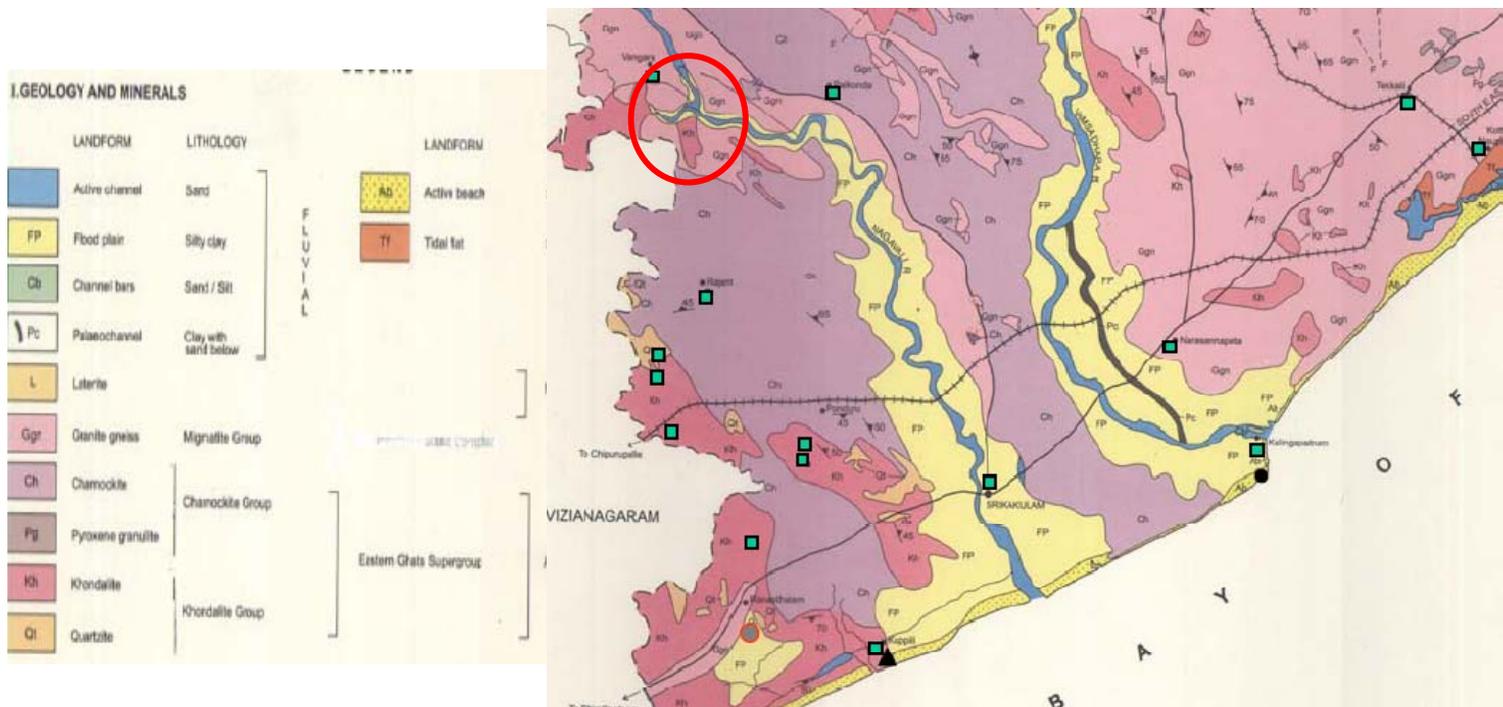


### MINING 'SRIKAKULAM BLUES' – Can Hills be Recreated?

Srikakulam is located along the longitudinal Eastern Ghats belt extending into Ongole in the southern side and has a longest coast line in Andhra Pradesh. The regional geology is explained in terms of three longitudinal zones which collectively is 600 kms in length from Srikakulam to Ongole with varied width from 100 – 20 kms trending from North to South.

