Ministry of Mines
National Mineral Exploration Trust

Minutes of the 21st meeting of Technical-cum-Cost Committee (TCC), NMET
(Date: 26th and 27th June, 2019, GSI, Nagpur)

The 21st meeting of Technical-Cum-Cost Committee (TCC) of National Mineral Exploration Trust (NMET) was held under the chairmanship of Shri S. Moran Rao, Addl. Director General & Head, National Mission-II, GSI on 26th and 27th June, 2019 at Former Conference Hall, GSI, Nagpur. The list of participants is as per annexure-1A & 1B.

Shri Manoj Kumar, Director, DGFO and Member Secretary, TCC, NMET, welcomed Shri S. Moran Rao, Additional Director General, National Mission-II, GSI and Chairman, TCC and all the participants of the meeting. He informed the house that Dr. L. P. Singh, Director, NMET has taken the charge of Director, NMET in place of Shri. Pradeep Singh, Director, NMET. He also informed that due to unforeseen reasons and other engagement, Shri R. K. Sinha could not attend the meeting. The chairman TCC granted leave of absence to the expert members.

Shri S. Moran Rao, Additional Director General, National Mission-II, GSI and Chairman, TCC also welcomed the participants. He emphasized about the mineral deficient resources, critical energy minerals and other important mineral resources which hold a important need to be considered by NMET for funding. Briefing the mandates of National Mineral Policy 2019, and National Mineral Exploration Trust 2015 he requested all the Notified Exploration Agencies (NEAs) to submit more and more project proposals per NMET objectives for facilitating greenfield regional exploration, promoting G2 level exploration in the areas where G3 stage of exploration has been carried out and bringing greenfield exploration in the country, facilitating aerogeophysical surveys in the country, and its utilisation by the NEAs. While giving the objectives of the National Mineral Policy 2019, he asked all the State leaders to peep up according. He also emphasised on completion of projects within stipulated time schedule.

The agenda wise discussion is hereunder.

21.1. Discussion of the Action Taken Report of the minutes of 20th TCC Meeting held on 4th and 5th April, 2019

The Member Secretary, TCC, NMET presented the Action Taken Report (ATR) of the 20th TCC meeting held on 4th and 5th April 2019 at GSI, Nagpur. ATR of various agenda items are given as annexure-2.

TCC committee suggested following guidelines for state DGMs:-

i. For proposing G2 stage exploration all the beneficiaries of NMET are requested to ensure that the mineral potentiality in G3 stage exploration of the block has been assessed. It was reiterated that the State DGMs/ PSUs/ any agency/ company having Letter of

a proposal is required to certify that the proposed mineral block is free from hindrance such as forest land, accessibility, law & order issues etc. the concerned State Government is requested to extend the responsibility of getting the necessary clearances for facilitating the exploration.

ii. The exploration of aquifer minerals is on the lower priority under NMET. Therefore, GSI/ MECL will take up exploration proposals of limestone, bauxite etc. on the basis of the assurance and proof justification from the State Government regarding the prospectivity of the block, so that after effective exploration work the block will be successfully auctioned.

iii. State DMGs and concerned PSUs should check the records for the list of projects already taken up in the meetings/discussions in SCM's and NGPB platforms to avoid duplicity. There should be proper verification of the block area where other agencies like GSI, MECL etc. are working, so as to avoid the overlapping of the block boundary.

iv. The Committee observed that as per the guidelines issued, whenever there is any deviation from the approved proposal during the progress of exploration work, it should be reported, immediately to the notice of the NMET secretariat followed by TCC for ratification.

v. It is suggested that all the implementing agencies have to inform NMET secretariat, regarding any change in work component or timeline, if any, from originally approved quantity and the same has to be put up in next TCC meeting for approval.

vi. It is also observed that many of the agencies are not submitting proposals in the format as it is expected. Such agencies may be notified NEAC for making such proposals on the right basis and the same can be discussed by the implementing agencies from NMET.

vii. The Committee suggested that such problem occurs because proper ground work is not done at the time of formulating the project proposals. The committee advised that project proposal should be submitted only after field visit, to assess the ground situations and potentiality of the block and mining barriers in the proposed block area etc.,

viii. All the State DGMs and PSAs must work together proactively to facilitate the matters of forest or any other statutory clearances.

21.0: Evaluation of new proposals:

21.1: The TS-QC Consultant for the project "Multi-Sensor Aero Geophysics Survey Over GGP and adjoining areas over GSP Block 5 of Phase-II and Block 5 to 12 for Phase-III" to be executed by GSI:

i. Geological Survey of India (GSI) proposed for hiring the TS-QC Consultant for the "Multi-Sensor Aero Geophysical Survey Over GGP and adjoining areas over GSP for Phase II (Block5 to 8) and Phase – III (Blocks 12).

ii. The cost of the project for four blocks 5 to 8 is ₹137,62,14,598/- for total coverage of 11,45,135 Line km over areas of 5,11,264 sq. km.

iv. The cost of the project for four blocks 8 to 12 is Rs.19,17,00,557/- for total coverage of 10,49,249 line km over area of 2,98,262 sq. km.

v. As the formalities for selection of PIA for block 8 to 12 will continue in 2019-20, but due to legal issues, it could not be finalized. Therefore, the tender/bidding will be done again for the selection of PIA.

vi. The PIA for blocks 9 and 12 has commenced survey over block-11 with effect from 24-04-2019 and has covered 97,894 line km (29.6%) as on 21-06-2019 against a target of 3,21,471 LKM. The work is suspended from 22-06-2019 due to onset of monsoon.

vii. The PIA for blocks 8, 10 has commenced seismic survey over blocks 10 on 02-06-2019 and has covered 3113 line km (2.5%) as on 21-06-2019. It is also suspended from 22-06-2019 due to onset of monsoon.

viii. An Estimated cost of US$7695140.374 (Including 18% GST) towards engaging the TS-QC Consultant over OGP block 8 of Phase-II and Block 9 to 12 for Phase-III

ix. Work Order for the TS-QC for different block for Phase-II and Phase-III will be issued separately.

x. ESAS, Bengaluru has submitted a bill of 14.59 Crore in respect of Milestone-1 of block 12 along with TS-QC certificate given by GSI. Therefore, the amount of TS-QC in respect of this milestone may be proportionately reduced from the total proposed cost of TS-QC work. The modified proposal may be re-submitted to NMET office under intimation to Chairperson, TCC, NMET. All payments in this regard will be subject to compliance of the provision of Foreign Exchange Management Act (FEMA) 1999.

21.3.1 Detail investigation on crustal architecture based on Magneto telluric Survey (MT) integrated with available gravity and magnetic data from western part of Aravallis (Rajasthan) to Singhbhum-Orissa mobile belt (Jharkhand) to be undertaken by GSI.

i. GSI submitted a detailed proposal on investigational crustal architecture based on Magneto telluric Survey (MT) integrated with available gravity and magnetic data from western part of Aravallis (Rajasthan) to Singhbhum-Orissa mobile belt (Jharkhand).

ii. The objective of the project is subsurface exploration of prospective commodities research to provide important insights into regional tectonics and also to offer guidelines to formulate strategies on mineral exploration.

iii. The Application of concepts and models based on global plate tectonics, subsurface geoelectrical structures, and potential field heterogeneities on metallogenic provinces have witnessed rapid progress.

iv. The geodynamic aspect of most metallogenic provinces in India have been discussed so far based on geological and geochronological framework.

iv. Tectonic and physical parameters of the deeper crust, based on the geophysical signatures provides a window of opportunity to understand the tectonics responsible for evolution of Precambrian provinces and discover new deposits.

v. GSI under the aegis of MoM, has launched ambitious projects like MAGNET, NGPP, Geological Mapping, NGCM and project UNCOVER. The primary goal of these programmes is to target concealed deep-seated deposits.

vi. In the continuum, MT survey in a corridor covering major metallogenic provinces of western, central and eastern India, is another initiative to boost the hunt for deep seated mineral deposits.

vii. MT survey has the potential to resolve the architecture of large-scale mineral deposit and alteration zones under cover.

ix. The NW part of India (Rajasthan) and SE part of India (Karnataka or Dharwar) are the host of rich mineral deposits.

x. The proposed survey area is bounded by coordinates (a) 74° E, 24° N (b) 77° E, 24° N (c) 83° E, 19° N (d) 88° E, 25° N. The average length and width of the area is 1600 and 700 km respectively and proposed survey area is 12,03,670 km^2.

xi. Approximately 2000 MT station observation will be made in grid pattern with 25 km X 25km grid spacing. However, the coordinates and data acquisition parameter may be modified in field stage to ensure feasibility and convenience regarding actual execution.

xii. It is intended to acquire 2000 long period MT sounding data in the identified area. As the duration of each sounding is about a month thus it would require a minimum of five years with help of 70 equipment to cover the area, as six months of field season will be congenial for instrumental deployment.

xiii. It was also presented that "It is intended to acquire 2000 long period MT sounding data along the identified area. As the duration of each sounding is about a month thus it would require a minimum of five years with help of 70 MT equipment to cover the area, as six months of field season will be congenial for instruments to collect data".

xiv. In the presentation, broad execution plan it was said that, "A Detail Project Report (DPR) involving IGG, IIT, IISM, CMG, GC will be done".

The Committee opined that the project is in very initial stage of formulation and cannot be accepted in the presently submitted form and requires further detailed work w.r.t. the selection of executing agency, details of terms & condition, work-flow, time schedules and deliverable quantities, QA-QC aspects, break up of cost, terms of payments etc.

For completing the proposed area with 2000 MT stations in a span of five years, 70 MT equipments were projected to be procured. Cost of latest MT equipment for 70 units appear to cost more than ₹50 crores. As this programme has been proposed to be undertaken by involving many agencies, there is no clarity on equipment specifications, procurement and claim method for various agencies, data acquisition, processing and interpretation to achieve the desired objectives of the mega initiative.

Therefore, the Committee recommended that prior to execution of a large target, the project to be implemented in pilot project mode so as to finalise the SOP for the MT Survey. One project for MT Survey is already under progress for Project: Uncover (India) under NMET Fund whose results and efficacy can be evaluated for taking up next course of program. For the pilot projects to

develop SOP, the selection of area, inter-disciplinary co-ordination and maps/data etc. should be made ready as pre-requisites.
Further, the Committee opined that, GSI needs to select three cratonic areas/ Orogens with an area of nearly 15,000 sq. km (10 MT points, each from an toposheet grid) viz., Dharwar, Aravalli, Singhbhum for conducting pilot scale projects to derive SOP for carrying out MT of a very large area in consultation with international expert geoscience team, those already progressed in their national scale MT survey. Once the SOP, proper execution plan etc., is evolved by GSI with involvement of Geophysics Team (Mission-I) and Mission-II, such large area MT survey can be taken up scientifically.

21.7 NG polity-Diagnostic survey under National Geophysical Mapping (NGPM) in selected area of Western, Central and Southern region of India by Consortium of IITs (Prof. M. Radhakrishna - IIT Mumbai, Prof. U. K. Mohanty - IIT Kharagpur, Prof. Shalivahan - IIT (ISM), Dr. G.S. Rao - IIT (BHU) and Dr. Animesh Mandal - IIT Kanpur as team members.

i. GSI proposed for Gravity-Magnetic survey under National Geophysical Mapping Programme (NGPM) in selected areas of Eastern, Central and Southern region of India by Consortium of IITs comprising of Prof. M. Radhakrishna - IIT Mumbai, Prof. U. K. Mohanty - IIT Kharagpur, Prof. Shalivahan - IIT (ISM), Dr. G.S. Rao - IIT (BHU) and Dr. Animesh Mandal - IIT Kanpur as team members.

ii. The objective of the project is to capacitate NGPM coverage, incorporate resources of research institutes of India for the NGPM and augment industry-academia participation for development strategies for mineral exploration.

iii. A total of 69 Toposheets covering eastern, central and southern parts of India and mostly encompassing each OGT area (~4,000 sq.km) is proposed to be surveyed. Data acquisition is planned following the existing norms of NGPM.

iv. *The committee suggested to give a deeper thought into the various possibilities and pre-requisites of the survey, like accessibility or any other problem that could be hindrance to work and availability of all pre-requisites. The committee is also in favour of work execution through a research consortium involving various IITs. Either the executing agency may be selected through open bid or it would require a proper execution work equipped with infrastructure, manpower, time bound deliverance and integrated data interpretation.*

The Committee opined that the proposal is in very initial stage of formulation and cannot be accepted in its present form and require further detailed work out w.r.t. the selection of executing agency, details of terms and condition, work-flow, time schedules and deliverable quantities, QA-QC aspects, break up of cost, terms of payments etc.
The Committee suggested GSI to verify the accessibility and other inherent problems in the proposed toposheets. Moreover, requirement should be to complete the OGP area first followed by the area beyond OGP.

21.8 Reconnaissance survey (RS) for Manganese ore in Tentuliguda block, Nuapada district, Odisha, to be executed by Directorate of Geology, Odisha)

i. The project was evaluated in 30th CC meeting held on 1st and 2nd June 2019. The committee recommended that modified proposal to be submitted in next CC meeting.

i. Directorate of Geology, Odisha submitted the modified proposal for manganese exploration in Tentulipada Block.

ii. The Large scale Geological mapping needs to be carried out on 1:12,500 scale over an area of 4.21 sq.km in the prospect area along with collection of structural data, petrographic and sampling work.

iii. The proposed topographic and detailed mapping is to be carried, as so far, the potential target area / zone is not identified.

iv. For manganese samples to be analysed on priority basis.

v. The time schedule for completion of the project is 9 months including circulation of report.

vi. The further course of exploration will be decided on the basis of review of the project, after completion of the proposed work.

