

**GEOLOGICAL SURVEY OF INDIA  
EASTERN REGION, KOLKATA**

**TERM REVIEW MEETING, F.S. 2018-19**

The Term Review Meeting (1<sup>st</sup> phase) of Eastern Region GSI, Kolkata was held from 2<sup>nd</sup> to 4<sup>th</sup> January, 2019 in the P. N.Bose Committee room of ERHQ to review the progress of work pertaining to items of Missions-I (STM, GPM & RSAS), Missions-II and Missions-IV of ER, FS 2018-19.

The meeting was Chaired by Shri P.A.Ramesh Babu, Additional Director General & HoD, Eastern Region, GSI and Co-chaired by National Mission Heads/ their representatives in the sessions of respective missions. Dr. Dinesh Gupta, Director General, GSI graced the occasion and reviewed some of the items on 3<sup>rd</sup> and 4<sup>th</sup> January 2018. Regional Mission Heads, DDGs of State units, Supervisory officers and officer-in-charge of different projects attended the meeting for presentation. Dr. Anupendu Gupta, DDG (Retd.), GSI; Dr. S.K. Biswas, Director (Retd.), GSI; Shri Nitish Das, Director (Retd.), GSI and Prof (Dr.) J.S.Roy, University of Calcutta, Kolkata attended as external experts to review the projects.

At the outset, Shri B.K.Mishra, Director, PSS, ER welcomed the Chairman and all the delegates who participated in the meeting which was followed by the opening remarks of the ADG & HoD, ER. Shri P.A.Ramesh Babu, ADG & HoD, ER welcomed all the delegates and advised all participants to give presentations in a very focused and time bound manner. He suggested all the officers and Supervisory officers to follow the comments and guidance of the reviewers for better outcome of the projects of 2018-19.

**Overall Observations and remarks of the Review Committee**

1. All the items were presented by the officers in charge followed by summarizing by the concerned Supervisory officers. Majority of the items are running well and most of them have been presented in a very systematic way.
2. Focus should be given to achieve the objective of the project. The field officers may be ensured to maintain the quality of the work.
3. The Supervisory officers and the concerned RMHs should play a proactive role for successful completion of the project within stipulated time.
4. Interactions to be made regularly with the geologists and geophysicists in respect of exploration project.
5. Sincerity should be maintained in data collection and their synthesis related to each projects.
6. Consultation of the literature may be encouraged to visualise the objectives.
7. New system of working may be adopted and one should come up with new ideas for improvement of societal values.

