Ministry of Mines
National Mineral Exploration Trust

Minutes of the 54th Technical-cum-Cost Committee (TCC) meeting held on 22nd &23rd June, 2023 through video conferencing at New Delhi

The 54th meeting of Technical-cum-Cost Committee [TCC] of National Mineral Exploration Trust [NMET] was held through video conferencing under the chairmanship of Dr. S. Ravi, Dy. Director General, Geological Survey of India (DDG, GSI) and Chairman, TCC, NMET on 22nd & 23rdJune, 2023 at New Delhi. Members of TCC-NMET and representatives from MECL, KIOCL, GSI, CMPDI, DMG Bihar, DMR Meghalaya, DMG Karnataka, DGM Uttarakhand, TSMDC, Maheshwari Mining Pvt. Ltd. have attended the meeting through their respective VC modes.

The list of participants is at **Annexure-1.**

Shri Suresh Chander, Director, GSI and Member Secretary, TCC-NMET, welcomed Dr. S. Ravi, DDG, GSI and Chairman, TCC, NMET, Members of the TCC and participants representing various Notified Exploration Agencies [NEAs] and Notified Private Exploration Agencies [NPEAs]. He briefed about the project proposals submitted by EAs for consideration of 54thTCC meeting. He conveyed that a total of 03 nos. of mineral exploration proposals were submitted by MECL, KIOCL and MMPL through DGM Chhattisgarh, 02 proposals of GSI, 03 proposals related to financial assistance for procurement submitted by the State Bihar, Meghalaya and Karnataka. Projects for review have been submitted by TSMDC, CMPDI, MECL, KIOCL and DMG Karnataka.

Dr. S. Ravi, DDG, GSI and Chairman, TCC welcomed the members and other participants from various NEAs/NPEAs.

Subsequently, the proceeding of meeting was initiated as per agenda of the meeting.

Agenda wise discussions are summarized as follows:

Agenda 54.1: Technical evaluation of new project proposals:

Agenda 54.1.1: Reconnaissance Survey (G-4 stage) for Phosphorite in Kathyur Block (9.00 sq. km) in Dehradun District, Uttarakhand. [Implementing Agency: MECL]

a) Regionally the proposed area falls under Mussoorie Syncline. Mussoorie Syncline is a part of the northern limb of Garhwal Syncline.

b) MECL conveyed that the block falls adjacent to the famous phosphorite deposits of Maledevta, Chamsari-Paritibba, Dubra and Mathet, which was explored by GSI.The phosphorite bed is conformable with the black cherts and the overlying shales of the Argillaceous member of Tal formation but laterally they are found to have intertonguing relationship. The shale of this area also phosphatic. The phosphate bearing sequence of Tal Formation extends in NW-SE direction and exposed in the proposed block.

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c) It has been further conveyed the details of the adjacent blocks are as follows:

Sl.No.	Name of Block	Strike length	Thickness	Wt. AVG. P2O5	Resource
1	Paritibba-Chamsari	1.80 km	1.0-3.50 m	14-31%	3.42mt
2.	Maldevta	1.30 km	0.45-7.8 m	15-30.90 %	9.73 mt
3.	Mathet	2.50 km	0.60-1.20 m	20.4-32.5 %	-
4.	Dubra	2.50 km	0.13-2.04 m	17.2-31.1 %	-
5.	Chiphloda (Chiphaldi)	2.36 km	0.20-2.0 m	21.8-36%	-

d) The proposal was sent to GSI for comments. In response to this GSI has informed thatthe proposed block is not overlapping with any of the proposed FS Programme (FSP 2023-24) of GSI.

e) DGM Uttarakhand also stated that the proposed block can be auctioned & mining would be permitted in the area in future.

f) In view of above considerations & assurance provided by the state govt officials, committee recommended to take up G4 Stage exploration in Kathyur Block with time schedule of 8 months. The project will be reviewed after 5 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Reconnaissance Survey (G-4 stage) for Phosphorite in Kathyur Block (9.00 sq. km) in Dehradun District, Uttarakhand" with an estimated cost of ₹ 64.23 lakh with time schedule of 08 months for carrying out the proposed work and submission of report as per annexure- 2A &2B.

Agenda 54.1.2: Reconnaissance survey (G4) for Phosphorite, Baryte & REE in Jevargi-Hulkal area, Kalburgi dist, Karnataka. [Implementing Agency: KIOCL]

a) The proposed block falls under the Halkal Formation of the Bhima Group.

b) KIOCL conveyed that the shales of this formation are greenish yellow to buff coloured and are friable and fissile. They are exposed nearKalkur, Andola, Martagi, Chennur and Halkal. On the western bank of the Bhima River near Kalkur, about 15m thick shales are exposed.

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c) It has been informed that Phosphorite mineralisation has been reported, for the first time, from several places associated with the Halkal shales. Further it is also informed that studies carried out by AV Jayaprakash (FS 1978), S.K Hansa and V. Sundaram (FS 1983 – 84 and 1989) indicates thatnodular discontinuous thin bands of Barytes are seen in the middle member of the Hulkal formation at Katamdevarhalli.

d) KIOCL conveyed that GSI carried out 'All India Phosphorite Scheme' for phosphorite in Bhima Basin. The phosphorite shales analysed 1.76 % P_2O_5 in Chik-Kolaga, P_2O_5 ranges from 6.72-7.86% in Kolkur, 9.0% in Chennar, 12.86% in Maradgi S Andola, 3.76% in Maradgi Shirumal Road, in Hulkal P_2O_5 ranges between 6.38 – 9.52%. The conclusion and recommendation informed the committeeare as follows:

i. Search for phosphorites in Bhima Basin 'Under the All India Phosphorite Scheme' has brought to light a number of phosphorites occurrences.
ii. Phosphorites are confined to Hulkal shales and are mostly found in the middle of the formation.
iii. Samples analysed from 6.38 to 12.86% P2O5.
iv. Phosphorites in the Bhima Basin are strata bound, it is recommended that the entire area covered by the Hulkal shales may be examined in detail by taking traverses at intervals of 250 to 500m".

e) The proposal was sent to GSI for their comments, in response to this GSI has informed that the proposed blocks fall within the exploration work for limestone by GSI during 1964-65, there is no overlap in commodities. Therefore, GSI has no objection if KIOCL takes up this investigation.

f) After the detailed deliberation committee opined that northern part of the block falls in the catchment area of Bhima River. Therefore the committee opined to delete overlapping area & divide the proposed area in two blocks to have rectangular block boundaries instead of cambered block boundary.

g) Accordingly, KIOCL has modified the block boundary and divided the block in Chennar block having an area of 50 sq.km. and Hulkul Block having an area of 120 sq.km.

h) In view of above, committee with consensus recommended to take up G4 level

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i) exploration in Chennar block (50sq.km.) with the time period of 8 months and Hulkul Block (120 sq.km.) with the time period of 12 months. The projects of Chennar block and Hulkul Block will be reviewed after 3 months and 8 months respectively.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Reconnaissance survey (G4) for Phosphorite, Baryte & REE in Chennar Block (50 sq.km.) Kalburgi dist, Karnataka" with an estimated cost of ₹ 72.08 Lakh (including GST) within time schedule of 08 months for carrying out the proposed work and submission of report as per annexure- 3A &3B.

The committee recommended the proposal for approval of EC for "Reconnaissance Survey (G-4 Stage) for "Reconnaissance survey (G4) for Phosphorite, Baryte & REE in Hulkul Block (120 sq.km) Kalburgi dist, Karnataka" with an estimated cost of ₹ 95.83 Lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 4A &4B.

Agenda 54.1.3: Approval for Alternate Area for carrying out TDEM Heliborne Survey. [Implementing Agency: GSI]

j) The project was discussed in the 52nd TCC, wherein the committee recommended reduction of 731 sq. km. area, commensurating with the cost involved from the approved area. It was also suggested that GSI may submit separate proposal for identified additional area in the next TCC meeting. However some of the members expressed concerns over the addition of fresh area in lieu of surrendered area.

k) GSI submitted that the cost implication after reduction of 731 sq. km. area from the approved area for Heliborne Survey is as tabulated below:

1	The original Sanctioned amount for 24595 Line K m (3,354 Sq. Km)	Rs. 26,77,55,531(inclusive of 18% GST)
2	The proportionate cost for the reduced area 731 Sq. Km	Rs. 5,83,62,976 (inclusive of 18% GST)
3	The reduction of the total cost after deleting the 731 Sq. Km area (5361 Line Km)	Rs. 20,93,92,555 (inclusive of 18% GST)

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a) In view of above committee agreed to reduce the area of 731 sq.km. with the cost reduction of Rs. 5, 83,62,976 (inclusive of 18% GST)and also suggested to submit separate proposal.

b) Accordingly, the GSI submitted the separate proposal for identified area of 731 sq.km. (5361 Line Km) in lieu of the overlapping area with AMD, with an estimated cost of
₹ 5, 83, 62,976 (inclusive of 18% GST). The new proposed areas are:

a. Area 1: H3-3 (Kadri Schist Belt) to be increased from 351 Sq. Km. to 682 Sq. Km. New area added for 331 Sq. Km only.
b. Area 2: H3-2 (New area identified between Kolar and Ramgiri-Penakacherla schist belt) new area added for 400 Sq. Km.

This new proposed area was recommended by TCC for approval of EC.

