

**MINUTES OF THE 50<sup>TH</sup> MEETING OF THE KERALA STATE  
GEOLOGICAL PROGRAMMING BOARD**

Date : 29/07/2013  
Venue : Banquet Hall, Government Guest House, Thycaud,  
Thiruvananthapuram  
Time : 11.00 AM - 3.05 PM  
Participants : Separate list appended

**Proceedings:**

**50.1.0.** The Member Secretary and Director of Mining and Geology (i/c), Shri A. Prabhakumar, delivered a welcome speech highlighting the present scenario of mineral development activities in the state of Kerala. He ascertained that minerals are the backbone for the development of a nation. The present sphere of Mineral Exploration activities were hindered by fast growing urbanization and over concern for environment. Typical example is the excellent clay deposits of Thonnackal and Sasthavattom which cannot be mined as the areas are earmarked for IT Development. Two major clay based companies are in the verge of closing stage due to lack of raw material. Our public sector companies – KCCP, IREL, KMML etc. are also facing the same situation. Hence he requested GSI, CESS, AMD and other scientific departments to intensify mineral investigation programmes for reserving mineral bearing areas for future mineral development projects. He then heartily welcomed Shri. K.S. Srinivas IAS, the Chairman of SGPB and Secretary to Government, Industries (IP), and all the members to the 50<sup>th</sup> SGPB meeting.

**50.2.0.** The Member Secretary requested the participants to introduce themselves.

**50.3.0.** Thereafter the Member Secretary went on to discuss the minutes of the 49<sup>th</sup> SGPB meeting.

**50.3.1.** The Member Secretary invited the attention of the members to para 49.5.4 of the minutes. He pointed out that M/s. IRE and KMML had not communicated to the Department of Mining and Geology for sea bed studies in Kollam-Kayamkulam area. Shri. S. Srikumar, KMML, replied that they were waiting for the final report of CESS on beach sediments in that area.

**50.4.0.** Followed by the above discussion the minutes of the 49<sup>th</sup> SGPB meeting was approved by the members.

**50.5.0.** The Member Secretary then invited the members for the presentation of work done during the period from July 2012 to June 2013 and the proposed programs for the year 2013-14.

**GEOLOGICAL SURVEY OF INDIA, KERALA UNIT, THIRUVANANTHAPURAM**

**50.6.0.** Shri M. Suresh Chandran, Director, GSI, presented the summary of work carried out from July 2012 to June 2013 which includes:

- Specialised thematic mapping of Palghat-Cauvery Lineament
- Geochemical mapping in parts of Kozhikode, Kannur, Wayanad districts
- Investigation for sulphide and PGE mineralization in Wayanad and Malappuram districts
- Studies to identify the geogenic source of fluoride in the ground water of Chittoor- Kollengode area, Palakkad district
- Studies conducted at the landslide-prone areas of Kerala and preparation of district-wise landslide susceptibility map.

Proposed programs for the field season 2013-14 include:

- Specialised thematic mapping of Palghat-Cauvery and Periyar Lineament
- Geochemical mapping in parts of Wayanad , Malappuram and Kozhikode districts
- Investigation for gold, copper and PGE mineralization in Thrissur and Malappuram districts
- Landslide investigations
- Declaration of the Tertiary Warkalli formation at Varkala as National Geological Monument and the development of a Geopark there.

**50.6.1.** The Director of GSI, Shri. Suresh Chandran, explained the efforts taken by GSI, Kerala Unit, to declare the type section of the Tertiary Warkalli formation at Varkala cliff section as National Geological Monument. As per decision taken during the meeting with the Vice Chairman, State Planning Board, GSI, will be preparing a proposal in consultation with Department of Geology, University of Kerala and SPV for Varkala for declaration of Varkala as a National Geopark. National Geological Monument and Geopark will promote 'Geotourism'. Further Shri. M. Suresh Chandran requested CGWB to give their opinion on protection of Varkala Cliff, especially regarding aspects connected with groundwater. Shri. Nandakumar, CGWB, agreed to have a discussion with GSI on the matter.

