Ministry of Mines
National Mineral Exploration Trust

Minutes of the 25th Technical-cum-Cost Committee (TCC) meeting held on 5th and 6th November, 2020 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

The 25th meeting of Technical-cum-Cost Committee (TCC) of National Mineral Exploration Trust (NMET) was held under the chairmanship of Shri Janardan Prasad, Addl. Director General, Geological Survey of India (ADG, GSI), and Chairman, TCC, NMET on 5th and 6th November, 2020 at GSI, DGCO, A-II Pushpa Bhawan, New Delhi through videoconferencing. The technical experts and representatives of Notified Exploration Agencies (NEAs) participated through their respective VC nodes. The list of participants is at Annexure-I.

Dr. L. P. Singh, Director, GSI & Member Secretary, TCC-NMET, welcomed Shri Janardan Prasad, ADG, GSI & Chairman, TCC, Members of the TCC and participants representing various NEAs. He briefed about the six project proposals submitted by NEAs for consideration of 25th TCC meeting.

Shri Janardan Prasad, ADG, GSI and Chairman, TCC welcomed all the participants. After brief introductory session with the participants the proceedings of meeting started as per circulated agenda.

The agenda-wise discussion followed.

25.1: Technical evaluation of new project proposals:

25.1.1:

a. General Exploration (G2) for bauxite in Nandana Block-1, District-Devbhumi Dvarka, Gujarat.

b. General Exploration (G2) for bauxite in Nandana Block-2, District- Devbhumi Dvarka, Gujarat.

c. General Exploration (G2) for bauxite in Rann Block, District- Devbhumi Dvarka, Gujarat.

i. The Commissioner of Geology and Mining, Gujarat has submitted three project proposals in Nandana Block-1, Nandana Block-2 and Rann block on Bauxite exploration.

ii. It has been conveyed that the proposed area is under soil cover followed by the Gaj beds which include bands of Limestone, Gypsum, Gypseous clays and other clays. Gypsum occurs mostly as selenite plates in clay which varies in thickness from 0 to a maximum of 18m while the average estimated thickness for the whole deposit being 7.5m in an area of 3.8 sq km. Bauxite and lateritic bauxite is confined to the Deccan Trap Inliers.

iii. It has been observed that all the three blocks are adjacent to each other and may be proposed in a single block.

iv. It has been suggested to present a latest regional geological map of the area vis-a-vis the location of three blocks on the map.

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v. As the proposal submitted for search of metallurgical grade bauxite and bauxites to be used by cement industries, then the assessment of other commodities like limestone and gypsum need to be considered. As limestone and gypsum are also considered as raw materials for cement industry. As there are resources of limestone and gypsum in the area, hence all three commodities may be included in the proposal.

vi. There are some working mines in the area, hence a clear picture of the lease hold and free land may be demarcated in map. Geological map of 1:50,000 scale of GSI may be used for demarcation of proposed area.

vii. There are earlier boreholes by DGM and GSI in the area drilled for bauxite and boreholes drilled by CGM for gypsum, it has been decided that all lithologs and analytical data along with location of drill holes may be included in the project proposal.

viii. After detailed discussion it has been decided that the CGM will resubmit the proposals by incorporating all the analytical results and previous borehole data in the next TCC meeting.

In view of the above, the committee has recommended that CGM, Gujarat may resubmit the project proposal by clubbing three proposals [Nandana block-1 & 2 and Rann] after incorporating suggestions/ recommendations in the next TCC meeting.

25.1.2 General Exploration (G2) for limestone in Dondapadu Limestone Block in Dondapadu Cluster (Cluster-6), Mellacheruvu Mandal, District- Suryapet, Telangana.

i. The TSMDC has submitted a project proposal for G2 stage limestone exploration after completion of G4 stage exploration in Dondapadu limestone block.

ii. TCC in its 14th meeting held on 21st and 22nd May 2018 recommended to club 15 blocks of DMG Telangana to make 8 clusters for G4 level. The committee also recommended the exploration programme up to G2 Stage and at the end of G4 and G3 stage of exploration, the projects will be reviewed by TCC to decide about the next stage of exploration.

iii. The cluster-6 consists of Dondapadu and Kothagudem limestone blocks. EC in its 8th meeting held on 12th June 2018 approved exploration work upto G3 and G2 for each blocks.