Recommendation of TCC:

1. ***The committee recommended the reduction of 731 sq. km. (5361 Line Km) cost of Rs. 5,83,62,976 (inclusive of 18% GST). After the proportionate reduction, the project cost will be Rs. 20,93,92,555 (inclusive of 18% GST) for 2623 sq.km. with 19,234 Line km.***
2. ***The committee recommended the alternate area of 731 sq.km as a fresh proposal submitted by RSAS (Area 1: H3-3 &Area 2: H3-2) for approval of EC. The cost of the proposal Rs. 5,83,62,976 (inclusive of 18% GST).***
3. ***GSI follow the GFR Rules of government of India.***

Agenda 54.1.4: Proposal for carrying out Aerogeophysical surveys over OGP Block-7. [Implementing Agency: GSI]

GSI informed that the objective of the proposal is to generate airborne magnetic and radiometric baseline data, Processing and interpretation of the acquired data, share the data in NGDR for utilizing by all the stakeholders, prepare composite map of aeromagnetic and radiometric map of India and carry out the further follow-up surveys from the data acquired in the Block-7.

GSI conveyed that OGP Block-7 has an area of 56,664 sq.km. with 2,07,768 Line km. and received the administrative approval from Ministry of Mines on 17.01.2023. Accordingly, the tender was floated on GeM portal on 03.02.2023 for engaging PIAs to carry out aerogeophysical surveys.

It is informed that OGP block-7 will cover part of Karnataka, Maharashtra & Goa The survey area is dominated by the Dharwar craton a classic granite-greenstone assemblage with recorded precious metal (Au), Iron ore, Chromite,

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Nickel, Cobalt & PGE, Basemetal, REE mineralization.

It is also informed that technical bids received against the tender for OGP Block-7 from three bidders were evaluated on 12.05.2023 by the Tender Evaluation Committee (TEC) for evaluation of Technical Bids. All the three bidders were technically qualified. The minutes of the TEC (Technical) was approved by DG, GSI on 16.05.2023.The bids of the three qualified bidders for OGP Block-7 were opened on 29.05.2023.

Further, it is also conveyed that the DG, GSI has accorded approval for the recommendations of the TEC (Finance) committee on 31.05.2023 and advised to communicate with Ministry of Mines & NMET, New Delhi, for obtaining the Financial Sanction of INR 35,74,52,623/- (L-1 Bidder) inclusive of 18% GST from the NMET, New Delhi for awarding the contract to the selected Bidder.

Accordingly GSI sought approval for Project with an amount of Rs.35,74,52,623/- inclusive of 18% GST to carry out aerogeophysical surveys over OGP Block-7 by engaging the consortium of M/s McPhar International Pvt. Ltd. Mumbai (Lead Partner) in Consortium with M/s Xcalibur Aviation (Australia) Pty Ltd, Xcalibur Multiphysics Group S.L., Spain and M/s Geovale Services Pvt. Ltd., India with project duration of 27 months for (a) obtaining the statutory permissions from various Government regulatory bodies, (b) Data acquisition, (c) Data processing, integration and interpretation and (d) Submission of final deliverables as per the Tender.

After the detailed deliberation, committee opined that the selection or engagement of PIA does not fall within the purview of the committee. GSI has to follow the due process for selection & engagement of PIA as per GFR of government of India.

The committee agreed for recommendation of OGP Block-7 (56,664 sq.km. with 2, 07,768 Line km) with time duration of 27 months from the date of signing of MoA with the selected bidder as post-facto approval from EC.

Recommendation of TCC:

1. ***The committee agreed for recommendation of OGP Block-7 (56,664 sq.km. with 2,07,768 Line km) with time duration of 27 month and with an amount of Rs.35,74,52,623/-inclusive of 18% GST, from the date of signing of MoA with the selected bidder as post-facto approval from EC.***
2. ***GSI has to follow the due process for their engagement as per GFR of government of India.***

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Agenda 54.1.5: Reconnaissance Survey (G4 Stage) for Graphite in Dindo-Belkurta Basera Block (54.40sq.km.), District: Surguja, Chhattisgarh. [Implementing Agency: DGM Chhattisgarh (M/s. Maheshwari Mining Pvt. Ltd.)]

a) Geologically, the proposed area is mainly occupied by the rocks of western extension of Chhotanagpur Gneissic Complex.The rock types of Chotanagpur Gneissic Complex are granite gneiss, alkali granite, granodiorite, tonalite and migmatites.The supracrustal enclaves within the granitic mass are represented by low to high grade metamorphic lithounits.

b) It has been conveyed that GSI (1991-92& 1995-96) identified discontinuous bands of graphite schists within Oranga Shear zone interbanded with marble, calc silicates, amphibolite, sillimanite and graphite bearing mica schist and recorded one graphite schist body (100mx30m) to the southeast of Revatipur.

c) A team of geologist from MMPL visited the area and identified a consistent zone with graphite mineralization. MMPL informed that Graphites are associated with Schistose Rockand Graphite bearing zone has a strike of around 1km and have a maximum width of 300m.

d) MMPL geologist collected 05 samples from the proposed area. The analytical result of these samples area as follows:
   a. Sample1: FC-3.37 %
   b. Sample 2: FC-2.32 %
   c. Sample 3: FC- 0.83%
   d. Sample 4: FC-0.38 %
   e. Sample 5: FC-1.59 %

e) The proposal was sent to GSI for their comments, in response to this GSI has informed that there is no overlap of proposed block with GSI explored blocks.

f) In view of above, committee agreed to take up G4 Stage exploration in proposed block. The committee also directed not to take trenching work in forest area as per the suggestion of DGM Chhattisgarh.

g) The project will be reviewed after 6 months.

Recommendation of TCC:

The committee recommended the proposal for approval of EC for "Reconnaissance Survey (G4 Stage) for Graphite in Dindo-Belkurta-Basera Block (54.40sq.km.), District: Surguja, Chhattisgarh" with an

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estimated cost of ₹ 104.64 Lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 5A &5B.

Agenda 54.2: Proposal on Financial Assistance for Procurement of Machinery/ Equipment

Agenda 54.2.1: Financial assistance from NMET funds to procure machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Department of Mines &Geology, Bihar]

a) The project for financial assistance from NMET fund to procure machinery / laboratory equipment/ instruments etc. was recommended in 51st TCC meeting and has approved in 29th EC Meeting of NMET with the duration of 12 months.

b) It has been conveyed that the procurement of 5 nos. Handheld GPS, 5 nos. of Brunton Compass, 5 nos. of Geologist Hammer, 2 nos. of Digital Camera and 1 license of GIS software are under process.

c) DMG Bihar, has received the 1st installment advance of Rs. 6,20,000/- for the project and conveyed that the process of procurement of above items will be completed within one or two months.

Recommendation of TCC:

The committee noted the progress of the procurement and suggested to complete the process within the stipulated time period.

Agenda 54.2.2: Financial assistance from NMET funds to procure machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: Director of Mineral Resources, Meghalaya :Shillong]

a) Directorate of Mineral Resources, Meghalaya: Shillong has submitted the proposal for financial assistance from NMET fund for procurement of machineries/ instruments and software to enhance exploration activities with an estimated cost of Rs.2,35,88,000/-(Rupees Two Crores Thirty Five Lakh Eighty Eight Thousand) only.

b) The committee discussed the proposal and opined that the procurement cost of some items are required to be examined afresh. Therefore, suggested to

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c) examine the cost of the item and asked Director of Mineral Resources, Meghalaya to submit the revised proposal in the next TCC meeting.

Recommendation of TCC:

The committee suggested to examine the cost of items afresh and accordingly submit the proposal in the next TCC meeting.

Agenda 54.2.3: Extension of Timeline for Procurement of Ore/Polarizing Microscope. [Implementing Agency: Department of Mines & Geology, Karnataka]

a) Firstly, the project proposal has been discussed in 53rd TCC meeting held on 24th& 25th May, 2023. The committee suggested to submit the road map indicating various stages/steps to be taken along with the time frame for procurement of the approved items in next TCC meeting.

b) Accordingly, DMG Karnataka presented a timeline for the procurement of Ore/Polarizing Microscope upto 20th March, 2024. It has also conveyed that DMG Karnataka had constituted a committee for finalization of specification of ore/polarizing microscope and the selected microscope will cost around Rs. 37 lakhs.

c) DMG Karnataka also informed that at the time of approval of the item, DMG karnataka was eligible to get grant of Rs. 75 lakh and therefore requested to enhance the amount from Rs. 25 lakh to Rs. 37 lakhs.

d) After the detailed deliberation, the committee opined that DMG already finalized the specification for the item therefore suggested to complete the procurement upto February, 2024.

Recommendation of TCC:
The committee recommended the time extension upto february, 2024 with the amount of Rs. 37 Lakh instead of 25 Lakh for approval of EC.

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Agenda 54.3: Review of Ongoing/Completed / Timeline Extension Projects

Agenda 54.3.1: General Exploration (G2) for Manganese Ore in Pimperkunta Block, Bheempur Mandal, District- Adilabad, Telangana. [Implementing Agency: TSMDC]

a) The project was approved in 16thEC meeting of NMET at cost of 157.22 lakhs with time duration of 12 months.

b) TSMDC conveyed that as per the 26th TCC discussion, they have completed the report in G3 stage instead of G2 stage.

c) It has been conveyed that Pimperkunta Block is soil covered with scanty outcrop of siliceous limestone and limestone with interbedded Manganese bands belonging to Goatkur Formation of Penganga Group. General strike of strata is NW-SE with 4°-9° dip towards north east to south west. In southwestern part of the block strike swerves locally to WNW-ESE with moderate dip (7° to 12°) towards SSW.

d) It has informed that two manganiferrous bands viz Western and Eastern bands are present. Western band can be traced for strike length of 625m with average width of 43m and Eastern band for strike length of 600m with 70m average width.Mn Mineralization is characterized by jasper+chert+manganese inter-bands in limestone and shows pinch and swell nature along strike and dip.

e) TSMDC conveyed that Mn ore resource of Pimperkunta block was estimated by area of influence method around positive boreholes. Eastern Mn band had only one positive borehole. Total resource estimated in Eastern band is 5908 Tonnes with 18.05% average Mn grade. Western band had three positive boreholes and its total resources is 53498 tonnes with average Mn grade of 12.62%. Thus total resource estimated in both the band is 59406 Metric Tonnes with 13.16% , where specific gravity is taken as 2.88.

f) TSMDC further conveyed that considering patchy pinch & swell nature low grade Mn zones along strike, heavy core loss in expected Mn ore zone and lack of quality geophysical survey results to trace the manganese bands along strike and dip, further exploration on G-2 stage was not considered and no further exploration work is also suggested.

g) In view of above, committee noted the outcome of project and agreed to submit geological report at G3 Stage exploration.

