Ministry of Mines
National Mineral Exploration Trust
Minutes of the 69th Technical-cum-Cost Committee (TCC) meeting held on 26th, 27th and 30th September, 2024 through video conferencing

The 69th meeting of the Technical-cum-Cost Committee-I (TCC-I) of the National Mineral Exploration Trust (NMET) was held via video conferencing under the chairmanship of Dr. S. Ravi, Deputy Director General (DDG), Geological Survey of India (GSI) and Chairman, TCC, NMET, on 26th, 27th, and 30th September 2024. All the members of TCC-I attended the meeting in person at GSI, DGCO, Pushpa Bhawan, New Delhi, on 26th and 27th September while the NEAs and NPEAs participated through online from their respective places. On 30th September, members joined via video conference from their respective locations, while all other agencies participated online throughout the entire meeting.

Members of TCC-NMET and representatives from DGM, Chhattisgarh, DMG, Karnataka, DMG, Odisha, DMR, Meghalaya, CSIR-IMMT, Bhubaneswar, MECL, KIOCL, CMPDI, OMC, MPSMC, GMSPL, Geovale, UEIPL, Gemcokati, GeoExplore, GeoMarine, PRBI etc have attended the meeting through their respective VC modes.

The list of participants is at Annexure-1.

Dr. S. Ravi, DDG, GSI and Chairman, TCC-I, extended a warm welcome to all TCC members and participants representing various Notified Exploration Agencies (NEAs) and Notified Private Exploration Agencies (NPEAs) and invited General comments/ suggestions if any from the member of TCC-I. For which Shri S.K. Adhikari, Chief Mining Geologist, IBM and TCC member, stated that the Schedule of Charges (SoC) for NMET should be reviewed due to changing circumstances over time. He further suggested that a software/ programme may be contemplated by NMET to have the parity in target fixation in NMET funded project. Dr. E.V.S.S.K. Babu, Scientist (G), NGRI and TCC member, emphasized the importance of all agencies clearly provide their manpower and capacity when submitting proposals for their items.

On 27th Sept' 2024, Smt. Geetika Sharma, Deputy Secretary, NMET, Ministry of Mines addressed the meeting with the formal greeting and wishes to the committee members. In her address Smt. Geetika Sharma asked both the teams of TCC to confabulate regularly to adopt and promote new technologies in the field of mineral exploration. She informed that the committee about the plan by ministry to host a separate portal under NMET to facilitate the NEAs and NPEAs to submit the proposals online as well as for efficient monitoring of NMET funded projects. Further, she urged the members of both the TCCs to ensure uniformity in decision especially with regard to quantum and cost of the approved projects.

Subsequently, the proceedings of meeting were initiated as per circulated agenda

Agenda 69.1 Review of Ongoing Projects/Completed Project & Timeline Extension

Agenda 69.1.1. Reconnaissance survey (G4) for PGE, Nickel, Cobalt and Gold in Rangapura Block, District: Hassan, Karnataka
[Implementing Agency: MECL]

a) MECL informed that the project was approved in the 23rd EC Meeting held on 11th March, 2022. The sanction order was issued on 25th March, 2022 with timeline of 12 months and approved cost was INR 2,57,50,609/-.

b) MECL reported that the block was reviewed during the 65th TCC meeting on 28th May, 2024, where the committee suggested to recheck analysis of 10% of samples and recommended time extension up to 31st August 2024.

c) Committee opined that PGE analysis of the borehole samples may be done as per the comments of the peer reviewer and incorporating the suggestions in the report before final submission.

d) The committee suggested MECL to prepare and analyze the Ni bearing zones (8 nos.) for PGE and 15 days timeline extension upto 31.10.2024 for final submission of the final GR to NMET.

Recommendation TCC

The Committee recommended MECL to carry out PGE analysis for the zones which showed encouraging Ni values by compositing them to 07 to 08 samples and incorporate the same in the report. Timeline extension upto 31.10.2024 is approved for submission of final GR.

Agenda 69.1.2. Reconnaissance Survey (G4) for Manganese in Taljuri-Ghunchadihi Block (80.00 Sq. Km), Balangir District, Odisha.
[Implementing Agency: MECL]

a) MECL informed that the project was approved in the 27th EC Meeting held on 10th January, 2023. The sanction order was issued on 3rd February, 2023 with timeline of 14 months and approved cost was INR 1,66,59,625/-.

b) MECL informed that due to local issue, only 12m of drilling could be completed and hence, the project may be concluded. MECL presented the revised cost sheet for the project.

c) The TCC-I committee advised MECL to submit a self-contained note, and all the correspondences held with the local authorities & DMG, Odisha for execution of the project. The committee agreed for revised cost of the project with modified quantum.

Recommendation TCC
The Committee recommended submitting **a self-contained note and all the correspondences held with the local authorities & DMG, Odisha for execution of the project. The committee agreed for the revised cost of the project at ₹ 67,95,945 as given at Annexure 2. Besides timeline to submit final GR has also been approved upto 31.10.2024.**

Agenda 69.1.3. Preliminary Exploration (G-3 Stage) (Phase-I) for Gold in Kudrekonda area by Geophysical Survey, Shimoga Schist Belt, Honnali Taluk, Devangere District, Karnataka.
[Implementing Agency: MECL]

a) MECL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The sanction order was issued on 27th February, 2024 with timeline of 12 months (up to 26.02.2025) and approved cost was INR 2,44,68,583/-.

b) MECL informed that the geological mapping, surface sampling, MT survey and partial EM survey have been completed. Further, survey work was stopped at the end of August, 2024 due to local agitation.

c) The committee opined that MECL may process the geophysical data of the area and pursue the local authorities for completion of the work.

Recommendation TCC
The Committee suggested MECL to pursue the matter seriously with local bodies and complete the assigned task. Also asked to come for review with the processed data.

Agenda 69.1.4. Reconnaissance Survey (G-4 Stage) for QPC hosted Gold Mineralisation and Copper in Kalasapura Block (119.00 Sq. Km), Chikkamagaluru District, Karnataka.
[Implementing Agency: MECL]

a) MECL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The sanction order was issued on 27th February, 2024 with timeline of 12 months (up to 26.02.2025) and approved cost was INR 1,52,40,702/-.
b) MECL informed that the sample processing is under progress and requested to review the project in the next TCC.

Recommendation TCC
The Committee noted the progress and decided to review the project in the next TCC.

Agenda 69.1.5. Reconnaissance Survey (G-4 Stage) for Graphite and Sulphide in Ganacharpura Block (33.60 Sq. Km), Kolar District, Karnataka.
[Implementing Agency: MECL]

a) MECL informed that the project was approved in the 30th EC Meeting held on 06th June, 2023. The sanction order was issued on 26th June, 2023 with timeline of 08 months and approved cost was INR 92,96,121/-.
b) MECL informed that drilling is completed in the block, MT analysis is under process and requested to review the project in the next TCC.

Recommendation TCC
The Committee noted the progress and decided to review the project in the next TCC.

Agenda 69.1.6. Re-appropriation of estimated cost of one hyperspectral core scanner with LIBS, one hyperspectral core scanner with XRF, 02 nos. Gamma Ray Spectrometer and 01 no. WD-XRF for capacity Augmentation in MECL.
[Implementing Agency: MECL]

a) MECL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The Sanction Order was issued on 1st March, 2024 with timeline of 12 months and approved cost was INR 3244.87 Lakh.
b) MECL presented the procurement status of the instruments before the committee along with the cost escalation.
c) Considering the cost escalation >10% of the approved cost, the committee opined that MECL may present the proposal in the next TCC with complete specification.

Recommendation TCC
The Committee suggested MECL to work out the cost again and come back to next TCC with detailed input by contacting more vendors and to prepare comparative statements of costs and specifications.

Agenda 69.1.7. Preliminary Exploration for coal in Borda & Ghonsa Parsoda block, Wardha Valley CF.
[Implementing Agency: CMPDI]

a) CMPDI informed that the project was approved in the 24th EC Meeting held on 18th May, 2022. The sanction order was issued on 01st June, 2022 with timeline of 18 months and approved cost was INR 12,01,56,952/-.
b) CMPDI informed that at present 2 drilling machines are deployed for drilling and 8 boreholes with 7000m drilling is left for project completion.
c) CMPDI proposed to drill those boreholes and sought time extension upto 31st March 2025.

Recommendation TCC
The Committee recommended approved timeline extension of 5 months upto 31st March' 2025.

Agenda 69.1.8. Preliminary exploration for Manganese in Hardatal block (1.38 sq. km), District Balangir, Odisha.
[Implementing Agency: DMG Odisha]

a) DMG Odisha informed that the project was approved in the 25th EC Meeting held on 29th June, 2022. The sanction order was issued on 04th September, 2023 with timeline of 09 months and approved cost was INR 1,52,36,385/-.
b) The committee suggested DMG Odisha presenting the proposal in the next TCC.

Recommendation TCC
The Committee recommended DMG Odisha presenting the proposal in the next TCC.

Agenda 69.1.9. Preliminary exploration (G3) for Karnapodikonda Bauxite Block (9.062 sq.km) in Koraput district of Odisha.
[Implementing Agency: OMC]

a) OMC informed that the project was approved in the 11th EC Meeting held on 07th February, 2019. The sanction order was issued on 07th March, 2024 with timeline of up to 31.03.2024 (as approved by 32nd EC) and approved cost was INR 1,82,42,553/- (Actual Cost: INR 1,70,98,000/-) and Additional Cost: INR 11,44,553/-.
b) OMC informed the committee, 46 million tons of bauxite resources have been estimated in the area.
c) The committee suggested OMC to include the trenching data of GSI (floor plan, location and lithologs, etc) in the Geological Report and attend the comments of the Peer reviewer.

Recommendation TCC
The Committee recommended to attend the Peer reviewer comments, include the trench data of GSI and approved timeline extension upto 31st October, 2024 for submission of the Geological Report.

