Ministry of Mines

National Mineral Exploration Trust

Minutes of the 37thTechnical-cum-Cost Committee (TCC) meeting held on 27th and 28th January 2022 through videoconferencing at Geological Survey of India, DGCO, A-II Pushpa Bhawan, New Delhi

The 37th 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 27th and 28th January 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, participants representing various EAs. He briefly outlined the project proposals submitted by EAs on various mineral commodities. Total nineteen new project proposals submitted by EAs [DGM, Maharashtra- 6; DGM, Assam- 4; MECL- 6; NMDC- 1; and CMPDI- 2] were discussed in the meeting.

Shri Amit Saran, Director and HoD NMET, M/o Mines welcomed the new TCC members and other participants. He expressed that the extended participation and submission of new project proposals by state DGMs will have pragmatic effect in the field of exploration and utilisation of NMET fund in more organised way.

Shri Janardan Prasad, ADG, GSI and Chairman, TCC welcomed the new members of TCC, Shri Hemraj Suryavanshi, DDG & NMH-II, GSI, Shri M. K. Patel, DDG & RMH-II, ER GSI, Shri S. K. Adhikari, Chief Mining Geologist, IBM, Nagpur, Shri Suresh Chander, Director GSI, WR &Member Secretary, TCC and other participants. The proceeding of the meeting was initiated as per the circulated agenda.

Agenda-wise discussions are summarised as follows.

37.1: Technical evaluation of new project proposals:

DGM, Maharashtra

37.1.1. Reconnaissance survey (G4) for manganese in Tangala-Ghotiblock, Tahsil-Ramtek, District: Nagpur, Maharashtra.

a) The proposed Tangala-Ghotiblock is geologically represented by the rocks of Sausar Group, which is divided into Sitasaongi, Lohangi, Mansar, Chorbaoli, Junewani and Bichuaformations. The Sausar Group is characterized by quartzite, quartz-mica schist, calc-silicate, calcitic and pink marble and manganese/ gondite ore.

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b) The southern part of the block is occupied by the biotite gneisses and the northern part is exposed by the calc-granulites and calc-gneisses associated with calcareous and dolomite marbles. In between the biotite gneisses and calc-granulite/gneisses the narrow linear belts of mica schist is present.

c) It has been submitted that the manganese mineralisation is expected to be associated in Lohangi and Mansar formations in the area. The entire rock sequence is folded into a series of isoclinal folds overturned towards north.

d) It has also been conveyed that during field season 2019-20 reconnaissance survey over 102.98 sq. km area and detailed mapping over 11.63 sq. km was carried out by DGM, Maharashtra in Tangla, Salai, Ghoti, and Chichada area recorded the MnO value ranging between 19% and 22% in the grab samples. Additionally, during FS 2020-21, twelve no of borehole and grab rock samples have been analyzed and the manganese values up to 48.16%Mn have been recorded in the area.

e) Based on the detailed deliberations, the committee opined that the G4 level exploration has been already carried out in the block area by DGM, Maharashtra, and it may be appropriate to take up G3 stage exploration by incorporating all available geological data.

The committee suggested to submit the G3 stage proposal by incorporating all available geological data in the next TCC meeting.

37.1.2. Reconnaissance survey (G4) for Iron ore in Kharra block, Tahsil- Godia, District: Gondia, Maharashtra.

a) Geologically the Kharra block is represented by Sakoli Group, which is divided into Gaikhuri, Dhabetekri, Bhiwapur and Pawani formations. Lithologically, the Sakoli Group comprises of metapelitic rocks, quartzite, arkose and conglomerate, Banded Iron Formation, volcanics including metamorphosed rhyolite, tuffs, metabasalts and meta-ultramafic rocks etc.

b) It has been conveyed that five samples have been collected from the area and analysed at DGM laboratory. The sample analyses indicate that the content of Fe_2O_3 varies from 16.9% to 67.4%; Al_2O_3 varies from 1.34% to 11.8% and SiO_2 varies from 15.2% to 68.3%.

c) Based on detailed deliberations, the committee opined that at some places the value of Fe_2O_3 is below the threshold value and some part of the block area was already explored which needs to be demarcated in the block to avoid any duplication.

d) The committee opined that the block has been explored for G4 stage exploration and it may be appropriate to propose G3 stage exploration by incorporating all available geological data.

The committee suggested to submit the G3 stage proposal by incorporating all available geological data in the next TCC meeting.

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37.1.3. Preliminary exploration (G3) for Copper& associated mineralization in Lawari area, Tahsil- Chimur, District: Chandrapur, Maharashtra.

37.1.4. Preliminary exploration (G3) for Bauxite/A1-Laterite in Kudopi area, Tehsil-Malvan, District: Sindhudurg, Maharashtra.

37.1.5. Preliminary exploration (G3) for Al-Laterite/Bauxite Ambiwali-Kante block in Mandangad Taluka, District: Ratnagiri, Maharashtra.

37.1.6. Preliminary exploration (G3) for Al-Laterite/Bauxite in Kudopi Block, Tehsil Malvan, District Sindhudure, Maharashtra. [collaboration with GSI]

a) The project proposals at 37.1.3 to 37.1.6 have been discussed by the committee.

b) DGM, Maharashtra has conveyed that in all the four projects, the exploration has been initiated and is in progress as per their pre-scheduled field season program.

The committee suggested to complete the ongoing exploration work in all the four blocks/projects and thereafter the proposal for the next higher stage of exploration,if required, may be submitted.

It is also suggested that project proposals may be submitted in advance for NMET funding.

DGM, Assam

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

a) It has been conveyed that the occurrence of Iron ore [max. 51.23% Fe] was first reported in 1972. Various mineralized zones are presented by formational contact, ferruginous capping and old workings/pits in the area.

b) The project proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that out of 56 sq km an overlapping of about 52 sq. km has been observed in the proposed block with the earlier explored LSM blocks [Gold: FS: 1996-97 & 1998-99 and REE: FS: 2012-13 & 2013-14].

c) Based on detailed deliberations, the committee suggested to incorporate the geological map available in BHUKOSH portal of GSI.

d) Committee suggested to include the available geoscience data on various mineral commodities reported from the area with detailed background information and a revised proposal for G4 stage exploration of Iron ore may be submitted.

The committee suggested to resubmit the G4 stage proposal by incorporating all available geological data in the next TCC meeting.

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37.1.8. Reconnaissance survey (G4) for limestone in Voteranlagso area of West Karbi, District: Anglong, Assam.

a) The block area lies along the western periphery of Karbi-Anglong district, Assam and adjacent to the Jaintia Hills district of Meghalaya.

b) DGM, Assam conveyed that the preliminary investigation for the cement grade limestone in Voteran Langsi in west Karbi Anglong district was carried out by DGM, Assam in 2019, wherein, encouraging results of CaO were recorded.It has been submitted that the limestone deposits of Voteranglangso area are part of carbonate belt extending from Kopili-Kharkar confluence in the SW to Panimur in the NE.

c) Geologically the area is represented by the basement crystalline [granites and gneisses] and Jaintia Group of rock represented by basal sandstone member and Sylhet limestone member of Shella Formation. The limestone deposits of the block belongs to Sylhet limestone member.

d) The limestone of Sylhet member are hard, compact, massive and fossiliferous with thickness varying from 20m to 36m. The limestone is oolitic in nature.

e) The project proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that the block does not have any overlapping with the earlier explored blocks as well as with the ongoing and ensuing blocks.

f) The committee suggested to carry out geological mapping on 1:12,500 scale, drilling of 500m in 10 boreholes with maximum depth of 50m.The progress of the exploration work will be reviewed after 6 months.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for limestone in Voteranlagso area of West Karbi, District: Anglong, Assam with estimated cost of Rs. 341.50 Lakhs including GST in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 2A & 2B.

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

a) The coal investigation in Kalamati area was carried out by DGM, Assam during 1991-92 and an area of 1 sq. km was delineated as coal bearing zone. Two coal seams in northern part and three seams in the southern part of the block were reported from Kalamati area.

b) The project proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that the proposed block has complete overlapping with the previous explored blocks (Limestone- FS: 1962-63 and REE- FS: 2019-20).

c) Based on detailed deliberations the committee suggested to incorporate the geological map available in BHUKOSH portal of GSI and other available geoscience data in background information. A borehole plan with expected depth of coal seam may also be presented.

