

Ministry of Mines
National Mineral Exploration Trust
Minutes of the 62nd Technical-cum-Cost Committee (TCC) meeting held on 28th
& 29th February and 01st March, 2024 through video conferencing

The 62nd 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 28th & 29th February and 01st March, 2024.

Members of TCC-NMET and representatives from DGM, Assam; CGM, Gujarat; DMG Karnataka; DGM, Madhyapradesh; DMG, Telangana; MECL; OMC, Odisha; CMPDI; MPSMC; Ecomen Laboratories Pvt.Ltd.; GeoExpore Pvt.Ltd; Geo Marine Solution Pvt.Ltd; Gemcokati Exploration Pvt. Ltd.; Geovale Service Pvt.Ltd; Maheshwari Mining Pvt.Ltd; and United Exploration India Pvt.Ltd have attended the meeting through their respective VC modes.

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

Shri C. Parthasarathi, 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).

Dr. S. Ravi, DDG, GSI and Chairman, TCC, welcomed the members of TCC and participants representing state DGMs, Notified Exploration Agencies [NEAs] and Notified Private Exploration Agencies [NPEAs]. In his opening remarks, the chairman advised the NPEAs and NEAs to submit the proposals on time so as to equip the members to come prepared for the meeting. Further he also insisted upon the following points,

- i. The agencies which are carrying out exploration through NMET fund should strictly adhere to the timeline and complete the exploration within the committed period as the same was discussed in the last concluded EC meeting too.
- ii. Further he highlighted the suggestion of EC of NMET to constitute an expert committee for reviewing the core strength, logistic and infrastructure with the NEAs and NPEAs to propose and execute the projects which are funded by NMET.
- iii. The chairman, TCC also opined that the state DGMs and PSUs which have procured equipments for their chemical labs through NMET fund need to extend their lab facilities for analyzing the samples of the NMET projects in the respective states to expedite chemical analysis.
- iv. Taking the comprehensive opinions of all the TCC members regarding the inordinate delays in execution of the projects, the chairman asked the state DGMs, NEAs and NPEAs to properly assess the ground conditions, Forest

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- Clearance, local law and order issues, and their own core strengths/competency before submitting the proposals for NMET fund.
- v. Regarding procurement of costly equipments through NMET fund, the chairman discussed the views of the members and insisted the NEAs and PSUs to be prudent while submitting procurement proposals. He asked all the agencies to properly asses their requirement, expertise, manpower and basic set-ups (lab building) available with them for installation of costly equipments. Instruments which are commissioned without basic lab set-ups and man power may lead sheer wastage of public fund.
 - vi. The agencies which are submitting proposals for procurement of drilling machine should properly enumerate their current strength and requirement along with possibilities for consortium model.
 - vii. Further the chairman, TCC expressed the collective views of the members that agencies which are submitting procurement proposals should also submit the undertakings from the head of the institution/organization regarding their organization's capabilities, strength and optimum utilization of the instruments which are proposed to be procured.

With the permission from the chair, Dr. E.V.S.S.K Babu, Chief Scientist, CSIR-NGRI and Member of TCC opined that the agencies while submitting their proposals can verify the status of the project area in the Gati Shakti portal and try for embedded clearance from the Dept. of Forests so as to avoid undue delay in execution of the projects.

Shri. Santosh Adhikari, Chief Mining Geologist, IBM and Member, TCC suggested the Chairman, TCC to work out the compilation of exploration data carried out under NMET fund and grade the agencies according to the number projects executed, stage of exploration, area covered, quality of execution, timeline adhered, core competency developed, resource augmented and rate of success in the form of blocks explored and auctioned.

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

Agenda 62.1: Technical evaluation of new project proposals:

Agenda 62.1.1 Preliminary Exploration (G-3) for REE Mineralization in Rangali Block (1.69 sq. km), District: Karbi Anglong, Assam.

[Implementing Agency: MECL]

- a) The proposed area lies in Mikir Hills with undulating terrain and the alluvial plain of Brahmaputra.
- b) During a meeting held on 24/11/2023, the Secretary (Mines) directed both the GSI and MECL to identify additional areas for exploration in the state,

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- intensify the pace of exploration activities, and furnish more Geological Reports to the state government for auctioning purposes.
- c) The GSI conducted a G-4 stage REE investigation during FS 2021-2022, involving large-scale mapping, sampling, pitting, trenching, and auger drilling (52 boreholes with 800m spacing). The drilling was done in the regolith.
 - d) The mineralized zone is situated within the regolith/soil developed over granites and migmatite gneiss exposed in the study area, indicating regolith hosted REE mineralization.
 - e) Chemical analysis indicates that the B horizon has a thickness of up to 2.0 meters and exhibits Σ REE values ranging from 156.68 to 2067.53 ppm. The B+C horizon is thick up to 9.0 meters, shows Σ REE ranging from 154.67 to 1467.39 ppm, while the C horizon, ranging from 1 to 6.0 meters, has Σ REE values from 180.29 to 1294.83 ppm.
 - f) The total REE resource in the exploration block is estimated to be 33.90 million tonnes with an average grade of 818.84 ppm (0.082 Wt. %) or an average REE₂O₃ grade of 959.10 ppm (0.096 Wt. %).
 - g) Expanding upon these directives and findings, the current proposal has been proposed for Preliminary Exploration (G-3) for REE_{sw} in the Rangali Block, located in the northeastern part of the Lakhajan area, situated within the Karbi Anglong District of Assam.
 - h) The project was reviewed and TCC opined that the proposed area may form a part of Eco Sensitive Zone (ESZ) and near by the Kaziranga National Park.

Recommendation of TCC:

The committee recommended MECL to confirm the status of the block and if possible avoid the Eco sensitive zone (including 1 km buffer area) and if still found potential for exploration submit it to the next TCC for review.

Agenda 62.1.2 Preliminary Exploration (G-3) for Copper, Lead, Zinc and associated Minerals (Phase-I) in Bagwari Khirkhori Block, District: Sidhi, Madhya Pradesh (5.70 Sq. Km). [Implementing Agency: MECL]

- a) The area lies in the vicinity of Northern boundary of the Central India Tectonic Zone (CITZ) and in the close vicinity of Mahakoshal and Vindhyan Supergroup.
- b) During the F.S. 1965-67, GSI has carried out pitting trenching and geochemical sampling and reported base metal from the area.
- c) In 2022-23, MECL conducted a Reconnaissance Survey (G-4 stage) within the Bagwari-Sukwari block, covering an area of 141.75 sq. km, out of which 5.70 sq. km. was identified, situated in and around the villages of Bagwari, Khirkhori, Chhirauhi, and Chidahawa in the Sidhi district of Madhya Pradesh. The survey included mapping, trenching and exploratory drilling.
- d) Surface indications of mineralization observed in the block include malachite stains, azurite, etc. predominantly along quartz veins within gneisses and schists. Copper mineralization has been confirmed in two boreholes, MSB-01 and MSB-03, with a cumulative strike length of 200m and a thickness of 2.00m at a 0.2% Cu cut-off. In the drilled boreholes, copper mineralization is

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evident in the form of specks, veins, lenses of chalcopyrite, pyrrhotite, and pyrite within altered quartz veins. Hydrothermal alteration features such as chloritization, biotitization, and sericitization are also observed, delineating mineralized zones.

- e) MECL informed the house that the mineralization is structurally controlled and thickness of the zone is approximately 0.5m
- f) MECL has now proposed the G3 item to further prove the subsurface continuity of the mineralized zone and estimate the resource with enhanced level of confidence
- g) The committee reviewed the proposal and opined that the stopping thickness of copper mineralization in the blocks is very less and does not find economic.

Recommendation of TCC:

The project at this juncture is not approved due to low stopping thickness and poor grade of copper mineralization but suggested MECL to resubmit with more justification.

Agenda 62.1.3 Preliminary Exploration (G-3) for Manganese in Nagardhan Block (2.00 sq. km), District: Nagpur, Maharashtra.

[Implementing Agency: MECL]

- a) The proposed exploration block belongs to Sakoli Fold Belt and is located in Ramtek Tehsil of Nagpur district, pat of Toposheet No 57O/7.
- b) A number of working underground and open cast mines of Manganese Ore India Limited (MOIL) are present around the area.
- c) The Nagardhan Manganese block is a lease area that has lapsed according to the State Government of Maharashtra. It was granted under section 10(A) 2(B) of the MMDR Act-15. The block was granted to M/s. Excel Mining Incorporation during 04/02/2011 to 03/02/2013 for 2 years.
- d) M/s. Excel Mining Incorporation conducted prospecting activities in the area, which included excavating 7 pits and drilling 6 vertical boreholes. Among the 7 pits, manganese boulders were encountered in three of them, while the remaining four pits showed no presence of manganese. Manganese mineralization was intersected in 4 (BH-1, BH-2, BH-3, and BH-4) out of the 7 vertical boreholes drilled in the block. However, analytical data for both the pits and boreholes are currently unavailable.
- e) Therefore, the Directorate of Geology and Mining (DGM) of the Government of Maharashtra, Nagpur, issued a request to MECL to undertake exploration activities in the lapsed 10(A) 2(B) mining lease areas vide letter no. Tech/1848/2023/3938, dated 22/12/2023.
- f) Accordingly, MECL consulted the data provided by the DGM, Maharashtra and conducted field visit in and around the Nagardhan area. The geologist

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team studied the area and found the surface indication of the manganese mineralization in the paddy field and a shallow pit within the block area.

- g) On the basis of all these, MECL has proposed the G3 program comprises topographical survey (1:4000 scale), geological mapping (1:4000 scale), trenching and drilling of about 500m with associated survey, chemical analysis & physical analysis and geological report preparation.
- h) Upon review, the TCC found that the block was already explored in detail and suggested MECL to thoroughly consult the GR submitted by the erstwhile lessee and if possible submit for auction.
- i) The MECL replied that the GR of erstwhile lessee is neither available with state DGM, Maharashtra and nor with IBM, Nagpur and the existing data too not sufficient enough for preparing NIT and hence sought for NMET's approval to carry out systematic exploration of the block under G3 stage.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Preliminary Exploration (G-3) for Manganese in Nagardhan Block (2.00 sq. km), District: Nagpur, Maharashtra" with an estimated cost of Rs. 130.66 lakh (including GST) within time schedule of 11 months and submission of report as per annexure-2A & 2B. The item will be reviewed after 5 months.

Agenda 62.1.4. Reconnaissance survey (G-4) for REE, Rare Metals (RM) and PGE Mineralization in Kathapullatti Block, Part of district- Tiruppur, State- Tamil Nadu.

[Implementing Agency: MECL]

- a) The proposed Kathapullapatti Block lies in Dharapuram Tehsil of Tiruppur, district Tamil Nadu and falls in the Survey of India Toposheet No 58F/05 & 58F/09.
- b) The block comprises of Charnockite, Basic Granulites, Pyroxenite, Pink Granites, Biotite-Hornblende Gneisses but exposures are very less and extensive soil cover occupy the area.
- c) GSI conducted a NGCM in the area and according to the report, GSI collected a total of 37 samples from the proposed area. Among these samples, 15 stream samples showed Total Rare Earth Element (TREE) concentrations of more than 1000 ppm. In the proposed block, the TREE values varied from 173.18 to 2889.67 ppm. Additionally, the values for HREE ranged from 7.38 ppm to 345.97 ppm, while those for LREE ranged from 165.3 ppm to 2860.7 ppm. The proposed block found to be LREE enriched.
- d) GSI has carried out STM work towards east of the proposed area and reported anomalous values for Cu (38 to 1093ppm), Ni (174 to 2024ppm), Cr (920 to 5145ppm), PGE (6ppb and 84ppb) Sc (up to 600ppm), Th, U and REE elements.
- e) The proposed area is the western extension of the above mentioned areas and shares continuity with numerous ultramafic and pegmatite bodies, it is

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proposed to systematically sample these rocks, particularly the ultramafic rocks, to explore for significant trace elements, Rare Earth Elements (REEs), and platinum group elements.

- f) The TCC reviewed the proposal and advised MECL to exclude the area adjoining to the major river running in the east and expand the area by including the pyroxenite bodies shown in the south.
- g) The committee suggested auger drilling as a replacement for core drilling.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for “Reconnaissance survey (G-4) for REE and Rare Metals (RM) and PGE Mineralization in Kathapullatti Block, Tiruppur district , Tamil Nadu” with an estimated cost of Rs. 97.63 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-3A & 3B.

Agenda 62.1.5. Preliminary Exploration for Iron Ore in Katupali Iron Ore block, Keonjhar district, Odisha. [Implementing Agency: OMC, Odisha]

- a) The Katupali Iron Ore Block occupied the 12.259 sqkm area towards eastern portion of Bonai – Keonjhar belt or Horse Shoe belt, a prominent province of Banded Iron Formation in Odisha.
- b) GSI has already conducted geological mapping on 1:63,360 scale in Malangtoli blocks and delineated various iron ore deposits in the area.
- c) The rock types exposed in the block area includes Iron Ore, Laterite, Shale, Banded Hematite Jasper (BHJ) and volcanics.
- d) The types of iron ore observed in the block include Hard Massive Ore (HMO), Hard Laminated Ore (HLO), and Lateritic Iron Ore. During the survey, a total of 22 surface samples were collected from various lithounits and analyzed. Among these samples, 9 were from iron ore bodies with iron percentages ranging from 58.74% to 68.44%.
- e) A numbers of mining lease areas exist in proposed Katupali block
- f) The Department of Steel & Mines has allocated the Katupali Iron Block with an area of 12.259 square kilometers to OMC (previously known as OMECL) for exploration up to the G2 level of the United Nations Framework Classification.
- g) Hence, OMC has proposed the item to carry out G3 stage investigation utilizing NMET fund.
- h) The block was reviewed by TCC and suggested OMC to modify the proposal in the following lines.
 - i. In the northern part, the area to the north of railway line occupied by basic volcanics should be excluded.
 - ii. In the southern part, the area to the south of highway occupied by soil with scanty shale outcrops should be excluded.
 - iii. In the central part, the areas adjoining to the existing mines should be assessed to understand the style of mineralization so as to decide the number of boreholes required to be drilled.
- i) For this, the OMC asked for the timeline and permission to resubmit the proposal after ground check.

Recommendation of TCC:

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The proposal was not recommended for want of additional input and ground check.

Agenda 62.1.6 Preliminary Exploration (G-3) for Graphite in the Patra graphite block, Jhabua district, Madhya Pradesh. [Implementing Agency: The MP State Mining Corporation Ltd (MPSMCL)]

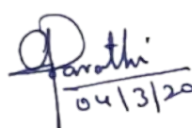
- a) The proposed block belongs to Meghnagar Group of rocks of Aravalli Supergroup in Jhabua district of Madhya Pradesh and this Meghnagar Group contain several bands of carbonaceous phyllites with intermittent graphitic horizon.
- b) GSI conducted a geological mapping of the area at a scale of 1:12500, reporting graphite (FC) content ranging from 5.26% to 8.21%. This graphite-bearing band extends over a length of 450 meters with thickness varying from 5 meters to 80 meters.
- c) The host rock for graphite mineralization in the Patra south band is identified as Aravalli metasediments, particularly carbonaceous phyllite. Raman spectroscopy studies further confirmed the presence of graphite peaks in various samples collected from the area.
- d) The TCC reviewed the project and learnt the block was initially submitted for auction but got annulled for want of more data.
- e) Accordingly, the MPSMCL has conducted field visit and confirmed the presence of the graphite bands and hence proposed to explore under NMET fund.


Recommendation of TCC:

The committee recommends the proposal for approval of EC for “Preliminary Exploration (G-3) for Graphite in the Patra graphite block, Jhabua district, Madhya Pradesh” with an estimated cost of Rs.198.11_ lakh (including GST) within time schedule of 12 months and submission of report as per annexure-4A & 4B. The item will be reviewed after 4 and 8 months consecutively.

Agenda 62.1.7 Preliminary Exploration (G-3) for Basemetal in Pastalaimal Basemetal Block, Betul District, Madhya Pradesh. [Implementing Agency: MPSMCL]

- a) The proposed block belongs to Betul belt (part of Toposheet No 55 K/5) and lies 4 km south-east of Dehalwara prospect where a resource of 1.12 million tons with 1.83% Zn, 0.45% Pb, 0.26% Cu besides 8.26 g/t Ag & 22 ppm Cd has already been established.
- b) The area surrounding Pastalaimal – Ryatwari is situated in the central part of the Betul Belt and shares a geological setup similar to that of the Dehalwara Prospect.
- c) The geological mapping (Scale:1:5000) and soil sampling (200m x 20m grid) in the Pastalaimal-Ryatwari-Somalpur area revealed the presence of


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four distinct anomalous zones for zinc mineralization, with values >1000 ppm in soil samples. Additionally, a copper anomaly zone with a value of 450 ppm Cu has been delineated.

- d) The favorable host rocks for sulphide mineralization in this area are metamorphosed foliated rhyolite and garnetiferous quartz–biotite schist.
- e) The TCC reviewed the project and learnt the block was initially submitted for auction but got annulled for want of more data. Subsequently, the Joint Working Group (JWG) of Madhya Pradesh has recommended further enhancing the exploration level to prepare the block for auctioning in the future.
- f) Upon review, the TCC, NMET suggested MPSMCL to modify the drilling plan to 400x 400 m grid pattern. Accordingly MPSMCL modified the drilling target under NQT.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for Preliminary Exploration (G-3) for Basemetal in Pastalaimal Basemetal Block, Betul District, Madhya Pradesh with an estimated cost of Rs. 136.41 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-5A & 5B. The item will be reviewed after 4 months.

Agenda 62.1.8 Reconnaissance Survey (G-4) For PGE, Vanadium & Associated Minerals in Risewada-Lodhiwada Block (64 Sq Km), Balaghat District, Madhya Pradesh.

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Agenda 62.1.9. Reconnaissance Survey (G-4) for PGE, Vanadium & associated minerals in Bhursadongari - Murum Block (120 Sq Km), Balaghat District, Madhya Pradesh.

[Implementing Agency: Gemcokati Exploration Pvt. Ltd]

- a) The proposed Risewada-Lodhiwada Block and Bhursadongari - Murum Block belong to Dongargarh Supergroup and the blocks are the southern and northern (respectively) extensions of Maneri – Sitapala area where a G4 stage investigation has already been sanctioned by NMET.
- b) During reconnaissance traverses in the Maneri-Sitapala block, a magnetite/spinel-bearing zone with total PGE values ranging from 50ppb to 488ppb was identified, spanning approximately 340 meters along NNE-SSW direction.
- c) Followed by discovery of this PGE anomalous zone Gemcokati Exploration Pvt. Ltd has conducted two reconnaissance field traverses and confirmed the extension of magnetite / spinel bearing PGE anomaly zone to the Risewada – Lodhiwada block and Bhursadongari - Murum Block.
- d) One sample collected from the southern strike-extension of the PGE anomaly zone of Maneri-Sitapala block yielded 54ppb total PGE. Within the proposed

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block, laterites have developed on Amgaon Phyllites in the west and on basalt in the east. Grab samples from the laterite capping on Amgaon phyllite yielded V₂O₅ values of 0.29% and 0.18%, while V₂O₅ values of other laterite samples from this zone range from 0.1% to 0.34%. These values exceed the IBM cut-off of 0.1% V₂O₅, indicating significant potential for vanadium mineralization.