Agenda 69.1.10. Reconnaissance Survey (G4) for graphite in Lamer-Panga Block (49 sq. Km) in Kalahandi district of Odisha.
[Implementing Agency: OMCL]

a) OMCL informed that the project was approved in the 26th EC Meeting held on 25th August, 2022. The sanction order was issued on 20th September, 2022 with timeline of 12 months and approved cost was INR 1,46,68,539/-.
b) OMECL informed, the estimated resource of graphite in the block is 2.034 million tones.
c) The committee reviewed the GR and advised OMCL to carry out petrological study of 10 nos of sample and incorporate the same in the report.
d) All the IPR comments should be strictly complied.
e) The details of potential block identified through LSM should be incorporated in GR and recommendation should be accordingly modified so as to make the block auctionable.
f) Since all the approved work components are not achieved, OMCL is advised to submit the revised cost sheet to NMET for approval.

Recommendation TCC
The Committee recommended completing the NQT including the petrographic studies and submit the Geological Report and approved the timeline extension upto 31st October, 2024. The committee also recommended to submit the revised cost sheet as per the shortfall in the NQT.

Agenda 69.1.11. Reconnaissance Survey (G4) for Graphite in Dindo-Belkurta-Basera Block in Balrampur District, Chhattisgarh
[Implementing Agency: MMPL]

a) MMPL informed that the project was approved in the 31st EC Meeting held on 12th September, 2023. The sanction order was issued on 05th October, 2023 with timeline of 12 months and approved cost was INR 1,04,63,931/-.
b) MMPL proposed 3 months extension for completing 300m drilling, preparation of report and peer review of the report.

Recommendation TCC
The Committee accorded 3 months timeline extension upto 31st December, 2024 and informed that further time extension would not be granted.

Agenda 69.1.12. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities
[Implementing Agency: IBM]

a) IBM informed that the project was approved in the 24th EC on 18.05.2022 for WD-XRF & ICPMS with estimated cost of INR 3.0 Crore & INR 2.0 Crore respectively. Also informed that, order has been placed for WD-XRF & ICPMS which would be delivered by Nov-Dec' 2024 and is expected to be installed by March, 2025.
b) IBM informed that the project was approved in the 27th EC Meeting held on 10th January, 2023 with an estimated cost of INR 7.60 Crore for RMPL, Bengaluru & INR 11.80 Crore for MMPL, IBM, Nagpur.
c) IBM also informed that one instrument LAARMANN Flotation cell with External Air Supply procurement would be cancelled due to price escalation before financial evaluation of the bid by the bidder.

Recommendation TCC

The Committee recommended for timeline extension upto 31st March, 2025 and approved cancellation of the equipment (LAARMANN Flotation cell with External Air Supply) due to technical issues.

Agenda 69.1.13. Preliminary Exploration (G3) for Ni, Cr, Cu, PGE-Au-REE in Mafic and Ultramafic Bodies in Hadanur and Tagadur Belt Mandya district, Karnataka.

[Implementing Agency: GeoExpore]

a) GeoExpore informed that the project was approved in the 29th EC Meeting held on 31st March, 2023. The sanction order was issued on 17th April, 2023 with timeline of 10 months and approved cost was INR 86,12,385/-.
b) The committee advised to modify the title of the project and submit the report as G-4 stage.

Recommendation TCC

The Committee recommended modifying the title to "Reconnaissance Survey (G4-Stage) for Ni, Cr, Cu and PGE in Aichanahalli - Chikkamagaluru area in Hadanur-Tagadur Belt, Mandya District, Karnataka".

Agenda 69.2: Technical evaluation of new project proposals

Agenda 69.2.1. Fixed wing Airborne (Magnetic Gradiometer & Radiometric) Surveys over the parts of Odisha State.

[Implementing Agency: OMC, Odisha]

a. Odisha is one of the mineral enriched states in India, bestowed with mineral deposits, such as, iron ore, manganese ore, chromite, bauxite, graphite, gemstones, diamond, beach placers (ilmenite, monazite etc.), nickel and platinum ore etc. The state features many important rock groups from the earliest time of crust formation to the "geologically" recent time. The varied geological set-up has served as host to many important mineral deposits
b. During 1993-1998, the High-Resolution Airborne Survey carried out by Govt. of Odisha in collaboration with World Geoscience Corporation of Australia over 75,000 sq. km. of Odisha, played a momentous role to comprehend the geology and mineralization of the area.
c. Now OMC proposes to conduct flying in the remaining half of the State with high resolution surveys to generate baseline data which would boost mineral exploration energies in the State and towards national mineral production.
d. The area proposed to be flied includes Eastern ghats mobile belt, Rengali province, Singhbhum mobile belt, Singhbhum craton, Chhattisgarh Supergroup & Gondwana Supergroup.
e. The proposed Fixed wing Airborne survey area of Odisha is demarcated into four blocks.

Block	Target area
Block-1	Eastern Ghat mobile belt, Coastal plain with Tertiary and Quaternary formations, Proterozoic Platformal Sediment sand Bastar Craton
Block-2	Gangpur Group of rocks, Gondwana Supergroup of rocks, Proterozoic Platformal Sediments, and Bastar Craton
Block-3	North Odisha Craton
Block-4	part of Bastar Craton

f. During review, the committee raised the point that heliborne survey in block H has already been assigned to OMC and has not been initiated yet.
g. The committee opined that GSI should take up the area as it has been mandated by MOM to generate baseline data for the country.

Recommendation of TCC:

Baseline geoscience data generation is currently being managed by the Geological Survey of India (GSI). Although a heliborne survey has already been assigned to OMC under NMET funding, the airborne survey, being an integral component of baseline data generation, could be conducted by GSI. However, if OMC considers the area to have potential, DMG, Odisha/OMC can write to the Ministry of Mines to advise GSI to carry out NAGMP in the area.

Agenda 69.2.2 Preliminary Exploration (G3) for Graphite in Dhourakhaman Block (Area - 37.0 Sq. Km), Tehsil Belpara, Bolangir District, Odisha.
[Implementing Agency: OMC, Odisha]

a) The block lies within the Sargipalli Graphite Belt, part of the "Western Zone" (64 L/14), and follows the Khondalite strike for around 36 sq. km.

b) The area is considered favorable for graphite mineralization due to its similarities with the adjacent Khairmal Graphite Block.

c) OMC informed that GSI has conducted mapping at scales of 1:63,360 to 1:50,000, but large-scale mapping has not been carried out yet. Nine studies by DoMG have reported various leases and mines in the area. According to legacy data, the surveys conducted in the 1980s used local reference points, making it difficult to pinpoint precise coordinates or locations.

d) The Dhourakhaman Block shows graphite mineralization in migmatized Khondalites, with minor occurrences in granites and pegmatites. The samples taken from the flaky form graphite showed FC range from 1.49 to 45.23 %.

e) OMC informed that there are a few non-operational mining activities in the area that were active during the 1970s and 1980s.

f) OMC suggests large-scale mapping and further exploration to confirm the graphite schist's continuity with Khondalite, Granite Gneiss, and Pegmatites.

g) The committee noted that the proposed 37 sq km area for G3 stage investigation is too large and suggested bringing a G4 stage proposal instead. OMC was recommended to modify the block boundary to cover a 45-50 sq km target area that would include all areas showing indications of graphite mineralization.

h) Accordingly, OMC extended the boundary to south and modified the proposal as a G4 stage item incorporating all the suggestions

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Reconnaisance survey(G4) for Graphite in Dhourakhaman area (60.0 Sq. Km), District: Bolangir, Odisha" with an estimated cost of Rs. 89.11 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 3A & 3B. The item will be reviewed after 4 months.

Agenda 69.2.3. Preliminary exploration (G3) for Bauxite in Barpat Block, Balrampur-Ramanujganj District, Chhattisgarh.

[Implementing Agency: DGM Chhattisgarh]

a) The proposed block belongs to Samripat & Jamirapat plateau and falls in part of SOI toposheet no. 73A/3.
b) GSI has already carried out exploration work (1972-98) in and around Samripat and Jamirapat area and estimated a resource of 40.39 million tons that spread over an area of 17.45 Sq.km. DGM, Chattisgarh has also worked on Demarcation of bauxite bearing area under forest & non forest in Samripat plateau, Distt, Surguja, M.P. in F.S.1990-91.
c) Based on the review of previous works of GSI and DGM, CG it is concluded that the area shows strong potential for bauxite mineralization, with several locations already identified. Some prospected blocks have already been allotted to M/S Hindalco Industries Ltd., which holds three active mining leases: Samri, Tatijharia, and Kudag. Additionally, a bauxite block in Jamirapat (toposheet 64M/15) has been allotted to CMDC.
d) Additionally, the proposed area, is very much adjacent to the recently auctioned CL blocks (Damchuan and Khajri).
e) Expanding upon the promising prospects, DGM Chhattisgarh proposed that further exploration is needed for bauxite deposits, especially in areas adjacent to the recently auctioned CL blocks.
f) Few samples collected from the area yields 53.64% to 56.46%, Al_2O_3 with less than 2% SiO_2 demonstrating that the Barpat area has high potential for bauxite resource.

g) The committee reviewed the proposal and recommended that the chemical analysis results be presented during the review to guide planning of boreholes. The boreholes should be planned at 200m x 200m spacing.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Preliminary exploration (G3) for Bauxite in Barpat Block, Balrampur-Ramanujganj District, Chhattisgarh" with an estimated cost of Rs. 136.80 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 4A & 4B. The item will be reviewed after 4 months.