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d) The DGM Assam has conveyed that limestone leasehold area is present near the proposed block. The committee suggest to demarcate the leasehold area and the proposed block area on geographical map to avoid any duplication and ambiguity in future.

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

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

a) Geologically the area is exposed by the rocks of granite, feldspathic gneiss, feldspathic quartz biotite gneiss, garnetiferous hornblende biotite gneiss (with laths of sillimanite), quartz schist, feldspathic sillimanite (migmatite) and minor veins of quartz and amphibolite.It has been submitted that the pockets of sillimanite bearing rocks occur within the granite body.

b) Based on detailed deliberations the committee suggested to incorporate the geological map available in BHUKOSH portal of GSI and other available geoscience data in background information. The modal analyses of the samples may be helpful instead of chemical analyses for identification of potential zones for sillimanite.

The committee suggested to resubmit the proposal by incorporating all available geological data in the next TCC meeting.

CMPDI

37.1.11. Preliminary exploration (G3) for coal in Dhaska Naugai block, East of Bisrampur Coalfield, District: Surguja, Chhattisgarh.

a) The Bisrampur Coalfield lies in the eastern part of the Son-Mahanadi valley Basin. The Dhaska-Naugai block, east of Bisrampur coalfield, is located in the NW-SE trending sub-basin bounded by Pondi and Bharatpur villages in the east and Ulia-Gamhardih block in the west, covering 52.54 sq. km.

b) Geologically the area is exposed by the rock of Lower Gondwana Group belonging to Talchir and Barakar formations which rest directly over the Precambrian metamorphics.

c) It has been conveyed that the Barakar formation is the only coal bearing formation in the block. CMPDI has submitted that during large scale mapping (1:25,000), number of coal outcrops have been recorded along nala sections as well as scarp faces of hills around northern and north-eastern part of Ghugri area.

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d) It has been conveyed that the Barakar coal seams are Non-Coking. Quality wise, the coal of seam zone-I is of G4 to G10 grade while of seam zone-II belong to G1 to G12 grade.

e) Based on detailed deliberations the committee opined that the drilling up to Talchir Formation may be done in one borehole and in rest of the boreholes the drilling may be closed below one meter of last encountered coal seam.

The committee recommended the proposal for approval by EC for Preliminary exploration (G3) for coal in DhaskaNaugai block, East of Bisrampur Coalfield, District: Surguja, Chhattisgarh with estimated cost of Rs. 293.58 Lakhs including GST in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 3A & 3B.

37.1.12. Preliminary exploration (G3) for coal in Gurwani block, Main Basin, Singrauli Coalfield, District: Singrauli, Madhya Pradesh.

a) The Singrauli coalfield is situated at the northern part of the Son-Mahanadi Basin. The Gurwani block is surrounded by CBM exploration block in the north, Dongrital North block in the west, Dongrital-II block in the south and Dhirauli Block on the east. Geologically the block is exposed by the rocks of Talchir, Barakar, Barren Measure formations and basic intrusive.

b) It has been conveyed that MECL and Geology and Mining Consultancy has established the occurrence of eight major coal seams in the adjacent Dongrital, Dongrital-II and Dhirauli Blocks in the Barakar Formation.

c) CMPDI has proposed to take up drilling up to basement of Talchir Formation. The committee opined that the drilling up to Talchir formation may be done in one borehole and in rest of boreholes the drilling may be closed below one meter of last encountered coal seam.

d) About 15.5 sq. km area out of 19.08 sq.km area (~81%) of the block falls in the reserve forest. The committee suggested to expedite for seeking permission from forest department to avoid any delay in initiation of exploration.

The committee recommended the proposal for approval by EC for Preliminary exploration (G3) for coal in Gurwani block, Main Basin, Singrauli Coalfield, District: Singrauli, Madhya Pradesh with estimated cost of Rs. 392.73 Lakhs including GST in time schedule of 14 months for carrying out the proposed work and submission of report as per annexure- 4A & 4B.

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NMDC

37.1.13. 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 NMDC has conveyed that the proposal was discussed in the 60th CGPB meeting wherein it was suggested to submit the project proposal for exploration as per NMET rule 2015 through NMET fund.

b) Keeping this in view, the said project proposal has been considered for deliberation under NMET rule 2015, 9(a) i.e.*funding special studies and projects designed to identify, explore, extract, beneficiate and refine deep seated or concealed mineral deposits.*

c) It has been conveyed that the project proposal is aimed to study genesis of Banded Iron Formation [BIF] hosted high-grade iron ores of the Bailadila deposits with special emphasis to geological control on mode of occurrence of ore-body and to establish concealed iron ore deposits.

d) NMDC has conveyed that the project will be carried out in collaboration among NMDC, CSIR-NGRI Hyderabad, and Presidency University, Kolkata.

e) NMDC has also conveyed that, in present scenario, the process of hypogene hydrothermal has also been considered for high-grade BIF ores in some of the giant iron ore deposits of the world such as the Mount Tom Price, Western Australia, Thabazimbi, South Africa, Carajas and Iron Quadrangle, Brazil. The preliminary studies in Bailadila deposit indicate that the Bailadila ore is closely comparable to world-class hypogene hydrothermal ore bodies.

f) It has been conveyed that the ore bodies of hypogene hydrothermal origin may continue at great depth and may occur as hidden ore bodies beneath unmineralized BIF cover and the grade of ore may increase down depth. The hypogene process of ore genesis model may predicts possible hidden iron ores beneath the barren BIF patches and extension of ore bodies at greater depth.

g) Keeping the above in view, the NMDC has proposed to investigate the Bailadila Iron ore deposits in greater detail including field relationships, chemical and isotopic compositions and ore petrography to identify the genetic class of the Bailadila ore deposit.

h) Based on detailed deliberations the committee opined that the project has path-breaking potential for identification of deep seated hypogene hydrothermal BIF deposits and is suitable for consideration of NMET funding.

i) The committee opined that the detailed costsheet with respect to the quantum of proposed componets requires detail deliberation before recommending to EC.

The committee suggested to submit the detailed costsheet as per the standard SoC of NMET in the next TCC. The cost vis-à-vis NQT will be finalised after deliberation in the next TCC.

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MECL

37.1.14. Reconnaissance survey (G4) for REE and basemetal in Temi-Tarku-Damthong block (74.06 sq. km), District: East Sikkim, Sikkim.

a) The project proposal was sent to GSI for their considered comments. In response to this, GSI has conveyed that an overlapping of about 26 sq.km has been observed in the proposed NMET block with the earlier explored Basemetal LSM block during FS: 2019-20. Based on this, MECL has reduced the block area to 74.06 sq. km.

b) It has been submitted that the study area falls within the Daling Allochthonous group. The Daling Group is represented by chlorite sericite phyllite, quartzose phyllite, quartzites, varbed phyllite, slates and quartz intrusive. The basic intrusive have been reported from Parbing area by DGM, Sikkim and radioactive anomaly was recorded by AMD in the basic intrusive.

c) MECL along with DGM, Sikkim had made seven days field visitaroundTemi-Tarku-Damthong block in October, 2021 wherein encrustations of malachite stainhas been recorded in quartz-chlorite-sericite-phyllite of Daling Series on road sections at two places. The samples collected from these two locations have been analysed under handheld XRF. The analyses of samples indicates 55,188ppm and 3,647.67ppm Cu.

d) It has been conveyed that during the techno-feasibility study conducted by MECL in 1983 of Dikchu Cu-Zn deposit, situated about 64 km NE of proposed block, an ore reserve of 0.45MT with 2.82% Cu and 0.90% Zn was established. The investigated lode extents for about 564m in length, 100m in vertical depth and 1.25m in thickness.

e) Similarly, in Upper Pachekhani block which is situated about 62km east of the proposed block, MECL had established 35,420 Tonnes of ore resources with grade of 1.21% Cu in 2002.

f) Based on detailed deliberations the committee suggested to take up exploration in the proposed block. The progress of the exploration work will be reviewed after 6 months.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for REE and basemetal in Temi-Tarku-Damthong block (74.06 sq. km), District: East Sikkim, Sikkim with estimated cost of Rs. 452.07 Lakhs including GST in time schedule of 14 months for carrying out the proposed work and submission of report as per annexure- 5A & 5B.