- e) During the field traverses and grab sampling conducted from Bhursadongari - Murum Block have revealed anomalous values of PGE in 21 samples, ranging from 24 ppb to 320 ppb, and V₂O₅ in 11 samples, ranging from 0.07% to 0.14%.
- f) NAGMP maps of (Block-4) Magnetic and spectrometric maps has corroborated with field observations.
- g) In order to trace and establish the northern and southern extensions of mineralization found in in Maneri – Sitapala these two G4 stage items have been proposed.
- h) The committee found that another item of the same stage and commodity is already in progress by Gemcokati in the sector. Therefore, at a time recommending two more items of similar nature is not advisable without complete understanding of the mineralisation. Therefore, the Gemcokati was asked to choose one block this time and wait for the outcome of the ongoing item.
- i) Accordingly, Gemcokati Exploration Pvt. Ltd choose to explore the northern block i.e. Bhursadongari - Murum Block and modified the block boundary, as suggested by TCC, to 100 sq.km by leaving the lean area demarcated on the basis of geophysical anomaly.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for “Reconnaissance Survey (G-4) for PGE, Vanadium & associated minerals in Bhursadongari - Murum Block (100 Sq Km), Balaghat District, Madhya Pradesh” with an estimated cost of Rs. 61.01 lakh (including GST) within time schedule of 6 months and submission of report as per annexure-6A & 6B. The item will be reviewed after 4 months.

Agenda 62.1.10. Preliminary Exploration (G3 stage) for Vanadium and Titanium in Beach and Dune sands of Talashil block in Sindhudurg district, Maharashtra [Implementing Agency: M/ S Geo Marine Solutions Private Ltd.]

- a) The proposed block is part of the old toposheet 47H/8 and OSM E43T/8. The Block covers distance of about 12km coastal stretch lies between Achara and Gad River mouth.
- b) Gujar et al. (2022) studied the mineralogy of fluvial and coastal sediments, specifically heavy mineral placers, along a 105 km stretch of the Sindhudurg District coastline, Maharashtra, India.

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- c) The concentration of heavy minerals is higher in the supratidal zone compared to the intertidal zone. These minerals originate from igneous, metamorphic rocks, and recycled sediments of Pre-Cambrian Age, as well as Deccan Trap basalts.
- d) Major oxides in separated ilmenite and magnetite grains within the Talashil Block show ilmenite content varies from 39% to 51%, with V₂O₅ ranging from 0.44% to 0.96%. TiO₂ in the magnetite fraction ranges from 14% to 24%, with V₂O₅ between 3.78% and 4.76% (Gujar et al., 2022).
- e) Geo Marine Solutions Pvt Ltd., Mangalore conducted a reconnaissance survey in the area in January 2024, collecting two samples to assess titanium (Ti) and vanadium (V) contents in different mineral phases. The separated heavy minerals show roughly equal proportions of magnetic and non-magnetic fractions.
- f) Further analysis revealed that magnetite fractions contain approximately 27% TiO₂, 0.75% V₂O₅, and Fe₂O₃ ranging from 57% to 60%. Ilmenite fractions exhibit about 42% TiO₂, 0.465% V₂O₅, and Fe₂O₃ ranging from 47%. Limonite fractions show TiO₂ content ranging from 11% to 19%, V₂O₅ content ranging from 0.21% to 0.34%, and Fe₂O₃ ranging from 37% to 47%.
- g) The results suggest that the Talashil block extending about 12 km in length and width, including the backshore and dune areas ranging from 150m to 550m, appears to be promising potential for G3-level exploration of critical minerals like vanadium and titanium.
- h) The TCC committee reviewed the proposal and raised concern about the excavation in active beach. In reply M/s Geo Marine clarified that it has proposed to work only in the area of stabilised dunes and will not disturb the active beaches.
- i) Further, the committee suggested Geo Marine to reduce the number of drill holes and follow the MEMC guidelines besides asking to assess its existing man power and infra-structure before proposing too many items.

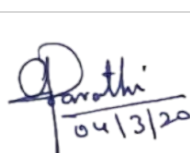
Recommendation of TCC:


The committee recommends the proposal for approval of EC for “Preliminary Exploration (G3 stage) for Vanadium, Titanium and Associated Minerals in Beach and Dune sands of Talashil block in Sindhudurg district, Maharashtra” with an estimated cost of Rs.136.13 lakh (including GST) within time schedule of 10 months and submission of report as per annexure-7A & 7B. The item will be reviewed after 5 months.

Agenda 62.1.11. Preliminary Exploration (G3 stage) for Limestone in Northwest of Boro Lakhindong Block, Dima- Hasao district, Assam.

[Implementing Agency: DGM Assam (Maheshwari Mining Pvt. Ltd.)]

- a) The proposed block area is occupied by Upper Sylhet Limestone Member of Shella Formation of Jaintia Group of Palaeocene-Eocene of Assam. Upper Sylhet Limestone is underlain by Upper Sylhet Sandstone and overlain by Kopili Formation.
- b) Upper Sylhet Limestone is constituted of light grey to dark grey highly fossiliferous compact limestone.


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- c) The North Boro Hundong Block is situated south of the proposed block and has an estimated resource of 474.8 million tonnes of limestone. This estimation was derived from eight boreholes, which intercepted limestone with thickness varying from 36.36m to 95.54m. Among the total estimated resource, 178.53 million tonnes are categorized under Portland cement criteria (CaO: 44-52% and MgO: maximum 3.5%), while 195.4 million tonnes are categorized under Blendable/Beneficial cement criteria (CaO: 38-44% and MgO: maximum 4%). The remaining quantity falls under the 'Unclassified' category.
- d) A team of geologists from MMPL recently conducted a field visit in the northwest area of the Boro Lakhindong Block and collected samples from the fossiliferous limestone. Analytical results from eleven samples revealed the following ranges: CaO: 49.28 to 53.08%, MgO: 0.89 to 1.33%, SiO₂: 1.61 to 3.65%, and LOI (Loss on Ignition): 40.33 to 42.75%. These results indicate highly promising values.
- e) Considering the encouraging values obtained from the geological study, a G3 stage investigation for the limestone is proposed in this block.
- f) The committee reviewed the proposal and raised concerns about the overlapping of about 0.75 sq.km area with the already explored block. The MMPL replied that it will once again review the block boundary with state DMG and modify the boundaries if required.
- g) The committee decided to recommend the item subject to clarification on the overlapping issue and suggested to restrict with 500 m of drilling in five boreholes.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for “Preliminary Exploration (G3 stage) for Limestone in Northwest of Boro Lakhindong Block, Dima- Hasao district, Assam” with an estimated cost of Rs. 311.98 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-8A & 8B. The item will be reviewed after 6 months.

Agenda 62.1.12. Reconnaissance Survey (G4 Stage) for Graphite in Ranibandh Block, Bankura district, West Bengal. [Implementing Agency: Maheshwari Mining Pvt. Ltd.]

- a) The proposed block is located between Dalma volcanics and Tamar-Porapahar Shear Zone. It falls in Bankura district of West Bengal and is a part of toposheet no 73J/13.
- b) Lithologies reported from the area are dominantly quartz-sericite schist with occasional carbonaceous schist and garnetiferous mica schist along with calc silicates, smaller bands of quartzite and smaller dimensions of ultrabasics and amphibolites.
- c) Graphite-bearing sericite schist/ carbonaceous sericite schist, is found as a thin and discontinuous unit within the argillaceous group of rocks. Chemical analysis of this rock type typically reveals the presence of titanium at 1000 ppm, vanadium ranging from 200 to 500 ppm, and barium 275 ppm approximately.

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- d) MMPL has reported the presence of a graphite band extending over a strike length of 500 meters based on restricted outcrops. Analytical results from seven samples collected from this band show graphite content, ranging from 6.32% to 8.26% fixed carbon (FC).
- e) The TCC reviewed the proposal and found that northern part of the proposed block partially overlapping with GSI's explored block and suggested MMPL to modify its block boundary.
- f) Further the committee suggested MMPL to select 3 to 4 sq.km area within the proposed G4 block and concentrate more on it with 1:2000 scale mapping and systematic sampling. The remaining area will have to be mapped on 1:12500 scale and sampled at wider interval.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Reconnaissance Survey (G4 Stage) for Graphite in Ranibandh Block, Bankura district, West Bengal with an estimated cost of Rs. 143.35 lakh (including GST) within time schedule of 10 months and submission of report as per annexure-9A & 9B. The item will be reviewed after 06 months.

**Agenda 62.1.13. Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat- Askot region, Pithoragarh district, Uttarakhand
[Implementing Agency: Geovale Services Pvt. Ltd.]**

- a) The proposed block occupies a portion of the northern Askot Crystalline Complex (ACC) and part of the Garhwal Group. In the southeastern section of the block lies a proved deposit of high-grade polymetallic minerals within the Askot area. The exploration agency of the deposit reported 3000 meters of strike length beyond the known deposit on the basis of geophysical and geochemical studies.
- b) GSI recently identified two potential block gossan zones in the same stratigraphic horizon to the west, situated approximately 10-20 km from the Askot deposit. However, a follow-up study on one of these gossans did not reveal significant geochemical anomalies.
- c) Geovale informed that MECL has also reported polymetallic mineralization from the area.
- d) The polymetallic deposit in the Askot area is identified as a volcanogenic massive sulphide (VMS) deposit by GSI. VMS deposits tend to occur in clusters, suggesting the possibility of additional deposits nearby.
- e) The proposed block area is covered by GSI's NGCM survey, showing encouraging values for arsenic (up to 35 ppm), bismuth (up to 12.8 ppm) and other elements such as antimony, gold, lead, and zinc. The central part of the block exhibits high concentrations of arsenic and bismuth.
- f) The TCC committee upon review noted that the proposed area is very large and recommended Geovale to reduce it, particularly avoiding the limestone area and the modified block area should be around 100 sqkm.

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- g) The committee further suggested M/s Geovale to split the item in to two phases. The first phase will involve geological mapping on 1:12500 scale, including geochemical and alteration mapping, to narrow down the target area. The second phase, contingent upon positive results from the first phase, will include geophysical surveys, drilling, and other components.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for “Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand” with an estimated cost of Rs.133.26 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-10A & 10B. The item will be reviewed after 06 months.

Agenda 62.1.14. Reconnaissance Survey (G4 Stage) for Mailar Base Metal–Gold Prospect Block in Mailar Area, Lalitpur District, Uttar Pradesh State.

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Agenda 62.1.15. Reconnaissance survey (G4 Stage) for Pachwara Cu-Mo-Au-Tellurides in Pachwara-Bhanesh Region, Jhansi District, Uttar Pradesh State.

[Implementing Agency: Geovale Services Pvt. Ltd.]

- a. The proposed blocks belong to Bundelkhand craton and fall in part of SOI toposheet no. 54L/5 (Mailar area) and 54O/2, 54K/15, 54O/3, 54O/6 (Pachwara area).
- b. The Bundelkhand craton, covering 29000 sq. km in central India, is mainly composed of younger granite-granodiorite rock suites and older supracrustals. Major features include extensive advanced argillic alteration with pyrophyllite-diaspore deposits and the presence of NNE-SSW and NW-SE trending Giant Quartz Veins (GQVs) that often coincide with areas of alteration.
- c. The genetic relationship of argillic alteration zones and GQVs with the host granitoids or the fluids responsible for the alterations may indicate about high sulfidic alteration, but further characterization is required.
- d. The proposed areas are favorable for mineralization due to differentiated granites. It hosts major NNE-SSW and minor NW-SE trending Giant Quartz Veins (GQVs), indicating potential for gold mineralization.
- e. GSI's NGCM data show high positive anomalies for Ag, Hg, Sb, As, and Bi, suggesting the possibilities of presence of porphyry-type Cu-Mo-Au deposits.
- f. Some previous reports with Au, Mo and Cu mineralization incidences in the nearby region of the proposed blocks exist.

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- g. GSI's geochemical survey near a GQV found a consistent copper anomaly of 100-450 ppm.
- h. Based on previous findings, the Geovale team conducted Mineral System Analysis (MSA) and identified the proposed areas to be potential for Au-Ag-Telluride mineralization, along with the possibility of deeper-level porphyry Cu-Mo mineralization
- i. The committee upon review opined that both the items are proposed as R&D projects rather than an exploration.
- j. Taking cognizance to the existing data of GSI including deep drilling, it suggested M/s Geovale in the following lines.
 - Area should be reduced to an extent appropriate for 1:12500 scale of mapping.
 - Samples under XRF and petrographic studies must be greatly reduced.
 - Only one of the proposed two items i.e. Mailar will be taken up initially, with the possibility of considering the second item subject to the success of the approved one.
- k. The committee suggested to carry out this item in 2 phases. Phase one will include geological mapping, including geochemical and alteration mapping, to refine the target area. Phase two, subject to positive outcomes from phase one, will involve geophysical mapping, drilling, and other activities.
- l. The committee suggested Geovale to consult Regional Mineral Targeting report of GSI, Madhya Pradesh.

Recommendation of TCC:

The committee recommends the proposal for approval of EC for "Reconnaissance Survey (G4 Stage) for Mailar Base Metal–Gold Prospect Block in Mailar Area, Lalitpur District, Uttar Pradesh with an estimated cost of Rs.240.81lakh (including GST) within time schedule of 12 months and submission of report as per annexure-11A & 11B. The item will be reviewed after 06 months.

Agenda 62.1.16. Reconnaissance Survey (G4 Stage) For Graphite and Associated Minerals Around Sonaghati, Amdol, Jharegaon & Bhayawari District: Betul, M.P.

[Implementing Agency: GeoExpore Pvt Ltd.]

- a) The proposed area belongs to Betul belt which is bestowed with volcanic hosted massive sulphides and is also known for its graphite mineralization.

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- b) The occurrence of Graphite was reported 1958 by GSI and detailed exploration (G4, G3 and G2 stage) has been carried out after 2012 in in parts of Chiklar, Gauthana and Tikari areas and estimated significant amount of resources under UNFC 333 and 332 categories.
- c) GSI investigations have revealed the presence of metasedimentary formations such as quartz-mica schist and quartzite, which occur as linear ridges of varying dimensions within the gneissic complex in the Sonaghati and Golighat areas. Quartz-mica schist serves as the host rock for graphite mineralization in the region.
- d) Since, the same geological formations continues towards south west, GeoExpore has identified the proposed area located towards south west of the blocks (G3, G2 stage) explored by GSI.
- e) After thorough review the committee found it suitable to explore the area for graphite and associated minerals under G4 stage

Recommendation of TCC:

The committee recommends the proposal for approval of EC for “Reconnaissance Survey (G4 Stage) For Graphite and associated Minerals around Sonaghati, Amdol, Jharegaon & Bhayawari, District: Betul, M.P. with an estimated cost of Rs.105.04 lakh (including GST) within time schedule of 12 months and submission of report as per annexure-12A & 12B. The item will be reviewed after 06 months.

Agenda 62.1.17. Proposal for Lithium Screening in Rann of Kachchh, Gujarat. [Implementing Agency: CGM, Gujarat.]

- a. The CGM has initiated a significant endeavor to explore lithium resources across Gujarat, recognizing its potential in the energy sector. As part of this initiative, the proposal has been conceived. This proposal outlines the approach and methodology to assess the brine-related lithium potential in the Rann of Kachchh, Gujarat.
- b. Bitter brines are a key lithium source, formed through evaporation in closed sedimentary basins in arid regions, contributing 40% of global lithium production. Despite low grades, their easy and eco-friendly beneficiation process makes them economically viable, with lithium concentrations ranging from 200ppm to 1400ppm.
- c. The Rann of Kachchh in Gujarat offers favorable conditions for brine-related lithium deposits, with brine and clay deposits formed in a restricted basin under arid conditions. Surrounded by hilly terrains

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containing potential lithium sources like Neoproterozoic alkaline granites and Late Cretaceous alkaline complexes, the region has shown high lithium values in sediment samples, suggesting significant lithium potential in surface or subsurface brines.

- d. Recognizing this potential, the Gujarat Government aims to conduct a preliminary assessment of the lithium potential in the Rann of Kachchh and identify areas for focused systematic exploration. This initiative could significantly contribute to the local, national, and global economies by meeting the growing demand for this essential rare metal.
- e. The TCC committee upon review opined that the proposal as R&D kind and proposed to cover 16500 sq.km area under conceptual approach. Therefore CGM, Gujarat was suggested to reduce the area on the basis of available anomalous data along A-B line. In which, CGM, Gujarat responded that smaller area won't fulfill the purpose.
- f. Since, the proposed item do not fit in UNFC exploration category, the committee suggested to prepare DPR and standard guidelines to execute this project.
- g. CGM, Gujarat has also been suggested to arrange for brainstorming sessions and workshops for the same.
- h. The committee expressed that new ideas are always welcome and will be encouraged to be executed under NMET fund.

Recommendation of TCC:

The committee recommends to adhere to the above mentioned suggestions and prepare comprehensive proposal and resubmit the item in the upcoming TCC meeting.

Agenda 62.1.18. Heliborne Time Domain Electromagnetic (TDEM) and Magnetic Surveys over the selected blocks at Sundargarh, Jharsuguda, Sambalpur, Deogarh, Angul and Kendhujhar Districts in Odisha.

[Implementing Agency:OMC]

- a) The proposed areas belong to North Odisha Geological Domain, Singhbhum mobile belt, Rengali province and falls in SOI toposheet nos: 64N16, 73C1, 73B3, 73B4, 73B8, 73B7, 73B11, 73B8, 73B12, 73G6, 73G7, 73C10, 73C14, 73G2, 73G3, 73G7.

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- b) RSAS, GSI Bangalore, has identified blocks H1-5 to H1-9 using Aeromagnetic and Radiometric data interpretation for Odisha. These blocks are scheduled for a closely spaced aeromagnetic survey.
- c) Further analysis of legacy reports, Aero Geophysical Magnetic data, and field surveys by OMC has led to the identification of an additional block named OM-1 in Keonjhar district, particularly focusing on gold mineralization.
- d) OM-1 displays a sinuous magnetic anomaly indicating the presence of basic metavolcanics and potentially adjoining intermediate to felsic metavolcanics, likely containing segments of Banded Iron Formations (BIF). This block exhibits ENE-WSW regional structural features with significant deformation along the greenstone belt. Notably, the known gold mineralized areas of Gopur and Rangadigh are situated within OM-1.
- e) To improve spatial resolution, especially considering magnetite's association with the gold mineralization event, a heli-TDEM (heliborne Time-Domain Electromagnetic survey) is proposed for the target blocks. This method aims to map conductive horizons within the schists and further characterize granitic contacts. Additionally, it may identify Au-associated sulphide minerals like pyrite if they exhibit good connectivity.
- f) TCC along with experts from RSAS of GSI and AMD, Hyderabad reviewed the item on 30.1.2024 and 07.02.2024 and sought clarity from OMC on the line interval proposed, non-involvement of NGCM, NGPM and other mapping data of GSI in the block, methodology of execution, possible depth up to which interpretation expected etc. As many queries raised by TCC could not be comprehended, the OMC was suggested to present the item again in the forthcoming TCC meeting.
- g) The item was again reviewed in 62nd TCC and the committee expressed that the smaller blocks could undergo ground geophysical surveys, while the larger blocks H1-5 may be taken up for Heliborne Time Domain Electromagnetic (TDEM) and Magnetic Surveys. The TCC suggested OMC to prepare tender document and cost estimation by diligently adopting documents followed by either AMD or RSAS of GSI.
- h) Regarding the OM-1 block, OMC informed the house that it was chosen after consultations of legacy data and field surveys. In the Gopur area, GSI has already identified gold mineralization, and ongoing exploration activities such as mapping, pitting, trenching, and drilling are being carried out by GSI.
- i) TCC recommended that OMC may work in Block OM-1 to primarily assess the depth continuity of the mineralization.