The Committee recommended the proposal for approval of Reconnaissance Survey (G4) for Manganese ore in Tentulipada Block, District Koraput, Odishawith estimated cost of ₹28.22 Lakhs including GST and time schedule of 9 months which includes the circulation of report as per Annexure-3A and 3B.

21.2.5(i) Detail Exploration (G2) for Estimation of Gold Ore in C. K. Halli South Area, District-Chitradurga, Karnataka. (to be executed by MECL)

i. The 20th TCC meeting committee recommended to take up the project in C. K. Halli South Block (extension of C. K. Halli North Block) if the issues to be resolved by DGM, Karnataka.

ii. MECL informed that the advice from DMG Karnataka is awaited. MECL will pursue with DMG Karnataka and thereafter the proposal will be submitted.

The Committee asked to submit the proposal in the next TCC meeting in prescribed format.

21.2.6:Reconnaissance Survey (G4) for Diamondiferous deposits in Sailaya Block, District-Katni, Madhya Pradesh, (to be executed by MECL)

i. In the 20th TCC meeting committee asked MECL to visit the area to finalise the work component and the possibility for processing the survey area may also be explored in consultation with the State Govt.

ii. MECL informed that as per suggestions of MME committee a planned joint site visit has been undertaken, MECL stated that the proposal is under preparation and will be submitted in next TCC meeting.

The Committee asked to submit the proposal in the next TCC meeting in the prescribed proforma.

21.2.7:General Exploration (G2) for Fluorspar in Sanganakallu Block, District-Katni, Madhya Pradesh (to be executed by Madhya Pradesh State Mining Corporation)

i. DGM, MP proposed the project for General Exploration (G2) for limestone in Surgimata Block, District-Satna, Madhya Pradesh. The proposed area does not require any data required to be taken up in G2 stage exploration, hence suggested to take up the continuing G1 stage to collect the basic data and mapping of the area in the requisite scale.

ii. Proposed area is divided into three blocks A, B and C. Biggest block is block-A and smallest is block-C.

iii. All the three blocks have to be clubbed in one cluster for taking up Large-Scale Geological mapping on 1:2,500 Scale covering an area of 3.40 Sq.km. along with collection of structural data, outcrop/trenching and sampling work.

iv. A total of six vertical boreholes to be drilled with maximum depth of up to 400 m. Three bore holes to be drilled in block-A, two bore holes in block-B and one borehole in block-C will be drilled.

v. Mapping, sampling, analysis and associated work will be taken up and completed in 12 months including preparation of report.

vi. Exploration work will be monitored and the DGM and MPSMCL will monitor the work.

vii. Project will be reviewed after the completion of proposed work, for the course of exploration will be decided based on the outcome.

The Committee recommended the proposal for approval as Reconnaissance Survey (G4) for limestone in Sonamania Block, District Satna, Madhya Pradesh with estimated cost of ~41.52 Lakhs including GST with a time schedule of 12 months subject to the circulation of report as per Annexure-4A and 4B.

21.2.8:General Exploration (G2) for limestone in Keshavpura-Bamna-Gaurel Block, District-Satna, Madhya Pradesh (to be executed by Madhya Pradesh State Mining Corporation)

i. DGM, MP proposed project proposal for General Exploration (G2) for limestone in Keshavpura Block, District-Satna, Madhya Pradesh.

ii. The area is under Option cultivation and there will be local problem or law and order issue during the execution of exploration work.

iii. State Govt. has to submit a certificate regarding the area is under the non-forest issue, if any, and viability of the block after successful completion of G2 stage exploration.

The Committee directed the State DGM to submit a certificate regarding the block area w.r.t status of land (private or forest issue, if any) and after successful completion exploration in the block, it will be successfully auctioned. The proposal will be re-evaluated in next TCC meeting.

21.2.9:Geophysical Exploration within the existing mining lease of 4 blocks of Hindustan Copper Limited (to be executed by HCL)

(1)Khetri Copper Block, Khetri Copper Complex, Jhunjhunu District, Rajasthan (G2)

(2)Surda, Kendadih and Rajoa Mines leases in Mineral Exploration in Pendsora and Rakha Copper Blocks, in Indian Copper Complex (ICC), East Singhbhum District, Jharkhand. (C2)

(3)Kolihan and Chandmari Copper Mining Lease in Mineral Exploration in Kolihan Mining Lease, Khetri, Jhunjhunu District, Rajasthan. (C2)

(4) Khandekhani Copper Mines Lease, Balaghat District, Madhya Pradesh. (C2)

I. Hindustan Copper Limited proposed to carry out the geophysical exploration survey work within the existing mining lease areas of HCL.

II. The following deep geophysical exploration surveys to be carried out in sequential order to delineate the base metal mineralized zones up to depths 1000m: (a) Gravity-Magnetic-DGPS Survey, (b) Time Domain Electro Magnetic Survey (TDEM) and (c) Induced Polarization & 2D Resistivity Imaging.

III. Time Domain Electro Magnetic Survey (TDEM), & Induced Polarization & 2D Resistivity imaging to be carried out to delineate deeper seated resolutions in the potential areas demarcated based on Gravity-Magnetic-DGPS Survey.

IV. 2D/3D resistivity imaging will be carried out for target depths of 300 / 400m from surface, especially in areas where strike wise continuity has not been established yet by drilling exploration.

The Committee informed that the matter has been already discussed in 10th EC meeting, once the EC takes decision to carry out exploration work even in leasehold area through NMET fund then decision on Geophysical Survey by HCL in all the 4 mining leases can be finalised by TCC

The present proposals of Geophysical Survey work in the 4 mining leasesetchotically qualify with minor qualifications.

21.3: Cost Evaluation of proposals as per existing SoC for which in-principle recommendation for approval is accorded by 20th TCC

I. The project was discussed in 20th TCC meeting and recommended for approval.

II. During the 10th EC meeting held on 12th June 2019, EC has directed that project proposals will be evaluated and approved as per the existing SoC of Ministry of Mines

21.3.1: General Exploration (G2) of Copper Ore Resource in Baraganda block, District- Giridih, Jharkhand.

The Committee has evaluated technically the proposal in the 20th TCC meeting and recommended for in-principle approval by 10 EC, as the SoC was not finalised for funding recommendation. Now the financial proposal is recommended using the previous SoC for approval of General Exploration (G2) of Copper Ore Resource in Baraganda Block, District-Giridih, Jharkhand with estimated cost of5284.57 Lakhs including GST with a time schedule of 15 months including circulation of the report as per Annexure-5A and 5B.

21.3.2: Baseline Environmental studies in Tamiya, Bengali, Bolaja, Biyaspalli and Dungarpalli Blocks, District: Balangir, Odisha.

The Committee has evaluated technically the proposal in the 20th TEC meeting recommended for in principle approval by 11 EC, as the SoC was not finalised for funding recommendation. Now it is recommended for financial approval is recommended using the previous SoC for Baseline Environmental studies in Tamiya, Bengali, Bolaja, Biyaspalli and Dungarpalli Blocks, district-Balangir, Odisha with estimated cost of ₹38.76 Lakhs including GST and for time schedule of 9 months including the circulation of reports as per Annexure 6.

21.3.3: Reconnaissance Survey (G4) for limestone and dolomite in Neerbudihal Block-East (KAR_NLDP_3361_E) District: Bagalkote, Karnataka.

The Committee has evaluated technically the proposal in the 20th TEC meeting recommended for in-principle approval by 11 EC, as the SoC was not finalised for recommendation. Now it is recommended for financial approval is recommended using the previous SoC forReconnaissance Survey (G4) for limestone and dolomite in Neerbudihal Block-East (KAR_NLDP_3363_E) District-Bagalkote, Karnataka with an estimated cost of ₹95.56 Lakhs including GST and for time schedule of 12 months including the circulation of report as per Annexure-7A and 7B.

21.3.4: Reconnaissance Survey (G4) for limestone and dolomite in Neerbudihal Block-West (KAR_NLDP_3363_W) District: Bagalkote, Karnataka

The Committee has evaluated technically the proposal in the 20th TEC meeting recommended for in-principle approval by 11 EC, as the SoC was not finalised for recommendation. Now it is recommended for financial approval is recommended forReconnaissance Survey (G4) for limestone and dolomite in Neerbudihal Block-West (KAR_NLDP_3363_W) District: Bagalkote, Karnataka with an estimated cost of ₹91.98 Lakhs including GST and for time schedule of 12 months including the circulation of report as per Annexure-7A and 7B.

21.3.5: General Exploration (G2) for limestone in SCC 1G-Samnali (Surasada-Gir Somnath District-1) Block, District: Gir-Somnath, Gujarat.

The Member Secretary informed the house that the Commissionerate of Geology & Mining, Gujarat has informed that the proposed block area will be resubmitted after necessary modification.

The committee took the note of it.

21.3.6: Re-evaluation of additional drilling of 29th in Tirbu Gold Project (GK_KAR_Gr) in Surat District for Enhanced Resources/Physical mandatory surrender and Approval of Time Over run.

1. The G4 level exploration work for Gold in the block was approved in 4th EC meeting held on 24th February, 2017 with estimated cost of ₹443.81 lakhs.

h. The TCC in its 13th meeting held on 7th and 8th March 2017 approved additional cost of ₹1,00,250/- for changing the methods in analysis of associated elements & carrying out analysis of ICP fusion, and reimbursement towards expenses for engaging manpower.

i. The TCC in its 14th meeting held on 21st and 22nd May 2018 approved additional cost of₹3,36,200/- for chemical analysis of 9 samples for silver and PGE.

j. The TCC in its 16th meeting held on 26th & 27th September, 2018 approved additional cost of₹12.07 Lakhs for additional 50 cubic meter pitting & trenching along with sampling and analysis for Ni, Cr, Cu, As & Sb.

k. The TCC in its 18th TCC meeting held on 18th & 19th January, 2019 approved additional cost of ₹14,77,074/- for EDM and SP16 duties.

l. The Committee evaluated the proposal in its 20th meeting held on 4th and 5th April 2019 and approved additional drilling of 200m, collection of samples and chemical analysis. It was also informed that 600m drilling in the block was recommended in the 4th TC meeting held on 1st & 2nd September, 2017 and approved in 4th EC meeting.

m. The additional cost of ₹47,54,565/- for the drilling and the test analysis are given in Annexure-9.

n. The total additional costs have been enhanced beyond the limit of according sanction (i.e. 10% of the total cost of the project approved by EC) by TCC. Hence, the approval for additional cost will be put up in next EC meeting.

o. As the total additional cost of ₹65,90,705/- (approved by TCC ₹18,36,140/- and proposed additional cost of ₹47,54,565/-) is beyond sanctioning limit of TCC. Hence, a consolidated additional cost of ₹66,90,705/- will be put up for approval in next EC meeting.

The Committee recommended the proposal of additional cost for drilling and chemical analysis. The consolidated additional cost of ₹66,90,705/- will be put up in next EC meeting for approval as per Annexure 9. A time line extension up to March 2020 to circulate the report, has also been recommended for approval of EC.

21.4.8 Review of the progress of ongoing projects

21.4.8. Review of the progress of work executed by MERIT, Andhra Pradesh for General Exploration (G2) work of all the 7 blocks.

i. A total of 07 projects for G2 level exploration for limestone of DCM, Andhra Pradesh was approved in 7th EC meeting held on 22nd March 2018 with the cost of ₹1,06,60,000 lakhs and the sanction letter was issued on 19th April, 2018 with the time schedule of 12 months i.e. to be completed by 18th April, 2019. The projects were to be executed by MCRIT, A.P.

ii. MCRIT represented the inconvenience that the 03 blocks namely Bhimagundam, Gurrankunta and Dommanamandyala-Veparala were made one cluster viz. Kadapa Cluster and 04 blocks namely, Mallampadu, Muvvavaripalli-Tegeda, Tangeda and Rompurambeedu made one cluster viz. Guntur Clusterfor the working purpose in order to avoid differential rates as the blocks are adjacent to each other.

iii. In 20th TCC meeting, the project was reviewed and Committee suggested that the drilling should be carried out upto 1m below the limestone in respect of Dommanamandyala-

Veparala Block. Accordingly the additional requirement of drilling and associated sampling work may be worked out along with cost and to be submitted in the next TCC meeting.

iv. The APGRIT representative presented the brief about the blocks and formerly Unit Kadapa Cluster (Bhimagundam, Gundlakunta and Dammaramandhyala Veparala Blocks) has completed.

v. The Committee is requested to classify limestone into different grades on the basis of the results analysis as per BIM mandate for time being.

vi. Drilling is to be done upto a maximum depth of 100m or upto 1m below the limestone bed in order to ascertain the thickness of the limestone and also for estimation of resource.

vii. After completion of Cluster wise review of the projects will be done and remaining additional work component will be reviewed for approval.

viii. The time over run for all the 7 blocks as recommended by 9th TCC will be put up in the next EC meeting for approval.

The Committee approved the change in work quantum of Bhimagundam, Gundlakunta and Dammaramandhyala Blocks without any cost implication (Annexure-10A, 10B and 10C) and also recommended for approval of EC for time over run of 04 months in respect of Bhimagundam block, 09 months each in respect of Gundlakunta and Dammaramandhyala Veparala Blocks.

The Committee also approved the additional drilling upto 1m below bottom of limestone bed or upto 70m depth, whichever is less for Cluster Cluster(Madinapadu, Mutyalampadu Tangedu, Tangedu and Ramapuram blocks) without involving any additional cost implication sections of the respective blocks.

The Committee approved the change in work quantum of Bhimagundam, Gundlakunta and Dammaramandhyala blocks without any additional cost over run (Annexure 10A, 10B and 10C) and also recommended for approval of EC for time over run of 04 months in respect of Bhimagundam Block, 09 months each in respect of Gundlakunta and Dammaramandhyala-Veparala block.However the exploration work will be reviewed on every stage of its exploration.