iv. In view of this the outcomes of the G4 stage exploration have been reviewed by the committee.

v. The TSMDC has geologically mapped 46.82 sq km area on 1: 12500 with 4 scout boreholes totalling 197m and collecting 153 numbers of core samples. Petrographic study has been carried out for 4 core samples and specific gravity has been determined for 8 core samples.

vi. Based on the G4 stage exploration a tentative reconnaissance resources (334) of about 56.54 MT has been assessed having average grade of 44.89% CaO and 16-18% SiO_2.

vii. Based on interpreted geological section with the help of four boreholes in Dondapadu block, it is noticed that the cement grade limestone is occurring

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below a 16-28m thick zone of silica rich limestone which is considered as a part of overburden and the average thickness of overburden is >20m which is higher than that of the limit of ore vs overburden ratio for any open cast mining.

viii. In view of the above observations the committee suggested not to take up further stage of exploration as of now.

In view of the above, the committee has recommended that no further stage of exploration may be carried out in Dondapadu block as the overburden ratio is much higher and may not be cost effective for mining as of now. It is also recommended to cancel the approved G3 and G2 project of Dondapadu and Kothagudem limestone blocks.

25.1.3 General Exploration (G2) for limestone in Mattampally Two (02) Limestone Block in Mattampally Cluster (Cluster-2), Mattampally Mandal, District- Suryapet, Telangana.

i. The TSMDC has submitted a project proposal for G2 stage exploration for two Limestone blocks (Mattampally Block-1 & Mattampally Block-2) in cluster-2 Mattampally area, District- Suryapet, Telangana.

ii. TCC in its 14th meeting held on 21st and 22nd May 2018 recommended to club 15 blocks of DMG Telangana to make 8 clusters for G4 level. The committee also recommended the exploration programme upto G2 Stage and at the end of G4 and G3 stage of exploration, the projects will be reviewed by TCC to decide about the next stage of exploration.

iii. The cluster-2 consists of Mattampally Block-1 and Mattampally Block-2 limestone blocks. EC in its 8th meeting held on 12th June 2018 approved exploration work upto G3 and G2 for each blocks.

iv. In view of this the outcomes of the G4 stage exploration have been reviewed by the TCC.

v. Geological mapping of 14.65 sq km area on 1: 12,500 scale, 4 scout drill boreholes totalling 200 m and collection of 167 numbers of core samples have been carried out by TSMDC.

vi. Based on analytical results of surface samples and applying end use classification for cement grade limestone as cut off, about 8.38 sq km area has potential for cement grade limestone.

vii. A tentative reconnaissance resources (334) of about 59.50 MT has been assessed having average grade of 46.97% CaO and 9-12% SiO_2.

viii. Based on geological section along boreholes in Mattampally blocks (Block 1 & 2), overburden thickness of about 8-24m with average overburden of >20m has been observed which is much higher than that of the limit of ore and overburden ratio for any open cast mining.

ix. In view of this the committee suggested not to take up next higher stage of exploration as of now.

In view of the above, the committee has recommended that no further stage of exploration may be carried out in Mattampally blocks as the overburden ratio is

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much higher and may not be cost effective for mining as of now. It is also recommended to cancel the approved G3 and G2 project for Mattampally block-1 and Mattampally block-2 limestone blocks.

25.1.4 Reconnaissance Survey (G4) for Kyanite in Kallahalli Kyanite block [KIOCL_15_KA_KKB] District- Mysore, Karnataka

i. The KIOCL has submitted a G4 level project proposal for Kyanite exploration in Mysore district Karnataka. In the said project, it is aimed to assess the mineralization of Kyanite and associated minerals in proposed area in order to carve out a potential mineralization of Kyanite and associated minerals.

ii. The G4 stage exploration work has been proposed over an area of 26.67 sq km in toposheet no 57D/08.

iii. Geological, geophysical mapping along with scout drilling has been proposed in the area. KIOCL has submitted that detailed investigation by GSI in 1977-78 in Malleswaranbetta area indicated a possible Kyanite reserve of 0.43MT of in situ ore and 20,000 tonnes of float ore with about 60% Kyanite concentration of refractory grade.

iv. After detailed deliberations, the committee opined that the Kyanite resource may be of refractory grade only. The recommendation of exploration for refractory grade minerals for NMET funding may not be in the spirit of NMET Fund utilisation.

v. In view of the above, the committee has decided not to recommend the project for approval of Executive Committee.