Recommendation of TCC:

The committee grants in-principle approval for blocks H1-5 and OM-1 subject to the submission of new tenders and DPRs.

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Agenda 62.2. Project evaluation for in-principle approval

Agenda 62.2.1. Reconnaissance Survey (G4 Stage) for Gold in Bhejra Tola Block, Rajnandgaon, Chhattisgarh.

[Implementing Agency: M/s. United Exploration India Private Ltd.]

- a) The proposed block shows potential for gold mineralization, supported by traces of gold deposition reported at Tappa, Dongargaon, by GSI (District Resource Map of Rajnandgaon, Chhattisgarh, 2004).
- b) These gold occurrences were found within NE-SW trending quartz veins, intruding fractured and faulted zones of metarhyolites.
- c) Similarly, quartz veins trending nearly N-S are present in the proposed block, indicating the possibility of containing gold deposits.

Recommendation of TCC:

Upon review, the TCC committee finds that the reported values of gold are not encouraging for further exploration. Moreover, committee also notes the absence of recommendations from previous workers. Therefore, the committee does not recommend the item.

Agenda 62.2.2. Reconnaissance Survey (G4 Stage) for REE in Nawagaon Block, Rajnandgaon, Chhattisgarh.

[Implementing Agency: M/s. United Exploration India Private Ltd.]

- a. The proposed block is a part of Bastar Cratonic Terrain of Chhattisgarh and shows potential for rare earth element (REE) concentration.
- b. The area is mainly composed of Dongargarh Granites with pegmatitic and quartz veins, known for elevated concentrations of HFSE and REE. Total REE concentrations range from 105 to 738 ppm, with an average of 358 ppm (Asthana et al., 2014).
- c. Additionally, Singh and Shiv Kumar (2009) reported significant abundances of rare-earth elements, such as yttrium and cerium, in Granitic soil/riverine placers along the Mari River in the Dantewada region.
- d. The Chhipa River, which flows through the Dongargarh Granite, may also contain REE concentrations warranting further investigation.

Recommendation of TCC:

The committee recommended that M/s. United Exploration India Private Ltd. conduct fieldwork in the proposed block to assess its viability. Based on the findings, they can submit a revised proposal for in-principle approval.

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Agenda 62.2.3. Reconnaissance Survey (G4 Stage) for Rock Phosphate in Dhudhali Phosphorite block, Balod, Chhattisgarh.

[Implementing Agency: M/s. United Exploration India Private Ltd.]

- a) The proposed area is part of the phosphorite-bearing Charmuria Formation of the Chhattisgarh Supergroup.
- b) The proposed block exhibits potential for phosphorite mineralization. It is situated in the southern margin of the Chhattisgarh basin.
- c) Previous exploration efforts by Vatsa et al. (FS 1972-73) and GSI has estimated 5.84 million tonnes of phosphorite deposits in the nearby Kharenadih-Bhargaon-Sambalpur area.

Recommendation of TCC:

The committee finds the proposed block has overlapping with already executed block. Hence, the committee does not recommend the item.

Agenda 62.2.4. Reconnaissance Survey (G4 Stage) for Ni-Co-Cr in Block-1, Ukhrul, Manipur.

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Agenda 62.2.5. Reconnaissance Survey (G4 Stage) for Ni-Co-Cr in Block-2, Ukhrul, Manipur.

[Implementing Agency: M/s. United Exploration India Private Ltd.]

- a) These proposed blocks have been identified by GSI because significant levels of Cr (958 to 4810 ppm), Ni (917 to 5681 ppm), and Co (88 to 678 ppm) have been reported in and around these areas.
- b) The study aims to assess the depth persistence of exposed podiform chromite in transitional-cumulate peridotite and the supergene enrichment of Cr, Ni, and Co in limonitic and saprolitic soil capping over mafic/ultramafic rocks.
- c) The committee finds that overlapping issues are there. Additionally, the committee was informed that the proposed blocks lie near Wild Life Sanctuaries.

Recommendation of TCC:

The committee recommended the NPEA to modify the block boundaries to address overlapping issues and concerns related to wildlife sanctuaries and submit the revised proposals for in-principle approval.

Agenda 62.2.6. Reconnaissance Survey (G4 Stage) for Ni-Co-Cr in Tengnoupal Block, Tengnoupal district, Manipur.

[Implementing Agency: M/s. United Exploration India Private Ltd.]

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- a) The block has been identified by GSI through geological mapping (1:12500) and bedrock sampling.
- b) Chemical analysis of the bedrock samples shows promising values for mineral commodities such as Cr (13305 ppm), Ni (14646 ppm), and Co (1389 ppm).
- c) These high values warrant further detailed investigation to assess the mineral potential.
- d) The committee finds that the proposed block has overlapping issue.

Recommendation of TCC:

The committee recommended that M/s. United Exploration India Private Ltd. may formulate a G3 stage investigation if feasible.

Agenda 62.2.7. Preliminary Exploration (G3 Stage) for REE and Associated Minerals around Kemuniya Village Dist: Rajsamand, Rajasthan.

[Implementing Agency: M/s. GeoExpore Pvt Ltd.]

- a) GSI carried out LSM, lithogeochemical sampling in and around Borana area. Results from 401 bedrock samples indicate total REE values ranging from 29.60 to 3434.93 in Migmatite Gneiss, and from 83.03 to 2336.27 in Alkali Syenite/Syenite.
- b) The geochemical dispersion map reveals anomalous concentrations of rare earth elements near Chatrawan Mata Temple in Borana near Kemuniya village over Migmatite Gneiss.
- c) As per GSI'S recommendations and the facts mentioned above that the G3 stage item has been formulated.

Recommendation of TCC:

The committee conveys the in-principle approval for the proposal and recommends GeoExpore Pvt Ltd. For submitting detailed proposal to NMET for further review.

Agenda 62.2.8. Preliminary Exploration (G3 Stage) for Graphite and Associated Minerals around Jamdoli and Chainpura Villages Dist: Alwar, Rajasthan.

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Agenda 62.2.9. Reconnaissance Survey (G4 Stage) for Graphite and Associated Minerals around Saloli, Buchpuri and Babeli Villages Dist: Alwar, Rajasthan.

[Implementing Agency: M/s. GeoExpore Pvt Ltd.]

- a) GSI conducted a G4 stage investigation in the Rajgarh-Saloli area, identifying a carbon phyllite unit containing graphite.

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- b) This unit spans approximately 2.25 km in length and 1.0 km in width at Jamdoli village, and 1.2 km in length and 400 m in width at Saloli village.
- c) Samples showed fixed carbon values ranging from 0.3% to 17.35%, with an average of around 7% in the area.
- d) Surface indications of copper mineralization have been found in the form of profuse sporadic malachite staining and occasional sulphides of copper.
- e) Based on this G4 reconnaissance survey for graphite conducted by GSI in the area, a potential area of 4.20 sq. km around Jamdoli and Chainpura Villages and 10 sq km area to the north and NE of Saloli have been identified for further G3 stage explorations.

Recommendation of TCC:

The committee does not recommend the items as both the blocks have overlapping issues with block already explored by GSI and blocks reserved by DGM, Rajasthan.

Agenda 62.2.10. Preliminary Exploration (G3 Stage) for REE and Associated Minerals around Borana, Borana Ka Khera and Gujjaron Ka Khera Villages Dist: Rajsamand, Rajasthan.

[Implementing Agency: M/s. GeoExpore Pvt Ltd.]

- a) During the Field Season (F.S) 2018-19, GSI carried out a reconnaissance survey for rare earth element (REE) mineralization in and around the Borana area.
- b) Analytical results from 401 bedrock samples revealed total REE values ranging from 29.60 to 3434.93 in Migmatite Gneiss and from 83.03 to 2336.27 in Alkali Syenite/Syenite.
- c) The geochemical dispersion map identified anomalous concentrations of rare earth elements, particularly in the northern part of the area near Chatrawan Mata Temple in Borana.
- d) As per GSI'S recommendations and the facts mentioned above that the G3 stage item has been formulated around Mandal, Borana, Borana Ka Khera and Gujjaron Ka Khera Villages in an area of 1.80 Sq.km. for delineation of REE mineralization.

Recommendation of TCC:

The committee conveys the in-principle approval for the proposal and recommends GeoExpore Pvt Ltd. to submit detailed proposal to NMET for further review.

Agenda 62.2.11. Preliminary Exploration (G3 Stage) for Phosphorite around Sallopat and Panch Mahuri Villages Dist: Banswara,Rajasthan.

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[Implementing Agency: M/s. GeoExpore Pvt Ltd.]

- a) GSI conducted a reconnaissance survey (F.S: 2015-16) for phosphorite, including detailed mapping of approximately 1.0 square kilometer in the Sallopat block and drilling of 200 meters in nine scout boreholes.
- b) The survey revealed a total reconnaissance resource of 6.63 million tonnes of low-grade phosphorite at a 5% cut-off grade, with an average grade of P₂O₅ at 9.13%, SiO₂ at 20.04%, CaO at 20.81%, MgO at 11.30%, Al₂O₃ at 1.71%, and Fe₂O₃ at 1.72%, calculated based on stromatolitic dolomite (phosphatic) intersected in boreholes.
- c) Based on the evaluation of previous GSI investigations (G4) for phosphate in the area, this G3 stage exploration item has been proposed.
- d) Upon review, the TCC committee found that the block proposed by GeoExpore has overlapping with block already explored.

Recommendation of TCC:

The item is not approved due to overlapping issue.

Agenda 62.2.12. Preliminary Exploration (G3 Stage) for Graphite and Associated Minerals around Ranki-Kalan Village Dist: Latehar, Jharkhand.

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Agenda 62.2.13. Preliminary Exploration (G3 Stage) for Graphite and Associated Minerals around Charwadih & Bhalwahi Villages Dist: Palamu & Latehar, Jharkhand.

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Agenda 62.2.14. Preliminary Exploration (G3 Stage) for Graphite and Associated Minerals around Bhdhibagi, Banjari & Harhi Villages Dist: Palamu & Latehar, Jharkhand.

[Implementing Agency: M/s. GeoExpore Pvt Ltd.]

- a) During the Field Season 2019-20, GSI conducted a reconnaissance survey for graphite in the Chhotanagpur Gneissic Complex, specifically in Parsahi, Satbarwa, and Ranki Kalan in Latehar District. Graphite mineralization was observed to be confined within the host rock graphite schist, a part of the Unclassified Metamorphics.
- b) Six potential blocks for graphite mineralization were identified by GSI, namely Adhmaniya, Karma, Siuri, Budhiyabagi, Ranki Kalan, and Charwadih blocks.
- c) GSI further conducted G3 stage work in the Adhmaniya, Karma, and Siuri blocks, yielding encouraging results for both graphite and vanadium.
- d) Based on the findings of GSI during the reconnaissance survey, these three G3 stage proposals for exploration have been placed.

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Recommendation of TCC:

All the three blocks have been kept on hold for want of comments from DMG, Jharkhand.

Agenda 62.2.15. Preliminary Exploration (G3 Stage) Makenhalli Gold Exploration Block, Makenhalli, Karnataka.

[Implementing Agency: M/s Ecomen Laboratories Pvt. Ltd.]

- a) During the field season of 2006-2007, investigations for gold were conducted in the Paramanahalli North block, Chitradurga district, Karnataka to identify potential auriferous zones through detailed mapping, trenching, and bedrock sampling.
- b) The work carried out comprised detailed geological mapping of 1 sq km on 1: 1000 scale, 300 cu.m of trenching, collection of 283 trench and 228 bedrock samples for gold analysis.
- c) Geochemical results of the collected samples revealed an auriferous zone stretching 300 meters in length and 4 to 10 meters in width. Gold assay values ranged from 0.25 g/t to 9.59 g/t over widths of 1-2 meters, with higher enrichment observed in the central part near an ancient working site.
- d) On account of the above findings and recommendations of GSI the G3 stage item has been placed to TCC, NMET

Recommendation of TCC:

The committee does not recommend this block as it has complete overlapping with area already explored by GSI involving DM and drilling. Further, the proposed area also falls within the boundary of Wildlife Sanctuary.

Agenda 62.2.16. Reconnaissance Survey (G – 4) for Heavy Mineral Sands in backshore and dunes for Titanium and Vanadium (Critical Minerals) in Magnetite, Ilmenite and Titanomagnetite in Bankot Block, Ratnagiri dist., Maharashtra.

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Agenda 62.2.17. Reconnaissance Survey (G – 4) for Heavy Mineral Sands in backshore and dunes for Titanium and Vanadium (Critical Minerals) in Magnetite, Ilmenite and Titanomagnetite, Guhagar Block, Ratnagiri, Maharashtra.

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Agenda 62.2.18. Reconnaissance Survey (G – 4) for Heavy Mineral Sands in backshore and dunes for Titanium and Vanadium (Critical Minerals) in

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Magnetite, Ilmenite and Titanomagnetite, Harihareshwar Block, Ratnagiri, Maharashtra.

[Implementing Agency: M/ S Geo Marine Solutions Private Ltd.]

- a) Upon review the TCC committee found that all the three blocks have been already explored by GSI under G4 stage.
- b) The outcome of these G4 works too not much encouraging.

Recommendation of TCC:

The Geo Marine Solutions Private Ltd. has been advised to consult the concerned reports of GSI and if possible, to upgrade them to next level along with its existing man power.

Agenda 62.2.19. Reconnaissance Survey (G – 4) for Heavy Mineral Sands in backshore and dunes for Titanium and Vanadium (Critical Minerals) in Magnetite, Ilmenite and titanomagnetite, Talashil Block, Ratnagiri, Maharashtra.

[Implementing Agency: M/ S Geo Marine Solutions Private Ltd.]

The item was not reviewed as requested by M/ S Geo Marine Solutions Private Ltd.

Agenda 62.3. Financial assistance form NMET fund to procure machinery/ laboratory equipment/ instruments

Agenda 62.3.1. Financial assistance form NMET fund to procure machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DGM, Madhya Pradesh]

- a) The Executive Committee of NMET in its 29th meeting held on 31.03.2023 had approved ₹161.35 Lakhs towards procurement of machinery/ laboratory equipment/instruments etc to DGM Madhya Pradesh
- b) Further, DGM Madhya Pradesh has submitted an additional list of equipments for upgradation of laboratory and enhance exploration and capacity building with an estimated cost of ₹ 2068.44 Lakhs.
- c) The committee evaluated the proposal and after detailed discussions agreed to recommend the following items to DGM Madhya Pradesh:

S.No.	Software / Hardware /Equipment	Quantity	Estimated Price / Unit (In Lakh)	Total Estimated cost (in Lakh)
1.	WD XRF	1	220	220
2.	Fusion bead machine	1	20	20

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3.	Press pallet machine	1	3.9	3.9
4.	Hot Plates	5	0.15	0.75
5.	Muffle furnace	4	1	4
6.	Air oven	1	0.55	0.55
7.	Bomb calorimeter	1	2	2
8.	Rock cutting, polishing and mounting unit	1	70	70
9.	Stero Zoom Microscope	1	31	31
10.	Transmitted and reflected light research microscope with software attached camera	1	18.58	18.58
11.	GIS Software	2	0.98	1.96
12.	Hydrostatic truck mounted drill machine (600m capacity) truck mounted rig without CAMS, without operator & without accessories	2	80	160
13.	Bits, drill rods, casing core barrel (for one year requirement for one time)	2	40	80
14.	DGPS	2	16	32
Total				644.74

Recommendation of TCC:

The committee recommended the proposal for approval of EC towards procurement of equipments/ softwares for DGM Madhya Pradesh with estimated cost of ₹ 644.74 lakh as detailed at para (c) above, to enhance the exploration activities in the state.

The committee opined that due process of procurement including item wise cost estimation as per extant Government of India Financial rules be followed by DGM Madhya Pradesh in consent with the competent authority of State Department/ State Financial Wing (Division). The State Govt.

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should also ensure full utilization of the instruments/software to be procured.

Agenda 62.3.2. Financial assistance form NMET fund to procure machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DMG Telangana]

- a) DMG Telangana has submitted an list of equipments for upgradation of laboratory and capacity building with an estimated cost of ₹ 540 Lakhs.
- b) The committee opined that currently the chemical lab of DGM, Telangana lacks manpower and needs to be strengthened to operate high cost equipments.
- c) The committee advised DMG Telangana to modify the list of procurement after thoroughly assessing the basic set up, infrastructure facilities and immediate requirements and submit the proposal to NMET for funding.

Recommendation of TCC:

The proposal was reviewed and DMG, Telangana was advised to submit the modified list along with proper justification.

Agenda 62.3.3. Financial assistance form NMET fund to procure machinery/ laboratory equipment/ instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: CGM Gujarat]

- a) The Executive Committee of NMET in its 31st meeting held on 12.09.2023 and 33rd meeting held on 15th February 2024 had approved ₹56.9 Lakhs and ₹413.7 Lakhs towards procurement of machinery/ laboratory equipment/instruments etc to Commissionerate of Geology and Mining, Gandhinagar
- b) Further, CGM Gujarat has submitted an additional list of softwares for upgradation of Petrology and Mineral Chemistry laboratory (PMC) of Gujarat with an with an estimated cost of ₹ 185.84 Lakhs.
- c) The committee evaluated the proposal and after detailed discussions agreed to recommend the following items to CGM Gujarat:

S.No.	Software / Hardware /Equipment	Quantity	Estimated Price / Unit	Total Estimated cost (in ₹)
1	GIS Software	2	11,90,000	23,80,000
Total				23,80,000/-

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Recommendation of TCC:

The committee recommended the proposal for approval of EC towards procurement of equipments/ softwares for CGM, Gujarat with estimated cost of ₹ 23.80 lakhs as detailed at para (c) above, to enhance the exploration activities in the state.

The committee opined that due process of procurement including item wise cost estimation as per extant Government of India Financial rules be followed by CGM Gujarat in consent with the competent authority of State Department/ State Financial Wing (Division). The State Govt. should also ensure full utilization of the instruments/software to be procured.

Agenda 6.2.4 Review of ongoing/completed Projects and Timeline Extension

Agenda 62.4.1. Reconnaissance Survey (G-4) for Phosphorite in Ram Ka Munna Block (40.00 sq. km), District- Banswara, Rajasthan [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 27th meeting of EC held on 10th January 2023. The Sanction order was issued on 6th February, 2023 with timeline of 12 months.
- b) The project was reviewed in 61st TCC on 7th February 2024. MECL informed that suggestions of the Peer reviewer has been attended and the Geological Report is ready for submission.
- c) MECL indicated that P₂O₅ concentration collected samples ranges from minimum 0.01% to maximum 10.36%. Only 3 samples collected from dolomite indicated P₂O₅ more than 5%. The maximum value of 10.36% P₂O₅ has been recorded in the Phosphatic dolomite collected from south of Gangartalai Moti village.
- d) Phosphatic zone available in the area is small and lensoidal in nature, and it is not economically viable because of low P₂O₅ content and high SiO₂ content. Analytical results of the samples indicate that the Ram Ka Munna area lacks significant phosphorite mineralization on the surface.