**50.6.2.** While discussing the annual programme of the GSI, the Chairman pointed out that the GSI had done detailed landslide investigations in three districts of Kerala and enquired when they

were going to take up other districts also. Shri. Ashok Kumar, Superintending Geologist, GSI, replied that a GIS based hazard zonation study would be taken up in two more districts of Kerala in the present field season.

**50.6.3.** Shri. Suresh Chandran informed the gathering that GSI was willing to take up work suggested by the Department of Mining and Geology or any other organization. On this, Shri A. Prabhakumar requested GSI to suggest bauxite-bearing areas in northern Kerala where the Department of Mining and Geology could take up detailed investigation for bauxite. Shri. Suresh Chandran suggested a discussion on the matter after collection of data on the work already carried out by Geological Survey of India and Department of Mining and Geology.

**50.6.4.** Dr. S.N. Kumar, Head of Department, Department of Geology, University of Kerala, Kariavttom, enquired whether GSI had carried out any NGCM sampling in Pathanamthitta district. Shri. Kutumba Rao, Deputy Director General, GSI replied that, at present, the northern parts of Kerala were given priority in NGCM sampling; but eventually southern parts of Kerala would also be included.

#### **DEPARTMENT OF MINING AND GEOLOGY**

**50.7.0.** Shri P.S. Jayachandra Panicker, Deputy Director (Exploration and Prospecting Division), Department of Mining and Geology, presented the summary of work carried out from July 2012 to June 2013 which include:

- Detailed investigation for bauxite and china clay in Peringome, Eramam and Ulloor areas of Kannur district

- Investigation for china clay in Kollam district
- Identification of bauxite /aluminous laterite in Kasargod district using remote sensing techniques
- Estimation of silica sand reserve in Cherthala taluk of Alappuzha district
- Assessment of sand deposits in kadavus of Kallada river, Kulathupuzha range, Thiruvananthapuram forest division
- Minor mineral quarry mapping in Kasargod district

Proposed programs for the field season 2013-14 include:

- Investigation for china clay/bauxite in Eramam and Ulloor areas of Kannur district
- Investigation for china clay in Kundara, Kollam district
- Minor mineral quarry mapping in Kozhikode district

**50.7.1.** The Chairman observed that though china clay reserves being identified, interested companies were not allowed to extract mineral as such areas were earmarked for Life Science Park, Technopark etc. Actually these areas need to be reserved only for mineral development.

**50.7.2.** Shri. Punnen, Senior Consultant, KEMDEL, requested to provide the bore-hole data. Shr. A. Prabhakumar agreed to provide the data free of cost on a written request from KEMDEL.

**Action: KEMDEL**

**50.7.3.** Shri. Nandakumar, CGWB, expressed concern over the negative impact of china clay mining on ground water. In clay mining areas the ground water levels were affected, ground water became acidic, wells went dry and the entire area became barren,

affecting the economy of the area. He pointed out the necessity of impact studies in clay mining areas.

**50.7.4.** Shri. Punnen called the attention of the meeting to the circular handed over by KSEB to investigate their dams for sand and clay. He informed that KEMDEL intended to take up sand removal from Malampuzha, Walayar and Chulliyar dams during the present field season. Sri Punnen urged the Department of Mining and Geology to take up prospecting for sand in dams on behalf of KEMDEL.

**50.7.5.** Dr. S.N. Kumar enquired whether the GSI had an Engineering Geology Division in Kerala. Shri. Kutumba Rao replied that experts came from Chennai as and when required. Dr. S.N. Kumar remarked that an Engineering Geology Division should be attached to the Kerala Unit to expedite the investigations of the GSI. Shri Kutumba Rao agreed that Engineering Geology Division was quite essential to strengthen the various programs of the GSI, Kerala Unit, and hence such a request had already been made.