In view of the above, the committee has recommended not to take up the Reconnaissance Survey (G4) exploration for Kyanite in Kallahalli Kyanite block [KIOCL_15_KA_KKB] Mysore District, Karnataka.

25.2 Review of the Geological Reports of completed projects

25.2.1 Geological report on Preliminary Exploration (G3) for Potash in Lakhasar Bock, Lakhasar Sub-Basin, District- Bikaner, Rajasthan [MECL]

i. The geological report and outcomes of Potash exploration in Lakhasar block Bikaner district have been reviewed by the committee.

ii. It has been conveyed that the assigned targets have been successfully achieved by the MECL.

iii. MECL has conveyed that the Potash resource have been estimated for varied cut-off grades since IBM has not provided/decided cut-off grade, threshold or end use specifications for Potash.

iv. The MECL has reported the following resource keeping 1m minimum stoping width and 2.39 as average Specific Gravity:

Inferred (333) category

- 44.972 MT with 5.20% K average at >3% K cut-off.
- 53.692 MT with 4.39% K average at >2% K cut-off, and

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- 104.03 MT with 3.21% K average at >1% K cut-off

Reconnaissance (334) category

- Similarly, 42.22 MT with 4.48% K average at >3% K cut-off.
- 51.56 MT with 4.21% K average at >2% K cut-off, and
- 99.61 MT with 2.90% K average at >1% K cut-off

v. MECL has conveyed that the State Government Rajasthan has opined that the Potash block can be auctioned after G3 stage exploration.

In view of the above, the committee has decided that the geological report may be handed over to State Government and considered comments of State DGM, Rajasthan may be sought on the possibility of auctioning of this block.

25.2.2 Geological Report on Reconnaissance Survey (G4) for Manganese in Tamiya Block, District- Balangir, Odisha

i. It has been conveyed that the assigned targets have been successfully achieved by MECL.

ii. Based on the geophysical studies scout bore holes have been planned and samples have been analysed.

iii. It has been conveyed that the Tamiya block is not potential, therefore resource estimation has not been done.

Based on the deliberations and discussions made, the committee has expressed that MECL should be more cautious on project formulation of commodities like Manganese, Bauxite, Iron Ore and Limestone. The pre-field studies may be elaborately carried out before conceiving project proposals on Manganese and Bauxite and selection of area to avoid such outcomes.

25.2.3 Geological Report on Reconnaissance Survey (G4) for Manganese in Rengali Block, District- Balangir, Odisha

i. The quantum of work assigned for the G4 stage exploration for Manganese in Rengali block has been successfully achieved by MECL.

ii. It has been conveyed that the thin manganese ore zones have been intersected only in two boreholes i.e., MRM-36 and MRM-38 and both the boreholes are about 2km apart from each other.

iii. Based on the exploration work carried out by MECL an estimated resource of 12090.285 tonnes of Manganese has been calculated through Cross Sectional Area method.

The committee has noted the outcome of project and suggested to submit the report to NMET Secretariat.

25.2.4 Geological Report on General Exploration (G2) for Manganese in Rengali Block, District: Balangir, Odisha

i. The quantum of work assigned for the G2 stage exploration for Manganese in Rengali block has been successfully achieved by MECL.

ii. The block area has been scanned by surface geophysical survey i.e. gravity, magnetic and resistivity to find out the disposition and depth persistence of the ore bodies.

iii. It has been conveyed that the manganese mineralization is occurring in the Khondalite and also in contacts between Khondalite and Calc-silicate/quartzite. Similarly, the mineralization occurs as lenses along shear zones and foliation in Khondalite as lenses.

iv. Based on the exploration work a total resource of 0.327 MT with 21.37% Mn has been estimated in both north and south Rengali blocks.

The committee has noted the outcome of project and suggested to submit the report to NMET Secretariat.