**ITEM WISE OBSERVATIONS AND COMMENTS FOR THE TERM REVIEW MEETING**  
**(FS 2018-19), GSI, ER**

**MISSION: IV****NAME OF THE RMH: S. N. MOHANTY, Dy. DG & RMH-IV**

Sl. No.	TITLE OF THE ITEM (ITEM CODE)	REMARKS
1.	Geotechnical investigation of Water Resources Development Projects in Odisha (FSPMIS ID: M4EGG/C/ER/S UODS/ 2018/17819)  Officer Presented: Debaprasad Sahoo, Sr. Geologist Supervisory Officer: Jaydip Mukherjee, Director	<ol style="list-style-type: none"> <li>1. Very good presentation and Excellent work.</li> <li>2. Targets of the agencies are fulfilled by the work.</li> <li>3. Highlights were cited.</li> <li>4. The work may be continued.</li> </ol>
2.	Mesoscale (1:10000) landslide susceptibility zonation and slope stability study along Gorubathan-Lava-Rishi road, Kalimpong District, West Bengal. (FSPMIS ID:M4LSSM/NC/ER//2017/18583)  Officer Presented: R S Karmakar, Sr. Geologist Supervisory Officer: T. B. Ghoshal, Director	<ol style="list-style-type: none"> <li>1. Very good presentation.</li> <li>2. Excellent work has been done by the Officers under the guidance of Supervisory officer.</li> <li>3. Specific about mitigation measures.</li> <li>4. Identify whether any debris flow landslide is there or not?</li> <li>5. The work may be continued.</li> </ol>
3.	Geotechnical investigation of Water Resources Development Projects of Jharkhand and Bihar. (FSPMIS ID: M4EGG/ C/ER//2018/ 18575)  Officers Presented: Mayukhee Ghosh, Sr. Geologist Supervisory Officer: T B Ghoshal, Director	<ol style="list-style-type: none"> <li>1. Excellent presentation.</li> <li>2. Due care may be taken during the investigation.</li> <li>3. All the projects are progressing well.</li> <li>4. The work may be continued.</li> </ol>
4.	Geotechnical investigation of Water Resources Development Projects in West Bengal and Andaman and Nicobar Islands. (FSPMIS ID: M4EGG/ C/ER//2018/ 18608 )  Officer Presented: S Baraik, Sr. Geologist and Smt. S. Kavita, Geologist Supervisory Officer: T B Ghoshal, Director	<ol style="list-style-type: none"> <li>1. Excellent presentation.</li> <li>2. The workers did very good work and achieved full target as desired by project agencies. This is praise-worthy.</li> <li>3. The work may be continued.</li> </ol>
5.	Geotechnical investigation of Communication Projects in Eastern Region. (FSPMIS ID: M4EGG/ C/ER//2018/ 18609)  Officers Presented: R S Karmakar, Sr. Geologist and Smt. S. Kavita, Geologist Supervisory Officer: T. B. Ghoshal, Director	<ol style="list-style-type: none"> <li>1. Very good presentation.</li> <li>2. The workers did very good work.</li> <li>3. Cut and cover method, re-alignment of railway line (slight shifting) may be done if required by the sponsored agency.</li> <li>4. The work may be continued.</li> </ol>
6.	Morphotectonic mapping to the northern parts of Ganges Bengal Fault (GBF) and Malda Kishenganj Fault (MKF) falling in parts of Darjeeling district, West Bengal and Kishanganj - Araria districts, Bihar. (FSPMIS ID: M4AFM/NC/ER//2017/19082)  Officer Presented: Shri Deepanjan Ghose, Sr. Geologist Supervisory Officer: Gautam Saha, Director	<ol style="list-style-type: none"> <li>1. The data collection is good but need more improvement in slide preparation and presentation.</li> <li>2. The data for seismicity collected by the officers from field must be properly projected.</li> <li>3. Work need to be upgraded through proper field work.</li> <li>4. Required adequate no. of field days of officers along with Supervisory officer and RMH-IV for enhancing the existing quality.</li> <li>5. The work may be completed as scheduled.</li> </ol>