Agenda 69.2.4. Reconnaissance Survey (G-4) For Diamond in Part of a Palaeo-Channel In Krishna Basin Near Mangalagiri, Guntur Dist, Andhra Pradesh.
[Implementing Agency: Geomarine]

a) The proposed study area falls in SOI toposheet no. 65D/11 and belongs to Kolluru - Partiala alluvial tract known for world famous diamonds
b) AMD reported microdiamonds from beach sediments at the mouth of the Krishna River. The colorless to brownish-yellow diamonds, containing inclusions, were identified microscopically as they were found only in finer size fractions (425 to 105 µm).
c) GSI's G4 reconnaissance survey in western Krishna delta (Revendrapudu to Tsunduru, Guntur district) revealed an inner fluvial delta bordered by a pediplain. The delta includes active channels, levees, flood basins, and palaeochannels, with the Modukuru and Tenali palaeochannels converging west of Tenali and extending north to Tadepalle.
d) The boreholes drilled in the Krishna delta, Andhra Pradesh revealed medium to coarse gravelly-sand units at depths of 110-180 meters, along with clayey sediments rich in higher lanthanides, zirconium, cobalt, and other minerals (Shah et al., 2006). XRD analysis suggests the presence of minerals from both granitic and ultramafic sources. The study proposes prospecting for diamond-bearing gravel beds in the Mangalgiri Block.
e) The Palaeo channels P1 and P2 were delineated using Landsat Imagery and the proposed block lies within P2. The palaeochannel P2, located on the right bank of the Krishna River covering an area of about 300 sq. km, the main channel trends south, while the other branch flows east. Field studies revealed that the area around the palaeochannel is predominantly composed of black clay underlain by coarse sand.
f) The proposed exploration block is located about 40 kilometers north of the area studied by Shah et al. (2006) and approximately 76 kilometers from BH1 (Uppugunduru) and 87 kilometers from BH2 (Kanuparthi) of ONGC. As a result, it is expected that the thickness of alluvial sediments in this upstream block will be significantly less.
g) After a detailed review, the committee concluded that resistivity (sounding, profiling) and seismic refraction surveys would meet the exploration objectives, and gravity survey is not necessary. Drilling will be conducted based on the outcomes of the geophysical surveys. A total of 300 meters of drilling in HX size has been recommended for the exploration.

h) Bulk sampling, grain identification and other related studies should also be included in the proposal.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Reconnaissance Survey (G-4) For Diamond In Part Of A Palaeo-Channel In Krishna Basin Near Mangalagiri, Guntur Dist, Andhra Pradesh" with an estimated cost of Rs. 206.55 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 5A & 5B. The item will be reviewed after 4 and 8 months consecutively.

Agenda 69.2.5. Preliminary Exploration (G-3) for Graphite in Kiurunjakulam Block (3.00 sq. km), Tenkasi District, Tamil Nadu.
[Implementing Agency: MECL]

a. The proposed study area belongs to Southern Granulite Terrain (SGT), Tamil Nadu and falls in SOI toposheet no. 58G/12
b. The proposed block is an annulled mineral block from Tranche I and III of the critical minerals auction, as it received fewer than three bids. After thorough deliberations, the Ministry of Mines selected the block for upgradation on 07/08/2024, and it was subsequently allotted to MECL for further upgradation.
c. During 1971-72, GSI explored the Kurunjakulam area and identified three graphite-bearing bands. The largest band extends 400 meters with a width of 1.5 meters, while the other two measure 400 meters (0.5 m wide) and 120 meters (5 m wide). The carbon content in the rocks ranges from 2.9% to 15.73%, with estimated graphite reserves of approximately 1,350 tonnes at depths of 3 to 6 meters. Later, NGCM work by GSI in the area, also recommended the area to explore for graphite

d. MECL informed that satellite imagery and elevation studies indicate that surface graphite occurrences have been reduced by cultivation and are covered by thick soil. To delineate the subsurface mineralized zone and enhance graphite resources in the proposed block, geophysical surveys and trenching are much needed.

e. The committee asked to furnish the detailed reasons for annulment of the block during auction process.

f. The committee expressed concern that the mineralized zone identified by MECL is located within inhabited and cultivated areas, which could lead to feasibility issues, even if the area proves to be promising. As a result, MECL is advised to conduct a site visit to assess the ground conditions and obtain a letter from the district authority.

g. The proposal, incorporating all detailed suggestions, should be presented in the upcoming TCC meeting. The tentative mineralized zone should be shown on Google Maps for better clarity and visualization.

Recommendation of TCC:

The committee advised MECL to visit the area to verify the tentative disposition of the mineralized body and determine whether it is located within inhabited and cultivated areas. They should also assess the ground conditions. Once all relevant details are obtained, the proposal can be resubmitted in the upcoming TCC meeting.

Agenda 69.2.6. Reconnaissance Survey (G-4) for REE & Rare Metals Mineralisation in Jampani area (143.28 sq. km), Jashpur District, Chhattisgarh.
[Implementing Agency: MECL]

a) The study area forms a part of the eastern segment of Chhotanagpur plateau and falls in SOI toposheet no. 73B/01 & 02

b) MECL reported that GSI's NGCM study indicates a significant geochemical anomaly in the proposed area. Out of 39 samples, 16 stream samples showed Total REE (TREE) levels exceeding 1000 ppm. TREE values in the proposed block range from 531 to 1535 ppm, with HREE values between 24.06 ppm and 108.27 ppm, and LREE values from 500 ppm to 1470.21 ppm. The concentration of HREE is lower than that of LREE in this block.

c) An elemental distribution map shows that higher REE values are primarily found in the southern, southeastern, and northwestern parts over granite gneiss.

d) MECL stated that the G4 stage exploration has been proposed based solely on the NGCM data discussed above.

e) The committee raised concern regarding the law and order situation in the Jashpur area. DMG, Chhattisgarh highlighted the unstable conditions, which have impacted operations. The committee noted that two items in the same region was previously approved to MECL, but both were prematurely closed due to these issues. Additionally, other agencies also attempted to work in the area but were unable to proceed because of the ongoing law and order challenges.

Recommendation of TCC:

The committee advised MECL to put the item on hold until the law and order situation in the area improves. They further assured MECL that the area will be assigned to them once the issues are resolved. However, if MECL chooses to proceed with the item at this stage, they must commit to execute it fully and should not request for dropping later.

Agenda 69.2.7. Preliminary Exploration (G-3) for Limestone in Akapur Block (6.52 sq. km), Yavatmal District, Maharashtra.
[Implementing Agency: MECL]

a. The study area forms a part of the Penganga Beds or Penganga Series and falls in SOI toposheet no. 55L/16.

b. The Akapur Limestone block was established based on lapsed lease areas by the Maharashtra State Government. The block was granted under section 10(A) 2(B) of the MMDR Act, 2015. The block has been assigned to MECL by DGM, Maharastra

c. Geological Survey of India, carried out systematic geological mapping in parts of toposheet no 56 I /09, 56 I/13 and 56 I/14 in field season 1984-85 and mapped the limestone bands as Penganga beds

d. In 1997, M/s Ku. Shailaja D. Dahule and Ku. Varsha Prabhakar Thakre conducted prospecting in the Akapur area (20.15 hectares) through five pits and one trench, establishing a limestone resource of 4.0 million tonnes in the block.

e. The limestone is fine-grained, massive, and ash-grey to black in color. It primarily occurs in compact, jointed, and homogeneous beds, without solution cavities or voids. The limestone in the area contains CaO ranging from 46.52% to 50.69%, MgO from 2.66% to 3.43%, and SiO_2 from 2.2% to 4.3%.

f. The committee reviewed the item thoroughly and agrees to the proposal.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3) for Limestone in Akapur Block, Yavatmal District, Maharashtra" with an estimated cost of Rs. 97.21 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 6A & 6B. The item will be reviewed after 5 months.

Agenda 69.2.8. Reconnaisance Survey (G4) for precious metals, REE, Base metals and strategic minerals in Kosgi Block Vikarabad and Narayanpet Districts, Telangana.
[Implementing Agency: Critical Mineral Trackers]

a) The area in and around Kosgi represents northern, North -Western part of the eastern Dharwar Craton of the Peninsular India and falls in part of SOI toposheet no. 56H/9.

b) The area is mainly occupied by coarse to very coarse porphyritic pink alkali feldspar granite, coarse to very coarse porphyritic grey alkali feldspar granite and migmatite gneiss
c) During GSI's National Geochemical Mapping (NGCM), zirconium (Zr) values in the block ranged from 600 ppm to 2500 ppm, and gold (Au) values from 1.0 ppb to 24.0 ppb, with uniform distribution.
d) Eastern Dharwar Craton, granites younger than 2500 Ma are known to contain allanite (cerium epidote), often associated with lanthanum. The Grey and Pink porphyritic alkali feldspar granites of the proposed area, coeval with the Closepet granite, are of early Proterozoic ager (2500 Ma).
e) Considering this, Critical Mineral Trackers (CMT) conducted a field visit to the Kosgi Block and collected samples, six of which showed promising gold assay values ranging from 0.50 ppm to 1.46 ppm. The granites around Kosgi feature tiny specks of pyrite or suspected arsenopyrite, potential carriers of gold.
f) CMT informed the committee that the Pink and Grey Porphyritic alkali feldspar granites are the key litho-units for targeting gold mineralization.
g) Additionally, CMT presented geochemical maps displaying the elemental concentration contours for gold (Au), copper (Cu), zirconium (Zr), lanthanum (La), cerium (Ce), rubidium (Rb), and strontium (Sr), highlighting their distribution across the surveyed area.
h) The committee observed that the area contains two zones: Zone 1, with four grab samples reporting gold, and Zone 2, with two grab samples showing gold. However, the proposed area lacks substantial evidence of shearing or the presence of potential gold-bearing rocks, which raises concerns about the viability of the exploration.

Recommendation of TCC:
The committee does not find the item to be promising or encouraging for gold mineralization, as it lacks substantial evidence of shearing and the presence of potential gold-bearing rocks.