25.2.5 Geological Report on Reconnaissance Survey (G4) for Manganese in Babja Block, District- Balangir, Odisha.

i. The project was approved in 10th EC meeting held on 30.10.2018.

ii. It has been conveyed that the Geophysical Survey (Random Magnetic Survey) for 320 points have been completed within 28 days.

iii. After interpretation of magnetic survey data six geomagnetic anomaly zones had been identified and five scout boreholes were proposed.

iv. MECL has informed that the drilling and other associated exploration activities in the block could not be taken up due to local law and order problem. The matter was also discussed in the 24th TCC meeting.

v. In view of the law and order problem in the area, is MECL has proposed to close the ongoing project.

The committee suggested MECL to submit the geological report along with certificate from State Government regarding the law and order issue before pre closure/terminating the project.

25.2.6 Detailed Exploration (G1) in Veeranam Lignite Block, District- Cuddalore, Tamil Nadu.

i. The G1 level exploration for lignite in Veeranam Block was approved in 4th EC meeting held on 21st February, 2017 at the cost of Rs. 6763.44 Lakhs (excluding tax). The block was sub-divided into 4 sub-blocks.

ii. It was decided that initially the exploration in first two blocks will be taken up thereafter the exploration in other two blocks may be carried out.

iii. The exploration in Veeranam Lignite Block-I have been completed by MECL and a resource of 204 MT have been estimated.

iv. The committee suggested that the end use classification of lignite resource may be made and incorporated in the report.

The committee has suggested that the geological report for Veeranam Lignite block-1 may be submitted to the NLCIL/State Government for auctioning.

25.3 Review of ongoing projects

25.3.1 BRH Iron Ore Mines, NEB Range M/s RMMPL, ML No. 2010, District- Ballari, Karnataka.

i. The project BRH Iron Ore Mines, NEB Range M/s RMMPL, ML No. 2010, (G3/G2) District- Ballari, Karnataka was approved in the 5th EC meeting held on 6.10.2017 at a cost of Rs 872.24 lakh.

ii. MECL has conveyed that only 456 m drilling against the target of 3495m have been completed till the end of Oct, 2020. Other exploration components of the project are yet to be initiated.

iii. It appears that the most of geological exploration components have not been initiated by the NEA.

The committee expressed its concern over the slow progress of work and directed MECL to divert its resources to complete the project. The committee suggested MECL to submit a delay statement with the sequence of events. The committee requested EC to take a view on this considerable delay of more than 3 years for initiation of project.

25.3.2 Recherla Block (G2), Godavari Valley Coal Field, Andhra Pradesh.

i. The target vis-à-vis achievement in Recherla block Godavari valley coal field have been reviewed and it has been observed that about 83% drilling has been achieved by MECL till Oct, 2020.

ii. It has been submitted that analytical results of 84 samples have been received so far against the target of 450 samples.

iii. MECL has conveyed that the Geological report will be submitted by December, 2020.

iv. The committee observed that, with present pace of analyses, it is apparent that the sample analyses may not be completed in the assigned timeline. MECL needs to enhance the pace of sample analyses to achieve the target in set timeline.

The committee directed MECL to complete the project in assigned timeline and submit the report by December, 2020. No further time extension will be granted for this project.

25.3.3 Reconnaissance Survey (G4) for Magnetite and Ni-Co-Cr in Mollen-Jopi-Ziphu and adjoining area, Naga Hills Ophiolite, District- Phek, Nagaland.

i. The progress of work in the Mollen-Jopi-Ziphu and adjoining area, Naga Hills Ophiolite, District- Phek, Nagaland has been reviewed by the committee.

ii. It has been conveyed that the exploration work has been completed and report is under finalisation.

iii. The DGM, Nagaland has informed that the two varieties of Iron ore have been reported from the area. It has been conveyed that total 5 mineralised zones have been identified in the area.

iv. About 4.93 MT resource have been estimated under 334 category and DGM Nagaland proposed to upgrade the project for next higher stage.

The committee opined that the Geological report of G4 stage exploration should be submitted by 31.1.2021 thereafter decision on upgradation on next stage will be taken.

25.3.4 Preliminary Exploration (G3) for Limestone in Salumi block, District-Kiphire, Nagaland.

i. The progress and achievement of G3 stage Limestone exploration in Salumi block Kiphire district Nagaland have been reviewed by the committee.

ii. It has been conveyed that the exploration work has been completed and report is under finalisation.

iii. It has been conveyed that the cut-off grade of CaO (Minimum 40%) and SiO2 <14% have been kept for delineation of cement grade horizons.

iv. Total in-situe resource of 3.92 MT has been estimated with CaO (43.46% - 48.60%) and SiO_2 (1.99% - 13.01%).