21.4.2:Review of progress of Multi Sensor Aero Geophysical survey (Blocks-2 to 7)

i. The Multi sensor Aero-geophysical Survey over OGP blocks 2 to 4 was launched on 10.12.18 as PILOT project, inaugurated by the then Minister of Mines on 07th April 2017.

ii. The EC in its 7th meeting approved the "Multi sensor Aero geophysical Surveys by GSI over OGP & adjoining areas" project comprising Blocks 2, 3 and 4 along with its QC Consultant for these.

iii. The GSI, SUAS, Bengaluru, representatives presented the progress of project "Multi Sensor Aero Geophysical Survey Over OGP and adjoining areas for Phase-I.

iv. It was informed that block 2, 3 and 4 have been completed and the Airborne magnetic data together with the existing ground and legacy data were analysed.

v. The interpretation and synthesis of the data for Block-1, 2 and 4 is shown (total of 16, 12 and 24 respectively) currently blocks

vi. The final report is expected to be submitting by first week of July, 2019.

vii. For block-3, data acquisition is completed. The data processing and report submission is expected by 15th Aug, 2019.

viii. The Committee asked about the time line for completion of the Phase I. It was informed that total 4 nos of time line extension has been given for each block. For block-1, 2 and 4, the completion time was 31st December 2018 and for Block-3 was 31st May 2019.

ix. For time overrun approval, Director General, GSI is competent authority as per contractual agreement between GSI and concerned PAs in respect of Phase I (block 1, 2, 3 and 4) and TS QC

x. The EC in its 2nd meeting approved 'Multisensor Aero-geophysical Survey by GSI over Salt & adjoining areas' project in respect of Block-5 (Kutch) and Block-9, 10, 11 and 12.

xi. It was informed that due to administrative problem, proceedings for the Block-5 is delayed.

xii. Land acquisition for phase-II (Block-1 to 12) have been started. Till date for block-1 has been completed.

Block No.	Target Area (sq km)	Area (Sq km) achievement	Target (L km)	Achieved (L km)	% achievement
Block-1	53,851	52,720	1,44,636	1,93,234	27.85%
Block-2	55,962	53,822	2,05,198	1,60,580.94	78.27%
block-3	39,412	35,146	1,44,557	1,43,529.8	99.22%
Block-4	44,361	44,801	1,64,490	1,64,490	100%
Blocks1-4	1,54,131	1,66,327	7,11,813	6,61,924	93%

The Committee asked to send the intimation regarding cancellation of approved project (Block-5) to MoEF and resubmit the fresh proposal in the next EC meeting.

2.1.4 Interview of TS QC for interpretation of airborne legacy data and airborne survey data

i. A TS-QC Consultant has been selected to interpret existing legacy data of GSI & data acquired by Geoscience Australia for Govt. of Gujarat to identify potential mineral blocks for helborne surveys.

ii. The selected Bidder M/s IDOM Pvt. Ltd. has to compile and interpret existing legacy data which includes legacy data of GSI and data acquired by Geoscience Australia for government of Gujarat over an area of 1,85,412 sq km (Block-1, 2 and 3) for identifying the potential areas for conducting helborne surveys, preparation of Detailed Project Report (DPR), inviting EOI from potential PAs, Global Tender Management and take up TS-QC jobs for identification blocks of helborne surveys for 50,000 line km.

iii. The final interpretation report is likely to be submitted by TS-QC consultant by 30th June, 2019 and then blocks recommended for helborne survey will be taken up for tendering.

identification of PAs, execution of survey and report submission by PAs at the site. The project is likely to be completed by 30th April 2020.

The Committee advised to submit the final report within the stipulated time line.

23.4.4 Review of the progress of work carried out so far in limestone and bauxite blocks under execution of FC@14, Chhattisgarh.

i. DGM, Chhattisgarh presented the status of work carried out for the bauxite (Dumargudda, Machhuone, Kenchkesra North Ext., Mainpat, Kerpatia Ext., Machpat blocks) district Surguja and limestone (Bhemaram, Gelephi and Kachna area, District: Raipur).

ii. All the projects were approved by executive Committee, MSET in its 8th meeting held on 12th June, 2018 and sanctioned vide letter no. F. No. 6/ /2015-MMET/MSC, New Delhi, dated 21st June, 2018.

The committee took cognizance on the time and cost overrun for which no prior approval has been sought.

(a) Dumargudda Block (Bauxite)

i. Detailed mapping on 1:4,000 scale comprising an area of 2.33 sq km area has been completed with 39 Nos. of Boreholes (4475m). 10 Nos. of boreholes could not be drilled due to encroachment and active area. Bauxite mineralization in 11 Nos. of Boreholes.

ii. The maximum thickness of bauxite is 9.37 m (CBDG-N5e5).

iii. Resource estimation: 5.62 MT, Inferred average grade of Al_2O_3: 40.24%, SiO_2: 5.04%, Fe_2O_3: 8.17%.

iv. The analytical data of samples received so far indicate the quality of bauxite is layer to mixed grade with average thickness of bauxite 3.25m.

v. The project has been delayed by two and half years due to mine & crop season from June 2016 to September 2018; Legislative Assembly Election from October 2018 to November, 2018 and again due to Loksabha Election 2019 from March, 2019 to May, 2019, election duties of the officers/staff & the exploration work was completely hampered during this period.

vi. At present the exploration work has been completed and the time overrun of 05 months (up to September 2019) is kindly requested for approval.

The Committee recommended for approval of time over-run of 5 months for submission of final report in prescribed format. Any additional work component or cost over-run in respect of the project, to be submitted in next TSC with proper justification.

(b) Kenchkesra North Block (Bauxite)

i. It was identified that due to good prospect of bauxite around the proposed site, the block area has been extended to 2.35 sq km and conducted detailed mapping on 1:4,000 scale in 2.35 sq km (increase of approved 1.348 sq km

ii. A total of 34 Nos. of Boreholes have been drilled with total meterage of 2615 m in place of approved 19 Nos. of boreholes with meterage of 1850m. The maximum thickness of bauxite is 7.80 m (GEDB 32) and average thickness of bauxite is 2.30m.

iii. Bauxite resource estimation of 4.0C M.T. (Provisional) and average grade of Al2O3 40.2.8%, SiO2 3.4% &Fe2O3 23.17%.

iv. The quality of bauxite be kept for trial mine.

The Committee observed that as per the guidelines issued when ever there is any deviation from the approved proposal during the progress of exploration work, it should be brought immediately to the notice of the NMET secretariat followed by TCC for ratification. In this case neither the DGM Chhattisgarh informed NMET Secretariat nor presented the same in the TCC. However, the department has completed the work and recommended for approval.

It suggested that, all the implementing agencies have to inform NMET secretariat, regarding any change in work component or timeline, if any, from originally approved quantity and the same has to be put up in next TCC meeting for approval.

The Committee recommended for approval of time overrun of 5 months for submission of final report in prescribed format. Any additional work component or cost over-run in respect of the project, to be submitted in next TCC with proper justification.

Parpatia block (Bauxite)-

i. Detailed mapping on 1:4,000 scale has been completed in 5.32 sq km area, against the originally approved area of 5.8 sq km. An area of 0.78 sq km is left due to deep valley and settlement.

ii. A total of 127 Nos. of Boreholes have been drilled with meterage of 5405.5 m (200 m grid interval) against the approved 175 nos. of BH and 52 BH could not be drilled due to non-availability of land (deep valley and settlement).

iii. Bauxite resource estimation of 8.11 M.T. (Provisional) and average grade of Al2O3 40.87%, SiO2 3.45% Fe2O3 27.57% & LOI 7.28%. The average thickness of bauxite is 2.40 m.

iv. The project has been delayed by five months due to mining season from June, 2019 to September, 2018, Legislative Assembly Election 2018 from October, 2018 to November, 2018 and again due to Lukesabha Election 2019, from March, 2019 to May 2019, election duties of the officers/field staffs, the exploration work was completely remained during this period.

v. At present the exploration work has been completed and the time over run of 05 months (30th September 2019) is kindly requested for approval.

The Committee observed that as per the guidelines issued whenever there is any deviation from the approved proposal during the progress of exploration work, it should be brought

immediately to the notice of the NMET secretariat followed by TCC for rectification. In this case neither the DGM Chhattisgarh informed NMET Secretariat nor presented the same in the TCC. However, the department has completed the work and recommended for approval.

The Committee recommended for approval of time overrun of 5 months for submission of final report as prescribed for est. Additional work component or cost over run, if any, in respect of project has to be submitted in next TCC with proper justification.

(c) Khamardih-Garadih Block (limestone)

i. An area of 5.5 sq.km has been mapped on 1:4000 scale. A total of 11 Nos. of Boreholes were drilled against the proposed 09 Nos. of Boreholes within the block @ No. of Boreholes on 800 x 800 m grid interval and 5 Nos. of Boreholes on 400 x 400 m grid interval).

ii. Limestone was encountered only in GH-3 wherein the thickness of the mineralized zone varies from 2.90 to 11.20m whereas average thickness = 20.07m

iii. Estimated resources of the block is about 147.53 million tonnes of mixed grade Limestone with Cao content varies from 34% to 44%.

iv. After the receipt of the Chemical analysis plus various zones for cement industry based Mineral Laws viz. red oxide, Slag grade or chemical grade etc.

v. The project has been delayed by five months due to rainy & crop season from June 2018 to September, 2018, Legislative assembly Election-2018 from October, 2018 to November, 2018 and again due to Lok Sabha Election-2019, from March, 2019 to May, 2019 Election duties of the officers/field staffs. The exploration work was completely hampered during this period.

vi. At present the exploration work has been completed and the time overrun of 09 months (30th September, 2019) is also requested for approval.

The Committee observed that as per the guidelines issued when ever there is any deviation from the approved proposal during the progress of exploration work, it should be brought immediately to the notice of the NMET secretariat followed by TCC for regularization. In this case neither the DGM Chhattisgarh informed NMET Secretariat nor presented the same in the TCC. However, the firm has completed the work and recommended for approval.

The Committee recommended for approval of time overrun of 9 months and informed that after the chemical analysis result for all the boreholes samples is received, the review will be done in TCC meeting. Sampling to be done properly at keeping sample length as 1m and the chemical analysis results needs to be plotted in the litholog.

(d) Khaltha Block (Limestone)-

i. An area of 5 sq.km. was mapped on 1:4000 scale with total of 8 Nos. of Boreholes are drilled, out of which 4 Nos. of Boreholes (central limestone) in the remaining boreholes did not encounter limestone and consists of sandstone.

i. The limestone is confined mostly around village Jaradih in central part of the block. Kharra settlement being the northern limitation and Chandrapur sandstone making the southern boundary. Block area is within the settlements and mining can't be done and hence can't be auctioned hence, further exploration is not recommended in this block.

ii. Although the average thickness of limestone is 14.32 m, but it cracks in the overburden.

iv. Estimated prognostic resources of Kharra block is 98.80 MT with cement grade; (CaO%- 44.0 - 48.0%, 18.16 MT and Cement beneficiable/blendable grade; (CaO% 42.0-44.0%) 50.40 MT.

It is also observed that many of the agencies are not submitting proposals in the format as it is expected. Such agencies may utilise the notified PFAS for making such proposals on charge basis and the same can be reimbursed by the implementing agencies from NMET.

The Committee directed the state UGM hereafter to submit a certificate regarding the potentiality of the block and after successful completion of exploration in the block, it will be successfully auctioned.

The Committee suggested that such problem occurs because proper ground work is not done at the time of formulating the project proposals. The committee advised that project proposal should be submitted only after field visit, to assess the ground situations and potentiality of the block and mining barriers in the proposed block area.

21.4.5:Review of proposals for dropping of exploration work for 08 iron ore and 01 manganese blocks and the bharat along with proper justification and approval of the Govt. for:

i. Representatives of DGV, Chhattisgarh informed that all the 04 stage 02 iron ore blocks proposed approved in 2nd SC may be dropped in view of huge cost of forest NOC. These projects are North Sailada Area, Dist. Dantewada with estimated cost of ₹91.48 lakhs, Kurlund Area Block, District Kanker with estimated cost of ₹93.77 lakhs, Bowenal Block, District Kanker with estimated cost of ₹90.77 lakhs, Rajhara Block, District Balod with estimated cost of ₹91.45 lakhs, Sulkeri Block, Dist. Durg with estimated cost of ₹91.18 lakhs, Kanya Jabar Block, Dist. Rajnandgaon with estimated cost of ₹73.15 lakhs, Kotlibeda Area Block, District Dantewada with estimated cost of ₹93.65 lakhs and Murlidih Area block, District Ambikapur with estimated cost of ₹79.29 lakhs.

ii. For abandoned bauxite block efforts are being made to get the necessary clearance.

The Committee agreed to the proposal of dropping 08 iron ore blocks at once and recommended for approval of EC for both technical and financial for the above projects.

11.4.6 Review of Nurmukka Block (SR-T\0-0) in respect of drilling progress and result of chemical analysis of the samples.

iii. MECL presented the details of the drilling carried out in 3 boreholes with total metreage of 558m.

iii. It was informed that Liberty approval for chemical analysis of 165 primary samples and 33 composite samples.

iii. During drilling, almost whole drilled length represented granite. Three complete boreholes were completed.

iv. Inclusion of approved Sno. the total number of samples to be analysed is 520 + 105 (new) viz. 625 and 6 samples for XRF in the central zones from each borehole.

v. Additional analysis for whole rock is to take decision on low flux grade Granite, evaluation of ore samples whether for Grade-I/low grade ultrabasic.

vi. Approvals required for additional samples.