Agenda 69.2.9. Reconnaissance Survey (G4) for REE and RM mineralisation in Samalpatti area, Syenite–Carbonatite Complex, Krishnagiri District, Tamil Nadu.
[Implementing Agency: KIOCL]

a) The area belongs to Samalpatti Carbonatite-syenite complex and falls in part of SOI toposheet no. 57L/7.

b) The carbonatite complex of Sevattur was explored by GSI and the authors have reported the occurrence of fenite, syenite, pyroxenite and carbonatites in the area

c) GSI has carried out preliminary prospecting in and around syenite – carbonatite of Samalpatti area in TS 57L/7 for tin and tungsten exploration (FS: 1967-68, 1991-92). They identified ultramafic pyroxenites, feldspathic pyroxenites, syenites, and carbonatites intruding the country rocks.

d) The carbonatites are a primary source of niobium and light rare earth elements (REEs) like La, Ce, Pr, and Nd.

e) The Samalpatti syenite-carbonatite complex covers 100 sq. km and contains ultramafic and pyroxenite bodies intruded by carbonatite veins.

f) During a recent field visit, KIOCL collected grab samples to analyze lanthanoid elements. Nine carbonatite samples yielded TREE values ranging from 0.12% to 0.54%, while one nepheline syenite sample showed 0.032%, and two pegmatoidal syenite samples had showed 0.01% TREE.

g) After a detailed review, the committee recommended modifying the proposal to focus on REE and RM, specifically targeting Nb and Sc, as the area shows potential for these elements.

h) The committee also opined that geophysical components are not required at this stage.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Reconnaissance Survey (G4) for REE & RM (Sc, Nb) mineralisation in Samalpatti, Krishnagiri District, Tamil Nadu" with an estimated cost of Rs. 132.12 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 7A & 7B. The item will be reviewed after 4 months.

Agenda 69.2A.1 Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities [Implementing Agency: IMMT]

The committee was informed that IMMT requires permission to revise the proposal and present in the next TCC meeting.

Agenda 69.3. Project Evaluation for In-Principle Approval

Agenda 69.3.1. Preliminary Exploration For Limestone (G4) In And Around Namangunam, Kadur, Chokkanathapuram, Vellur Areas, Ariyalur And Perambalur Districts, Tamil Nadu.
[Implementing Agency: Geo Exploration and Mining Solutions]

&

Agenda 69.3.2. Preliminary Exploration for Limestone (G4) in And Around Kulumur, Killiyapatti, Nallanayagapuram, Perumandi areas, Ariyalur and Perambalur districts, Tamil Nadu.
[Implementing Agency: Geo Exploration and Mining Solutions]

a) The proposed area for limestone falls in part of SOI toposheet no. 58M/3 and 58M/4.

b) Geo Exploration and Mining Solutions proposed G3 stage explorations in both the blocks.
c) The committee noted that the agency had not presented the outcomes of previous work conducted in the area, leaving them unable to make a decision.
d) Consequently, the committee advised Geo Exploration and Mining Solutions to conduct a field visit in the proposed area, collect and analyze samples, and present both the results of the earlier work and their own field visit findings. The agency is instructed to return for in-principle approval afterward.

Recommendation of TCC:
The committee recommended the NPEA to generate tangible evidence of mineralization in the blocks and resubmit with some chemical analysis for in-principle approval.

Agenda 69.3.3. Preliminary Exploration (G3 Level) For Copper, Lead & Zinc In The Ran Mangli Prospect, Nagpur District, Maharashtra.
[Implementing Agency: Bhushilp Mines and Minerals Pvt. Ltd.]

a) The proposed area falls in part of SOI toposheet no. 55P/05.
b) An area of approximately 1477 sq km has been proposed for a G3 stage investigation, therefore, GSI was unable to provide any comments on this item.
c) Bhushilp Mines informed that the proposal was based on AMSE work. The committee opined that such a large area is not suitable for either G3 or G4 stage investigations.

Recommendation of TCC:
The committee recommended that Bhushilp Mines select a smaller area and resubmit the proposal with appropriate justifications. Additionally, the committee suggested that Bhushilp Mines conduct a field visit prior to resubmitting their proposal with chemical values for in-principle approval.

Agenda 69.3.4. Reconnaissance Survey (G4) For REE & Strategic Minerals In And Around Thorrur, Nellikuduru, Nekkonda, Warangal Rural And Mahabubabad Districts, Telangana.
[Implementing Agency: Critical Mineral Trackers]

a) The proposed area falls in part of SIO toposheet no. 56O/10.

b) GSI has reported > 1000ppm Ce and 300-500ppm La from the area and later enrichment of Cerium and Lanthanum have been supported by NGCM work in that area. Presence of allanite has also been reported while mapping of the Eastern Dharwar Craton

c) The area was not targeted for Strategic Minerals like Strontium, Gallium, Zirconium during mapping therefore they can also be targeted in this block to assess their potential.

d) Three clusters of cerium and lanthanum were identified in areas 560/9, 10, and 13, based on NGCM data. The Nellikudur block showed the highest values, with

cerium ranging from 300 ppm to 2800 ppm and lanthanum from 150 ppm to 1215 ppm, which led to selecting this block for G-4 investigation of REE and strategic minerals/elements.

Recommendation of TCC:
The committee suggested Critical Mineral Trackers to conduct a field visit to collect bedrock samples for analysis and present the findings and the revised proposal at the next TCC meeting.

Agenda 69.3.5. Reconnaissance Survey (G-4 stage) for Tin (Sn) & associated rare metal mineralization in Bande-Saver area (80 Sq km), District: Uttar Baster Kanker, Chhattishgarh.
[Implementing Agency: Gemkokati exploration Pvt Ltd]

a) The proposed area belongs to Bastar Craton and falls in SOI toposheet no. 65A/09
b) Gemcokati has carried out field visit and collected bed rock and stream sediment samples. Analytical results from bedrock samples in Havalbaras and Bande show Sn concentrations of 10-30 ppm and Nb concentrations of 50-100 ppm. Panned samples from streams around Havalbaras, Karakoda, Saver, and Bande indicate Sn values of 10-75 ppm and Nb values of 75-200 ppm, with Ta and W levels below 500 ppm and 100 ppm, respectively.
c) In the adjoining eastern region, Sn concentrations range from 10-100 ppm, Nb from 50-1000 ppm, and Ta from 500-700 ppm.

Recommendation of TCC:

The committee raised concerns about the ground conditions in the area and instructed Gemcokati to coordinate with DMG, Chhattisgarh for further guidance. The committee advised Gemcokati to conduct a field visit to collect bedrock samples for analysis and to present the findings for in-principle approval.

Agenda 69.3.6. Reconnaissance Survey (G-4 stage) for Tin (Sn) & associated rare metal mineralization in Jarawandi-Sahgaon Block (95 sq km), District: Gadchiroli, Maharashtra.
[Implementing Agency: Gemkokati exploration Pvt Ltd]

a) The proposed area belongs to Bastar Craton and falls in SOI toposheets no. 65A/05 & 09
b) Gemcokati has carried out field visit and collected bed rock and stream sediment samples. Bedrock and panned concentrate samples from granite massifs in Bhapda and Handipaille show Sn values of 10-30 ppm and Nb values of 50-100 ppm.
c) Panned samples from streams near Jarawandi and Sohgaon Dodgri reveal Sn values of 10-75 ppm and Nb values of 75-200 ppm, with Ta and W values below 500 ppm and 100 ppm, respectively.

d) In a similar study in the eastern Chhattisgarh region, bedrock and colluvium placer samples yielded Sn values of 10-100 ppm, Nb values of 50-1000 ppm, and Ta values of 500-700 ppm.

Recommendation of TCC:
The committee raised concerns about the ground conditions in the area and instructed Gemcokati to coordinate with DMG, Maharastra for further guidance. The committee advised Gemcokati to conduct a field visit to collect bedrock samples for analysis and to present the findings for in-principle approval.

Agenda 69.3.7. Reconnaissance survey (G4 stage) for Molybdenum in and around Alangayam, Reddiyur, Puthur, Narasingapuram area, Tirupattur district, Tamil Nadu.
&
Agenda 69.3.8. Reconnaissance survey (G4 stage) for Potash mineral in and around Keeraipatti, Koranikaradu, Paithur, Sani karadu & Bharathiburam area, Salem district, Tamil Nadu.
&
Agenda 69.3.9. Reconnaissance survey (G4 stage) for Carbonatite rock in and around Mangalapuram, Mettur, Mannarpalayam, Ponnarampatti, Parogad, Vilaripalayam, Rajapalayam, & Eswaramurthipalayam area, Salem district, Tamil Nadu.
&
Agenda 69.3.10. Reconnaissance survey (G4 stage) for Tin in and around Kallampalayam, Chettipatti, Kullampatti, Arasiramani, Olappalaiyam, Palakkarankadu, Suriyamalai RF, Devannagoundanur, Puliyampatti, Thalakirakadu, Alachampalayam, Marikavundankuttai area, Salem district, Tamil Nadu.
[Implementing Agency: Geo Technical Mining Solutions]

a) It was informed that Geo Technical Mining Solutions is registered under Category “B” and as per the norms the agencies registered under Category “B” are allowed to work in bedded commodities only but the items proposed by Geo Technical Mining Solutions are of Mo, Potash, Carbonatite, Sn.
b) The committee enquired about the host rock for potash and in reply Geo Technical Mining Solutions informed that the host for the potash is granite
c) Hence, the committee did not allow Geo Technical Mining Solutions to present the item and suggested to get registered under Category “A”.

Recommendation of TCC:
The committee did not review the items because Geo Technical Mining Solutions is registered under Category "B", which is not permitted to explore non-bedded minerals. However, the committee informed Geo Technical Mining Solutions that they may present the items again if they obtain registration under Category "A".

Agenda 69.3.11. Reconnaissance survey (G4) for Iron, Gold and associated minerals in and around Michgaon, Lohattar, Dorkaenhur area, Kanker district, Chattisgarh.
[Implementing Agency: Kartikay Exploration and Mining Services private Limited]

a) The proposed area falls in SOI toposheets no. 64D/16.

b) The Govt of Chhattisgarh allotted the job of G3 exploration for Iron ore in Mero block by out sourcing. During the course of field work Mero block it was observed that the Iron ore body extends further south of Mero block. The present project is proposed to establish the continuity of Iron ore in south of the Mero block.
c) DGM, Chhattisgarh informed the committee that there is an ongoing legal litigation, and the matter is currently subjudice. DMG also mentioned that they had previously proposed an item in the area but were unable to proceed due to the same legal issue.

Recommendation of TCC:

As there is an ongoing legal litigation, and the matter is currently subjudice, the committee opined that once DGM, Chhattisgarh provides the details in writing, the TCC will be in a better position to make a decision.