The committee suggested to classify the limestone grades fallowing End Use Grade classification of IBM into Cement/ Industrial /SMS grade limestone. The report is to be submitted by 31.1.2021.

25.3.5 Review of limestone projects executed by MERIT, Andhra Pradesh

i. A total of 07 projects for G2 level exploration for limestone of DGM, Andhra Pradesh were approved in 7th EC meeting held on 12th March, 2018.

ii. MERIT representative informed that the exploration work of Kadapa cluster (Bhimagundam, Gundlakunta and Dommaranandhyala-Veparala) has been completed and geological report have been submitted for external peer review.

iii. The scheduled timelines of these projects were delayed as the exploration blocks areas remained covered with seasonal crops like red chilli and cotton crops in private patta lands and the farmers are strongly resisting to deploy drilling machinery.

iv. The Committee asked to incorporate all the comments suggested by the peer reviewer in Geological report. Final approval of the geological report will be given after review of the geological report in next TCC meeting.

v. It has been conveyed that the exploration work in Guntur cluster (Madinapadu, Mutyalampadu-Tangeda, Tangeda and Ramapuram) has been completed.

vi. The drilling and sampling activities have been completed and samples have been submitted to laboratories for analyses. Due to COVID-19, the chemical analyses have been delayed as the laboratory is situated in containment zone.

vii. The exploration work in Guntur cluster blocks are expected to be completed by June, 2021 in view of the COVID-19 Pandemic.

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The Committee directed that the final approval of the geological report will be given after review of the geological report in next TCC meeting. It was also informed that review of the geological report for each block will be done separately.

The Committee conveyed that exploration work will be reviewed after receiving the chemical analysis of all the blocks of Guntur cluster (Madinapadu, Mutyalampadu-Tangeda, Tangeda and Ramapuram).

25.3.6 Review of limestone projects executed by KIOCL

i. KIOCL presented the exploration work carried out in Reddipalaiyam amalgamated Block (G2), District- Ariyalur, Tamil Nadu.

ii. The project was recommended in 22nd TCC meeting held on 13th and 14th November 2019. It was suggested that the initially borehole spacing shall be as per G3 stage exploration norms and after the review of outcome and analytical results, close spaced drilling may be carried out.

iii. The chemical analysis of the core samples shows more than 48% CaO and SiO_2 less than 5% which is of Portland Cement grade (CaO 44-52% & MgO 3.5%).

In view of the above, the committee suggested to complete the project as per approved timelines.

25.3.7 Review of Tentuliguda Manganese (G4) investigation, District- Koraput, Odisha executed by DGM, Odisha

i. The DGM Odisha informed that exploration work has been halted due to the local public resistance.

In view of the above, the committee suggested to submit the details of work carried out so far and outcomes along with certificate from local authority regarding law and order issue in next TCC meeting to take a view on dropping /cancellation the approved project.

25.4 Requirement of additional drilling/sampling/core boxes etc. for the approved ongoing projects

i. The MECL has submitted requirement of additional drilling, sampling and core boxes for the approved projects. The committee has reviewed the requirement and approved the additional components for projects detailed below:

(1) Baraganda (G2) for copper, District- Giridih, Jharkhand additional cost **₹35,80,455/-** (Annexure-II)

(2) Alathiyur Limestone Block (G2), District- Ariyalur, Tamil Nadu additional cost **₹77,880/-** (Annexure-III)

(3) Babja Manganese Block (G2), District- Balangir, Odisha additional cost **₹7,200/-** (Annexure-IV)

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(4) Sendurkhar Bauxite Block (G3), District- Kabirdham, Chhattisgarh additional cost **₹3,28,504/-** (Annexure-V)

ii. Regarding additional 81.50m drilling and core boxes in Adanakurichi Limestone Block (G2) Ariyalur, Tamil Nadu, committee suggested to submit the details of borehole litholog in the next TCC meeting. After review of the litholog the decision on additional drilling will be taken.

iii. Regarding additional Sp. Gravity samples in Unjjini Limestone Block (G2) and Anandwadi Limestone Block (G2), committee has decided that there is no need of additional specific gravity sample analyses.

iv. Regarding additional chemical sampling in Biarpalli Manganese Block (G2) and Dungripalli Manganese Block, the committee has decided that the borehole data and lithologs needs to be shown in next TCC meeting thereafter a view of additional sample analyses will be taken.