#### **MARINE AND COASTAL SURVEY DIVISION, GSI, COCHIN**

**50.8.0.** Dr. Thomas Mathai, Director, West Coast Operations, Marine and Coastal Surveys Division, GSI, Cochin, summarized the work carried out from July 2012 to June 2013:

- Geological and geo-environmental studies of the central part of Vembanad lagoon (almost completed)
- Geo-technical appraisal off Nileswaram, Kasargod
- Geological appraisal of Azhikkal port, Kannur
- Preliminary geological studies at Ponnani harbour, Kerala

Proposed programs for the field season 2013-14 include:

- Assessment of heavy mineral potential in near shore gap areas off Attipara, near Thiruvananthapuram district
- Geological and geo-environmental studies of Ashtamudi estuary, Kerala
- Geotechnical appraisal off Manjeshwaram, Kasargod, Kerala for the development of a harbor/minor port

**50.8.1.** Dr. Thomas Mathai opined that the works carried out by M & CSD, GSI were very useful for the Department of Ports and Harbour Engineering Department. Hence these user agencies should also be included into the SGPB meeting. The Chairman advised him that based on a request placed by the Industries Department, M & CSD could send their study reports to the Industries Department, which shall then forward the reports to the user agencies.

**Action: Industries Department**

**50.8.2.** The Chairman enquired whether the Vembanad Lake came under the Ramsar sites to which Dr. Thomas Mathai replied in the affirmative.

**50.8.3.** Dr. Thomas Mathai invited work proposals from other organizations so that M & CSD of GSI could do some public-oriented programs. The Chairman opined that since KMML, IRE etc. were facing acute shortage of ilmenite, it was necessary to find new source areas. He further enquired about the technical possibility of offshore mining for ilmenite and other minerals. Dr. Mathai replied that offshore mining was technically possible. The

Chairman informed that the Titanium Sponge project in collaboration with companies like SAIL had already started. Hence it was highly essential to find source areas for raw materials used in ilmenite-based companies in Kerala. A request in this regard shall be send to M & CSD of GSI.

**Action: Industries Department**

**MARINE AND COASTAL SURVEY DIVISION, GSI, MANGALORE**

**50.9.0.** Dr. R.K. Pillai, Marine and Coastal Surveys Division, GSI, Mangalore summarized the work carried out from July 2012 to June 2013:

- Seismic survey in the area off Bharathapuzha river, Malappuram district for locating palaeo sand bodies
- Coastal survey between Kasargod and Nileshwaram, Kerala for identification of heavy mineral occurrences

Proposed program for the field season 2013-14 include:

- Preliminary evaluation of heavy mineral occurrences off Trivandrum-Attipara area, Kerala
- Preliminary evaluation of sand resources off Cochin, Kerala

**CENTRAL GROUND WATER BOARD**

**50.10.0.** Dr. Nandakumar P.,Regional Director, Central Ground Water Board, Kerala Region, summarized the activities and achievements of CGWB from July 2012 to June 2013 as given below:

- Aquifer mapping in parts of Kasargod, Malappuram and Palakkad districts
- Monitoring of hydrograph network stations



- Short term water supply investigations
- Artificial Recharge studies
- Ground water resources assessment
- Ground water monitoring and short term water supply investigations

Proposed program for the field season 2013-14 include:

- Aquifer mapping
- Ground water regime monitoring and strengthening of ground water observation well network
- Ground water resources assessment
- Ground water regulation
- Study on the possibility of radioactivity in ground water along coastal stretches

**STATE GROUND WATER DEPARTMENT, THIRUVANANTHAPURAM**

**50.11.0.** Dr. Ajithkumar P.N., Senior Hydrogeologist, State Ground Water Department, presented the work carried out from July 2012 to June 2013 as given below:

- Ground water investigation and development
- Control and regulation of ground water
- Rajiv Gandhi drinking water mission
- Conservation of ground water and artificial recharge
- Drought mitigation works

Proposed plan for the field season 2013-14 include:

- Ground water investigation and development
- Control and regulation of ground water
- Comprehensive ground water management plan for Chittoor block in Palakkad district
- Rajiv Gandhi drinking water mission
- Conservation and recharge of ground water
- Long term drought mitigation plans

**50.11.1.** Dr. Thomas Mathai enquired on the measures taken to prevent sea water intrusion in coastal areas. Shri. Ajith answered that they had no specific program for preventing saline intrusion though they were monitoring it. Shri. Nandakumar opined that though there was seasonal variation in water quality along banks of inlets and an overall deterioration of water quality, sea water intrusion as such had not taken place anywhere in the State.

**CENTRE FOR EARTH SCIENCE STUDIES (CESS)**

**50.12.0.** Dr. Radhakrishna, Scientist, CESS presented the geological work carried out from July 2012 to June 2013 and the proposed projects for 2013-14:

- Studies on granulites of Kerala Khondalite belt
- Studies on mafic igneous activity to evaluate the position of Indian shield with reference to super continental assembly
- Palaeo fluids in the petroliferous basins of western offshore
- Landslides and land subsidence

- Rain water harvesting and ground water recharge in Chadayamangalam Block
- Earthquake monitoring
- Estimation of sand budget for the mining sites of KMML
- Shoreline monitoring and mapping of west coast of India

**50.13.0.** After the presentation by CESS, the Member Secretary announced that the SGPB shall resume at 2.15 pm after lunch.

**INDIAN BUREAU OF MINES, BANGALORE**

**50.14.0.** Shri Prashant S. Hegde, Senior Mining Geologist, outlined the progress of work carried out by IBM, Regional office, Bangalore from July 2012 to June 2013:

- 35 MCDR and 11 Mining Plan/Mining Scheme inspections were carried out
- Regional mining geological study of, china clay and bauxite mines of Thiruvananthapuram and Kollam districts of Kerala covering 31 mining leases was carried out

Shri. Prashant Hegde informed that IBM had requested the DMG, Kerala regarding imposition on condition under rule 27(3) of MCR, 1960 for implementation of exploration program in mining lease as per time schedule prescribed by the Ministry of Mines. He suggested that the proposed techno-city and life-science park in Thiruvananthapuram might be established after the mining of china clay and backfilling of the mined out area up to ground level.

**ATOMIC MINERALS DIRECTORATE FOR EXPLORATION AND RESEARCH,  
THIRUVANANTHAPURAM**

**50.15.0.** Shri K. Balachandran, Officer in-charge, AMD, briefed the work carried out from July 2012 to June 2013:

- Sampling of Thrikunnapuzha-Thottapally eastern extension, Alappuzha-Kochi and Vypin-Munnambam sectors of Kerala for chemical characterization of monazite and zircon
- Mineralogical analysis of heavy mineral fractions from Ponnani-Bey pore, Vypin-Munambam and Nileschwaram-Chandragiri coastal sectors

Proposed program for 2013-14 include exploration in Chavara on behalf of IREL, in conformity with UNFC norms for exploration.

**50.15.1.** Shri S. Srikumar, KMML requested AMD to take up the exploration of heavy minerals below 8 m depth in the entire Chavara belt as good reserves of heavy minerals were available at a depth of 14 m. Shri K. Balachandran replied that if mining was allowed at a depth of 14 m, such an exploration study might be planned accordingly.