Agenda 69.3.12. Preliminary Exploration (G3) for Gold near Chinnikatti Village, Haveri District, Karnataka.
[Implementing Agency: Mining Tech Consultancy Services Limited]

a) The proposed area is part of Shimoga-Dharwar schist belt and falls in SOI toposheets no.48N/6 featuring carbonatized meta-basalts, tuff (?), argillite/greywacke, phyllite, Banded Iron Formations (BIF), quartzite, quartz veins and Gabbro dykes.
b) Mining Tech Consultancy Services Limited informed the committee that the GSI has conducted exploration around Chinmulgund village, located 2 km southwest of the proposed block, but no exploration work has been carried out within the proposed block itself.
c) However, an investigation in the Salgudda block during FSP 1998-1999, which is highly relevant to the proposed area due to its similar geological setting southeast of the block, identified three discontinuous BIF bands: (i) Northern band, (ii) Middle band, and (iii) Southern band. GSI analyzed 358 trench samples from these bands, reporting gold values ranging from <0.1 ppm to 12 ppm in the northern band, <0.1 ppm to 5.5 ppm in the middle band, and <0.1 ppm to 6 ppm in the southern band.
d) GSI informed that the proposed block is located between two GM blocks, and they have already conducted G4 stage work in the surrounding area, but the results were not encouraging.

Recommendation of TCC:

The committee suggested that Mining Tech Consultancy Services Limited review both the previous and recent works conducted by other agencies, conduct a field visit, collect and analyze samples, and present all findings at the next TCC meeting to seek in-principle approval.





Annexure 1

Minutes of the 69th Technical-cum-Cost Committee (TCC) meeting held on 26h and 27th September, 2024 in hybrid mode.

S.No.	Name/ Designation	Status	Remarks
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	Chairman, TCC	Physical
2	Shri. I.R. Kirmani, ADG (Retd.), GSI.	Member	Physical
3	Shri. Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	Member	Physical
4	Shri. K. Koteswara Rao, Dy.D.G. (Retd.) GSI.	Member	Physical
5	Dr. S. K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	Member	Physical
6	Shri. S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	Member	Physical
7	Dr. E.V.S.S.K.Babu, Scientist (G), NGRI.	Member	Physical
8	Shri. K.L. Mundra, Head-RMRE, AMD, Hyderabad	Member	Physical
9	Shri. Alok Kumar, Deputy Secretary, (IFD), Ministry of Mines.	Member	Not Attended
10	Smt. Geetika Sharma Deputy Secretay ,NMET, Ministry of Mines	Member	Physical
11	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	Member	Physical
12	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Member	Through VC
13	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	Member	Physical
14	Shri. C. Parthsarathi, Director, GSI & Member Secretary, TCC- NMET, GSI, Bengaluru	Member Secretary	Physical

List of participants attended 69th Technical-cum-cost Committee (TCC) meeting of NMET held on 26th and 27th September, 2024 in hybrid mode

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. I.R. Kirmani, ADG (Retd.), GSI	irkirmani@yahoo.com	9414014723	Member TCC
3.	Shri. Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	hemraj.nmet@gmail.com	7477042176	Member TCC
4.	Shri. K. Koteswara Rao, Dy.D.G. (Retd.) GSI.	kkrao1957@gmail.com	9000117969	Member TCC
5.	Dr. S. K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	s.kulshrestha@gsi.gov.in	9413330658	Member TCC
6.	Dr. E.V.S.S.K. Babu, Scientist (G), NGRI.	evsskbabu@ngri.res.in	9441535852	Member TCC
7.	Shri. K.L. Mundra, Head-RMRE, AMD, Hyderabad	headrmre.amd@gov.in	9414785663	Member TCC
8.	Shri. S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	skadhikari@ibm.gov.in	7588690545	Member TCC
9.	Smt. Geetika Sharma Deputy Secretay ,NMET, Ministry of Mines	geetika.sharma@gov.in	9423284067	Member Ex- office
10.	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	pmaharana@rediffmail.com	8500669500	Member TCC
11.	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	ravi_g@hindustancopper.com	9433274328	Member TCC
12.	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	vandana@gsi.in	8660939235	Member TCC
13.	Shri. C. Parthsarathi, Director, GSI & Member Secretary, TCC- NMET, GSI, Bengaluru	c.parthasarathi@gsi.gov.in	9483186932	Member Secretary
14.	Dr. Dillip R. Kanungo CODO & Director(OD)I/c	codo@ibm.gov.in	8237047897	IBM
15.	Shri S.K Kankane, Joint Director	dgm.cg@gov.in	9826753151	DGM Chhattisgarh
16.	Dr. P. C. Mishra JDG	jointpcmishra66@rediffmail.com	9861465695	DMG, Odisha
17.	Shri Harish H.P. Deputy Director (Plan)	ddpmdmg1@gmail.com	9611951313	DMG, Karnataka

18.	Shri P. Ravindran GM (Exploration)	ravindran.mecl@gmail.com	9407607309	MECL
19.	Shri G S Dhami, GM (Geophysics)	geophy-unit@mecl.co.in	8290610086	
20.	Shri P.P.Kulkarni DGM (Exploration)	kulkarnip.mecl@gmail.com	8319364061	
21.	Shri Naveen Kumar Pala Senior Manager (Geology)	naveenpala.mecl@gmail.com	7738368657	
22.	Shri S. K. Satapathy, Manager (Geology)	sksatapathy4u@gmail.com	9980241921	
23.	Shri Swarup Dhara Manager (Geology)	swarupdhara@gmail.com	9630307282	
24.	Md. Dastageer, Manager (Geology)	dastageermd@gmail.com	9560739350	
25.	Shri Ashish Singh, Manager (Geology)	ashishsingh@mecl.gov.in	9929960301	
26.	Md Intazar Alam, Asst. Manager (Geology)	Intazar.geol1189@gmail.com	9483914347	
27.	Shri Dashmesh Singh, Asst. Manager (Geology)	dashmeshsingh@mecl.gov.in	8445346896	
28.	Shri Yashu Joshi, Asst. Manager (Geology)	yashujoshi@mecl.co.in	9920878577	
29.	Shri Sayandeep Chakraborty, Asst. Manager (Geology)	schakraborty@mecl.co.in	9038956935	
30.	Shri Rajanya Roy, Sr. Geologist	royrajanya@gmail.com	7301099066	
31.	Shri Dipankar Manna, Sr. Geologist	dipankarmanna@mecl.gov.in	7073593377	
32.	Sri Shiva Kumar M, AGM(ME)	bmed@kioclltd.in	9148743807	KIOCL Ltd.
33.	Sri Mohan Raj D, Consultant (ME)		9765980957	
34.	Sri Palani M, SM(ME)		6366774596	
35.	Sri Dnyaneshwar Gaonkar, DM(Geo)		9945258578	
36.	Dr. Hema HC (Geologist		9972487412	
37.	Dr. Raghwendra Pratap, Singh Senior Manager (geology)	singh.rp@coalindia.in	9431358716	CMPDI
38.	Shri Shibani Mahanta, Sr. Manager Geology	-	-	OMC
39.	Shri Navneet Sharma, Senior Geologist Mihir Malla	navneet@idpex.in	9426924652	
40.	Shri Biplob Chatterjee	biplob.chatterjee@geovale.com	9007706145	NPEA- Geovale

41.	Shri Subrata Sarkar, Vice President	subrata.sarkar@gemcokati.com	7044208900	NPEA- Gemcokati
42.	Shri Chinmay Rout	chinmay2007rta@gmail.com	8260086563	
43.	Shri Tejeswar Barik, Jr. Geologist	tejeswarbarik73@gmail.com	6294601759	
44.	Shri Rabikant Sinha, Jr. Geologist	ravikantgeology111@gmail.com	7541073820	
45.	Shri Amit Kumar Sahoo, Jr. Geologist	materbbm963@gmail.com	7008428887	
46.	Ms. Manjusha Avinash Shinde, GIS Analyst	shindemanjusha1997@gmail.com	9657858818	
47.	Representative from PRBI	prbinfraprojects@gmail.com	-	NPEA- PRBI
48.	Dr. Yerriswamy Pateel, Director	ypateel@geoexpore.com	9980118930	NPEA- GeoExpore
49.	Shri Channamallikarjun Patil, Director	cm@geoexpore.com	9980554498	
50.	Dr. Fareeduddin, Advisor	fareedromani@gmail.com	9886402487	
51.	Dr. Chandrashekaran, Project Coordinator	chandru@geoexpore.com	6361206452	
52.	Dr. K N Radhika, Senior Geologist	radhika@geoexpore.com	9886300105	
53.	Shri Arvinth Kumar H R, Asst. Geologist	arvinth@geoexpore.com	8077860054	
54.	Shri Manoj V P, Asst. Geologist	manoj@geoexpore.com	9591542608	
55.	Shri Praveen Kumar/Director	praveen@geomarinesolutions.in	8277363919	NPEA- GeoMarine
56.	Shri A.C. Dinesh, Chief Technology Officer	oed@geomarinesolutions.in	9038534560	
57.	Dr T Rajesham - Director - Technical & Chief project Coordinator	criticalmineraltrackers@gmail.com		NPEA- Critical Mineral Trackers
58.	Shri. K Mahender Reddy - Director (ME)			
59.	Shri. Rama Murthy – Director (ME)			
60.	Sri. Uma Maheshwara Rao, Director (ME)			
61.	Sri. Nageshwara Rao, Director (ME)			
62.	Sri. Vikram K Y - Director -			

	Operations			
63.	Dr. Y Satyanararyana - Director - AI, R&D, Geo-physics			
64.	Representative			NPEA- Bhushilip Mines and Minerals
65.	Representative			NPEA- MMPL
66.	Representative			NPEA-Geotechnical Mining
67.	Representative			NPEA-Geoexploration and Mining solutions
68.	Representative			NPEA- Kartikay Expl.& Mining services
69.	Representative			NPEA- Mining Tech Consultancy Services
49.	Ms. Anju C.S., Superintending Geologist	nmet.mines@gov.in	8588836933	NMET
50.	Shri Bulbul Mondal, Superintending Geologist	tcc.nmet.2023@gmail.com	9784700207	NMET
51.	Ms. Palak Kapoor, Senior Geologist	nmet.mines@gov.in	8851742488	NMET
52.	Shri Rajesh Sharma, Senior Geologist	nmet.mines@gov.in	8377851047	NMET

