Ministry of Mines
National Mineral Exploration Trust

Minutes of the 38th Technical-cum-Cost Committee (TCC) meeting held on 24th and 25th February 2022 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

The 38th Technical-cum-Cost Committee [TCC] meeting of National Mineral Exploration Trust [NMET] was held under the chairmanship of Shri Janardan Prasad, Additional Director General, Geological Survey of India [ADG, GSI], and Chairman, TCC, NMET on 24th and 25th February 2022 at GSI, DGCO, A-II Pushpa Bhawan, New Delhi through videoconferencing. The TCC members and representatives of Exploration Agencies [EAs] participated through their respective VC nodes. The list of participants is at **annexure-1**.

Shri Suresh Chander, Director, GSI and Member Secretary, TCC NMET, welcomed Shri Janardan Prasad, ADG, GSI & Chairman, TCC; Members of the TCC, and participants representing various EAs. He briefly outlined the project proposals submitted by EAs on various mineral commodities. Shri Janardan Prasad, ADG, GSI, and Chairman, TCC welcomed the TCC members and other participants from various EAs.

A total of twenty-four (24) [KIOCL-1; NMDC-1; MECL-8; DGM, Assam-3 and OMCL-11] new project proposals submitted by EAs were discussed in the meeting. The proceeding of the meeting was initiated as per the circulated agenda.

Agenda-wise discussions are summarised as follows.

38.1: Technical evaluation of new project proposals:

KIOCL

38.1.1. Reconnaissance survey (G4) for Gold and basemetal in Nagvanda block, Districts: Davangere, Haveri and Shivamogga, Karnataka.

a) It has been submitted that the Archean meta-sedimentary and Proterozoic sequences are the main lithologies exposed in the areas. Biotite gneiss of Peninsular Gneissic Complex (PGC) is the oldest rock unit and is overlain by the Chitradurga group of rocks in the study area. Thick soil cover has been seen in the northern part of the block and hence good exposures are scarce. In the southern part of the area numerous continuous and discontinuous BIF bands trending E-W to NW-SE are seen associated with the meta-sedimentary rocks.

b) It has been conveyed that the BIF bands of the Chikkagonageri area (4 km east of the block boundary) show encouraging occurrences of Pb (0.10%-0.61%) and Zn (0.10% - 0.34%) apart from Fe and Mn.

c) It has been conveyed that sulfide mineralization is associated with chert/ quartz along with bands of carbonaceous shist. Chalcopyrite, Pyrite, and Malachite are seen in Chert and quartz layer.

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d) The project proposal was sent to GSI for their considered comments, in response to this GSI has conveyed that the entire block is overlapping with the earlier explored blocks of GSI and overlapping of the area with the proposed RMT project for FS: 2022-23.

e) Based on deliberations, the committee opined that the proposed block has already been explored up to the G4 stage, hence KIOCL may take up for further stage of exploration i.e. G3 stage. KIOCL may also include some analytical results of gold in their revised proposal.

The committee suggested to submit the G3 stage proposal by incorporating analytical values for gold, basemetal, and other available geological data in the next TCC meeting.

NMDCL

38.1.2. Reconnaissance survey (G4) for Genesis of BIF-hosted high grade iron ores of the Bailadila Deposits with special reference to geological controls on mode of occurrence of Ore-Beneath-Ore and implications on future game changing exploration in India.

a) The project proposal was discussed in 37th TCC meeting wherein the Committee suggested submitting the detailed costsheet as per the standard SoC of NMET in the next TCC enabling the finalization of the cost vis-à-vis NQT in the next TCC. Now, the NMDCL has submitted the detailed cost sheet and NQT for the said project.

b) Based on deliberations the committee opined that this research proposal has path-breaking potential in deciphering the deep-seated mineral potentiality for Iron Ore and may be recommended to EC.

c) The committee suggested that the NMDCL needs to take prior approval of NMET before sharing/ reproducing and publishing geoscientific data generated through this project.

Recommendations:

i. ***The committee also opined that this is a different type of project and EC may take a view on the funding of this specialized research project.***

ii. ***The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for Genesis of BIF-hosted high-grade iron ores of the Bailadila Deposits with special reference to geological controls on mode of occurrence of Ore-Beneath-Ore and implications on future game-changing exploration in India with an estimated cost of Rs. 86.59 Lakhs including GST in time schedule of 24 months for carrying out the proposed work and submission of the report as per annexure- 2A & 2B.***

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MECL

38.1.3. Reconnaissance survey (G4) for REE in Karadihalli block (120.00 sq. km), District: Hassan and Chikmagalur, Karnataka.

a) The project proposal was recommended by TCC for approval of EC in 34th TCC meeting, however, the EC in its 22nd meeting has sent back the proposal and suggested to reassess the REE mineralisation in the Karadihalli block as the sample analyses of source rock were not provided in the proposal. It was also suggested to provide the details of mineralization and type of REE deposit in the area.

b) The committee reassessed the proposal and suggested resubmitting the proposal after incorporating analytical results of REE (atleast 10 samples) through ICPMS and mineralogical studies.

The committee suggested to resubmit the proposal by incorporating the ICPMS analytical data and mineralogical studies data in the next TCC meeting.

38.1.4. Reconnaissance survey (G4) for Copper, Lead, Zinc and Gold in Tarichar Khurd block (101.00 sq. km), District: Niwari, Madhya Pradesh.

a) It has been submitted that the block area is represented by the pink and grey granites forming a part of Bundelkhand Granitoid Complex (BGC). The area exposes enclaves and xenoliths of gneisses, migmatites, amphibolites schist within the granitic rock. The dominant lithology of the area is granite and coarse-grained granite of BGC. Porphyritic granite, medium-grained granite, fine-grained granite, and granite gneiss are also present in the area. Large enclaves of amphibolites belonging to the Older Metamorphic Group are found within the younger granites.

b) MECL has submitted that the sulphide (Pyrite, Chalcopyrite, Azurite) and carbonate minerals (Malachite), have been identified during the fieldwork near Tarichar Khurd, Karguwan, Laron, Murara, Parara, Biraro Khas, Kumarpura, Sakera and Baron. In NE-SW trending reef in Tarichar khurd village, sulphide mineralization (azurite, chalcopyrite and other Cu sulphides) and malachite disseminations were observed in brecciated quartz. In thin section studies of the samples collected from Tarichar Khurd area, the mineral assemblages of quartz reefs show anhedral quartz, sericite, alkali feldspar with opaques. The targeted quartz reefs are trending NE-SW direction. The associated quartz reef has been emplaced in two generations. The pink coarse-grained granite gneiss bears orientation of orthoclase feldspar, quartz, and mafic minerals.

c) After detailed deliberation, the committee reserved its decision for want of clarification on the background information of the present proposal and geological milieau of the proposal entitled "Reconnaissance Survey (G4) for Copper, Lead, Zinc and Gold in Sanori Block, District: Lalitpur, Uttar Pradesh" discussed during the 36th TCC meeting.

The committee has reserved its decision for want of clarification on the background information, geological mileau, and analytical results.

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38.1.5. Reconnaissance survey (G4) for Tungsten, Tin, and basemetal in Datia-Bijapur block (145.00 sq. km), Districts: Datia and Shivpuri, Madhya Pradesh.

a) Regionally the proposed block is a part of Bundelkhand Gneissic Complex (BGC) which is a highly deformed granite–greenstone terrain profusely intruded by undeformed granitoids. The craton is separated from the Bastar and Singhbhum cratons by the Narmada-Son lineament in the south and from Aravalli's by the Great Boundary Fault (GBF) in the west. It is bounded by the Vindhyan Basin and alluvium in the northeast and Deccan Traps in the south. The proposed area of investigation lies in the northern fringe of the Bundelkhand craton.

b) It has been conveyed that the area is occupied by the Bundelkhand granitoid and Chambal alluvium. The Tonalite-Trondhjemite Gneiss (TTG) are the oldest rocks exposed in this area occurring as enclaves and linear bodies of various dimensions within younger granites.

c) MECL has submitted that the presence of Tungsten was confirmed in TTG by GSI in 1997 around Dang Karera, Jigna, Bilhari, Kalothra, Chhata, Salaya and Bebapur villages.

d) It has been submitted that during F.S. 1996-97, GSI had reported tungsten anomaly of 500-775 ppm and copper anomaly of 775 and 945 ppm, Pb anomaly of 665 ppm in the proposed area. GSI has also recorded 1.75ppm to 6.66ppm value of Tin through NGCM program in 2014-15.

e) Based on detailed deliberations the committee opined that the project may be taken up for G4 stage exploration with modification of block boundary (152.33 sq. km) as per the work components mentioned in annexure 3A and 3B.

f) The outcomes of the geological mapping and analytical analysis will be reviewed after 6 months thereafter decision on geophysical components will be taken. The second review will be held after 10 months wherein the decision on borehole plan and drilling will be taken.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for Tungsten, Tin, and basemetal in Datia-Bijapur block (152.33 sq. km), Districts: Datia and Shivpuri, Madhya Pradesh with an estimated cost of Rs. 183.23 Lakhs including GST in the time schedule of 18 months for carrying out the proposed work and submission of the report as per annexure- 3A & 3B.

38.1.6. Reconnaissance survey (G4) for copper in Kalasapura block (33 sq. km), District: Chikkamagaluru, Karnataka.

a) Geologically the block area is exposed by a thick bed of brown-colored quartzite, which rests conformably over grey porphyritic granite. The base of the quartzite unit is marked by a thin zone of oligomictic quartzite-conglomerate. The quartzite unit is overlain by a thick sequence of amygdular amphibolite (metabasalts) which is exposed in the northern parts of the quartzitic ridge. Further north in the valley, granites are exposed separating two synclinal outliers.

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b) It has been conveyed that, during 1973, GSI had carried out exploratory drilling for 9 boreholes (885.25m) in the proposed area, and revealed copper mineralization in grey massive quartzites over a continuous strike length of 240m and 420m in the western and the eastern block respectively. The grade of copper varies from 0.13 to 0.43%. A possible resource of 0.16 MT with an average grade of 0.25% Cu was estimated.

c) The project proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that Kalasapura Copper block was explored by GSI during FS: 1968-69 covering regional mapping (150 Sq. Km on 1:63,360 scale), largescale plane Table mapping (0.33 Sq. Km on 1:1,000 scale), trenching 232 cu. m and groove sampling (231 Nos.).

d) After detailed deliberations, the committee opined that the block was already explored atleast for the G4 stage and a possible resource of 0.16 MT with an average grade of 0.25% Cu was estimated and there is no scope for similar exploration.

e) The committee suggested that based on available geological data the potential areas may be identified and a revised proposal for the G3 stage of exploration, if found suitable, may be submitted.

The committee suggested that a modified project proposal for the G3 stage of exploration over identified potential areas may be submitted in the next TCC meeting.