Cost Estimate for G-4 Level of Exploration for Granite in Namakkal District, Tamil Nadu (Block ID-17,08)

Sl. No.	Item of Work	Unit	Rates (In rupees)	Qty.	Actual / Expected	Additional Qty	Additional Amount (₹)
1	Bit/ Core Sampling, Primary & Check samples						
	a) For MgO, SiO2, Al2O3, Fe2O3, CaO, LOI	Nos.	2,700.00	165.00	524.00	10.00	1,39,365.00
	b) For N & Cr	Nos	1,121.00	165.00	272.00	60.00	2,55,241.00
2	Composite Samples	Nos					
	a) MgO, SiO2, Al2O3, Fe2O3, CaO, LOI with Cr2O3	Nos	2,700.00	15.00	50.00	15.00	6,345.00
	b) For N & Cr	Nos	1,121.00	15.00	30.00	33.00	39,270.00
3	Physical analysis						
	a) Preparation of thin section	Nos	342	20.00	30.00	10.00	3,456.00
	b) Study of thin section	Nos	1,495	25.00	10.00	10.00	41,450.00
	c) Specific Gravity, Determination (all)	Nos	198.00	5.00	25.00	10.00	7,180.00
							1,72,6,665.00
					GST (18%)		292,799.70
					GRAND TOTAL		1,916,464.70

The Committee recommended for approval of additional sampling with estimated cost of ₹19,19,464/- (including GST) and suggested that samples to be analysed for whole rock (for radical) and Ni-Cr.

21.4./Namakkal-Pothiniposhi Block: Furnishing detailed explorations towards irregularities in data presentation and justification for not carrying out the strictly approved drilling of 4100m in 55 bore holes and additional 7 boreholes approved in 3rd IC meeting.

i. In 20th TCC meeting held on 4th and 5th April 2019, MNRE representative informed the Committee that while taking the over-run approval in 19th TCC meeting MECL submitted that a total 7100m drilling in 63 boreholes has been approved with 3605m RC and 3495m core drilling. Out of this, 1034m RC drilling in 23 boreholes and 1650m core drilling in 14 boreholes was completed up to January, 2017.

ii. MECL informed that due to typographical error noticed later, the boreholes no. for RC and core drilling has been interchanged. The correct data is 5054m RC drilling in 14 boreholes and 2680m core drilling in 23 boreholes. The estimated additional cost is given below

S. No.	Work Component	Unit	Rates	Approved Quantity	Actual quantity	Difference in quantity	Additional amount (₹)
1	Core Drilling	metre	19,716/-	1435	2913.50 (1278.5 Core drilling)	1478.50	2,95,48,308/-
2	RC Drilling	metre	8,134/-	2055	1034.00 (1034 RC drilling)	-1650.50	-1,34,40,030/-
					Total		1,61,08,278/-
					GST @ 18%		29,01,501/-
					Grand Total		1,90,17,914/-

The Committee recommended for approval of additional estimated cost of ₹1,92,17,814/- including GST in respect of change in drilling method in Jhumka-Pachimposhi Block and recommended for approval of EC.

21.4.8 EIPMA studies of Galudih-Tirla-Jasudara & Diamond Block (SR-AP-02), District- Anantpur, Andhra Pradesh - Approval for work component & Timeline.

i. In 20th TCC meeting held on 4th & 5th April 2019, MECL informed that the heavy minerals separation through sluice method has been completed through outsourcing from MNRE. The cost has been borne by MECL as per the direction of 19th EC meeting held on 21st January, 2018. A total of 47nos. of samples have been segregated for diamond and other minerals which are required to be studied through EPMA. MECL has contacted IITs and other govt. agencies for carrying out EPMA analysis / studies.

ii. To complete the EPMA Study (which includes individual grain counting, grinding and polishing) for 47 nos. of samples, it is somewhat require 3 Months i.e. by Oct 2019 the analysis will be completed.

iii. The estimated cost for the analysis from I.I. Bombay are given below:

iv. Final Geological report will be submitted by December 2019 (within two month after getting the EPMA results from I.I. Bombay).

v. Sequence time over run of 5 months from July 2019 to Dec 2019

	Expected cost for EPMA analysis (IIT Bombay)	
	No of Sample	40
	Expected indications from each sample	16
	Total Expected indications from 40 samples	640
	Total Days required to mount 640 grains	20
A	No of Grains which can be mounted on one slide	9
	Total Mounting slides	72
	Mounting cost per slide	₹4,500.00
	Total Cost for Mounting	₹90,000.00
B	EPMA stations charges for one day	320,000.00
	Nos of samples which can be analysed in a day	2
	Days required to analyze 40 samples	20
	Total Cost of EPMA studies	64,00,000.00
	*Grand total of A+B	04,80,000.00

*Note: The above cost is excluding GST

The Committee accordingly consent for approval of the additional estimated cost of ₹4,80,000/- excluding GST in respect of EPMA studies with time over run of 5 months (December 2019) and recommended for approval of EC.

21.4.5:Additional drilling and associated sampling in Gajapur Limestone Block (I&II), District Kalaburagi, Karnataka.

i. In 20th SEAC meeting held on 4th and 5th April 2019, Committee approved additional drilling of 90m and additional associated work with additional cost of ₹1,71,540/- including GST with a condition of one further additional approval in the study.

ii. MECL informed that a total of 1245.50m drilling has been completed in 11 boreholes and a huge number of samples increased based on interaction found in outcrops.

iii. Approval for additional cost for samples analysis are required.

COST SHEET FOR PRELIMINARY EXPLORATION (G-3) IN LINGDAN BLOCKS, CHITTAPUR TALUK, DISTRICT GULBARGA, KARNATAKA

S. No	Item of Work	Unit	Date Date 01-04-19	Estimated Rate (₹)	Approved Quantity	Actual Quantity	Further Approval Required	Amount (₹)
A	Chemical Analysis							
1	Drilling Core Sample							

	Nos	40 (19+7+14)	1680	810+90 =900	1.12	1.2	45,00,000
	No	1 (7+1+2)	10.49	2*10=100	1.0	1	1,0,000
	Nos	10 (7+1+2)	2677	45+45	1.2	2	5,40,000
	L.S	980 (1+1+1)	2670	91+9=100	104	1	10,2,80,000
	Nos	10	900	1	1.2	1	59,1,000
						TOTAL	69,45,1,000
						GST-18%	12,50,1,380
						GRAND TOTAL	81,95,1,380

The Committee recommended for approval of additional estimated cost of ₹81,038/- including GST in respect of chemical analysis.

21. Additional Cost for MP Drilling Review and Approval for further drilling i.e. beyond 120.00m in drill across the sulphide zone

i. The project was approved in 4th EC meeting held on 21.02.17 with estimated cost of ₹3400.74 with time schedule of 14 months.

ii. In 15th TEC meeting, additional sampling cost was approved with estimated cost of ₹1,73,564/-

iii. In 15th EC meeting, project was reviewed and committee agreed for channel sampling in the area of anomalous PGE value. Ni and Cr should be included in the analysis.

iv. For trenches (1+2 samples for PGE & Ni, Cr) were made in 2 sections where PGE value was show value up to 1.5 ppm Pt+Pd and 0.5m core of 0.7% Cr.

v. In 17th TEC meeting, additional estimated cost of ₹10,13,581/- was approved for the analysis of 2 more core samples costing ₹82,772/- and 172 sample for PGE, Ni & Cr costing ₹9,13,812/-

vi. A total 743.60m drilling has been completed in 2 boreholes. Sampling of drill cores is in progress.

vii. Approval is awaited for PGE/Ni/Cr analysis of core samples as same is not incorporated in original approval.

viii. Time over run of 17 months was approved in 21st EC meeting (October 2019)

Committee recommended for approval of additional estimated cost of ₹17,22,396/- including GST in respect of the chemical analysis.The details are given in Annexure-11.

21.4.11 Review and justification for discontinuation of the limestone blocks of ISMDC:

(a) Lodays Block, Ranjeshte additional area in West Singhbhum district, Jharkhand

i. In 48th TCC meeting, the project was reviewed by the committee and asked ISMDC to present the work done with proper geological data and associated work with justifications.

ii. ISMDC informed that work carrying out the large scale geological mapping, exploration agency could not find any limestone outcrops in the area where mostly phyllite and pictures of Pelagic outcrop were seen.

iii. Samples were collected from suspected limestone outcrop during mapping but chemical analysis result could not confirm it as limestone.

iv. Further work in Jetiya block can be planned due to non availability of limestone outcrop and soil covered area. Drilling trenching in soil covered area or in phyllite rock could not expose the limestone to the resistance, drilling could not be taken up.

v. Time schedule for the project was 6 months i.e. to be completed by 13th October, 2018.

(b) Gopeshwar Block, Koraput district, Odisha

i. In 20th TCC meeting, the project was reviewed by the committee and observed that the fieldwork was completed in October, 2018. However the chairman was not informed about the problems faced by the implementing agency in execution of remaining works.

ii. ISMDC informed that out of six boreholes, four boreholes have been completed and remaining two boreholes could not be completed due to law & order problem. Request is enquested to drop drilling of two boreholes.

iii. Surface bed rock samples of limestone collected from the outcrop and dolomite outcrop during mapping. Chemical analysis of limestone surface samples showed positive result for cement grade limestone.

iv. The representative from State DGM, Odisha informed that exploration work has been done by DGM in the block area, so no further work can be done.

v. Time schedule for the project was 6 months i.e. to be completed by 28th October, 2018.

The Committee recommended to close further exploration in both limestone blocks and submit the final reports as per prescribed format incorporating all the chemical analysis data. The committee also accorded consent for additional time over run for 12 months (13th October, 2019) for both blocks to submit the final report and recommended same for approval of EC. As the agency has clarified all the issues, there is no impediment for processing and clearing bills to the agency.

21.4.12 Sendha Block, Sohagpur Coalfield, Shahdol, M.P., Pachpur South Block, Mand Raigarh, Chhattisgarh and Morkhi West Block, Singrauli Coalfield, Shahdol, M.P. approved in 9th EC

i. CMPDI informed that the blocks will be only undertaken by CMPDI for detailed drilling and exploration after finalization and approval of Schedule of Charges (SoC) of MoMFT by executive Committee (EC)/Governing Body (GB) of MoMFT.

The Committee informed that as per 13th EC directive, the proposals will be evaluated as per existing SoC presently.

21.4.13 Revised proposal of Khandadhar Block of Odisha involving overlap issue with CSL

i. The Member Secretary, TCC informed the Forum that OMECL has informed that revised proposal will be submitted only after the notification of the blocks in respect of OMECL is done by the Steel & Mines, Govt. of Odisha, as per submitted plan of DGM Odisha.

The Committee asked to submit the complete revised proposals of Khandadhar block in next TCC meeting.

21.4.14 Kandaji-on-Grid, Mahendra Block (CR-MP-05), for gold and associated element, Chhatarpur District, MP.

i. The project was reviewed in 18th TCC meeting held on 26th and 27th November 2018 and committee directed NMDC to complete geological mapping and extended the timeline to complete the project along with submission of the final geological report by September 2019.
ii. NMDC presented the final work done.

The Committee recommended to submit the Geological Report as per the approved time line in prescribed format.

21.4.15 Ruskabana Block (SR-KA-01) for gold and associated element, Tumkur district, Karnataka.

i. The project was reviewed in 18th TCC meeting held on 26th and 27th November 2018 and committee directed NMDC to complete the left out geological mapping and sampling. It was also extended the timeline to complete the project along with submission of the final geological report by September 2019.
ii. NMDC presented the final work done.

The Committee recommended to submit the Geological Report as per the approved time line in prescribed format.

21.4.16 Hatti-II Block (SR-KA-01) for gold and associated element, Raichur district, Karnataka.

i. The project was reviewed in 18th TCC meeting held on 25th and 27th November 2018 and committee directed NMDC to complete the left out geological mapping and sampling in suitable time during off season of cultivation (working window) and extended the timeline to complete the project along with submission of the final geological report by November 2019.

ii. NMDC presented the work done and informed that the block area is mostly soil covered and under cultivation for almost 8 months in a year. There is hardly 4 months (March – mid) for field work.

iii. All the 60 collected samples from Chalamalla area are basic intrusive rocks and contains gold values.

iv. The committee suggested to revisit the area again and do the systematic sampling for every trench.

v. 6 trenches each with 45m in strike total 270 m to be sampled at 1m interval for gold and associated elements analysis.

The committee reviewed the work progress report and with an emphasis on systematic trench pit sampling and directed to carry out additional/repeat 90 rm of trenching on the condition of no cost over-run and directed to collect groove sample at an interval of 1.0m
The committee also considered timeline extension of 6 months i.e. up to April, 2020 with a condition of no further extension will be granted and recommended for approval of EC.

21.4.17:Presentation of draft report of Kanigiri Bilkisoru Polymetallic Block (CR-011) for grant of Composite Mineral Exploration Licence

i. The project was reviewed in 18th TCC meeting held on 26th and 27th November 2018 and committee directed NMDC to complete geological mapping and sampling and extended the timeline to complete the project along with submission of the final geological report by June 2019.

ii. NMDC presented the final work done and informed that there is no permission for 3 months.

The Committee recommended for approval of time over run for 7 months (31st August 2019) and asked to submit the Geological Report as per the approved time line presented former.