Recommendation TCC:

The Committee noted the outcome of the project and agreed for submission of GR.

Agenda 62.4.2. Reconnaissance Survey (G-4) for Glauconitic Sandstone in Pindra SW Extension Block (40.00 sq. km), District- Satna, Madhya Pradesh [Implementing Agency: MECL]

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- a) MECL informed that the project was approved in 27th meeting of EC held on 10th Jan 2023. Sanction order was issued on 11th December, 2023 with timeline of 12 months and approved cost ₹ 1,17,42,895.
- b) The project was reviewed in the 61st TCC of NMET held in Jan- Feb 2024 and the committee had agreed the additional cost of 2.3 lakhs (towards for the additional samples and recommended time extension up to 5th March 2023 for GR submission
- c) MECL presented the outcome of the block and informed the modifications suggested by the Peer reviewer. MECL informed that G3 level exploration has been recommended in the block
- d) The committee observed the outcomes of the item and opined that proper color code and symbol should be adopted in the geological map. Further, legend and structural symbols shown in the map should also be prepared by adopting the conventional code of geological mapping.

Recommendation TCC:

The committee agreed for GR submission after incorporation of the modifications suggested by the committee.

Agenda 62.4.3. Reconnaissance Survey (G-4) for polymetals in Miregaon Block (40.769 sq. km), District- Bhandara, Maharashtra [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 28th meeting of EC held on 16th March 2023. Sanction order was issued on 27th March, 2023 with timeline of 12 months and approved cost ₹ 1,09,56,018.
- b) The block was reviewed in 58th TCC held on 30th & 31st October, 2023 after completion of geological mapping and Sampling work. The committee recommended to take up the already approved Geophysical Survey.
- c) MECL informed that geophysical survey has been completed and one potential area of 0.2 sq. km. over a strike length of about 500m has been identified on the basis of geological mapping, sampling and geophysical survey.
- d) MECL also requested for drilling of boreholes after the review and further, time extension up to 30th June, 2024.
- e) The committee noted the progress of the project and opined that drilling may be carried out in 2 boreholes. The committee also suggested that timeline extension may be granted after next review.

Recommendation TCC:

The Committee agreed for extension of the timeline upto 30th June 2024 with a suggestion to discuss the outcome of the 2 boreholes i.e. BH No.1 and BH No.6i in the forthcoming TCC.

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Agenda 62.4.4. Reconnaissance Survey (G-4) for Iron, Manganese and associated Minerals in Talwa Block (80.50 sq. km), Districts- Jabalpur & Katni, Madhya Pradesh[Implementing Agency: MECL]

- a) MECL informed that the project was approved in 28th meeting of EC held on 16th March 2023. The Sanction order was issued on 09th January, 2023 with timeline of 10 months and approved cost ₹ 46,75,087.
- b) MECL informed that exploration work in the block has been completed and GR is under preparation.
- c) MECL informed that Iron ore occurrences are found in two form i) Iron ore in BHC/BHJ (Fe – 47%,max). ii) Lateritic Iron ore (Fe – 37%,max). Manganese mineralisation is seen as manganiferous phyllites and fracture filling or pockety nature in laterites.
- d) MECL conveyed that 4 number of samples were collected for gold analysis, 6 numbers of samples for petrographic study and 10 numbers for whole rock and trace element analysis.
- e) Considering that the results are awaited and GR is under preparation, MECL requested for time extension upto 31st March 2024.

Recommendation TCC:

The Committee recommended time extension up to 31st March 2024.

Agenda 62.4.5. Reconnaissance Survey (G-4) for tin and associated minerals in Pendra Block (110.362 sq. km), District- Gaurela-Pendra-Marwahi, Chhattisgarh[Implementing Agency: MECL]

- a) MECL informed that the project was approved in 27th meeting of EC held on 10th January 2023. Sanction order was issued on 06th February, 2023 with timeline of 12 months and approved cost ₹ 1,19,78,243.
- b) MECL conveyed that the block was reviewed in 58th meeting of TCC held on 30th October – 1st November, 2023 and committee suggested MECL to identify the mineral phases of REE and V through petrographic sampling and delineate the potential zones based on the surface sampling and geological mapping before initiating drilling in the area.
- c) Accordingly, additional 16 Nos of bed rock chip samples from the amphibolite body had been collected in close space and subjected for trace element study.
- d) MECL sought permission from the committee Additional for the additional 16 nos. of samples from amphibolite body collected and analyses for 34 element.. MECL informed that the analytical cost is (Rs 7731/- X 16) = Rs 1,23,696/- + GST , however there is no cost over run above sanctioned cost of the project.
- e) MECL informed report has already been sent to Peer review and sought time extension till 31st March, 2024 .

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Recommendation TCC:

The Committee approved analysis of 16 nos. of additional samples for a cost of Rs 1,23, 696/- + GST without cost overrun above sanctioned cost of the project and recommended timeline extension upto 31st March 2024.

Agenda 62.4.6. Preliminary exploration (G-3) for Phosphorite in Kachaldara East Block (5.60 sq. km), District- Jhabua, Madhya Pradesh. [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 27th meeting of EC held on 10th January 2023. The sanction order was issued on 03rd February, 2023 with timeline of 12 months.
- b) MECL informed that as per the recommendation of the 60th TCC, the GR has been prepared and is ready for submission to peer reviewer.
- c) MECL requested for timeline extension upto 31st March 2024.

Recommendation TCC:

The Committee recommended time extension upto 31st March 2024.

Agenda 62.4.7. Preliminary Exploration (G-3) for potash in Dhankowali Dhani Block (North) (9.63 sq. km), District- Hanumangarh, Rajasthan [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 32nd meeting of EC held on 06th December, 2023. Sanction order was issued on 12th December, 2023 with timeline of 12 months and approved cost ₹ 24,06,16,207.
- b) MECL started the exploration work immediately on 25/12/2023 by deploying rig for drilling borehole no MDN-01 (PBH-05).
- c) MECL informed that a total 2400 numbers of sample were approved for sampling of potash zone and halite cycle of H-1 and H-2. However, as per the recent auction process of potash minerals of Rajasthan, halite is also being auctioned with potash. Hence cycle wise estimation of potash resource is unavoidable.
- d) Considering the same, MECL requested for additional cost of Rs. 75.54 Lakhs for cycle wise estimation of potash resource.

Recommendation TCC:

The Committee did not recommend the additional cost towards analysis of halite cycles in the project.

Agenda 62.4.8. Preliminary Exploration (G-3) for Limestone in Sendurai-Maruvathur Block (1.54 sq. km), District- Ariyalur, Tamil Nadu (for release of bills) [Implementing Agency: MECL]

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- a) MECL informed that the project was approved in 24th meeting of EC held on 18th May, 2022. Sanction order was issued on 02nd June, 2022 with timeline of 07 months and approved cost ₹ 95,73,800.
- b) MECL informed that the project was completed and GR was submitted to NMET in January 2023. However, during the submission of final bills, it was informed that the timeline for last date of GR submission has been already completed. Hence, timeline extension up to 31st January 2023 is sought for settlement of final bills

Recommendation TCC:

The Committee agreed to grant timeline extension up to 31st January 2023 (with post-facto effect) subject to submission of justification from MECL for the delay in seeking timeline extension since January' 2023.

Agenda 62.4.9. Preliminary Exploration (G-4) for Coal in West of Tubed Block (11.89 sq. km), Auranga Coalfield District- Latehar, Jharkhand [Implementing Agency: CMPDI]

- a) CMPDI informed that the project was approved in 26th meeting of EC held on 25th Aug, 2022. Sanction order was issued on 03rd January, 2023 with timeline of 14 months and approved cost ₹ 3,39,03,743.
- b) CMPDI informed that the exploration activities have been completed in the block and comments of peer reviewer has been incorporated. However, out of 5 boreholes 01 BH could not be completed due to local issues.
- c) Seam-wise Inferred Resource in Million Tonnes in the block is as given below:

SEAM WISE RESERVE (MT)																	
SEAM	VIIT	VIIB	VI	VT	VB	IVT	IVB	IIIT	IIIM	IIIB	II	IT	IB	IB1	IB2	IB3	Grand Total
RESERVE	185.50	29.50	01.42	95.00	115.48	61.47	81.45	23.98	25.41	27.95	184.67	21.39	22.85	...	3.17	3.17	882.41

Recommendation TCC:

The Committee noted the outcome and agreed for submission of final GR.

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Agenda 62.4.10. Preliminary Exploration (G-4) for Coal in North of Urtan North Block (10.28 sq. km), Sohagpur Coalfield District-Anuppur, Madhya Pradesh. [Implementing Agency: CMPDI]

- CMPDI informed that the project was approved in 27th meeting of EC held on 10th January, 2023. Sanction order was issued on 03rd February, 2023 with timeline of 12 months and approved cost ₹ 3,45,21,958.
- CMPDI informed that the exploration activities have been completed in the block and comments of peer reviewer has been incorporated.
- Seam-wise Coal type-wise Inferred Resource in Million Tonnes is given below:

Seam	Thick Seams			Thin Seams			Grand Total	Grade
	Coking	Non-Coking	Total	Coking	Non-coking	Total		
BAND					2.243	2.243	2.243	G14
V	93.563	21.328	114.891				114.891	WIV-WV & G6
INDEX	35.196		35.196				35.196	WI-WII
L3	11613		11.613	2.509		2.509	14.122	WIII-WV
IV	8.472		8.472	2.296		2.296	10.768	WIII-WIV
III	23.790		23.790	2.326		2.326	26.116	WIII-WV
L2				8.979		8.979	8.979	SI-WII
II	3.536		3.536				3.536	WIII
L1								-
I	3.364		3.364	2.310	2.335	4.645	8.009	WI-WV & G16
	179.534	21.328	200.862	18.420	4.578	22.998	223.860	W-IV & G8

- CMPDI requested for time extension upto 15th March 2024 for GR submission.

Recommendation TCC:

The Committee recommended time extension upto 15th March 2024 for GR submission.

Agenda 62.4.11 General Exploration for Coal in South of Damuda Block ,Jharia Coalfield, District- Dhanbad, Jharkhand. [Implementing Agency: CMPDI]

- CMPDI informed that the project was approved in 24th meeting of EC held on 18th May, 2022. Sanction order was issued on 01st June, 2022 with timeline of 18 months and approved cost ₹ 11,24,87,022.
- CMPDI informed that the exploration activities have been completed in the block and comments of peer reviewer has been incorporated.
- The Summary of Total Coal Resources in Million Tonnes in the block:

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	Thick Seam		Thin Seam
	Coking Coal	Non Coking Coal	
Indicated	125.119	135.994	6.73
Inferred		35.247	
Total	125.119	171.241	6.73
Grand Total		303.09	

d) CMPDI requested for time extension 3 months for GR submission.

Recommendation TCC:

The Committee recommended timeline extension up to 1st March 2024 for GR submission.

Agenda 62.4.12. Preliminary Exploration (G-3) for Coal in Brahmani North Block (21.73 sq.km), Talcher Coalfield, District- Dhenkanal, Odisha. [Implementing Agency: CMPDI]

- CMPDI informed that the project was approved in 27th meeting of EC held on 10th January, 2023. Sanction order was issued on 03rd February, 2023 with timeline of 12 months and approved cost ₹ 2,54,49,713.
- CMPDI informed that permission was sought in the 55th TCC in its meeting for surrendering the block due to prevailing ground condition any activities through departmental or outsourcing mode was not commenced in the block.
- Further, CMPDI had once again tried to outsource the work through tendering but tender could not be finalized and cancelled on 21/11/2023.
- In view of the above, CMPDI requested permission for surrender of the block.

Recommendation TCC:

The Committee recommended CMPDI to surrender the block but suggested to ground check the area before taking up projects.

Agenda 62.4.13. Agenda Preliminary Exploration (G-3) for Coal in West of Chuperbhita Block (24.57 sq.km), Rajmahal Coalfield, District- Godda, Jharkhand. [Implementing Agency: CMPDI]

- CMPDI informed that the project was approved in 26th meeting of EC held on 25th August, 2022. Sanction order was issued on 03rd January, 2023 with timeline of 12 months and approved cost ₹ 2,48,01,169.

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- b) CMPDI mentioned that exploration activities through outsourcing in adjacent NMET funded block i.e East of Chuperbhita block, drilling was continuously hampered due to local conditions and due to hostile conditions, carrying out field activities in this area is not feasible. A requested was made before TCC in its 55th meeting for surrendering the block as due to prevailing hostile condition in the block. However, the tender floated could not be finalised twice.
- c) Hence, CMPDI requested permission for surrender of the block.

Recommendation TCC:

The Committee recommended CMPDI to surrender of the block but suggested to ground check the area before taking up projects. Further, the CMPDI was advised to all the detail correspondences and efforts taken to NMET for surrendering the block.

Agenda 62.4.14. Agenda Reconnaissance Survey (G-4) for Coal in West of Ghughus & Bellora block (39.15 sq.km), Wardha Valley Coalfield District- Yavatmal, Maharashtra. [Implementing Agency: CMPDI]

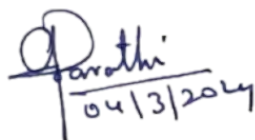
- a) CMPDI informed that the project was approved in 26th meeting of EC held on 25th August, 2022. Sanction order was issued on 03rd January, 2023 with timeline of 12 months and approved cost ₹ 2,48,01,169.
- b) CMPDI informed that total 1800m of Drilling in the block was proposed through outsourcing. CMPDI had floated tenders two times but could not finalize it. Hence, CMPDI requested for surrendering of the block.
- c) In view of the above, the committee suggested for retendering and review of the project in May 2024 and timeline extension up to 1st September 2024.


Recommendation TCC:

The Committee recommended timeline extension up to 1st September 2024. The project is to be reviewed in the month of May 2024.

Agenda 62.4.15 Preliminary Exploration for Coal in North of Rajathari block, PENCHKANHAN Coalfield ,Chhindwara, Madhya Pradesh [Implementing Agency : CMPDI]

- a) CMPDI informed that the project Preliminary Exploration for Coal in North of Rajathari block, PENCHKANHAN Coalfield Chhindwara, Madhya Pradesh was approved in 24th EC on 18th May 2022 with 20 months timeline. The sanction order was issued on 2nd June 2022.
- b) CMPDI conveyed the drilling status in the field as below:


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Sl. No.	Proposed Point	Borehole No.	Proposed Depth	Closing/ Current Depth	Remarks
1	P-3	CMPNR-01	880.00	880.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
2	P-4	CMPNR-02	900.00	674.00	No Coal Seam Encountered, Repeated attempt but borehole could not be succeeded due drilling difficulty in Motur .
3	P-8	CMPNR-03	1000.00	698.00	Temporarily Suspended
4	P-14	CMPNR-04	950.00	837.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
5	P-10	CMPNR-05	1000.00	789.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
6	P-7	CMPNR-06	870.00	956.00	All the coal seams Encountered
7	P-11	CMPNR-07	950.00	950.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
8	P-18	CMPNR-08	1000.00	1000.00	No Coal Seam Encountered, Coal Seam Expected Beyond 1000m
9	P-6	CMPNR-09	870.00	776.00	All the coal seams Encountered
10.	P-5	CMPNR-10	850.00		Running Borehole

- c) CMPDI requested for closure of Borehole No. CMPNR-2(P4),CMPNR-4(P14) & CMPNR-5(P-10) due to drilling difficulty in Motur formation, as repeated attempt for drilling could not succeeded. Also the lithologs of these boreholes suggest that the coal seams are expected beyond 1000m.
- d) CMPDI sought permission to complete borehole no CMPNR-10(P5) & CMPNR-3(P8) on the basis of positive outcome of these two borehole, only proposed borehole no P-9 may be taken.
- e) Further CMPDI requested for time Extension of 6 months required owing to delay in award of Tender due to govt. directive for compulsory tendering through GEM portal and difficulty in drilling in Motur Formation.
- f) Upon request from CMPDI, the TCC committee reviewed this item for cancellation of 3 boreholes namely Borehole no. CMPNR-2 (P4), CMPNR-4 (P14) and borehole no. CMPNR-5 (P10) due to technical difficulties.

Recommendation of TCC:

The committee noted the outcome and agreed upon cancellation of 3 boreholes namely CMPNR-2 (P4), CMPNR-4 (P14) and borehole no. CMPNR-5 (P10).

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Agenda 62.4.16. Agenda Preliminary exploration (G3) for limestone in Itga blocks, (10.60 sq.km) District: Kalaburagi, Karnataka.[Implementing Agency: DGM Karnataka]

- a) DGM Karnataka informed that the project was approved in 28th meeting of EC held on 16th August, 2023. Sanction order was issued on 18th October, 2023 with timeline of 12 months and approved cost ₹ 1,25,25,588.
- b) DGM Karnataka informed that due to non encountering of limestone bedded deposit, BH- KDMGIL-02 was truncated at 19m depth and additional borehole drilled up to 45 m depth has resulted in additional quantum of work and Rs 37,050/- will be the additional cost and same is well within the approved project cost (drilling rate is Rs.1652.542+18%GST per meter).
- c) The resource calculation in the block is as given below:

Combined Resources (333+3345)						
Gross Total Tonnage (t)	Gross Total Tonnage in MMT	Net Total Tonnage (t)	Net Total Tonnage in MMT	Wtd Avg CaO Grade	Wtd Avg MgO Grade	Wtd Avg SiO ₂ Grade
Cement (Portland)						
6,17,27,247	61.73	4,93,81,797	49.38	47.96	0.74798	11.2013
Cement (Blendable)						
8,20,38,424	82.04	6,56,30,739	65.63	39.42	0.69	21.88
Threshold						
35,38,66,451	353.87	28,30,93,161	283.09	35.97	0.7634	29.43
49,76,32,122	497.63	39,81,05,698	398.11	38.68	0.75	24.94

- d) DGM Karnataka requested for permission to submit the GR for peer review and time extension upto 25th March 2024 for submission of report.

Recommendation TCC:

The Committee noted the outcome of the project and agreed for peer review. Considering the time required for final review of the project, the committee recommend time extension upto 31st March 2024.

Agenda 62.4.17. Agenda Procurement of Ore/Polarizing Microscope with Transmitted/Incident Light and oil immersion objectives [Implementing Agency: DGM Karnataka]

- a) DGM Karnataka informed that the project was approved in 04th meeting of EC held on 05th May, 2022. Sanction order was issued on 15th July, 2022 with timeline of 12 months and approved cost ₹ 25,00,000.

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- b) Further, as per revised NMET OM letter No: F.No.23/275/2022-NMET/294 Dated 18.10.2023, approved time extension was 29.02.2024.
- c) DGM Karnataka conveyed that due to cancellation of bids, timeline may be extended for another 12 months.

Recommendation TCC:

The Committee informed that the procurement may be carried out as per GFR rules and recommended time extension of 6 months.