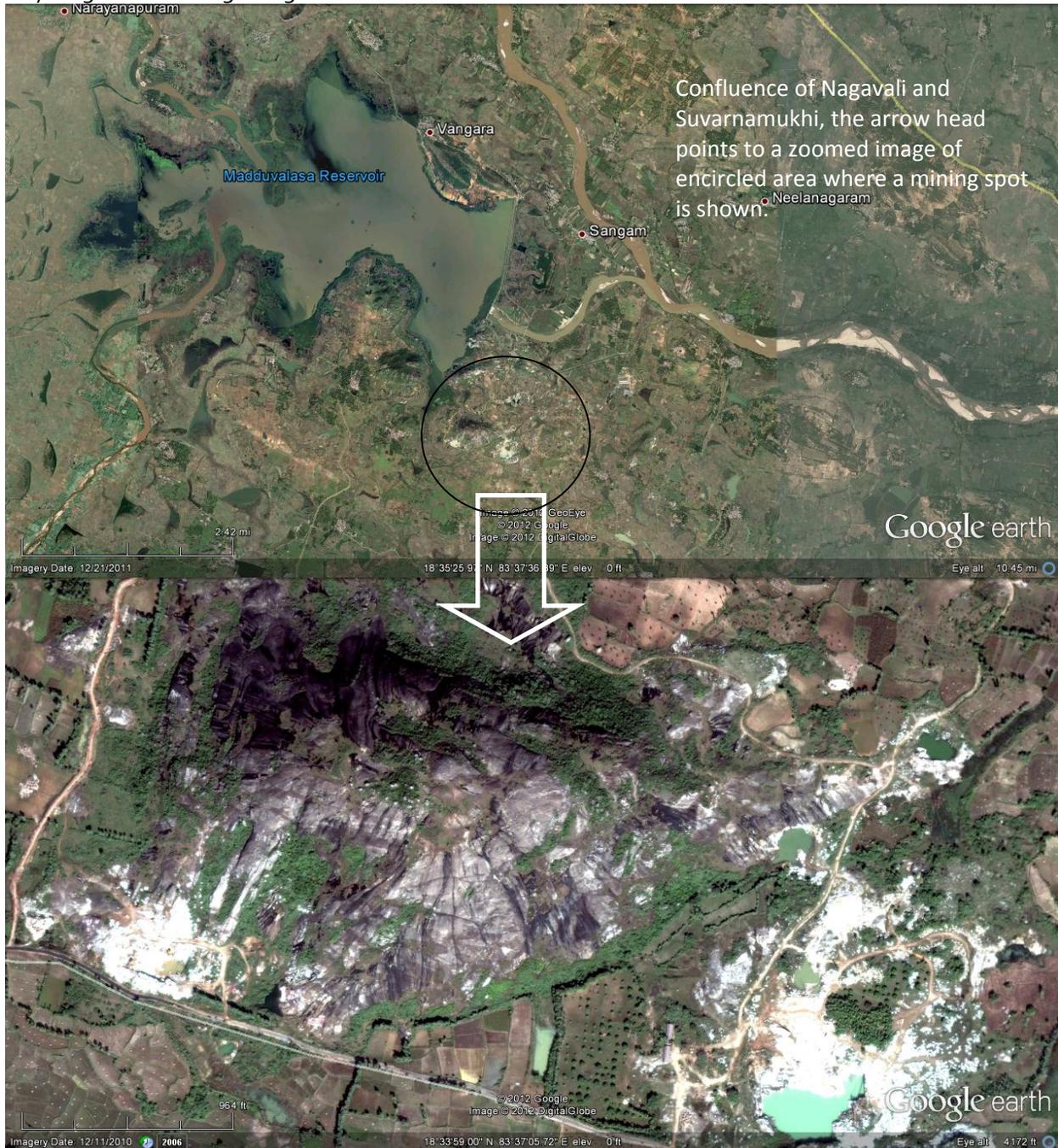
The landforms in the Eastern Ghats belt (known as Eastern Ghats Mobile belt in geological terms) are Charnockitic zone, Kondalite Zone and Migmatite zone, Migmatite belt is well developed in Srikakulam. It is these migmatites and migmatised charnockite deposits commercially known as 'Srikakulam Blue'. The blue colour of granite (for which is internationally famous) comes from blue quartz and bluish grey to light grey feldspar. It is believed that due to massive monolithic igneous formation (landforms) these rocks are amenable for producing large size blocks (usually the granite block is 10'x5'x5' and lesser).



The landform in the above figure clearly indicates the presence of Eastern Ghats subgroup and the three longitudinal zones described above. The red circle indicates confluence of River Nagavali and Suvarnamukhi which can be correlated with the image on next page where Madduvalasa Reservoir is indicated and mining is going around the region (see next page).

Tekkali mandal of the District has a large number of quarry leases for granite, 33 of the 48 leases listed from various documents of the government are less than 5 hectares (see annexure). As per 2006 EIA notification of MoEF, the leases less than 5 hectares did not required environment clearance, although a mining plan in this context was to be prepared through the state (Department of Mines & Geology) or central institutions like Indian Bureau of Mines.

Granite is a minor mineral and is administered at the state level under its Minor Mineral Concession Rules (in this case APMMCR) and Granite Conservation and Development Rules, 1999 (amended). It is largely under GCDR 1999 that mining leases for granite are awarded and mining plan prepared. In a recent development, the Supreme court of India (February 2012) in its order dated 27.2.2012 in the matter of Deepak Kumar Vs State of Haryana and Others made it clear that irrespective of the size and nature of lease (even minor mineral and less than 5 hectares), the leases including their renewal can only be granted after getting environmental clearance from the MoEF.