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Recommendation of TCC:

The committee noted the outcome of project and agreed for submission of geological report at G3 Stage exploration to NMET Secretarait.

Agenda 54.3.2: Reconnaissance Survey (G-4 Stage) for Prospect Evaluation of the sporadic occurrences of Molybdenite, South of Karimnagar (56 N/4), Districts-Siddipet and Karimnagar, Telangana.[Implementing Agency: TSMDC]

a) The project was approved in 16thEC meeting of NMET at cost of 173.17 lakhs with time duration of 12 months.

b) TSMDC conveyed that Molybdenite occurrences are seen as disseminated grains and stringers within granitoids (monzogranite and granodiorite) traversed by quartz and pegmatite veins at places. The occurrence of molybdenite at various locations is very local in nature and restricted to small quartz/ pegmatite veins with no strike continuity.

c) Further, it has been conveyed that 103 nos of bed rock samples collected from different rock units and samples showed Mo values ranging from 1.10ppm to 185.12 ppm. one sample gave value of 185.12ppm. 18 numbers of soil samples were collected and soil samples showed values of <1.0 ppm for Mo; anomalous values for Ag (1.69 ppm to 5.98 ppm); Cu (11.72 ppm to 51.21 ppm), Pb (12.57 ppm to 79.87 ppm) and Zn (26.53 ppm to 145.82 ppm).5 stream sediment samples were also collected from first order stream junctions.5 boreholes were drilled and Core samples did not yield any Mo values of significance.

d) After the detailed deliberation, the committee opined that significant molybdenum values are not found in any samples. However, some anomalous value of silver is found in soil samples. Therefore, committee suggested to submit geological report and sepearte proposal for silver may also be submitted.

Recommendation of TCC:

The committee noted the outcome of project and agreed for submission of geological report to NMET Secretarait.

Agenda 54.3.3: Preliminary exploration (G3) for bauxite in the Garhpat block (1.63 sq. km), District: Lohardaga, Jharkhand [Implementing Agency: CMPDI]

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a) The "Preliminary exploration (G3) for bauxite in the Garhpat block (1.63 sq. km), District: Lohardaga, Jharkhand" was approved in 26th EC meeting with an estimated cost of Rs 0.83 Cr.and time period of 12 months.

b) It has been conveyed that the sanction order has been issued on 20th September,2022. Accordingly, the date of completion for the project is 19th September, 2023.

c) CMPDI informed that in forest clearance for exploration work in forest area has been received on 13th December, 2022.

d) It has also informed that 60% geological mapping is completed and 10 bhs with 165m drilling has also been completed.

e) CMPDI further informed that 100 no. of sample have been sanctioned for analysis with 14 elements and requested to complete 1 borehole analysis (approximately 40 samples) with 34 elements for REE & Trace Elements @Rs. 7731.00 per sample.

f) In view of above, the committee agreed to do analysis of 1 bh. i.e. 40 samples out of 100 samples for analysis of 34 elements by ICPMS.

Recommendation of TCC:

The committee agreed for ICPMS studies (34 Element) of 1 bh (40 samples) for REE & Trace elements out of 100 sanctioned samples.

Agenda 54.3.4: Preliminary exploration (G3) for coal in North of Parbelia, Raniganj Coalfield, District: Purulia, West Bengal. [Implementing Agency: CMPDI]

a) The project "Preliminary exploration (G3) for coal in North of Parbelia, Raniganj Coalfield, District:Purulia, West Bengal" was approved in 24th EC meeting of NMET with an estimated cost of ₹ 2.86 Cr. and timeline of 12 months.

b) CMPDI conveyed that R4 is correctable coal seam in the block which has been considered for resource estimation.The minimum workable thickness considered for resource estimation is 0.9m for underground mining proposition and specific gravity value of GCV i.e. G10 which is 1.61 gm/cc is considered for resource estimation. The resource has been estimated on the assumption that the thicknesses of the seam (10.4 m) intersected in boreholes CMNPB-03 are uniform throughout the area of influence (0.1 sq.km). Total Inferred Resource of 1.67 MT for coal have been estimated in the North of Parbelia Block for seam R4.

c) The committee noted the outcome of project and agreed to submit geological report to NMET secretariat.

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Recommendation of TCC:

The committee noted the outcome of project and agreed to submit geological report to NMET Secretarait.

Agenda 54.3.5: Preliminary exploration (G3) for coal in East of Chuperbhita block, Rajmahal Coalfield, District:Godda, Jharkhand.[Implementing Agency: CMPDI]

a) The project "Preliminary exploration (G3) for coal in East of Chuperbhia block, Rajmahal Coalfield, District: Godda, Jharkhand" was approved in supplementary meeting of 23rdEC meeting of NMET.

b) CMPDI conveyed that drilling work commenced on 05thDecember, 2022. CMPDI has completed 6 bhs. with 2859.70 m and drilling is suspended in remaining 2 Bhs due to objection of villagers from 25.05.2023.

c) Further conveyed that Rigs are standing idle at these 02 borehole sites. Negotiation with the local villagers is under process and hopeful on resuming drilling work shortly.

d) In view of above, committee suggested to resolved the local issues within 15 days. If not possible, the submitted the report with the data generated through 6 bhs. The committee also agreed for time extension upto 6 months.

Recommendation of TCC:

The committee recomended the time extension upto 6 months for submission of geological report to NMET Secretarait.

Agenda 54.3.6: Preliminary exploration (G3) for coal in Gurwani block, Main Basin, Singrauli Coalfield, District: Singrauli, Madhya Pradesh. [Implementing Agency: CMPDI]

a) The project "Preliminary exploration (G3) for coal in Gurwani block, Main Basin, Singrauli Coalfield, District Singrauli, Madhya Pradesh" was approved in supplementary meeting of 23rdEC meeting of NMET.

b) CMPDI conveyed that schedule date of completion for the project is 25.06.2023. CMPDI has completed the drilling and geophysical studies of 3842.50 m. The samples with their advice have been sent to laboratory.

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c) CMPDI also informed the committee that field activities were delayed due to forest clearance. It was received on 21/03/2023. Therefore, extension of 6 months required for completion of the project.

d) In view of above, the committee agreed for the time extension of 6 months.

Recommendation of TCC:
The committee recomended the time extension upto 6 months (upto 25/12/2023) for submission of geological report to NMET Secretarait.

Agenda 54.3.7: Preliminary Exploration (G-3 stage) for Limestone in Periyakurichi Block (1.88 sq. km) in Ariyalur District, Tamil Nadu.[Implementing Agency: MECL]

Agenda 54.3.8: Preliminary Exploration (G-3 stage) for Phosphorite in Pahadi Kalan Gora Kalan Block in Lalitpur District, Uttar Pradesh. [Implementing Agency: MECL]

Agenda 54.3.9: Reconnaissance Survey (G-4) for Emerald in Rajgarh Block (115.00 sq. km) in Ajmer District, Rajasthan.[Implementing Agency: MECL]

Agenda 54.3.7 to 54.3.9 will be discussed in next TCC meeting

Agenda 54.3.10: Reconnaissance Survey for PGE, Nickel, Cobalt & Gold in Rangapura Block in Hassan District, Karnataka. [Implementing Agency: MECL]

a) The project "Reconnaissance Survey for PGE, Nickel, Cobalt & Gold in Rangapura Block in Hassan District, Karnataka" was recommended in 36th meeting of TCC held on 23rd and 24th December, 2021 and approved in 23rd meeting of EC held on 11th March 2022 with an estimated cost of ₹ 2.58 Cr with 12 month of time duration.

b) MECL conveyed that geological mapping as well as trenching work has been completed and 5 potential areas have been identified.

c) MECL presented the outcome of trench samples are as follows:

Trench No.	PGE ASSAY (ppm)				Ni & Cr ASSAY (%)			
	Pd		Pt		Ni		Cr	
	Thick (m)	Grade	Thick (m)	Grade	Thick (m)	Grade	Thick (m)	Grade
TR-1	25.00	1.76	-	-	-	-	-	-

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TR-2	22.5	2.78	-	-	-		-	-
TR-3	7.00	1.98	-	-	-	-	-	-
	1.70	0.98	1.70	0.18	-	-	-	-
TR-4	10.20	0.91	1.00	0.14	-	-	-	-
			1.20	0.29	-	-	-	-
			0.70	0.16	-	-	-	-
TR-5	-	-	-	-	7.00	0.37	7.00	0.63
TR-6	13.00	0.91	0.70	0.21	-	-	-	-
TR-7	19.10	0.99	0.70	0.17	-	-	-	-
			0.80	0.19	-	-	-	-
			0.80	0.14	-	-	-	-
			0.70	0.16	-	-	-	-
			1.00	0.18	-	-	-	-
TR-8	6.00	1.04	-	-	-	-	-	-
	0.50	0.91	-	-	-	-	-	-
	3.00	1.22	-	-	-	-	-	-
TR-9	10.00	1.04	-	-	5.00	0.39	4.00 (3.00)	0.97 (1.04)
			-	-	1.00	0.32	1.00	0.72
TR-10	-	-	-	-	11.00	0.40	11.00	0.63
TR-11	-	-	-	-	12.90	0.41	12.90	0.75

And also sought time extension upto October, 2023

d) In view of above, The committee suggested to drilled 7 bhs in intersection of 30 m vertical depth as 1 bh in Trench T-1 & T-2, 1bh in T-3, 1 bh in T-4, 1 bh in T-5, 1 bh in T-10 & T-11, 1 bh in T-6 & T-7 and 1 bh in T-8. And agreed for time extension of 7 months i.e. upto 24th October, 2023

Recommendation of TCC:

The committee review the project and suggested to drilled 7 bhs at 30 m vertical intersection and recommended the time extension of 7 months i.e. 24th October, 2023.