Agenda 62.4.18. Agenda Procurement of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities [Implementing Agency: DGM Karnataka]

- a) DGM Karnataka informed that the project was approved in 27th meeting of EC held on 10th January, 2023. The Sanction order was issued on 24th March, 2023 with timeline of 12 months and approved cost ₹ 4,17,00,000.
- b) Further, NMET vide OM letter No: F.No.23/312/2023-NMET/392 Dated 24.03.2023 approved time extension up to 23.03.2024.
- c) DGM Karnataka conveyed that due to cancelation of bids, timeline may be extended for another 12 months.

Recommendation TCC:

The Committee informed that the procurement may be carried out as per GFR rules and recommended time extension of 6 months

Agenda 62.4.19. Agenda Reconnaissance Survey (G4) for Limestone in Voterolangsho Area Of West Karbi-Anglong And Dima Hasao District, Assam. [Implementing Agency: DGM Assam]

- a) The project was approved in 23rd meeting of EC held on 16th March, 2022. Sanction order was issued on 25th March, 2022 with timeline of 12 months and approved cost ₹ 3,41,50,946.
- b) Further, timeline extension upto 24th March 2023 was ratified in the 31st EC meeting of NMET held on 12th September 2023.
- c) DGM Assam informed that drilling in BH 1 is completed with Limestone present from 9 m onwards. The Core samples have been sent for analysis.
- d) DGM Assam informed forest permission is awaited for further exploration. Hence, time extension for 2 months was sought by DGM Assam for the project.

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Recommendation TCC:

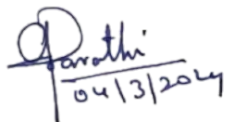
The Committee agreed upon for extension of timeline of 2 months and directed to DGM, Assam to bring the item for review April' 2024 after the receipt of forest clearance. However, if FC is not accorded, the GR may be submitted for peer review.

Agenda 62.4.20. Agenda Reconnaissance Survey for Exploration of Iron in Lengupara Area, District: Goalpara, Assam. [Implementing Agency: DGM Assam]

- a) DGM Assam informed that the project was approved in 23rd meeting of EC held on 16th March, 2022. Sanction order was issued on 25th March, 2022 with timeline of 12 months and approved cost ₹ 3,28,47,213.
- b) Further, timeline extension upto 24th March 2023 was ratified in the 31st EC meeting of NMET held on 12th September 2023.
- c) DGM, Assam informed that in the 60th TCC meeting, the committee suggested to prepare geological map with sample locations. The committee also recommended for interpretation of the geophysical anomaly with guidance from GSI, AMD in this regard.
- d) Accordingly, after discussions with GSI and AMD the following conclusion were reached :
 - Geophysical investigation reveals a circular nature of the body and a linear shape of the Banded Iron Formation (BIF) in the geological map. However, without drilling in the prospect area, confirmation regarding the extension of the BIF or the presence of any ultramafic body beneath the geomagnetic anomaly zone cannot be established.
 - BIF in Lengupara is similar to the Chandradinga BIF in Dhubri district. As far as linear shape of the BIF body is concerned, similar lensoidal bodies of BIF are observed in the Chandradinga area also. These BIF bodies are detached due to intense and multiple deformations .
 - Ultramafic rocks are not found within the 56 sq. km study area and also not mapped in Lengupara area . Rare Earth Elements (REE), elements like Niobium and Tantalum etc. may not be present.
- e) DGM Assam also mentioned that the matter has been discussed with AMD and is expecting their views within a week.
- f) Considering the above DGM Assam sought time extension upto 31st March 2024.

Recommendation TCC:

The Committee recommended the timeline extension upto 30th April 2024 .


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Agenda 62.4.21. Reconnaissance Survey for Exploration of Sillimanite in Samelangso Area (50 Sq. K.M.) District, Karbi-Anglong, Assam [Implementing Agency: DGM Assam]

- a) DGM Assam informed that the project was approved in 23rd meeting of EC held on 16th March, 2022. Sanction order was issued on 25th March, 2022 with timeline of 12 months and approved cost ₹ 3,64,17,283.
- b) Further, timeline extension upto 24th March 2023 was ratified in the 31st EC meeting of NMET held on 12th September 2023.
- c) DGM Assam informed that development of the Geological map for the study area in collaboration with GSI SU Assam was recommended in the previous TCC meeting. All designated objectives for Geological Survey and Geological Mapping within specified time frame following NMET guidelines has been completed.
- d) Chemical analysis of prospective samples revealing Al₂O₃ content ranging from 7.08% to 24.48% in the majority of sillimanite-bearing rocks within the study area. The bands fall in the Grade IV of DGM Assam classification for the sillimanite occurrences in the area.

Recommendation TCC:

The Committee noted the outcome of the project and agreed for GR submission after incorporation of the comments of peer reviewer. Further, timeline extension up to 30th April' 2024 is approved for submission of final GR.

Agenda 62.4.22. Preliminary Exploration (G3 Stage) of Limestone in Jodhpur-Satarpar Block, Devbhumi Dwarka District, Gujarat [Implementing Agency: CGM Gujarat]

- a) CGM Gujarat informed that the project was approved in 31st meeting of EC held on 12th September, 2023. Sanction order was issued on 5th October, 2023 with timeline of 03 months and approved cost ₹ 35,91,209.
- b) CGM Gujarat informed that the results of analytical results are still awaited and hence requested for time extension of 2 months.
- c) The committee suggested to review the project after receipt of results of sample analysis and thereafter submission of GR to peer reviewer.

Recommendation TCC:

The Committee recommended time extension upto 30th April 2024.

Agenda 62.4.23. Preliminary Exploration (G3 Stage) of Bauxite in Khaharda-kenedi Block, Devbhumi Dwarka District, Gujarat [Implementing Agency: CGM Gujarat]

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- a) CGM Gujarat informed that the project was approved in 31st meeting of EC held on 12th September, 2023. Sanction order was issued on 5th October, 2023 with timeline of 05 months and approved cost ₹ 1,82,59,134.
- b) CGM Gujarat informed that as per field observation, the older formation (black trap) is exposed and remaining area is not accessible due to cultivation. Hence, CGM Gujarat requested for cancellation of the project.

Recommendation TCC:

The Committee recommended cancellation of the project but instructed CGM, Gujarat to make field visit before proposing any item for exploration under NMET fund.

Agenda 62.4.24. Reconnaissance Survey (G-4) for PGE, Nickel, Cobalt in Rangapura Block, Dist- Hassan, Karnataka [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 23rd meeting of EC held on 16th March, 2022. Sanction order was issued on 25th March, 2022 with timeline of 12 months and approved cost ₹ 2,57,50,609.
- b) MECL informed that the drilling in the area could not be carried out due to cultivation. This was discussed in the 55th TCC of NMET on 7th August 2023. MECL conveyed that the drilling (7 boreholes) will commence in the 1st week of March 2024 and hence sought timeline extension upto 31st May 2024.

Recommendation TCC:

The Committee recommended timeline extension upto 31st May 2024.

Agenda 62.4.25. Agenda Reconnaissance Survey (G-4) for Basemetal in Tarichar Khurd Block, Dist- Niwari, Madhya Pradesh [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 27th meeting of EC held on 10th January, 2023. Sanction order was issued on 06th February, 2023 with timeline of 12 months and approved cost ₹ 49,34,888/-.
- b) The committee was informed that MECL is currently carrying out luminescent survey in the block which is likely to be completed by March 1st, 2024.
- c) MECL sought time extension **upto 30th April 2024.**

Recommendation TCC:

The Committee recommended timeline extension upto 30th April 2024.

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Agenda 62.4.26. Reconnaissance Survey (G-4) for REE in Rudrawathi Block, Dist-Tirupur, Tamil Nadu [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 28th meeting of EC held on 16th March, 2023. Sanction order was issued on 27th March, 2023 with timeline of 12 months and approved cost ₹ 71,82,943.
- b) MECL informed that results of chemical analysis are awaited and requested for time extension upto 31st May 2024.

Recommendation TCC:

The Committee recommended timeline extension upto 31st May 2024.

Agenda 62.4.27. Reconnaissance Survey (G-4) for Graphite in Ganacharpura Block, Dist- Kolar, Karnataka [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 30th meeting of EC held on 6th June, 2023. The sanction order was issued on 26th June, 2023 with timeline of 08 months and approved cost ₹ 92,96,121.
- b) MECL informed that results of chemical analysis are awaited and requested for time extension upto upto 31st May 2024.

Recommendation TCC:

The Committee recommended timeline extension upto 31st May 2024.

Agenda 62.4.28. Reconnaissance Survey (G-4) for Tin in Pokhar Chhaili Block, Dist-Tehri Garwal, Uttarakhand [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 30th meeting of EC held on 6th June, 2023. Sanction order was issued on 26th June, 2023 with timeline of 08 months and approved cost ₹ 1,05,05,247.
- b) MECL informed that the exploration work in the area was delayed due to cold and foggy weather. Currently, mapping and sampling are in progress. The sample processing and chemical analysis is expected to be completed by mid of May 2024.
- c) Considering the above, MECL sought time extension upto June 2024.

Recommendation TCC:

The Committee recommended timeline extension upto 30th June 2024

Agenda 62.4.29. Preliminary Exploration (G-3) for Limestone in Naddisinur 1 & 2 Block, Dist- Gulbarga, Karnataka [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 28th meeting of EC held on 16th March, 2023. Sanction order was issued on 3rd April, 2023 with timeline of 10 months and approved cost ₹ 1,37,56,914.

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- b) MECL informed that the GR preparation is in progress and the report will be submitted for Peer review in 1st week of March 2024.
- c) MECL sought time extension upto 31st March 2024 for the project.

Recommendation TCC:

The Committee recommended timeline extension up to 31st March 2024.

Agenda 62.4.30. Reconnaissance Survey (G-4) for Lithium & Potash in Merak Block, Dist- Leh, Ladakh [Implementing Agency: MECL]

- a) MECL informed that the project was approved in 23rd meeting of EC held on 16th March, 2022. Sanction order was issued on 25th March, 2022 with timeline of 24 months and approved cost ₹ 2,13,04,062.
- b) MECL informed that field work in the area was completed on 27th September 2023. However, the analytical results of the samples will be received by March 2024.
- c) Considering the above, MECL requested for time extension up to 30th April 2024 for GR submission.

Recommendation TCC:

The Committee recommended timeline extension upto 30th April 2024..

The meeting ended with Vote of Thanks to the chair

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Minutes of the 62nd Technical-cum-cost Committee (TCC) meeting of NMET held on 28th & 29th February & 1st March 2024 through video conferencing

S.No.	Name/ Designation	Status	Remarks
1	Dr. S. Ravi, Dy. Director General, SU: Karnataka & Goa, GSI Bangalore.	Chairman, TCC	Through VC
2	Shri. I.R. Kirmani, ADG (Retd.), GSI.	Member	Through VC
3	Shri. HemrajSuryavanshi, Addl. Director General (Retd.), GSI	Member	Through VC
4	Shri. K. Koteswara Rao, Dy.D.G. (Retd.) GSI.	Member	Through VC
5	Dr. S. K. Kulshrestha, DDG-RMH-III, NER, GSI, Shillong	Member	Through VC
6	Shri. S.K. Adhikari, Chief Mining Geologist, IBM, Nagpur.	Member	Through VC
7	Dr.E.V.S.S.K.Babu, Scientist (G), NGRI.	Member	Through VC
8	Shri. K.L. Mundra, Head-RMRE, AMD, Hyderabad	Member	Through VC
9	Shri. A.R. Sengupta, Director (IFD), Ministry of Mines.	Member	7 th Feb
10	Shri. Vivek Kumar Sharma, Director, NMET, Ministry of Mines	Member	7 th Feb
11	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	Member	Through VC
12	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	Member	Through VC
13	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	Member	Through VC
14	Shri. C. Parthsarathi, Director, GSI&Member Secretary, TCC- NMET, GSI, Bengaluru	Member Secretary	Through VC

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List of participants attended 62nd Technical-cum-cost Committee (TCC) meeting of NMET held on 28th & 29th February & 1st March 2024 through videoconferencing

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	hemrajgsi@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.	Shri. P.K. Maharana, DGM (Finance), NALCO, Bhubaneswar	pmaharana@rediffmail.com	8500669500	Member TCC
10.	Shri. Ravi Kumar Gupta General Manager (Finance) HCL, Kolkata	ravi_g@hindustancopper.com	9433274328	Member TCC
11.	Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.	vandana@gsi.in	8660939235	Member TCC
12.	Shri. C. Parthasarathi, Director, GSI&Member Secretary, TCC- NMET, GSI, Bengaluru	c.parthasarathi@gsi.gov.in	9483186932	Member Secretary
13.	Shri B R V Susheel Kumar, Director	dmgts-mines@telangana.gov.in	7005386045	DMG, Telangana
14.	Smt. Barnalee Nath Joint Director(Geology)	dgmassam@gmail.com	9435104508	DGM Assam

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15.	Shri Nirav Barot Senior Geologist	ad-tech-cgm@geologistgujarat.gov.in	9727706356	CGM, Gujarat
16.	Shri S.K Kankane, Joint Director,	dgm.cg@gov.in	9826753151	DGM Chhattisgarh
17.	Representative from DGM Jharkhand	geo-geology@jharkhandgmail.gov.in	9431196469	DGM Jharkhand
18.	Representative from DGM Madhya Pradesh	geology.dgm@mp.gov.in	-	DGM Madhya Pradesh
19.	Shri P. Ravindran (GM Exploration)	ravindran.mecl@gmail.com	9407607309	MECL
20.	Shri P.P. Kulkarni (DGM Exploration)	kulkarnip.mecl@gmail.com	8319364061	MECL
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22.	Shri E. Kuppusamy Sr. Manager (Geology)	kuppuekambaram@gmail.com	7776958086	MECL
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27.	Shri Vikash kumar Manager (Geology)	vikgeo@gmail.com	9110065089	MECL
28.	Shri Vikash Ranjan Manager (Geology)	vikashraj.ranjan@gmail.com	7763085178	MECL
29.	Shri R.P. Singh Manager (Geologist)	Gm.exploration.cmpdi@gmail.com	8987789047	CMPDI
30.	Shri Bharat Chandra Sahoo, GM (Exploration)	bharat.sahoo@odishamining.in	9438887784	OMC
31.	Shri Mihir Malla, DGM (Geo)	mihir.malla@odishamining.in	9777454069	OMC
32.	Shri Sumanta Sahu,	sumanta.sahu@odishamining.in	9668365885	OMC

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	AGM (Geo)			
33.	Shri Hemant Yerpude, Mines Forman	mpsmc@mp.gov.in	983662100	MPSMC
34.	Shri Niraj Kumar Chowdhary Appointed Consultant	mpsmc@mp.gov.in	9179084301	MPSMC
35.	Shri. Tufan Bhowmik, Geologist	tufan.bhowmik@maheshwaree.com	7602994286	MMPL
36.	Dr. Fareeduddin, Advisor	fareedromani@gmail.com	9886402487	GeoExpore Pvt. Ltd
37.	Dr.Yerriswamy Pateel, director	vpateel@geoexpore.com	9980118930	GeoExpore Pvt. Ltd
38.	Shri. Channamallikarjun B Patil, Director	cm@geoexpore.com	9980554498	GeoExpore Pvt. Ltd
39.	Dr. K.N. Radhika, Sr. Geologist	radhika@geoexpore.com	9886300105	GeoExpore Pvt. Ltd
40.	Dr. A.V. Keshava Prasad, V.P. (Mineral Exploration)	keshava.prasad@gemcokati.com	-	NPEA- Gemcokati
41.	Shri. P.Praveenkumar Director	praveen@geomarinesolution.in	8277363919	GMSPL Mangalore
42.	Shri. A.C. Dinesh Chief Technology Officer	oed@geomarinesolutions.in	9038534560	GMSPL Mangalore
43.	Shri. Biplob Chatterjee (CEO, Director, Consulant)	biplob.chatterjee@geovale.com	9007706145	NPEA- Geovale
44.	Shri Taraknath Pal	-	-	NPEA- Geovale
45.	Ms. Tuasha Majumdar (Sr. Project Manager, Geology and Exploration)	tuasha.majumder@geovale.com	9007215397	NPEA- Geovale
46.	Ms. Sangeeta Gupta Superintending Geologist	nmet.mines@gov.in	8005763199	NMET
47.	Ms. Anju C.S., Superintending Geologist	nmet.mines@gov.in	8588836933	NMET
48.	Shri Rajesh Sharma, Senior Geologist	nmet.mines@gov.in	8377851047	NMET

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Estimate Cost for Preliminary Exploration (G3) for manganese in Nagardhan blocks, District: Nagpur, Maharashtra.
[Block area- 2.00 sq. km; Timeline- 11 months Review : 5 months, BH : 8 nos, Drilling: 500m]

S. No.	Item of Work	Unit	Rates as per NMETSoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Amount (Rs)	
A	GEOLOGICAL WORK						
1	Borehole logging, sampling & Report writing						
i	Charges for one Geologist-Field	day	1.2	11,000	120	13,20,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	40	3,60,000	
iii	2 labours/ party (Rs 504/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	504	240	1,20,960	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Trench and Core Sampling -1 Samplers	day	1.5.2	5,100	18	91,800	
v	4 labours/ party for smpling (Rs 504/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	504	72	36,288	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)						
i	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS and boundary coordinates	Per Point of observation	1.6.2	19,200	12	2,30,400	8 BHs and 4 boundary coordinates one base station
ii	Charges of Surveyor	one surveyor per day	1.6.1a	8,300	15	1,24,500	

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iii	Labours Charges for survey work; Base rate - Rs.504	day	5.7	504	60	30,240	Amount will be reimburse as per the notified rates for unskilled labor by the Central Labour Commissioner or respective State Govt. whichever is higher
Sub Total- A						23,14,188	
B	PITTING AND TRENCHING						
i	Trenching (1m x 2mx 10 m) x 7 trenches	Cu m	2.1.1	3330	140	4,66,200	
Sub Total- B						4,66,200	
C	DRILLING						
i	Drilling upto300m (Hard Rock) (1 rigs)	m	2.2.1.4a	11,500	500	57,50,000	
ii	Borehole deviation Survey	m	2.2.6	330	500	1,65,000	
iii	Land / Crop Compansation	per BH	5.6	20,000	8	1,60,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
iv	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	8	16,000	
v	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	100	3,600	Certification in this regard is required to be provided
vi	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	2	1,00,000	
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
viii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
ix	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	3	66,060	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed later
x	Core Preservation: One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	150	2,38,500	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities

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	Sub Total- C					69,99,160	
D	LABORATORY STUDIES						
1	Chemical Analysis						
i	Primary & Check samples						
	a. Primary Samples for 6 radical (Mn, SiO ₂ , P ₂ O ₅ , Fe ₂ O ₃ , MnO ₂ and Insolubles)	Nos	4.1.7a + 7b	2,841	130	3,69,330	Trench-50, BH-80
	b-Internal (5%) Check samples for 6 radical (Mn, SiO ₂ , P ₂ O ₅ , Fe ₂ O ₃ , MnO ₂ and Insolubles)	Nos	4.1.7a + 7b	2,841	-	-	
	c-External(10%) Check samples from NABL Lab for 6 radical (Mn, SiO ₂ , P ₂ O ₅ , Fe ₂ O ₃ , MnO ₂ and Insolubles)	Nos	4.1.7a + 7b	2,841	13	36,933	
iii	Composite samples for Manganese	Nos	4.1.7a + 7b	2,841	-	-	
2	Physical & Petrological Studies						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polished section	Nos	4.3.2	1,549	10	15,490	
iv	Complete mineragraphic study report	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis (Major oxide and 8 additional trace elements)	Nos	4.1.15a& b	7,568	-	-	
vii	Specific gravity studies	Nos	4.8.1	1,605	5	8,025	
viii	Bulk Density Determination	Nos	4.10	3,540	-	-	
	Sub Total- D					5,40,748	

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E	Total A to D				1,03,20,296	
F	Geological Report Preparation		5.2	For the projects having cost exceeding 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	5,16,015	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
G	Peer review Charges		As per EC decision		30,000	
H	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs.5 Lakhs whichever is lower	2,06,405.92	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
I	Total Estimated Cost without GST				1,10,72,716.72	
J	Provision for GST (18% of I)				19,93,089.01	GST will be reimburse as per actual and as per notified prescribed rate
K	Total Estimated Cost with GST				1,30,65,805.73	or Say Rs. 145.87 Lakh
Note:						
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMETSoC and Item no. 6 of NMETSoC. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.					