### Definition of Granite as per Granite Conservation and Development Rules 1999

(h) "granite" means dolerites, granite gneisses, migmatites, gabbros, anorthosites, rhyolites, syenites,

leptynites, charnockites and any other igneous and orthometamorphic rock types which are -

- (i) amenable to be recovered as dimensional stone;
- (ii) capable of taking polish; and
- (iii) commercially exploitable

### Nature of Mining & Production:

Granite is mined through opencast mining which is generally a quarry and as these are hard rocks which are used in construction activities, these have to be taken out using blasting measures along with heavy machinery to carry the blocks. India is the second largest producer of raw granite and stands at fifth place when it comes to processed granite. In Andhra Pradesh, important mining areas are located in the districts of Chittoor, Anantapur, Kurnool, Prakasam, Srikakulam, Warangal, Karimnagar and Khammam.

The mining of granite involves two important stages of operation: one is actual block splitting either from sheet rock or boulder and the other operation involves many items of works, such as removal of weathered zone or overburden, opening of faces, lifting of cut blocks, transportation and many other ancillary work before and after the block splitting. [IBM Mineral Yearbook 2010]

Production of Granite in Andhra Pradesh		
2006-07 <sup>®</sup>	Quantity (Cu.m)	796880
	Value (Rs. '000)	13308421
2007-08	Quantity	787557
	Value	14608299
2008-09	Quantity	761078
	Value	15463740
2009-10	Quantity	648789
	Value	13994677

The leader in 'royalty earner' is the minor minerals category in the District, the contribution from major minerals is in minority. The figures are in Rs. Lakhs. During the 2008 recession, the news reports highlighted the lowering exports which usually touch Rs. 100 crore / year. The following news throw some more light on the other aspects.

#### Recession hits granite exports from Srikakulam

*Our Bureau Srikakulam, March 15*

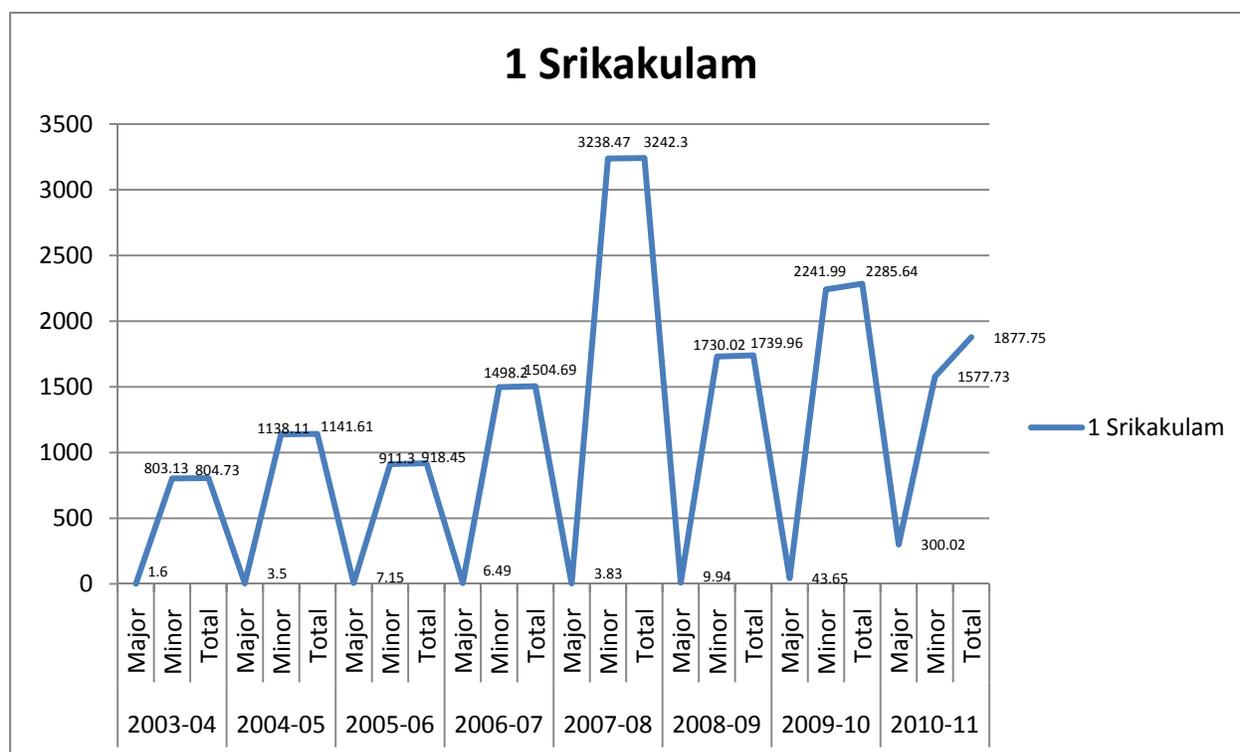
Global economic recession has badly hit granite exports from Srikakulam district this year and exports have almost been halved from the usual level of Rs 100 crore or so a year.