Annexure-2

Estimated cost for Reconnaissance survey (G4) for manganese ore and graphite in Taljuri - Gunchadihi Block, District: Balangir, Odisha. [Block area- 83 sq. km; Nos. of Borehole- 8; Borehole depth range- 60m; Schedule timeline- 18 months

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Achieved Cost in the project		Remarks
			SoC- Item -Sl No.	Rates as per SoC	Qty.	Amount (Rs)	Qty.	Amount (Rs)	
A	**GEOLOGICAL WORK (1:12,500 scale)**								
i	Charges for one Geologist- Field	day	1.2	11,000	150	16,50,000	131	14,41,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	60	5,40,000	30	2,70,000	
iii	2 labours/ party (Rs /day/labour) (As per rates of Central Labour Commissioner)	day	5.7	490	300	1,47,000	220	1,28,344	For field work only, drilling not completed
iv	Core Sampling -1 Samplers Labour charge not included	day	1.5.2	5,100	35	1,78,500	5	25,500	
v	4 labours/ party (Rs 437/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	490	140	68,600	20	9,800	
	Sub Total- A					**25,84,100**		**18,74,644**	
B	**GEOPHYSICAL SURVEY**								
i	S.P. and Magnetic (8-20 km)	L. km.	3.4b	12,92,047	1	12,92,047	1	12,92,047	
ii	Charges for one Geophysicist per day at field	day	3.18	11,000	35	3,85,000	35	3,85,000	
iii	Charges for one Geophysicist per day at HQ	day	3.18	9,000	15	1,35,000	15	1,35,000	
iv	Surveyor Work	days	1.6.1a	8,300	35	2,90,500	35	2,90,500	
v	4 labours/ party (Rs 437/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	504	140	70,560	60	30,240	
	Sub Total- B					**21,73,107**		**21,32,787**	

C	**PITTING AND TRENCHING**								
i	Trenching (1m x 2mx 150 m)	Cu m	2.1.1	3330	100	3,33,000	80	**2,66,400**	
	Sub Total- C					**3,33,000**			
D	**DRILLING**								
i	Drilling upto 300m (Hard Rock) (1rigs)	m	2.2.1.4a	11,500	500	57,50,000	12	1,38,000	
iii	Land / Crop Compansation	per BH	5.6	20,000	8	1,60,000			
iv	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	8	16,000		-	
v	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,400	50,400	700	25,200	
vi	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	1,50,000	1	50,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	1	2,50,000	
viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	1	2,50,000	
ix	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	4	88,080	1	22,020	
x	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and corner points of block by DGPS	Nos	1.6.2	19,200	9	1,72,800		-	
xi	One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	150	2,38,500	-	-	
	Sub Total- D					**71,25,780**		**7,35,220**	
E	**LABORATORY STUDIES**								
1	**Chemical Analysis**								
i	**Primary & Check samples for Maganese**								
	a. Primary Samples for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	200	5,68,200	23	65,343	Invoice to be raised

	c-External(10%) Check samples from NABL Lab for 6 radical (Mn, SiO2, P2O5, Fe2O3, MnO2 and Insolubles)	Nos	4.1.7a + 7b	2,841	20	56,820	1	2,841	
ii	**Primary & Check samples for Graphite**								
	a. Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for Primary Samples	Nos	4.1.16	3,000	50	1,50,000	24	72,000	Invoice raised for 09 samples
	c Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for External (10%) Check Samples NABL Lab	Nos	4.1.16	3,000	5	15,000	1	3,000	
2	**Physical & Petrological Stusies**								
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	5	11,765	Invoice to be raised
ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	5	21,160	
iii	Preparation of polished section	Nos	4.3.2	1,549	5	7,745	3	4,647	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	5	21,160	3	12,696	
v	Digital Photographs	Nos	4.3.7	280	15	4,200	10	2,800	
vi	Whole Rock Analysis (Major oxide and 8 additional trace elements)	Nos	4.1.15a & b	7,568	10	75,680		-	
	Sub Total- E					**9,64,655**		**1,96,252**	
F	**Total A to E**					**1,31,80,642**		**52,05,303**	
G	**Geological Report Preparation**		**5.2**	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum		**6,59,032**	**1**	**2,60,265**	Invoice to be raised

10/10/24

10/10/2024

				of Rs. 7.5 lakhs or 3% of the value of work whichever is more					
H	**Peer review Charges**		**As per EC decision**			**10,000**	**1**	**30,000**	Invoice to be raised
I	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**2,63,612.84**		**2,63,707**	
K	**Total Estimated Cost without GST**					**1,41,13,287**		**57,59,275**	
J	**Provision for GST (18% of I)**					**25,40,392**		10,36,670	
K	**Total Estimated Cost with GST**					**1,66,53,679**		67,95,945	
Note:									
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.								

Annexure 3A

Estimated cost of Reconnaissance survey (G4) for Graphite in Dhourakhaman area (60.0 Sq. Km), District : Bolangir, Odisha
BH: 300m , 4 BHs, Total area : 60 Sq. Km, Completion Time - 10 months, Review - 4 months

Sr.no	Item of work	Unit	Rates as per NMET SoC		Estimated cost of the proposal		Remark
			SoC Item (Sr. no)	Rates as per SoC	Qty.	Total amount (INR)	
1	**Geological Work**						
a	Geological mapping at 1:12,500 and BRS sampling						
b	Charges for one geologist per day at HQ	Charges for one geologist per day	*1.2*	9,000.0	30	**2,70,000.0**	45 man-days at HQ
c	Charges for one geologist per day at field	Charges for one geologist per day	*1.3*	11,000.0	120	**13,20,000.0**	2 geologists x 60 days
	Labour			522.0	240	**1,25,280.0**	
d	Charges of one sampler per day	Charges for one sampler per day	*1.5.3*	5,100.0	20	**1,02,000.0**	1 Sampler x 20 days
	Labour			522.0	80	**41,760.0**	
e	Demarcation of lease boundary, Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS (including charges for labours deployed for the work) through DGPS- **Outsourced**	Per point of observation	*1.6.2*	19,200.0	4	**76,800.0**	Outsourced component (4 BH)
2	**Mineral Investigation**						
a	Excavation of pits upto 2 m depth	Per Cu. M	*2.2.2*	3,800.0	60	**2,28,000.0**	

10/10/24

10/10/2024

b	Drilling for NQ size borehole (Diamond core drilling) - Medium hard rock upto depth of 300 m (Normal rate)- **Outsourced**	Per M	*2.1.3a*	10,100.0	300	**30,30,000.0**	4 Nos BH of 75 m each (Outsourced component)
c	Construction of concrete pillar (12" x 12" x 30")	Per borehole	*2.7a*	2,000.0	10	**20,000.0**	
3	**Geophysical survey**						
a	Self-potential method- **Outsourced**	Line Km	*3.3a*	29,600.0	20	**5,92,000.0**	Outsourced component
b.	Expert charges for Geophysicist	Charges per day	*3.18*	9,000.0	0	**-**	Charges for QA/QC of geophysical data based at HQ, Outsourced component
4	**Laboratory studies**						
a	Analysis of one rock/soil sample for determination of apackage of 34 elements by ICP-AES/ICP MS	Per sample	*4.1.14*	7,731.0	5	**38,655.0**	
b	XRF- (Major + V2O5)	Per sample	*4.1.15a*	4,621.0	10	**46,210.0**	
c	Proximate analysis of Graphite	Per sample	*4.1.16*	3,000.0	145	**4,35,000.0**	BRs = 80 samples + 10% QC samples= 90 nos., Core samples 50 + 10% QC samples= 55 nos. Total = 145
4.3	**Petrological studies**						
a	Preparation of standard thin section of the rocks	Per sample	*4.3.1*	2,353.0	10	**23,530.0**	
b	Completed petrographic/ore microscopic study/mineragraphic report of the rock samples	Per sample	*4.3.4*	4,232.0	5	**21,160.0**	
c	Digital photomicrograph of the thin sections	Per sample	*4.3.7*	280.0	10	**2,800.0**	
c	Drill core preservation	Per M	*5.3*	1,590.0	150	**2,38,500.0**	
4.5	**Mineral Physics studies**	Per sample	*4.5.1*	4,000	0	**-**	
4.8	**Specific gravity**	Per sample	4.8.1	1,605.00	2	**3,210.00**	

5	**Total Cost Excluding Outsourcing Cost**					**29,16,105.00**	
6	**Total Outsourcing Cost**					**36,98,800.0**	
7	**Total Cost**					**66,14,905.00**	
8	**Miscellaneous Charges**						
a	Preparation of exploration proposal	One number (5 hard copies along with soft copy)	*5.1*			**1,32,298**	2 % or 3.8 Lacs whichever is lower
b	Geological report preparation	Cost per 5 Hard copies of report along with soft copy	*5.2*			**3,30,745**	Reconnaissance Survey/Preliminary exploration/General exploration/Detailed exploration exceeding ₹150 lakh but less than 300 lakh: A Minimum of ₹7.5 lakh or 3% of the work whichever is more and ₹3000/- per each additional copy.
c	Tendering Cost					**73,976**	
d	Operational Charges		6.0.i			**3,69,880**	
e	Peer review charges					**30,000**	
9	**Total Cost (7+8)**					**75,51,804**	
a	**GST**					**13,59,325**	
b	**Total Cost with GST**					**89,11,129**	

c	Rs. In lacs					89.11	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	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 Certifiate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						

Annexure 3B

Time Schedule/ Action Plan for Reconnaissance survey (G4) for Graphite in Dhourakhaman area (60.0 Sq. Km), District : Bolangir, Odisha

		2024					2025					
Phase	**Activity**	**Month 1**	**Month 2**	**Month 3**	**Month 4**		**Month 5**	**Month 6**	**Month 7**	**Month 8**	**Month 9**	**Month 10**
Phase 1	Geological mapping and surveying											
	Chemical analysis of BRS samples											
	Petrological and mineralogical studies											
	Geophysical survey (Self Potential survey, including tendering process)											
Phase 2	Excavation (Trenching or pitting as appropriate based on field experience					**Review**						
	Drilling of 10 boreholes (time period includes mobilization and tendering process)											
	Chemical analysis of trench and core samples											
	Interpretation of results											
	Preparation of Geological report according to MEMC and peer review											
	NMET Presentation and project closure											