Agenda 54.3.11: Reconnaissance Survey for Copper in Bagwari-Sukwari Block (141.75 sq. km) in Sidhi District, Madhya Pradesh. [Implementing Agency: MECL]

a) The project was recommended in 35th meeting of TCC held on 29th & 30th November, 2021 and approved in 22nd meeting of EC held on 22nd Dec 2021.

b) MECL conveyed that 5 no of trenches were carried-out, which have given positive outcome. Out of 35 no of trench samples, 24 no of samples has analysed Cu values >1000ppm (Range 1068-6576 ppm). Accordingly, 7 no of

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exploratory BH were carried out at all 5 trench locations (2 BH each at T2 & T3 and 1 BH each at T1, T4 & T5).

c) Further, it has been conveyed that Out of 7 BH, Drilling in 5BH (MSB-01 to MSB-05) covering Trench T3,T2 & T5 is completed. All 5 boreholes has encountered Cu mineralisation. Drilling in 6th borehole (MSB-06) is under progress, while, 7th borehole is falling in forest area, for which MECL has applied for forest permission.

d) MECL also informed that due to delay in execution of trenches due to temporary issues in the area and due to forest area constraints, work is delayed and MECL got time extension by the 51st TCC up to 6th July 2023. But, due to formational and forest constraint, drill progress is getting slowed and MECL again sought time extension of 4 months i.e. upto 6th November, 2023.

e) After the detailed deliberation, committee opined that is showing fair prospect for Cu mineralisation and the block can be upgraded to G3 level, therefore recommended the time extension of 4 months for submission of Geological Report.

Recommendation of TCC:
The committee recomended the time extension upto 4 months i.e. 6th November, 2023 for submission of geological report to NMET Secretarait.

Agenda 54.3.12: Reconnaissance Survey for Base metals & REE in Temi-Tarku-Damthong Block in East Sikkim District, Sikkim.[Implementing Agency: MECL]

a) The project "Reconnaissance Survey for Base metals & REE in Temi-Tarku-Damthong Block in East Sikkim District, Sikkim"was approved in 23rd EC meeting with an extimated cost of Rs.4.52 Cr. With the time duration of 14 months.

b) It has been conveyed that the sanction order has been issued on 25th March, 2022. Accordingly, the date of completion for the project is 24th May, 2023.

c) MECL conveyed that The NOC issued from DMG, Sikkim on 02nd February, 2023 after getting permission from Forest and Chief Minister Office. Accordingly, execution of the project start on 03rd February, 2023.Further MECL informed that geologically mapping and sampling works are under process. Therefore, MECL

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request to the committee to consider timeline extension of 10 months 07 days i.e.upto 31st March, 2024.

d) In view of above, committee agreed to recommend 10 months time extension as there is 10 months delayed in receiving NoC from DGM Sikkim.

Recommendation of TCC:

The committee recomended the time extension upto 10 months i.e. 24th March, 2024 for submission of geological report to NMET Secretarait.

Agenda 54.3.13: Transportation cost and camp setting proposed for Neelam Khan Block, Kishtwar, J&K- for approval. [Implementing Agency: MECL]

a) The project was approved/ratified in 30th EC meeting for phase -I with an estimated cost of Rs. 4.26 Cr. With time duration of 36 month.
b) MECL requested to consider the cost of Rs. 18,76,556.00/- against transportation and camp setting cost of Phase-I
c) The committee suggested to initiate the exploration work in the block and after checking the ground condition the proposal may be submitted in next TCC if required.

Recommendation of TCC:

The committee suggested to initiate the exploration work in the block and after checking the ground condition the proposal may be submitted in next TCC if required

Agenda 54.3.14: Shifting of proposed boreholes (PBH-2) of Piparhat- Kubri Block, Satna, Madhya Pradesh. [Implementing Agency: MECL]

a) The project was recommended in 48th meeting of TCC held on 22nd & 23rd December- 2022 and approved in 27th meeting of EC held on 10th Jan 2023. OM has been issued with effective date of 03rd April, 2023.

b) MECL conveyed that out of five approved boreholes, four boreholes has been drilled with intersection of limestone upto 40m of depth.Bauxite and fireclay has not been intersected in the four boreholes drilled so far. However, Laterite was intersected in MPK-04 for 40 cm.

c) MECL informed the committee that 5th Borehole at PBH-2which is targeted for intersection of lateritic bauxite, is falling in forest area. it was observed that the

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entire lateritic bauxite horizon has been exploited from this area by way of pits. MECL requests the Committee to approve the shifting of the 5th borehole outside the forest boundary.

d) In view of above, the committee agreed for shifting of PBH-2 in 235m east of proposed PBH-2and recommended drilling of stratigraphic borehole at PBH-2. Therefore, committee also approved 30m additional drilling at PBH-02. Further, committee suggested that in case no. of sample increases due to additional drilling, Then approval may be sought for the additional sample in the next TCC meeting.

Recommendation of TCC:
The committee recomended the shifting of PBH-2 in 235m east of proposed PBH-2 and recommended to drill stratigraphic borehole at PBH-2. with 30m additional drilling of estimated cost of ₹2,03,250/-.

Agenda 54.3.15: Shifting of proposed boreholes (PBH-5) of Bharusari North Block, Hanumangarh, Rajasthan. [Implementing Agency: MECL]

a) The project was approved in 29th EC meeting held on 31st March, 2023 with an estimated cost of ₹ 7.40 Cr.

b) It has been conveyed that the date of completion of the project will be 16th October, 2023.

c) MECL further conveyed that borehole No MBP-14 (PBH-05) commenced on 05.05.2023 and is presently drilled up to the Depth of 281.00 m Depth within quaternary and tertiary formations. The borehole hit the artesian zone at 281.00 m. A period of one and half months has been spent in the borehole due to artesian water flow without any success. The surrounding area of the borehole is also very much swampy and it has been told by villagers that the area will remains under water during rest of the rainy season as it is the old course of Ghaggar River.

d) In view of above, the committee opined that as the time schedule is very tight and the GR is needed to be submitted within 6 months and shifting of borehole needs timeline extension. Therefore, the committee suggested to close the borehole no. MBP-14 (PBH-05) at the depth of 281.00 m.

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Recommendation of TCC:

The committee recommended for the closure of MBP-14 (PBH-05) at the depth of 281.00 m and suggested to submit the geological report within time.

Agenda 54.3.16: Reconnaissance Survey (G4) for Kyanite in Kallahalli Kyanite block, District- Mysore, Karnataka. [Implementing Agency: KIOCL]

Agenda 54.3.17: Preliminary exploration (G3) for limestone in Itga blocks, District: Kalaburagi, Karnataka. [Implementing Agency: DMG Karnataka]

Agenda 54.3.16 to 54.3.17 will be discussed in next TCC meeting

Agenda 54.4: Additional Agenda

Agenda 54.4.1: Road Map for Procurement of 11 Number of Gravimeters, Magnetometers and DGPS Units. [Implementing Agency: GSI]

a) The requirement of timeline extension of one year for procurement 11 sets geophysical instruments (gravimeters, magnetometers, DGPS) was presented in the 53rd TCC-NMET meeting, and The committee suggested to submit the road map indicating various stages/steps to be taken along with time frame for procurement of the approved items in next meeting.

b) Accordingly, GSI has presented the road map of the procurement of 11 sets geophysical instruments (gravimeters, magnetometers, DGPS). GSI conveyed that approval accorded for procurement of 11 Nos. of magnetometers through the tender dated on 02.06.2023 and letter of acceptance issued on 05/06/2023. The submission of last date of PBG and SLA is 26.06.2023. Accordingly, procurement order will be issued after signing of SLA i.e. after 26.06.2023.Delivery period is 90 days from date of Procurement order. GSI further conveyed that the procurement of 11 Magnetometer will be completed by 10.11.2023.For Gravimeter; first bid was cancelled on 20.04.2023 due to non compliance of MII Clause. And MII exemption obtained from MoM on 05.06.2023. GSI informed that the procurement process of gravimeters will be completed by 14.07.2024. For DGPS, first bid was cancelled on 20.04.2023 and again Bid floated on GeM , dated 04.05.2023 and the Bid cycle after extension ends on 23.07.2023.It has been conveyed that procurement process will be completed by 31.12.2023.

c) Further, GSI has informed that GSI has received another sanction of 24 sets of Gravimeter, Magnetometer and DGPS. It was also informed that the tenders have been floated for 35 nos(11 +24) Gravimeters, 35nos DGPS (11+24) and 24 nos of Magnetometers. GSI informed that the procurement process of 35 nos of gravimeters (11 nos. + 24nos.) will be completed by 14.07.2024 , 35 nos. of

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DGPS (11 nos.+ 24nos.) will be completed by 13.12.2023 and 24 nos. of magnetometer will be completed by 13.12.2023.

d) In view of above, GSI sought time extension. upto 14.07.2024 for the procurement of 11 sets geophysical instruments (gravimeters, magnetometers, DGPS) and 24 sets each of Magnetometer, Gravimeter and DGPS.

e) After the detailed deliberation, committee agreed for the time extension of upto 14.07.2024.