25.5 Cancellation of General exploration (G2) for Limestone in Diggaon Limestone Block Kalaburgi District, Karnataka

i. The project was approved in 15th EC meeting held on 28.11.2019 for G2 stage exploration of Diggaon limestone block.

ii. Subsequently, MECL vide letter dated 5.8.2020 has requested NMET to withdraw approval of G2 stage limestone exploration in Diggaon block as G3 level explored Diggaon limestone block is already included in the list of 50 blocks earmarked for auctioning.

iii. It is pertinent to mention that the G3 level exploration have been completed by MECL using NMET fund during the period from Oct, 2018 to Sep, 2019. Furthering this, during exercise of blocks finalisation for auctioning, in Ministry of Mines in June, 2020, the MECL has included the Diggaon blocks (G3 stage) in the list of 50 blocks earmarked for auctioning.

iv. State Government of Karnataka, during the TCC meeting has requested MECL to carry out G2 stage exploration before putting up for auctioning of block.

In view of the above, the committee recommended that EC may take a view on Diggaon G2 stage exploration block as the Diggaon block (G3 stage) has already been included in the list of blocks to be auctioned.

25.6 Inclusion of Induction probe in SoC of NMET.

i. Electromagnetic-induction logs record the electrical conductivity or resistivity of the rocks and water surrounding the borehole. Electrical conductivity and resistivity are affected by the porosity, permeability, and clay content of the rocks and by the dissolved-solids concentration of the water within the rocks. The electromagnetic-induction probe is designed to maximize vertical resolution and depth of investigation and to minimize the effects of the borehole fluid.

ii. Induction probes have been designed specifically for small-diameter monitoring wells. Induction logs can be collected in water, air, and mud-filled holes and through PVC casing. Induction logs, which are commonly run in combination

with gamma logs, are used to identify lithology and zones of electrically conductive contamination such as landfill leachate and saltwater intrusion.

In view the utility of Induction probe in mineral exploration, the committee has recommended to include the Induction Probe in SoC of NMET. The charge/rate of Induction Probe may be decided by NMET.

25.7 In concluding remarks Chairman, TCC, NMET expressed that the NEAs should come well prepared with all scientific outcomes viz. analytical results, core litholog, geological /geophysical maps, target vis-à-vis achievement of NQT, category wise estimated resource value etc. for the review of the particular project so that a clear outcome may be concluded at the time of review. He also suggested that all the additional work components, additional cost or timeover will be given during review of the project in TCC meeting. The review of the ongoing projects will be done in every six months.

The Chairman desired that from next TCC meeting a short summary of 1-2 page should be provided in advance to the TCC, Secretariat for the review of projects or geological reports.

25.8 The meeting ended with vote of thanks to chair by Director and Member Secretary, TCC, NMET.

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List of TCC members attended 25th Technical-cum-Cost Committee (TCC) meeting of NMET held on 05th and 06th November, 2020 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

S. No.	Name/Designation	Status	Remarks
1	Shri Janardan Prasad, ADG & HoD, SR, GSI	Chairman, TCC, NMET	Attended in person
2	Shri Ranjan Kumar Sinha, Controller General (Retd.) Indian Bureau of Mines	TCC Member	Attended via videoconference
3	Shri P. Tarafdar, Dy. Director General (Retd.) Geological Survey of India	TCC Member	Attended via videoconference
4	Dr. Manoranjan Mohanty, Dy. Director General (Retd.) Geological Survey of India	TCC Member	Attended via videoconference
5	Shri Naeem Ahmad, General Manager-Exploration (Retd.), CMPDI Ltd.	TCC Member	Attended via videoconference
6	Dr. Anjani Kumar, Dy. General Manager (Exploration) & HoD-Planning (Retd.), MECL	TCC Member	Attended via videoconference
7	Shri J. V. Ramarao, Dy. Director General (GP), Geological Survey of India	TCC Member	Attended via videoconference
8	Dr. L. P. Singh, Director, Geological Survey of India	Member Secretary, TCC, NMET	Attended in person
9	Shri Amit Saran, Director, NMET, MoM	TCC Member	Attended via videoconference
10	Shri P. K. Maharana, AGM (Finance), NALCO	TCC Member	Attended via videoconference
11	Shri Vinay Pal, Assit. Cost Account Officer (Finance), Geological Survey of India	TCC Member	Attended in person