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Time Schedule / Action Plan for Preliminary Exploration (G-3) for Manganese in Nagardhan Block, Districts: Nagpur, Maharashtra
[Block area-2.00 sq. km; Schedule timeline- 11 months]

S. No.	Particulars	Months	1	2	3	4	5	Review	6	7	8	9	10	11	
1	Camp Setting	Months													
2	Survey Party days (1 Party)	days													
3	Trenching / Pitting	cu.m													
4	Drilling (1 rig)	m													
5	Geologist Party days (1 Party)	days													
6	Sampling days for Trench & Core Sampling (1 Party)	days													
7	Camp winding	Months													
8	Laboratory Studies	days													
9	Geologist days, HQ	days													
10	Report Writing with Peer Review	days													

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**Estimate Cost for Reconnaissance Survey (G-4) for REE, Rare Metals (RM) and PGE mineralization Kathapullapatti Block ,
Tiruppur District, Tamil Nadu**

Total block area- 144.56 sq km; Completion Time- 12 Months; Review: after 6 months

S. No.	Item of Work	Unit	Rates as per NMETSoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	Large scale (LSM) Geological mapping/ Trenching/ Drilling						
a)	Geologist man days (1 No.) for Geological map & Report (HQ)	days	1.2	9,000	40	3,60,000	
b)	Geologist man days (2 No) for Large scale (LSM) Geological mapping/ sampling (Field)	days	1.2	11,000	150	16,50,000	
c)	Labour (field) for (Total 4 Nos i.e. 4 workers)	per worker	5.7	504	300	1,51,200	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 (1 Party) for geochemical, channel and core samples	one sampler per day	1.5.2	5100	46	2,34,600	
e)	Labours (4 Nos) Rs. 504/-	day	5.7	504	184	92,736	
	Sub-Total A					24,88,536	
2.0	Mineral Investigation						
2.1	Pitting	per cu m	2.1.2	3,800	50	1,90,000	

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	Sub-Total B					1,90,000	
3.0	Drilling						
A	Auger Drilling outsourced						
i)	Auger Drilling soft Strata upto 150 m Depth (30 Boreholes X 7m average depth)	m	2.2.2	4760	210	9,99,600	Amount will be reimburse as per actual tender cost
	Sub-Total C					9,99,600	
4.0	Laboratory Studies						
4.1	Separation of heavy minerals from stream sediment samples of - 2mm size through gravity and magnetic separation	No.	4.3.6a&6b	16,200	100	16,20,000	
4.2	Chemical Analysis						
i)	Surface sampling (Bed Rock/Stream Sediment/regolith Samples)						
	Analysis of stream sediment/ regolith samples for determination of a package by 34 elements by ICP-AES / ICPMS (sequential technique) includes 14 elements of REE	per sample	4.1.14	7,731	100	7,73,100	BRS/SSS=150, Soil=50
ii)	Sub Surface sampling						
	Analysis of stream pit samples for determination of a package by 34 elements by ICP-AES / ICPMS (sequential technique) includes 14 elements of REE	per sample	4.1.14	7,731	0	-	
	Auger Sample+Pit Samples	per sample	4.1.14	7,731	150	11,59,650	
iii)	PGE Surface sampling						
	For PGE (ICP-MS Ni-S Fire assay technique)	per sample	4.1.5d	11,800	10	1,18,000	
iv)	Check Samples (Stream Sediment/regolith Samples/Pit) - 10% External						-

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	Analysis of one rock/soil sample for determination of a package by 34 elements by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	0	-	
4.3	Whole rock studies	per sample	4.1.15a	4,200	10	42,000	
	Check Samples (10% External)	per sample	4.1.15a	4,200	1	4,200	
4.4	Petrological / Mineralographic studies					-	
	a) Preparation of thin section	per sample	4.3.1	2,353	20	47,060	
	b) Study of thin section for petrography	per sample	4.3.4	4,232	20	84,640	
	c) XRD analysis	per sample	4.5.1	4,000	0	-	
4.5	EPMA Studies per hour (Outsourced)	Hour	4.4.1	8,540	10	85,400	
4.6	SEM Studies per hour (Outsourced)	Hour	4.4.2	2,940	10	29,400	
4.7	Operational Charge = (4.5+4.6) X 10%		6.0 (i)	10% of Total outsourced Cost in case of total ousouce cost up to 50 lakh		11,480	-
	Sub-Total D					39,74,930	
5.0	Total (1.0 to 4.0)					76,53,066	
	Tender Process Cost			2% of the project cost or 5 Lakhs which ever will be lower	2.3	54,688	For auger Drilling Outsourcing, Heavy Seperation, SEM&EPMA study

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6.0	Geological Report Preparation	Nos	5.2	A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more	1	3,82,653	For the projects having cost up to exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more and Rs. 3000/- per each additional copy.
7.0	Preparation of Exploration Proposal	Nos	5.1	2% of project cost	1	1,53,061	EA has to submit the final proposal
9.0	Report Peer Review Charges	lumpsum	As per 30th EC decision	30000	1	30,000	
10.0	Total Estimated Cost without GST (7+8+9+10)					82,73,469	
11.0	Provision for GST (18%)					14,89,224	GST will be reimburse as per actual and as per notified prescribed rate
12.0	Total Estimated Cost with GST					97,62,693	
					Rs. in Lakhs	97.63	
Note:							
\$	Pitting dimensions are tentative may vary depending upon the geology and field conditions						
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 NMETSoC and Item no. 6 of NMETSoC. In case of excusion of the project by NEA on its own, a Certiate 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.						

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Time schedule / Action plan of Reconnaissance Survey (G-4) for REE, Rare Metals (RM) and PGE in Kathapullapatti Block ,District: Tiruppur District, Tamil Nadu															
S.No.	Activities	MONTHS													
		1	2	3	4	5	6	Review	7	8	9	10	11	12	
1	Camp setting	█													
2	Geological mapping & Sampling	█	█	█	█	█	█								
3	Sample preparation		█	█	█	█	█								
4	Analytical work			█	█	█	█								
5	Exploratory mining for Pitting				█	█	█								
6	Sample preparation (Pit samples)					█	█								
7	Analytical work						█								
8	Drilling (Auger)									█	█				
9	Sample preparation (Auger samples)										█	█			
10	Analytical work											█	█		
11	Geologist at HQ												█	█	
12	Geological report													█	█
13	Peer Review													█	

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Estimate Cost for Preliminary Exploration (G3) for Graphite in the Patra Graphite Block , Jhabua District: Madhya Pradesh, Area 1.5 sq. km, No.ofBH: 10, Borehole depth range 80 m; Schedule timeline 12 months Review: 4 Months and 8 months]

S. No.	Item of Work *	Unit *	Rates as per NMETSoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)	
A	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:2,000 scale) & Trenching , drilling work						
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2a	11,000	90	9,90,000	
ii	b. Labours Charges; Base rate (2 nos)	day	5.7	504	180	90,720	Amount will be reimbursed 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	1.2b	9,000	45	4,05,000	
	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	56	2,85,600	

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	e. Labours (4 Nos)	day	5.7	504	224	1,12,896	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
Sub Total- A						18,84,216	
B	Ground Geophysical Survey						
1	SP Method (outsourced)	per Line Km	3.3a	29,600	10	2,96,000	
2	IP (Dipole-Dipole) (outsourced)	10-20 Line Km	3.4a	69,950	-	-	
3	Geophysicist party days (Field) (Outsourced)	per day		11,000	-	-	
4	c. Labours Charges	day	5.7	504	-	-	
5	Geophysicist party days (HQ) (Outsourced)	per day		9,000	-	-	
Sub Total- B						2,96,000	
C	Survey work						
a	DGPS Survey for BH fixation & RL determination (outsourced)	Per Point of observation	1.6.2	19,200	14	268800	
b	Charges of Surveyor (1 party) (Outsource)	one surveyor per day	1.6.1a	8,300	-	0	

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c	Survey man days for forest clearance works (Outsourced)	days	1.6.1b	8,300	-	0	
d	Labours Charges for survey work;	day	5.7	504	-	0	
	Sub-Total C					2,68,800	
D	Trenching/Pitting						
	a) Excavation of Trenches	per cu.m	2.1.1	3,330	60	199800	
E	DRILLING (after review)						
1	Drilling up to 300m (Hard Rock) (Outsourced)	m	2.2.1.4a	11,500	800	92,00,000	
2	Borehole deviation Survey by Multishot Camera	m					
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH					
4	Construction of concrete Pillar (12"x12"x30")	per borehole					
5	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km					
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month					
7	Drilling Camp Setting Cost	Nos					
8	Drilling Camp Winding up Cost	Nos					
9	Road Making (Flat Terrain)	Km					
10	Drill Core Preservation (Outsourced)	per m	5.3	1,590	300	4,77,000	
	Sub Total E					96,77,000	
F	Borehole Geophysical Logging (Outsourced)	m	3.12	622.00	800	4,97,600	1088941/(5*350)=622.22

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G	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a	3,846	20	76,920	
	c. For PGE by Fire Assay	Nos					
	Proximate analysis of Graphite	Nos	4.1.16	3,000	20	60,000	
ii)	Surface Check samples (10% External)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a	3,846	2	7,692	
	c. For PGE	Nos					
	Proximate analysis of Graphite	Nos	4.1.16	3,000	2	6,000	
iii)	Trench & Check Samples from Trench						
	Trench samples						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a	3,846	60	2,30,760	
	c. For PGE	Nos					
	Proximate analysis of Graphite	Nos	4.1.16	3,000	60	1,80,000	
iv)	Trench Check samples (10% External)						
	a. Au by Fire Assay	Nos					

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	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.7a	3,846	6	23,076	
	c. For PGE	Nos					
	Proximate analysis of Graphite	Nos	4.1.16	3,000	6	18,000	
v)	BH Core samples						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos	4.1.14	7,731	50	3,86,550	
	c. For PGE	Nos					
	Proximate analysis of Graphite	Nos	4.1.16	3,000	200	6,00,000	
vi)	BH Core samples (10%External)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos	4.1.14	7,731	-	-	
	c. For PGE	Nos					
	Proximate analysis of Graphite	Nos	4.1.16	3,000	20	60,000	
2	Physical & Petrological Studies						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	study of polished section	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	20	5,600	
vi	Raman Spectroscopy	Nos			5		not an SoC
vii	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	
	SEM Studies	per hour					
viii	EPMA studies	per hour					
						17,86,283	
H	Total A to G					1,46,09,699	

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I	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		7,30,485	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
J	Peer review Charges		As per EC decision			30,000	
K	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		2,92,194	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.
L	Operational Charges		6 (iii)			9,11,970	
M	Tendering Cost			2% of the project cost or 5 Lakhs which ever will be lower		2,14,788	
N	Total Estimated Cost without GST					1,67,89,136	
O	Provision for GST (18% of J)					30,22,044	GST will be reimburse as per actual and as per notified prescribed rate
P	Total Estimated Cost with GST					1,98,11,180	
					Rs. In Lakhs	198.11	
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 NMETSoC and Item no. 6 of NMETSoC. In case of excusion of the project by NEA on its own, a Certifiante 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.						

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Time Schedule/ Action Plan for Preliminary Exploration (G3 Stage) for Graphite in the Patra Graphite Block, Jhabua District: Madhya Pradesh

S. No.			1	2	3	4		5	6	7	8	9	10	11	12	
1	Camp Setting	Months/Days					Review									
2	Geological Mapping & Sampling	Months														
3	Geophysical survey	Months														
5	Pitting/Trenching	Months														
6	Surface Drilling (1 rigs)	Months														
7	Survey Party days	Months														
8	Geologist Man days	Months														
9	Geophysict man days	Months														
9	Sampler Man days	Months														
10	Camp Winding	Months														
11	Laboratory Studies	Months														
12	Report Writing with Peer Review	Months														

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Estimate Cost for Preliminary Exploration (G4) for Basemetals in Pastalaimal Basemetal Block, Betul, MAdhya Pradesh
Area: 1.73 sq. km, No.ofBH: 4, Drilling : 450m, Timeline: 12 months, Review: After 4 Months

S. No.	Item of Work *	Unit *	Rates as per NMETSoc 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)	
A	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:2,000 scale) & Trenching , drilling work						
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2a	11,000	100	11,00,000	
ii	b. Labours Charges; Base rate	day	5.7	504	200	1,00,800	Amount will be reimbursed 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	1.2b	9,000	30	2,70,000	
	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	21	1,07,100	
	e. Labours (4 Nos)	day	5.7	504	120	60,480	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.

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	Charges of Surveyor (1 party) For Geological mapping	one surveyor per day	1.6.1a	8,300	30	249000	
	Labours Charges for survey work; (2 nos)	day	5.7	504	60	30240	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	Sub Total- A					19,17,620	
B	Ground Geophysical Survey (Outsourced)						
1	IP. Induced Polarization (I.P) cum Resistivity S.P and Magnetic (10 Lkm)(Outsourced)	8-10 Line Km	3.4b	14,48,693	1	14,48,693	
3	Geophysicist party days (Field)	per day	3.18	11,000	-	-	
4	c. Labours Charges	day	5.7	504	-	-	
5	Geophysicist party days (HQ)	per day	3.18	9,000	15	1,35,000	
	Sub Total- B					15,83,693	
C	Survey work (Outsource)						
a	DGPS Survey for BH fixation &RL determination	Per Point of observation	1.6.2	19,200	8	153600	
b	Charges of Surveyor (1 party) for Geophysical survey layout work & Block boundary demarcation	one surveyor per day	1.6.1a	8,300	-	0	
c	Labours Charges for survey work;	day	5.7	504	-	0	
	Sub-Total C					1,53,600	
D	Trenching/Pitting						

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	a) Excavation of Trenches	per cu.m	2.1.1	3,330	50	166500	
E	DRILLING (after review) (Outsourced) (Inclined)						
1	Drilling up to 300m (Hard Rock)	m	2.2.1.4a	11,500	450	51,75,000	
2	Borehole deviation Survey by Multishot Camera	m					
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH					
4	Construction of concrete Pillar (12"x12"x30")	per borehole					
5	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km					
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month					
7	Drilling Camp Setting Cost	Nos					
8	Drilling Camp Winding up Cost	Nos					
9	Road Making (Flat Terrain)	Km					
10	Drill Core Preservation (outsourced)	per m	5.3	1,590	200	3,18,000	
	Sub Total E					54,93,000	
F	Borehole Geophysical Logging (outsourced)	450m	3.12	622	450	2,79,900	1088941/(5*350)=622.22
G	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Au by Fire Assay	Nos					
	b. For Cu, Pb, Zn, by AAS Method	Nos	4.1.7a	2,506	100	2,50,600	

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	c. For PGE by Fire Assay	Nos					
ii)	Surface Check samples (10% External)						
	a. Au by Fire Assay	Nos					
	b. For Cu, Pb, Zn, by AAS Method	Nos	4.1.7a	2,506	10	25,060	
	c. For PGE	Nos					
iii)	Trench & Check Samples from Trench						
	Trench samples						
	a. Au by Fire Assay	Nos					
	b. For , Cu, Pb, Zn, by AAS Method	Nos	4.1.7a	2,506	50	1,25,300	
	c. For PGE	Nos					
iv)	Trench Check samples (10% External)						
	a. Au by Fire Assay	Nos					
	b. For Cu, Pb, Zn, by AAS Method	Nos	4.1.7a	2,506	5	12,530	
	c. For PGE	Nos					
v)	BH Core samples						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos	4.1.14	7,731	-	-	
	c. For PGE	Nos					
vi)	BH Core samples (10%External)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos	4.1.14	7,731	-	-	
	c. For PGE	Nos					
2	Physical & Petrological Studies						

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i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos	4.3.2	1,549	10	15,490	
iv	study of polished section	Nos	4.3.4	4,232	10	42,320	
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis	Nos					
vii	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	
	SEM Studies	per hour					
viii	EPMA studies	per hour					
						5,47,975	
H	Total A to G					1,01,42,288	
I	Geological Report Preparation	5 Hard copies with a soft copy	5.2	5.2 (i/ii/iii/iv)		5,07,114	EA has to submit the final proposal.
	Tender Process Cost			2% of the project cost or 5 Lakhs which ever will be lower		1,47,504	
J	Peer review Charges		As per EC decision			30,000	
K	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		2,02,846	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.
	Reimbursement of cost in case of outsourced component of project work		6.0 (ii)			6,78,139	

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L	Total Estimated Cost without GST	1,15,60,388	
M	Provision for GST (18% of J)	20,80,870	GST will be reimburse as per actual and as per notified prescribed rate
N	Total Estimated Cost with GST	1,36,41,257	
		Rs. In Lakhs	136.41
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 NMETSoC and Item no. 6 of NMETSoC. In case of excusion of the project by NEA on its own, a Certifiante 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.		