10/10/24

10/10/2024

Annexure 4A

Estimate cost for Preliminary exploration (G3) for Bauxite in Barpat Block, Balrampur-Ramanujganj District, Chhattisgarh.
Area - 2.43 sq.km, BH: 73 nos. BHs, Depth: 10 m approx., 700 m drilling, Duration: 12 months, Review after 4 months

S. No.	Item of work	Unit	Rates as per NMET SoC 2020-21		Total		Remarks
			SoC Item -S.No.	Rates as per SoC	Qty.	Amount (Rs)	
A.	**GEOLOGICAL WORK: GM- 1:4000 with contouring**						
1	Survey Party Days (1 party)	Per day	1.6.1a	8300	30	249000	
2	Labour charges for Survey work	Per Labour	5.7	522	120	62640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
3	Geologist Party Days (1 Party) Field	Per day	1.3	11000	120	1320000	
4	Geologist Party Days (1 Party) HQ	Per day	1.3	9000	30	270000	
5	Labour charges for Geological Field work	Per Labour	5.7	522	240	125280	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

10/10/24

10/10/2024

6	Sampler	Per day	1.5.2	5100	57	290700	
7	Labour for Sampling	Per Labour	5.7	522	228	119016	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
8	Other geological work/studies(Core logging & sampling etc.)	Per day	1.5.1a	11000	0	0	
	Sub Total A					**2436636**	
B.	**DRILLING- (in -house)**						
1	Surface drilling (2 rigs)	Meter	2.2.1.1b	5242	700	3669400	
2	Excavation of Pit up to 2.0m depth	Per cu.m.		3800	0	0	
3	Excavation of Pit between 2.0 to 5.0m depth	Per cu.m.		5330	0	0	
4	Road making (flat terrain)	Per km	2.2.10a	22020	5	110100	As per actuals
5	Transportation (2 rigs)	Per km	2.2.8	36	1280	46080	Bilaspur to field area and back
6	Monthly Accommodation charges for drilling camp	Monthly basis	2.2.9	50000	6	300000	
7	Camp Establishment cost (2 rigs)	Per Drill	2.2.9a	250000	2	500000	

8	Camp Winding cost (2 rigs)	Per Drill	2.2.9b	250000	2	500000	
9	Core Preservation	Per m	5.3	1,590	400	636000	As per actual mineralised zone
10	Land Crop compensation	Per borehole	5.6	20000	20	400000	Calculated a@ 25% of BHs -As per actuals as certified by local authorities subject to a maximum of 20,000 per bore hole
	Sub Total B					**6161580**	
C.	**LABORATORY STUDIES**						
a	Bulk Density	per sample	4.1	3,540	2	7080	
b.	Chemical Analysis						
1	Primary + Check Samples						
	(i) Primary Samples 7 radicals (SiO_2, Al_2O_3, Fe_2O_3%, TiO2, Ga, V & LOI)	per sample	4.1.15a	4200	400	1680000	
	(ii)For Check Samples 7 radicals (SiO2, Al2O3, Fe2O3%, TiO2, Ga, V & LOI)	per sample	4.1.15a	4200	40	168000	
	(iii) Mineral Physics Study (XRD)	per sample	4.5.1	4000	5	20000	
	(iv) Petrological study thin section	per sample	4.3.1	2353	10	23530	

	(v) Combined determination of Trihydrate Alumina (THA-140°C), Monohydrate Alumina (MHA-240°C) & Reactive Silica	per sample	4.1.17a	6700	5	33500	
	(vi) Determination of Trihydrate Alumina (THA-140°C),	per sample	4.1.17b	2000	0	0	
	(vii) Determination of Monohydrate Alumina (MHA-140°C),	per sample	4.1.17c	3500	0	0	
	(viii) Determination of Reactive Silica	per sample	4.1.17d	1500	0	0	
	(ix) Determination of Bond work Index	per sample	4.1.17e	10000	2	20000	
	(x) Analysis of REE (14 Element) by ICPMS	per sample	4.1.13	5380	10	53800	
	Sub Total C					**2005910**	
D.	**MISCELLANEOUS CHARGES**						
	Drill core preservation	per meter	5.3	1590	0	0	
	Land/crop compensation	Per BH	5.6	20000	0	0	
	Sub Total D					**0**	
E.	**Total A + B + C + D**				-	**10604126**	
F.	Peer review					30000	
	Preparation of exploration proposal	One Number (5 Hard copies	5.1	2% of the project cost or Rs 3.8 lakh	1	2,12,083	

		along with soft copy)		whichever is lower			
	Geological Report Preparation	Copy per 5 Hard copies of report along with soft copy	5.2	For the projects having cost upto Rs 300 lakhs : A Minimum of Rs.7.5 lakhs or 3% of the value of work whichever is more	1	7,50,000	
	Sub Total F					**992083**	
	Grand Total E+F					**11596209**	
	GST 18%					**2087318**	
	Grand Total: with GST 18%					**13683526**	
	Rs. In Lacs					**136.80**	
Note:							
1	**Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.**						
2	**In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.**						
3	**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.**						
4	**Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.**						

10/10/24

10/10/2024

Annexure 4B

Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for of Bauxite in Barpat Area, Tahsil- Kusmi, Distt. Balrampur-Ramanujganj, C.G.

Item of work	1	2	3	4	Review	5	6	7	8	9	10	11	12
Camp setup													
Surveying (one party)													
Drilling													
Sample preparation													
Geologist party days													
Analytical work													
Camp winding													
Geological report													





Annexure 5A

Estimate cost for Reconnaissance Survey (G-4) For Diamond in Part of a Palaeo-Channel In Krishna Basin Near Mangalagiri, Guntur Dist, Andhra Pradesh.
Area: 22.6 sq.km, Duration :12 months , Review: 4months & 8 months

S. No.	Item of Work *	Unit *	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)	
A	**Geophysical Mapping Other Geological and Geophysical Work & Surveying**						
	Geophysical Survey & drilling work	**22.6 sq.km**					
i	a. Charges for Geophysicist (30*2 Geophysicist -seismic, 20*2 Geophysicist -sounding, 60*2 Geophysicist -profiling)	day	**3.18**	11,000	0	0	
ii	b. Labours Charges; Base rate- 2 labourer per day (5 labourer*30-seismic; 6 labourer *60-electrical profiling.; 5 labourer *20 -elec.sounding)	day		504	0	0	
iii.	c. Charges for Geophysicist per day (HQ)	day	**3.18**	9,000	30	2,70,000	
	GM - 1:12,500						
i	a. Charges for Geologist per day (Field)	day	1.2	11,000	60	6,60,000	
ii	b. Labours Charges; Base rate (2 labourers)	day	5.7	522	120	62,640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	c. Charges for Geologist per day (HQ)	day		9,000	45	4,05,000	

10/10/24

10/10/2024

	Sub Total- A					**13,97,640**	
B	**Ground Geophysical Survey- Outsourced**						
1.b	High resolution Seismic Survey- A. Source: Hammer/Weight drop &Equip: 24 Channel-2. Group Interval: 5m (12 Foldage) & within 300 m	Per Line km	**3.13b**	3,03,437	12	36,41,244.00	
	Elec Resistivity (sounding)	stn	**3.5**	70,650	5	10,59,750.00	
	Resistivity profiling	line km	**3.6.c**	3,00,000	20	60,00,000.00	
	Sub Total- B					**1,07,00,994**	
C	**Survey work**						
a	**DGPS Survey for BH -RL fixing**	day	**1.6.1a**	8,300	10	83000	
b	Labours Charges for DGPS survey;2 labourers	day	**5.7**	522	40	20880	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
Sub-Total C						**103880**	
E	**DRILLING (after review)- Outsourced**						
1	Drilling:Soft Rock (HX size)	Per m	**2.2.1.1b**	7,168	300	21,50,400	MoC rate - As per actuals
5	Transportation of Drill Rig & Truck associated per drill	Km	**2.2.8**	36	994 km	0	
6	Monthly Accomodation Charges for drilling Camp	month	**2.2.9**	50,000	2	0	
7	Drilling Camp Setting Cost	Nos	**2.2.9a**	2,50,000	1	0	
8	Drilling Camp Winding up Cost	Nos	**2.2.9b**	2,50,000	1	0	
9	Sample processing incl marking of samples, core splitting crushing and powdering, coning	day	**1.5.2**	5,100	-	-	

	and quartering, packing and labelling, preparation of duplicate samples etc						
	Labour		**5.7**	522	-	-	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
10	Drill Core Preservation	per m	**5.3**	1,590	300	4,77,000	
Sub-Total E						**26,27,400**	
G	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
	Separation of heavy minerals from sediment samples of 2mm size through gravity and two level magnetic separation	**per sample**	**4.3.6b**	13,820	20	2,76,400	
	XRD analyisis for identification of minerals(random)	**per sample**	4.5.1	4000	10	40000	
Sub total G						**3,16,400.00**	
H	**Total Outsourcing Cost**					**1,28,51,394.00**	
I	**Total Cost A to G**					**1,51,46,314.00**	
J	**Geological Report Preparation**	**5 Hard copies with a soft copy**	**5.2**	Exploration cost exceeding150 lakh but less than 300 lakh: A Minimum of ₹7.5 lakh or 3% of the work whichever is more		7,50,000	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

K	**Peer review Charges**		**As per EC decision**		30000	
L	**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 less	3,02,926	EA will be reimbursed after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
M	**Operational charges**				**10,17,570**	
N	**Tendering cost**				**2,57,028**	
O	**Total Estimated Cost without GST**				**1,75,03,837.86**	
P	**Provision for GST (18% of J)**				**31,50,690.81**	
Q	**Total Estimated Cost with GST**				**2,06,54,528.67**	
R	**Rs. In Lakhs**				**206.55**	
Note:						
1	**Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.**					
2	**In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.**					
3	**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.**					
4	**Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.**					

Annexure 5B

Time Schedule/ Action Plan for Reconnaissance Survey (G-4) For Diamond in Part of a Palaeo-Channel In Krishna Basin Near Mangalagiri, Guntur Dist, Andhra Pradesh.