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Annexure-I

List of participants attended 25th Technical-cum-Cost Committee (TCC) meeting of NMET, held on 05th and 06th November, 2020 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

S. No.	Name/Designation	Email ID	Contact No	Organisation
1	Sh. Janardan Prasad, ADG & HoD, SR, GSI, Hyderabad	janardan.prasad@gsi.gov.in	7763800788	Chairman, TCC
2	Shri Ranjan Kumar Sinha, Controller General (Retd.) IBM	sinhark57@rediffmail.com	9421777637	Member, TCC
3	Sh. Pradipta Tarafdar, DDG (Retd.) GSI	tarafdar.pradipta@gmail.com	9503088847	Member, TCC
4	Sh. Manoranjan Mohanty, DDG (Retd.) GSI	manoranjanmoha@gmail.com	9483511287 8249014425	Member, TCC
5	Sh. J. V. Ramarao, DDG (GP) (Retd.) GSI	rarajammi@gmail.com	9440691284	Member, TCC
6	Sh. Anjani Kumar, (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member, TCC
7	Shri Naeem Ahmed, (Retd.), CMPDI	ahmadnaeem17@yahoo.co.in	8588092153	Member, TCC
8	Sh. Amit Saran, Director & HoD, NMET	amit.saran@nic.in	9717647259	Member, TCC
9	Dr. L. P. Singh, Director, GSI	nmet-tcc@gov.in	9490748249	Member Secretary, TCC
10	Sh. P. K. Maharana	pmaharana@rediffmail.com	8500669500	Member, TCC
11	Sh. Vinay Pal, ACAO, GSI	palvinay009@gmail.com	8527368161	Member, TCC
12	Dr. Deshraj Trivedi, Senior Geologist	nmet-tcc@gov.in	9419244294	TCC, NMET
13	Sh. Subhash Kumar, Senior Geologist	nmet-mines@gov.in	9868302624	NMET
14	Sh. D. M. Solanki, Additional Director (Exploration)	ad-tech-cgm@gujarat.gov.in		Geology and Mining, Gujarat
15	Sh. K. Rajasekhar Reddy General Manager (Mining)	tsmdcltd@gmail.com	8008558580	TSMDC, Hyderabad
16	Sh. M. S. Jairam DDG (Retd.), GSI, Technical advisor	tsmdcltd@gmail.com	9866987154	TSMDC, Hyderabad
17	Shri V. Koteswara Raju, Joint Director	ceo.merit@gmail.com		MERIT, AP
18	Shri B. P. Raturi, GM, (Exploration)	bpraturi100@gmail.com	9422806417	MECL, Nagpur
19	Shri Sudeepta Sundar Parida, Assistant Geologist	ssparida.geo@gmail.com	865833344	DGM, Tamil Nadu
20	Dr. P. C. Mishra, Dy. Director Geology	pcmishra66@rediffmail.com		DGM, Odisha
21	Shri Shiva Kumar M, SM (ME)	bmed@kioclltd.com	9481444686	KIOCL
22	Shri David Koza	geominenaga@gmail.com	9436434678	DGM, Nagaland

Details of requirement of additional drilling/sampling/core boxes etc.