7.	<p>Seismic susceptibility Assessment in and around Cuttack Urban Agglomeration, Odisha. (FSPMIS ID: M4SHMZ/NC/ER//2018/16218)</p> <p>Officer Presented: Shri Imtikunzuk, Sr. Geologist Supervisory Officer: Gautam Saha, Director</p>	<ol style="list-style-type: none"> <li>1. Power point presentation is not satisfactory.</li> <li>2. Required more input with field validation.</li> <li>3. Follow the SOP.</li> <li>4. Pre-field maps not prepared well.</li> <li>5. Director and RMH-IV involvement become mandatory to enhance quality.</li> <li>6. The work may be completed as scheduled.</li> </ol>
8.	<p>GPS measurements of present day strain across the active transverse tectonic elements in Bihar &amp; North Bengal. (FSPMIS ID: M4SEIS/NC/ER//2018/16148)</p> <p>Officer Presented: V. C. Kharkagonkar, Sr. Geologist Supervisory Officer: Gautam Saha, Director</p>	<ol style="list-style-type: none"> <li>1. Power point presentation is not satisfactory.</li> <li>2. GPS stations established only.</li> <li>3. Quantum of field work is not satisfactory. Try to improve it.</li> <li>4. Complete station preparation at the earliest.</li> <li>5. Director and RMH-IV involvement become mandatory to enhance quality. They must visit to the field item.</li> <li>6. The work may be completed as scheduled.</li> </ol>
9.	<p>Geological Assessment of incidence of Arsenic in groundwater around Biraul, Baheri, Kusheshwarsthan (E and W), Alinagar and adjoining areas in Darbhanga district, Bihar (FSP ID: M4ENV/NC/ER/SU-BR/2018/15595 )</p> <p>Officer Presented: Apurva Kr. Singh, Geologist Supervisory Officer: A. Bishwapriya, Director</p>	<ol style="list-style-type: none"> <li>1. Excellent presentation, substantiated by the Director is also excellent.</li> <li>2. Approach is very good.</li> <li>3. However, causative factors and source may be identified where the Arsenic contents are brought and deposited at the confluence to suggest generic remedial measures.</li> <li>4. Aquifer modeling and classification may be attempted with the help of geophysics (if feasible).</li> <li>5. Type of aquifers which are free of As contamination may be identified and mapped.</li> <li>6. The work may be completed as scheduled.</li> </ol>
10.	<p>Study of fluoride incidences in surface and groundwater in parts of Jamui and Nawada Districts, Bihar. (FSPMIS ID: M4ENV/ NC/ ER/SU-BR/2018/20844)</p> <p>Officer Presented: Navneet Ranjan, Asst. Geologist Supervisory Officer: Mili Singh</p>	<ol style="list-style-type: none"> <li>1. Power point presentation is very good.</li> <li>2. Work progress on right direction.</li> <li>3. Aquifer modeling and classification may be attempted with the help of geophysics (if feasible).</li> <li>4. Type of aquifers which are free of F contamination may be identified and mapped.</li> <li>5.</li> <li>6. The report may be handed over to State Government after final circulation.</li> </ol>
11.	<p>Geo-Environmental Assessment of Patna urban agglomeration, Patna district, Bihar. (FSP ID: M4ENV/NC/ER/SU-BR/2018/21491)</p> <p>Officer Presented: Priya Upadhyay, Geologist Supervisory Officer: A Bishwapriya, Director</p>	<ol style="list-style-type: none"> <li>1. Very good presentation.</li> <li>2. Data provided by the officer is very good.</li> <li>3. Project is progressing in a right direction; Geophysics data should undoubtedly substantiate and enhances the existing quality of work.</li> </ol>
12.	<p>Semi quantitative Study of alpha-particle induced radioactive damages in common rock forming non-radioactive minerals. (FSPMIS ID: M4PET/NC/ER//2018/ 18505)</p> <p>Officer Presented: Smt. Trisrota Choudhury, Sr. Geologist Supervisory Officer: K. Chakraborty, Director</p>	<ol style="list-style-type: none"> <li>1. Excellent work as well as presentation</li> <li>2. RP items should lead to mineral investigation and ore genesis; innovative ideas are excellent and may come out with good publications.</li> <li>3. The project yet to generate data to fulfil the 3<sup>rd</sup> objective.</li> <li>4. During scrutiny of report RMH, ER should check whether data have been generated by this project or not.</li> <li>5. The work may be completed as scheduled.</li> </ol>

