Ministry of Mines
National Mineral Exploration Trust

Minutes of the 48th Technical-cum-Cost Committee [TCC] meeting held on 22nd and 23rd December 2022 through videoconference at DGCO, GSI, New Delhi

The 48th 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 22nd and 23rd December, 2022 at DGCO, GSI, New Delhi through videoconference. The TCC members and representatives of Exploration Agencies [EAs] have attended the meeting through videoconference. The list of participants is in **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 Exploration Agencies [EAs]. He conveyed that total 16 nos. of new project proposals including eight proposals for financial assistance for procurement of machinery/ laboratory equipment/ instruments etc. have been received from different EAs and State Government for technical cum cost evaluation by the committee.

Shri Vivek Kumar Sharma, Director, NMET welcomed Chairman, TCC; Members of the TCC and participants representing various EAs and State Government Officials. It has been submitted that the Ministry of Mines envisage to increase the pace of exploration in country. In line of this total 13 private exploration agencies have been empanelled by Ministry for taking up exploration projects through NMET fund.

Shri Janardan Prasad, ADG, GSI, and Chairman, TCC welcomed the members and other participants from various EAs. The proceeding of the meeting was initiated as per the circulated agenda.

Agenda wise discussions are summarised as follows.

48.1. Technical evaluation of new project proposals:

48.1.1. Preliminary exploration (G3) of bauxite in Dhuluapat block (4.0 sq. km), District: Lohardaga and Gumla, Jharkhand. [Implementing Agency: CMPDI]

a) The proposal was discussed in 44th TCC meeting held in August 2022 wherein the committee suggested to collate the geological report and reassess the available geological data collected by GSI and, if warranted, a revised proposal may be submitted for drilling in the gap areas and analyses of borehole samples for aluminous laterite.

b) The principal rock formation of this area comprised of Chhota Nagpur granite gneiss resting over the unclassified metamorphics, followed by Lameta beds overlain by laterite and bauxite.

c) It has been submitted that the bauxite occurs as segregated sheets and lenses within the laterite capping over the diorite/granite/and granite gneisses. Bauxite is varying in

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thickness from 0.50m to 9.0m. The bands are persistent over a length of 500m but often they peter out abruptly within a short distance.

d) After detailed deliberations the committee opined that the G3 stage exploration may be taken up in the block area by deploying 15 boreholes with 300m drilling meterage, detail mapping (1: 4,000 scale).

e) The Committee suggested to take up one borehole up to granite basement whereas other boreholes may be drilled up to lithomarge.

f) The outcome of the project will be reviewed after six months.

The committee recommended the proposal for approval of EC for Preliminary exploration (G3) for bauxite in Dhuluapat block (4.0 sq. km), District: Lohardaga and Gumla, Jharkhand with an estimated cost of Rs. 82.21 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 2A & 2B.

48.1.2. Reconnaissance survey (G4) for copper in Damoh-Parsahi block (97.0 sq. km), District: Balaghat, Madhya Pradesh. [Implementing Agency: MECL]

a) The proposal was discussed in 47th TCC meeting held in November 2022 wherein the committee suggested to collect and analyze few samples from the proposed block and proposal may be resubmitted in case of encouraging results. The analyses of samples are not presented in the proposal.

b) Geologically the area is represented by the Basement Gnessic complex, followed by Dongargarh Supergroup (Chilpi Ghat Group) and Deccan Trap. The Chilpi Ghat group is comprised of phyllite, quartzite, slaty shale, conglomerate/grit, laterite/alluvium and soil cover.

c) It has been submitted that the limited field survey by GSI during 1988-90 has indicated favourable geological set-up for copper mineralization around Damoh, Parsahi and Kabrotala area. It has been submitted that the quartz reef is the host for sulphide mineralisation, besides this considerable amount of sulphide mineralisation also occur in the silicified altered granitic rock.

d) The proposal was sent to GSI for their considered comments, in response to this, GSI has submitted the proposed Damoh-Parsahi Block proposed during 47th TCC meeting was overlapping with GSI item titled "Regional integrated surveys in parts of Malanjkhand extension area, Central block, Baihar Tahsil, Balaghat district, Madhya Pradesh" (FS: 1973-74), "Assessment of gold and basemetal potentiality in Pipardhar area, Balaghat district, Madhya Pradesh" (2005-06) and "Reconnaissance survey for Cu and associated mineralization in pre-Chilpi quartz veins and granitoid around Ramgarhi, Pathartola and Rol village parts of Balaghat District, Madhya Pradesh and Rajnanadgaon District Chhattisgarh". Further GSI has also submitted that the revised proposal of Damoh-Parsahi Block being considered in 48th TCC meeting is completely overlapping with GSI project titled "Assessment of gold and basemetal potentiality in Pipardhar area, Balaghat district, Madhya Pradesh" (2005-06).

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e) Keeping in view the overlapping of the proposed block, the committee suggested not to take up exploration in the proposed block.

The Committee suggested not to take up exploration in the Damoh-Piprahi block as the area is already covered by GSI under G4 stage exploration for basemetal and gold in FY 2005-06 to avoid duplication of efforts.

48.1.3. Reconnaissance survey (G4) for Tin, Rare Metal and REE in Bandhauri block (116.564 sq. km), District: Gaurela- Pendra- Marwahi, Chhattisgarh. [Implementing Agency: MECL]

a) The proposed block falls in the north and north east of Pendra block recommended in 47th TCC held in November 2022. Geologically the area lies to the north of Tan Shear Zone and is predominantly comprised of unclassified granites and gneisses of Chhotanagpur Gneissic Complex (CGC). CGC is unconformably overlain by platform sediments of Gondwana Supergroup, Lameta Group, Deccan Traps and laterite deposits.

b) The CGC covering about 90% area of the proposed block, occur as a basement. The supracrustal rocks of CGC possess the gneisses and variety of granitoids. Outcrops of foliated pink granite, grey granite gneiss, foliated grey granite, porphyric pink and grey granite, tourmaline bearing pink granite are exposed at different locations.

c) It has been submitted that the anomalous values of Tin (0.50ppm to 29.22ppm) have been observed in the area by GSI through geochemical mapping carried out in FY: 2018-19. GSI has reported that S-type granitoids are characterized by concentration of metals like tin, tungsten, uranium and thorium while A-type granitoids are characterized by concentration of metals like tin, molybdenum, tungsten, lithium and REE.

d) It has been submitted that the anomalous values of above-mentioned elements from the area may be considered as the indicative signatures and a comparative study of granitoids may be taken-up to classify and find out the economical potentiality of strategic minerals, if any.

e) Based on anomalous NGCM values, reported by GSI, the G4 stage project has been proposed by deploying geological mapping (1:12,500 scale), geochemical sample collection, pitting/trenching, drilling, petrological /mineralogical studies.

f) The proposal was sent to GSI, in response to this, GSI has submitted that GSI has not conducted any exploration program for Tin (Sn), Rare metal and REE in the proposed Bandhauri block of MECL in Toposheet 64F/13. Further, GSI, SU: Chhattisgarh has so far not mounted any proposal for the above commodities in the Bandhauri block area for the field season 2023-24.

g) After detailed deliberations the committee opined that the Pendra block has been recommended in the area and it may be appropriate to wait for the outcome of Pendra block. In case of encouraging results from the Pendra block we may, recommend the

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Bandhauri block for G4 stage exploration. As of now, the proposal may be kept in abeyance.

The committee suggested to keep the proposal in abeyance till the outcome of exploration of adjacent Pendra Block is received. In case of positive or encouraging outcome of exploratory work being carried out in Pendra Block, the proposal for G4 exploration for Bandhuri Block shall be reconsidered through NMET funding.