38.1.7. Reconnaissance survey (G4) for PGE in Chandiposh block (95.00 sq. km), District: Sundargarh, Odisha.

a) It has been submitted that the supracrustal Bonai granite rocks are exposed in the Bonai-Chandiposh-Gurundia sector. The sequence is comprised of fuchsite quartzite, quartz schist, mica schist, amphibolite, chlorite schist. The younger sequence overlying the Bonai Granite is characterized by a basal polymictic conglomerate, slate, phyllite, quartzite, and amphibolite.

b) MECL has submitted that during 1983, GSI had reported the occurrences of mafic-ultramafic rocks forming a linear belt trending WNW-ESE along the southern margin of the Iron Ore Group in the proposed area. GSI had also reported occurrences of audesite, rhyolite, rhyodocite, ignimbrite and anorthosite in the investigated area.

c) It has been conveyed that the MECL had made a field visit to the area and collected 12 nos of bedrock samples from the exposed rock body. Out of which 4 ultramafic/mafic rock samples were analyzed for PGE and recorded Ir (0.72ppm to 26.61ppm), Ru (3.03ppm to 56.26ppm) and Os (24.79ppm to 50.67ppm) values. However, the committee opined that the values are much high and needs to be reverified.

d) Based on detailed deliberation the committee opined that the proposal may be taken up by implementing the geological, geophysical mapping and drilling.

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e) The outcomes of the geological mapping, geolophysical survey and analytical analysis will be reviewed after 9 months thereafter the decision on drilling will be taken.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for PGE in Chandiposh block (111.00 sq. km), District: Sundargarh, Odisha with an estimated cost of Rs. 218.53 Lakhs including GST in the time schedule of 16 months for carrying out the proposed work and submission of the report as per annexure- 4A & 4B.

38.1.8. Reconnaissance survey (G4) for manganese ore and graphite in Larambha-Kanaital block (73 sq. km), District: Balangir, Odisha.

and

38.1.9. Reconnaissance survey (G4) for manganese ore and graphite in Pudapadar-Bharatbahal block (62 sq. km), District: Balangir, Odisha.

a) The exploration area lies in the northern part of the Eastern Ghat Super Group of rocks belonging to the meta-sedimentary sequence of Precambrian khondalite. The para-metamorphic sequence is comprised of pelitic, psammitic and calcareous formations.

b) It has been submitted during FS 1997-98, GSI had collected 13 bedrock samples from Larambha and Kanaital villages and out of which 11 samples had reported Mn value more than threshold i.e., 10% Mn.

c) It is submitted that, in surface exposures, the Mn ore mineralization presents a rugged bouldery appearance. In general, oxide minerals show granoblastic to granulitic fabric. Manganese ore bodies occur as bands, lenses, pockets, veins, tabular bodies, and dissemination within the khondalite group of rocks. Graphite mineralization is restricted to Khondalite suite and its migmatised equivalents.

d) It has been informed that the proposed block is in the vicinity of already explored 10 manganese blocks wherein 3.529 MT manganese resource was established by MECL at 18% Mn. Therefore, it is expected that a similar resource may be found from the proposed block.

e) Based on detailed deliberation the committee suggested taking up a combined G4 stage project over 135 sq. km area [62 + 73 sq. km] around Pudapadar, Bharatbahal, Larambha, Kanaital villages.

f) The outcomes of the geological mapping and analytical analysis will be reviewed after 6 months thereafter decision on the geophysical survey will be taken. The second review will be held after 12 months wherein the decision on drilling will be taken.

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The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for manganese ore and graphite in Larambha-Kanaital & Pudapadar-Bharatbahal blocks (135 sq. km), District: Balangir, Odisha with an estimated cost of Rs. 193.51 Lakhs including GST in the time schedule of 18 months for carrying out the proposed work and submission of the report as per annexure- 5A & 5B.

38.1.10. Preliminary exploration (G3) for Phosphorite in Barwar-Jaitpura block (8.0 sq. km), District: Lalitpur, Uttar Pradesh.

a) It has been submitted that the block area is exposed by the rocks of the Bijawar Group representing an alternating sequence of quartzite, shales, dolomite limestone, and phosphorite. The rocks are exposed in a linear tract extending in N-W direction. The Bijawar Group is divisible into Barwar, Sonrai and Solda formations, and the phosphorite occurrence is confined to only Sonrai Formation wherein the block lies.

b) It has been submitted that during Field Season 1984-87, GSI had carried out geological investigations for phosphorite mineralization wherein encouraging results have been reported from two of the boreholes.

c) The Borehole (BBBH-12) has encountered three phosphorite zones with P_2O_5 (5.55% to 20.31%) between vertical depths of 24.0m to 59.0m. The Borehole (BBBH-13) has encountered six phosphorite zones with P_2O_5 (5.21% to 12%) between vertical depths of 7m to 34m.

d) The project proposal was sent to GSI for their considered comments, in response to this GSI has submitted that the area bounded by coordinates Latitudes 24°17'30" and 24°18'30" N and Longitudes 78°50'48" and 78°55'00" E was investigated by drilling in FS 1984-87 wherein phosphorite resource of 0.74MT at grade of 6.68% P_2O_5. In addition of this, a possible resource of 0.038 MT with 16.90% P_2O_5, 0.054 MT with 11.25% P_2O_5 and 0.618 MT with 7.98% P_2O_5 was estimated on the basis of surface outcrop. The possible resource of phosphorite in reddish shales exposed on surface is 0.013 MT with 17.33% P_2O_5. It is also conveyed that during FS 2020-21, a larger Barwar block including the proposed MECL block was also explored by GSI for basemetal.

e) In view of this the committee has observed that there is a repetition of similar exploration work in the area. As resource was already established by GSI, the committee suggested considering the block for auctioning of Composite License (CL).

f) In response to this DGM, UP agreed for auctioning of block for CL subject to availability of geological map of the block from GSI.

The committee suggested considering the block for auctioning of Composite License by DGM, UP.

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DGM, Assam

38.1.11. Reconnaissance survey (G4) for Iron ore in Lengupara area (56 sq. km), District: Goalpara, Assam.

a) The project proposal was discussed in the 37th TCC meeting wherein the committee suggested to resubmit the proposal by incorporating all available geological data in the next TCC meeting.

b) The committee also suggested including the available geoscience data on various mineral commodities reported from the area with detailed background information and a revised proposal for G4 stage exploration for Iron ore may be submitted. Now, DGM, Assam has submitted the revised proposal after incorporating requisite information.

c) After detailed deliberations, the committee opined that initially only mapping and surface sampling [pitting, trenching, etc.] will be taken up thereafter the outcome will be reviewed after 6 months for demarcation of boreholes and implementation of drilling component.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for Iron ore in Lengupara area (56.0 sq. km), District: Goalpara, Assam with an estimated cost of Rs. 328.47 Lakhs including GST in the time schedule of 12 months for carrying out the proposed work and submission of the report as per annexure- 6A & 6B.

38.1.12. Reconnaissance survey (G4) for Sillimanite in Samelangsu area, District: Karbi-Anglong, Assam.

a) The project proposal was discussed in 37th TCC meeting wherein the committee suggested to resubmit the proposal by incorporating all available geological data in the next TCC meeting. Now, DGM, Assam has submitted the revised proposal after incorporating requisite information.

b) After detailed deliberations the committee opined that initially only mapping and surface sampling [pitting, trenching etc] will be taken up thereafter the outcome will be reviewed after 6 months for demarcation of boreholes and implementation of drilling component.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for Sillimanite in Samelangsu area (50.0 sq. km), District: Karbi-Anglong, Assam with estimated cost of Rs. 364.17 Lakhs including GST in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 7A & 7B.

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38.1.13. Reconnaissance survey (G4) for coal in Kalamati area, District: Dima Hasao, Assam.

a) The project proposal was discussed during 37th TCC meeting wherein the committee had suggested to demarcate the limestone leasehold area and the proposed block area on the geographical map to avoid any duplication and ambiguity in future.

b) The committee had suggested to resubmit the proposal by incorporating all available geological data and demarcation of leasehold area in the next TCC meeting.

c) Now, DGM, Assam has submitted the revised proposal after incorporating requisite information.

d) After detailed deliberations, the committee opined that the most of the block area falls within the catchment area of the reservoir and the block may not be suitable for exploration.

The committee suggested not to take the project for reconnaissance survey in the Kalamati area.

OMCL

38.1.14. Reconnaissance survey (G4) for Iron ore in Balita block (3.9902 sq. km), District: Keonjhar, Odisha.

a) The proposed block is located adjacent to Thakurani block- B Iron ore mines of M/s. Sharda Mines Pvt. Ltd whereat the mineral resource of 290 MT at 45% Fe was estimated in 2014.

b) It has been conveyed that the potential lithological formations for Iron ore are exposed in the adjacent mine and it is expected that the similar geological set up will be encountered in the proposed block. In view of this, the OMC has proposed to take up reconnaissance survey (G4) in the proposed block.

c) The project proposal was sent to GSI for their considered comments, in response to this GSI has submitted that no work has been carried out by GSI in the proposed Balita Block. However, GSI has also taken up a G2 stage exploration project in the northeastern part of the proposed Balita block with the same block title i.e. Balita block, which may create ambiguity during auctioning of the block. The committee suggested modifying the title of the block by OMCL.

d) The committee opined that as per recent amendement in Mineral (Auction) Second Amendment Rules, 2021, in case of auction of mineral block for composite licence (CL) for minerals and corresponding deposits as specified in Schedule-II of the Minerals (Evidence of Mineral Contents) (Amendment) Rules, 2021, the 'estimated quantity of mineral resources' can be arrived by multiplying the average of the estimated quantity of mineral resource per hectare for the same mineral available in the mineralised area of nearby mining leases or mineral blocks having similar geological features and explored upto G3 level. However, the DGM Odisha has conveyed that the base geological map of the area is not available for the said block.

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e) In view of this, the committee suggested to take up a project for G3 stage of exploration by implementing geological mapping on 1:12,500 scale along with 600m drilling in 6 boreholes. Out of six boreholes, two boreholes will be conditional and their location will be decided later on.

The committee recommended the proposal for approval by EC for Preliminary exploration (G3) for Iron ore in Deojhar (Balita) block (3.99 sq. km), District: Keonjhar, Odisha with estimated cost of Rs. 141.08 Lakhs including GST in time schedule of 3 months for carrying out the proposed work and submission of report as per annexure- 8A & 8B.