Recommendation of TCC:
The committee recommended the time extension upto 14.07.2024 for the procurement of 11 sets geophysical instruments (gravimeters, magnetometers, DGPS) and 24 sets each of Magnetometer, Gravimeter and DGPS.

Agenda 54.4.2: Request for the approval of additional cost against Lakhasar East and Bharusari North block (Potash investigation).[Implementing Agency: MECL]

a) The project "Preliminary exploration (G3) for Potash in Lakhasar East block, Lakhasar-Sub Basin, North Western Part of Rajasthan, District: Bikaner, Rajasthan" was approved in 28th EC with an estimated cost of Rs. 15.51 Cr. With time duration of 18 month.

b) The project "Preliminary Exploration (G3 stage) for Potash in Bharusari North Block (10 sq. km.), Northwestern Part of Rajasthan, District: Hanumangarh, Rajasthan." was approved in 28th EC with an estimated cost of Rs. 739.70 Lakh and timeline of less than 6 months.

c) MECL conveyed that a review meeting on Potash exploration in Nagaur-Ganganagar basin, Rajasthan was held on *21/06/2023* which was chaired by Secretary, MoM, GoI along with Addl. Secretary, MoM, GoI and Director, Ministry of Mines. After the detail discussion regarding the potash exploration, it was directed to work out the respective proportions of Sylvite and polyhalite in the deposits in ongoing projects which will be facilitate to take decision on establishment of pilot plant for extraction of potash minerals. To achieve this objective, following has been directed:

a. Precise geophysical interpretation on presence of mineral band in all the borehole.
b. Primary samples shall be drawn in very small intervals, i.e., 50 cm to avoid dilution of mineral phases.

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c. All the primary samples shall be subjected to XRD study to identify the dominant mineral phase of that particular sample.

d) In view of above, MECL sought approval of additional Rs.2,80,94,797/- in Lakhasar East block and approve Rs.2,05,72,698/- against Bharusari North Block. The details are annexed at annexure-7&8 respectively.

e) After the detailed deliberation, the committee opined that result generated from XRD is more appropriate that the geophysical logging. However, due to time constrain, the committee agreed for the additional amount of Rs.2,80,94,797/- in Lakhasar East block and approve Rs.2,05,72,698/- against Bharusari North Blockas per the work assigned in annexure-7&8 respectively. Further, committee also suggested to review the data of 4 bhs with geophysical logging and sample analysis in Lakshasar East Block.

Recommendation of TCC:

The committee recommended the additional quantum of work with additional cost of Rs.2,80,94,797/- in Lakhasar East block and approve Rs.2,05,72,698/-against Bharusari North Block as per annexure-7&-8 respectively for approval of EC.

The meeting ended with vote of thanks to the chair.

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Minutes of the 54th Technical-cum-Cost Committee (TCC) meeting held on 22nd & 23rd June, 2023 through video conferencing at New Delhi

S.NO	Name/ Designation	Status	Remarks
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	Chairman, TCC	Attended Physically
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), IBM	Member	Through VC
3	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	Member	Through VC
4	Dr. S.K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	Member	Through VC
5	Shri S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	Member	Not Attended
6	Dr. Anjani Kumar, Dy. General Manager (Exploration) & HoD Planning (Retd.), MECL	Member	Through VC
7	Shri Naeem Ahmed, General Manager (Exploration) (Retd.), CMPDI Ltd.	Member	Not Attended
8	Shri K.L. Mundra, Head-RMRE, AMD, Hyderabad	Member	Through VC
9	Shri Vivek Kumar Sharma, Director, NMET, Ministry of Mines	Member	Not Attended
10	Shri Vinay Pal, Cost Accounts Officer, GSI, Nagpur	Member	Through VC
11	Shri P.K. Maharana, AGM (Finance), NALCO, Bhubaneswar	Member	Not Attended
12	Shri Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Member	Through VC
13	Shri. Suresh Chander, Director, GSI, WR, Jaipur.	Member Secretary	Through VC

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Annexure-1

List of participants attended 54th Technical-cum-cost Committee (TCC) meeting of NMET Dated: 22nd& 23rd June, 2023, through video conferencing at New Delhi

S.No.	Name/Designation	Email ID	Contact No	Organization
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	s.ravi1@gsi.gov.in	9441138834	Chairman, TCC
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), IBM	sinhark57@rediffmail.com	9421777637	Member TCC
3	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	hemrajgsi@gmail.com	7477042176	Member TCC
4	Dr.S.K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	s.kulshrestha@gsi.gov.in	9413330658	Member TCC
5	Dr. Anjani Kumar, Dy. General Manager (Exploration) & HoD Planning (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member TCC
6	Shri K.L. Mundra, Head-RMRE, AMD, Hyderabad	headrmre.amd@gov.in	9414785663	Member TCC
7	Shri Vinay Pal, Cost Accounts Officer, GSI, Nagpur	vinay.pal@gsi.gov.in	8527368161	Member TCC
8	Shri Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Ravi_g@hindustancopper.com	9433274328	Member TCC
9	Shri.Suresh Chander, Director (G), GSI, WR, Jaipur.	suresh.chander@gsi.gov.in	9493860963	Member Secretary
10	Shri P.Ravindran,DGM (Exploration)	gm.exploration.@mecl.co.in	7907649392	MECL
11	Shri Swarup Dhara, Manager (Geology)	swarupdhara@gmail.com	9630307282	MECL
12	Shri S.L. Patrick, Director, DGM Uttarakhand	dir.ukdgm@gmail.com	8192802321	DGM Uttarakhand
13	Shri Shiva kumar Asst.GM (ME)	bmed@kioclIta.in	9148743807	KIOCL
14	Shri Debkumar Bhattacharyya, DDG & HoD RSAS, GSI	ddggp.rsas@gsi.gov.in	9830031059	GSI
15	Dr. Shailendra Singh, DDG, GSI	shailendra.singh@gsi.gov.in	9450093216	GSI

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16	Shri P.R.Rao, Director, GSI	p.rao@gsi.gov.in	9292252894	GSI
17	Shri. D.S. Jeere, Director, GSI	-	9423400302	GSI
18	Shri H. Rajaram, Director, GSI	-	-	GSI
19	Shri. S.K. Kankane, Joint Director, DGM Chhattisgarh	dgm.cg@gov.in	9826753151	DGM Chhattisgarh
20	Representative from Meghalaya	dmrdirector@gmail.com;	-	-
21	Shri Saswat subedit Geologist,MMPL	saswat.@maheshware.in	7978190515	Maheshwari Mining Pvt.Ltd
22	Shri Tufan bhowmikGeologist,MMPL	tufan.bhowmik@mhashware.in	7602994286	Maheshware Mining Pvt.Ltd
23	Shri H.P. Harish, Deputy Director (Plan)	dir-mines@karnataka.gov.in	9611951313	DMG,Karnataka
24	Shri S.K. Dutta, Advisor, DGM, Bihar	advisorbsmc2023@gmail.com	9430906082	DGM,Bihar
25	Shri R.P. Singh, Manager (Geology)	gm.exploration.cmpdil@gmail.com	8987789047	CMPDI
26	Smt Ujjwala Sharma Senior Geologist	nmet.mines@gov.in	8957806004	NMET

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ANNEXURE-2A

COST ESTIMATE FOR RECONNAISSANCE SURVEY (G-4) FOR PHOSPHORITE IN KATHYUR BLOCK DISTRICT: DEHRADUN, UTTARAKHAND
Total Area - 9.00 Sq Km; Completion Time - 8 Months

S. N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Rates for exploration in North East States and Hilly Terrain of Himalaya (3.35 times higher than the normal SoC rate for filed activities) as per Para 5 of NMET SoC	Estimated Cost of the Proposal for FY 23-24		Remarks
			SoC-Item - Sl No.	Rates as per SoC		Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**							
1	**Mapping (1:10,000), sampling & report writing**							
a	Charges for one Geologist per day at HQ for monitoring, data processing etc.	day	1.3	9,000	9,000	**30**	2,70,000	
b	Charges for Geologist per day at field for mapping, channel sampling and logging	day	1.3	11,000	36,850	**60**	22,11,000	

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c	Labour Charges(4 Nos) for Geologist;	day	5.7	494	1,655	**240**	3,97,176	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 (1 party)	one sample r per day	1.5.2	5,100	17,085	**15**	2,56,275	75 BRS+30 Trench+11 check samples
e	Labour Charges (4 Nos)for Sampling Work;	day	5.7	494	1,655	**60**	99,294	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Total - A						**32,33,745**	
B	**EXCAVATION**							
1	Trenching	per Cu.m	2.1.1	3,330	11,156	**50**	5,57,775	
	Total - B						**5,57,775**	
	Sub Total (A to B)						**37,91,520**	
C	**LABORATORY STUDIES**							