48.1.4. Preliminary exploration (G3) for limestone in Malkhed-1 block (8.49 sq. km), Bhima Basin, District: Gulbarga (Kalaburagi), Karnataka. [Implementing Agency: MECL]

and

48.1.5. Preliminary exploration (G3) for limestone in Malkhed-2 block (9.52 sq. km), Bhima Basin, District: Gulbarga (Kalaburagi), Karnataka. [Implementing Agency: MECL]

a) It has been submitted that during 61st meeting of Central Geological Programming Board (CGPB) held on 24th March 2022, New Delhi, Director (Tech.), MoM conveyed that the proposal for exploration of limestone can be submitted to NMET through MECL due to crunch of raw material faced by the cement industries. In view of this, MECL has proposed to take up G3 stage exploration in Malkhed-1 and Malkhed-2 blocks for limestone.

b) It has been submitted that the consent from Department of Mines & Geology, Govt. of Karnataka has accorded to take up exploration in the proposed Malkhed-1 and Malkhed-2 blocks vide letter No. DMG/Plan/ 53695/VOL-III/2022-23 dated 17/11/2022.

c) The rocks exposed in the blocks belong to the Shahabad Formation of Sedam Subgroup of Bhima Group. MECL had explored Diggaon block which is located at a distance of 5 km south of proposed Malkhed-2 Block.

d) It has been conveyed that almost entire area of the blocks is concealed under quaternary sediments i.e., soil cover. Scanty limestone outcrops are seen at places. The beds are horizontally disposed as noticed in nearby areas. Mining activities are currently ongoing in surrounding areas.

e) It is pertinent to mention that as per recent Mineral (Auction) Second 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 mineralized area of nearby mining leases or mineral blocks having similar geological features and explored up to G3 level.

f) In response to this, MECL has submitted that the qualitative assessment based on the interpretation from nearby data could not done especially for important factors like silica, MgO and others, which have a key role in qualitative standardization of limestone for cement and other industries. Limestone having high silica and MgO cannot be utilized for cement manufacturing process without blending with high grade

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limestone and the same may not be suitable for clinker manufacturing process. The proposed exploration will locate and quantify the different grade of limestone based on the requirement for the different industries.

g) Keeping the above in view the committee suggested to take up the G3 stage exploration by combining Malkhed-1 and Malkhed-2 blocks [18.01 sq. km]. The Committee suggested to club the two blocks and take up G3 stage exploration by deploying 600m drilling in 10 boreholes with 50 m borehole depth [5 boreholes in each block]. One borehole may be drilled up to basement. The Committee suggested to submit two separate geological reports [Malkhed-1 and Malkhed-2 block] for auctioning purpose by the State Government.

h) Project will be reviewed after completion of borehole data analyses and achieving all assigned targets.

The committee recommended the proposal for approval of EC, Preliminary exploration (G3) for limestone in Malkhed block- 1 and 2 (18.01 sq. km), Bhima Basin, District: Gulbarga (Kalaburagi), Karnataka with an estimated cost of Rs. 147.77 Lakh (including GST) in time schedule of 10 months for carrying out the proposed work and submission of report as per annexure- 3A & 3B.

48.1.6. Reconnaissance survey (G4) for REE mineralization in Sarnu block (130.04 sq. km), District: Barmer, Rajasthan. [Implementing Agency: MECL]

a) The proposal was sent to GSI for their considered comments, in response to this, GSI has submitted that a G4 stage exploration was already carried out by GSI in the area. Besides this, part of the proposed block overlaps with the pre-explored block, ongoing G4 stage REE project and RMT project (FS 2022-23). Further GSI has also proposed to take project in the gap areas in ensuing FS 2023-24.

b) The Department of Mines and Geology, Rajasthan conveyed that a G4 stage exploration is under execution in the proposed block by DMG, Rajasthan.

c) After detailed deliberations the committee opined that the issue of overlap with DMG, Rajasthan and GSI, WR may be resolved before taking up this proposal by MECL.

d) The Committee suggested that a revised proposal, if required, may be submitted in next TCC after excluding all overlapping area being taken up by GSI and DMG, Rajasthan to avoid duplication.

The Committee suggested to exclude the overlapping area being taken up by GSI and DMG, Rajasthan and a revised proposal may be submitted, if warranted.

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48.1.7. Preliminary exploration (G3) for limestone, bauxite and fire clay in Piparhat-Kubri block (2.51 sq. km), District: Satna, Madhya Pradesh [Implementing Agency: MECL]

a) It has been submitted that the limestone occurrence is well established previously, but, G3 stage of exploration is required for quantitative and qualitative assessment and to convert the geological resource to mineable reserves with higher level of confidence.

b) The proposal was sent to GSI for their considered comments, in response to this GSI has submitted that the Piparhat-Kubri block does not fall/overlap within the block boundary/coordinates of areas already explored/being explored during the previous or current FSP from SU: MP, GSI.

c) It has been submitted that the litholoigies including soil cover, laterites, bauxite and limestone has been reported in the block. Bauxite has been found in pockets and is exposed in the eastern part of the block. While, Trenches excavated in the block has shown presence of limestone.

d) It has been conveyed that the prospecting, exploration and mining activities have been carried out in the south of the proposed block by M/s Ore & Processor Minerals during 2012-13 for bauxite, laterite & fire clay. Two bauxite zones and limestone have been reported from the area.

e) It is expected that the similar geological sequence may be encountered in the proposed block. Keeping this in view, MECL has proposed to take up G3 stage exploration in the block to establish the quality and quantity of limestone, bauxite and fire clay.

f) It is pertinent to mention that as per recent Mineral (Auction) Second 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 mineralized area of nearby mining leases or mineral blocks having similar geological features and explored up to G3 level.

g) In response to this, MECL has submitted that the qualitative assessment based on the interpretation from nearby data could not done especially for important factors like silica, MgO and others, which have a key role in qualitative standardization of limestone for cement and other industries. Limestone having high silica and MgO cannot be utilized for cement manufacturing process without blending with high grade limestone and the same may not be suitable for clinker manufacturing process. The proposed exploration will locate and quantify the different grade of limestone based on the requirement for the different industries.

h) Keeping the above in view, the committee suggested to take up G3 stage exploration by deploying 210m drilling in five boreholes with average drilling meterage of 35-40m and detailed geological mapping on 1:4,000 scale.

The committee recommended the proposal for approval of EC, Preliminary exploration (G3) for limestone, bauxite and fire clay in Piparhat-Kubri block (2.51 sq. km), District: Satna, Madhya Pradesh with an estimated cost of Rs. 81.10 Lakh (including GST) in time schedule of 9 months for carrying out the proposed work and submission of report as per annexure- 4A & 4B.

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48.1.8. Preliminary exploration (G3) for graphite around Naringapanga block (S & W) (0.143 sq. km) block, District: Rayagada, Odisha. [Implementing Agency: DGM, Odisha]

a) The proposal was sent to GSI for their considered comments, in response to this, GSI has submitted that the proposed block (G3) of D/o MG is not being considered for the current FSP and upcoming FSP, i.e., FS 2023-24.

b) The Preliminary exploration (G3) in the south-west block of Narigapanga Block has been formulated on the basis of the findings of the previous General exploration (G2) around north-east of the present block.

c) The area under consideration forms a part of Eastern Ghats Super Group of rocks comprising lithounits like khondalite suite of rocks, charnockite, quartzo-feldspathic gneiss and pegmatite overlain by recent soil and alluvium.

d) It has been conveyed that both migmatised khondalite & quartzo-feldspathic gneiss occur concomitantly & graphite mineralization is restricted only to the contact zone. Graphite mineralization is litho-structurally controlled & mineralization has been confined in quartzo-feldspathic gneiss which seems to act like a scavenger and graphite is a remobilized product.

e) It has been conveyed that the Narigapanga block was auctioned with a good resource, and it is expected that the similar geological set-up may continue in the south and west of the Narigapanga block.

f) Keeping this in view the Directorate of Mines and Geology, Odisha has proposed to take up preliminary exploration (G3 stage) in the south-west of Narigapanga block.

g) It has been conveyed that the Fixed Carbon in the adjoining block recorded at 11%FC.

h) Based on detailed deliberations the committee suggested that the geophysical survey [Self Potential (12 L km)] may be taken up in the expected potential areas. After review of the SP survey, 600m drilling in six boreholes with 30m vertical depth for five boreholes and one borehole up to 60m will be taken.

i) The Committee suggested to initially take up first level drilling up to 30m vertical depth, thereafter, in case of encouraging results the second level drilling up to 60m vertical depth may be taken up.

j) The outcome of the project will be reviewed after completion of SP survey and pitting after four months.

The committee recommended the proposal for approval of EC, Preliminary exploration (G3) for graphite around Naringapanga block (S & W) (0.143 sq. km) block, District: Rayagada, Odisha with an estimated cost of Rs. 120.93 Lakh (including GST) in time schedule of 9 months for carrying out the proposed work and submission of report as per annexure- 5A & 5B.