13.	<p>Petrogenetic evolution of manganese bearing rocks in Goriajhor Formation, Gangpur Group, Sundergarh, Odisha. (FSPMIS ID: M4PET/NC/ER//2018/ 21928)</p> <p>Officer Presented: Dr.M Maharana, Sr. Geologist Supervisory Officer: K. Chakraborty, Director</p>	<ol style="list-style-type: none"> <li>1. Excellent work done and presentation is very good.</li> <li>2. It embodies good application of metamorphic petrology to understand petrogenetic evolution.</li> <li>3. Whether Mn is identified by EPMA or not Geothermometry from Mn ore is very difficult.</li> <li>4. HoD may look after whether, expenses on wages head continue for next three months.</li> </ol>
14.	<p>Tectono-metamorphic evolution of the pelitic rocks of Proterozoic Singhbhum Group around Kandra-Sini-Lapsa areas, West Singhbhum and Kharswan Districts, Jharkhand. (FSPMIS ID: M4PET/NC/ER//2018/ 15550)</p> <p>Officer Presented: Smt.Trisrota Choudhury, Sr. Geologist Supervisory Officer: K. Chakraborty, Director</p>	<ol style="list-style-type: none"> <li>1. Very good presentation.</li> <li>2. Excellent work done on Classical Metamorphic Petrology.</li> <li>3. Emphasis to be paid to relate the work with mineralization potential.</li> <li>4. The four phases of deformations, identified in the field, need more critical observation to establish the fact.</li> <li>5. Properly answered to all the quarries by the officer.</li> </ol>
15.	<p>Study of Pelagic Sediments associated with Ophiolites sequence of Andaman Islands (FSPMIS ID: M4PAL/NC/ER//2017/19093)</p> <p>Officer Presented: M. Chaturbedy, Sr. Geologist Supervisory Officer: J. K. Biswas, Director</p>	<ol style="list-style-type: none"> <li>1. Objectives are yet to be fulfilled.</li> <li>2. Only sample collection is not the target for any RP item.</li> <li>3. Justify the objective of the RP item.</li> <li>4. As SEM done in December, whether the item may be completed or not.</li> <li>5. Officer may be released (on transfer) after report submission.</li> </ol>
16.	<p>Quantitative assessment of geotechnical properties of soil and rock. (FSPMIS ID: M4GTL/NC/ER//2018/18897)</p> <p>Officer Presented: Anima Gogoi, Sr. Geologist Supervisory Officer: Gautam Saha, Director</p>	<ol style="list-style-type: none"> <li>1. Routine progress done.</li> <li>2. More or less satisfactory progress.</li> <li>3. Proposal of up gradation of the laboratory sent to competent authority in Dec, 2018.</li> </ol>
17.	<p>Post-disaster study of emergent landslides along major road corridors and settlement areas of Darjeeling Himalaya. (FSPMIS ID: M4LS/NC/ER//2018/ 18605)</p> <p>Officer Presented: R S Karmakar, Sr. Geologist Supervisory Officer: T. B. Ghoshal, Director</p>	<ol style="list-style-type: none"> <li>1. Work may be completed in time.</li> </ol>
18.	<p>Post-earthquake intensity estimation by Macroseismic survey. (FSPMIS ID: M4ASI/NC/ER//2018/19160)</p> <p>Officer Presented: D Ghose, Sr. Geologist Supervisory Officer: Gautam Saha, Director</p>	<ol style="list-style-type: none"> <li>1. Good progress.</li> </ol>
19.	<p>Petrological service to state units and outside agencies. (FSPMIS ID: M4ARP/NC/ER//2018/16476)</p> <p>Officer Presented: S. Kumari, Sr. Geologist Supervisory Officer: K. Chakraborty, Director</p>	<ol style="list-style-type: none"> <li>1. Satisfactory progress.</li> <li>2. All works are completed in time.</li> </ol>
20.	<p>Palaeontological service to Projects/ SUs of Eastern Region and outside agencies. (FSPMIS ID: M4CSI/NC/ER//2018/19095)</p> <p>Officer Presented: M. Chaturvedi, Sr. Geologist Supervisory Officer: J. K. Biswas, Director</p>	<ol style="list-style-type: none"> <li>1. Satisfactory progress.</li> </ol>

**LIST OF PARTICIPANTS ATTENDING TERM REVIEW MEETING OF EASTERN REGION FOR FS  
2018-19 HELD ON 2<sup>ND</sup>, 3<sup>RD</sup> & 4<sup>TH</sup> JANUARY, 2019**

In the Chair: Shri P. A. Ramesh Babu, Addl. Director General & HoD, Eastern Region

Sl. No.	Name	Designation
1.	Shri D. Mohan Raj	ADG & NMH-II, Nagpur
2.	Dr. S. Raju	ADG & NMH-IV, CHQ
3.	Shr P.C. Patra	DDG-PSS-P&M, CHQ
4.	Shri G. K. Kesari	DDG, M-IA, CHQ
5.	Shri A. V. Satya Kumar	DDG, M-II, Nagpur
6.	Shri A. P. Rai	DDG, M-IVC, CHQ
7.	Dr. K. Jayabalan	DDG, M-IVA, CHQ
8.	Shri Saudipta Chattopadhyay	Director, P&M-7, CHQ
9.	Shri N.K. Sarkar,	Director, P&M-1, CHQ
10.	Shri Subrata Sarkar,	Director, P&M-2, CHQ
11.	Shri Ashish Kumar Nath	Director, P&M-4, CHQ
12.	Shri S. K. Dash	Director, M-IA, CHQ
13.	Shri R. K. Mishra	Director (GP), WR, Jaipur
14.	Dr. Subrata Chakraborti	Director (TC), M-IV, CHQ
15.	Dr. S. K. Som	Director, GSD, CHQ
16.	Shri S. Dhanendran	Suptdg. Geologist, NMH-II, Nagpur
17.	Shri V. Ramamury	Suptdg. Geophysics, CHQ
18.	Shri A. Saha	Sr. Geophysicist, M-IA, CHQ