37.1.15. Reconnaissance survey (G4) for Phosphorite in Pahadi Kalan-Gora Kalan block (13.93 sq. km), District: Lalitpur, Uttar Pradesh.

a) Geologically the block area is exposed by the rocks of Bijawar Group forming a linear tract extending in east-west direction for about 27 km with a maximum width of about 5 km and covering an area of ~105 sq. km. The Bijawar Group is divisible into Barwar, Sonrai and Solda formations. The phosphorite occurrence is confined to Sonrai Formation.

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b) The Sonari Formation is divisible into Barwar member (BHQ, fuchsite, quartzite, chlorate shale and pebble conglomerate), Gorakalan member (shales interbedded with carbonate and phosphorite bands), Tori member (brecciated quartzite with lenses of phosphorite), and Rohini member (shaly dolomite, sandy carbonates, pillow brecciated and massive basic volcanics). The Chert breccia is the established potential lithological horizon for Phosphorite mineralisation in Sanori Formation.

c) It has been conveyed that the phosphate resource of 16.52MT, with average grade of 14.24% P_2O_5, was estimated by MECL in Tori-Pisnari block which is present eastern side of the proposed block.

d) The proposal was sent to GSI for their considered comments. In response to this GSI has submitted that a part of the proposed block was explored for basemetal and associated mineralization during FS 2020-2021. It is also submitted that the area was explored as RMT item for basemetal and REE mineralization during FS 2019-2021.

e) In view of this, the committee opined that MECL may collate all the available geoscience data and geological map of the area and accordingly implement the exploration strategy to avoid any duplication.The progress of the exploration work will be reviewed after 6 months.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for Phosphorite in Pahadi Kalan-Gora Kalan block, District: Lalitpur, Uttar Pradesh with estimated cost of Rs. 171.04 Lakhs including GST in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 6A & 6B.

37.1.16. General exploration (G2) for manganese ore in Khagsabahal (East and West) block (0.98 sq.km) District- Balangir, Odisha.

37.1.17. General exploration (G2) for manganese ore in Tabalbanji block (1.52 sq.km) District- Balangir, Odisha.

a) The proposed two manganese blocks **[Tabalbanji Block and Khagsabahal (East and West)]**were discussed in 31st TCC meeting in July, 2021 wherein DGM, Odisha had conveyed that the proposed two blocks are suitable for auctioning however, a final decision will be taken after deliberation in the State Expert Committee (SEC).

b) Furthering this, it has been conveyed by DGM, Odisha that during the SEC meeting held on 21.12.2021, MECL was requested to provide the status of level of exploration for the said blocks after consulting Director of Geology and GSI and thereafter projects may be proposed for funding.

c) In reference to OM dated 24.08.2021 of NMET, it has been reiterated that for basemetals and other minerlas, in view of the option of conducting auction of blocks at G4 level for composite license, proposals for funding from NMET for exploration up to G2 level may be considered only on recommendations of state government after

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the state government has considered the possibility of auction of the block for composite license.

NMET has not received any consent from State Government of Odisha for consideration of proposal for G2 stage of exploration, hence the TCC has differed to discuss these two proposals and suggested to send the consent letter to NMET.

37.1.18. Reconnaissance survey (G4) for gold in Menderbahar - Bhaghora Block (38.58 sq. Km), District- Jashpur, Chhattisgarh.

a) The proposed block, submitted in the name of Pharsabahar block for G3 stage of exploration, was discussed in 36th TCC meeting held in December, 2021 wherein the committee had opined that the Pandripani block situated close to the proposed block was sufficiently explored by GSI in Field Season 1993-1997 and a small quantum of resource has been reported.

b) Further, the committee had suggested to resubmit the proposal in the next TCC meeting after collating all geoscience data and demarcating all villages on geological map and indicating gap areas having further scope of exploration.

c) Now, MECL has submitted the proposal for G4 stage of exploration in Menderbahar - Bhaghora block. The proposal was sent to GSI for their considered comments. In response to this GSI has submitted that the entire block lies within the Pandripani Gold block explored during 1992-1997.

d) After detailed deliberations the committee opined that MECL may collate all available geoscience data including borehole data, geological map, sample analyses data etc. and take up the G4 stage exploration in the gap areas only. The committee suggested to ensure that there should not be any duplication of work in the proposed block.The progress of the exploration work will be reviewed after 6 months.

The committee recommended the proposal for approval by EC for Reconnaissance survey (G4) for gold in Menderbahar - Bhaghora Block, District- Jashpur, Chhattisgarh with estimated cost of Rs. 151.06 Lakhs including GST in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 7A & 7B.

37.1.19. Preliminary exploration (G3) for Diamond in Tumla block (129 sq.km) District:Jashpur, Chhattisgarh.

a) The proposal for diamond exploration was deliberated in the 36th TCC meeting wherein the committee opined that the G4 stage exploration in the proposed area was already carried out by GSI and Jindal Steel & Power Limited and there is no scope for similar G4 stage exploration in the same area.

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b) The committee further suggested to resubmit the proposal after collating all geoscience data and demarcation of potential zones, if any, in the next TCC meeting.

c) In view of the above, MECL has now submitted the proposal for preliminary exploration (G3) for Diamond in Tumla block (129 sq. km).

d) The committee opined that the potential areas may be demarcated in the proposed block for further stage of exploration on the basis of previous exploration carried out by GSI and Jindal Steel & Power Limited.

e) The Committee suggested to implement the magnetic survey and geological mapping in first phase. The outcome of the first phse will be reviewed after 6 month.In case of encouraging results, the drilling may be implemented.

The committee recommended the proposal for approval by EC for Preliminary exploration (G3) for Diamond in Tumla block (129 sq. km) District:Jashpur, Chhattisgarh with estimated cost of Rs. 493.66 Lakhs including GST in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 8A & 8B.

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

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List of TCC members attended 37th Technical-cum-Cost Committee (TCC) meeting of NMET held on 27th and 28th January, 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 on 28th January, 2022
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	Not attended
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	Attended via videoconference
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	Attended via videoconference

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Annexure-1

List of participants attended 37th Technical-cum-Cost Committee (TCC) meeting of NMET held on 27th and 28th January, 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 Hemraj Suryavanshi, DDG and NMH-II, GSI	hem.raj@gsi.gov.in	7477042176	Member, TCC
6	Shri Manoj Kumar Patel, DDG and RMH-II, GSI	m.patel1@gsi.gov.in	9040011231	Member, TCC
7	Shri Santosh Kumar Adhikari, Chief Mining Geologist, IBM	skadhikari@ibm.gov.in	7588690545	Member, TCC
8	Shri Amit Saran, Director &HoD, NMET	amit.saran@nic.in	9717647259	Member, TCC
9	Shri Suresh Chander, Director, GSI	suresh.chander@gsi.gov.in	9493860963	Member Secretary, TCC
10	Shri P. K. Maharana, DGM (F), NALCO	pmaharana@rediffmail.com	8500669500	Member, TCC
11	Shri Ravi Kumar Gupta, DGM (F), HCL	ravi_g@hindustancopper.com	9433274328	Member, TCC
12	Shri Vinay Pal, ACAO, GSI	vinay.pal@gsi.gov.in	8527368161	Member, TCC
13	Dr.Deshraj Trivedi, Senior Geologist	nmet-tcc@gov.in	9419244294	NMET
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18	Smt. Barnalee Nath, Joint Director (Geology)	dgmassam@gmail.com	9435104508	DGM, Assam
19	Shri Nikhil Aparajit			DGM, Maharashtra
20	Shri Annand Patil			DGM, Maharashtra
21	Shri Dhanashree Lanjewar			DGM, Maharashtra
22	Shri Kailash Dongre, Joint Director (Geology)	kailashdongre.kd@gmail.com	9424282791	DGM, Chhattisgarh
23	Shri R. P. Singh, Geologist	rps1173@gmail.com	9621045793	DGM, UP
24	Dr. Abhijeet Mukherjee, Dy. General Manager (G)	abhijeetmukherjee64@gmail.com	9490760004	NMDC, Hyderabad
25	Dr.Bulusu Sreenivas, Principal Scientist	bulusu.sreenivas@gmail.com		NGRI, Hyderabad

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Annexure-2A

Estimated cost for Reconnaissance survey (G4) for limestone in Voteranlagso area of West Karbi, District: Anglong, Assam.

Block area- 25.00 sq. km; Nos. of borehole- 10; Borehole depth range- 50-60m; Completion Time- 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 (1:12500 scale)**						
a	Charges for Geologist (Field)	day	1.3	11,000	120	13,20,000	
b	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
c	Charges for surveyor	one surveyor per day	1.6.1a	8,300	30	2,49,000	
d	Charges for Sampler	one sampler per day	1.5.2	5,100	60	3,06,000	
e	Labour Charges for Sample work; 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
f	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	10	1,92,000	
					Sub Total- A	**22,76,760**	
B	**Pitting & Trenching/Drilling**						
	Pitting & Trenching	per cu m	2.1.1	3,330	200	6,66,000	
a	Drilling- Soft rock	m	2.2.1.1b	5,242	500	26,21,000	
b	Land / Crop Compansation (in case the BH falls in agreecultural Land)	per BH	5.6	20,000	10	2,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
c	Construction of concrete Pillar (12"x 12"x 30")	per borehole	2.2.7a	2,000	10	20,000	

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d	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	500	18,000	Certification in this regard is required to be provided
e	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	1,50,000	
f	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
g	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
h	Road Making (Flat Terrain)	Km	2.2.10a	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.
i	Drill Core Preservation	per m	5.3	1,590	500	7,95,000	Amount will be reimbursed after successful delivery of the core to concerned library/authorities
					Sub Total- B	**54,53,000**	
					Sub Total A to B	**77,29,760**	
C	**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**		**2,58,94,696.00**	Certification that area falls in remote and inaccessible terrain in North Eastern State and/or Hilly Terrain of Himalya region
D	**Laboratory studies**						
a	**Primary samples**						
	For 6 radicals i.e.CaO, MgO, Al2O3, SiO2, Fe2O3 and LOI (AAS method)	Nos	4.1.7a & b	2,841	450	12,78,450	
b	**Check samples Internal (5%) and External (10%)**						
	For 6 radicals i.e.CaO, MgO, Al2O3, SiO2, Fe2O3 and LOI (AAS method)	Nos	4.1.7a &b	2,841	68	1,93,188	
c	**Petrological samples**						
	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
	Study of Thin Section	Nos	4.3.4	4,232	10	42,320	
d	**Bulk density**						

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	Determination of insitu bulk density	No.	4.1	3,540	5	17,700	
					Sub Total- D	**15,55,188**	
E	**Charges for one Geologist per day at HQ**	day	1.3	9,000	30	**2,70,000**	
F	**Total - C+D+E**					**2,77,19,884**	
G	**Geological Report Preparation**		5.2 (iii)	For the projects exceeding Rs. 150 Lakhs but less than 300 Lakhs: A Minimum of Rs. 7.5 lakhs or 3% of the work whichever is more		8,31,596	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
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		3,80,000	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.
I	**Peer review Charges**		As per EC decision			10,000	
					Total Estimated Cost without GST	**2,89,41,480**	
					Provision for GST (18%)	**52,09,466**	GST will be reimburse as per actual and as per notified prescribed rate
					Total Estimated Cost with GST	**3,41,50,946**	***or Say 341.50 Lakh***
Note- 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-2B

Time schedule for Reconnaissance survey (G4) for limestone in Voteranlagso area of West Karbi, District: Anglong, Assam.

S. No.	Activities	Months												
		1	2	3	4	5	6	Review	7	8	9	10	11	12
1	Camp mobilisation													
2	Mapping (1:12500)													
3	Geologist days in field													
4	Surface drilling (1 rig)													
5	Survey days													
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-3A

Estimated cost for Preliminary exploration (G3) for coal in DhaskaNaugai block, East of Bisrampur Coalfield, District: Surguja, Chhattisgarh.

Block area- 52.54 sq. km; Nos. of borehole- 14; Borehole depth range- 100-300m; Completion Time- 12months

S. No.	Item Work	Item no in Soc	Unit	Rates as per SoC of NMET	Rate (Rs)	Qty.	Amount (Rs)	Remarks
1- Outsoursed component								
Field operations (Outsourcing)								
A	**DRILLING**							
1	Drilling (As per MoC Rate 2020-21)	2.2.1.1b	m		5,619	2,700	1,51,71,300	Copy of MoCapproved Rate is required
B	**GEOPHYSICAL STUDIES**							
1	Borehole Geophysical logging (As per MoC Rate 2020-21)	MoC Rates - Pls. refer note 5	m		601	2,700	16,22,700	Copy of MoCapproved Rate is required
				Total Cost of Outsourcing Componet			**1,67,94,000**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC. The copy of contract agreement for outsourced component is required to be provided.
2- In-House Component								
Field Work								
A	**GEOLOGICAL WORK**							
i	Geological Party days-Field	1.5.1b	Day	11,000	11,000	90	9,90,000	
ii	Geological Party days-HQ (Data processing & Report Preparation)	1.5.1b	Day	9,000	9,000	45	4,05,000	
						Sub Total- A	**13,95,000**	
B	**GEOPHYSICAL STUDIES**							
i	Geophysict Party days-Field	3.19	Day	11,000	11,000	14	1,54,000	
ii	Geophysict days-HQ (Data processing & Report Preparation)	3.19	Day	9,000	9,000	10	90,000	
						Sub Total- B	**2,44,000**	
						Field Work Total (A+B)	**16,39,000**	
Laboratory Studies								

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1	**Band By Band Analysis**							
a	Ash+Moisture	4.2.6	per sample	700	700	700	4,90,000	
b	House Keeping	4.2.1	per sample	115	115	700	80,500	
2	**Overall analysis**							
a	Proximate analysis	4.2.7	per sample	935	935	295	2,75,825	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1,010	1,010	295	2,97,950	
c	GCV	4.2.11	per sample	1,505	1,505	295	4,43,975	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	295	2,34,525	
3	**Special Test**							
a	Ultimate analysis	4.2.17	per sample	9,945	9,945	29	2,88,405	
b	Total Sulphur	4.2.14	per sample	1,900	1,900	29	55,100	
c	Distribution of Sulpher	4.2.15	per sample	3,695	3695	29	1,07,155	
d	HGI including sample preparation	4.2.18	per sample	3,805	3,805	29	1,10,345	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2,745	2,745	29	79,605	
f	Ash analysis	4.2.25	per sample	325	325	29	9,425	
4	**Petrographic analysis**							
a	Pellet preparation	4.3.14a	per sample	1,160	1,160	5	5,800	
b	Maceral Analysis (with photomicrography)	4.3.14e	per sample	25,000	25,000	5	1,25,000	
c	Microlithotype Analysis (with photomicrography)	4.3.14g	per sample	25,000	25,000	5	1,25,000	
d	Mean Ro%	4.3.14j	per sample	16,345	16,345	5	81,725	
5	**Trace Element/REE Studies ICPMS (1 bh)**	4.1.14	per sample	7,731	7,731	8	61,848	
					Laboratory Studies Total		**28,72,183**	
Miscellaneous Charges (Departmental)								
a	DGPS Survey of bundary, borehole points (14 Bhs& 16 boundary point)	1.6.2	per point	19,200	19,200	30	5,76,000	
b	Borehole pillaring (12"x12"x30")	2.2.7a	per Bh	2,000	2,000	14	28,000	
c	Land/Crop compensation	5.6	per Bh	20,000	20,000	14	2,80,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities

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d	Preparation of Exploration Proposal	5.1	lump sum	2% or Rs. 3.8 lakh which ever is lower		1	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.
e	Peer review			10,000	10,000	1	10,000	
f	Tender Process Cost (on outsourced component)	2.3	lump sum one time	2% or Rs. 5 lakh which ever is lower		1	3,35,880	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.
g	Operational charges for CMPDI (on outsourced component)	Point 3 (iii)of SOC				1	12,14,700	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
					Miscellaneous Charges Total		**28,24,580**	
					Total cost for in-House component (I to III)		**73,35,763**	
3 - Total Cost for outsource and in-House component (1 & 2)							**2,41,29,763**	
i	Geological Report preparation	5.2		For project exceeding Rs. 150 Lakh but less than 300 lakhs - A minimum Rs.7.5 lakh or 3% of the value of work which ever is more			7,50,000	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
4 - Total Cost of the project without GST							**2,48,79,763**	
					Provision for GST (@18%)		44,78,357	GST will be reimbursed as per actual and as per notified prescribed rate
5- Total Cost of the project with GST							**2,93,58,120**	***or Say Rs. 293.58 Lakh***

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NOTE -	**1) If any part mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. For in-house component of the project , a Certifiate from the NEA regarding non outsourcing of any component/project is required.**			
	2) Above rate of drilling, GPL, Chemical, Physicomechanical are budgeted rates.			
	3) There are numerous items in chemical anlysis.The CIMFR rates will be applied for actual payment.			
	4)For Drilling & Geophysical the approved rates of MoC for FY 2020-21 has been taken other rates are as per approved SoC rates.			
	5) GPL rates is Rs 697/- per meter as per MoC Rates for minimum 8 parameters, the break up is as follows-			
	S. No.	**Probe**	**MoC approved Rate 2020-21 (in Rs)**	
	1	Base Log		162
	2	Dual Density		110
	3	Natural Gamma		96
	4	Caliper		20
	5	SPR		41
	6	Sonic		131
	7	Resistivity		41
		Total		**601**
	6) Lumpsum amount of Rs. 10,000 has been considered for Peer Review.			

Annexure-3B

Time schedule for Preliminary exploration (G3) for coal in DhaskaNaugai block, East of Bisrampur Coalfield, District: Surguja, Chhattisgarh.

S. No	Activities	Months											
		1	2	3	4	5	6	7	8	9	10	11	12
1	Outsourcing	■	■	■									
2	Mobilising				■								
3	Drilling (1 rig)					■	■	■	■				
4	Borehole Geophysical logging					■	■	■	■				
5	Survey days					■	■	■	■				
6	Geologist days, Field					■	■	■	■				
7	Geophysicist days, Field					■	■	■	■				
8	Laboratory Studies (Band By Band)						■	■	■	■			
9	Laboratory Studies (Overall)								■	■	■		
10	Laboratory Studies (Special) & (Petrography)										■		
11	Geologist days, HQ									■	■	■	■
12	Geophysicist days, HQ									■	■	■	■
13	Report Writing & Peer Review									■	■	■	■

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Annexure-4A

Estimated cost for Preliminary exploration (G3) for coal in Gurwani block, Main Basin, Singrauli Coalfield, District: Singrauli, Madhya Pradesh.

Blockarea- 19.08 sq. km; Nos. of borehole- 9; Borehole depth range- 440-640m;Completion Time- 14 months

S. No.	Item Work	Item no in Soc	Unit	Rates as per SoC of NMET	Rate (Rs)	Qty.	Amount (Rs)	Remarks
1- Outsoursedomponent								
Field operations (Outsourcing)								
A	**DRILLING**							
1	Drilling (As per MoC Rate 2020-21)	2.2.1.1b	m		5,619	4,000	2,24,76,000	Copy of MoCapproved Rate is required
B	**GEOPHYSICAL STUDIES**							
1	Borehole Geophysical logging (As per MoC Rate 2020-21)	MoC Rates - Pls. refer note 5	m		601	4,000	24,04,000	Copy of MoCapproved Rate is required
					Total Cost of Outsourcing Componet		**2,48,80,000**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC. The copy of contract agreement for outsourced component is required to be provided.
2- In-House Component								
Field Work								
A	**GEOLOGICAL WORK**							
i	Geological Party days-Field	1.5.1b	Day	11,000	11,000	120	13,20,000	
ii	Geological Party days-HQ (Data processing & Report Preparation)	1.5.1b	Day	9,000	9,000	45	4,05,000	
						Sub Total- A	**17,25,000**	
B	**GEOPHYSICAL STUDIES**							
i	Geophysict Party days-Field	3.19	Day	11,000	11,000	10	1,10,000	
ii	Geophysict days-HQ (Data processing & Report Preparation)	3.19	Day	9,000	9,000	7	63,000	

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						Sub Total- B	**1,73,000**	
						Field Work Total (A+B)	**18,98,000**	
Laboratory Studies								
1	**Band By Band Analysis**							
a	Ash+Moisture	4.2.6	per sample	700	700	500	3,50,000	
b	House Keeping	4.2.1	per sample	115	115	500	57,500	
2	**Overall analysis**							
a	Proximate analysis	4.2.7	per sample	935	935	270	2,52,450	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1,010	1,010	270	2,72,700	
c	GCV	4.2.11	per sample	1,505	1,505	270	4,06,350	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	270	2,14,650	
3	**Special Test**							
a	Ultimate analysis	4.2.17	per sample	9,945	9,945	15	1,491,75	
b	Total Sulphur	4.2.14	per sample	1,900	1,900	15	28,500	
c	Distribution of Sulpher	4.2.15	per sample	3,695	3,695	15	55,425	
d	HGI including sample preparation	4.2.18	per sample	3,805	3,805	15	57,075	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2,745	2,745	15	41,175	
f	Ash analysis	4.2.25	per sample	325	325	15	4875	
4	**Petrographic analysis**							
a	Pellet preparation	4.3.14a	per sample	1,160	1,160	10	11,600	
b	Maceral Analysis (with photomicrography)	4.3.14e	per sample	25,000	25,000	10	2,50,000	
c	Microlithotype Analysis (with photomicrography)	4.3.14g	per sample	25,000	25,000	10	2,50,000	
d	Mean Ro%	4.3.14j	per sample	16,345	16,345	10	1,63,450	
5	**Trace Element/REE Studies ICPMS (1 bh)**	4.1.14	per sample	7,731	7,731	10	77,310	
						Laboratory Studies Total	**26,42,235**	
Miscellaneous Charges (Departmental)								
a	DGPS Survey of bundary, borehole points (9 Bhs& 7 boundary point)	1.6.2	per point	19,200	19,200	16	3,07,200	
b	Borehole pillaring (12"x12"x30")	2.2.7a	per Bh	2,000	2,000	9	18,000	

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c	Land/Crop compensation	5.6	per Bh	20,000	20,000	9	1,80,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
d	Preparation of Exploration Proposal	5.1	lump sum	2% or Rs. 3.8 lakh which ever is lower		1	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.
e	Peer review			10,000	10,000	1	10,000	
f	Tender Process Cost (on outsourced component)	2.3	lump sum one time	2% or Rs. 5 lakh which ever is lower		1	4,97,600	will be reimbursed when copy of signed agreement/tender for outsoure component will be submitted.
g	Operational charges for CMPDI (on outsourced component)	Point 3 (iii)of SOC				1	15,00,000	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
					Miscellaneous Charges Total		**28,92,800**	
					Total cost for in-House component (I to III)		**74,33,035**	
3 - Total Cost for outsource and in-House component (1 & 2)							**3,23,13,035**	
i	Geological Report preparation	5.2		For project exceeding Rs. 300 lakhs - A minimum Rs. 9 lakh or 3% of the value of work which ever is more			9,69,391	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
4 - Total Cost of the project without GST							**3,32,82,426**	
	Provision for GST (@18%)						59,90,837	GST will be reimburse as per actual and as per notified prescribed rate
5- Total Cost of the project with GST							**3,92,73,263**	***or Say Rs. 392.73***

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NOTE	**1) If any part mentioned in the in-house component is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. For in-house component of the project , a Certifiate from the NEA regarding non outsourcing of any component/project is required.**			
	2) Above rate of drilling, GPL, Chemical, Physicomechanical are budgeted rates.			
	3) There are numerous items in chemical anlysis.The CIMFR rates will be applied for actual payment.			
	4) For Drilling & Geophysical the approved rates of MoC for FY 2020-21 has been taken other rates are as per approved SoC rates.			
	5) GPL rates is Rs 697/- per meter as per MoC Rates for minimum 8 parameters, the break up is as follows-			
	S. No.	**Probe**	**MoC approved Rate 2020-21 (in Rs)**	
	1	Base Log	162	
	2	Dual Density	110	
	3	Natural Gamma	96	
	4	Caliper	20	
	5	SPR	41	
	6	Sonic	131	
	7	Resistivity	41	
		Total	**601**	
	6) Lumpsum amount of Rs. 10,000 has been considered for Peer Review.			

Annexure-4B

Time schedule for Preliminary exploration (G3) for coal in Gurwani block, Main Basin, Singrauli Coalfield, District: Singrauli, Madhya Pradesh.

S. No	Activities	Months													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Outsourcing														
2	Mobilising														
3	Drilling (Nos of rigs-1 rigs)														
4	Borehole Geophysical logging														
5	Survey days														
6	Geologist days, Field														
7	Geophysicist days, Field														
8	Laboratory Studies (Band By Band)														
9	Laboratory Studies (Overall)														
10	Laboratory Studies (Special) & (Petrography)														
11	Laboratory Studies (Petrography,)														
12	Geologist days, HQ														
13	Geophysicist days, HQ														
14	Report Writing & Peer Review														

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Annexure-5A

Estimated cost for Reconnaissance survey (G4) for REE and basemetal in Temi-Tarku-Damthong block, District: East Sikkim, Sikkim.

Block area- 74.70 sq. km; Nos. of borehole- 5; Borehole depth range- 100m; Completion Time- 14 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	**REMOTE SENSING STUDY**						
a	Cost of interpretation in terms of Geologist Man days	day	1.1b	9,000	10	90,000	
b	Chargest of procurement of imageries	No.	1.1a	-	-	-	As per actual cost incurred on procurement from NRSA. No chargeswill be paid for data freely avaialable from website
					SubTotal- A	**90,000**	
B	**GEOLOGICAL WORK**						
a	Charges for Geologist at field for mapping, channel sampling and trenching	day	1.3	11,000	180	19,80,000	
b	Labour Charges for Geologist; Base rate - Rs. 437/ per day	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
c	Charges for Sampler for geochemical, channel and core samples	one sampler per day	1.5.2	5,100	40	2,04,000	
d	Labour Charges for Sampling Work; Base rate - Rs. 437/ per day	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
					SubTotal- B	**24,11,240**	
C	**PITTING AND TRENCHING[3]**						
	Trenching	Cu m	2.1.1	3,300	100	3,30,000	
					SubTotal- C	**3,30,000**	
D	**DRILLING**						
1	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	500	57,50,000	Will be done after review of mapping,

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							geochemical sampling & analytical work and Geophysical Survey
2	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	500	1,65,000	
3	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
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
5	Transportation of Drill Rig & Truck associated per drill (1 rigs) 1650km to &fro from Nagpur/ Rig	Km	2.2.8	36	3,300	1,18,800	Certification in this regard is required to be provided
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	5	2,50,000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
8	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
9	Approach Road Making (Hilly Terrain)	Km	2.2.10b	32,200	5	1,61,000	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 4 km.
10	DGPS Survey For BH Coordinate	Nos	1.6.2	19,200	5	96,000	
11	Charges for surveyor	one surveyor per day	1.6.1a	8,300	5	41,500	
12	Labour Charges for Survey Work; Base rate - Rs. 437/ per day	day	5.7	437	20	8,740	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
13	Drill Core Preservation	per m	5.3	1,590	150	2,38,500	Amount will be reimbursed after successful delivery of the core to concerned library/authorities
					Sub Total- D	**74,39,540**	
					Sub Total- B to D	**1,01,80,780**	
E	**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**		**3,41,05,613**	Certification that area falls in remote and inaccessible terrain in North Eastern State and/or Hilly Terrain of Himalya region
F	**Charges for Geologist at HQrs for**	day	1.3	9,000	60	**5,40,000**	

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	data processing						
G	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
I	**Primary & Check Samples from Surface outcrop and steam sediments**						
i)	**Primary samples**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	100	2,50,600	
	b. For REE by ICPMS	Nos	4.1.13	5,380	30	1,61,400	
ii)	**Internal check samples (5%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	5	12,530	
	b. For REE by ICPMS	Nos	4.1.13	5,380	2	8,070	
iii)	**External check samples (10%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	10	25,060	
	b. For REE by ICPMS	Nos	4.1.13	5,380	3	16,140	
II	**Primary & Check Samples of Channel Sample**						
i)	**Primary samples**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	100	2,50,600	
	b. For REE by ICPMS	Nos	4.1.13	5,380	30	1,61,400	
ii)	**Internal check samples (5%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	5	12,530	
	b. For REE by ICPMS	Nos	4.1.13	5,380	2	8,070	
iii)	**External check samples (10%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	10	25,060	
	b. For REE by ICPMS	Nos	4.1.13	5,380	3	16,140	
III	**Primary & Check Samples from Trench**						
i)	**Primary samples**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	80	2,00,480	
	b. For REE by ICPMS	Nos	4.1.13	5,380	20	1,07,600	
ii)	**Internal check samples (5%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	4	10,024	
	b. For REE by ICPMS	Nos	4.1.13	5,380	1	5,380	
iii)	**External check samples (10%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	8	20,048	
	b. For REE by ICPMS	Nos	4.1.13	5,380	2	10,760	
IV	**Primary & Check Samples from Drill Core**						
i)	**Primary samples**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	100	2,50,600	
	b. For REE by ICPMS	Nos	4.1.13	5,380	25	1,34,500	

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ii)	**Internal check samples (5%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	5	12,530	
	b. For REE by ICPMS	Nos	4.1.13	5,380	1	6,725	
iii)	**External check samples (10%)**						
	a. For Cu, Pb, Zn, Ni & Co by AAS	Nos	4.1.7a	2,506	10	25,060	
	b. For REE by ICPMS	Nos	4.1.13	5,380	3	13,450	
2	**Physical & Petrological Stusies**						
i)	Preparation of thin section	Nos	4.3.1	2,353	20	47,060	
ii)	Complete petrographic study report	Nos	4.3.4	4,232	20	84,640	
iii)	Preparation of polish section	Nos	4.3.2	1,549	15	23,235	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.
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	GST will be reimburse as per actual and as per notified prescribed rate
vi)	Whole Rock Analysis	Nos	4.1.15a	7,568	15	1,13,520	
					Sub Total- G	**20,80,892**	
H					**Total A + E + F + G**	**3,68,16,505**	
I	**Geological Report Preparation**	5 Hard copies with a soft copy	5.2	For the projects having cost more than Rs. 300 lakhs - A minimum of Rs. 9 lakhs or 3% of the value of work whichever is more subject to Max. Rs. 20 lakhs		**11,04,495**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
J	**Peer review Charges**		As per EC decision			**10,000**	

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K	**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.
L	**Total Estimated Cost without GST**					**3,83,11,000**	
M	**Provision for GST (18% of L)**					**68,95,980**	
N	**Total Estimated Cost with GST**					**4,52,06,980**	***or Say Rs. 452.07 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						
	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

Time schedule for Reconnaissance survey (G4) for REE and basemetal in Temi-Tarku-Damthong block, District: East Sikkim, Sikkim.

S. No.		1	2	3	4	5	6		7	8	9	10	11	12	13	14
1	Remote sensing study															
2	Camp Setting															
3	Geological Mapping															
4	Pitting /Trenching															
5	Surface Drilling (1rig)															
6	Geologist days															
7	Samplingdays															
8	Surveyordays															
9	CampWinding															
10	Laboratory Studies															
11	Geologistdays, HQ															
12	Report Writing with Peer Review															
	*** Commencement of project will be reckoned from the day the exploration acreage is available along with all statutory clearances.**															
	***Time loss on account of monsoon/agricultural activity/forest clearance/local law and order problems will be addition to above time line.**															

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Annexure-6A

Estimated cost for Reconnaissance survey (G4) for Phosphorite in Pahadi Kalan-Gora Kalan block, District: Lalitpur, Uttar Pradesh.