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48.1.9. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Rajasthan]

a) The Department of Mines and Geology, Rajasthan has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹10,68,00,000/-.

b) Based on the requirement of DMG Rajasthan, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below-

S. No.	Item	Quantity	Estimated cost Per unit (Rs.)	Total estimated cost (Rs.)	Remarks
1	Digital Camera	5	50,000	2,50,000	
2	Brunton	20	10,000	2,00,000	Cost provided by GSI
3	Geological Hammer	20	6,000	1,20,000	
4	Handheld GPS	20	35,000	7,00,000	
5	Handheld XRF	5	30,00,000	1,50,00,000	Cost provided by GSI
6	Research Polarising Microscope with software attached camera for Transmitted and Reflected light with accessories	5	5,00,000	25,00,000	
7	Pulverizer	1	50,000	50,000	
8	Ball Mill	1	20,00,000	20,00,000	
9	WD-XRF	1	2,20,00,000	2,20,00,000	Cost provided by GSI
10	GIS software	2	15,00,000	30,00,000	
11	Core Splitter	6	2,00,000	12,00,000	Cost provided by GSI
				4,70,20,000	

The Committee recommended the proposal for approval of EC towards procurement of equipment's/software's for Department of Mines and Geology, Rajasthan with estimated cost of Rs. 470.20 Lakh as detailed at para (b) above, to strengthen the capacities of DGM, Rajasthan in field of mineral exploration.

*i) **The committee agreed in-principal for procurement of equipment/ machinery/ instruments/software etc to strengthen the exportation activities of DMG, Rajasthan under financial assistance scheme of NMET.***

*ii) **It is pertinent to mention that the cost estimates for procurement of equipment's /instruments/ software's etc. are based on the proposal submitted by the State Government or restricted to cost provided by GSI or IBM. In absence of SoC it was not possible for the committee to either examine the reasonableness of cost or arrive at the cost estimate independently.***

*iii) **The Committee also suggested that the State Governments need to submit details of mineral exploration activities being carried out by DMG, Rajasthan as well as future exploration programmes envisaged for the next five years to ascertain the requirements of equipments/ instruments/ software. Besides certificates regarding optimum utilization of equipment /instrument/ software etc should also be submitted.***

*iv) **The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by all the State Government in consent with the competent authority of Department/ Administrative Ministry/ IFD, Ministry of Mines/State Financial Wing (Department).***

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48.2. Financial assistance to the North Eastern Region [Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura] States.

a) It is pertinent to mention that the NMET vide letter no.: F.No.6/9/20156-NMET/71 dated 8th June 2022 had requested all State Govt./ DGMs to submit proposals for seeking financial assistance for procurement of machinery/ laboratory equipment/ instruments etc. through NMET fund. Further in October 2022, Ministry of Mines has announced a financial assistance of ₹5.0 Cr for each North-Eastern Region States (DGMs) for strengthening their capacities through procuremont of machinery/ laboratory equipment/ instruments etc.

b) Accordingly, Seven States Government [Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim] have submitted their proposals for financial assistance for procurement of machinery/ laboratory equipment/ instruments etc.

c) Director, NMET has conveyed that such proposals on strengthening of capacities may be technically and financially evaluated on the basis of requirements of the State Government in field of mineral exploration. The cost of the machinery/ laboratory equipment/ instruments etc. will be evaluated on the basis of the estimated cost received from GSI and IBM. The cost details received from GSI/IBM is given below:

S. No.	Machinery/Laboratory equipment/Instruments etc.	Estimated cost (Rs. Lakh) provided by GSI	Estimated cost (Rs. Lakh) provided by IBM	Remarks
1	Digital Camera	1.0 to 1.50		
2	Brunton compass	0.05 to 0.10		
3	Geologists Hammer	0.06 to 0.10		
4	Handheld GPS	0.08 to 0.95		
5	UV Lamp	0.05		
6	Handheld XRF	10.0 to 30.0		
7	Scintilometer	6.00		
8	Rock cutting, Polishing and mounting unit	70.00	31.59	
9	Pulverizer	40.00		
10	Stereo zoom microscope	31.00		
11	Polarizing microscope	25.00		
12	Transmitted and reflected light research microscope with software attached camera	1.00 to 12.00	18.58	
13	WD-XRF	220.00		
14	Fusion bead machine	20.00		
15	Press pellet machine	3.90		
16	AAS	80.00	30	
17	Fire Assay	2.80 to 4.80	13.76	
18	ICP-MS	250.00		
19	Hot Plates	0.02 to 0.10	0.15	
20	Muffle Furnace	0.35 to 1.00	1.00	
21	Proximate Analyzer	15.50 to 22.00		
22	Air Oven	0.22 to 0.55	0.30	
23	Bomb Calorimeter	0.85 to 2.00		
24	GIS softwares	499.00		ArcGSI EA (2.5 Years) Unlimited 3000 License
25	Surfer	2.30		Perpetual 3 Years support per License
26	Corel Draw	0.75		1 Year Subscription/ User per License
27	Drilling Machine upto 1000m capacity (1000m Mechanical rig skid mounted)	25.00		

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28	Hydrostatic truck mounted drill machine (1000m capacity, truck mounted hydrostatic rig without CAMC, without operator & without accessories. Without spares and lubricants. However, pump is integral part of the rig)	120.00		
29	Hydrostatic truck mounted drill machine (600m capacity, truck mounted hydrostatic rig without CAMC, without operator & without accessories. Without spares and lubricants. However, pump is the integral part of the rig.)	80.00		
30	Bits, drill rods, casing, core barrel (for one year requirement for one time)	80.0		Assuming 1000m drilling; 02PQ barrel, 02HQ barrel, 02 NQ barrel, 02 PQ bit, 02 HQ bit and 03 NQ bit, 01 PQ r/Shell, 02HQ R/ shell, 02 NQ R/shell, 30 PQ rods, 100 HQ rods and 350 NQ rods, 3 PW casing, 30 HW casings and 100 NW casings for 1000m rig will be required subject to the condition that BH of 1000 meter depth is to be drilled and 3 no of casing shoe bits of each size
31	Pumps (pressure/mud)	15.00		Duplex (RD 900/ FM 45 equivalent)
32	Core splitter/core splitter hydrostatic	2.00		
33	DGPS	16.00		
34	Total Station	6.96		
35	Borehole camera	0.50		
36	Resistivity-Potential Meter	0.15		

Technical-cum Cost Committee [TCC] remarks

a) All the proposals [48.2.1 to 48.2.7] on financial assistance for State Governments [Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura] were examined by the Committee and discussed with the representatives of the respective State Government/ DGMs.

b) The committee agreed in-principal for procurement of equipment/ machinery/ instruments/software etc to strengthen the exportation activities of State DGMs under financial assistance scheme of NMET.

c) It is pertinent to mention that the cost estimates for procurement of equipment's /instruments/ software's etc. are based on the proposal submitted by the State Government or restricted to cost provided by GSI or IBM. In absence of SoC it was not possible for the committee to either examine the reasonableness of cost or arrive at the cost estimate independently.

d) The Committee also suggested that the State Governments need to submit details of mineral exploration activities being carried out by DMGs/DGMs as well as future exploration programmes envisaged for the next five years to ascertain the requirements of equipments/ instruments/ software. Besides certificates regarding optimum utilization of equipment /instrument/ software etc should also be submitted.

e) The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by all the State Government in consent with the

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competent authority of Department/ Administrative Ministry/ IFD, Ministry of Mines/State Financial Wing (Department).