21.4.18: Additional drilling in South of Kesna Gutta Block, Dist. Chittoor in Cuddapah (FR-0015) with associated chemical work

i. The project was approved in 3rd EC meeting held on 25.10.2016 with estimated cost of 4276 in Lakhs

ii. In 12th TCC meeting additional cost of 5287 was approved for chemical analysis

iii. In 18th TCC meeting, additional cost of 30,12,500 was approved for additional drilling of 40m. The original program approved for drilling of 600m.

iv. The drilling has been completed and the total no. of bore drill holes are 50

v. The additional cost of drilling and sampling to be approved

Cost Estimate for Grant Level of Exploration for Base Metal (Cu) in South of Kesnapur Block (CR-0015/09)

S. No.	Item of Work	Unit	Rates (in proposal) (Rs)	Qty.	Actual/ Expected	Additional	Original Approved Amount (Rs)
1	[illegible]	M	2,268.00	640.00	663.00	23.00	1,67,184.00
3	Geological Sketch (Scale 1:[illegible])	Nos.	2,447.00	300.00	475.00	75.00	2,92,529.00
4	Composite Samples (4 Metals, Cu, Pb, Zn, Co)	No	1,683.00	20.00	30.00	10.00	16,830.00
5	Composite Samples (Mg/Ca of T.C.)	No	1,460.00	20.00	30.00	10.00	14,600.00
							431,139.00
					GST (18%)		81,265.02
						GRAND TOTAL	532,344.02

The Committee recommended for approval of additional estimated cost of Rs.5,32,344/- including GST in respect of drilling and chemical analysis.

23.4.19: Additional sampling at Dungri Solu-Kherwara Tuz Area District Udaipur, Rajasthan (WR RAJ-[illegible])

i. Initially block was for Base metal exploration. During Mapping Magnesite only was delineated along the contact of dolomite and phyllite.

ii. During 11th TCC meeting, 3 drills (1 Bistar Magnesite and 4 Drills for Dolomite were approved).

iii. A total 650m drilling in 2 Drills has been drilled. The approval was given for additional drilling in 19th TCC meeting.

iv. Approval for additional core and surface samples for dolomite are required.

Item of Work	Unit	Price Rate as on 01-04-19	Rates in Proposal	Approved	Actual	Additional Qty	Amount (Rs)
LABORATORY STUDIES							
Chemical Analysis							
For [illegible] Samples							
For additional [illegible] Rs.2,07,000/- approved in 19th TCC	Nos	420 (3,75,000+1.5%)	4,31,381	Yes	573.00	23	9,660.00
Surface Dolomite samples for Chemical (for Oxides Mg,CaO, Al2O3, SiO2, P2O5, Loss on [illegible])	Nos	420 (1,75,000+10%)	2,30,000		80.00	60	2,56,800.00
							2,65,460.00
						GST (18%)	47,782.80
						GRAND TOTAL	3,13,242.80

The Committee recommended for approval of additional estimated cost of ₹3,13,579/- including GST in respect of sampling and chemical analysis.

21.4.20 (i) In line in consultation with NLC in respect of Veeranam (Ext.) sub-block (Blocks I, II & III and IV)

- NLC informed that the detail time line for each block will be submitted in the next TCC meeting.

The Committee asked to submit break ups of cost and Time line for each sub-block of Veeranam Project in the next TCC meeting.

21.4.21 Modification/Submission of Geological Reports as per Draft DGM's recommendations in Thirubhuvanai-Chandirapadi and Ottakoil Panaiyanjeri Lignite Block (Ext.) and Thirubhuvanai Block.

- NLCL informed that Draft DGM's have asked to submit the geological reports of completed projects in different blocks as per State DGM's requirements.

The Committee informed that there is no provision in existing CoC for such type of payments.

21.4.22 Handing over of core boxes to National Core Library

The Committee informed that for core preservation, MoEF has already issued drilling guidelines accordingly the core preservation can be done after completion of the projects.

GENERAL GUIDELINES BY TCC

- The Committee directed that all the implementing agencies shall submit the work progress report only in the prescribed format duly enclosed by list of key plan, sections.
- The Committee directed that the implementing agencies have to get approval of EC through TCC for any time extension with proper justification before the lapse of approved time schedule of the concerned project and thereafter it should not be clubbed with Quarterly Monthly Progress Report to NMET Secretariat. It is the responsibility of the Implementing agency to put up the matter in TCC meeting.
- The expenditure statement to be submitted to NMET along with the approved Annual Action Plan.
- The drill core preservation to be done as per drilling guidelines of NMET given on NMET website (https://nmet.gov.in).
- The Committee asked to submit the Geological Report as per the approved time line in prescribed template given on NMET portal (https://nmet.gov.in).

Meeting ended with a vote of thanks to the Member Secretary, TCC & NMET.

Mineral Exploration Projects/blocks recommended by 21st TCC held on 26th and 27th June

S. No.	Block Name	Commodity	Stage	Duration	Approved Cost (₹ lakhs including GST)
					1796.9
1	[illegible] for the project [illegible] Granites [illegible] Block 5 of Phase II and Block 1 to 4 of Phase II				(US$ 2514040.124 US Dollar including 18% GST.
Implementing Agency: DCM, Odisha					
2	[illegible] Block, District- [illegible], Odisha	Manganese	G4	9 months	26.32
Implementing Agency: DGM, Madhya Pradesh					
3	[illegible] District Satna, Madhya Pradesh	Limestone	G4	12 months	41.52
Implementing Agency: MECL					
4	Bargunda Block, District- Giridih, Jharkhand	Copper	G4	15 months	884.67
5	[illegible] Environmental Studies in Tamar, Singari, Kasia, Kamdara and Lapsa Buru Block, District [illegible]			9 months	18.70
Implementing Agency: KGIGL					
6	Yermuchigi Block-Extn. (KAR_SHI_G_03B_E) Distt. [illegible], Karnataka	Limestone	G4	12 months	93.66
7	New Additional Block [illegible] (KAR_NEW_G_27G2_W) District [illegible], Karnataka	Limestone	G4	12 months	51.58
				Total	2955.71 Lakhs

Additional cost recommendation/approval by 21st TCC

1. Dubai Cold Block (SR_KAR_07)- Rs 47,54,765/- including GST (the consolidated additional cost Rs 50,60,105/- will be put up in next EC meeting for approval)
2. [illegible] Block (SR_TN_06)- Rs [illegible]/- including GST
3. [illegible]- Rs 42,27,215/- including GST
4. [illegible] Block (SR_[illegible])- Rs 4,30,000/- including GST
5. [illegible] (G3)- Rs 82,158/- including GST
6. [illegible] (ER_JK_[illegible])- Rs 12,27,456/- including GST
7. South of Jail [illegible] Block- Rs 1,32,342/- including GST
8. [illegible] Area- Rs 3,13,572/- including GST

Annexure-1A

21st Technical-cum-Cost Committee (TCC) NMET, GSI, Nagpur on 26.06.2019 and 27.06.2019

(P. Maharana)
AGM, NALCO
Member, TCC, NMET

(Naeem Ahmad)
General Manager-Exploration
(Retd.), CMPDI Ltd.
Member, TCC, NMET

(Dr. Anjani Kumar)
Dy. General Manager
(Exploration) & HoD-Planning
(Retd.), MECL
Member, TCC, NMET

(H. K. Verma)
DGM (Finance), HCL
Member, TCC, NMET

(Vinay Pal)
Asstt. Cost Account Officer, GSI,
Member, TCC, NMET

(J. V. Ramarao)
Director (GP), GSI
Member, TCC, NMET

(Dr. Manoranjan Mohanty)
Dy. Director General (Retd.)
Geological Survey of India
Member, TCC, NMET

(Ranjan Kumar Sinha)
Controller General (Retd.) Indian
Bureau of Mines
Member, TCC, NMET

(P. Turafdar)
Dy. DG (Retd.), GSI
Member, TCC, NMET

(Dr. L. P. Singh)
Director, NMET, MoM
Member, TCC, NMET

(Manoj Kumar)
Director, GSI
Member Secretary, TCC, NMET

(D. Mohan Raj)
ADG & NM H-II, GSI and
Chairman, TCC, NMET

Annexure-1B

***List of Participants* 21th Technical -cum-Cost Committee (TCC) NMET**

(*Date: 26th and 27th June, 2019*) *(Venue: GSI, Nagpur)*

S. No.	Name & Designation	Organization/Contact No./ Email	Remarks
1	Shri D. Mohan Raj, ADG, NM-II and Chairman, TCC, NMET	Geological Survey of India, hodnm2@gsi.gov.in	*In Chair*
2	Shri P. Tarafdar Dy. DG (Retd.)	Geological Survey of India 9503088847/tarafdar.pradipta@gmail.com	Member
3	Dr. Manoranjan Mohanty, Dy. Director General (Retd.)	Geological Survey of India, 9483511287/manoranjanmoha@gmail.com	Member
4	Dr. Anjani Kumar, DGM (Exp) & HoD-Planning (Retd.)	MECL, 9975350576 anjani_kumar1957@yahoo.co.in	Member
5	Shri Naeem Ahmad, General Manager -Exploration (Retd.)	CMPDI Ltd./ 8588092153 ahmadnaeem17@yahoo.co.in	Member
6	Shri Pradeep Singh, Director (Tech)	Ministry of Mines, 9810233957/dirtech.mom@gov.in	Invitee
7	Dr. L. P. Singh Director	NMET, Ministry of Mines, 9971839549/nmet-mines@gov.in	Member
8	Shri Manoj Kumar Director	NMET, Ministry of Mines, 8968443417/nmet-tcc@gov.in	Member Secretary
9	Shri J. V. Ramarao, Director (GP)	Geological Survey of India, Hyderabad 944691284/rarajammi@rediffmail.com	Member
10	Shri Vinay Pal Asstt. Cost Account Officer	Geological Survey of India, DGCO 8527368161/palvinay009@gmail.com	Member
11	Shri P. Maharana, AGM, NALCO	NALCO, Bhubaneswar 8500669500/pmaharana@rediffmail.com	Member
12	Shri H. K. Verma DGM (Finance), HCL	HCL, Kolkata 9752860983/verma_hk@hindustancopper.com	Member
13	Shri Vijay V. Mugal Dy. DG & RMH-II	Geological Survey of India, Central Region, Nagpur/9423620166	Invitee
14	Shri Subhash Kumar, Senior Geologist	NMET, Ministry of Mines 9868302624/nmet-mines@gov.in	NMET representative
15	Shri Yogesh Sharma GM (BD &P/E)	MECL 9810163792/yogesh21@hotmail.com	Nodal Officer, MECL
16	Shri B. P. Raturi HoD (Exploration)	MECL 9422806417/bpratan100@yahoo.co.in	MECL representative
17	Shri S. K. Biswas Expert Level-1	MECL 9830812363/shyawal1949@gmail.com	MECL representative
18	Dr. S. Kamalakaram Sr. Manager (Geology)	MECL 9370621725/drskumprbh@gmail.com	MECL representative
19	Shri Saurabh Vivek, Assit. Manager (Geology)	MECL 9545425923/saurabh.12181@gmail.com	MECL representative
20	Shri. K. Rajasekhar Reddy General Manager	TSMDC Ltd 8008558580/tsmdcltd@gmail.com	TSMDC representative
21	Dr. P. Habibulla Khan Jt. GM (Geology)	NMDC Ltd 9490759640/phkhan@nmdc.co.in	NMDC representative



22	Shri Swaminathan S. Sr. Manager (Geology)	NMDC Ltd. 9652938385/swaminathan.sm@gmail.com	NMDC representative
23	Shri Panchanan Das Manager (Geology)	NMDC Ltd 8374986796/dasgeol@gmail.com	NMDC representative
24	Mohd. Nasim Ansari Senior Manager (Geology)	NMDC Ltd 9963117045/mdansari@nmdc.co.in	NMDC representative
24	Shri. C. S. Bhardwaj Deputy Director (Geology)	DGM, Chhattisgarh 9424214734/csb7685@gmail.com	DGM representative
26	Shri D. K. Kosre Deputy Director (Geology)	DGM, Chhattisgarh 9993449601/kosredeepak71@gmail.com	DGM representative
27	Shri G. R. Chauhan Deputy Director (Geology)	DGM, Chhattisgarh 9424147716/chauhangr30@gmail.com	DGM representative
28	Shri Shailesh Verma Deputy Director (Geology)	DGM Chattissgarh shaileshverma040@gmail.com	DGM representative
29	Shri O.V.V.S. Ravi Kumar Geologist	MERIT, Andhra Pradesh 7506776919/merit.ravikumar@gmail.com	DMG, AP representative
30	Shri. Shiva Kumar M SM (ME)	KIOCL Ltd 9481444686/bmed@kioclltd.com	KIOCL representative
31	Dr P.C. Mishra, Dy. Director.	Directorate of Geology, Odisha directorgeology_odisha@yahoo.co.in	DGM, Odisha representative
32	Shri P. C. Das Supdtg. Geophysicist	RSAS, Bengaluru 9483623603/daspurnach@yahoo.co.in	GSI representative
33	Shri S. A. Khan, Dy. Director (Tech.)	DGM, Madhya Pradesh, 9425678746 sakhan.mining@gmail.com	DGM, MP representative
34	Shri D. S. Baghel Sr. DGM (Geology)	MPSMCL, Bhopal 9425373848	DGM, MP representative
35	Shri K. K. Kaushik Dy. GM (Exploration)	MECL 9422805475/kkaushik47@gmail.com	MECL representative
36	Shri K. K. S. R. K. S. Sai Sr. Manager (GP)	MECL 9829127182/saigph@gmai.com	MECL representative
37	Dr. Gaurav K. Shukla Manager (Geology)	MECL 9931165764/dr.gauravkumarshukla@gmail.com	MECL representative
38	Shri A. K. Singh Adv. (Exploration)	Khetic Copper complex, HCL	HCL representative
39	Shri Amit Sarkar AGM (Exploration)	HCL 8902624488/amit.s@hindustancopper .com	HCL representative
40	Smt. Sukanya Chakraborti Sr. Manager (Exploration)	HCL 8902288772/sukanya-c@hindustancopper.com	HCL representative
41	Dr. A. V. Subrahmanya, Consultant BMDC	TSMDC Ltd. 9000181324/dravsubramanya@gmail.com	TSMDC representative