Block area- 13.93 sq. km; Nos. of borehole- 5; Borehole depth range- 100m; Completion Time- 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 WORK**						
1	**Borhole logging & sampling & report writing**						
a	Charges for Geologist at HQ	day	1.3	9,000	60	5,40,000	
b	Charges for Geologist at field	day	1.3	11,000	90	9,90,000	
c	Labour Charges for Geologist; Base rate - Rs. 437/ per day	day	5.7	437	180	78,660	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for Sampler	one sampler per day	1.5.2	5,100	50	2,55,000	
e	Labour Charges for Sampling Work; Base rate - Rs. 437/ per day	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	**19,51,060**	
B	**EXCAVATION**						
1	Trenching	per Cu.m	2.1.1	3,330	60	1,99,800	
					Sub Total- B	**1,99,800**	
C	**Survey**						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	5	96,000	
					Sub Total- C	**96,000**	
D	**DRILLING**						
1	Drilling up to 300m (Hard rock)	m	2.2.1.4a	11,500	500	57,50,000	
2	Borehole deviation Survey	m	2.2.6	330	500	1,65,000	

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	by multishot camera						
3	Land / Crop Compansation (in case the BH falls in agreecultural 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
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
5	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,000	36,000	Certification in this regard is required to be provided
6	Monthly Accomodation Charges for drilling Camp (1 Rigs)	month	2.2.9	50,000	3	1,50,000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
8	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
9	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.
10	Drill Core Preservation	per m	5.3	1,590	260	4,13,400	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
					Sub Total-D	**71,90,460**	
E	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples (BRS/Channel)**						
	a. For 5 radicals i.e. P2O5, SiO2, Al2O3, Fe2O3 and LOI	Nos	4.1.3	9,805	100	9,80,500	
	Check samples Internal (5%) and External(10%)						
	a. For 5 radicals i.e. P2O5, SiO2, Al2O3, Fe2O3 and LOI	Nos	4.1.3	9,805	15	1,47,075	
ii)	**Primary samples (Trench)**						
	a. For 5 radicals i.e. P2O5, SiO2, Al2O3, Fe2O3 and LOI	Nos	4.1.3	9,805	50	4,90,250	
	Check samples Internal (5%) and External(10%)						
	a. For 5 radicals i.e. P2O5,	Nos	4.1.3	9,805	8	73,538	

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	SiO_2, Al_2O_3, Fe_2O_3 and LOI						
iii)	**Primary samples (Bh Core)**						
	a. For 5 radicals i.e. P_2O_5, SiO_2, Al_2O_3, Fe_2O_3 and LOI	Nos	4.1.3	9,805	200	19,61,000	
iv)	**Check samples Internal (5%) and External(10%)**						
	a. For 5 radicals i.e. P_2O_5, SiO_2, Al_2O_3, Fe_2O_3 and LOI	Nos	4.1.3	9,805	30	2,94,150	
v)	**Petrological samples (Bh Core Samples)**						
i	Preparation of thin section	Nos	4.3.1	2,353	15	35,295	
ii	Study of Thin Section	Nos	4.3.4	4,232	15	63,480	
vi)	**Whole rock analysis (Major oxides)**	No.	4.1.15a	4,200	10	42,000	
					Sub Total-E	**40,87,288**	
F					**Sub Total- (A to E)**	**1,35,24,608**	
G	**Geological Report Preparation**		5.2	For the projects exceeding Rs. 50 Lakhs but less than Rs. 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more.	1	**6,76,230**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
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	1	**2,84,017**	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.
I	**Peer review Charges**		As per EC decision			**10,000**	
J					**Total Estimated Cost without GST**	**1,44,94,855**	
K					**Provision for GST (18% of GST)**	**26,09,074**	GST will be reimburse as per actual and as per notified prescribed rate
L					**Total Estimated Cost with GST**	**1,71,03,928**	***or Say Rs. 171.04 Lakh***

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Note - 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

Time schedule for Reconnaissance survey (G4) for Phosphorite in Pahadi Kalan-Gora Kalan block, District: Lalitpur, Uttar Pradesh.

S. No.	Activities	Months											
		1	2	3	4	5	6	Review	7	8	9	10	11	12
1	Camp Mobilisation													
2	Geologist for Sampling/Trenching/Logging													
3	Laboratory Studies													
4	Surface Drilling (1 rig)													
5	Sampling days													
6	Laboratory Studies for Borehole													
7	Camp Demobilisation													
8	Geologist days in HQ													
9	Geological Report Writing with Peer review													
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-7A

Estimated cost for Reconnaissance survey (G4) for Gold in Mendarbahar-Bhagora Block (38.58 sq. km), District: Jashpur, Chhattisgarh.

Block area- 38.58 sq.km; Nos. of borehole- 5; Borehole depth range- 100m; Completion Time- 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 WORK**						
1	**Mapping,Borhole logging & sampling & report writing**						
a	Charges for Geologist at HQ	day	1.3	9,000	60	5,40,000	
b	Charges for Geologist at field	day	1.3	11,000	120	13,20,000	
c	Labour Charges for Geologist; Base rate - Rs. 437/ per day	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
d	Charges for Sampler	one sampler per day	1.5.2	5,100	40	2,04,000	
e	Labour Charges for Sampling Work; Base rate - Rs. 437/ per day	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
2	**Survey**						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	5	96,000	
b	Charges for surveyor	one surveyor per day	1.6.1a	8,300	5	41,500	
c	Labour Charges for Survey Work; Base rate - Rs. 437/ per day	day	5.7	437	20	8,740	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**23,85,040**	
B	**DRILLING**						
1	Drilling -Medium hard rock (100m to 300m)	m	2.2.1.3a	10,100	500	50,50,000	

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2	Land / Crop Compansation (in case the BH falls in agreecultural 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
3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	
4	Transportation of Drill Rig & Truck associated per drill 1400 Km (to and fro) per rig,	Km	2.2.8	36	2,800	1,00,800	Certification in this regard is required to be provided
5	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	2	1,00,000	
6	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
7	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
8	Road Making (Flat Terrain)	Km	2.2.10a	22,020	4.00	88,080	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 4 km.
9	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-B	**62,35,080**	
C	**EXCAVATION**						
1	Pitting/Trenching	per Cu.m	2.1.1	3,330	200	6,66,000	
					Sub Total- C	**6,66,000**	
D	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples (Surface (Trench/channel) & Core)**						
	a. For Au and As by fire assay	Nos	4.1.5a	4,760	300	14,28,000	Channel-100, Trench-100 & Core-100
	b. For 5 radicals (As, Cu, Pb, Zn & Ni) by AAS	Nos	4.1.7a	2,506	300	7,51,800	Channel-100, Trench-100 & Core-100
ii)	**Check samples Internal (5%) and External(10%)**						
	a. For Au and As by fire assay	Nos	4.1.5a	4,760	45	2,14,200	
	b. For 5 radicals (As, Cu, Pb, Zn & Ni) by AAS	Nos	4.1.7a	2,506	45	1,12,770	
iii)	**Petrological samples (Bh Core Samples &Surfce)**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	

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ii	Study of Thin Section	Nos	4.3.4	4,232	10	42,320	
iv)	**Ore Microscopic Study**	Nos					
i	Preparation of polished section	Nos	4.3.3	1,185	10	11,850	
ii	Study of polished section	Nos	4.3.4	4,232	10	42,320	
v)	**Whole rock analysis (Major oxides)**	Nos	4.1.15a	4,200	10	42,000	
					Sub Total- D	**26,68,790**	
E	**Sub Total (A to D)**					**1,19,54,910**	
F	**Preparation of Exploration Proposal**		5.1	2% of approved project cost or 3.8 Lakhs, whichever is less.	1	**2,39,098**	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.
G	**Geological Report Preparation**		5.2	For the projects exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more.	1	**5,97,746**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
H	**Peer Review cost**			As per decission of EC	1	**10,000**	
J					**Total Estimated Cost without GST**	**1,28,01,754**	
K					**Provision for GST (18% of G)**	**23,04,316**	GST will be reimburse as per actual and as per notified prescribed rate
L					**Total Estimated Cost with GST**	**1,51,06,069**	***or Say Rs. 151.06 Lakh***
Note- 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-7B

Time schedule for Reconnaissance survey (G4) for Gold in Mendarbahar-Bhagora Block (38.58 sq. km), District: Jashpur, Chhattisgarh.

S. No.	Activities	Months												
		1	2	3	4	5	6	Review	7	8	9	10	11	12
1	Camp Setting													
2	Geological Mapping(1: 12,500 scale)													
3	Trenching and Channel Sampling													
4	Chemical analysis of Trench and Channel Sample													
5	Exploratory drilling (1 rigs)													
6	Geologist days in field													
7	Labour (2 Nos) for Geologist													
8	Surveydays													
9	Labour (4 Nos.) for Survey Work													
10	Samplingdays													
11	Labours (4 Nos) for Sampling work													
12	Chemical analysis of Core samples & Laboratory Studies													
13	Camp Demobilisation													
14	Geologist days in HQ													
15	Geological Report Writing													
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-8A

Estimated cost for Preliminary exploration (G3) for Diamond in Tumla Block (129 sq. km), District: Jashpur, Chhattisgarh.