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Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for Basemetal in Pastalaimal Basemetal Block, Betul District: Madhya Pradesh															
S. No.	Details	1	2	3	4	Review	5	6	7	8	9	10	11	12	
1	Camp Setting	█													
2	Geological Mapping & Sampling		█	█	█										
3	Geophysical survey		█	█											
4	Geophysicist party days (HQ) for data interpretation & Report		█	█											
5	Pitting/Trenching			█	█										
6	Surface Drilling (1 rigs)		█	█	█										
7	Survey Party days		█	█	█			█	█						
8	Geologist Man days	█	█	█	█			█	█	█	█				
9	Sampler Man days		█	█	█			█	█	█					
10	Laboratory Studies			█	█			█	█	█	█	█	█		
11	Report Writing with Peer Review											█	█	█	

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**Estimate cost for Reconnaissance Survey (G-4) for PGE, Vanadium & associated mineral in Bhursadongari - Murum Block,
Balaghat District, MP. Total block area- 102 sq km; Completion Time- 6 Months**

S. No.	Item of Work *	Unit *	Rates as per NMETSOC 2020-21		Estimated Cost of the Proposal	
			SoC-Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)
A	Geological Mapping Other Geological Work & Surveying					
	Geological mapping, (1:12,500 scale) & Trenching , drilling work					
i	a. Charges for Geologists per day (Field) for geological mapping & trenching work, drilling work	Geologists per day	1.2b	11,000	120	13,20,000
ii	b. Labours Charges; Base rate	2 Labourers per day	5.7	504	240	1,20,960
	c. Charges for Geologists per day (HQ)	day	1.2a	9,000	30	2,70,000
	d. Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	30	1,53,000
	e. Labours (4 Nos)	day		504	120	60,480
	Sub Total- A					19,24,440
B	Ground Geophysical Survey					
1	IP. Induced Polarization (I.P) cum Resistivity S.P and Magnetic (30 Lkm)	8-10 Line Km				
3	Geophysicist party days (Field)	per day				

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4	c. Labours Charges	day				
5	Geophysicist party days (HQ)	per day				
Sub Total- B						-
C	Survey work					
a	DGPS Survey for BH fixation & RL determination	Per Point of observation				
b	Charges of Surveyor (1 party) for Geophysical survey layout work & Block boundary demarcation	one surveyor per day				
c	Labours Charges for survey work;	day				
Sub-Total C						-
D	Trenching/Pitting					
a)	Excavation of Trenches	per cu.m	2.1.1	3,330	150	499500
b)	Excavation of Pits	per cu.m	2.1.2	3,800	20	76000
E	DRILLING (after review)					
1	Drilling up to 300m (Hard Rock)	m				
2	Borehole deviation Survey by Multishot Camera	m				
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH				
4	Construction of concrete Pillar (12"x12"x30")	per borehole				
5	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km				
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month				
7	Drilling Camp Setting Cost	Nos				
8	Drilling Camp Winding up Cost	Nos				
9	Road Making (Flat Terrain)	Km				
10	Drill Core Preservation	per m				
Sub Total E						-

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F	Borehole Geophysical Logging	5 Bhs of 350m each				
G	LABORATORY STUDIES					
1	Chemical Analysis					
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)					
	a. Au by Fire Assay	Nos	4.1.5a	2,380	10	23,800
	b. Major Oxides by XRF (including Laterite Analysis for Vanadium)	Nos	4.1.15a	4,200	50	2,10,000
	c. For PGE by Fire Assay	Nos	4.1.5d	11,800	20	2,36,000
ii)	Surface Check samples (10% External)					
	a. Au by Fire Assay	Nos	4.1.5a	2,380	1	2,380
	b. Major Oxides by XRF (including Laterite Analysis for Vanadium)	Nos	4.1.15a	4,200	5	21,000
	c. For PGE	Nos	4.1.5d	11,800	2	23,600
iii)	Trench & Check Samples from Trench					-
	Trench / Pit samples					-
	a. Au by Fire Assay	Nos				-
	b. Major Oxides by XRF (Laterite Analysis for Vanadium)	Nos	4.1.15a	4,200	20	84,000
	c. For PGE	Nos	4.1.5d	11,800	75	8,85,000
	d. REE +traces by ICP in Spinel-bearing PGE Anomaly zone	per sample	4.1.14	7,731	20	1,54,620
iv)	Trench Check samples (10% External)					
	a. Au by Fire Assay	Nos				
	b. Major Oxides by XRF (Laterite Analysis of Pit samples for Vanadium)	Nos	4.1.15a	4,200	20	84,000
	c. For PGE	Nos	4.1.5d	11,800	15	1,77,000
	d. REE by ICP in Spinel-bearing PGE Anomaly zone	per sample	4.1.13	5,380	3	16,140
v)	BH Core samples					

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	a. Au by Fire Assay	Nos				
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos				
	c. For PGE	Nos				
vi)	BH Core samples (10%External)					
	a. Au by Fire Assay	Nos				
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos				
	c. For PGE	Nos				
2	Physical & Petrological Studies					
i	Preparation of thin section	Nos	4.3.1	2,353	20	47,060
ii	Study of thin section	Nos	4.3.4	4,232	20	84,640
iii	Preparation of polish section	Nos	4.3.0	1,549	20	30,980
iv	study of polished section	Nos	4.3.4	4,232	20	84,640
v	Digital Photographs	Nos	4.3.7	280	40	11,200
vi	Whole Rock Analysis	Nos				
vii	Sp. Gravity	Nos				
viii	SEM Studies	per hour			-	
ix	EPMA Studies	per hour	4.4.1	8,540	15	1,28,100
x	XRD Studies	Nos	4.5.1	4,000	-	-
						23,04,160
H	Total A to G					48,04,100
I	Geological Report Preparation	5 Hard copies with a soft copy	5.2	i		2,40,205
J	Peer review Charges		As per EC decision	30,000	1	30,000

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K	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		96,082
L	Total Estimated Cost without GST					51,70,387
M	Provision for GST (18% of L)					9,30,670
N	Total Estimated Cost with GST					61,01,057
					Rs. In Lakhs	61.01
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 NMETSoc and Item no. 6 of NMETSoc. In case of excusion 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.					

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Timeline Schedule for Reconnaissance Survey (G-4) for PGE, Vanadium & associated mineral in Bhursadongari - Murum Block, Balaghat District, Madhya Pradesh.								
S. No.			1	2	3	4	5	6
1	Camp Setting	Months/Days						
2	Geological Mapping & Sampling	days						
3	Geophysical survey	L.km						
4	Geophysicist party days (HQ) for data interpretation & Report	Days						
5	Pitting/Trenching	cu.m						
6	Surface Drilling (1 rigs)	m						
7	Survey Party days	days						
8	Geologist Man days	days						
9	Sampler Man days	days						
10	Camp Winding	months						
11	Laboratory Studies	Nos.						
12	Report Writing with Peer Review	months						

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Estimate Cost for Preliminary Exploration (G3 stage) for Vanadium, Titanium and Associated Minerals in Beach and Dune sands of Talashil block in Sindhudurg district, Maharashtra;
Area: 4.68 sq km, No.ofBH: 52; Borehole depth range: 6m ;Timeline: 10 Months; Review: 5 Months

S. No.	Item of Work	Unit	Rates as per NMETSoc 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - SI No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:10,000 scale) & Trenching , drilling work	4.68 Sq. km.					
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2	11,000	90	9,90,000	
ii	b. Labours Charges; Base rate- 2 labourer per day	day		504	180	90,720	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iii.	c. Charges for Geologist per day (HQ)	day	1.2	9,000	120	10,80,000	
	Sub Total- A					21,60,720	
C	Survey work						

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a	Surveyor for topographic mapping, BH fixation & RL determination	day	1.6.1a	8,300	45	373500	
b	Labours Charges (4 Labours)	day		504	180	90720	
	Sub-Total C					4,64,220	
E	DRILLING (after review)						
1	AUGER Drilling of 52 BH up to 6.0m	m	2.2.2	4,760	312	14,85,120	
2	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	-	-	-	
3	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	990	35,640	Certification in this regard is required to be provided (Mangalore to Sindhudurg and back)
4	Monthly Accomodation Charges for drilling Camp	month	2.2.9	50,000	3	1,50,000	
5	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
6	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
7	Sampler processing incl marking of samples, coning and quartering, packing and labelling, preparation of duplicate samples etc and complete grain size analysis (Sieve and hydrometer analysis)	day	1.5.2	5,100	72	3,67,200	
	Labours (4 labours)			504	288	1,45,152	

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8	Drill Core Preservation	per m	5.3	1,590	-	-	
	Sub Total E					26,83,112	
G	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Separation of heavy minerals from sediment samples of 2mm size through gravity and two level magnetic separation (BH and Pit samples) to yield three sub fractions of Magnetite, Ilmenite and Limonite (312*3= 936 sub fractions)		4.3.6b	13,820	312	43,11,840	
ii)	a. for Trace and REE by ICPMS b. for U and Th by LA_ICPMS by grain analysis(15 +15 samples)	Nos	4.1.14	7,731	-	-	
iii)	All Major oxides including TiO2 plus V2O5 by XRF (25% of total 936 Sub fractions)	Nos	4.1.15a	4,200	234	9,82,800	
iv)	10 % XRF check samples	Nos	4.1.15a	4,200	23	96,600	To be given to AMD for analysis
2	Physical Studies						
i)	Mineralogical Study under microscope	Nos	4.3.4	4,232	10	42,320	
ii)	XRD studies	Nos	4.5.1	4,000	10	40,000	
	Sub total G					54,73,560	
H	Total A to H					1,07,81,612	

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I	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		5,39,081	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
J	Peer review Charges		As per EC decision			30,000	
K	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		2,15,632.24	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.
L	Total Estimated Cost without GST					1,15,36,324.84	
M	Provision for GST (18% of J)					20,76,538.47	GST will be reimburse as per actual and as per notified prescribed rate
N	Total Estimated Cost with GST					1,36,12,863.31	
					Rs. In Lakhs	136.13	
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 NMETSoc and Item no. 6 of NMETSoc. In case of excusion of the project by NEA on its own, a Certifiante 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.						

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Annexure 7B

Time Schedule / Action Plan for Preliminary Exploration (G3 stage) for Vanadium, Titanium and Associated Minerals in Beach and Dune sands of Talashil block in Sindhudurg district, Maharashtra.													
WORK/ MONTHS	1	2	3	4	5	Review	6	7	8	9	10		
Camp Setting	█												
Geological Mapping		█	█	█									
Survey Party		█	█	█	█								
Auger Drilling				█	█		█	█	█	█			
Geologist Man days		█	█	█	█		█	█	█	█			
Sampler Man days		█	█	█	█		█	█	█	█			
Camp Winding								█					
Laboratory Studies								█	█	█	█		
Report Writing									█	█	█	█	

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Annexure 8A

Estimate Cost for Preliminary Exploration (G3 Stage) for Limestone in North West of Boro Lakhindong Block, Dima-Hasao

District: Assam

Timeline : 12 months , Review 6 months , BH : 5 nos., BH m: 500m; Total area: 4.82 sq km

Sl. Nos.	Item of work	Rates as per NMETSoC 2020-21			Estimated Cost of the Proposal		Remarks
		Unit	SoC-Item-SI No	Quantity	Rates as per SoC	Total	
1	Geological Mapping (on 1:4000) (4.82 sq km)						
	(a) Charges for Geologist in field (without labourer)	per day per Geologist	1.2. b	120	11,000	1320000	
	(c) Wages for 2 labourers for geologist	per day	5.7	240	504	120960	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	Land/Crop compensation (as per actual)	per borehole	5.6	5	20000	100000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
3	Geochemical sampling (Bedrock sampling)	50 nos	-	-	-	-	
5	Survey work						
	(a) Surveyor Charges (without labourer)	per day	1.6.1a	30	8300	249000	

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	(b) Labour(4nos) charges for survey work	per day	5.7	120	504	60480	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
6	Technological Survey						
	(a) Trenching	per cu m	2.1.1	0	0	0	
	(b) Drilling	per m in soft rock	2.2.1.4b	500	6775	3387500	As per MoC
	(c) Borehole pillaring (construction of concrete pillar) 12 inches x12 inches x 30 inches	per borehole	2.2.7a	5	2000	10000	
	(d) Transportation of Drill Rig and truck(to and from Headquarters or Previous drill site)	per km	2.2.8	2290	36	82440	Certification in this regard is required to be provided (Raniganj to BoroLakhindong and back)
	(e) Drilling camp setting cost	per drill	2.2.9a	1	250000	250000	
	(f) Drilling camp winding cost	per drill	2.2.9a	1	250000	250000	
	(g) Monthly accommodation charges for drilling camp	per month	2.2.9	3	50000	150000	
	(h) Approach road making to drill site (as oer actual)	per km	2.2.10a	5	22020	110100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed later
	Sampler			70	5100	357000	
	Labour (4 nos)			280	504	141120	
	TOTAL					6588600	
	Northeastern state: 3.35 times of normal SoC rates					22071810	
	(b) Charges for Geologist at Headquarters	per day per Geologist	1.2. a	45	9,000	405000	

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7	Laboratory Studies						
	(a) Complete analysis for Limestone	per sample	4.1.16	500	3000	1500000	
	(a) Complete analysis for Limestone (10% external Check)	per sample	4.1.16	50	3000	150000	
	(d) Petrochemical studies (PCS)	per sample	4.1.15a	10	4200	42000	
	Check Sample (10% external Check)	per sample	4.1.16	50	3000	150000	
8	Petrographic studies						
	(a) Preparation of thin sections	per sample	4.3.1	5	2353	11765	
	(b) Study of thin sections	per sample	4.3.4	5	4232	21160	
9	Bulk Density/specific gravity Determination	per sample	4.8.1	3	1605	4815	
10	Drill core preservation (1 bh+ mineralised zone : as per actual)	per m	5.3	500	1590	795000	
	TOTAL					3079740	
	TOTAL (A+B)					25151550	
11	Geological Report preparation (5 hard copies with a soft copy)	cost per 5 hard copies along with soft copy	5.2	iii		754547	
12	Peer Review	lumpsum	as per EC decision	1	30000	30000	

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13	Preparation of exploration proposal (5 hard copies with a soft copy)	one number (5 hard copies) along with soft copies	5.1	1	2% of approved project cost or 5 lakh, whichever is lower	503031	
Grand Total of estimated cost:						₹ 2,64,39,127.50	
GST @ 18 %						₹ 47,59,042.95	
Grand Total						₹ 3,11,98,170.45	
Rs. In lacs						₹ 311.98	
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 NMETSoc and Item no. 6 of NMETSoc. In case of excusion of the project by NEA on its own, a Certifiante 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.						

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Time Schedule/ Action Plan for Preliminary Exploration (G3 Stage) for Limestone in North West of BoroLakhindong Block, Dima-Hasao District: Assam														
Item of work	Months													
	1	2	3	4	5	6	Review	7	8	9	10	11	12	
Geological Mapping (1:4000)	█	█	█	█		█			█	█	█			
Survey Work & Contouring	█	█	█			█			█	█				
Bed rock sampling			█	█										
Chemical analysis of surface samples				█	█									
Drilling						█			█	█				
Core Sampling & its preparation									█	█	█			
Chemical analysis of core samples										█	█	█		
Processing of Analytical data												█	█	█
Preparation of Geological report										█	█	█	█	█

P. Parathi
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Estimate Cost for Reconnaissance Survey (G4 Stage) for Graphite in Ranibadh Block, Bankura West Bengal

Total area: 14 sq km, Period of Completion: 10 months ,BH: 5 nos. review: after 6 months

S. No.	Item of Work *	Unit *	Rates as per NMETSoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)	
A	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:12,500 scale) & Trenching , drilling work, 1:400 scale for 3 sq. Km with topographic contouring						
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2. b	11,000	120	13,20,000	1:12,500 scale map modification of 14sq km = 60Days 1:4000 scale map of 3 sq km area = 60 Days During Drilling=60 Days
ii	b. Labours Charges; Base rate	day	5.7	504	240	1,20,960	Amount will be reimbursed 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	1.2. a	9,000	60	5,40,000	
	d. Charges for one Sampler per day (1 Party)	one sampler per day		5,100	34	1,73,400	

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	e. Labours (4 Nos)	day	5.7	504	136	68,544	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.	
	Sub Total- A						22,22,904	
B	Ground Geophysical Survey							
1	S.P method	Line Km	3.3a	29,600	3	88,800		
3	Geophysicist party days (Field)	per day	3.18b	11,000	-	-		
4	c. Labours Charges(2 nos)	day	5.7	504	-	0		
5	Geophysicist party days (HQ)	per day	3.18	9,000	20	1,80,000		
	Sub Total- B						2,68,800	
C	Survey work							
a	DGPS Survey for BH fixation &RL determination	Per Point of observation	1.6.2	19,200	5	96000		
b	Charges of Surveyor (1 party) for Geophysical survey layout work & Block boundary demarcation	one surveyor per day	1.6.1a	8,300	30	249000		
c	Labours Charges for survey work;	day	5.7	504	120	60480	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher. (4 labours per day)	
	Sub-Total C						4,05,480	
D	Trenching/Pitting							
	a) Excavation of Trenches	per cu.m	2.1.1	3,330	100	333000		
E	DRILLING (after review)							
1	Drilling up to 500m (Hard Rock)	m	2.2.1.4a	10,908	500	54,54,000		

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2	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	500	1,65,000	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	1,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10,000	As per actuals
5	Transportation of Drill Rig & Truck associated per drill (2 rigs)	Km	2.2.8	36	400	14,400	Certification in this regard is required to be provided (Raniganj to Ranibandh and back)
6	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	2	1,00,000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
8	Drilling Camp Winding up Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
9	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	As per actuals
10	Drill Core Preservation	per m	5.3	1,590	300	4,77,000	
	Sub Total E					69,30,500	
F	Borehole Geophysical Logging	5 Bhs of 350m each					
G	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos					
	c. For PGE by Fire Assay	Nos					
	d. Proximate Analysis for Graphite	Nos	4.1.16				

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				3,000	50	1,50,000	
ii)	Surface Check samples (10% External)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos					
	c. For PGE	Nos					
	d. Proximate Analysis for Graphite	Nos	4.1.16	3,000	5	15,000	
iii)	Trench & Check Samples from Trench						
	Trench samples						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos					
	c. For PGE	Nos					
	d. Proximate Analysis for Graphite	Nos	4.1.16	3,000	50	1,50,000	
iv)	Trench Check samples (10% External)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos					
	c. For PGE	Nos					
	d. Proximate Analysis for Graphite	Nos	4.1.16	3,000	5	15,000	
v)	BH Core samples						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements	Nos	4.1.14	7,731	50	3,86,550	
	c. For PGE	Nos					
	d. Proximate Analysis of Graphite	Nos	4.1.16				

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				3,000	100	3,00,000	
vi)	BH Core samples (10%External)						
	a. Au by Fire Assay	Nos					
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos					
	c. For PGE	Nos					
	d. Proximate Analysis for Graphite	Nos	4.1.16	3,000	10	30,000	
2	<u>Physical & Petrological Studies</u>						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42,320	
iii	Preparation of polish section	Nos					
iv	study of polished section	Nos					
v	Digital Photographs	Nos	4.3.7	280	10	2,800	
vi	Whole Rock Analysis	Nos	4.1.15a	4,200	10	42,000	
vii	Sp. Gravity	Nos	4.8.1	1,605	5	8,025	
	SEM Studies	per hour					
viii	EPMA studies	per hour					
						11,65,225	
H	Total A to G					1,13,25,909	
I	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		5,66,295	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
J	Peer review Charges		As per EC decision	30,000	1	30,000	

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K	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		2,26,518	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.
L	Total Estimated Cost without GST					1,21,48,723	
M	Provision for GST (18% of J)					21,86,770	GST will be reimburse as per actual and as per notified prescribed rate
N	Total Estimated Cost with GST					1,43,35,493	
						Rs. In Lakhs	143.35
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 NMETSoC and Item no. 6 of NMETSoC. In case of excusion of the project by NEA on its own, a Certifiante 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.						