**NATIONAL INSTITUTE FOR INTERDISCIPLINARY SCIENCE AND TECHNOLOGY,  
THIRUVANANTHAPURAM**

**50.16.0.** Shri J. Ansari, Sr. Principal Scientist, CSIR-NIIST, presented the EIA study in clay mining areas in Mangalapuram, Azhoor, Pallipuram and Sasthavattom areas in Thiruvananthapuram district. He pointed out that preservation of topsoil and its reuse for reclamation had not been strictly followed by most of the mines. This resulted in huge pits disrupting the drainage and threatening the ecosystem and ground water flow pattern leading

to water scarcity. Also seepage of acidic waters from the mines into downstream areas caused a serious environmental problem. He also discussed the effects of calcium chloride and magnesium chloride used as dust suppressants in china clay mines.

**KERALA CERAMICS LIMITED, KUNDARA, KOLLAM**

**50.17.0.** Shri Samson A., Deputy Manager, KCL, Kundara, requested the Department of Mining and Geology, to bespeak to the Government of Kerala on their behalf to hand over clay bearing revenue lands in Thiruvananthapuram district to Kerala Ceramics for the survival of the company. Shri A. Prabhakumar replied that all clay bearing areas in the district had been acquired for IT development.

**MALABAR CEMENTS LIMITED, WALAYAR, PALAKKAD**

**50.18.0.** Shri Jose Thomas, Mines Manager, requested the Department of Mining and Geology to investigate for limestone on the existing mine floor. Shri A. Prabhakumar advised him to approach MECL.

**Action: Malabar Cements Limited**

**KERALA CLAYS AND CERAMICS PRODUCTS LIMITED, PAPPINISSERI**

**50.19.0.** Shri P.K. Bharathan, Geologist, KCCP informed that as part of the diversification program the company proposed to enter into, granite building stone mining and sand manufacturing in northern Kerala. He requested the Department of Mining and Geology to identify suitable Government lands in Kannur and Kasaragod districts for the purpose. Shri A. Prabhakumar asked

KCCP to send a letter to the Department of Mining and Geology in this regard.

**Action: KCCP Limited**

**50.20.0.** Smt. Rugmini Sukumar, Principal Scientist, NIIST-CSIR, informed that she required around 50 kg of china clay from Erikkulam area as part of her project and requested the Department of Mining and Geology to provide the sample. Shri A. Prabhakumar assured her that the Department would arrange pitting in Erikkulam area for fulfilling her request.

**Action: Department of Mining and Geology**

**KEMDEL, THIRUVANANTHAPURAM**

**50.21.0.** Shri Punnen, Senior Consultant, KEMDEL, requested the Department of Mining and Geology to prospect for sand in the Malampuzha, Walayar and Chulliyar dams to support their project. Shri A. Prabhakumar asked KEMDEL to send a proposal in this regard.

**Action: KEMDEL**

**MECL, HYDERABAD**

**50.22.0.** Shri D. Mohan, Zonal Manager, MECL, enquired about the present status of the proposal for prospecting Maruda gold. Shri. Sreekumar, Deputy Director, Department of Mining and Geology informed that the proposal had been rejected by the Ministry of Environment & Forests. Shri D. Mohan said that MECL was willing to take up exploration works for other organizations.

Shri. A. Prabhakumar requested MECL to take up limestone prospecting for Malabar Cements.

**Action: Malabar Cements Limited**

**KERALA STATE ELECTRICITY BOARD**

**50.23.0.** Shri. Balu V.S., Executive Engineer, KSEB, enquired about the circular send by KSEB. Shri. A. Prabhakumar replied that sand prospecting would be difficult in forest areas and asked KSEB to send a detailed proposal.

**Action: KSEB**

**50.24.0.** Shri. A. Prabhakumar informed that Kerala State Pollution Control Board and Department of Environment would be invited for the next SGPB meeting.

**50.25.0.** Shri D.P. Sreekumar, Deputy Director, Department of Mining and Geology, delivered the vote of thanks.

The 50<sup>th</sup> SGPB meeting concluded at 3.05 pm.

Minutes approved by

Sd/-

**K.S. Srinivas, IAS**

**Secretary to Government & Chairman, SGPB**