Annexure-2

Agenda Point/Para	TCC Reccomemdation	Action Taken Report
Para 20.1.1: General Exploration (G2) for Estimation of Gold Ore in C. K. Halli South Block, District- Chitradurga, Karnataka.	MECL to prepare proposal for C. K. Halli South Block in consultation with DGM Karnataka.	MECL informed that the proposal is under preparation in consultation with DGM Karnataka.
Para 20.1.2: General Exploration (G2) of Copper Ore Resource in Baraganda Block, District- Giridih, Jharkhand.	**TCC-** Cost approval as per the SoC of NMET. **13th EC-** Cost evaluation as per existing SoC.	MECL submitted the proposal with a request that the cost ratification be differed till the SOC is approved.
Para 20.1.3: Reconnaissance Survey (G4) for Diamondiferous deposits in Sailaya Block, District-Katni, Madhya Pradesh.	To finalize the work component and increase the area in consultation with DGM MP.	MECL informed that the proposal is under preparation in consultation with DGM MP.
Para 20.1.4: Baseline Environmental studies in Tamiya, Rengali, Babja, Biyarapalli and Dungarpalli Blocks, District- Bolangir, Odisha.	TCC; Cost approval as per the SoC of NMET 13th EC; Cost evaluation as per existing SoC.	MECL submitted the proposal with a request that the cost ratification be differed till the SOC is approved.
Para 20.1.5: Seamless upgradation from G3 to G2 exploration of Diggaon and Udagi Block District Kalaburagi, Karnataka based on incorusing Chemical analysis results.	MECL to submit chemical analytical results.	MECL informed that on receipt of chemical analytical results the same will be presented in TCC.
Para 20.1.6 and 20.1.7 Reconnaissance Survey (G4) for limestone and dolomite in Neerbudhilal Block-East and West District- Bagalkote, Karnataka.	TCC; Cost approval as per the SoC of NMET 13th EC; Cost evaluation as per exisiting SoC.	KIOCL submitted the proposal.
Para 20.1.8: General Exploration (G2) for limestone in SGS-1Gir-Somnath (Sutrapada-Gir-Somnath cluster-1) Block, District- Gir-Somnath, Gujarat.	To resubmit modified proposal.	Commissionerate of Geology, Gujrat informed that the proposal is under preparation.
Para 20.1.9: Reconnaissance Survey (G4) for Manganese ore in Tentuliguda Block, District- Koraput, Odisha.	To resubmit modified proposal.	DMG Odisha submitted the revised proposal.
Para 20.2.1: Cost evaluation of additional drilling of 200m in Udbur Gold Block (SR_KAR_07) in Stage-3 and related Analytical/Physical studies of samples and approval of Time Over-run.	TCC; Cost approval as per the SoC of NMET 13th EC; Cost evaluation as per existing SoC.	KIOCL submitted the proposal.
Para 20.2.4: Jateya, Buruborta & Dumurjowa Block, District- West Singhbhum, Jharkhand: Review and justification for discontinuation of the block.	To furnish proper geological map of limestone blocks and justification to discontinue the project.	TSMDC submitted the justification.



Para 20.2.5: Review of the projects-MECL; Malangtoli iron ore deposit H-sub Block, Sundergarh & Kendujhar, Odisha.	The Govt of Odisha may be pursued for getting forest clearance.	MECL is pursuing the matter with DGM Odisha in the month of March 2019 and action is awaited from DGM Odisha.
Para 20.2.6: Review of Project of OMECL	To take up the matter of overlapping of blocks in Khandadhar Iron ore block with GSI and State Govt.	DMG Odisha furnished the details map excluding GSI explored block and the same forwarded to OMECL to revise the project. OMECL informed that notification in this regards is awaited from Ministry of Steel and Mines, Odisha.
Para 20.2.7: Review of 04 Nos Bauxite (G3) and 02 Nos limestone block (G3) and 08 Nos Iron ore block (G4) , Chhattisgarh.	To furnish justification for dropping 08 Nos Iron ore blocks and 01 No Bauxite block and matter of time overrun approval.	DGM Chhattisgarh informed that justification for dropping 08 Nos Iron ore blocks due to NPV issue of forest and details of time over run required will be presented in 21st TCC meeting. Matter of 01 No Murtadang Bauxite Block is being pursued with officials for continuation of exploration.
Para 20.3: Time over run approval for Nahardih-Madhaipur Limestone block Chhattisgarh.	MECL to furnished clarification to NMET Secretariat regarding mention of time schedule of 7 months in technical report along with bills.	MECL informed that the classification has been submitted on 29 April 2019.
Para 20.4: EPMA studies in Kalyandurg-Timmasundram Diamond Block (SR-AP-02), District- Anantpur, Andhra Pradesh and Agnigundala North Block (SR-AP-09), District-Guntur, Andhra Pradesh. Approval for work component & Timeline.	To finalized work component and time line first in consultation with the institute carrying out analytical work.	MECL informed that IIT Mumbai has been engaged for EPMA analysis of 40 samples who will be taking up studies in batches. In first lot 20 samples submitted. Consequent time and cost impact will be worked out and will be submitted for approval of time and cost overrun.
Para 20.6.4: Approval of additional cost due to change in drilling method in Jhumka-Pathriposhi Block.	Clarification required for ambiguity in data of drilling.	Yet to be submitted by MECL.
Para 20.8: Issues related to Veeranam Lignite Block.	To work out separate time lines for all sub blocks in consultation with NLC.	The exercise is under progress and drilling capacity has been augmented by deploying additional drilling rigs.



Annexure-3A

Cost Estimate for Exploration of Manganese Ore around Tentuliguda Block (G-4)						
Sl. No.	**Item of work**	**Unit**	**Base Rate as per MECL**	**Esc. Rate 2018-19**	**Quantity**	**Amount (INR)**
A.						
1	Transportation (Mobilisation & field work)	Km	8	33	400	13200
2	Accommodation/Establishment					
3	Camp setting/Winding	Nos.	68606	254864	1	254864
	Sub-Total-A					**268064**
B.	**Geological Work**					
1	Geologist Party days(1 party)	Day	1541	8083	120	969960
2	Sampling Party days (Pit, Trench & Channel)	Day	994	5409	60	324540
	Sub-Total-B					**1294500**
C.	**Pitting & Trenching**					
1	a) Pitting 10 Nos. (1m x 1m x1m) & Trenching (1m x 2m x 20m) 5 Nos.	Cu.m	395	1739	210	365190
	Sub-Total-C					**365190**
D.	**Laboratory Studies**					
1	**Chemical Analysis**					
	i) Primary & Check samples					
	a) Primary samples for 6 radicals (Mn, SiO_2, P_2O_5, Fe_2O_3, MnO_2 and Insolubles)	Nos	490	2670	135	360450
	ii) Composite samples					0
	a) Composite samples for 6 radicals (Mn, SiO_2, P_2O_5, Fe_2O_3, MnO_2 and Insolubles.)	Nos.	490	2670	10	26700
2	**Physical Analysis**					0
i)	Preparation of Thin Section	Nos.	100	556	10	5560
ii)	Petrographic Studies	Nos.	228	1478	10	14780
iii)	Preparation of polished section	Nos.	100	556	10	5560
iv)	Specific Gravity	Nos.	32	195	5	975
	Sub-Total-D					**414025**
	Total:A+B+C+D					**2341779**
E	**EXPLORATION REPORT**				1	**50000**
	Total: A+B+C+D+E+F+G					2391779
	GST @ 18%					430520
	Grand Total					**2822299**
						or Say ₹28.22 Lakhs



Annexure-3B

Time Line for Exploration of Manganese Ore around Tentuliguda Block (G4)											
Time Schedule											
			1	2	3	4	5	6	7	8	9
1	Camp Setting	Month									
2	Geological mapping	Month									
3	Pitting & Trenching (10 pits & 5 Trenches)	Cu. m									
4	Sampling Party days (Pit, Trench, Channel & Bulk) (1 party)	Party days									
5	Laboratory studies	Nos.									
6	Camp Winding	months									
7	Report Writing with Peer Review	Months									



Annexure-4A

Details of cost estimate for Limestone (G4) in Sangmania Block District-Satna, MP						
SL. No.	**Item of Work**	**Unit**	**Base Rate 1.4.90 as per MECL SoR**	**Financial Year (2019-20)**		
				MECL's Esc. Rate for F.Y 2018-19 (₹)	**Qty.**	**Amount (₹)**
A	**DRILLING**					
1	Surface Drilling (1 Rigs, 6 BH)	m.	1714	7028	240	1686720
2	Tender preparation, Publishing & finalisation	No.			1	100000
	Sub Total A					**1786720**
B	**GEOLOGICAL WORK**					
1	Survey Party Days	day	1180	6056	30	181680
2	Geologist Party days	day	1541	8083	70	565810
3	Core Sampling Party days	day	525	2905	45	130725
	Sub-Total B					**878215**
C	**Trenching (3mx1mx2m) 10 Nos.**	Cu.m	395	1739	0	0
	Sub-Total C					**0**
D	**LABORATORY STUDIES**					
a	**Chemical Analysis**					
1	Primary Samples Check & Comp, Samples					
	a) Primary samples for 6 radicals	Nos	490	2670	200	534000
	b) Check samples for 6 radicals	Nos	490	2670	15	40050
	c) Composite samples for 6 radicals	Nos	490	2670	0	0
b	**Physical Analysis**					
	i) Specific Gravity determination	Nos	32	195	0	0
	Sub-Total D					**574050**
E	**Preservation of Core**					
i)	GI Core boxes	Nos.		2000	60	120000
ii)	Transportation of Core Boxes	Km	8.8	33.0	300	9900
	Sub-Total E					**129900**
	Total A+B+C+D+E					**3368885**
F	**EXPLORATION REPORT**					**150000**
	Total Cost (A+B+C+D+E+F)					**3518885**
	GST 18%					**633399**
	Grand Total: with GST 18%					**4152284**
						Say ₹41.52 Lakh



Annexure-4B

Time Schedule /Action Plan													
S. No	Time/Items	Months	1	2	3	4	5	6	7	8	9	10	11	12
1	Work Order To the Out Sourced Partner	Months												
2	Mobilisation	lumpsum												
3	Approach Road	km												
4	Drilling (6-BH)	240 M												
5	Survey	9.43 sq km												
6	Mappping	9.43 sq km												
7	Sampling	215												
8	Laboratory Studies	215												
9	Report writing and Submission	Months												



Annexure-5A

Cost Estimate for General Exploration (G2) Proposal for Estimation of Copper Ore in Baraganda-Parsabera Block (0.60 SqKm), in Giridih District, Jharkhand State						
SL. No.	**Item of Work**	**Unit**	**Base**	**Financial Year (2019-20)**		
			Rate 1.4.90	**Esc.Rate (18-19)**	**Qty.**	**Amount (₹)**
A	**DRILLING**					
1	Surface Drilling (3 Rigs, 30 BH)	m.	2551	10317	5395	55660215.00
2	Transportation	Km.	8.8	33	2200	72600.00
3	Accommodation	One time / Drill	185925	690693	3	2072079.00
4	Camp Setting / Winding	Drill/ month	68606	254864	6	1529184.00
5	Road Making (Flat Terrain)	Km	7800	19317	16	309072.00
	Sub Total A					**59643150.00**
B	**GEOLOGICAL WORK**					
1	Survey Party Days (1 party)	day	1180	6056	160	968960.00
2	Geologist Party days (2 party)	day	1541	8083	460	3718180.00
3	Core Sampling Party days (2 parties)	day	525	2905	300	871500.00
4	Bulk Sampling Party days (1 parties)	day	2566	13908	30	417240.00
	Sub-Total B					**5975880.00**
C	**LABORATORY STUDIES**					
a	**Chemical Analysis**					
1	Primary + Check Samples					
	i) for Cu (Classical)	Nos	205	1111	2500	2777500.00
	ii) for Pb, Zn and W (3 radical)	Nos	262	1422	300	426600.00
	ii) for Au and Ag (Fire Assay)	Nos	268	1439	300	431700.00
2	Composite Samples					
	i) For 4 radicals (Cu, Pb, Zn and W)	Nos	338	1838	250	459500.00
	ii) for Au and Ag (Fire Assay)	Nos	268	1439	250	359750.00
b	**Physical Analysis**					
	i) ICPMS (22 trace elements) ****	Nos		7602	50	380100.00



	ii) XRD Analysis	Nos	1137	5813	25	145325.00
	iii) Spectroscopic analysis	Nos	1173	5603	25	140075.00
	iv) Preparation of thin section	Nos	100	556	30	16680.00
	v) Petrographic Studies	Nos	228	1478	30	44340.00
	vi) Preparation of polished section	Nos	100	556	30	16680.00
	vii) Minerographic studies	Nos	364	2090	30	62700.00
	viii) Specific Gravity determination	Nos	32	195	40	7800.00
	ix) Transportation (Beneficiating sample to IBM Bangalore)	Km	8.8	33	1100	36300.00
	x) Beneficiation sample *	Nos		289327	1	289327.00
	xi) Transportation (Geotechnical sample)	Km	8.8	33	1100	36300.00
	xi) Geotechnical sample (For 60 samples in one borehole) #	Nos	as per Actual	360500	1	360500.00
	Sub-Total C					**5991177.00**
D	**Preservation of Core**					
i)	GI Core boxes	Nos.		2000	375	750000.00
ii)	Transportation of Core Boxes	Km	8.8	33	375	12375.00
	Sub-Total D					**762375.00**
	Total A+B+C+D					**72372582.00**
E	**EXPLORATION REPORT - 1% of (A+B+C+D) or 150000 whichever is more**					**723725.82**
F	**Environmental Studies**					
1	Satellite Imagery studies	Scene	99697	476193	1	476193.00
2	Base line Data Collection	(10 KM Radius Area)	151273	722540	1	722540.00
3	Chemical Analysis	Nos	257400**	626615	1	626615.00
4	Report Writing	Nos	50000	50000	1	50000.00
	Sub Total F					**1875348.00**
	Total Cost (A+B+C+D+E+F)					**74971655.82**
	GST 18%					**13494898.05**
	Grand Total: with GST 18%					**88466553.87**
						or say ₹884.67 Lakhs
Note						
1	* IBM Rate					



2	** Nityanand Committee Rates with actual escalation as per RBI Index as on 31/03/2018 and the same for subsequent year
3	**** Rate has taken from Schedule of Charges of different activities of GSI as on 2014-15 and 40% escalation on the same has been considered for FY 2018-19.
4	# the charges of analyzing of Geotechnical Sample will be charged as per actual basis
5	The date of commencement shall be reckoned after forest clearance.