**External Experts**

Sl. No.	Name	Designation
19	Dr. Anupendu Gupta	DDG (Retd.) GSI
20	Shri P. Darafdar	DDG (Retd.) & Consultant to GSI
21	Dr. S. K. Biswas	Director (Retd.) GSI
22	Shri Nitish Das	Director (Retd.) GSI
23	Prof. (Dr.) Jyoti Shankar Roy	University of Calcutta, Kolkata

**ERHQ**

Sl. No	Name of Officer	Designation
24	Shri N. K. Punj	DDG & RMH-I
25	Md. Aminul Islam	DDG & RMH-II
26	Shri Satya Narayan Mohanty	DDG & RMH-IV
27	Shri C.K. Sengupta	DDG, NEnR, M-IIB
28	Shri B.K. Mishra	Director, PSS
28	Shri P.K. Jena	Director, RM-II
30	Smt. Kakoli Deb	Director, RM-I
31	Shri J. K. Bishwas	Director, ER
32	Shri D. Bhattacharya	Director (GP)
33	Dr. (Smt.) Kasturi Chakraborty	Director
34	Dr. T.B. Ghosal	Director
35	Dr. Basudeb Datta,	Director
13	Dr. Sanjeev Kumar	Suptdg. Chemist
14	Shri Sanjeeb Bhattacharya	Suptd. Geologist
15	Dr. (Smt.) P. M. Bhattacharya	Suptdg. Geophysicist
16	Shri S M Syiem	Suptdg. Geophysicist
17	Shri G.C. Mukhopadhyay,	Suptdg. Geologist
18	Shri A. Gupta	Supdg. Engineer

19	Shri B. K. Behera	EE (NFJAG)
20	Shri Parsuram Behera,	Sr. Geologist
21	Shri W. Rocky	Sr. Geologist
22	Shri Intikumzuk	Sr. Geologist
23	Dr. Bani Ranjan Mishra	Sr. Geologist
24	Dr. (Smt.) Madhusmita Sahoo	Sr. Geologist
25	Smt. Anima Gogoi	Sr. Geologist
26	Shri Satyendra Baraik	Sr. Geologist
27	Smt. Ritupragya Chourasia	Sr. Geologist
28	Shri Sourav Sen,	Sr. Geologist
29	Shri Rabisankar Karmakar	Sr. Geologist
30	Smt. Mayukhee Ghosh	Sr. Geologist
31	Shri Deepjyoti Gogoi,	Sr. Geologist
32	Shri Deepanjan Ghosh	Sr. Geologist
33	Shri Vishal Chhetri Kharkongor	Sr. Geologist
34	Dr. Mandakini Maharana	Sr. Geologist
35	Smt. Trisota Choudhuri	Sr. Geologist
36	Smt. Shivangi Kumari	Sr. Geologist
37	Shri Rakesh Deepankar	Sr. Geologist
38	Shri Mritunjay Chaturvedy	Sr. Geologist
39	Ms. Abha Urmila A. Tirkey	Sr. Geologist
40	Dr. Satya Narayan Sethy	Geologist
41	Smt. Kavitha S.	Geologist
42	Shri Ranjan Mukherjee	Sr. Geophysicist
43	Dr. P.N. Nagaraja	Sr. Geophysicist
44	Shri Promod Kr. Yadav	Geophysicist
45	Shri Ramasatish Thota	Geophysicist
46	Shri Arun Singh	Geophysicist
47	Shri Vikash Chandra Pandey	Geophysicist
48	Shri Niva Brahma	Geophysicist
49	Shri Arun Kumar	Asstt. Geophysicist
50	Shri Ashishit Lakra	Asst. Geophysicist

**SU: BIHAR**

Sl. No.	Name	Designation
51.	Dr. Sudipta Sarkar	Dy. D. G.
52.	Shri S. K. Dutta	Director (G) (TC)
53.	Shri Ravi Shankar Kumar Ravi	Director (G)
54.	Shri Akhouri Bishwapriya	Director (G)
55.	Ms. Priyadarshi Sahoo	Director (G)
56.	Ms. Mili Singh	Suptdg. Geol
57.	Shri Pawan Kumar Yadav	Sr. Geologist
58.	Shri Rupesh Kumar	Sr. Geologist
59.	Shri Asad. A. Raza	Sr. Geologist
60.	Shri Avinash Niranjana	Sr. Geologist
61.	Shri Apurva Kr. Singh	Geologist
62.	Smt. Priya Upadhyay	Geologist
63.	Shri Ashmeer Mohammad	Geologist
64.	Shri Mithun Deb	Geologist
65.	Shri Ringphami Awungshi	Geologist
66.	Shri Abhaya Kr. Maurya	Geologist
67.	Ms. Sikha Dagar	Geophysicist
68.	Shri Navneet Ranjan	Asst. Geologist