Annexure-II

BARAGANDA (G2) FOR COPPER, DISTRICT-GIRIDIH, JHARKHAND								
SL. No.	Item of Work	Unit	Base	Financial Year (2019-20)				
			Rate 1.4.90	Esc. Rate (18-19) Rs.	Qty.	Actual/ Expected Qty	Additional Qty	Additional Amount
A	**Drilling**							
1	Surface Drilling (3 Rigs, 30 BH)	m.	2,551.00	10,317.00	5,395.00	5,490.50	95.50	9,85,273.50
2	GI Core boxes	Nos.		2,000.00	375.00	1,075.00	700.00	14,00,000.00
B	**Chemical Analysis**						-	
1	Primary + Check Samples							
	i) for Cu (Classical)	Nos	205.00	1,111.00	2,500.00	2,800.00	300.00	3,33,300.00
	ii) for Pb, Zn (2 radical)	Nos	186.00	1,006.00	-	350.00	350.00	3,52,100.00
	iii) for W (1 radical)	Nos	205.00	1,111.00	-	50.00	50.00	55,550.00
	iv) for Pb, Zn and W (3 radical)	Nos	262.00	1,422.00	300.00	110.00	190.00	2,70,180.00
	v) for Au and Ag (Fire Assay)	Nos	268.00	1,439.00	300.00	310.00	10.00	14,390.00
2	Composite Samples							
	i) For 4 radicals (Cu, Pb, Zn and W)	Nos	338.00	1,838.00	250.00	300.00	50.00	91,900.00
	ii) for Au and Ag (Fire Assay)	Nos	268.00	1,439.00	250.00	300.00	50.00	71,950.00
	TOTAL-							**30,34,283.50**
	GST -18%							5,46,171.03
	TOTAL ADDITIONAL							**35,80,454.53**
	APPROVED COST WITH GST							**8,84,66,553.87**
	ADDITIONAL PERCENTAGE							**4.05**
ADDITIONAL APPROVAL OF RS. 35,80,454.53								

J P Singh 12/11/20

12/11/20

Annexure-III

ALATHIYUR LIMESTONE BLOCK (G2) DISTRICT- ARIYALUR, TAMIL NADU								
S L. No.	Item of Work	Unit	Base	Financial Year (2019-20)				
			Rate 1.4.90	Esc.Rate (18-19) Rs.	Qty.	Actual/ Expected Qty	Additional Qty	Additional Amount
1	GI Core boxes	Nos.		2,000.00	90.00	**123.00**	33.00	66,000.00
	ADDITIONAL							**66,000.00**
	GST-18%							**11,880.00**
	TOTAL ADDITIONAL							**77,880.00**
	APPROVED COST WITH GST							**11,592,240.00**
	ADDITIONAL PERCENTAGE							**0.672%**
ADDITIONAL APPROVAL OF RS.77,880.00								

Annexure-IV

BABJA MANGANESE BLOCK (G2), DISTRICT BALANGIR, ODISHA								
SL. No.	Item of Work	Unit	Base	Financial Year (2019-20)				
			Rate 1.4.90	Esc.Rate (18-19) Rs.	Qty.	Actual/ Expected Qty	Additional Qty	Additional Amount
	Physical Studies						-	
1	Preparation of thin section	Nos	100	556	10	13	3.00	1,668.00
2	Petrographic Studies	Nos	228	1478	10	13	3.00	4,434.00
	TOTAL-							6,102.00
	GST -18%							1,098.36
	TOTAL ADDITIONAL							**7,200.36**
	APPROVED COST WITH GST							**1,44,22,723.46**
	ADDITIONAL PERCENTAGE							0.050%
ADDITIONAL APPROVAL FOR Rs. 7,200.36								

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Annexure-V

SENDURKHAR BAUXITE BLOCK (G3), DISTRICT- KABIRDHAM, CHHATTISHGARH								
SL. No.	Item of Work	Unit	Base	Financial Year (2019-20)				
			Rate 1.4.90	Esc. Rate (18-19) Rs.	Qty.	Actual/ Expected Qty	Additional Qty	Additional Amount
1	GI Core boxes	Nos.		2,000.00	85.00	97.00	12.00	24,000.00
B	**Chemical Analysis**							
1	Primary + Check Samples							
	i) for 5 radicals (Al2O3, SiO2, Fe2O3, TiO2, LOI)	Nos	414 (76x4+110)	2,254.00	275.00	387.00	112.00	2,52,448.00
2	Porosity determination	Nos	32.00	194.50	-	10.00	10.00	1,945.00
	TOTAL							**2,78,393.00**
	GST -18%							50,110.74
	TOTAL ADDITIONAL							**3,28,503.74**
	APPROVED COST WITH GST							**94,42,574.00**
	ADDITIONAL PERCENTAGE							**3.479%**
ADDITIONAL APPROVAL FOR Rs. 3,28,503.74								

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