48.2.1. Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DGM, Assam]

a) The Directorate of Geology and Mining, Assam has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹4,05,54,950/-.

b) Based on the requirement of DGM Assam, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below:

S. No.	Item	Quantity	Estimated cost of Per unit (Rs.)	Total Estimated cost (Rs.)	Remarks
1	Brunton compass	6	10,000	60,000	Cost provided by GSI
2	Handheld GPS	10	60,000	6,00,000	
3	Handheld XRF	1	13,00,000	13,00,000	
4	Thin Section Cutting and Grinding Machine	1	5,00,000	5,00,000	
5	Reflected light research microscope with software attached camera	1	12,00,000	12,00,000	Cost provided by GSI
6	Pulverizer	1	20,00,000	20,00,000	
7	WD XRF	1	2,20,00,000	2,20,00,000	Cost provided by GSI
8	Fusion bead machine	1	20,00,000	20,00,000	Cost provided by GSI
9	Press pellet machine	1	3,90,000	3,90,000	Cost provided by GSI
10	Hot Plates (with stirrer)	1	10,000	10,000	Cost provided by GSI
11	Microwave Desiccation System	1	15,00,000	15,00,000	
12	Bomb Calorimeter	1	2,00,000	2,00,000	Cost provided by GSI
13	GIS software	1	25,00,000	25,00,000	
14	**Drilling bits**				
	NX Casing Bit	3	3,850	11,550	
	NX Casing Shoe Bit	5	3,750	18,750	
	BX Casing Bit	3	3,100	9,300	
	BX Casing shoe Bit	5	3,000	15,000	
	AX Casing Bit	3	2,850	8,550	
	AX Casing Shoe Bit	5	2,700	13,500	
	BX Diamond Core Bit	20	2,850	57,000	
	BX Reamer Shell (Single Tube)	5	1,800	9,000	
	BX Reamer Shell (Double Tube)	3	1,800	5,400	
	NX Diamond Core Bit	10	3,500	35,000	
	NX Reamer Shell (Single Tube)	5	3,450	17,250	
	NX Reamer Shell (Double Tube)	5	3,400	17,000	
	AX Diamond Core Bit	20	2,600	52,000	
	AX Reamer Shell (Single Tube)	5	1,600	8,000	
	AX Reamer Shell (Double Tube)	5	1,650	8,250	

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15	**Drill Rod**				
	BW Drill Rod with Coupling R/H 3.00Mtr Long	100	4,500	4,50,000	
	AW Drill Rod with Coupling R/H 3.00Mtr Long	100	3,350	3,35,000	
16	**Casing**				
	HX M.S. Flush Coupled Casing with coupling 3.00Mtr Long and Screw flush but joins with square from of thread parallel screwing thread protection should be provided in both hands	5	7,000	35,000	
	HX Casing 5 Feet Long	3	3,850	11,550	
	HX Casing 3 Feet Long	3	2,650	7,950	
	HX Casing 2 Feet Long	3	2,250	6,750	
	HX Casing 1 Feet Long	3	1,850	5,550	
	NX M.S. Flush Coupled Casing with coupling 3.00Mtr Long and Screw flush but joins with square from of thread parallel screwing thread protection should be provided in both hands	50	4,800	2,40,000	
	NX Casing 5 Feet Long	3	2,800	8,400	
	NX Casing 3 Feet Long	3	2,250	6,750	
	NX Casing 2 Feet Long	3	1,650	4,950	
	NX Casing 1 Feet Long	3	1,400	4,200	
	BX M.S. Flush Coupled Casing with coupling 3.00Mtr Long and Screw flush but joins with square from of thread parallel screwing thread protection should be provided in both hands	50	4,250	2,12,500	
	BX Casing 5 Feet Long	3	2,450	7,350	
	BX Casing 3 Feet Long	3	1,850	5,550	
	BX Casing 2 Feet Long	3	1,500	4,500	
	BX Casing 1 Feet Long	3	1,250	3,750	
	AX M.S. Flush Coupled Casing with coupling 3.00Mtr Long and Screw flush but joins with square from of thread parallel screwing thread protection should be provided in both hands	100	3,850	3,85,000	
	AX Casing 5 Feet Long	3	2,100	6,300	
	AX Casing 3 Feet Long	3	1,600	4,800	
	AX Casing 2 Feet Long	3	1,200	3,600	
	AX Casing 1 Feet Long	3	1,050	3,150	
17	**Core Barrel**				
	NX Core Barrel 3.00Mtr Long (single Tube)	2	6,500	13,000	
	BX Core Barrel 3.00Mtr Long (single Tube)	2	5,000	10,000	
	BX Core Barrel 3.00Mtr Long (Double Tube)	2	8,500	17,000	

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	AX Core Barrel 3.00Mtr Long (single Tube)	2	3,250	6,500	
	AX Core Barrel 3.00Mtr Long (Double Tube)	2	6,500	13,000	
18	**Core Lifter**				
	NX Core Lifter (Single Tube)	5	300	1,500	
	NX Core Lifter (Double Tube)	5	300	1,500	
	BX Core Lifter (Single Tube)	5	250	1,250	
	BX Core Lifter (Double Tube)	5	250	1,250	
	AX Core Lifter (Single Tube)	5	180	900	
	AX Core Lifter (Double Tube)	5	180	900	
19	**Accessories of NQ Series**				
	NQ drill rod 3.00 m			35,00,000	
	NQ wireline core barrel 3.00 m				
	NQ core bit impregnated				
	NQ core bit surface set				
	NQ over shot				
	NQ reamer shell				
	NQ core case				
	NQ core lifter				
20	Total Station	1	5,00,000	5,00,000	
				4,03,64,950	

The Committee recommended the proposal for approval of EC towards procurement of equipment's/software's for Directorate of Geology and Mining, Assam with estimated cost of Rs. 403.65 Lakh as detailed at para (b) above, to enhance the exploration activities in the country.

The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by DGM, Assam in consent with the competent authority of State Department /State Financial Wing (Division).

48.2.2. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Directorate for Trade, Commerce and Industries, Manipur]

a) The Directorate for Trade, Commerce and Industries, Manipur has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹4,39,85,000/-.

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b) Based on the requirement of Manipur, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below-

S. No.	Item	Quantity	Estimated cost Per unit (Rs.)	Total estimated cost (Rs.)	Remarks
1	Digital Camera	3	60,000	1,80,000	
2	Brunton compass	3	10,000	30,000	Cost provided by GSI
3	Geologists Hammer	3	10,000	30,000	Cost provided by GSI
4	Handheld GPS	3	50,000	1,50,000	
5	Handheld XRF	1	9,50,000	9,50,000	
6	Scintilometer	1	6,00,000	6,00,000	Cost provided by GSI
7	Portable Water Analysis Kit	3	15,000	45,000	
8	Pulverizer	1	6,00,000	6,00,000	
9	Research Polarising Microscope with software attached camera for Transmitted and Reflected light with accessories	1	12,00,000	12,00,000	Cost provided by GSI
10	WD-XRF	1	40,00,000	40,00,000	
11	Fusion bead machine	1	20,00,000	20,00,000	
12	Press pellet machine	1	3,90,000	3,90,000	Cost provided by GSI
13	Hot Plates/Fume Hood	1	10,000	10,000	Cost provided by GSI
14	GIS softwares	1	13,00,000	13,00,000	
15	Drilling machine up to 600 m capacity (Skid mounted) with all accessories (core barrels, casing, drill rods, bits, pulley wire rope etc)	1	70,00,000	70,00,000	
16	High Pressure water Pump	1	15,00,000	15,00,000	Cost provided by GSI
17	Core Splitter/Core splitter hydrostatic	1	2,00,000	2,00,000	Cost provided by GSI
18	DGPS (1 set)	1	16,00,000	16,00,000	Cost provided by GSI
19	Total Station	1	3,00,000	3,00,000	
20	Barehole Camera	1	50,000	50,000	
				2,21,35,000	

The Committee recommended the proposal for approval of EC towards procurement of equipment's/software's for Directorate for Trade, Commerce and Industries, Manipur with estimated cost of Rs. 221.35 Lakh as detailed at para (b) above, to enhance the exploration activities in the country.

The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by Directorate for Trade, Commerce and Industries, Manipur in consent with the competent authority of Department /State Financial Wing (Division).

48.2.3. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Directorate of Geology and Mining, Mizoram]

a) The Directorate of Geology and Mining, Mizoram has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹5,24,67,200/-.

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b) Based on the requirement of DGM, Mizoram, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below-

S. No.	Item	Quantity	Estimated cost Per unit (Rs.)	Total estimated cost (Rs.)	Remarks
1	Digital Camera DSLR	1	1,25,000	1,25,000	
2	Brunton compass	10	10,000	1,00,000	Cost provided by GSI
3	Geologists Hammer	10	7,200	72,000	
4	Handheld GPS	10	8,000	80,000	
5	Scintilometer	1	6,00,000	6,00,000	Cost provided by GSI
6	Rock processing unit (Polishing, grinding, mounting)	1	10,00,000	10,00,000	
7	Pulverizer	1	6,00,000	6,00,000	
8	Research Polarising Microscope with software attached camera for Transmitted and Reflected light with accessories	1	12,00,000	12,00,000	
9	WD-XRF	1	40,00,000	40,00,000	
10	Fusion bead machine	1	20,00,000	20,00,000	
11	Press pellet machine	1	3,90,000	3,90,000	Cost provided by GSI
12	Hot Plates	1	10,000	10,000	Cost provided by GSI
13	Muffle furnace	1	1,00,000	1,00,000	Cost provided by GSI
14	Air Oven	1	55,000	55,000	Cost provided by GSI
15	GIS softwares	1	13,00,000	13,00,000	
16	Hydrostatic drill machine upto 600m capacity	1	80,00,000	80,00,000	Cost provided by GSI
17	Drill Accessories			80,00,000	
18	Pumps	1	15,00,000	15,00,000	Cost provided by GSI
19	Core Splitter	1	2,00,000	2,00,000	Cost provided by GSI
20	DGPS (1 set)	1	16,00,000	16,00,000	Cost provided by GSI
				3,09,32,000	

The Committee agreed to recommend the proposal for approval of EC towards procurement of equipment's/software's for Directorate of Geology and Mining, Mizoram with estimated cost of Rs. 309.32 Lakh as detailed at para (b) above, to enhance the exploration activities in the country.

The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by Directorate of Geology and Mining, Mizoram in consent with the competent authority of State Department /State Financial Wing (Division).

48.2.4. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Directorate of Geology and Mining, Nagaland]

a) The Directorate of Geology and Mining, Nagaland has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹5,00,03,491/-.

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b) Based on the requirement of DGM Nagaland, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below-

S. No.	Item	Quantity	Estimated cost Per unit (Rs.)	Total estimated cost (Rs.)	Remarks
1	Skid mounted wireline drilling technology with capacity 1000 m with HQ rod, 1000 m with NQ rod	1	68,90,000	68,90,000	
	HX casings 10*long with coupling	90	10,925	9,83,250	
	NX casings 10*long with coupling	200	7,400	14,80,000	
	HQ drill rod 3mtr	180	13,650	24,57,000	
	NQ drill rod 3mtr	350	9,125	31,93,750	
2	Bits, Casings, Barrel (one time requirement)				
	HQ surface core bit 60/80 s.p.c	25	13,875	3,46,875	
	HQ surface shoe bit 60/80 s.p.c	25	14,155	3,53,875	
	HQ reamer shell 25/40s.p.c	25	11,305	2,82,625	
	NQ surface core bit 60/80 s.p.c	25	12,255	3,06,375	
	NQ surface shoe bit 60/80 s.p.c	25	11,685	2,92,125	
	NQ reamer shell 25/40 s.p.c	25	10,545	2,63,625	
	HQ barrel 3 m	15	69,600	10,44,000	
	NQ barrel 3 m	15	55,200	8,28,000	
	Clamp for HX, NX casings	4	7,125	28,500	
3	Core splitter hydrostatic	1	2,00,000	2,00,000	Cost provided by GSI
4	DGPS (1 set)	1	16,00,000	16,00,000	Cost provided by GSI
5	Total Station	1	6,96,000	6,96,000	Cost provided by GSI
6	Pulverizer	1	40,00,000	40,00,000	Cost provided by GSI
7	Research Polarising Microscope with software attached camera for Transmitted and Reflected light with accessories	1	12,00,000	12,00,000	Cost provided by GSI
8	Muffle furnace	1	1,00,000	1,00,000	Cost provided by GSI
				2,65,46,000	

The Committee recommended the proposal for approval of EC towards procurement of equipment's/software's for Directorate of Geology and Mining, Nagaland with estimated cost of Rs. 265.46 Lakh as detailed at para (b) above, to enhance the exploration activities in the country.

The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by Directorate of Geology and Mining, Nagaland in consent with the competent authority of State Department /State Financial Wing (Division).

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48.6.5. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines and Geology, Sikkim]

a) The Department of Mines and Geology, Sikkim has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹5,07,63,200/-.

b) Based on the requirement of DMG Sikkim, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. The details are given below-

S. No.	Item	Quantity	Estimated cost Per unit (Rs.)	Total estimated cost (Rs.)	Remarks
1	Digital Camera	3	1,20,400	3,61,200	
2	Brunton compass	12	10,000	1,20,000	Cost provided by GSI
3	Geological Hammer	10	10,000	1,00,000	Cost provided by GSI
4	Handheld GPS	10	29,736	2,97,360	
5	Handheld XRF	1	30,00,000	30,00,000	Cost provided by GSI
6	Pulverizer	1	1,07,380	1,07,380	
7	Research Polarising Microscope with software attached camera for Transmitted and Reflected light with accessories	1	12,00,000	12,00,000	Cost provided by GSI
8	Hot Plates	1	10,000	10,000	Cost provided by GSI
9	Muffle Furnace	1	1,00,000	1,00,000	
10	Air Oven	1	18,000	18,000	
11	GIS Software	1	14,95,300	14,95,300	
12	Drilling machine upto 1000 m capacity	1	60,00,000	60,00,000	
13	Bits, drill rods, casing, core barrel (for one year requirement for one time)	1	20,00,000	20,00,000	
14	Pumps (Pressure /Mud)	1	10,00,000	10,00,000	
15	Core Splitter/ Core Splitter Hydrostatic	1	2,00,000	6,00,000	Cost provided by GSI
16	DGPS (1 set)	1	16,00,000	16,00,000	Cost provided by GSI
17	Total Station	1	6,96,000	6,96,000	Cost provided by GSI
				1,87,05,240	

The Committee recommended the proposal for approval of EC towards procurement of equipment's/software's for Department of Mines and Geology, Sikkim with estimated cost of Rs. 187.06 Lakh as detailed at para (b) above, to enhance the exploration activities in the country.

The Committee opined that due process of procurement as per extant Government of India Financial rules be followed by Department of Mines and Geology, Sikkim in consent with the competent authority of State Department /State Financial Wing (Division).

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48.2.6. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Department of Geology and Mining, Arunachal Pradesh]

a) The Department of Geology and Mining, Arunachal Pradesh has submitted the proposal for procurements of GIS software along with survey equipment for the implementation of an integrated Geology and Mining Management System with estimated cost of ₹5,00,00,000/-. The details are-

S. No.	Item	Quantity	Per unit cost (Rs.)	GST (Rs.)	Total cost (Rs.)
1	Advance GIS Software License with Server for MAP Creation	1	1,48,72,881	4477118.58	2,93,49,999.6
2	User based Dashboard creation, Integration with GIS, Mobile app	1	1,85,00,000	15,30,000	1,00,30,000
3	IT Hardware and Networking Services for Geo Hub	1	55,00,000	9,90,000	64,90,000
4	Advance Survey Grade GPS Drone	1	35,00,000	6,30,000	41,30,000
				Grand Total	**5,00,00,000**

b) It was informed that the instruments are GIS software along with hardware.

c) Based on the requirement of DGM Arunachal Pradesh, the Committee evaluated the proposal for procurement of machinery/ laboratory equipment/ instruments etc. and suggested to submit the revised proposal for the procurement of mineral exploration based instruments.

The Committee suggested to resubmit the revised proposal for the procurement of mineral exploration based instruments in next TCC meeting.

48.2.7. Financial assistance for procurement to procure machinery /laboratory equipment's instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Directorate of Mineral Resources, Meghalaya]

a) The Directorate of Mineral Resources, Meghalaya has submitted the proposal for procurements of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities without cost estimate.

b) The Committee suggested to resubmit the proposal along with cost estimated for further technical evaluation.

The Committee suggested to resubmit the detailed proposal along with cost estimate for the procurement of machinery/ laboratory equipment/instruments etc. in next TCC meeting.

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48.3. Review of the Geological report/Ongoing projects

48.3.1. Reconnaissance survey (G4) for iron ore Khandadhar Block (40.46 sq. km), District: Sundergarh, Odisha. [Implementing Agency: OMECL]

a) The project was recommended in 16th TCC meeting held on 24th and 25th September, 2018 and approved in 10th EC meeting held on 30th October, 2018 with estimated cost of ₹62.43 lakh for a time period of 10 months.

b) It has been conveyed that all the assigned targets have been successfully achieved by the OMECL. Total 510.5m drilling have been completed and a resource of 126.0MT has been estimated at G4 stage exploration.

c) It has also been conveyed that a G2 stage exploration was also carried out in the nearby area of the proposed block.

d) The Committee suggested that the present block combining with adjoining G2 stage block may be considered for Composite License (CL) by the State Government.

e) OMECL sough time extension up to 31.01.2023 and the committee agreed for time extension up to 31st January 2023 and suggested to submit the geological report to NMET Secretariat.

The committee noted the outcome of the project and suggested to submit the geological report to NMET Secretariat. The Committee also recommended for consideration of time extension up to 31st January 2023.

48.3.2. Reconnaissance survey (G4) for limestone in Voteranlagso area of West Karbi, District: Anglong, Assam. [Implementing Agency: DGM, Assam]

a) The project was recommended in 37th TCC meeting held on 27th and 28th January, 2022 with estimated cost of Rs. 341.50 Lakhs and timeline of 12 months.

b) The committee suggested that the chemical analysis for primary samples need to be done through XRF in place of AAS for major oxides.

c) Accordingly, the Committee agreed for the correction and suggested for revised cost of the work component. The revised cost for the samples analysis is given below:

S. No.	Chemical Analysis	Soc Item S. No.	Rate as per SoC	No. of Samples	Total Cost (Rs.)
Primary samples					
i	For 6 radicals i.e., CaO, MgO, Al2O3, SiO2, Fe2O3 and LOI	4.1.15a	4,200	450	18,90,000
Check samples Internal (5%) and External (10%)					
ii	For 6 radicals i.e., CaO, MgO, Al2O3, SiO2, Fe2O3 and LOI	4.1.15a	4,200	68	2,85,600

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The committee agreed for the chemical analysis through XRF and approved additional cost of Rs. 8,30,675/- (including GST) for the chemical analysis.

48.4. The meeting ended with concluding remarks of the Chairman and vote of thanks by the Director and member secretary, TCC, NMET.

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List of TCC members attended 48th Technical-cum-Cost Committee (TCC) meeting of NMET held on 22nd and 23rd December, 2022 through video conference at Geological Survey of India, Director General Camp Office, New Delhi.

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.), IBM	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	Additional Director, Atomic Minerals Directorate for Exploration and Research	TCC Member	Not attended
6	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), 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	Not Attended
9	Shri Vivek Kumar Sharma, 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, 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, ACAO (Finance), GSI	TCC Member	Attended via videoconference

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Annexure-1

List of participants attended 48th Technical-cum-Cost Committee (TCC) meeting of NMET held on 22nd and 23rd December, 2022 through video conference at Geological Survey of India, Director General Camp Office, New Delhi.

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 Hemraj Suryavanshi ADG (Retd.), GSI	hemrajgsi@gmail.com	7477042176	Member, TCC
4	Dr. Anjani Kumar DGM (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member, TCC
5	Shri Naeem Ahmed GM (Retd.), CMPDI	ahmadnaeem17@yahoo.co.in	8588092153	Member, TCC
6	Shri Manoj Kumar Patel DDG and RMH-II, GSI	m.patel1@gsi.gov.in	9040011231	Member, TCC
7	Shri Vivek Kumar Sharma Director, NMET	vksharma.ofb@gov.in	7024570055	Member, TCC
8	Shri P. K. Maharana, DGM (F), NALCO	pmaharana@rediffmail.com	8500669500	Member, TCC
9	Shri Vinay Pal, CAO, (Finance), GSI	vinay.pal@gsi.gov.in	8527368161	Member, TCC
10	Shri Suresh Chander Director, GSI	suresh.chander@gsi.gov.in	9493860963	Member Secretary, TCC
11	Dr. Deshraj Trivedi Senior Geologist	nmet-tcc@gov.in	9419244294	NMET
12	Shri Subhash Kumar Senior Geologist	nmet-mines@gov.in	9868302624	NMET
13	Dr. R. P. Singh, Manger (Geology)	gm.exploration.cmpdil@gmail.com	8987789047	CMPDI
14	Shri P. Ravindran, DGM (Exploration)	gm-exploration@mecl.co.in	7907649392	MECL, Nagpur
15	Shri P. C. Mishra, Joint Director (Geology)	directorgeology_odisha@yahoo.in	9861465695	DGM, Odisha
16	Shri S. K. Minda, Suptdg. Geologist	supgeohq@rajasthan.gov.in	9413317214	DMG, Rajasthan
17	Shri Kailash Dongre Joint Director (Geology)	dgmgeology@gmail.com	9424282791	DGM, Chhattisgarh
18	Shri H. P. Harish, Deputy Director (Plan)	dir-mines@karnataka.gov.in	9611951313	DMG, Karnataka
19	Kumar Amitabh, Dy.Director, Geology	geo-geology@jharkhandmail.gov.in	9431196469	DMG, Jharkhand
20	Shri Udayaravi	geology.dgm@mp.gov.in		DGM, MP
21	Smt. Barnalee Nath, Joint Director (Geology)	dgmassam@gmail.com	9435104508	DGM, Assam
22	Shri Raghumant Sharma, Senior Geologist	dcimanipur@gmail.com	9862028405	DTCI, Manipur
23	Shri Lalthaznala, Director	directordgmr@gmail.com;	9436150941	DGM, Mizoram
24	Shri N. Longrikaba, Addl. Director	geominenaga@gmail.com	9402024561	DGM, Nagaland
25	Shri Saran Shilal, Joint Director Mining	dmmgsikkim@gmail.com	9733384154	DMD, Sikkim
26	Shri Tasar Talar, Director	dgmarunachal@gmail.com	9402277840	DGM, Arunachal Pradesh
27	Shri K. B. Sarong, Senior Geologist	dmrdirector@gmail.com	9436100333	DMR, Meghalaya
28	Dr. P. K. Nayak Sr. Manager (Geology)	omecloffice@gmail.com	6372651516	OMECL

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Annexure-2A

Estimated cost for Preliminary exploration (G3) for bauxite in Dhuluapat block (4.0 sq. km), District: Lohardaga and Gumla, Jharkhand.
[Block area: 4.0 sq. km, No. of boreholes: 15, Timeline: 12 months]

S. No.	Item Work	Item no in SoC	Unit	Rates as per SoC of NMET	Qty.	Amount (Rs) In Lakh	Remarks
A	**Mineral Investigation (Outsourced)**						
1a	Core drilling	2.2.1.1b	m	6,775	300	20,32,500	Copy of MoC approved Rate is required
1b	Approach road making drill site (Hilly terrain)	2.2.10b	per km	32,200	6	1,93,200	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed for max. km.
1c	Borehole Pillaring - Construction of Con -Pillar	2.2.7a	Per bh	2,000	15	30,000	
				Sub Total-A		**22,55,700**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
B	**GEOLOGICAL WORK (In House)**						
2a	Survey Party days without Labour	1.6.1a	Day	8,300	30	2,49,000	
2b	4 labours (Rs 477/day/labour), As per rates of Central labour Commission	5.7	Day	1,908	30	57,240	Amount will be reimbursed as per the notified rates for unskilled labour by the Central Labour Commissioner or respective State Govt. whichever is higher
2c	Bore hole Fixation and determination of co-ordinates & Reduced Level and Demarcation of lease hold boundary (15 bh point and 15 boundary point)	1.6.2	Per point	19,200	30	5,76,000	
2d	Geological days-Field	1.2	Day	11,000	120	13,20,000	
2e	Geological days-HQ	1.2	Day	9,000	45	4,05,000	
2f	4 labours (Rs 477/day/labour), As per rates of Central labour Commission)	5.7	Day	954	120	1,14,480	Amount will be reimbursed as per the notified rates for unskilled labour by the Central Labour Commissioner or respective State Govt. whichever is higher
				Sub Total-B		**27,21,720**	
C	**SAMPLING (In house)**						
3a	Core Sampling - 1 sampler without Labour	1.5.2	Day	5,100	10	51,000	

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3b	4 labours (Rs 477/day/labour, As per rates of Central labour Commission)	5.7	Day	1,908	10	19,080	Amount will be reimbursed as per the notified rates for unskilled labour by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total-C	**70,080**	
D	**PITTING-TRENCHING**						
4a	Pitting for determination of bulk density (1m x1m x1m)-2 no	2.1.1	Cu m	3,330	2	6,660	
					Sub Total-D	**6,660**	
E	**Laboratory Studies (Outsourced)**						
	Chemical Analysis						
7a	Primary Sample for 5 radicals (Al_2O_3, SiO_2, Fe_2O_3, TiO_2 & LOI) , considering 10 samples each in Bauxite	4.1.15a	Per sample	4,200	100	4,20,000	
7b	Internal (5%) & External (10%) Check samples of 5 radicals	4.1.15a	Per sample	4,200	15	63,000	
7c	b) Composite Core samples (14 radicals, viz. Al_2O_3 , SiO_2 , Fe_2O_3 , TiO_2 , V_2O_5 , P_2O_5 , LOI, MnO, CaO, MgO, K_2O, Na_2O, SO_3 & Organic carbon	4.1.15a	Per sample	4,200	10	42,000	
7d	Combined determination of TMH, MHA & Reactive silica	4.1.17a	Per sample	6,700	10	67,000	
	Physical & Petrological Studies						
7e	X-RD Studies on composite	4.5.1	per sample	4,000	5	20,000	
7f	ICP-MS studies (REE analysis of Saprolite zone)	4.1.13	per sample	5,380	20	1,07,600	
7g	Preparation of thin section	4.3.1	per sample	2,353	5	11,765	
7h	Complete Petrographic studies	4.3.4	per sample	4,232	5	21,160	
	Geotechnical Laboratory						
7i	Determination of in situ bulk density	4.10	per sample	3,540	5	17,700	
					Sub Total-E	**7,70,225**	
					Total (A to E)	**58,24,385**	
F	**Miscellaneous Charges**						
8a	Preparation of Exploration Proposal (2% of approved Project cost or 3.8 lakh whichever is lower)	5.1	lump sum	3,80,000	1	1,16,488	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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8b	Outsourcing process cost (2% of approved Project cost or 5 Lakh)	2.3	lump sum	5,00,000	1	1,16,488	
8c	Operational charges for CMPDI	Point 3 iii of SOC				3,02,593	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
8d	Land crop compensation	5.6	Per bh	20,000	15	3,00,000	
8e	Geological Report Preparation (Min 2.5 Lakh or 5% of work value)	5.2			1	2,96,943	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
8f	Peer Review Charges			10,000	1	10,000	
					Sub Total-F	**11,42, 511**	
	Sub Total (A+B+C+D+E+F)					**69,66,896**	
	GST	18%				**12,54,041**	GST will be reimburse as per actual and as per notified prescribed rate
	Grand Total					**82,20,938**	***or say Rs. 82.21 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 execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.							

Annexure-2B

Scheduled time for Preliminary exploration (G3) for bauxite in Dhuluapat block (4.0 sq. km), District: Lohardaga and Gumla, Jharkhand.

S. No.		Months/Days	1	2	3	4	5	6	Review	7	8	9	10	11	12
1	Outsourcing and moblising	months													
2	Geological Mapping	months													
3	Survey days	days													
4	Trenching	cu. m													
5	Drilling (1 rig)	m													
6	Geologist days	days													
7	Sampling days, Core Sampling	days													
8	Laboratory Studies	months													
9	Geologist days, HQ	days													
10	Report Writing with Peer Review	months													

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Annexure-3A

Estimated cost for Preliminary exploration (G3) for limestone in Malkhed block- 1 and 2 (18.01 sq. km), Bhima Basin, District: Gulbarga (Kalaburagi), Karnataka.
[Block area: 18.01 sq. km, No. of Boreholes: 10, Average borehole depth: 50m, Timeline: 10 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, Borehole logging & Sampling & Report writing**						
a	Charges for one Geologist per day at HQ	day	1.3	9,000	60	5,40,000	
b	Charges for one Geologist per day at field	day	1.3	11,000	120	13,20,000	
c	Labour for Geologist (2 Nos) Base rate - 431	day	5.7	477	240	1,14,480	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day	one sampler per day	1.5.2	5,100	50	2,55,000	
e	Labours for sampling work (4 Nos)	day	5.7	477	200	95,400	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**Survey (on 1:4000 Scale)**						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardinal points by DGPS	Per Point of observation	1.6.2	19,200	21	4,03,200	Block cardinal point- 10 Borehole- 10, base station- 1
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring at 2m interval
c	Labours (4 Nos)	day	5.7	477	120	57,240	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

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					Sub Total-A	**30,34,320**	
B	**DRILLING**						
1	Drilling -Soft rock	m	2.2.1.1b	6,775	600	40,65,000	MoC Rate
2	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	10	2,00,000	Amount will be reimbursed 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	10	20,000	
4	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	2,400	86,400	To & fro
5	Monthly Accommodation Charges for drill ng Camp (up to 2 Rigs)	month	2.2.9	50,000	4	2,00,000	
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 (F at 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 accordingly.
9	Drill Core Preservation	per m	5.3	1,590	410	6,51,900	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
					Sub Total-B	**58,11,380**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples**						
	a. For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	Nos	4.1.15a	4,200	400	16,80,000	
ii)	**Check samples Internal (5%) and External (10%)**						
	a. For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	Nos	4.1.15a	4,200	60	2,52,000	
iii)	**Composite Samples**						

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	a) For 12 radicals (CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3, SO_3, P_2O_5 , LOI, MnO_2, K_2O, Na_2O and Cl.)	Nos	4.1.15a	4,200	67	2,81,400	
iv)	**Petrological samples (Bh Core Samples)**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of Thin Section	Nos	4.3.4	4,232	10	42,320	
iii	Photomicrographs	Nos	4.3.7	280	10	2,800	
v)	**Determination of bulk density**						
	Determination of bulk density	No.	4.1	3,540	10	35,400	
					Sub Total-C	**23,17,450**	
D					**Sub Total (A to C)**	**1,11,63,150**	
E	**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		**11,16,315**	2 Separate GRs for two blocks (Malkhed-1 and Malkhed-2 Blocks) EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
F	**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		**2,23,263**	
G	**Peer review Charges**		As per EC decision			**20,000**	Cost Estimated for two peer review of 2 blocks separately (Malkhed-1 and Malkhed-2 Blocks)
H	**Total Estimated Cost without GST**					**1,25,22,728**	
I	**Provision for GST (18% of H)**					**22,54,091**	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**1,47,76,819**	***or Say Rs. 147.77 Lakhs***
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 execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.							

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Annexure-3B

Scheduled time for Preliminary exploration (G3) for limestone in Malkhed block- 1 and 2 (18.01 sq. km), Bhima Basin, District: Gulbarga (Kalaburagi), Karnataka.

S. No.	Activities	Unit	MONTHS									
			1	2	3	4	5	6	7	8	9	10
1	Camp Setting	Month										
2	Surface Drilling (1 rig)	m.										
3	Survey Party days	day										
4	Geologist days in field	day										
5	Sampling days, Core Sampling	day										
6	Laboratory Studies	Nos.										
7	Camp Winding	Month										
8	Geologist days in HQ	day										
9	Geological Report Writing with Peer Review	Month										

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 Preliminary exploration (G3) for limestone, bauxite and fire clay in Piparhat-Kubri block (2.51 sq. km), District: Satna, Madhya Pradesh.
[Block area: 2.51 sq. km, No. of Boreholes: 5, Average borehole depth: 35-40m, Timeline: 9 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, Borehole logging & Sampling & Report writing**						
a	Charges for one Geologist per day at HQ	day	1.3	9,000	45	4,05,000	
b	Charges for one Geologist per day at field	day	1.3	11,000	90	9,90,000	
c	Labour for Geologist (2 Nos) Base rate - 431	day	5.7	477	180	85,860	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	30	1,53,000	
e	Labours for sampling work (4 Nos)	day	5.7	477	120	57,240	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**Survey (on 1:4000 Scale)**						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardinal points by DGPS	Per Point of observation	1.6.2	19,200	34	6,52,800	Block cardinal point- 28 Borehole- 5, Base station - 1
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring at 2m interval

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c	Labours (4 Nos)	day	5.7	477	120	57,240	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**26,50,140**	
B	**DRILLING**						
1	Drilling -Soft rock	m	2.2.1.1b	6,775	210	14,22,750	MoC Rate, 4 Bhs upto depth of 40m & 1Bh on Bauxite upto depth of 50m
2	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimbursed 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	Km	2.2.8	36	1,000	36,000	To & fro
5	Monthly Accommodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	1,50,000	
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	2	44,040	Road Making will be considered as per the requirement anc Road Making Charges will be reimbursed accordingly.
9	Drill Core Preservation	per m	5.3	1,590	120	1,90,800	
					Sub Total- B	**24,53,590**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples for Limestone**						