38.1.15. Reconnaissance survey (G4) for manganese ore in Lashi block (1.609 sq. km), District: Sundargarh, Odisha.

a) It has been conveyed that the proposed block is adjacent to the Sarkunda and Bhutuda iron and manganese mines. It has been conveyed that the potential lithological formations for Iron and manganese ore are exposed in the adjacent mines and it is expected that a similar geological setup will be encountered in the proposed block. In view of this, the OMC has proposed to take up a reconnaissance survey (G4) in the proposed block.

b) The project proposal was sent to GSI for their considered comments, in response to this GSI has submitted that the block is entirely falling within the G4 explored block of GSI during 1968-70 and, the block under accession no. 9270 is completely overlapping.

c) The committee opined that as per recent amendment in Mineral (Auction) Second Amendment Rules, 2021, and Minerals (Evidence of Mineral Contents) (Amendment) Rules, 2021, the mineral block may be auctioned for composite licence (CL). However, the DGM Odisha has conveyed that the base geological map of the area is not available for the said block.

d) The committee opined that sufficient exploration for G4 stage exploration was already carried out by GSI in the proposed area, hence a Preliminary exploration (G3 stage) may be launched. OMCL may ensure the utilization of all available geological maps of GSI to avoid any duplication.

e) In view of this, the committee suggested taking up the project for G3 stage of exploration by implementing surface sampling aling with 800m drilling in 8 boreholes.

The committee recommended the proposal for approval by EC for Preliminary exploration (G3) for manganese ore in Lashi block (1.60 sq. km), District: Sundargarh, Odisha with an estimated cost of Rs. 180.41 Lakhs including GST in the time schedule of 4 months for carrying out the proposed work and submission of the report as per annexure- 9A & 9B.

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38.1.16. Reconnaissance survey (G4) for iron and manganese ore in Mandajoda block (0.1208 sq. km), District: Sundargarh, Odisha.

38.1.17. Reconnaissance survey (G4) for manganese ore in Oraghat block (0.11485 sq. km), District: Sundargarh, Odisha.

38.1.18. Reconnaissance survey (G4) for manganese ore in Nuagaon block (0.3889 sq. km), District: Sundargarh, Odisha.

38.1.19. Reconnaissance survey (G4) for manganese ore in Ganua block (0.233 sq. km), District: Sundargarh, Odisha.

38.1.20. Reconnaissance survey (G4) for iron ore Bhulubeda block (0.05253 sq. km), District: Keonjhar, Odisha.

38.1.21. Reconnaissance survey (G4) for iron ore in Khuntapani block (0.15378 sq. km), District: Keonjhar, Odisha.

38.1.22. Reconnaissance survey (G4) for iron ore in Dalita-1 block (0.22165 sq. km), District: Sundargarh, Odisha.

38.1.23. Reconnaissance survey (G4) for iron ore in Dalita-2 block (0.32375 sq. km), District: Sundargarh, Odisha.

38.1.24. Reconnaissance survey (G4) for iron ore in Jajang block (~0.4 sq. km), District: Keonjhar, Odisha.

Committee suggested-

a) ***The project proposals at sr. no. 38.1.16 to 38.1.24 were discussed by the committee and it has been suggested not to take up the exploration in these blocks due to their very small dimension i.e. less than 0.5 sq. km.***

b) ***State Government to consider the auctioning of these blocks under Mineral (Auction) Second Amendment Rules, 2021 wherein the 'estimated quantity of mineral resources' can be arrived at by multiplying the average of the estimated quantity of mineral resource per hectare for the same mineral available in the mineralized area of nearby mining leases or mineral blocks having similar geological features and explored upto G3 level.***

38.2. Review of the ongoing projects

MERIT

38.2.1. General exploration (G2) for limestone in Madinapadu, Mutyalampadu-Tangeda, Tangeda and Ramapuram Limestone Blocks, Dachepalli (M), District-Guntur, Andhra Pradesh.

a) MERIT informed that four limestone projects for G2 level exploration of DGM, Andhra Pradesh (executed by MERIT) were approved in the 7th EC meeting held on 12th March 2018 at the cost of Rs. 735.00 Lakhs with a time schedule of 12 months.

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b) It has been conveyed that the exploration work in Madinapadu, Mutyalampadu-Tangeda, Tangeda, and Ramapuram blocks have been completed and geological reports have been submitted for external peer review.

c) It has been conveyed that initially drilling upto 50-60m in each borehole was approved for the said project, thereafter, it was decided to extend the drilling upto the basement of the limestone body. In this condition, additional drilling meterage, core boxes, core sampling, chemical of analysis all elements have been done.

d) MERIT requested approval for additional associated work components which are within the overall sanctioned cost of each block.

The Committee approved the change in work quantum of Madinapadu, Mutyalampadu-Tangeda, Tangeda and Ramapuram blocks without any cost implication (Annexure- 10A, 10B, 10C and 10D).

OMECL

38.2.2. Reconnaissance Survey (G4) for Iron Ore in Khandadhar Block (50.91 sq. km), District: Sundargarh, Odisha.

a) The EC in its 10th meeting held on 30th October 2018 approved G4 stage exploration in Khandadhar Block, District- Sundergarh, Odisha at the cost of Rs. 56,70,983/-.

b) The geological work carried out was reviewed during 20th TCC meeting held in April, 2019 and additional 60 geological party days were approved with an additional cost of Rs. 5,72,276/-.

c) During 23rd TCC meeting held in February 2020, the committee suggested to get forest clearance and submit the proposal for the implementation of 500m drilling (5 BHs) instead of geophysical survey work.

d) OMECL submitted the revised proposal for drilling of 500m in 8 boreholes along with core samples for chemical analysis with a revised estimated cost of Rs. 84,55,005/- (annexure-11).

e) The committee opined that additional costs will be reimbursed as per the earlier SoC without any escalation.

The Committee recommended for approval by EC for a revised estimated cost of Rs. 84,55,005/- for Reconnaissance Survey (G4) for Iron Ore in Khandadhar Block (50.91 sq. km), District: Sundargarh, Odisha as per the annexure- 11.

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38.3. Timeline extension of projects

OMECL

38.3.1. Nunapaimali Bauxite block (4.282 sq. km), District: Rayagada, Odisha (G3).

a) OMECL informed that geological mapping, topographic survey, core drilling, logging, sampling and analysis have been completed and geological report writing is in progress.

b) It has been conveyed that a mineral resource of 12.20MT have been estimated by polygonal area method which may be assigned as indicated mineral resource (332) category.

c) OMECL requested for timeline extension till April 2022 for the submission/ reimbursement of bills.

The committee recommended for approval by EC for timeline extension for Nunapaimali Bauxite block (4.282 sq. km), District: Rayagada, Odisha (G3) upto 30th April, 2022.

38.3.2. Keluamali Bauxite block (11.292 sq. km), District: Kalahandi, Odisha.

38.3.3. Majhingamali Bauxite block (4.479 sq. km), District: Rayagada & Kalahandi, Odisha.

38.3.4. Tarhapani (west) Bauxite block (4.322 sq. km), District: Koraput, Odisha.

38.3.5. Karnapodikonda Bauxite block (9.062 sq. km), District: Koraput, Odisha.

a) Project proposals at **38.3.2 to 38.3.5** have been deliberated by the committee and it has been conveyed that the geological mapping (1:4000) and geochemical analysis of surface samples have been completed. Drilling will be initiated after resolving local disputes in the area.

b) OMECL requested for timeline extension for all four bauxite blocks. The details are given below-

S. No.	Block/Project	Actual Schedule date of completion	Required timeline extension
1	Nunapaimali bauxite block, District- Rayagada, Odisha (G3)	11/02/2020 12 Months	**30th April, 2022**
2	Keluamali bauxite block, District- Kalahandi, Odisha (G3)	11/04/2020 14 Months	**31st December, 2022**
3	Majhingamali bauxite block, Districts- Rayagada& Kalahandi, Odisha (G3)	11/02/2020 12 Months	**31st December, 2022**
4	Tarhapani (West) bauxite block, District- Koraput, Odisha (G3)	11/02/2020 12 Months	**31st December, 2022**
5	Karnapodikonda bauxite block, District- Koraput, Odisha (G3)	11/12/2019 10 Months	**31st December, 2022**

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The committee noted the request of OMECL and recommended for approval by EC for timeline extension upto 31st December 2022 and the progress of drilling work for all these four projects will be reviewed after six months i.e. August, 2022.

MECL

38.3.6. General exploration (G2) for Iron ore in BRH Iron Ore Mines, NEB Range M/s RMMPL, ML No. 2010, District: Ballari, Karnataka.

a) The project was approved in 6th EC meeting with an estimated cost of Rs. 1004.16 Lakh with a time schedule for 13 months subject to the forest clearance. The timeline for the completion of the project was 09.09.2021.

b) EC in its 22nd meeting approved timeline extension till 31st January 2022 and pre-closure of project 'General exploration (G2) for Iron ore in BRH Iron ore Mines, NEB Range M/s RMMPL, ML No. 2010, District: Ballari, Karnataka" and submit the geological report for G3 exploration report.

c) MECL informed that geological report has been submitted for peer review and requested for timeline extension till 30th April 2022.

The committee recommended for approval by EC for timeline extension till 30th April, 2022 and suggested submitting the final geological report before April, 2022.

38.3.6. Preliminary Exploration (G3) for Potash in Lakhasar-sub basin, North-Western part of Rajasthan, District: Bikaner, Rajasthan.

a) The project was approved in March 2020 with an estimated cost of Rs. 1753.53 lakh and a time schedule of 24 months.

b) The project was reviewed in 36th TCC meeting and the committee suggested to complete all the analyses of 15 boreholes by May, 2022. The outcome of the findings will be reviewed after completion of analytical work. The additional drilling, cost if any, and time extension will be recommended for approval at that time.

The committee suggested that the progress of work will be reviewed in May, 2022 after including all analytical data, and timeline extension will be recommended, if required, for approval accordingly.

38.4. Additional geotechnical samples studies for ongoing projects

38.4.1. General Exploration (G2) for Copper in Tonda block, Eastern Khetri Copper Belt, District: Jhunjhunu, Rajasthan.

and

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38.4.2. General Exploration (G2) for Copper in Mundadevta-Darkhuli-South Jharia block, District: East Singhbhum, Jharkhand.

MECL informed that now additional geotechnical sample studies are not required for the said two projects and the matter has been resolved internally.

The committee noted the deliberation regarding the additional geotechnical sample studies for both the G2 projects.

38.5 Pre-closer of borehole for approved project

38.5.1. Preliminary exploration for potash in Bharusari sub basin, North Western part of Rajasthan, district- Hanumangarh, Rajasthan.

a) The project was recommended in 24th TCC meeting held on 07th, 08th and 09th October 2020 with an estimated cost of Rs. 1754.13 Lakh and approved in 17th EC meeting held on 05th November 2020.

b) MECL has conveyed that the borehole MBH-07 was approved for maximum drilling up to 725m and drilling has been completed upto 480m till today.

c) MECL has expressed its inability to complete the borehole due to technical snag and drilling difficulties in the said borehole and requested for preclosure of said borehole at 480m.