Blue granite exported from the district, known in the international market as Srikakulam Blue, is much sought after in the US, Japan, China, Taiwan and several European markets. It is mainly available in Tekkali and Pathapatnam mandals and it is estimated that reserves are of the order of 29.25 lakh cubic metres, of which roughly 2 lakh cubic metres of granite is in the form of recoverable blocks.

According to Mining Department sources, 150 colour granite mines are identified in the Tekkali region and also 40 road metal granite mines. Srikakulam Blue is exported in gang saw sixe and cutter size.

Granite exporting companies from the district such as MSP Granites, Sterling Stone Exports Pvt Ltd, Golden Rocks and Madhucon Granites Pvt Ltd are in great distress and they contend that unless the State understands their plight and reduces the royalties and the Union Government offers some export incentives, their survival may be difficult.

The industry sources say that the State Government is charging royalty of Rs 750 to Rs 2,250 a cubic metre for different varieties of granite and the target for the current financial year has been fixed at Rs 13 crore. Till date, only Rs 7.67 crore has been realised, reflecting the sorry state of the industry. Industry sources anticipate the recession to last at least two more years and urge the Union and State governments to rescue them, and thousands of workers dependent on the industry.



The almost flatter line (except 2009-10 & 2010-11) joining the minor and total values indicates majority earning of revenue from minor minerals.

Source: Data from AP Government

#### Issues to Deliberate:

1. Environmental problems due to clustering of leases for granite like change in the landscape and topography of the region alongwith high usage of water in the processing industry as well as cutting of blocks at site requires a comprehensive environmental assessment to set criteria for granting quarry licences / leases by the state.
2. Reliability and rationality of any mine is ensured if the operations are in situ with the Mining plan and it presents a picture of safe and environmental closure of mine both progressively as well as finally. The punctured water table, if any has to be closed in a consolidated manner so as to retain the water in natural aquifers.
3. Restrain in granting any new leases for granite and adhere to the Supreme Court Order on environmental clearance for all mines irrespective of size. The state should immediately process all the existing (for renewal) and new (restricted) leases for putting them through environment clearance process at the state and central level.

4. As granite is an export item (raw as well as processed), it should also be a part of fair trade standards by implementing the provisions of Mines Act 1952 (safety and welfare of workers), Granite Conservation and Development Rules 1999 and AP Minor Mineral Concession Rules and international guidelines of fair trade. As granite mines are revenue earner for the district, a delay in complying with the order would mean more impetus on revenue than environment. Revenue should not be seen as a net value but it should have a considerable proportion from this revenue for effectively improving the environment around the communities – this should be over an above the mandatory costs for mine closure and implementation of mining plans.
5. Strict procedure for implementation of mining plan in terms of scientific mining and taking a conservative approach towards environment, adhering to production schedule and production, overburden and waste management. What by product technologies can be brought to utilise the existing waste materials like weathered granite pieces / chips for making an alternate usage to avoid mining of other mineral for a particular purpose.

100 m<sup>3</sup> Granite (broken) by volume = 165 tonne by weight [density 1650 kg/m<sup>3</sup>]

100 m<sup>3</sup> Granite by volume = 269 tonne by weight [density 2691 kg/m<sup>3</sup>]

**For a 5 tonne truck, it would mean 52 trips – fugitive and exhaust emissions, accidents, illicit activities unavoidable!**

#### INFORMATION WITH THE GOVERNMENT

1. Under the *Granite Conservation and Development Rules 1999*, Form B contains information about notice of intimation of Opening of Mine / Quarry. Similarly Form C provides information on Intention of Abandonment/Surrender of Mine or part of it
2. At the *Collectorate Level* which deals with most of the information, following officers are appointed as PIO / APIO

Sl.NO.	Name of office/administrative unit	Name & Designation of PIO	Office Tel: Residence Tel: Fax:
1.	Collector's Office	Sri B.Yadagiri, District Revenue Officer, Srikakulam (Public Information Officer)	08942-222510(O) 08942-220835
2.	Collector's Office	Sri J.Venkata Rao, Administrative Officer (Assistant Public Information Officer)	08942-240583(o) 08942-225361

3. At the Directorate of Mines and Geology, information about a particular mine as stated in 1 above will be available with Mining Officer.