Annexure-5B

Time Schedule for General Exploration (G2) Proposal for Estimation of Copper Ore in Baraganda-Parsabera Block (0.6 Sq Km), in Giridih District, Jharkhand																	
Sl. No.	Activities	Unit	Months														Total
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Camp Setting	Month																30 Days
2	Surface Drilling (3 Drills)	Metre																30 BH (5395 meters) 8 months
3	Survey Party days (1 Party)	Days																240 Days
4	Geologist Party days (2 Party)	Days																540 Days
5	Sampling Party days																	
i.	Core Sampling (2 party)	Days																480 Days
ii.	Bulk Sampling (1 party)	Days																30 Days
6	Laboratory Studies	Number/month																2500 Samples 9 Months
7	Geotechnical Studies (Drill core 1 BH)	Month																90 Days
8	Beneficiation Studies	Month																90 Days
9	Camp Winding	Month																30 Days
10	Baseline Environmental Studies	Month																10 Months
11	Report Writing (Including Peer Review of Report)	Month																6 Months
	NOTE-																	
	* Commencement of projects will be reckoned from the day the exploration acreage is available along with all statutory clearances.																	



Annexure-6

Cost for Environmental Studies including Base line data collection and imagery studies of 10 KM (Radius area), Manganese ore Block at Bolangir-District, Odisha						
S. No.	**Item of Work**	**Unit**	**Base**	**Financial year (2019-20)**		
			Rate	**Esc. Rate (18-19)**	**Qty.**	**Amount (₹)**
1	Satellite Imagery Study	Scene	99,697.00	476,193.00	1.00	476,193.00
2	Baseline Data Collection (Envn. Std.)	(10 km radius area)	151,273.00	722,540.00	1.00	722,540.00
3	Chemical Analysis*	Nos	257,400.00	626,615.00	1.00	626,615.00
4	Report Writing	Nos	50,000.00	50,000.00	1.00	50,000.00
	Total					**1,875,348.00**
Time line: 9 Months, * Rates as per Nityanand Committee						**or say ₹18.75 Lakhs**

Annexure-7A

Cost Estimate for Prospecting Exploration (G4 Level) for Limestone in Neerbudhihal Limestone & Dolomite Block (East), Bagalkote (District), Karnataka							
S.N	**Item of Work**	**Unit**	**Base Rate as on 01-04-1990**	**Financial Year (2019-20)**			**Total Amount in ₹**
				Escalated Rate (18-19)	**Qty**	**Amount (₹)**	
(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)=(e)*(f)**	**(h)**
1	**DRILLING**						**4,009,281**
1.1	Surface Drilling (01 Rig)	m.	1,714	7,028	340	2,389,520	
1.2	Transportation (01 Rig for 500 km - One way)	Km.	8.8	33	1,000	33,000	
1.3	Accomodation	One time/ Drill	185,925	690,693	1	690,693	
1.4	Camp Setting / Winding	Drill/month	68,606	254,864	2	509,728	
1.5	Road Making (Flat Terrain)	Km	5,200	19,317	20	386,340	
2	**GEOLOGICAL WORK (25.17 sq km)**						**1,292,724**
2.1	Geologist Party days (1 party) — LSM (25.17)+ Collection of BRS (60) / Drilling works	days	1,541	8,083	128	1,034,624	
2.1	Survey Party Days (1 party) — LSM + Collection of BRS (60) / DGPS - Drilling points	days	1,180	6,056	10	60,560	
2.3	Core Sampling Party days(1 party)	days	525	2,905	68	197,540	
3	**TRENCHING /PITTING WORKS**						**147,775**
3.1	Trenching/ pitting for Insitu Bulk Density	cum	395	1,739	5	8,695	
3.2	Bulk Sampling Party days	days	2,566	13,908	10	139,080	
4	**Preservation of Cores**						**236,000**
4.1	GI core boxes	nos	0	2,000	85	170,000	
4.2	Transportation (2 trips * 1000 km per trip - 300m of core per trip)	kms	8.8	33	2,000	66,000	
5	**LABORATORY STUDIES**						**1,907,720**
5.1	**Chemical Analysis**						
a)	Primary analysis for * 08 radicals	Nos	642 '(110+76X7)	3,502	400	1,400,800	



	(CaO,MgO,SiO2,Al2O3,Fe2O3, LOI, Na2O & K2O)						
b)	04 radicals (SO3,P2O5, Cr2O3 & Acid Insoluables) - 10%		338 '(110+76X3)	1,838	40	73,520	
d)	Internal Check sample analysis for analysis of for * 08 radicals - 5%	Nos	642 '(110+76X7)	3,502	20	70,040	
e)	External Check (NABL) samples for analysis of for *08 radicals - 10 %	Nos	642 '(110+76X7)	3,502	40	140,080	
f)	Composite sample analysis (13 radicals - (CaO, MgO, R2O3(Al2O3,Cr2O3 & Fe2O3) SiO2, LOI, SO3, P2O5 , MnO2, K2O, Na2O, and Acid insolubales.)) - 10%	Nos	1022 '(110 + 76X12)	5,582	40	223,280	
5.2	**Petro studies**						**28,908**
a)	Preparation of thin section	Nos	100	556	10	5,560	
b)	Complete petrological report of Rock samples	Nos	228	1,478	10	14,780	
c)	Photomicrographs of Thin sections	Nos	GSI Rate	363	10	3,630	
d)	Moisture absorption & Specific Gravity determination	Nos	64	389	3	1,167	
g)	Sample Handling/Transportation charges (@15% of 5.2)		-	-	-	3,771	
6	**STUDY AND INTERPRETATION OF AERO GEOPHYSICAL DATA**					236,303	**236,303**
7	**EXPLORATION REPORT - 1% of (Total (1+2+3+4+5+6))**					**78,587**	**78,587**
8	**GRAND TOTAL (1 to 7)**					**7,937,298**	**7,937,298**
9	**GST 18%**					**1,428,714**	**1,428,714**
10	**Grand Total (with GST 18%)**					**9,366,012**	**9,366,012**
							or say ₹93.66 Lakhs

NOTE	
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02-07-2014 and based on actual escalation as per RBI indices as on 31-03-2018.
2	Procurement of Aerogeophysical maps, Data, Fees & Levies on actuals to be reimuburesed
3	Petro Studies (Sl No.5.2) - if the these items will be carried out in GSI/other Govt. lab, the charges will be reimburse as per actual.



Annexure-7B

Time schedule for G4 level mineral exploration in Neerbudhihal limestone & dolomite block (KAR_NLDB_3363_EAST)															
S. No	**Details of Works**		**Duration**	**12 MONTHS**											
			Months	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	**CAMP SETTING**		**01**												
2	**LARGE SCALE GEOLOGICAL MAPPING (Includes 25.17 sq km of LSM + 60 nos of BRS)**		**05**												
	2.1	**Geologist Party days (1 Party)**	**04**												
	2.2	**Survey Party days (1 Party**	**04**												
	2.3	**Bulk Sampling Party days**	**01**												
	2.4	**Laboratory Works**	**04**												
3	**Surface Drilling (01 rig)**		**6**												
	3.1	**Geologist Party days (1 Party)**	**6**												
	3.2	**Core sampling Party days (1 Party)**	**6**												
	3.2	**Survey Party days (1 Party)**	**1**												
	3.3	**Laboratory Works**	**07**												
4	**Camp Winding**		**1**												
5	**Preparation of Reports and Maps**		**2**												

Annexure-8A

Cost Estimate for Prospecting Exploration (G4 Level) of Limestone in Neerbudhihal Limestone & Dolomite Block (West), Bagalkote (District), Karnataka							
S.N	**Item of Work**	**Unit**	**Base Rate as on 01-04-1990**	**Financial Year (2019-20)**			**Total Amount in ₹**
				Escalated Rate (18-19)	**Qty**	**Amount (₹)**	
(a)	**(b)**	**(c)**	**(d)**	**(e)**	**(f)**	**(g)=(e)*(f)**	**(h)**
1	**DRILLING**						**4,009,281**
1.1	Surface Drilling (01 Rig)	m.	1,714	7,028	340	2,389,520	
1.2	Transportation (01 Rig for 500 km - One way)	Km.	8.8	33	1,000	33,000	
1.3	Accomodation	One time/ Drill	185,925	690,693	1	690,693	
1.4	Camp Setting / Winding	Drill/month	68,606	254,864	2	509,728	
1.5	Road Making (Flat Terrain)	Km	5,200	19,317	20	386,340	
2	**GEOLOGICAL WORK (21.11 sq km)**						**1,292,724**
2.1	Geologist Party days (1 party) — LSM + Collection of BRS / Drilling works	days	1,541	8,083	128	1,034,624	
2.2	Survey Party Days (1 party) — LSM + Collection of BRS / DGPS - Drilling points	days	1,180	6,056	10	60,560	
2.3	Core Sampling Party days(1 party)	days	525	2,905	68	197,540	
3	**TRENCHING /PITTING WORKS**						**156,470**
3.1	Trenching/ pitting for insitu Bulk Density	cum	395	1,739	10	17,390	
3.2	Bulk Sampling Party days	days	2,566	13,908	10	139,080	
4	**Preservation of Cores**						**236,000**
4.1	GI core boxes	nos	0	2,000	85	170,000	
4.2	Transportation (2 trips * 1000 km per trip - 300m of core per trip)	kms	8.8	33	2,000	66,000	
5	**LABORATORY STUDIES**						**1,796,080**
5.1	**Chemical Analysis**						
a)	Primary analysis for * 08 radicals (CaO,MgO,SiO2,Al2O3,Fe2O3, LOI, Na2O & K2O)	Nos	642 '(110+76X7)	3,502	400	1,400,800	



b)	04 radicals (SO3,P2O5, Cr2O3 & Acid Insoluables) - 10%		338 '(110+76X3)	1,838	40	73,520	
d)	Internal Check sample analysis for analysis of for * 08 radicals - 5%	Nos	642 '(110+76X7)	3,502	20	70,040	
e)	External Check (NABL) samples for analysis of for *08 radicals - 10 %	Nos	642 '(110+76X7)	3,502	40	140,080	
f)	Composite sample analysis (13 radicals - (CaO, MgO, R2O3(Al2O3,Cr2O3 & Fe2O3) SiO2, LOI, SO3, P2O5 , MnO2, K2O, Na2O, and Acid insolubales.)) - 10%	Nos	1022 '(110 + 76X12)	5,582	20	111,640	
5.2	**Petro studies**						**28,908**
a)	Preparation of thin section	Nos		556	10	5,560	
b)	Complete petrological report of Rock samples	Nos		1,478	10	14,780	
c)	Photomicrographs of Thin sections	Nos	GSI Rate	363	10	3,630	
d)	Moisture absorption & Specific Gravity determination	Nos	64	389	3	1,167	
g)	Sample Handling/Transportation charges (@15% of 5.2)		-	-	-	3,771	
6	**STUDY AND INTERPRETATION OF AERO GEOPHYSICAL DATA**					198,187	**198,187**
7	**EXPLORATION REPORT - 1% of (Total (1+2+3+4+5+6))**					**77,176**	**77,176**
8	**GRAND TOTAL (1 to 7)**					**7,794,826**	**7,794,826**
9	**GST 18%**					**1,403,069**	**1,403,069**
10	**Grand Total (with GST 18%)**					**9,197,894**	**9,197,894**
							or Say ₹91.98 Lakhs

NOTE	
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02-07-2014 and based on actual escalation as per RBI indices as on 31-03-2018.
2	Procurement of Aerogeophysical maps, Data, Fees & Levies on actuals to be reimuburesed
3	Petro Studies (Sl No.5.2) - if the these items will be carried out in GSI/other Govt. lab, the charges will be reimburse as per actual.