The committee noted the submission and permitted to close the drilling in borehole MBH-07 at 480m. The committee suggested completing the assigned targets as per pre-approved NQT and submitting the report as per schedule.

38.6 Timeline and execution of approved projects of Iron Ore in Malangtoli Iron Ore (D, E & G-sub block), Districts: Sundargarh & Kendujhar, Odisha.

a) Executive Committee in its 9th meeting held on 8th August, 2018 had approved the project proposals for Iron Ore in Malangtoli sub-block D, E & G (G3 stage) based on the following recommendations of 15th TCC [4th and 5th July, 2018]

   i. Malangtoli Iron Ore (G3) D-sub block, Districts: Sundargarh & Kendujhar, Odisha with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory Studies at an estimated cost of Rs. 210.89 Lakh to be completed in a time schedule of 14 months including the final report submission.

   ii. Malangtoli Iron Ore (G3) E-sub block, Districts- Sundargarh & Kendujhar, Odisha with a total of 1000m drilling in 10 Bhs along with associated geological & Laboratory Studies at an estimated cost of Rs 199.21 Lakh to be completed in a time schedule of 14 months including the final report submission.

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iii. Malangtoli Iron Ore (G3) G-sub block, Districts- Sundargarh & Kendujhar, Odisha with a total of 1000m drilling in 10 Bhs alongwith associated geological & Laboratory Studies at an estimated cost of Rs 210.88 Lakh to be completed in a time schedule of 14 months including the final report submission.

b) MECL has conveyed that forest clearance have been received for all the three blocks ('D', 'E' and 'G') and requested for the inhouse drilling as per the approved cost in 9th EC meeting held on 8th August, 2018.

The committee agreed about the proposal and asked MECL to complete the exploration work as per the approved cost in 9th EC meeting without any cost escalation within 14 months and submit the report at the earliest. Committee recommended for approval by EC for the timeline extension upto 31st May, 2023.

38.7. The meeting ended with a vote of thanks by the Director and member secretary, TCC, NMET.

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List of TCC members attended 38th Technical-cum-Cost Committee (TCC) meeting of NMET held on 24th and 25th February 2022 through videoconferencing

S. No.	Name/Designation	Status	Remarks
1	Shri Janardan Prasad, Addl. Director General & HoD, GSI	Chairman, TCC, NMET	Attended via videoconference
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), Indian Bureau of Mines	TCC Member	Attended via videoconference
3	Shri Naeem Ahmad, General Manager-Exploration (Retd.), CMPDI Ltd.	TCC Member	Attended via videoconference
4	Dr. Anjani Kumar, Dy. General Manager (Exploration) &HoD-Planning (Retd.), MECL	TCC Member	Attended via videoconference
5	Shri B. Saravanan, Additional Director, Atomic Minerals Directorate for Exploration and Research	TCC Member	Attended via videoconference
6	Shri Hemraj Suryavanshi, Deputy Director General and NMH-II, GSI	TCC Member	Attended via videoconference
7	Shri Manoj Kumar Patel, Deputy Director General and RMH-II, GSI	TCC Member	Attended via videoconference
8	Shri Santosh Kumar Adhikari, Chief Mining Geologist, IBM	TCC Member	Attended via videoconference
9	Shri Amit Saran, Director, NMET, Ministry of Mines	TCC Member	Attended via videoconference
10	Shri Suresh Chander, Director, GSI	Member Secretary, TCC, NMET	Attended via videoconference
11	Shri Ravi Kumar Gupta, Deputy General Manager (Finance), HCL	TCC Member	Not attended
12	Shri P. K. Maharana, Dy. General Manager (Finance), NALCO	TCC Member	Attended via videoconference
13	Shri Vinay Pal, Assistant Cost Account Officer (Finance), GSI	TCC Member	Not attended

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Annexure-1

List of participants attended 38th Technical-cum-Cost Committee (TCC) meeting of NMET held on 24th and 25th February, 2022 through videoconferencing

S. No.	Name/Designation	Email ID	Contact No	Organisation
1	Shri Janardan Prasad, ADG & HoD, GSI	janardan.prasad@gsi.gov.in	7763800788	Chairman, TCC
2	Shri Ranjan Kumar Sinha, Controller General (Retd.) IBM	sinhark57@rediffmail.com	9421777637	Member, TCC
3	Shri Naeem Ahmed, EM (Retd.), CMPDI	ahmadnaeem17@yahoo.co.in	8588092153	Member, TCC
4	Dr. Anjani Kumar, DGM (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member, TCC
5	Shri B. Saravanan, AMD, Hyderabad	addldir-op1.amd@gov.in	8987571606	Member, TCC
6	Shri Hemraj Suryavanshi, DDG and NMH-II, GSI	hem.raj@gsi.gov.in	7477042176	Member, TCC
7	Shri Manoj Kumar Patel, DDG and RMH-II, GSI	m.patel1@gsi.gov.in	9040011231	Member, TCC
8	Shri Santosh Kumar Adhikari, Chief Mining Geologist, IBM	skadhikari@ibm.gov.in	7588690545	Member, TCC
9	Shri Amit Saran, Director, NMET	amit.saran@nic.in	9717647259	Member, TCC
10	Shri Suresh Chander, Director, GSI	suresh.chander@gsi.gov.in	9493860963	Member Secretary, TCC
11	Shri P. K. Maharana, DGM (F), NALCO	pmaharana@rediffmail.com	8500669500	Member, TCC
12	Dr.Deshraj Trivedi, Senior Geologist	nmet-tcc@gov.in	9419244294	NMET
13	Shri Subhash Kumar, Senior Geologist	nmet-mines@gov.in	9868302624	NMET
14	Shri M. Baskaran, GM, (Exploration)	gm-exploration@mecl.co.in	8248532307	MECL, Nagpur
15	Shri P. Ravindran, DGM (Exploration)	gm-exploration@mecl.co.in	7907649392	MECL, Nagpur
16	Shri Shiva Kumar M, SM (ME)	bmed@kioclltd.in	9481444686	KIOCL
17	Dr. Abhijeet Mukherjee, Dy. General Manager (G)	abhijeetmukherjee64@gmail.com	9490760004	NMDC, Hyderabad
18	Smt. Barnalee Nath, Joint Director (Geology)	dgmassam@gmail.com	9435104508	DGM, Assam
19	Shri R. P. Singh, Geologist	rps1173@gmail.com	9621045793	DGM, UP
20	Shri P. C. Mishra, Joint Director (Geology)	directorgeology_odisha@yahoo.in	9861465695	DGM, Odisha
21	Shri Shailendra Sinha, General Manager (Exploration)	omecloffice@gmail.com	9937388703	OMECL
22	Dr. P. K. Nayak, Sr. Manager (Geology)	omecloffice@gmail.com	6372651516	OMECL
23	Shri V. Koteswara Raju, Joint Director	ceo.merit@gmail.com	9100688115	MERIT, AP

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Annexure-2A

Reconnaissance survey (G4) for Genesis of BIF-hosted high grade iron ores of the Bailadila Deposits with special reference to geological controls on mode of occurrence of Ore-Beneath-Ore and implications on future game changing exploration in India.

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal (FY 2022-23)		Remarks
			SoC-Item-Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**						
a	Charges for Geologist per day at HQ for monitoring, data processing etc.	day	1.3	9,000	60	5,40,000	
b	Charges for Geologist per day at field for mapping, channel sampling and logging	day	1.3	11,000	120	13,20,000	
c	Labours Charges Base rate - Rs. 437/-	day	5.7	437	240	1,04,880	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**19,64,880**	
B	**LABORATORY STUDIES**						
i	Preparation of thin section	Nos	4.3.1	2,353	124	2,91,772	
ii	SEM/EDS (40 Nos. of samples) 4 hrs for 1 samples	Per Hour	4.4.2	2,940	160	4,70,400	
iii	XRF	Nos	4.1.15a	4,200	100	4,20,000	
iv	EPMA (40 Nos. of samples)	Per Hour	4.4.1	8,540	120	10,24,800	
v	ICP-MS	Nos	4.6.3	8,540	60	5,12,400	
vi	LA-ICP-MS	Nos	4.6.3	8,540	40	3,41,600	
vii	MC-ICP-MS	Nos	4.6.3	8,540	40	3,41,600	
viii	Sulphur/carbon isotope analysis by Mass Spectrometer per sample	Nos	4.6.1	25,340	30	7,60,200	
ix	Carbon/oxygen isotopic analysis by Mass Spectrometer per sample	Nos	4.6.2	24,360	30	7,30,800	
					Sub Total- B	**48,93,572**	
					Total A to B	**68,58,452**	
C	**Preparation of Exploration proposal**	**5 Hard copies with a soft copy**	**5.1**	2% of the approved project cost or 3.8 Lakh whichever is lower		**1,37,169**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
D	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	For the projects having cost up to exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work		**3,42,923**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

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				whichever is more and Rs. 3000/- per each additional copy.			
E	**Total Estimated Cost without GST**					**73,38,544**	
F	**Provision for GST (18%)**					**13,20,938**	GST will be reimbursed as per actual and as per notified prescribed rate
	Total Estimated Cost with GST					**86,59,481**	***or Say Rs. 86.59 Lakh***
NOTE-							
1	**If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.**						
2	**NEA has to take permission before publishing any geoscientific work data in any scientific publication.**						

Annexure-2B

Reconnaissance survey (G4) for Genesis of BIF-hosted high grade iron ores of the Bailadila Deposits with special reference to geological controls on mode of occurrence of Ore-Beneath-Ore and implications on future game changing exploration in India.

S. No.	Activities	First Year Months													Second Year Months										
		1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12
1	Remote sensing													REVIEW												
2	Field work																									
3	Core Sampling																									
4	Geologist days in field																									
5	Study of Cross Section &Sliceplans																									
6	Sample Prepration																									
7	Thin section prepration& studies																									
8	Ore Microscopic Studies																									
9	Laboratory Studies (sample preparation, analysis)																									
10	Analysis (EPMA,ICP MS,LA ICP, ICPMS)																									
11	Isotope Analysis																									
12	Geologist days in HO																									
13	Geological Report Preparation																									

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Annexure-3A

Reconnaissance survey (G4) for Tungsten, Tin and basemetals in Datia-Bijapur block, Districts: Datia and Shivpuri, Madhya Pradesh. [Block area- 152.33 sq. km; Nos. of Borehole- 5; Borehole depth range- upto 100m; Schedule timeline- 18 months]

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK (1:12,500 scale)**						
i	Charges for one Geologist- HQ	day	1.3	9,000	60	5,40,000	
ii	Charges for one Geologist-Field	day	1.3	11,000	180	19,80,000	
iii	Labour (2 Nos) Base rate - Rs.437/-	day	5.7	437	360	1,57,320	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day (1 Party) for geochemical, channel and core samples	one sampler per day	1.5.2	5,100	60	3,06,000	
v	Labours (4 Nos) Base rate - Rs. 437/-	day	5.7	437	240	1,04,880	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**30,88,200**	
B	**PITTING AND TRENCHING[$]**						
i	Trenching	Cu m	2.1.1	3,300	100	3,30,000	
					Sub Total- B	**3,30,000**	
C	**GEOPHYSICAL SURVEY**						
i	SP & Magnetic Method (8-20 Line km)	(8-20 Line km	3.3b	12,92,047	1	12,92,047	Decission will taken after review of geological work
ii	Charges for one Geophysicist per day at field	day	3.18	11,000	30	3,30,000	
iii	Charges for Surveyor	day	1.6.1a	8,300	30	2,49,000	
iv	Labours (4 Nos) Base rate - Rs. 437/-	day	5.7	437	120	52,440	
v	Charges for one Geophysicist per day at HQ	day	3.18	9,000	20	1,80,000	
					Sub Total- C	**21,03,487**	
D	**DRILLING**						
i	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	500	57,50,000	Taken after review of mapping sampling, trenching and geophysical survey work
ii	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	500	1,65,000	
iii	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iv	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
v	Transportation of Drill Rig & Truck associated per drill (1 rigs)	Km	2.2.8	36	1,250	45,000	Certification in this regard is required to be provided
vi	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	1,50,000	

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vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	3	66,060	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 3 km.
x	DGPS Survey for Block Boundary and BH coordinate & Reduce level with block boundary	per point	1.6.2	19,200	6	1,15,200	
xi	Drill Core Preservation	per m	5.3	1,590	180	2,86,200	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
					Sub Total- D	**71,87,460**	
E	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
I	**Primary & Check Samples from Surface outcrop and steam sediments (BRS/Channel samples/Stream Sediments)**						
i	**Primary samples**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a & b	3,176	200	6,35,200	
	b. For Au by fire assay	Nos	4.1.5a	2,380	30	71,400	
ii	**Internal check samples (5%)**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	10	31,760	
	b. For Au by fire assay	Nos	4.1.5a	2,380	2	3,570	
iii	**External check samples (10%)**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	20	63,520	
	b. For Au by fire assay	Nos	4.1.5a	2,380	3	7,140	
II	**Primary & Check Samples from Trench**						
i	**Primary samples**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	100	3,17,600	
	b. For Au by fire assay	Nos	4.1.5a	2,380	10	23,800	
ii	**Internal check samples (5%)**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	5	15,880	
	b. For Au & Ag by fire assay	Nos	4.1.5a	2,380	1	1,190	
iii	**External check samples (10%)**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	10	31,760	
	b. For Au by fire assay	Nos	4.1.5a	2,380	1	2,380	
III	**Primary & Check Sampes- Drill Core**						
i	**Primary samples**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta a	Nos	4.1.7a	3,176	100	3,17,600	
	b. For Au & Ag by fire assay	Nos	4.1.5a	4,760	10	47,600	
ii	**Internal check samples (5%)**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	5	15,880	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	1	2,380	
iii	**External check samples (10%)**						
	a. For W, Sn, Mo, Cu, Pb , Zn & Ta	Nos	4.1.7a	3,176	10	31,760	
	c. For Au by fire assay	Nos	4.1.5a	4,760	1	4,760	
2	**Physical & Petrological Stusies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	

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ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
					Sub Total- E	**17,93,640**	
F					**Total A to E**	**1,45,02,787**	
G	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	Exploration cost exceeding ₹50 lakh but less than 150 lakh: A Minimum of ₹2.5 lakh or 5% of the work whichever is more		**7,25,139.35**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
H	**Peer review Charges**		**As per EC decision**			**10,000**	
I	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**2,90,055.74**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
J	**Total Estimated Cost without GST**					**1,55,27,982.09**	
K	**Provision for GST (18% of J)**					**27,95,036.78**	GST will be reimburse as per actual and as per notified prescribed rate
L	**Total Estimated Cost with GST**					**1,83,23,018.87**	***or Say Rs. 183.23 Lakh***
Note:							
$	Trenching/Pitting dimensions are tentative may vary depending upon the geology and field conditions						
#	2nd level of work shall be carried out after review of 1st level work i.e. Geological mapping, geochemical sampling and analysis and geophysical survey						
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-3B

Schedule timeline for Reconnaissance survey (G4) for Tungsten, Tin and basemetals in Datia-Bijapur block, Districts: Datia and Shivpuri, Madhya Pradesh.

S. No.			1	2	3	4	5	6		7	8	9	10		11	12	13	14	15	16	17	18
1	Camp Setting	Months/Days																				
3	Geological Mapping & Sampling	days	■	■	■																	
4	Geophysical Survey	months								■	■	■										
5	Geophysical Report	days											■									
6	Pitting and Trenching	cu.m								■	■	■	■									
8	Surface Drilling (1 rigs)	m													■	■	■	■				
9	Survey Party days	days								■	■	■										
10	Geologst Man days	days	■	■	■	■	■					■	■		■	■	■	■				
11	Sampler Man days	days			■	■	■					■	■					■	■			
12	Camp Winding	months																	■			
13	Laboratory Studies	Nos.			■	■	■	■				■	■						■	■		
14	Report Writing with Peer Review	months																	■	■	■	■

Review for Geo-physical Survey

Review for Drilling

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.
2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

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Annexure-4A

Estimated cost for Reconnaissance survey (G4) for PGE in Chandiposh block, District: Sundargarh, Odisha. [Block area- 111.00 sq. km; Nos. of Borehole-5; Borehole depth range- upto 100m; Schedule timeline- 16 months]

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK (1:12,500 scale)**						
i	Charges for one Geologist per- HQ	day	1.3	9,000	60	5,40,000	
ii	Charges for one Geologist- Field	day	1.3	11,000	180	19,80,000	
iii	Labour (2 Nos) Base rate - Rs.437	day	5.7	437	360	1,57,320	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day for geochemical, channel and core samples	one sampler per day	1.5.2	5,100	45	2,29,500	
v	Labours (4 Nos) Base rate - Rs. 437/-	day	5.7	437	180	78,660	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- A					**29,85,480**	
B	**PITTING AND TRENCHING**						
i	Trenching (1m x 2mx 3410 m)	Cu m	2.1.1	3,300	150	4,95,000	
	Sub Total- B					**4,95,000**	
C	**GEOPHYSICAL SURVEY**						
i	Magnetic	Nos of Stations	3.2a	1,800	420	7,56,000	
ii	Charges for Geophysicist per day at field	day	3.18	11,000	60	6,60,000	
iii	Labour (2 Nos) Base rate - Rs.437	day	5.7	437	120	52,440	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total- C					**14,68,440**	
C	**DRILLING**						
i	Drilling (Hard Rock)	m	2.2.1.4a	11,500	500	57,50,000	
ii	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	500	1,65,000	
iii	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iv	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
v	Transportation of Drill Rig & Truck associated per drill (1 rigs)	Km	2.2.8	36	2,600	93,600	Certification in this regard is required to be provided
vi	Monthly Accomodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	1,50,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement

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							and Road Making Charges will be reimbursed for max. 5 km.
x	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and corner points by DGPS	Per Point of observation	1.6.2	19,200	6	1,15,200	
xi	Drill Core Preservation	per m	5.3	1,590	180	2,86,200	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities.
	Sub Total- C					**72,80,100**	
D	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
I	**Primary & Check Sampes from Surface outcrop**						
i	**Primary samples**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	100	2,84,100	
	b. For PGE	Nos	4.1.5d	11,800	100	11,80,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	20	95,200	
ii	**Internal check samples (5%)**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	5	14,205	
	b. For PGE	Nos	4.1.5d	11,800	5	59,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	1	4,760	
iii	**External check samples (10%)**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	10	28,410	
	b. For PGE	Nos	4.1.5d	11,800	10	1,18,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	2	9,520	
II	**Primary & Check Samples from Trench**						
i	**Primary samples**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	75	2,13,075	
	b. For PGE	Nos	4.1.5d	11,800	75	8,85,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	20	95,200	
ii	**Internal check samples (5%)**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	4	10,654	
	b. For PGE	Nos	4.1.5d	11,800	4	44,250	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	1	4,760	
iii	**External check samples (10%)**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	8	21,308	
	b. For PGE	Nos	4.1.5d	11,800	8	88,500	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	2	9,520	
III	**Primary & Check Sampes from Drill**						

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	Core						
i	**Primary samples**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	100	2,84,100	
	b. For PGE	Nos	4.1.5d	11,800	100	11,80,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	30	1,42,800	
ii	**Internal check samples (5%)**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	5	14,205	
	b. For PGE	Nos	4.1.5d	11,800	5	59,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	2	7,140	
iii	**External check samples (10%)**						
	a. For Ni, Co, Cr, Cu, Pb, Zn	Nos	4.1.7a & 4.1.7b	2,841	10	28,410	
	b. For PGE	Nos	4.1.5d	11,800	10	1,18,000	
	c. For Au & Ag by fire assay	Nos	4.1.5a	4,760	3	14,280	
2	**Physical & Petrological Stusies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
	Sub Total- D					**51,81,856**	
E	**Total A to D**					**1,74,10,876**	
F	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more		**7,50,000**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
G	**Peer review Charges**		**As per EC decision**			**10,000**	
H	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**3,48,217.53**	will be reimbursed after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
I	**Total Estimated Cost without GST**					**1,85,19,094**	
J	**Provision for GST (18% of J)**					**33,33,436.88**	GST will be reimburse as per actual and as per notified prescribed rate
K	**Total Estimated Cost with GST**					**2,18,52,531**	***or Say Rs. 218.53 Lakh***
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

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Annexure-4B

Schedule timeline for Reconnaissance survey (G4) for PGE in Chandiposh block, District: Sundargarh, Odisha.

S. No.		Months/Days	1	2	3	4	5	6	7	8	9	Review	10	11	12	13	14	15	16
1	Camp Setting	months																	
2	Geological Mapping	months																	
3	Survey days	days																	
4	Geophysical Work	months																	
5	Pitting & Trenching	cu.m																	
6	Drilling (1 rig)	m																	
7	Geologist days	days																	
8	Sampling days, Core Sampling	days																	
9	Camp Winding	months																	
10	Laboratory Studies	months																	
11	Geologist Party days, HQ	days																	
12	Report Writing with Peer Review	months																	

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.
2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

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Annexure-5A

Estimated cost for Reconnaissance survey (G4) for manganese ore and graphite in Larambha-Kanaital & Pudapadar-Bharatbahal blocks, District: Balangir, Odisha. [Block area- 135 sq. km; Nos. of Borehole- 8; Borehole depth range- 60m; Schedule timeline- 18 months

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Amount (Rs)	
A	**GEOLOGICAL WORK (1:12,500 scale)**						
i	Charges for one Geologist- Field	day	1.2	11,000	180	19,80,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	60	5,40,000	
iii	2 labours/ party (Rs 437/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	437	360	1,57,320	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Core Sampling -1 Samplers Labour charge not included	day	1.5.2	5,100	40	2,04,000	
v	4 labours/ party (Rs 437/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	437	160	69,920	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
				Sub Total- A		**29,51,240**	
B	**GEOPHYSICAL SURVEY**						will be decided after review
i	SP and Magnetic Survey (8-20 L Km)	Line Km	3.3b	12,92,047	1	12,92,047	
ii	Charges for one Geophysicist per day at field	day	3.18	11,000	30	3,30,000	
iii	Charges for one Geophysicist per day at HQ	day	3.18	9,000	20	1,80,000	
iv	Surveyor Work	days	1.6.1a	8,300	30	2,49,000	
v	4 labours/ party (Rs 437/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	437	120	52,440	
				Sub Total- B		**21,03,487**	
C	**PITTING AND TRENCHING**						
i	Trenching (1m x 2mx 150 m)	Cu m	2.1.1	3300	150	4,95,000	
				Sub Total- C		**4,95,000**	
D	**DRILLING**						
i	Drilling upto 300m (Hard Rock) (1 rigs)	m	2.2.1.4a	11,500	500	57,50,000	
ii	Borehole deviation Survey	m	2.2.6	330	500	1,65,000	
iii	Land / Crop Compansation	per BH	5.6	20,000	8	1,60,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
iv	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	8	16,000	
v	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,400	50,400	Certification in this regard is required to be provided

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vi	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	6	3,00,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	4	88,080	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 4 km.
x	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and corner points of block by DGPS	Nos	1.6.2	19,200	9	1,72,800	
xi	One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	165	2,62,350	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
					Sub Total- D	**74,64,630**	
E	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i	**Primary & Check samples for Maganese**						
	a. Primary Samples for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	300	8,52,300	
	b-Internal (5%) Check samples for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	15	42,615	
	c-External(10%) Check samples from NABL Lab for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	30	85,230	
ii	**Primary & Check samples for Graphite**						
	a. Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for Primary Samples	Nos	4.1.16	3,000	300	9,00,000	
	b Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for Internal (5%) Check Samples	Nos	4.1.16	3,000	15	45,000	
	c Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for External (10%) Check Samples NABL Lab	Nos	4.1.16	3,000	30	90,000	
2	**Physical & Petrological Stusies**						
i	Preparation of thin section	Nos	4.3.1	2,353	15	35,295	
ii	Complete petrographic study report	Nos	4.3.4	4,232	15	63,480	
iii	Preparation of polished section	Nos	4.3.2	1,549	15	23,235	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	15	63,480	
v	Digital Photographs	Nos	4.3.7	280	15	4,200	

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vi	Whole Rock Analysis (Major oxide and 8 additional trace elements)	Nos	4.1.15a & b	7,568	15	1,13,520	
	Sub Total- E					**23,18,355**	
F					**Total A to E**	**1,53,32,712**	
G	**Geological Report Preparation**		**5.2**	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more		**7,50,000**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
H	**Peer review Charges**		**As per EC decision**			**10,000**	
I	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	5.1	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**3,06,654.24**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
K	**Total Estimated Cost without GST**					**1,63,99,366.24**	
J	**Provision for GST (18% of I)**					**29,51,885.92**	GST will be reimburse as per actual and as per notified prescribed rate
K	**Total Estimated Cost with GST**					**1,93,51,252.16**	***or Say Rs. 193.51 Lakh***
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-5B

Schedule timeline for Reconnaissance survey (G4) for manganese ore and graphite in Larambha-Kanaital & Pudapadar-Bharatbahal blocks, District: Balangir, Odisha.

S. No.		Months/Days	1	2	3	4	5	6		7	8	9	10	11	12		13	14	15	16	17	18
1	Camp Setting	months																				
2	Geological Mapping	months																				
3	Survey days	days																				
2	Geophysical Work	months																				
5	Trenching	cu.m																				
6	Drilling (1 rig)	m																				
7	Geologist days	days																				
8	Sampling days, Core Sampling	days																				
9	Camp winding	months																				
10	Laboratory Studies	months																				
11	Geologist days, HQ	days																				
12	Report Writing with Peer Review	months																				

Review

Review

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Annexure-6A

Reconnaissance survey (G4) for Iron in Lengupara block, District: Goalpara, Assam. [Block area- 56.00 sq. km; Nos. of Borehole- 05; Borehole depth range- 70m; Schedule timeline- 12 months							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**Geological mapping/Survey (1:12,500 scale)**						
i	Charges for Geologist (Field)	day	1.3	11,000	120	13,20,000	
ii	Labour Charges for geological mapping/survey; Base rate - Rs.437	day	5.7	437	240	1,04,880	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iii	Charges for Sampler	one sampler per day	1.5.2	5,100	40	2,04,000	
iv	Labour Charges for Sample work; Base rate - Rs.437	day	5.7	437	160	69,920	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**16,98,800**	
B	**Geophysical Survey**						
ii	Magnetic station	Per station	3.2 a	1,800	100	1,80,000	
					Sub Total- B	**1,80,000**	
C	**Pitting & Trenching**						
i	Pitting & Trenching	per cu m	2.1.1	3,330	100	3,33,000	
					Sub Total- C	**3,33,000**	
D	**Drilling**						
i	Surface Drilling (Hard rock)	m	2.2.1.4b	11,500	350	40,25,000	
ii	Transportation (1 rigs)	km	2.2.8	36	500	18,000	
iii	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iv	Construction of concrete Pillar (12"x 12"x 30")	per borehole	2.2.7a	2,000	5	10,000	
v	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	1,50,000	
vi	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
vii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
viii	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 15 km.
ix	Bore Hole Fixation and	Per Point of	1.6.2	19,200	6		

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	determination of co-ordinates & Reduced Level of the boreholes by DGPS	observation				1,15,200	
x	Drill Core Preservation	per m	5.3	1,590	100	1,59,000	Amount will be reimbursed after successful delivery of the core to concerned library/authorities
					Sub Total- D	**51,87,300**	
					Sub Total A to D	**73,99,100**	
E	**Sub Total A & B after incorporating Additional Rate for exploration work in remote and inaccessible terrain in North Eastern States and Hilly Terrain of Himalaya**		para 5 of SoC	3.35 times higher than the normal SoC		**2,47,86,985.00**	Certification that area falls in remote and inaccessible terrain in North Eastern State and/or Hilly Terrain of Himalya region
F	**Laboratory studies**						
1	**Chemical Analysis**						
i	**Surface Sampling**						
	6 radicals (Fe%, Mn%, SiO2%, Al2O3%, P%, S%)	Nos	4.1.15a	4,200	50	2,10,000	
ii	**Soil sampling**						
	a) 6 radicals (Fe%, Mn%, SiO2%, Al2O3%, P%, S%)	Nos	4.1.15a	4,200	50	2,10,000	
iii	**Check samples**						
	a) 6 radicals (Fe%, Mn%, SiO2%, Al2O3%, P%, S%)	Nos	4.1.15a	4,200	5	21,000	
iv	**Trench & Pit sampling**						
	a) 6 radicals (Fe%, Mn%, SiO2%, Al2O3%, P%, S%)	Nos	4.1.15a	4,200	100	4,20,000	
v	**BH Core sampling, Primary & Check samples**						
	a) 6 radicals (Fe%, Mn%, SiO2%, Al2O3%, P%, S%)	Nos	4.1.15a	4,200	60	2,52,000	
vi	**Composite samples**						
	a) 6 radicals (Fe%, Mn%, SiO2%, Al2O3%, P%, S%)	Nos	4.1.15a	4,200	10	42,000	
2	**Physical Analysis**						
i	Thin Section Preparation	Nos	4.3.1	2,353	15	35,295	
ii	Polished Section Preparation	Nos	4.3.2	1,549	5	7,745	
iii	Complete Petrographic / Mineragraphic report of rock sample	Nos	4.3.4	4,232	15	63,480	
iv	Bulk density	Nos	4.1	3,540	5	17,700	
v	XRD & spectroscopic studies	Nos	4.5	4,000	5	20,000	
vi	Whole rock analysis (Major oxides)	Nos	4.1.15a	4,200	5	21,000	
					Sub Total- F	**13,20,220**	
G	**Charges for one Geologist per day at HQ**	**day**	**1.3**	**9,000**	**60**	**5,40,000**	

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H	**Total- E to G**					**2,66,47,205**	
I	**Geological Report Preparation**		**5.2 (iii)**	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more		**7,99,416**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
J	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**3,80,000**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
K	Peer review Charges		**As per EC decision**			**10,000**	
					Total Estimated Cost without GST	**2,78,36,621**	
					Provision for GST (18%)	**50,10,591.81**	GST will be reimburse as per actual and as per notified prescribed rate
					Total Estimated Cost with GST	**3,28,47,213**	***or Say Rs. 328.47 Lakh***
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-6B

Schedule timeline for Reconnaissance survey (G4) for Iron in Lengupara block, District: Goalpara, Assam.

S. No.	Activities	Months											
		1	2	3	4	5	6		7	8	9	10	11	12
1	Camp mobilisation													
2	Mapping (1:12500)													
3	Geologist days in field													
4	Surface drilling (2 rig)													
5	Survey days													
6	Sampling days													
7	Laboratory Studies													
8	Camp winding													
9	Geologist days in HQ													
10	Geological Report Writing													

Review

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all stautory clearances.

2. Time loss on account of monsoon/agricultural activity/forest clearence/local law & order problem may be additional to above time line.

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Annexure-7A

Estimated cost for Reconnaissance survey (G4) for Sillimanite in Samelangsu block, District: Karbi-Anglong, Assam. [Block area- 50.00 sq. km; Nos. of Borehole- 05; Borehole depth range- 70m; Schedule timeline- 12 months

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC- Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**Geological mapping/Survey (1:12,500 scale)**						
i	Charges for Geologist (Field)	day	1.3	11,000	120	13,20,000	
ii	Labour Charges for geological mapping/survey; Base rate - Rs.437	day	5.7	437	240	1,04,880	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iii	Charges for Sampler	one sampler per day	1.5.2	5,100	50	2,55,000	
iv	Labour Charges for Sample work; Base rate - Rs.437	day	5.7	437	200	87,400	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**17,67,280**	
B	**EXPLORATORY MINING**						
i	Excavation (Pitting)	per cu m	2.1.2	3,800	100	3,80,000	
ii	Excavation (Trenching)	per cu m	2.1.1	3,330	100	3,33,000	Kept as a provision , will be decided by field geologist based on field observation
					Sub Total- B	**7,13,000**	
C	**Drilling**						
i	Surface Drilling (Hard rock)	m	2.2.1.4b	11,500	350	40,25,000	Expecting Hard Rock in the hilly terrain.
ii	Transportation (1 rigs)	km	2.2.8	36	700	25,200	Individual Rig Movement of cummulative 700 Km with Inter Location Movement added As well. Certification in this regard is required to be provided.
iii	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iv	Construction of concrete Pillar (12"x 12"x 30")	per borehole	2.2.7a	2,000	5	10,000	
v	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	4	2,00,000	
vi	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
vii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
viii	Road Making (Hilly Terrain)	Km	2.2.10b	32,200	15	4,83,000	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 15 km.
ix	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	6	1,15,200	

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x	Drill Core Preservation	per m	5.3	1,590	120	1,90,800	Amount will be reimbursed after successful delivery of the core to concerned library/authorities
					Sub Total- C	**56,49,200**	
					Sub Total A to C	**81,29,480**	
D	**Sub Total A B &C after incorporating Additional Rate for exploration work in remote and inaccessible terrain in North Eastern States and Hilly Terrain of Himalaya**		**para 5 of SoC**	**3.35 times higher than the normal SoC**		**2,72,33,758**	Certification that area falls in remote and inaccessible terrain in North Eastern State and/or Hilly Terrain of Himalya region
E	**Laboratory studies**						
1	**Chemical Analysis**						
i	Analysis of one alumino-silicate rock (sillimanite/kyanite)	Nos	4.1.2	8,796	4	35,184	
ii	Surface Sampling (Bed rock samples) (For quantitative REE analysis)	Nos	4.1.13	5,380	20	1,07,600	
iii	Check Samples (5% internal and 10% external) of Bed rock (For quantitative REE analysis)	Nos	4.1.13	5,380	5	26,900	
iv	Primary & Check samples from both Pit & Trench & BH Core samples (for SiO_2 , Al_2O_3, Fe_2O_3, TiO_2, CaO, MgO, Na_2O, K_2O, LOI)	Nos	4.1.7a &b	3,846	370	14,23,020	9 Radicals
2	**Petrological samples**						
i	Preparation of thin section	Nos	4.3.1	2,353	25	58,825	
ii	Study of Thin Section	Nos	4.3.4	4,232	25	1,05,800	
iii	Modal analysis of thin section	Nos	4.3.8	3,780	10	37,800	
iv	Bulk density	Nos	4.8.3	1,568	10	15,680	
					Sub Total- D	**18,10,809**	
F	**Charges for one Geologist per day at HQ**	**day**	**1.3**	**9,000**	**60**	**5,40,000**	
G					**Total- D to F**	**2,95,84,567**	
H	**Geological Report Preparation**		**5.2 (iv)**	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more		**8,87,537.01**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
I	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**3,80,000**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.

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J	**Peer review Charges**		**As per EC decision**			**10,000**	
	Total Estimated Cost without GST					**3,08,62,104.01**	
	Provision for GST (18%)					**55,55,178.72**	GST will be reimburse as per actual and as per notified prescribed rate
	Total Estimated Cost with GST					**3,64,17,282.73**	***or Say Rs. 364.17 Lakh***
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-7B

Schedule timeline for Reconnaissance survey (G4) for Sillimanite in Samelangsu block,District: Karbi-Anglong, Assam.

S. No.	Activities	Months											
		1	2	3	4	5	6		7	8	9	10	11	12
1	Camp mobilisation													
2	Mapping (1:12500)													
3	Geologist days in field													
4	Surface drilling (2 rig)													
5	Survey days							Review						
6	Sampling days													
7	Laboratory Studies													
8	Camp winding													
9	Geologist days in HQ													
10	Geological Report Writing													

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all stautory clearances.

2. Time loss on account of monsoon/agricultural activity/forest clearence/local law & order problem may be additional to above time line.

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Annexure-8A

Estimated Cost for Priliminary Exploration (G3) for Iron Ore in Deojhar (Balita) Block, District: Keonjhar, Odisha. [Block area- 3.99 sq. km; Nos. of Borehole-6; Borehole depth range- upto 100m; Schedule timeline- 3 months]

S. No.	Item of work	Unit	Rate as per NMET SOC 2020-21		Estimated cost of proposal		Remarks
			SOC item Sl. No.	Rate as per SOC in Rs	Qty.	Total Amount (in Rs)	
A	**Geological Work (1:12,500)**						
i	Geologist party days- HQ	per day	1.3	9,000	30	2,70,000	
ii	Geologist party days- field	per day	1.3	11,000	60	6,60,000	
iii	Labour (2 Nos) Base rate - Rs.437	per day	5.7	437	120	52,440	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day for geochemical, channel and core samples	per day	1.5.2	5,100	45	2,29,500	
v	Labours (4 Nos) Base rate - Rs. 437/-	per day	5.7	437	180	78,660	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
				Sub Total- A		**12,90,600**	
B	**Drilling Work**						
i	Drilling - Very Hard rock	per m	2.2.1.5	12,650	600	75,90,000	
ii	Borehole Pillaring (12"x12"x30")	per Nos.	2.2.7a	2,000	6	12,000	
iii	Transporation of drill rig & truck associated per drill	per km	2.2.8	36	100	3,600	Certification in this regard is required to be provided
iv	Demarcation of lease boundary, Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS	Per point of observation	1.6.2	19,200	7	1,34,400	
v	Drill core preservation	per m	5.3	1,590	300	4,77,000	This amount will be reimbursed after successful delivery of the cores to concerned libraries /authorities.
				Sub Total- B		**82,17,000**	
C	**Laboratory Studies**						
1	**Chemical Analysis**						
i	*Primary Samples* (Surface Samples + Core Samples + Check Samples)						
	Chemical analysis (Fe%, SiO2%, Al2O3%, P%, S% & LOI)	per Nos.	4.1.15a	4,200	350	14,70,000	
ii	*Composite samples*						
	Chemical analysis (Fe%, SiO2%, Al2O3%, P%, Mn%, S%, Na2O, K2O & V2O5%)	per Nos.	4.1.15a & b	4,621	6	27,726	
2	**Physical Analysis**						
i	Preparation of standard thin section of rock	per Nos.	4.3.1	2,353	5	11,765	
ii	Petrographic Studies	per Nos.	4.3.4	4,232	5	21,160	

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iii	Preparation of polished thin section of rock/ wafer	per Nos.	4.3.2	1,549	10	15,490	
iv	Minerographic Studies	per Nos.	4.3.4	4,232	10	42,320	
vi	XRD analysis for composite	per Nos.	4.5.1	4,000	6	24,000	
vii	Trace Element Studies by ICP-MS (15 elements)	per Nos.	4.1.13	5,380	5	26,900	
viii	Bulk Density Determination	per Nos.	4.10	3,540	5	17,700	
					Sub Total-C	**16,57,061**	
D					**Total A to C**	**1,11,64,661**	
E	Geological Report Preparation	Cost per 5 Hard copies of report along with soft copy	5.2	**Project between ₹50 lakh to ₹150 lakh:** Minimum of ₹2.5 Lakh or 5% of the work which ever is more and ₹3000/ each additional copy.		**5,58,233.05**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
F	Peer Review		As per EC decision			**10,000**	
G	Preparation of Exploration Proposal	One Number (5 Hard copies) along with soft copy	5.1	2% of approved project cost or 3.8 lakh whichever is lower		**2,23,293.22**	will be reimbursed after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
H	**Total Estimated cost without GST**					**1,19,56,187**	
I	**Provision for GST (18%)**					**21,52,114**	
J	**Total Estimated Cost with GST**					**1,41,08,301**	***or Say Rs. 141.08 Lakh***
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-8B

Schedule timeline for Priliminary Exploration (G3) for Iron Ore in Deojhar (Balita) Block, Keonjhar district, Odisha.

S. No.	Activities	Unit	Months			Quantity
			1	2	3	
1	Geological Mapping	sq. km				3.99
2	Surface Drilling	m				600
3	Geologist days	day				60
4	Survey days	day				20
5	Sampling days/ core sampling	day				30
6	Laboratory Studies	Nos.				408
8	Geological Report Writing	day				30
9	Geologist party days (HQ)	day				30

Note:
1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.
2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

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Annexure-9A

Estimated Cost for Priliminary Exploration (G3) for manganese ore in Lashi Block, District: Sundargarh, Odisha. [Block area- 1.60 sq. km; Nos. of Borehole-8; Borehole depth range- upto 100m; Schedule timeline- 4 months]

S. No.	Item of work	Unit	Rate as per NMET SOC 2020-21		Estimated cost of proposal		Remarks
			SOC item Sl. No.	Rate as per SOC in Rs	Qty.	Total Amount (in Rs)	
A	**Geological Work**						
i	Geologist party days- HQ	per day	1.3	9,000	30	2,70,000	
ii	Geologist party days- field	per day	1.3	11,000	60	6,60,000	
iii	Labour (2 Nos) Base rate - Rs.437	per day	5.7	437	120	52,440	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Charges for one Sampler per day for geochemical, channel and core samples	per day	1.5.2	5,100	50	2,55,000	
v	Labours (4 Nos) Base rate - Rs. 437/-	per day	5.7	437	200	87,400	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**13,24,840**	
B	**Drilling Work**						
i	Drilling - Very Hard rock	per m	2.2.1.5	12,650	800	1,01,20,000	
ii	Borehole Pillaring (12"x12"x30")	per Nos.	2.2.7a	2,000	8	16,000	
iii	Transporation of drill rig & truck associated per drill	per km	2.2.8	36	200	7,200	Certification in this regard is required to be provided
iv	Demarcation of lease boundary, Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS	Per point of observation	1.6.2	19,200	9	1,72,800	
v	Drill core preservation	per m	5.3	1,590	350	5,56,500	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities.
					Sub Total- B	**1,08,72,500**	
C	**Laboratory Studies**						
1	**Chemical Analysis**						
i	***Primary Samples*** (Surface Samples + Core Samples + Check Samples)						
	Chemical analysis (Fe, Mn, SiO_2, Fe_2O_3, P_2O_5, MnO_2, Al_2O_3, Insolubles & LOI)	per Nos.	4.1.15a	4,200	440	18,48,000	
ii	***Composite samples***						
	Chemical analysis (Fe, Mn, SiO_2, Fe_2O_3, P_2O_5, MnO_2, Al_2O_3, Na_2O, K_2O, Insolubles & LOI)	per Nos.	4.1.15a	4,200	8	33,600	
2	**Physical Analysis**						
i	Preparation of standard thin section of rock	per Nos.	4.3.1	2,353	10	23,530	
ii	Petrographic Studies	per Nos.	4.3.4	4,232	10	42,320	
iii	Preparation of polished thin section of rock/ wafer	per Nos.	4.3.2	1,549	10	15,490	
iv	Minerographic Studies	per Nos.	4.3.4	4,232	10	42,320	
v	XRD analysis for composite	per Nos.	4.5.1	4,000	8	32,000	

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vi	Trace Element Studies by ICP-MS (15 elements)	per Nos.	4.1.13	5,380	5	26,900	
vii	Bulk Density Determination	per Nos.	4.10	3,540	5	17,700	
					Sub Total- C	**20,81,860**	
D					**Total A to C**	**1,42,79,200**	
E	Geological Report Preparation	Cost per 5 Hard copies of report along with soft copy	5.2	**Project between ₹50 lakh to ₹150 lakh:** Minimum of ₹2.5 Lakh or 5% of the work which ever is more and ₹3000/ each additional copy.		**7,13,960**	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
F	Peer Review		As per EC decision			**10,000**	
G	Preparation of Exploration Proposal	One Number (5 Hard copies) along with soft copy	5.1	2% of approved project cost or 3.8 lakh whichever is lower		**2,85,584**	will be reimbursed after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
H	**Total Estimated cost without GST**					**1,52,88,744**	
I	**Provision for GST (18%)**					**27,51,973.92**	
J	**Total Estimated Cost with GST**					**1,80,40,718**	***or Say Rs. 180.41 Lakh***
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

Annexure-9B

Schedule timeline for Priliminary Exploration (G3) for manganese ore in Lashi Block, District: Sundargarh, Odisha.

S. No.	Activities	Unit	Months				Quantity
			1	2	3	4	
1	Surface Drilling	m	■	■	■		800
2	Geologist days	day	■	■	■		60
3	Survey days	day	■		■		30
4	Sampling party/core sampling	day	■	■	■		60
5	Laboratory Studies	Nos.	■	■	■	■	524
6	Geological Report Writing	day				■	30
7	Geologist party days (HQ)	day				■	30

Note:

1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.
2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

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Annexure-10A

Estimated cost for General exploration (G2) for limestone in Madianpadu (6.6 sq. km) block, District: Guntur, 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	1440	9763200	2328
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	0
3	GI Core Box *	each	2000.0		288	576000	327
4	Camp Setting	Drill/ month	68606	244910	1	244910	0
	Sub Total A					**10646110**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days	day	1180	5840	40	233600	48
2	Geologist Party days	day	1541	7802	90	702180	52
3	Core Sampling Party days	day	525	2809	60	168540	117
	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	1584	4086720	2357
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	1584	1539648	2357
	Chemical Analysis of Na2O, K2O	Nos					208
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					**5646108**	
	Total A+B+C					**17396538**	
D	**EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more)**					**347931**	600000
	Peer Review Honororium						10000
	GRAND TOTAL A to D					**17744469**	
	GST 18%					**3194004**	
	Grand Total : with GST 18%					**20938473**	**8065606.8**
						Rs. 209 Lakhs	**Rs. 80.65 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 Rs.2000/- has been considered as per MECL rates approved by Ministry.						

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Annexure-10B

Estimated cost for General exploration (G2) for limestone in Mutyalampadu-Tangeda (4.8 sq. km) block, District: Guntur, 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	1120	7593600	2034
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	0
3	GI Core Box *	each	2000		224	448000	300
4	Camp Setting	Drill/ month	68606	244910	1	244910	0
	Sub Total A					**8348510**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days	day	1180	5840	30	175200	48
2	Geologist Party days	day	1541	7802	50	390100	43
3	Core Sampling Party days	day	525	2809	40	112360	106
	Sub-Total B					**677660**	
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	1232	3178560	2017
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	1232	1197504	2017
	Chemical Analysis of Na2O, K2O						179
b	**Physical Analysis**						
2	Preparation of thin section	Nos	100	538	8	4304	8
3	Petrographic Studies	Nos	228	1436	8	11488	8
	Sub-Total C					**4391856**	
	Total A+B+C					**13418026**	
D	**EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more)**					**268361**	600000
	Peer Review Honororium						10000
	GRAND TOTAL A to D					**13686387**	
	GST 18%					**2463550**	
	Grand Total : with GST 18%					**16149936**	**7151954.04**
						Rs. 161 Lakhs	**Rs. 71.52 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 Rs.2000/- has been considered as per MECL rates approved by Ministry.						

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Annexure-10C

Estimated cost for General exploration (G2) for limestone in Tangeda (7.16 sq. km) block, District: Guntur, Andhra Pradesh							
SL.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	1560	10576800	2850
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	0
3	GI Core Box *	each	2000.0	2000	312	624000	443
4	Camp Setting	Drill/ month	68606	244910	1	244910	0
	Sub Total A					**11507710**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days	day	1180	5840	40	233600	80
2	Geologist Party days	day	1541	7802	90	702180	60
3	Core Sampling Party days	day	525	2809	60	168540	158
	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	1716	4427280	2999
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	1716	1667952	2999
	Chemical Analysis of Na2O, K2O						272
b	**Physical Analysis**						
2	Preparation of thin section	Nos	100	538	8	4304	8
3	Petrographic Studies	Nos	228	1436	8	11488	8
	Sub-Total C					**6111024**	
	Total A+B+C					**18723054**	
D	**EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more)**					**374461**	600000
	Peer Review Honororium						10000
	GRAND TOTAL A to D					**19097515**	
	GST 18%					**3437553**	
	Grand Total : with GST 18%					**22535068**	**9994644.84**
						Rs. 225 Lakhs	**Rs. 99.95 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 Rs.2000/- has been considered as per MECL rates approved by Ministry.						

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Annexure-10D

Estimated cost for General exploration for limestone in Ramapuram (4.07 sq. km) block, District: Guntur, 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	960	6508800	1693
2	Transportation (at actuals)	Km.	8.8	31	2000	62000	0
3	GI Core Box *	each	2000		192	384000	294
4	Camp Setting	Drill/ month	68606	244910	1	244910	0
	Sub Total A					**7199710**	
B	**GEOLOGICAL WORK**						
1	Survey Party Days (1 party)	day	1180	5840	30	175200	48
2	Geologist Party days (1 party)	day	1541	7802	50	390100	35
3	Core Sampling Party days(1 party)	day	525	2809	40	112360	39
	Sub-Total B					**677660**	
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	1056	2724480	1758
	iii) For additional 2 Radicals SO3 & P2O5	Nos	186 (110 +76)	972	1056	1026432	1758
	Chemical Analysis of Na2O, K2O						161
b	**Physical Analysis**						
2	Preparation of thin section	Nos	100	538	6	3228	6
3	Petrographic Studies	Nos	228	1436	6	8616	6
	Sub-Total C					**3762756**	
	Total A+B+C					**11640126**	
D	**EXPLORATION REPORT (Rs.60000 or 2% of Value which ever is more)**					**232803**	600000
	Peer Review Honororium						10000
	GRAND TOTAL A to D					**11872929**	
	GST 18%					**2137127**	
	Grand Total : with GST 18%					**14010056**	**6045399.6**
						Rs. 140 Lakhs	**Rs. 60.46 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 Rs.2000/- has been considered as per MECL rates approved by Ministry.

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Annexure-11

Revised estimated cost for Reconnaissance Survey (G4) for Iron Ore in Khandadhar (40.46 sq. km) block, District: Sundargarh, Odisha

S. No.	Item of Work	Unit	Approved Cost in 10th EC and 20th TCC			Additional Cost Requirement		Total		
			Rate as per Old SOC (in Rs.)	Approved Quantity	Cost (in Rs)	Additional Quantity	Cost (in Rs.)	Total Quantity	Amount (in Rs.)	
A	**DRILLING**									
	Surface Drilling	m	8,472	-	-	500	42,36,000	500	42,36,000	
	Road Making	Km	28,976	-	-	8	2,31,808	8	2,31,808	
	Camp Setting		2,54,864	1	2,54,864	-	-	1	2,54,864	
	Demarcation of lease boundary, Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS	Per point of observation	19,200	-	-	8	1,53,600	8	1,53,600	As per actual cost of DGPS survey
	Sub Total- A				**2,54,864**		**46,21,408**		**48,76,272**	
B	**GEOLOGICAL WORK**									
	Survey Party days	day	6,056	-	-	-	-	-	-	
	Geologist Party Days	day	8,083	150	12,12,450	-	-	150	12,12,450	Additional 60 Geologist Party Days was approved in 20th TCC
	Bulk Sampling Party Days	day	13,908	-	-	-	-	-	-	
	Core Sampling Party days	day	2,905	-	-	-	-	-	-	
	Sub Total- B				**12,12,450**		**-**		**12,12,450**	
C	**PITTING & TRENCHING**									
	Pitting & Trenching	Cu.m	1,739	100	1,73,900	-	-	100	1,73,900	
	Sub Total- C				**1,73,900**		**-**		**1,73,900**	
D	**GEOPHYSICAL**									
	Magnetic Survey	Nos.	479	7,000	33,53,000	-	-	-	-	23rd TCC, the committee recommend for 500 m drilling instead of Geophysical Study
	Sub Total- D				**33,53,000**		**-**		-	
E	**LABORATORY STUDIES**									
1	**Chemical Analysis**									
	i) Primary and check samples									
	a) Primary samples for 3 radicals (Fe, SiO2 & Al2O3))	Nos	1,422	150	2,13,300	300	4,26,600	450	6,39,900	
	b) Check samples for 3 radicals (Fe, SiO2 & Al2O3))	Nos	1,422	-	-	30	42,660	30	42,660	
	ii) Composite samples									

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	a) Composite samples for 7 radicals (Fe%, SiO2%, Al2O3%, P%, Mn%, S%, LOI)	Nos	3,086	-	-	8	24,688	8	24,688	
2	**Physical Analysis**									
	a) X-RD Studies on composite	Nos	5,813	-	-	8	46,504	8	46,504	
	b) ICP -MS studies (14 trace elements including Gallium)	Nos	4,620	-	-	-	-	-	-	
	Preparation of thin section	Nos	556	10	5,560	-	-	10	5,560	
	Petrographic studies	Nos	1,478	10	14,780	-	-	10	14,780	
	Preparation of polished section	Nos	556	10	5,560	-	-	10	5,560	
	Mineralographic studies	Nos	2,090	-	-	10	20,900	10	20,900	
	Specific gravity & porocity determination	Nos	195	-	-	-	-	-	-	
	Bulk density	Nos	144	-	-	10	1,440	10	1,440	
	Sub Total- E				**2,39,200**		**5,62,792**		**8,01,992**	
F	**PRESERVATION OF CORE**									
	Transportation of Core boxes	Km	33	-	-	600	19,800	600	19,800	
	Sub Total- F				**-**		**19,800**		**19,800**	
G	**Total A+B+C+D+E+F**				**52,33,414**		**52,04,000**		**70,84,414**	
H	**EXPLORATION REPORT 1% of G**				52,334				70,844	
I	**Peer Review**				10,000				10,000	
J	**Total G+H+I**				**52,95,748**				**71,65,258**	
	GST @18%				9,53,235				12,89,746	
K	**Grand Total**				**62,48,983**				**84,55,005**	**Rs. 84.55 Lakh**

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