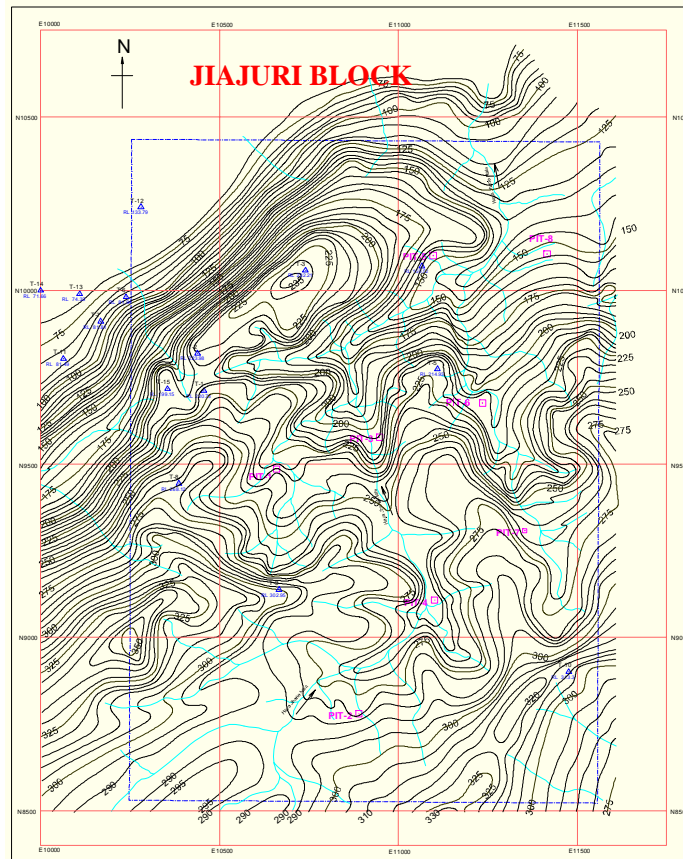


**GEOLOGICAL REPORT ON EXPLORATION FOR
FRIABLE QUARTZITE (GLASS-SAND)**

JIAJURI DEPOSIT

DISTRICT: NAGAON, ASSAM

EXECUTIVE SUMMARY



FEBRUARY - 2010

MINERAL EXPLORATION CORPORATION LIMITED

(A Government of India Enterprise)

DR. BABASAHEB AMBEDKAR BHAVAN

SEMINARY HILLS, NAGPUR-440006

NOVEMBER-2005

**GEOLOGICAL REPORT ON EXPLORATION FOR
FRIABLE QUARTZITE (GLASS – SAND) JIAJURI DEPOSIT
(PHASE-I & PHASE-II)
NAGAON DISTRICT, ASSAM**

EXECUTIVE SUMMARY

1.0 LOCATION

The area is located about 30 kms South-East from Nagaon and adjacent to Jiajuri Tea Estate. The deposit is bounded by Latitude 26°18'0" to 26°19'0" North and Longitude 92°52'55" to 92°54'15" East (Toposheet No. 83B/15). The block is located at 3 km South-East from Chapanalla on Jiajuri hill, South-East of Jiajuri Tea Garden.

Nagaon is 30 km from Jiajuri block and 180 km from Guwahati the capital city of Assam. Block is well connected by Rail and Road, which would be necessary for establishing glass industry in the area. Nagaon, the district head quarter is having all infrastructure facilities like Workshop, Post Office, Bank etc.

2.0 GEOLOGY AND STRUCTURE

Metasediments of Shillong group of pre-cambrian rocks are regionally exposed over the area. Rocks of Shillong Group are Amphibolite, phyllite, grey white hard quartzite, feldspathic ferruginous friable quartzite/ grey & white friable quartzite. Shillong Group is overlain by rocks of Cretaceous and Tertiary sediments and represented by limestone, mudstone, Tura sandstone etc.

The Jiajuri friable quartzite (Glass Sand) of Shillong Group is exposed at the central part of Jiajuri hill, Barhola hill and Chapanalla hill. Friable quartzite is exposed in the central part of the block while all along periphery, quartzite is less friable and somewhat hard & massive. General colour of quartzite varies from greyish white to pale white. The thickness of quartzite vary from 30 - 130 m (as per borehole data). General strike of formations varies from N55°E –S55°W to N80°E-S80°W.

Friable quartzite is thickly bedded. The bedding nature is absent in the rock, which is deciphered by colour banding at places. Quartzite is highly fractured and jointed and is intruded by vein quartz at places.

3.0 MINERALISATION

The friable Quartzite (glass sand) deposit of Jiajuri, district Nagaon, Assam occurs on plateau with undulating topography. Thickness of soil in the area varies from 0.25 m. to 2.00 m. Quartz and Mica are the dominant minerals while orthoclase, kaolinite and iron oxide minerals (hematite & goethite) occur as minor minerals. Sphene, zircon, tourmaline and corundum as accessory minerals. Quartz occurs as sub-angular to sub-rounded grains of Quartz. Quartzite shows granular and clastic texture. Grain size varies from 0.05mm to

0.125mm. At places quartzite shows granoblastic texture where size of quartz grains varies from 0.05mm to 0.30mm.

4.0 QUANTUM OF WORK DONE

MECL has carried out work in two phases. Details of Work done in different Phases is given below:- Beneficiation studies by Indian Bureau Of Mines on one Bulk sample was also carried out. The beneficiation studies indicated that quartzite (Glass Sand) is suitable for glassware Industry.

S. NO.	ITEM OF WORK	QUANTUM OF WORK			REMARKS
		PHASE-I	PHASE-II	TOTAL	
1	Geological Mapping & Topographical Survey	2.5 Sq. Km.	1.50 Sq.Km.	2.50 Sq.Km.	
2	Mining				
	a) Trenching (Cu.m)	4108.00	-	4108.00	
	b) Pitting (Cu.m)	192.00	-	192.00	
Total				4300.00	
3	Drilling (m)	-	655m (9 BHs)	655m (9 BHs)	
4	Core Logging (m)	-	655 m	655m	
5	Laboratory Studies				
	a) Primary Thick Samples (5 radicals)	283 Nos. (Trench & Pit)	657 Nos. (Drill Core)	940 Nos	
	b) Composite Samples (12 radicals)	30 Nos.	30 Nos.	60 Nos.	
	c) Spectroscopic Studies		30	30 Nos.	
	d) XRD-Studies on composite samples	-	10	10 Nos.	
	e) Petrographic Studies		25	55 Nos.	
	f) Specific Gravity Determination	30	30	60 Nos.	
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 of 1st phase sample has yielded sand concentrate (-30+120 fractions) assaying 98.87%SiO₂, 0.04% Fe₂O₃ and 0.20% Al₂O₃ with Wt% yield of 55.6. It is Grade-I in respect of Silica & Iron content, whereas it meets Grade-II specification in respect of silica, iron & alumina.

The Indian Standard specification for the chemical; composition of glass making sand is given in following table:-

Constituents	Grade-I	Grade-II
i) SiO ₂ % min	98.5	98.0
ii) Fe ₂ O ₃ % max	0.04	0.06
iii) Al ₂ O ₃ %	0.04	--=
iv) Ti O ₂ % max	0.10	0.10

Based on the Phase-I work, MECL has carried out second Phase exploration by drilling boreholes in order to prove depth continuity of friable quartzite. MECL has drilled 655.00m in 9 boreholes. Boreholes were drilled at 500mX500m grid (approximately), covering an area of 1.50 sq.km. Field work of Phase-II has been completed and Laboratory work is in progress.

5.0 ORE RESERVE ESTIMATION

MECL estimated a total of 320.53 million tonnes of glass sand (240.53 million tonnes of Probable category and 80.00 million tonnes of possible category) reserves with grade 88.42 % SiO₂, 0.93% Fe₂O₃, 0.13% CaO, 0.11% MgO and 5.12% Al₂O₃ after receiving analytical data of Phase-II exploration.

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

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. 388.34* Lakhs.

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

LOCATION MAP OF JIAJURI EXPLORATION BLOCK,
DISTRICTS –NAGAON AND KARBI ANGLONG, ASSAM



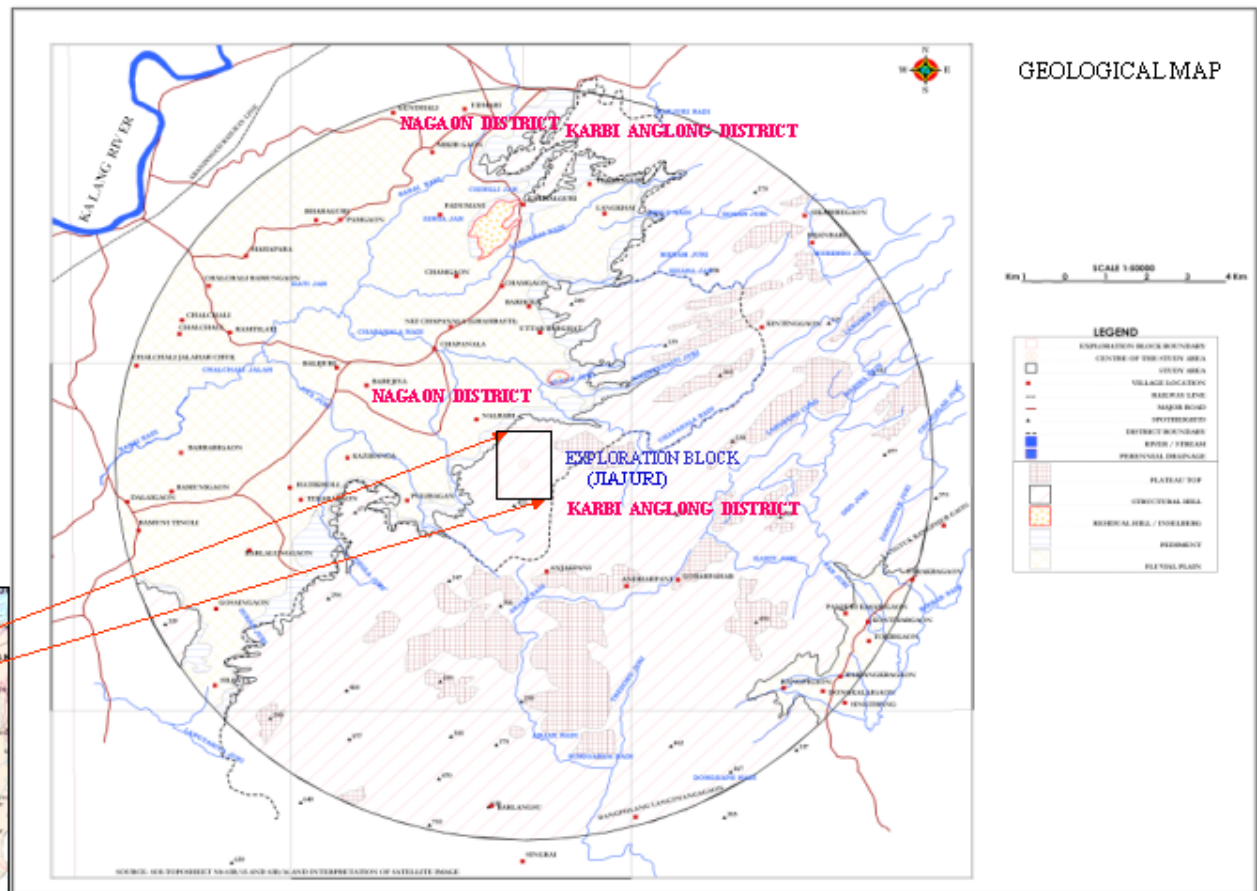
MAP OF INDIA SHOWING THE LOCATION



MAP OF NER REGION SHOWING CENTRAL ASSAM

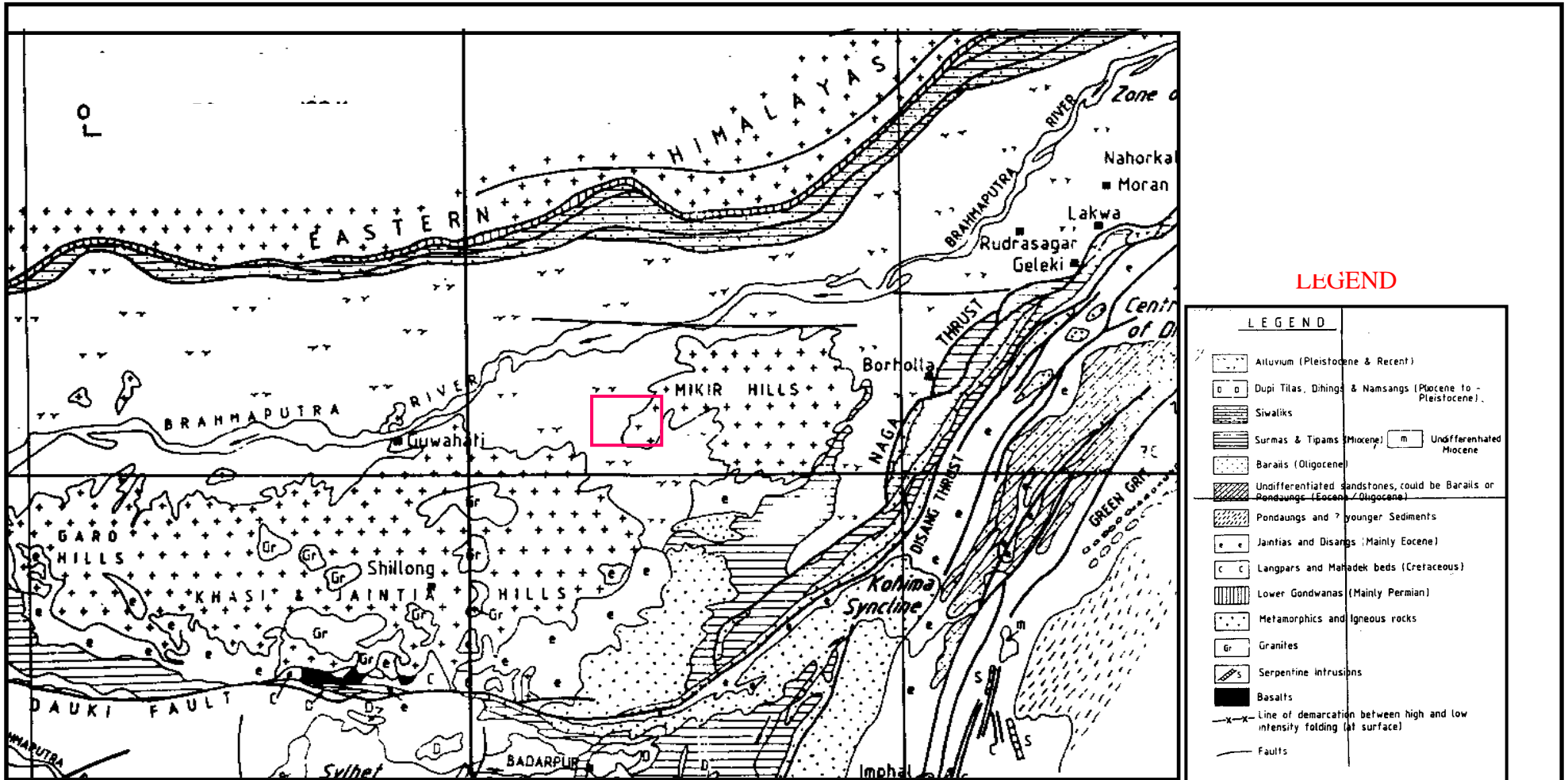


MAP OF CENTRAL ASSAM SHOWING THE EXPLORATION AREA



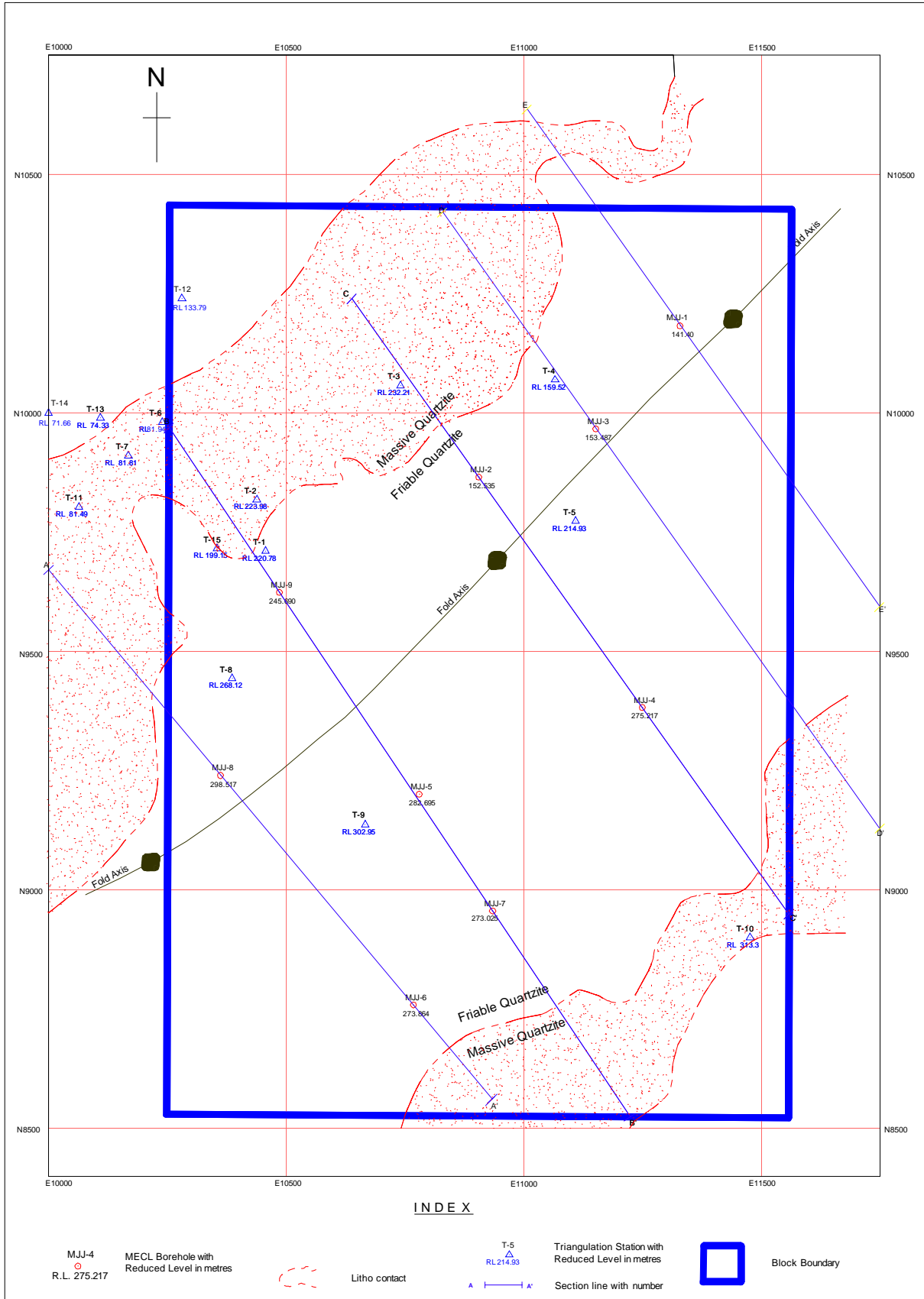
TEXT PLATE-I

REGIONAL GEOLOGICAL MAP OF JIAJURI DEPOSIT DISTRICT – NAGAON, ASSAM



**SOURCE - GEOLOGICAL MAP OF ASSAM AND
SURROUNDINGS (AFTER GSI, 1977)**

GEOLOGICAL MAP OF JIAJURI DEPOSIT



GEOLOGICAL CROSS SECTION