			MONTHS																					
S. No.	ACTIVITIES	DAYS	1		2		3		4		Review	5		6		7		8		Review	9		10		11		12	
1	Camp Setting	60																										
2	Geophysical survey	110																										
3	Geophyscist party days (HQ) for data interpretation & Report	90																										
4	Drilling (10 rigs upto 30m)	45																										
5	Geologist Man days(Field)	45																										
6	Sampler man days(Field)	60																										
7	Camp Winding	15																										
8	Laboratory Studies	30																										
7	Report Writing with Peer Review	60																										

10/10/24

10/10/2024

Annexure 6A

Estimate cost for Preliminary Exploration (G-3) for Limestone in Akapur Block (6.52 sq. km), Yavatmal District, Maharashtra
Nos. of Borehole - 07; Borehole depth range - 50m (BGL); 350m drilling Completion Time - 10 Months, Review : after 5 months

S.N	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 (1:4000), Borhole logging & Sampling & Report writing**						
a	Charges for one Geologist per day at HQ	day	1.3a	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	day	1.3b	11,000	100	11,00,000	
c	Labour for Geologist (2 Nos)	day	5.7	522	200	1,04,400	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 (1 Party)	one sampler per day	1.5.2	5,100	41	2,09,100	
e	Labours for sampling work (4 Nos)	day	5.7	522	164	85,608	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), Topographical Mapping**						
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	12	2,30,400	Block cardinal point- 5 Borehole- 7

10/10/24

10/10/2024

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	522	120	62,640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub-Total A					**23,11,148**	
B	**DRILLING - in- house**						
1	Drilling -Soft rock	m	2.2.1.1b	7,168	350	25,08,800	MoC Rate
2	Land / Crop Compansation (in case the BH falls in agreecultural Land)	per BH	5.6	20,000	7	1,40,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	12	24,000	
4	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	400	14,400	To & fro
5	Monthly Accomodation Charges for drilling Camp (up to 1 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	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	320	5,08,800	
	Sub Total B					**39,34,080**	
C	**LABORATORY STUDIES**						

1	**Chemical Analysis**						
i)	**Primary samples**						
	a. For 10 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O, Na2O and LOI by XRF	Nos	4.1.15a	4,200	300	12,60,000	
ii)	**External Check samples (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	30	1,26,000	
iii)	**Petrological samples (Bh Core Samples)**						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii	Study of Thin Section	Nos	4.3.4	4,232	5	21,160	
iv)	**Bulk Density Determination**						
	Bulk Density	No.	4.1	3,540	2	7,080	
	Total - C					**14,26,005**	
D	**Sub Total (A to C)**					**76,71,233**	
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**		**3,83,562**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and soft copy to NMET

F	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1/28th EC**	**2% of the Cost or Rs. 5.0 Lakhs whichever is lower**		**1,53,425**	EA has to submit the Hhard copies and soft copies of final proposal along with maps and plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
G	**Peer review Charges**		**As per EC decision**			**30,000**	Cost Estimated for two peer review of 2 blocks seperately (Naddisinur-1 and Naddisinur-2 Blocks)
H	**Total Estimated Cost without GST**					**82,38,219**	
I	**Provision for GST (18% of H)**	**%**				**14,82,879**	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**97,21,099**	
				Rs. In Lakhs		***97.21***	
Note:							
1	**Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.**						
2	**In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.**						
3	**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.**						
4	**Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.**						





Annexure 6B

Time Schedule/ Action Plan for Preliminary Exploration (G-3) for Limestone in Akapur Block (6.52 sq. km), Yavatmal District, Maharashtra

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

Annexure 7A

Estimate cost for Reconnaissance Survey (G4) for REE and RM mineralisation in Samalpatti area, Syenite–Carbonatite Complex, Krishnagiri District, Tamil Nadu
KIOCL_57_TN_SREE) Area: 28.5 sq.km, Time :10 months , Review- after 4 months

Sl	Item of Work	Unit	Rates as per NMET SoC					Tendering/ Outsourcing components	Remarks
			SOC Item No	Rates as per SOC	Qty	Amount (Rs)			
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)*(f)		(g)	(h)
1	**INCORPORATION OF CORBONOTITE BODIES IN GSI's 12.5k MAP (FSP 2016-17) OVER AN EXTENT OF 28.5 sqkm**								
1.1	Geologist Party days - Field	days	1.2	11,000	60.0	6,60,000			For Updation of Geological Map
1.2	Geologist Party days - HQ		1.2	9,000	20.0	1,80,000			
1.3	Labour charges @ 2nos per Geologist	days	5.7	522.00	120.0	62,640			As per enclosed notification by Govt of Karnataka for Unskilled labour charges for Zone 04 categories
	PITS/ TRENCHING WORKS						**13,78,640**		
2.1	Pits/ Trenching works	cum	2.1.2	3,800	100.0	3,80,000			
3	**Survey works**								
3.1	Demarkation of Lease boundary and fixation of borehole and determination of coordinates and RL by DGPS	Per point of observation	1.6.2	19,200	5.0	96,000			(5Bhs)

4	**DRILLING**									
4.1	Drilling (01 rig - Medium Hard Rock) **(Outsourcing)**		m.	2.2.1.3a	10,100	500.0	50,50,000	**54,47,500**	**50,50,000**	
4.2	Core preservation		m	5.3	1,590	250.0	3,97,500			420m= @ 80m per BH X 4 BHs + 100m (1 complete BH)
5	**LABORATORY STUDIES**									
5.1	Sample processing works	Sampler charges	days	1.5.2	5,100	41.0	2,09,100	**2,94,708**		@440 samples /8 samples per day
5.2		Labour charges	days	5.7	522.00	164.0	85,608			Amount will be reimbursed for unskilled labour as per the notified rates by the Central Labour Commissioner (Rs.504/- per day) or respective State Govt. whichever is higher)
5.3	34 elemental analysis by ICPMS (Sequential technique)	Primary	per sample	4.1.14	7,731	300.0	23,19,300	**25,51,230**		400nos: BRS & Channel (100 nos) + Regolith Samples (50 nos)+ Trench (50 nos)+ Drill core: (100 nos)
5.4		External Check (10%)		4.1.14	7,731	30.0	2,31,930		**2,31,930**	

10/10/24

10/10/2024

5.5	Petro studies	Preparation of Standard Thin section	nos	4.3.1	2,353	10.0	23,530	**1,63,660**	**1,63,660**	
5.6		Complete Petrological Report of rock sample	nos	4.3.4	4,232	10.0	42,320			
5.7		Preparation of Polished Thin section	nos	4.3.2	1,549	10.0	15,490			
5.8		Mineragraphic studies	nos	4.3.4	4,232	10.0	42,320			
5.9		XRD for Mineral phase analysis	nos	4.5.1	4,000	10.0	40,000			
5.10		SEM studies	hrs	4.4.2	2,940	0.0	0			
5.11	Determination of Insitu bulk density		nos	4.10	3,540	0.0	0			
6	**Sub Total (1+2+3+4+5+6)**						**98,35,738**	**98,35,738**	**54,45,590**	
7	**Peer review of report**		lumpsum		MoM Office Memorandum Dtd 12 July 2023		30,000	13,60,833		
8	Preparation of Exploration Project Proposal		lumpsum	5.1	2% of approved project cost subject to maximum of ₹ 5 lakh"		1,96,715			
9	Exploration Report (5% of (Sl 9 + Sl 10))		lumpsum	5.2(ii)	Reconnaissance survey/Preliminary exploration exceeding Rs.150 Lakh and less than Rs 300 lakhs: A min. of Rs.7.5 Lakhs or 3% of the value of		4,91,787			

				work whichever is more.					
10	Tender processing Cost	lumpsum	2.3	One time in case of outsourced component(s) of project work (2% of the approved project cost or 5 lakh whichever is lower)		1,08,912			Tendering/ Outsourcing Cost (Rs. 59,47,295)
11	Operational Charges (Reimbursement of cost in case of outsoruced components of project work)	lumpsum	6(iii)	In case of total outsourced cost more than Rs 50 lakhs up to Rs 1 Crore: Rs 5.0 lakhs + 7.5% of balance amount outsourced in excess of Rs50 lakhs		5,33,419			Tendering/ Outsourcing Cost (Rs. 59,47,295)
12	**GRAND TOTAL (7 to 11)**					**1,11,96,571**	**1,11,96,571**		
13	**GST 18%**					**20,15,383**	**20,15,383**		GST will be reimbursed as per actual and as per notified prescribed rate
14	**Grand Total (with GST 18%)**					**1,32,11,953**	**1,32,11,953**		
15	**Rs. In lacs**					**132.12**			
Note:									
1	**Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.**								
2	**In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.**								
3	**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.**								
4	**Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.**								

Annexure 7B

Time Schedule/ Action Plan for Reconnaissance Survey (G4) for REE and RM mineralisation in Samalpatti area, Syenite–Carbonatite Complex, Krishnagiri District, Tamil Nadu

Sl	Details of Works		Duration in months	1	2	3	4		5	6	7	8	9	10
1	**CAMP SETTING**		01											
2	**Incorporation of Corbonotite bodies** (Includes 28.5 sq km of LSM + 100 nos of BRS + Regolith 30+ 100 cum Trial pit/ Trenches)		3											
	2.1	Geologist Party days (01 Party)												
	2.2	Laboratory Works	3											
3	**Surface Drilling**													
	3.1	Preparatory works for drilling (Approach road making)	01											
	3.2	Drilling works (01 rig - 500m with 05 Bhs)	3											
	3.3	Geologist Party days (01 Party)												
	3.4	Laboratory Works	03											
4	**Survey Works**													
	4.1	DGPS survey works of 17 points (05 BHs+12 Boundary)	01											
5	**Camp Winding**		01											
6	**Preparation of Reports and maps**		01											

Review

10/10/24

10/10/2024