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1	**Chemical Analysis**							
i)	**Primary samples**							
	a. For 6 radicals i.e. P2O5, SiO2, Al2O3, Fe2O3, MgO and LOI	Nos	4.1.3	9,805	9,805	**105**	10,29,525	Analysis of phosphate
	Check samples: External(10%)							
	a. For 6 radicals i.e. P2O5, SiO2, Al2O3, Fe2O3, MgO and LOI	Nos	4.1.3	9,805	9,805	**11**	1,07,855	
ii)	**Primary samples (Trench)**							
	Trace element study by ICP-MS (34 elements) Ti, V, Cr, Ni, Ga, Cr, Co, Ba, Sr, Rb, Zr, Y, Nb, Ce, Nd, Ta Cd, Sb, Sc, As, Th, U & REE	Nos	4.1.14	7,731	7,731	**10**	77,310	
	XRD study	Nos	4.5.1	4,000	4,000	**5**	20,000	
iii)	**Petrographic Study**							
i	Preparation of thin section	Nos	4.3.1	2,353	2,353	**5**	11,765	
ii	Study of Thin Section	Nos	4.3.4	4,232	4,232	**5**	21,160	
	TOTAL - C						**12,67,615**	

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D	Sub Total (A to C)						50,59,135	
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		1	2,52,957	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. 5 Lakhs whichever is lower		1	1,01,183	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	Peer review Charges		30th EC				30,000	
H	Total Estimated Cost without GST						54,43,274	

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I	**Provision for GST (18% of GST)**	%					**9,79,789**	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**						**64,23,064**	
				or Say Rs. In Lakhs			***64.23***	
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

Timeline/work plan for Reconnaissance Survey (G-4) for Phosphorite in Kathyur Block District: Dehradun, Uttarakhand

Sl. No.	Activities	Unit	MONTHS								
			1	2	3	4	5	Review	6	7	8
1	Camp Mobilisation	Month	■								
2	Geologist Days-Field	Day	■	■	■	■	■				
3	Trenching	Cu.M		■	■	■					
4	Laboratory Studies	Nos.			■	■	■		■		
5	Sampling Party	day			■	■	■				
6	Geologist days in HQ	day							■	■	■
7	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 – 3A

COST ESTIMATE FOR RECONNAISSANCE EXPLORATION (G-4 LEVEL) OF CHENNAR PHOSPORITE BLOCK 50 SQKM (BLOCK ID: KIOCL_39_KA_CPB), KARNATAKA

Total Area : 50 SqKm; **Completion time : 08 Months**

Sl	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost			Remarks
			SOC Item No	Rates as per SOC	Qty	Amount (Rs)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)*(f)		
1	**LARGE SCALE GEOLOGICAL MAPPING WORKS (1:12,500 scale :50sq km)**							
1.1	Geologist Party days - Field	days	1.2	11,000	60	6,60,000	**11,91,720**	
1.2	Geologist Party days - HQ		1.2	9,000	30	2,70,000		
1.3	Labour charges	days	5.7	431	120	51,720		Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**PITTING WORKS**							
2.1	Pitting works	cum	2.1.2	3,800	30	1,14,000		
3	**SURVEY WORKS**							

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3.1	Fixation of borehole and determination of Co-ordinates and RL by DGPS	days	1.6.2	19,200	5	96,000		After Review & LSM & analytical results
4	**DRILLING**							
4.1	Surface Drilling (01 rig - Soft Rock)	m.	2.2.1.4 a	6,775	150	10,16,250	**18,76,010**	Copy of approved MoC rate is required
4.2	Transportation of drill rigs (01 unit x 500 km one way)	km	2.2.8	36	1000	36,000		Certification in this regard is required
4.3	Drilling camp setting cost	per drill	2.2.9a	2,50,000	1	2,50,000		
4.4	Monthly accomadation charges for drilling camp	monthly basis	2.2.9	50,000	2	1,00,000		
4.5	Drilling camp winding cost	per drill	2.2.9b	2,50,000	1	2,50,000		
4.6	Approach road making for Flat terrain	Km	2.2.10a	22,020	3	66,060		Road Making will be considered as per the requirement but not more than the provided kms in the cost sheet. Road Making Charges will be reimbursed accordingly.
4.7	Construction of Concrete pillar (12"X 12"X30")	per borehole	2.2.7a	2,000	5	10,000		
4.8	Core preservation	m	5.3	1,590	30	47,700		This amount will be reimbursed after successful delivery of the cores to the concerned core libraries/authorities

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4.9	Land/Crop compensation (in case the BH falls in agriculture land)		per borehole	5.6	20,000	5	1,00,000		Amount will be reimburse as per actuals or max. Rs. 20000 per BH after certification from the local authorities
5	**LABORATORY STUDIES**								
5.1	Sample processing works	Sampler charges	days	1.5.2	5,100	30	1,53,000	**2,04,720**	(50BRS+30Pit+130Core+36 Check= 266Total)
5.2		Labour charges	days	5.7	431	120	51,720		Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
5.3	Sample analysis - Phosphate rock	Primary	per sample	4.1.3	9,805	210	20,59,050	**22,64,955**	(50BRS+30Pit+150Core= 230Total)
5.4		Internal Check (5%)		4.1.3	9,805		0		
5.5		External Check (10%)		4.1.3	9,805	21	2,05,905		
5.7	Sample for analysis of 34 radials for REE & Uranium		per sample	4.1.14	7,731	10	77,310	**77,310**	
5.8	Petro studies	Preparation of Standard Thin section	nos	4.3.1	2,353	10	23,530	**65,850**	

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5.9		Complete Petrological Report of rock sample	nos	4.3.4	4,232	10	42,320		
6	**Sub Total**						**56,80,565**	**56,80,565**	
7	Peer review of report		30th EC Meeting		**30,000**	**1**	30,000	**30,000**	
8	Preparation of Exploration Project Proposal		lumpsum	5.1	2% of approved project cost subject to a maximum of ₹5 lakh	5 Hard copies along with Soft copy	**1,13,611**	**1,13,611**	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.
9	Exploration Report (5% of (Sl 9 + Sl 10))			5.2(ii)	For the projects having cost exceding Rs 50 lakhs but less than Rs 150 lakhs : A Minimum of Rs.2.5 lakhs or 5% of the value of	5 Hard copies along with Soft copy	**2,84,028**	**2,84,028**	EA has to submit the final Geological Report in Hard Copies (5 nos) and the soft copy to NMET.

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				work whicheve r is more				
10	**Total Estimated Cost without GST**					**61,08,20 5**	**61,08,20 5**	
11	**Provision for GST @ 18%**					**10,99,47 7**	**10,99,47 7**	GST will be reimbursed as per actual and as per notified prescribed rate
12	**Total Estimated Cost inclusive GST**					**72,07,68 1**	**72,07,68 1**	
				or Say Rs. in Lakh			**72.08**	

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.

2. In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.

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ANNEXURE - 3B

Time Schedule For Reconnaissance survey (G4) for Phosphorite, Baryte & REE in Chennar Block (50 sq.km.) Kalburgi dist, Karnataka

Sl	Details of Works		Duration in months	1	2	3		4	5	6	7	8
1	**CAMP SETTING**		**01**									
2	**LARGE SCALE GEOLOGICAL MAPPING** (Includes 50 sq km of LSM +50 nos of BRS +30 cum Trenching)		**04**									
	2.1	Geologist Party days (02 Party)										
	2.2	Laboratory Works	**03**									
3	**Surface Drilling**		**5**									
	3.1	Preparatory works for drilling (Approach road making)	**1**									
	3.2	Drilling works (01 rig - 150m)										
	3.3	Geologist Party days (01 Party)										
	3.4	Laboratory Works	**04**									
4	**Survey Works**											
	4.1	Survey party days for DGPS survey of Boreholes 5 pts(05BHs +01 Base point) - 01 party	05 days									

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5	Camp Winding	01											
6	Preparation of Reports and Maps	01											

ANNEXURE – 4A

Cost Estimate for Reconnaissance survey (G4) for Phosphorite, Baryte & REE in Hulkul Block Kalburgi dist,Karnataka

Total Area : 120 Sq km **Completion Time : 12 Months**

Sl	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost			Remarks
			SOC Item No	Rates as per SOC	Qty	Amount (Rs)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)*(f)		
1	**LARGE SCALE GEOLOGICAL MAPPING WORKS (1:12,500 scale :120sq km)**							
1.1	Geologist Party days - Field	days	1.2b	11,000	120	13,20,000	**22,49,440**	
1.2	Geologist Party days - HQ		1.2a	9,000	60	5,40,000		
1.3	Labour charges	days	5.7	431	240	1,03,440		Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**PITTING WORKS**							

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2.1	Pitting works	cum	2.1.2	3,800	50	1,90,000		
	SURVEY WORKS							
3.1	Fixation of borehole and determination of Co-ordinates and RL by DGPS	days	16.2	19,200	5	96,000		
4	**DRILLING**							
4.1	Surface Drilling (01 rig - Soft Rock)	m.	2.2.1. 4a	6,775	150	10,16,250	**18,76,010**	Copy of approved MoC rate is required
4.2	Transportation of drill rigs (01 unit x 500 km one way)	km	2.2.8	36	1000	36,000		Certification in this regard is required
4.3	Drilling camp setting cost	per drill	2.2.9 a	2,50,000	1	2,50,000		
4.4	Monthly accomadation charges for drilling camp	monthly basis	2.2.9	50,000	2	1,00,000		
4.5	Drilling camp winding cost	per drill	2.2.9 b	2,50,000	1	2,50,000		
4.6	Approach road making for Flat terrain	Km	2.2.1 0a	22,020	3	66,060		Road Making will be considered as per the requirement but not more than the provided kms in the cost sheet. Road Making Charges will be reimbursed accordingly.
4.7	Construction of Concrete pillar (12"X 12"X30")	per borehole	2.2.7 a	2,000	5	10,000		