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Time Schedule/ Action Plan for Reconnaissance Survey (G4 Stage) for Graphite in Ranibandh Block Bankura District: West Bengal

Item of work	Months										
	1	2	3	4	5	6	Review	7	8	9	10
a) Large Scale Map Modification (1:12,500) b) Detailed Mapping of 3 Sq. Km (1:4000)											
Topographic Survey(1:4000) and Borehole Location survey											
Bed rock sampling											
Laying of Geophysical survey lines											
Geophysical survey by Geophysicist(1 Sq Km)											
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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Estimate Cost for Reconnaissance Survey (G4) for Basemetal in Thal-Didihat-Askot area, Pithoragarh District, Uttarakhand
Name of the Exploration Agency - Geovale Services Pvt. Ltd.
Total Area - 73 sq. km; Nos. of Borehole -Core drilling: 3; Completion Time -12 Months , Review: after 6 months

S.N	Item of work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SOC	Quantum	Total Amount (Rs)	
1	Geological Work						
A	Geological Mapping & sampling (1:12,500 scale)	73 sq km					
a	Geologists (HQ) days (1 No)	Man-days	1.2	9,000	45	4,05,000.00	
b	Geologist field-days	Man-days	1.2	11,000	180	19,80,000.00	73 sq.km
c	Labor (Field days) (2 workers per geologist)	per labor day	5.7	504	360	1,81,440.00	Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher
B	Pitting/Trenching						
a	Pitting	per cubic meter	2.1.2	3,800	100	3,80,000.00	No of samples 20 samples
	Sub-Total 1					29,46,440.00	
2	Laboratory Studies						

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A	Geochemical Analysis for regional and detail survey						Sample: 100 BRS, 80 Stream sediments and 20 Pit samples
a	XRF (major oxides)	per sample	4.1.15a	4,200	20	84,000.00	
b	Check samples for XRF -External 10%	per sample		4,200	2	8,400.00	
	AAS Method		4.1.7a	2,506	200	5,01,200.00	
	Check samples -External 10%		4.1.7a	2,506	20	50,120.00	
a	ICPMS (34 elements)	per sample	4.1.14	7,731	50	3,86,550.00	
b	Check samples for ICPMS-External 10%	per sample		7,731	5	38,655.00	
c	XRD	per sample	4.5.1	4,000	0	-	
a	Sampler man-days	one sampler per day	1.5.2	5,100	7	35,062.50	
b	Labor (Man days) (4 labours per sampler)	per labor day	5.7	494	28	13,585.00	Amount will be reimburse as per the notified rates by the Central Labor Comission or respective State Govt. whichever is higher
	Sub-Total 2					11,17,572.50	
3	Petrological studies						
a	Thin section preparation	per sample	4.3.1	2,353	20	47,060.00	
b	Microscopic study	per sample	4.3.4	4,232	20	84,640.00	
c	EPMA (10 samples, 20 hours)	per hour	4.4.1	8,540	20	1,70,800.00	
	Sub-Total 3					3,02,500.00	

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4	Geophysical Survey (After Review)						
a	IP cum resistivity, S.P., magnetic (8-10 Line Km)	per line km	3.4b	14,48,693	1	14,48,693.00	
b	Ground Magnetic	per station	3.2a	1,800	160	2,88,000.00	Will be decided after review
c	EM survey (10 sq km, 500 sounding)	per sounding	3.7a	21,197	0	-	
d	Expert Charges for Geophysicist (Field)	Geophysicist per day	3.18	11,000	0	-	
	Labour			504	0	-	
	Sub-Total 4					17,36,693.00	
5	Geological Work (After Review,Drilling)						
a	Core drilling up to 300m depth (2BH)	per meter	2.2.2	4,760	600	28,56,000.00	No of samples 300 samples
b	Drill Core Preservation	per meter	5.3.0	1,590	500	7,95,000.00	
	Sub-Total 5					36,51,000.00	
6	Laboratory Studies (After Review, BH samples)						
A	Geochemical Analysis (BH samples)						(100 BH Sample)
a	AAS	per sample	4.1.15a	2,506	100	2,50,600.00	
b	Check samples for AAS	per sample		2,506	10	25,060.00	
a	ICPMS (34 elements)	per sample	4.1.14	7,731	20	1,54,620.00	
b	Check samples for ICPMS	per sample		7,731	2	15,462.00	
c	XRD	per sample	4.5.1	4,000	10	40,000.00	
d	EPMA (10 samples, 20 hours)	per hour	4.4.1	8,540	10	85,400.00	

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a	Sampler man-days	per day	1.5.2	5,100	19	96,900.00	
b	Labor (Man days) (4 labours per sampler)	per labor day	5.7	504	76	38,304.00	Amount will be reimburse as per the notified rates by the Central Labor Comission or respective State Govt. whichever is higher
	Sub-Total 6					7,06,346.00	
7	Petrological studies (BH samples)						
a	Thin section preparation	per sample	4.3.1	2,353	10	23,530.00	
b	Microscopic study	per sample	4.3.4	4,232	10	42,320.00	
	Sub-Total 7					65,850.00	
	Total (Sub-Total 1-7)					1,05,26,401.50	
8	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	Lumpsum	5.1	2% of the cost subject to a maximum of 5 lakhs	1	2,10,528	This amount 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.
9	Final report preparation	3% of project cost or 7.5 lakh whichever is higher	5.2	ii	1	5,26,320.08	Final report submission, peer review and project conclusion
10	Report Peer Review	Lump sum	As per EC	30,000	1	30,000.00	

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Project Cost without GST		1,12,93,249.61	
18% GST		20,32,784.93	GST will be reimbursed as per actual and as per the applicable notified rate
Total Project Cost		1,33,26,034.53	
Rs in lacs		133.26	
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 excusion of the project by NEA on its own, a Certifiante 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.		

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Time Schedule /Action Plan For Reconnaissance Survey (G4) for Basemetal in Thal-Didihat Askot region Base Metal Prospect Block, Pithoragarh District, Uttarakhand

Sl. No.	Activities	Unit	MONTHS														
			1	2	3	4	5	6	Review	7	8	9	10	11	12		
1	Geological Mapping and Sampling (1:12,500)	Days															
2	Sampling Party days	Days															
3	Geologist Party days, HQ	Days															
4	Pitting/Trenching	Cu.m															
5	Laboratory Studies	Nos.															
6	Petrographic Studies	Nos.															
7	Geophysical Survey (after review)	Days															
8	Geological Work (after review) (drilling)	m															
9	Laboratory Studies (after review)	Nos.															
10	Petrographic Studies (after review)	Nos.															
11	Report Writing	Months															
12	Peer Review	Months															

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Estimate Cost for Reconnaissance Survey (G4 Stage) for Mailar Base Metal - Gold Prospect Block in Mailar Area, Lalitpur Dist: Uttar Pradesh

Name of the Exploration Agency - Geovale Services Pvt. Ltd.

Total Area - 206 sq. km; Nos. of Borehole , Auger drilling: 10, Core drilling: 2; Completion Time -12 Months , Review:6 months

S.N	Item of work	Unit	Rates as per NMET SoC		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SOC	Quantum	Total Amount (Rs)	
1	Geological Work						
A	Geological Mapping (1:12500) & sampling	206 sq km					
a	Geologists (HQ) days (1 No)	Man-days	1.2	9,000.00	60	5,40,000.00	
b	Geologist field-days	Man-days	1.2	11,000.00	180	19,80,000.00	206 sq.km
c	Labor (Field days)	per labor day	5.7	504.00	360	1,81,440.00	Amount will be reimburse as per the notified rates by the Central Labor Comission or respective State Govt. whichever is higher
B	Pitting and Auger Drilling						
a	Pitting	per cu.m	2.1.3	5,330.00	250	13,32,500.00	No of samples 60 samples
b	Auger Drilling for soft strata up to 10m depth (10 BH)	per m	2.2.2	4,760.00	100	4,76,000.00	100 samples; 1 sample per meter
	Sub-Total 1					45,09,940.00	

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2	Laboratory Studies						
A	Geochemical Analysis for regional and detail survey						40 BRS; 100 Auger drilling sample; 60 pitting/trenching samples
a	XRF (major oxides)	per sample	4.1.15a	4,200.00	30	1,26,000.00	
b	Check samples for XRF(External 10%)	per sample		4,200.00	3	12,600.00	
a	ICPMS (34 elements)	per sample	4.1.14	7,731.00	200	15,46,200.00	
b	Check samples for ICPMS(External 10%)	per sample		7,731.00	20	1,54,620.00	
c	Analysis for gold by fire assay technique	per sample	4.1.5a	2,380.00	50	1,19,000.00	
d	XRD	per sample	4.5.1	4,000.00	50	2,00,000.00	
a	Sampler man-days	one sampler per day	1.5.2	5,100.00	40	2,04,000.00	
b	Labor(4 workers per sampler)	per labor day	5.7	504.00	160	80,640.00	Amount will be reimburse as per the notified rates by the Central Labor Comission or respective State Govt. whichever is higher
	Sub-Total 2					24,43,060.00	
3	Petrological studies						
a	Thin section preparation	per sample	4.3.1	2,353.00	25	58,825.00	
b	Microscopic study	per sample	4.3.4	4,232.00	25	1,05,800.00	
	Sub-Total 3					1,64,625.00	

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4	Geophysical Survey (After Review)						
a	S.P. & Shallow electrical resistivity (10- 20 sq.km)	per line km	3.3c	60,000.00	20	12,00,000.00	
a	Magnetic (20 sq km, 2000 points)	per station	3.2a	1,800.00	2000	36,00,000.00	
c	EM survey (10 sq km, 250 sounding)	per sounding	3.7a	21,197.00	0	-	
d	Expert Charges for Geophysicist (Field)	Geophysicist per day	3.18	11,000.00	20	2,20,000.00	
	Labour (2 nos)						
	Sub-Total 4					50,20,000.00	
5	Geological Work ((After Review, Drilling)						
a	Core drilling up to 400m depth (2 BH)	per meter	2.2.2	4,760.00	800	38,08,000.00	No of samples 200 samples
b	Drill core preservation	per meter	5.3.0	1,590.00	500	7,95,000.00	
	Sub-Total 5					46,03,000.00	
6	Laboratory Studies (After Review)						
A	Geochemical Analysis (BH samples)						(200BHS)
a	XRF (major oxides)	per sample	4.1.15a	4,200.00	30	1,26,000.00	
b	Check samples for XRF	per sample		4,200.00	3	12,600.00	
a	ICPMS (34 elements)	per sample	4.1.14	7,731.00	200	15,46,200.00	
b	Check samples for ICPMS	per sample		7,731.00	0	-	

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c	Analysis for gold by fire assay technique	per sample	4.1.5a	2,380.00	50	1,19,000.00	
	Check samples	per sample	4.1.5a	2,380.00	5	11,900.00	
d	XRD	per sample	4.5.1	4,000.00	20	80,000.00	
a	Sampler man-days	per day	1.5.2	5,100.00	39	1,98,900.00	
b	Labor (4 workers per sampler)	per labor day	5.7	504.00	156	78,624.00	Amount will be reimburse as per the notified rates by the Central Labor Comission or respective State Govt. whichever is higher
	Sub-Total 6					21,73,224.00	
7	Petrological studies (After Review)						
a	Thin section preparation	per sample	4.3.1	2,353.00	50	1,17,650.00	
b	Microscopic study	per sample	4.3.4	4,232.00	50	2,11,600.00	
	Sub-Total 7					3,29,250.00	
	Total (Sub-Total 1-7)					1,92,43,099.00	

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7	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	Lumpsum	5.1	2% of the cost subject to a maximum of 5 lakhs	1	3,84,861.98	This amount 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 TCCNMET in its meeting while clearing the proposal.
8	Final report preparation	3% of project cost or 7.5 lakh whichever is higher	5.2	For the projects having cost exceeding 150 lakhs but less than 300 lakhs- A minimum of 7.5 lakhs or 3% of the value of work whichever is more	1	7,50,000.00	Final report submission, peer review and project conclusion
9	Report Peer Review	Lump sum	As per EC	30,000.00	1	30,000.00	
Project Cost without GST						2,04,07,960.98	
18% GST						36,73,432.98	GST will be reimbursed as per actual and as per the applicable notified rate
Total Project Cost						2,40,81,393.96	
					Rs. In lacs	240.81	
Note:							

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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 excusion of the project by NEA on its own, a Certifiante 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.

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Time Schedule /Action Plan For Reconnaissance Survey (G4 Stage) for Mailar Base Metal - Gold Prospect Block in Milar Area, Lalitpur District: Uttar Pradesh																
Sl. No.	Activities	Unit	MONTHS													
			1	2	3	4	5	6	Review	7	8	9	10	11	12	
1	Geological Mapping and Sampling (1:12,500)	Days														
2	Sampling Party days	Days														
3	Geologist Party days, HQ	Days														
4	Pitting/Trenching	Cu.m														
5	Auger Drilling	m														
6	Laboratory Studies	Nos.														
7	Petrographic Studies	Nos.														
8	Geophysical Survey (after review)	Days														
9	Geological Work (after review) (drilling)	m														
10	Laboratory Studies (after review)	Nos.														
11	Petrographic Studies (after review)	Nos.														
12	Report Writing	Months														
13	Peer Review	Months														

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Estimate Cost for Reconnaissance Survey (G-4 STAGE) for Graphite and associated Minerals Around Sonnaghati, Amdol, Jharegaon & Bhayawari District: Betul Madhya Pradesh
Total Area 7.34.00 Sq.Km -Mapping 1:4000 Scale, No of Boreholes: 5 , Depth: 60 m (Vertical) , Total Depth: 300 meters , Timeline :12 months, Review 6 months

SI.No	Item of work	Unit	NMET SoC-Item -SI No.	NMET Rates (2020)	Qty	Amount INR	Remarks
A	GEOLOGICAL MAPPING OTHER GEOLOGICAL WORK & SURVEYING						
i	Geologist Party days H Q	Days	1.3	9000	30	270000	
ii	Geological Mapping (1:4000)& Trenching and Drilling - Geologist Party days (1) -Field	Days	1.3	11000	90	990000	
iii		Days	5.7	504	180	90720	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
iv	Sampler Party days (1party)	Days	1.5.2	5100	29	147900	
v	Labour for Sampling (4 Nos.)	Days	5.7	504	116	58464	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
B	GROUND GEOPHYSICAL SURVEY						
1	IP Cum resistivity S.P magnetic (8-10 line km) - Package	Line Km	3.4b	1448693	1	1448693	
	Geophysicist (HQ)	Per Day	3.18	9000	10	90000	To be checked by Finance committee

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3	Labourers (Rs 477/day/labour) Geophysical Survey(2Nos)	Days	5.7	477	0	0	
	Geophysicist (Field)	Per Day	3.18	11000	0	0	
C	SURVEY WORK						
i	Survey Party Days (1 party)	Days	1.6.1a	8300	30	249000	
	DGPS Survey- BH fixation, boundary, RL determination	Per point	1.6.2	19200	5	96000	
ii	Labourers (4 Nos)	Days	5.7	504	120	60480	Amount will be reimburse as per the notified rates by the Central Labour Commission or respective State Govt. whichever is higher
	SubTotal A+ B + C					3501257	
D	PITTING & TRENCHING						
1	Trenching(1m x 2mx 10 m) (5 Nos)	Per Cu.M	2.1.1	3330	100	333000	
	SubTotal D					333000	
E	DRILLING (after Review)						
1	Drilling (30 m vertical depth) 5 bhs	mts.	2.2.1.3a	10100	300	3030000	
3	Approach Road making for Flat terrain	per Km.	2.2.10a	22020	5	110100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed later
4	Land Compensation	Per Borehole	5.6	20000	5	100000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities

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5	Construction of concrete Pillar (12" x12"x30")	Per Borehole	2.2.7a	2000	5	10000	
6	Drill Core Preservation	per m	5.3	1590	160	254400	This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
7	Drilling camp setting cost	Per Project	2.2.9a	250000	1	250000	
8	Drilling Camp Winding cost	per project	2.2.9b	250000	1	250000	
7	SubTotal E					3504500	
F	LABORATORY STUDIES						
	a.Chemical analyses (Geochemicals Sampling(Bedrock/Channel/Stream sediments))						
1	Proximate Analyses of Trench/Pit for graphite-VM,FC, Moisture & Ash	Per sample	4.1.16	3000	80	240000	
2	Whole Rock Analyses-Major Oxides by XRF technique	Per sample	4.1.15a	4200	10	42000	
3	REE analysis of 14 elements ICPMS	per sample	4.1.13	5380	15	80700	
4	ii) Check Samples (Bed rock/ soil/ stream) (10%) External	Per sample	4.1.16	3000	8	24000	
	b)Trench & Check Samples from Trench						
5	Proximate Analyses of Trench/Pit for graphite-VM,FC, Moisture & Ash	per sample	4.1.16	3000	0	0	
	Check Samples (10%) External	per sample	4.1.16	3000	0	0	
6	Borehole Core samples						

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7	a)Proximate Analysis (Ash, Moisture, V.M. and F.C.)	Per sample	4.1.16	3000	100	300000	
8	(b)Check Samples-(Ash, Moisture, V.M. and F.C.) 10%	Per sample	4.1.16	3000	10	30000	
9	c) Total Sulphur (S)	Per sample	4.2.14	1900	0	0	
10	(d) REE analyses of 14 elements/radicals by ICPMS (10%)	Per sample	4.1.13	5380	0	0	
11	ICP -MS studies (34 trace elements)	Per sample	4.1.14	7731	15	115965	
	Check Samples (10%) External				0		
	b.Petrography studies						
1	X-RD Studies	Per sample	4.5.1	4000	10	40000	
3	c) Preparation of thin sections	Per sample	4.3.1	2353	10	23530	
4	c)Complete petrographic /ore microscopic study/Mineragraphic studies	Per sample	4.3.4	4232	10	42320	
5	d)Preparation of Polished Sections	Per sample	4.3.2	1549	10	15490	
	SubTotal F					954005	
G	GEOTECHNICAL STUDIES						
	a)Specific Gravity Determination	Per Sample	4.8.1	1605	5	8025	
	b)Bulk density	Per Sample	4.10	3540	0	0	
	SubTotal G					8025	
	Total A+B+C+D+E+F+G					8300787	
H	PREPARATION OF EXPLORATION PROPOSAL (5+1 Softcopy)	Per Project	5.1		1	166016	

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I	PEER REVIEW	As per EC committee			30,000	20000	
J	GEOLOGICAL REPORT PREPARATION 5+5 HARD COPIES + 2 SOFTCOPY (@3%)	Per Porject	5.2	ii	1	415039	
	TOTAL A to J					8901842	
	GST 18%					1602332	
	Total with GST 18%					10504174	
	Rs. In lacs					105.04	
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 excusion of the project by NEA on its own, a Certifiante 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.						

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Time Schedule / Action Plan for Reconnaissance Survey (G-4 STAGE) for Graphite and associated Minerals Around Sonnaghati, Amdol, Jharegaon & Bhayawari District: Betul Madhya Pradesh

Item of Work	1	2	3	4	5	6	Review	7	8	9	10	11	12	
Camp Setting & Ground Geophysical studies	■	■												
Geologist (1 Party) for Geological Mapping, Pitting/Trenching/Drilling & Sampling -(1:4000 scale mapping)		■	■	■					■	■				
Bed rock / channel. Stream		■	■	■										
Pitting/Trenching -Bed Rock			■	■										
Sample Preparation(1Party)- includes crushing, powdering, packing & Labeling			■	■										
Analyses of Pit/Trench, BRS & Geochemical Samples			■	■	■									
Survey work- boundary survey, surface features Contouring & BH fixation, determination of coordinates and Reduced level				■	■	■			■					
Drilling (Drill Operation)(300 Mtrs.)						■			■	■				
Core Sampling - core splitting, crussing, powdering, coning and quartering						■			■	■	■			
Analysis of Drilling Core Samples(Nos.)									■	■	■	■	■	
Camp Winding												■	■	
Geological Report Writing with Peer Review and submission													■	■

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