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	a. For 8 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI by XRF	Nos	4.1.15a	4,200	200	8,40,000	
ii)	**Check samples Internal (5%) and External(10%) for Limestone**						
	a. For 8 radicals i.e. CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3 and LOI	Nos	4.1.15a	4,200	30	1,26,000	
iii)	**Composite Samples for Limestone**						
	a. For 12 radicals (CaO, MgO, Al_2O_3, SiO_2, Fe_2O_3, SO_3, P_2O_5 , LOI, MnO_2, K_2O, Na_2O and Cl.)	Nos	4.1.15a	4,200	30	1,26,000	
iv)	**Primary samples for Bauxite**						
	a. For5 radicals Al2O3, SiO2, Fe2O3, TiO2 & LOI	Nos	4.1.15a	4,200	10	42,000	
v)	**Check samples Internal (5%) and External(10%) for Bauxite**						
	a. For5 radicals Al2O3, SiO2, Fe2O3, TiO2 & LOI	Nos	4.1.15a	4,200	5	21,000	
vi)	Analysis of REE by ICP-MS (Sequential technique) of lithomarge	Nos	4.1.13	5,380	5	26,900	
vii)	**Primary samples for Fire Clay**						
	a. For 7 radicals Al2O3, SiO2, MgO, CaO, Fe2O3, K2O & LOI	Nos	4.1.15a	4,200	10	42,000	
viii)	**Petrological samples (BH Core Samples)**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of Thin Section	Nos	4.3.4	4,232	10	42,320	
iii	Photomicrographs	Nos	4.3.7	280	10	2,800	
ix)							
	Bulk density Determination	No.	4.1	3,540	5	17,700	
					Sub Total- C	**13,10,250**	
D					**Sub Total (A to C)**	**64,13,980**	

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E	**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		**3,20,699**	
F	**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		**1,28,280**	
G	**Peer review Charges**		As per EC decision			**10,000**	
H	**Total Estimated Cost without GST**					**68,72,959**	
I	**Provision for GST (18% of H)**					**12,37,133**	GST will be reimbursed as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**81,10,091**	***or Say Rs. 81.10 Lakhs***
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 execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.							

Annexure-4B

Scheduled time for Preliminary exploration (G3) for limestone, bauxite and fire clay in Piparhat-Kubri block (2.51 sq. km), District: Satna, Madhya Pradesh.

S. No.	Activities	Unit	MONTHS								
			1	2	3	4	5	6	7	8	9
1	Camp Setting	Month									
2	Surface Drilling (1 rig)	m.									
3	Survey days	day									
4	Geologist days in field	day									
5	Sampling days, Core Sampling	day									
7	Laboratory Studies	Nos.									
8	Camp Winding	Month									
9	Geologist days in HQ	day									
10	Geological Report Writing with Peer Review	Month									
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 Preliminary exploration (G3) for graphite around Naringapanga block (S & W) (0.143 sq. km) block, District: Rayagada, Odisha.
[Block area: 0.143 sq. km, No. of Boreholes: 6, Timeline: 9 months]

S. No.	Activities	Unit	Soc-Item-Sl.No.	SoC Rate (Rs.)	QTY	Amount (Rs.)	Remarks
A	**DRILLING (Outsourced)**						
1	Drilling (6 BHs) outsourcing	m	2.2.1.4a	11,500	400	46,00,000	
2	Drill Core Preservation	per m	5.3	1,590	100	1,59,000	
						47,59,000	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
	Tender Processing Cost	2% of the above Project or 5 lakh whichever is lower will be paid.				95,180	
	Reimbursement of cost in case of outsourced components of project work.	SOC Para 3 (i)				4,75,900	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
				Sub Total- A		**48,54,180**	
B	**GEOLOGICAL WORK**						
1	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	
2	Survey days (One Surveyor Charges)	day	1.6.1a	8,300	15	1,24,500	
3	Labours (4 Nos) Base rate - Rs. 326*4=1304/-	day	5.7	1,304	15	19,560	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
4	Charges for one Geologist per day at HQ	day	1.2	9,000	60	5,40,000	

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5	Geological Mapping, Core Logging (Charges for one Geologist per day at field)	day	1.2	11,000	120	13,20,000	
6	Labours (2 Nos) Base rate - Rs. 326*2=652/-	day	5.7	652	120	78,240	Amount will be reimbursed as per the notified rates for unskilled labour by the Central Labour Commissioner or respective State Govt. whichever is higher
7	Sampler	day	1.5.2	5,100	15	76,500	
8	Labours (4 Nos) Base rate - Rs. 326*4=1304/-	day	5.7	1,304	15	19,560	Amount will be reimbursed as per the notified rates for unskilled labour by the Central Labour Commissioner or respective State Govt. whichever is higher
9	Pitting	Cu.m	2.1.3	5,330	100	5,33,000	
				Sub Total- B		**28,26,560**	
C	**GEOPHYSICAL WORK**						
1	Charges for one Geophysicist per day at field	day	3.18	11,000	20	2,20,000	
2	Charges for one Geophysicist per day at HQ	day	1.2	9,000	7	63,000	
3	Self-Potential Survey (2500x500m)	Line Km	3.3a	29,600	12	3,55,200	
4	Labours (2 Nos) Base rate - Rs. 326*2=652/-	day	5.7	652	20	13,040	Amount will be reimbursed as per the notified rates for unskilled labour by the Central Labour Commissioner or respective State Govt. whichever is higher
				Sub Total- C		**6,51,240**	
D	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary check samples**						
	Primary samples for 5 radicals (Al_2O_3, SiO_2, FC, Ash and LOI)	Nos	4.1.1	8,157	100	8,15,700	
	X-RD Studies	Nos	4.5.1	4,000	5	20,000	
	ICPMS/ICP-AES (34 Elements Analysis) REE & Vn	Nos	4.1.14	7,731	20	1,54,620	
ii)	**Check samples Internal**						
	Check samples for 5 radicals (Al_2O_3, SiO_2, FC, Ash and LOI)	Nos	4.1.1	8,157	5	40,785	

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ii)	**Check samples External**						
	Check samples for 5 radicals (Al_2O3, SiO_2, FC, Ash and LOI)	Nos	4.1.1	8,157	10	81,570	
iii)	**Composite Samples**						
	Check samples for 5 radicals (Al_2O_3, SiO_2, FC, Ash and LOI)	Nos	4.1.1	8,157	10	81,570	
2	**Physical Analysis**						
i)	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii)	Petrographic studies	Nos	4.3.4	4,232	5	21,160	
v)	Digital Photographs	Nos	4.3.7	280	5	1,400	
vi)	Density	Nos	4.8.3	1,568	5	7,840	
					Sub Total- D	**12,36,410**	
					Total A+B+C+D	**95,68,390**	
E	Preparation of Exploration Proposal	One number (5 Hard copies with a soft copy)	5.1	2% of the approved project cost or 3.8 lakh whichever is lower.		1,91,368	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.
F	Geological Report Preparation	5 Hard copies with a soft copy	5.2	For the projects having cost more than Rs. 50 lakh but less than Rs 150, A minimum of Rs. 2.5 lakh or 5% of the value of work whichever is more.		4,78,420	EA has to submit 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	**Total Estimated Cost without GST**					**1,02,48,177**	
I	GST @18%					18,44,671.91	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**1,20,92,849.21**	***or Say Rs. 120.93 Lakhs***
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 execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.							

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Annexure-5B

Scheduled time for Preliminary exploration (G3) for graphite around Naringapanga block (S & W) (0.143 sq. km) block, District: Rayagada, Odisha.

S. No.	Work Components	Units	1	2	3	4	5	6	7	8	9
1	Camp Setting	Days									
2	Survey Work units (Total Station survey)	Days									
3	Detailed Geological Mapping (1:2000)	Days									
4	Self-Potential Survey	Days									
5	Pitting										
6	Drilling	Months									
7	BH core Logging & Sampling	Months									
8	Sample processing & Analysis	Month									
9	Camp Winding	Days									
10	Data Analysis (DA) & Report Writing with Peer Review	Month									

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