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4.8	Drill Core preservation		m	5.3	1,590	30	47,700		This amount will be reimbursed after successful delivery of the cores to the concerned core libraries/authorities
4.9	Land/Crop compensation (in case the BH falls in agriculture land)		per borehole	5.6	20,000	5	1,00,000		Amount will be reimburse as per actuals or max. Rs. 20000 per BH after certification from the local authorities
5	**LABORATORY STUDIES**								
5.1	Sample processing works	Sampler charges	days	1.5.2	5,100	40	2,04,000	**2,72,960**	(100BRS+50Pit+130 Core+28 Check= 346Total)
5.2		Labour charges	days	5.7	431	160	68,960		Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
5.3	Sample analysis - Phosphate rock	Primary	per sample	4.1.3	9,805	280	27,45,400	**30,19,940**	(100BRS+50Pit+150 Core= 300Total)
5.4		External Check (10%)		4.1.3	9,805	28	2,74,540		
5.7	Sample for analysis of 34 radials for REE & uranium		per sample	4.1.14	7,731	10	77,310	**77,310**	

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5.8	Petro studies	Preparation of Standard Thin section	nos	4.3.1	2,353	10	23,530	**65,850**	
5.9		Complete Petrological Report of rock sample	nos	4.3.4	4,232	10	42,320		
6	**Sub Total**						**75,61,510**	**75,61,510**	
	Peer review of report		lumpsum		**30,000**	**1**	30,000	**30,000**	
	Preparation of Exploration Project Proposal		lumpsum		2% of approved project cost subject to a maximum of ₹5 lakh	5 Hard copies along with Soft copy	**151230**	**1,51,230**	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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	Exploration Report (5% of (Sl 9 + Sl 10))			For the projects having cost exceding Rs 50 lakhs but less than Rs 150 lakhs : A Minimum of Rs.2.5 lakhs or 5% of the value of work whichever is more	5 Hard copies along with Soft copy	**3,78,076**	**3,78,076**	EA has to submit the final Geological Report in Hard Copies (5 nos) and the soft copy to NMET.
	Total Estimated Cost without GST					**81,20,816**	**81,20,816**	
	Provision for GST @ 18%					**14,61,747**	**14,61,747**	GST will be reimbursed as per actual and as per notified prescribed rate
	Total Estimated Cost inclusive GST					**95,82,563**	**95,82,563**	
				or Say Rs. in Lakh			**95.83**	

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Note- **1.**

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.**

2. **In case of execution of the project by EA on its own, a Certificate regarding non outsourcing of any component/project is required.**

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ANNEXURE – 4B

TIME SCHEDULE For Reconnaissance survey (G4) for Phosphorite, Baryte & REE in Hulkul Block Kalburgi dist,Karnataka

Sl	Details of Works	Duration in months	1	2	3	4	5	6	7	8		9	10	11	12
1	**CAMP SETTING**	01													
2	**LARGE SCALE GEOLOGICAL MAPPING** (Includes 120 sq km of LSM +100 nos of BRS +50 cum Trenching)	04													
	2.1 Geologist Party days (02 Party)														
	2.2 Laboratory Works	03													
3	**Surface Drilling**	5													
	3.1 Preparatory works for drilling (Approach road making)	1													
	3.2 Drilling works (01 rig - 150m)														
	3.4 Laboratory Works	04													
4	**Survey Works**														
	4.1 Survey party days for DGPS survey of Boreholes 5 pts(05BHs +01 Base point) - 01 party	05 days													
5	**Camp Winding**	01													
6	**Preparation of Reports and Maps**	01													

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ANNEXURE 5A

Cost Estimated For Reconnaissance Survey (G-4 Stage) For Graphite in Dindo-Belkurta-Basera Block District: Surguja, Chhattisgarh.

Total Area : 54.40sq.km **Completion Time : 12 months**

Sl. Nos.	Item of work	Unit	Rates as per NMET SoC		Estimated Cost		Remarks
			SoC-Item-Sl No	Rates as per SoC	Quantity	Total	
1	**Geological Mapping (on 1:12,500)**		**(54.4 sq km)**				
a	Charges for Geologist in field (without labourer)	per day per Geologist	1.2.b	11,000	120	13,20,000	
b	Charges for Geologist at Headquaters	per day per Geologist	1.2.a	9,000	60	5,40,000	
c	Labour Charges for Geological Work	per day	5.7	477	240	1,14,480	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
2	**Land /Crop compensation**	**per borehole**	**5.6**	**20,000**	**5**	**1,00,000**	Amount will be reimburse as per actuals or max. Rs. 20000 per BH after certification from the local authorities
3	**Geophysical survey(SP method)**		**(3 L.km)**				
a	Charge for SP survey	per L.km	3.3a	29,600	3	88,800	
4	**Survey Work**						

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a	Surveyor Charges	per day	1.6.1a	8,300	10	83,000	
b	Labour(4nos) charges for survey work	per day	5.7	477	40	19,080	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. - whichever is higher
5	**Drilling Work**						
a	Trenching	per cu m	2.1.1	3,330	100	3,33,000	
b	Drilling	per m	2.2.1.4a	11,500	300	34,50,000	
c	Borehole pillaring (construction of concrete pillar) 12 inches x12 inches x 30 inches	per borehole	2.2.7a	2,000	5	10,000	
d	Transportation of Drill Rig and truck(to and from Headquarter s or Previous drill site)	per km	2.2.8	36	480	17,280	Certification in this regard is required
e	Drilling camp setting cost	per drill	2.2.9a	2,50,000	1	2,50,000	
f	Drilling camp winding cost	per drill	2.2.9a	2,50,000	1	2,50,000	
g	Monthly accommodation charges for drilling camp	per month	2.2.9	50,000	2	1,00,000	

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h	Approach road making to drill site	per km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement but not more than the provided kms in the cost sheet. Road Making Charges will be reimbursed accordingly.
6	**Laboratory Studies**						
a	Proximate analysis for graphite	per sample	4.1.16	3,000	300	9,00,000	BRS-100+TRENCH-50+CORE SAMPLE-150
b	Whole rock analysis (XRF method-V2 O5)	per sample	4.1.15a	4,200	50	2,10,000	
c	34 element by ICPMS	per sample	4.1.14	7,731	10	77,310	
7	**Petrographic studies**						
a	Preparation of thin sections	per sample	4.3.1	2,353	10	23,530	
b	Study of thin sections	per sample	4.3.4	4,232	10	42,320	
6.	Drill core preservation	per m	5.3	1,590	150	2,38,500	This amount will be reimbursed after successful delivery of the cores to the concerned core libraries/authorities
	TOTAL					**82,77,400**	
7	**Geological Report preparation**	**5 hard copies along with soft copy**	**5.2**	For the projects having cost more		**4,13,870**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET

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				than Rs. 50 lakhs Upto 150 Lakhs - A minimum of Rs. 2.5 lakhs or 5% of the work whichever is more			
8	**Peer Review**	**lumpsump**	**as per EC decision**	**30,000**	**1**	**30,000**	
9	**Preparation of exploration proposal**	**5 hard copies along with soft copies**	**5.1**	2% of the approved cost to a max. of Rs. 5 Lakhs	**1**	**1,65,548**	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
10	**Total Estimated Cost without GST**					**88,67,738**	
11	**Provision for GST @18%**					**15,96,193**	

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12	TOTAL ESTIMATED COST INCLUSIVE GST	1,04,63,931	
or Say Rs.		104.64	Lakh

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ANNEXURE-5B

Time Schedule for Reconnaissance Survey (G4 Stage) for Graphite in Dindo-Belkurta-Basera Block (54.40 sq.km.), District: Surguja, Chhattisgarh													
	Months												
Item of work	**1**	**2**	**3**	**4**	**5**	**6**		**7**	**8**	**9**	**10**	**11**	**12**
Large Scale Mapping (1:12,500)													
Bed rock sampling													
Geophysical survey by Geophysicist													
Laying of Geophysical survey lines & location of Boreholes by surveyors							REVIEW						
Trenching & Sampling													
Chemical analysis of surface samples													
Drilling													
Core Sampling & its preparation													
Chemical analysis of core samples													
Processing of Analytical data													
Preparation of Geological report													

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ANNEXURE-7

Additional COST ESTIMATE FOR PRILIMINARY EXPLORATION (G-3) FOR POTASH IN LAKHASAR EAST BLOCK, LAKHASAR-SUB BASIN, NORTH WESTERN PART OF RAJASTHAN, DISTRICT- BIKANER, RAJASTHAN.
Total Area - 7.16 sq km; Nos. of Borehole - 11 ; Borehole depth range - Avg 700 m ; Completion Time - 19 Months

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Cost Already recommended in 39th NMET-TCC		Additional Estimated Cost (54 NMET-TCC meeting)		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**								
1	**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 Geologist party per day at field	day	1.3	11,000	300	33,00,000		-	
c	1 party Labour (2 Nos each party) Base rate - Rs.437/-	day	5.7	437	600	2,62,200		-	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	one	1.5.2						

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	Sampler per day (1 Party)	sampler per day		5,100	250	12,75,000		-	
e	Labours (4 Nos) Base rate - Rs. 437/-	day	5.7	437	1,000	4,37,000		-	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**Survey (on 1:10000 Scale)**								
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and Boundary points by DGPS	Per Point of observation	1.6.2	19,200	11	2,11,200		-	BH-11 nos., Cardinal Pt.-5nos. & Base station-1 No
	Sub-Total A					**60,25,400**		**-**	
B	**DRILLING**								
1	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	3,300	3,79,50,000		-	Soc-Page No-2, Clause No. II: Note on Potash Drilling
2	Drilling 301 to 600 m (Hard Rock)	m	2.2.1.4b	12,420	3,300	4,09,86,000		-	
	Drilling 600 to 900 m (Hard Rock)	m	2.2.1.4c	13,225	1,100	1,45,47,500		-	