Block area- 129.0sq.km; Nos. of borehole- 5; Borehole depth range- 100m; Completion Time- 12 months

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC- Item-S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**Geological, Sampling & Survey Days**						
	Large scale (LSM) Geological mapping/ Detailed Mapping/Trenching/ Drilling						
1.1	Geologist man days (Field)	days	1.2	11,000	180	19,80,000	
1.2	Labour Charges for Mapping work Base rate - Rs. 479/ per day	per worker	5.7	479	360	1,72,440	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. - whichever is higher
1.3	Geologist man days (HQ)	days	1.3	9,000	150	13,50,000	
1.4	Labour Charges for Drilling/Logging (Field) Base rate - Rs. 479/ per day	per worker	5.7	479	300	1,43,700	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. - whichever is higher
1.5	Sampling Charges (Geochemical /Trenching/Pitting/Drilling)	day	1.5.2	5,100	60	3,06,000	
1.6	Labour Charges for Sampling Work Base rate - Rs. 479/ per day	day	5.7	479	240	1,14,960	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. - whichever is higher
					SubTotal-A	**40,67,100**	
B	**Geophysical Surveys***						
2.1	Magnetic Surveys (10-30 line km)	per station	3.2a	1,800	800	14,40,000	Modification will be done after the review of the work
2.2	Electromagnetic Survey (Profiling/Sounding)	sounding	3.7a	21,197	300	63,59,100	Modification will be done after the review of the work
2.3	Geophysicist man days for Geophysical Survey	days	3.18	11,000	80	8,80,000	Modification will be done after the review of the work
2.4	Surveyor Charges	days	1.6.1.a	8,300	40	3,32,000	Modification will be done after the review of the work
2.5	Llabours Charges for Survey Work	per worker	5.7	479	160	76,640	Modification will be done after the review

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	Base rate - Rs. 479/ per day						of the work. Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. - whichever is higher
					SubTotal-B	**90,87,740**	
C	**Mineral Investigation**						
3.1	Trenching/Pitting*						
	a) Excavation of trenches/pits	per cu m	2.1.1	3,330	100	3,33,000	
					SubTotal-C	**3,33,000**	
D	**Drilling****						
4.1	a) Drilling up to 300m Rigs) (Medium Hard Rock)	per m	2.2.1.4 a	10,100	500	50,50,000	
4.2	Borehole deviation survey	per m	2.2.6	330	500	1,65,000	
4.3	Borehole pillaring					-	
	a) construction of concrete pillar (12"x12"x30")	per bh	2.2.7.a	2,000	5	10,000	
4.4	Transportation of drill rigs & truck associated per drill (To &Fro from HQ)	per km	2.2.8	36	1400	50,400	Certification in this regard is required to be provided
4.5	Monthly accommodation charges for drilling camp	monthly	2.2.9	50,000	3	1,50,000	
4.6	a) Drilling camp setting (1 rigs)	per drill	2.2.9a	2,50,000	1	2,50,000	
4.7	b) Drilling camp winding (1 rigs)	per drill	2.2.9b	2,50,000	1	2,50,000	
4.8	Approach road making in rugged-hilly terrain (Flat terrain)	per km	2.2.10	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. 5 km.
4.9	Drill core preservation	per m	5.3	1590	250	3,97,500	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
4.10	Land/crop compensation	per borehole	5.6	20000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities

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4.11	Demarcation Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS (including charges for labours deployed for the work)	Per point of observation	1.6.2	19,200	5	96,000	
					SubTotal-D	**66,29,000**	
E	**Laboratory Studies**						
5.1	Chemical Analysis						
	i) Surface sampling (Bed RockSamples)						
	a) Whole rock analysis (Major oxides)	per sample	4.1.15a	4,200	20	84,000	
	ii) Stream Sample						
	a. Separation of heavy minerals from stream sediment samples of - 2mm size through gravity and magnetic separation	per sample	4.3.6b	13,820	50+ 25 = 75	10,36,500	25 follow up samples, will be reimbursed as per actual nos of sample, Max. - 50+25 =75 samples
	b. Heavy mineral separation by liquid	per sample	4.3.6a	2,380	50+ 25 = 75	1,78,500	25 follow up samples, will be reimbursed as per actual nos of sample, Max. - 50+25 =75 samples
	c. EPMA studies for suspected Heavy Mineral grains	Per hour	4.4.1	8,540	140	11,95,600	
	iii) Soil Sample						
	a. Separation of heavy minerals from soil samples of - 2mm size through gravity and magnetic separation	per sample	4.3.6b	13,820	20	2,76,400	will be reimbursed as per actual nos of sample; Max. 20 samples
	b. Heavy mineral separation by liquid	per sample	4.3.6a	2,380	20	47,600	will be reimbursed as per actual nos of sample; Max. 20 samples
	d. EPMA studies for suspected Heavy Mineral grains	Per hour	4.4.1	8,540	130	11,10,200	
5.2	**Pit & Trench**						
	a. Separation of heavy minerals from Pit & Trench samples of - 2mm size through gravity and magnetic separation	per sample	4.3.6b	13,820	100	13,82,000	will be reimbursed as per actual nos of sample; Max. 100 samples
	b. Heavy mineral separation by liquid	per sample	4.3.6a	2,380	100	2,38,000	will be reimbursed as per actual nos of sample; Max. 100 samples

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	d. EPMA studies for suspected Heavy Mineral grains	Per hour	4.4.1	8,540	440	37,57,600	
5.3	**ii) BH Sampling (Primary)**						
	a. Separation of heavy minerals from drill samples of - 2mm size through gravity and magnetic separation	per sample	4.3.6b	13,820	200	27,64,000	will be reimbursed as per actual nos of sample; Max. 200 samples
	b. Heavy mineral separation by liquid	per sample	4.3.6a	2,380	200	4,76,000	will be reimbursed as per actual nos of sample; Max. 200 samples
	d. EPMA studies for suspected Heavy Mineral grains	Per hour	4.4.1	8,540	875	74,72,500	
5.4	**Petrological / Mineralographic studies**						
	a) Preparation of thin section (Surface & BH)	per sample	4.3.1	2,353	15	35,295	
	b) Study of thin section for petrography	per sample	4.3.4	4,232	15	63,480	
	c) Digital photomicrograph of thin section	per sample	4.3.7	280	15	4,200	
					SubTotal-E	**2,01,21,875**	
F					**Sub Total- (A to E)**	**4,02,38,715**	
G	**Geological Report Preparation**	Nos	5.2	A Minimum of Rs. 9 lakhs or 3% of the work	1	**12,07,161**	For the projects having cost up to exceeding Rs. 300 Lakhs: A Minimum of Rs.9 lakhs or 3% of the value of work whichever is more subject to a maximum amount of Rs. 20 lakh and Rs. 10000/- per each additional copy.
H	**Preparation of Exploration Proposal**	Nos	5.1	380000	1	**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.
I	**Report Peer Review Charges**	lumpsum	As per EC decision	10000	1	**10,000**	With handling Charges
					Total Estimated Cost without GST (F + G + H + I)	**4,18,35,876**	
					Provision for GST (18%)	**75,30,458**	GST will be reimburse as per actual and as per notified prescribed rate
					Total Estimated Cost with GST	**4,93,66,334**	***or Say Rs. 493.66 Lakh***

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	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 EA on its own, a Certificate regarding non outsourcing of any component/project is required.

Annexure-8B

Time schedule for Preliminary exploration (G3) for Diamond in Tumla Block (129 sq. km), District: Jashpur, Chhattisgarh.

S. No.	Activities	Months											
		1	2	3	4	5	6		7	8	9	10	11	12
1	Geologist at HQ													
2	Camp setting													
3	Large Scale Geological mapping & Sampling													
4	Sample preparation													
5	Analytical work													
6	Geophysical survey													
7	Survey work for Geophysical Survey													
8	Geophysicist at HQ													
9	Exploratory mining for trenching & Pitting													
10	Sample preparation													
11	Analytical work													
12	Drilling 500m													
13	Geologist for logging													
14	Sample preparation for Drill samples													
15	Camp winding													
16	Analytical work drill core samples													
17	Geologist at HQ													
18	Geological report													
19	Peer Review													
	*** Commencement of project will be reckoned from the day the exploration acreage is available along with all statutory clearances**													
	***Time loss on account of monsoon/agricultural activity/forest clearance/ local law & order problems will be addition to above time line.**													

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