**SU: JHARKHAND**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>
69.	Shri Janardan Prasad	Dy.D.G
70.	Dr. Saibal Chandra Mitra	Director (G)
71.	Shri Partha Dutta	Director (G)
72.	Shri Niraj Jaiswal	Director (G)
73.	Dr. (Smt.) Debashree Pratap Singh	Suptdg. Geologist
74.	Smt Lawanya Suren	Sr. Geologist
75.	Shri Arun Kumar Kujur	Sr. Geologist
76.	Shri Hrudananda Naik	Sr. Geologist
77.	Ms Chhaya Minz	Sr. Geologist
78.	Shri Sudeep Manish Toppo	Sr. Geologist
79.	Smt. Aditi das	Sr. Geologist
80.	Smt. Abhilipsa Dash	Sr. Geologist
81.	Shri Kshirod Kumar Sahoo	Sr. Geologist
82.	Shri Abhishek Das	Sr. Geologist
83.	Shri Rana Shil	Geologist
84.	Shri Ravi Shankar Chaubey	Geologist
85.	Shri Deeju T R	Geologist

**SU:ODISHA**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>
86.	Shri L. L. Vishwakarma	Dy.DG
87.	Shri M. K. Patel	Director
88.	Shri Rajesh Kumar Naik	Director
89.	Shri Jaydeep Mukherjee	Director
90.	Shri A. K. Tripathy	Director
91.	Shri Uttam Kumar Pradhan	Suptdg Geologist
92.	Shri Israil Khan	Suptdg Geologist
93.	Shri Kshirod Kumar Nayak	Suptdg Geologist
94.	Shri Rajendra Kumar Ghadei	Sr. Geologist
95.	Shri Giridhari Das	Sr. Geologist
96.	Shri Deba Prasad Sahoo	Sr. Geologist
97.	Shri Ramesh Kishan	Sr. Geologist
98.	Shri B. C. Pattnaik	Sr. Geologist
99.	Shri Satrugana Majhi	Sr. Geologist
100.	Shri Biswajit Lenka	Sr. Geologist
101.	Shri Harman Mahanta	Sr. Geologist
102.	Ms. Shradhanjali Subhadarshini	Sr. Geologist
103.	Smt. Sonali Behera	Sr. Geologist
104.	Shri Srikanth Doradla	Sr. Geologist
105.	Shri Tarini Prasad Sahoo	Sr. Geologist
106.	Shri Saptarshi Mallick	Geologist
107.	Shri Supriya Chakraborty	Geologist
108.	Shri Soumya Mitra	Geologist
109.	Smt. Priya Pachauri	Geologist
110.	Ms. Mousumi Bhattacharjee	Geologist
111.	Shri Yogeesh S.N	Geologist

**SU:WB-AN**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>
112.	Shri. Prasanta Kumar Das,	Dy. DG, SU:WB-AN
113.	Shri. A.K. Huin,	Director
114.	Shri. S.K. Saha, Director,	Director
115.	Shri. Indranil Chakraborty	Superintending Geologist
116.	Shri. Avijit Mukherjee	Sr. Geologist
117.	Shri Debtanu Das	Sr. Geologist
118.	Shri. Bulbul Mondal	Sr. Geologist
119.	Shri. Sandip Neogi	Sr. Geologist
120.	Ms. Madhusmita Samal	Sr. Geologist
121.	Shri. Mahesh Kumar S	Geologist
122.	Shri. Sambuddha Mukherjee	Geologist
123.	Dr. Mansi Jain	Geologist
124.	Shri Pritam Panja,	Geologist
125.	Ms. Priyanka Singh Rao	Geologist
126.	Shri Rayala Seshachalam	Geologist
127.	Ms. Anindita Chakraborty	Asst. Geologist
128.	Ms. Meenakshi Baneerjee	Asst. Geologist