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3	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	7,700	25,41,000		-	
4	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	11	2,20,000		-	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
5	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	11	22,000		-	
6	Borehole plugging by cement	m	2.2.7b	150	7,700	11,55,000		-	
7	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	7,398	2,66,328		-	
8	Monthly Accommodation Charges for drilling Camp (For 3 Rigs 50000+(50000 X 50%) X 1) = 75000	month	2.2.9	75,000	11	8,25,000		-	
9	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	3	7,50,000		-	Certification in this regard is required to

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10	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	3	7,50,000		-	be provided
11	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 accordingly.
12	Drill Core Preservation	per m	5.3	1,590	1,900	30,21,000		-	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
	Sub Total B					**10,30,99,888**		**-**	
C	**BOREHOLE GEOPHYSICAL LOGGING**								
1	Dual Density	m	3.11d	102	3,500	3,57,000	4,200	4,28,400	for 5 Bhs
2	Neutron	m	3.11f	74	3,500	2,59,000	4,200	3,10,800	for 5 Bhs
3	Spectral Gamma	m	3.11o	164	-	-	7,700	12,62,800	
4	Resitivity	m	3.11c	39		-	7,700	3,00,300	
5	Caliper	m	3.11g						

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				19		-	7,700	1,46,300	
6	Expert charges for Geophysicist in HQ	day	3.18	9,000	15	1,35,000		-	
7	Expert charges for Geophysicist in Field	day	3.18	11,000	30	3,30,000		-	
	Sub Total C					**10,81,000**		**24,48,600**	
D	**LABORATORY STUDIES**								
1	**Chemical Analysis**								
i)	**Primary samples**								
	a. Analysis of 9 radicals i.e. K, Na, Water insolubles, Mg, Cl, Br, I, Li &CaSO4	Nos	4.1.1	8,157	2,000	1,63,14,000	1,000	81,57,000	
ii)	**Check samples Internal (5%) and External(10%)**							-	
	a. Analysis of 9 radicals i.e. K, Na, Mg, Cl, Br, I, Li, CaSO4 & Water insolubles	Nos	4.1.1	8,157	300	24,47,100	150	12,23,550	

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iii)	XRD analysis for identification of minerals (Random)	Nos	4.5.1	4,000	10	40,000	2,990	1,19,60,000	
	Sub-Total -1					**1,88,01,100**		**2,13,40,550**	
2	**Specific Gravity Determination**								
	Specific Gravity Determination	No.	4.8.1	1,605	10	16,050		-	
	Sub Total- D					**1,88,17,150**		**2,13,40,550**	
E	**Total - A to D**					**12,90,23,438**		**2,37,89,150**	
F	**Geological Report Preparation**	5 Hard copies with a soft copy	**5.2 (iv)**	**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**		**20,00,000**			EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

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				more subject to a max. amount of Rs. 20 lakhs					
G	**Peer review Charges**		**As per EC decisio n**			**10,000**		**20,000**	
	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.
H	**Total Estimated Cost without GST**					**13,14,13,43 8**		**2,38,09,15 0**	
I	**Provision for GST (18% of G)**	**%**				**2,36,54,419**		**42,85,647**	GST will be reimbursed as per actual and as per notified prescribed rate
J	**Total Estimated Cost**					**15,50,67,85 7**		**2,80,94,79 7**	

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	with GST								
				Say in Lakhs (Rs.)		1,550.68		280.95	

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-8

ADDITIONAL COST ESTIMATE FOR PRILIMINARY EXPLORATION (G-3) FOR POTASH IN BHARUSARI NORTH BLOCK, BHARUSARI-SUB BASIN, NORTH WESTERN PART OF RAJASTHAN, DISTRICT- HANUMANGARH, RAJASTHAN.
Total Area - 10.00 sq km; Nos. of Borehole - 5 ; Borehole depth range - Avg 700 m ; Completion Time - 12 Months

S. N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Cost already recommended in 51st NMET-TCC		Additional Cost already recommended in 52 NMET-TCC		Additional Cost Estimate (54th NMET-TCC Meeting)		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	Qty.	Total Amount (Rs)	Additional Qty	Additional Amount	
A	**GEOLOGICAL WORK**										
1	**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 Geologist party	day	1.3	11,000	150	16,50,000	150	16,50,00		-	

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	per day at field							0			
c	1 party Labour (2 Nos each party)	day	5.7	477	300	1,43,100	300	1,43,100		-	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	125	6,37,500	125	6,37,500		-	
e	Labours (4 Nos)	day	5.7	477	500	2,38,500	500	2,38,500		-	Amount will be reimbursed as per the notified rates by the Central Labour

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											Commissioner or respective State Govt., whichever is higher
2	**Survey (on 1:10000 Scale)**										
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and Boundary points by DGPS	Per Point of observation	1.6.2	19,200	6	1,15,200		-			BH-5 nos. & Base Station 1 Nos
	Sub-Total A					**33,24,300**		**26,69,100**		**-**	
B	**DRILLING**										
1	Drilling up to 300m (Hard Rock)	m	2.2.1.4 a	11,500	1,500	1,72,50,000		-		-	Soc-Page No-2, Clause No. II: Note on Potash Drilling
2	Drilling 301 to 600 m (Hard Rock)	m	2.2.1.4 b	12,420	1,500	1,86,30,000		-		-	
3	Drilling 601 to 900 m (Hard Rock)	m	2.2.1.4 c	13,225	500	66,12,500		-		-	

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4	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 the local authorities
5	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000		-		-	
6	Borehole plugging by cement	m	2.2.7b	150	5	750		-		-	
7	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	5,400	1,94,400	8,100	2,91,600		-	certification in this regard is required to be provided
8	Monthly Accommodation	month	2.2.9	50,000	6	3,00,000		-		-	

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	Charges for drilling Camp										
9	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	2	5,00,000	3	7,50,000		-	certification of deplyoment of drill rigs are required
10	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	2	5,00,000	3	7,50,000		-	
11	Road Making (Flat Terrain)	Km	2.2.10 a	22,020	5	1,10,100		-		-	Road Making will be considered as per the requirement but not more than the provided kms in the cost sheet, Road Making Charges will be reimbursed accordingly.

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12	Drill Core Preservation	per m	5.3	1,590	1,250	19,87,500		-		-	This amount will be reimbursed after successful delivery of the cores to concerned libraries/ authorities
	Sub Total B					**4,61,95,250**		**17,91,600**		**-**	
C	**BOREHOLE GEOPHYSICAL LOGGING**										
1	Dual Density	m	3.11d	102	3,500	3,57,000		-		-	
2	Spectral Gamma	m	3.11o	164	3,500	5,74,000		-		-	
3	Resitivity	m	3.11c	39	3,500	1,36,500		-		-	
4	Expert charges for Geophysicist in HQ	day	3.18	9,000	10	90,000		-		-	
5	Expert charges	day	3.18								

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	for Geophysicist in Field			11,000	20	2,20,000		-		-	
6	neutron	m	3.11f	74		-	3,500	2,59,000		-	
7	Caliper	m	3.11g	19		-		-	3,500	66,500	
	Sub Total C					**13,77,500**		**2,59,000**		**66,500**	
D	**LABORATORY STUDIES**										
1	**Chemical Analysis**										
i)	**Primary samples**										
	a. Analysis of 9 radicals i.e. K, Na, Water insolubles, Mg, Cl, Br, I, Li & CaSO4, Boron, Fluoride	Nos	4.1.1	8,157	1,000	81,57,000		-	1,000	81,57,000	
ii)	**Check samples Internal (5%) and External(10%)**									-	
	a. Analysis of 9 radicals i.e. K, Na, Mg, Cl, Br, I, Li, Boron, Fluoride, CaSO4 & Water insolubles	Nos	4.1.1	8,157	150	12,23,550		-	150	12,23,550	

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iii)	XRD analysis for identification of minerals (Random)	Nos	4.5.1	4,000	20	80,000		-	1,980	79,20,000	
	Sub-Total -1					**94,60,550**		**-**		**1,73,00,550**	
2	**Physical Laboratory**										
i.	Specific Gravity Determination	No.	4.8.1	1,605	5	8,025	-	-		-	
	Sub Total- D					**94,68,575**		**-**		**1,73,00,550**	
E	**Total - A to D**					**6,03,65,625**		**47,19,700**		**1,73,67,050**	
G	**Geological Report Preparation**		**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**		**18,10,969**		**1,41,591**		**47,440**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET

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				is more subject to a max. amount of Rs. 20 lakhs							
H	**Peer review Charges**		**As per EC decisi on**			**10,000**		**-**		**20,000**	
	Preparation of Exploration Proposal (5 Hard copies with a soft copy),	5 Hard copies with a soft copy	5.1	2% of the approve d cost to a max. of Rs. 5 Lakhs		**5,00,000**		**-**		**-**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and plan as suggeste d by the TCC-NMET in its meeting while clearing the proposal

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J	**Total Estimated Cost without GST**					**6,26,86,594**		**48,61,291**		**1,74,34,490**	
K	**Provision for GST (18% of G)**	%				**1,12,83,587**		**8,75,032**		**31,38,208**	GST will be reimbursed as per actual and as per notified prescribed rate
	Total Estimated project Cost with GST					**7,39,70,181**		**57,36,323**		**2,05,72,698**	or Say Rs. 205.73 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 execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/ project is required.											

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