Annexure-8B

Time schedule for G4 level mineral exploration in Neerbudhihal limestone & dolomite block (KAR_NLDB_3363_WEST)														
S. No	**Details of Works**		**Duration**	**12 MONTHS**										
			Months	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	**CAMP SETTING**		**01**												
2	**LARGE SCALE GEOLOGICAL MAPPING (Includes 21.11 sq km of LSM + 60 nos of BRS)**		**05**												
	2.1	**Geologist Party days (1 Party)**	**04**												
	2.2	**Survey Party days (1 Party**	**04**												
	2.3	**Bulk Sampling Party days**	**01**												
	2.4	**Laboratory Works**	**04**												
3	**Surface Drilling (01 rig)**		**6**												
	3.1	**Geologist Party days (1 Party)**	**6**												
	3.2	**Core sampling Party days (1 Party)**	**6**												
	3.2	**Survey Party days (1 Party)**	**1**												
	3.3	**Laboratory Works**	**07**												
4	**Camp Winding**		**1**												
5	**Preparation of Reports and Maps**		**2**												

Annexure-9

- The G4 level exploration work for Gold in the block was approved in 4th EC meeting held on 21st February, 2017 with estimated cost of **₹443.81**.
- The TCC in its 13th meeting held on 7th and 8th March 2017 approved additional cost **₹1,00,866/-** for changing the radicals in analysis of associated elements & carrying out analysis of REE (additional) and reimbursement towards engaging labourers expenses towards Forest Department.
- The TCC in its 14th meeting held on 21st and 22nd May 2018 approved additional cost **₹1,56,200/-** for chemical analysis of 8 samples for silver and PGE.
- The TCC in its 16th meeting held on 24th & 25th September, 2018 approved additional cost **₹12.02 Lakhs** for additional 50 cubic meter pitting & trenching along with sampling and analysis for Ni, Cr, Cu, As & Bi.
- The TCC in its 19th TCC meeting held on 18th & 19th January, 2019 approved additional cost **₹4,77,074/-** for SEM and EPMA studies.
- **Cost sheet for additional drilling in Stage 03 works Udbur Gold Block (Block ID: SR_KAR_07)**

S. No.	Item of Work	Unit	Base Rate as on 01-04-1990	Financial Year (2019-20)			Total Amount in ₹
				Escalated Rate (18-19)	Qty	Amount ₹)	
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)*(f)	(h)
1	**DRILLING**						**29,03,920**
1.1	Surface Drilling	m.	2,035	8,472	200	16,94,400	
2	**PARTY DAYS**						
2.1	Geological party days	days	1,541	8,083	60	4,84,980	
2.2	Core sampling party days	days	525	2,905	60	1,74,300	
2.4	Bulk sampling party days	days	2,566	13,908	30	4,17,240	
2.3	GI Core Boxes	nos	0	2,000	50	1,00,000	
2.5	Transportation charges of core boxes	km	8.8	33	1,000	33,000	
3	**LABORATORY WORKS (CHEMICAL ANALYSIS)**						
3.1	Primary Samples (05 radicals Ni, Cr, Cu, As & Bi)						**11,25,372**
	Analysis for Ni (01st Radical)	nos	(237 X 01)	1,252	301	3,76,852	
	Subsequent radicals (04 radicals)	nos	(76X4)	1,664	301	5,00,864	
3.2	Check Samples (05 radicals)						
	Analysis for Ni (01st Radical)	nos	(237 X 01)	1,252	33	41,316	
	Subsequent radicals (04 radicals)	nos	(76X4)	1,664	33	54,912	
3.3	Composite Samples (05 radicals)						
	Analysis for Ni (01st Radical)	nos	(237 X 01)	1,252	33	41,316	
	Subsequent radicals (04 radicals)	nos	(76X4)	1,664	33	54,912	



3.4	Analysis of PGE (Pt, Pd, Ir, Rh & Ru)	nos	As per Actual	11,040	5	55,200	
4	**TOTAL AMOUNT (excluding GST)**					**40,29,292**	**40,29,292**
5	**GST @ 18%**					**7,25,273**	**7,25,273**
6	**TOTAL AMOUNT (including GST)**					**47,54,565**	**47,54,565**

Note: As the total additional cost **₹66,90,705/-** (approved by TCC- **₹19,36,140/-** and proposed additional cost **₹47,54,565/-)** is beyond sanctioning limit of TCC. Hence, a consolidated additional cost **₹66,90,705/-** will be put up for approval in next EC meeting.

Annexure-10A

COST ESTIMATE FOR G2- EXPLORATION OF LIMESTONE IN BHIMAGUNDAM (6.979 sq.km), Kadapa District, Andhra Pradesh							
S. No.	**Item of Work**	**Unit**	**Base**	**Financial Year (2017-18)**			
			Rate	**Esc. Rate**	**Qty.**	**Amount(₹)**	**Qty. Revised**
			1.4.90				
A	**DRILLING**						
1	Surface Drilling (1 Rig)	m.	1714	6780	1520	10305600	1520
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	2000
3	GI Core Box *	each	2000		304	608000	304
4	Camp Setting	Drill/ month	68606	244910	1	244910	1
	Sub Total A					**11220510**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days (1 party)	day	1180	5840	40	233600	40
2	Geologist Party days (1 party)	day	1541	7802	90	702180	90
3	Core Sampling Party days(1 party)	day	525	2809	60	168540	105
	Sub-Total B					**1104320**	
C	**LABORATORY STUDIES**						
a	**Chemical Analysis**						
1	Primary + Check Samples						
	i) for 6 radicals ($CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3$ & LOI)	Nos	490 76x5+110)	2580	1672	4313760	1672
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	1672	1625184	1672
b	**Physical Analysis**						
2	Preparation of thin section	Nos	100	538	10	5380	10
3	Petrographic Studies	Nos	228	1436	10	14360	10
	Sub-Total C					**5958684**	
	Total A+B+C					**18283514**	
D	**EXPLORATION REPORT (₹60000 or 2% of Value whichever is more)**					**365670**	500000
	GRAND TOTAL- A to D					**18649184**	
	GST 18%					**3356853**	
	Grand Total : with GST 18%					**22006037**	
						Say ₹220 Lakhs	
Note:							
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.						
2	Phoshphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.						
3	*An amount of ₹2000/- has been considered as per MECL rates approved by Ministry.						



Annexure-10B

COST ESTIMATE FOR G2-EXPLORATION OF LIMESTONE IN GUNDLAKUNTA (12.58 sq.km), Kadapa District, Andhra Pradesh							
S. No.	**Item of Work**	**Unit**	**Base**	**Financial Year (2017-18)**			
			Rate	**Esc. Rate**	**Qty.**	**Amount (₹)**	**Qty. Revised**
			1.4.90				
A	**DRILLING**						
1	Surface Drilling (1 Rig)	m.	1714	6780	3080	20882400	3080
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	2000
3	GI Core Box *	each	2000		616	1232000	616
4	Camp Setting	Drill/ month	68606	244910	1	244910	1
	Sub Total A					**22421310**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days (1 party)	day	1180	5840	60	350400	80
2	Geologist Party days (1 party)	day	1541	7802	120	936240	120
3	Core Sampling Party days(1 party)	day	525	2809	100	280900	170
	Sub-Total B					**1567540**	
C	**LABORATORY STUDIES**						
a	**Chemical Analysis**						
1	Primary + Check Samples						
	i) for 6 radicals (CaO,MgO,Al_2O_3,SiO_2,Fe_2O_3 & LOI)	Nos	490 76x5+110)	2580	3388	8741040	3388
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	3388	3293136	3388
b	**Physical Analysis**						
2	Preparation of thin section	Nos	100	538	15	8070	15
3	Petrographic Studies	Nos	228	1436	15	21540	15
	Sub-Total C					**12063786**	
	Total A+B+C					**36052636**	
D	**EXPLORATION REPORT (₹60000 or 2% of Value whichever is more)**					**721053**	
	GRAND TOTAL A to D					**36773689**	
	GST 18%					**6619264**	
	Grand Total : with GST 18%					**43392953**	
						Say ₹433 Lakhs	
Note:							
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.						
2	Phoshphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.						
3	* An amount of ₹2000/- has been considered as per MECL rates approved by Ministry.						



Annexure-10C

COST ESTIMATE FOR G2- EXPLORATION OF LIMESTONE IN DOMMARANANDHYALA-VEPARALA (20.1 sq.km), Kadapa District, Andhra Pradesh							
S. No.	**Item of Work**	**Unit**	**Base**	**Financial Year (2017-18)**			
			Rate	**Esc. Rate**	**Qty.**	**Amount (₹)**	**Qty. Revised**
			1.4.90				
A	**DRILLING**						
1	Surface Drilling (1 Rig)	m.	1714	6780	4160	28204800	4160
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	2000
3	GI Core Box *	each	2000		832	1664000	832
4	Camp Setting	Drill/ month	68606	244910	1	244910	1
	Sub Total A					**30175710**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days (1 party)	day	1180	5840	60	350400	90
2	Geologist Party days (1 party)	day	1541	7802	120	936240	120
3	Core Sampling Party days(1 party)	day	525	2809	100	280900	201
	Sub-Total B					**1567540**	
C	**LABORATORY STUDIES**						
a	**Chemical Analysis**						
1	Primary + Check Samples						
	i) for 6 radicals (CaO,MgO,Al_2O_3,SiO_2,Fe_2O_3 & LOI)	Nos	490 76x5+110)	2580	4576	11806080	4576
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	4576	4447872	4576
b	**Physical Analysis**						
2	Preparation of thin section	Nos	100	538	15	8070	15
3	Petrographic Studies	Nos	228	1436	15	21540	15
	Sub-Total C					**16283562**	
	Total A+B+C					**48026812**	
D	**EXPLORATION REPORT (₹60000 or 2% of Value whichever is more)**					**960536**	
	GRAND TOTAL- A to D					**48987348**	
	GST 18%					**8817723**	
	Grand Total : with GST 18%					**57805071**	
						Say ₹578 Lakhs	
Note:							
1	Revised Rates of Promotional Work done by MECL on behalf of Govt. of India Vide letter No. 37(I) /2006-M.I. dated- 02_07_2014 and based on actual escalation as per RBI indices as on 31-03-2017 and the same has been considered for subsequent year.						
2	Phoshphorite rates have been considered as there is no rates for Limestone in Revised Rates of Promotional Work of MoM Schedule of Rates.						
3	* An amount of ₹2000/- has been considered as per MECL rates approved by Ministry.						



Annexure-11

MP-01, ADDITIONAL REQUIRMENT FOR PGE/ Ni/Cr ANALYSIS						
S. No.	**Item of Work**	**Unit**	**Base Rate 4/1/1990**	**Rates (2016-17)**	**Qty.**	**Amount (₹)**
	I) Primary & Check Samples					
	a) For Mn, Fe, SiO_2, Al_2O_3, P, LoI	Nos.	110 +76*5 = 414	2,287	170	388,790.00
	For P_2O_5	Nos.	110	599	170	101,830.00
	b) For FC,VM,Ash,	Nos.	124	667	50	33,350.00
	For S	Nos.	238	1,275	50	63,750.00
	For Moisture	Nos.	114	618	50	30,900.00
	II) Composite Samples for 6 radicals					
	a) For Mn, Fe, SiO_2, Al_2O_3, P, LoI	Nos	110 +76*5 = 490	2,709	10	27,090.00
	For P_2O_5	Nos.	110	599	10	5,990.00
	b) For FC,VM,Ash,	Nos.	124	667	5	3,335.00
	For S	Nos.	238	1,275	5	6,375.00
	For Moisture	Nos.	114	618	5	3,090.00
TOTAL FOR CORE SAMPLES-A						**664,500.00**
REVISED PROPOSAL FOR CORE SAMPLING, MP-01						
Sl. No.	**Item of Work**	**Unit**	**Base Rate 4/1/1990**	**Rates (2017-18)**	**Qty.**	**Amount (₹)**
	I) Primary Samples					
	a) PGE		Siva Lab	10000	183	1,830,000.00
	b) Ni Cr		110+76	1006	183	184,098.00
	II) Composite Samples					
	a) PGE		Siva Lab	10000	10	100,000.00
	b) Ni Cr		110+76	1006	10	10,060.00
TOTAL FOR CORE SAMPLES-B						**2,124,158.00**
	ADDITIONAL REQUIRMENT (B-A)					**1,459,658.00**
	GST					**262,738.44**
	GRAND TOTAL					**1,722,396.44**
A	**Original approval-3rd April, 2017 vide letter no F.N.6/1/NMET-2015/2151**					**40,063,797**
B	**Additional Approval, 12th TCC**					173,684
	Total Approval					**40,237,481**
C	**Additional sampling Approval, 17th TCC**					1,925,584
D	**Additional Approval Required (For Drill Core Samples)**					1,722,396
	TOTAL-AFTER ORIGINAL (B+C+D)					**3,821,664**

National Mineral Exploration Trust
Ministry of Mines

FORMAT FOR PROJECT MONITORING

IN HOUSE ASSESSMENT-
(Block details: Name/Commodity/Exploration Stage/ID/T.S./District/State/Exploration Agency)

Name of the Project	Date of Approval	Date of Commence	Reason for delay in commencement / time over run (if any)	TCC Comment/ Assessment

Nature and Quantum of work (Target assigned and achieved)

S. No.	Nature of work	Target assigned	*Work Progress during the current month_____*	*Cumulative progress since_____*	TCC Comment/ Assessment
1	**Aerial Reconnaissance** : PGRS studies (1:25/50,000) (sq km)				
2	**Geological Survey-** (DGPS/Total Station Survey) (sq km)				
3	**Geological Mapping** (LSM/DM) (sq km)				
4	**Geophysical Surveys** (Gravity, Magnetic, IP, SP & Resistivity) (L Km)/(sq km)				
5	**Technological** **(a)** Surface exploration- Pitting/trenching (cu m) **(b)** Sub Surface exploration- Drilling (m)				
6	**Geochemical survey** **(a)** Bed Rock Sample (Nos.) **(b)** Stream Sediment Sample (Nos.)				



	(c) Core Sample (Nos.) **(d)** PT sample (Nos.)				
7	**Petrographic/ Mineragraphic studies** **(a)** Petrographic (Nos.) **(b)** EPMA (Nos.) **(c)** Petrographic Core (Nos.) **(d)** Ore Microscopy (Nos.)				
8	**Chemical analysis (Nos.)** (As per approved NQT) **1.** (Fe_2O_3, CaO, MgO, MnO, SiO_2, Al_2O_3) etc. **2.** Major oxides **3.** Trace elements **4.** XRD **5.** Gold (Fire Assay analysis) **6.** Pd-Pt analysis Etc.				

Highlights/Summary/Remarks, if any:

