

Ministry of Mines
National Mineral Exploration Trust
Minutes of the 70thTechnical-cum-Cost Committee (TCC-I) meeting held on
24th and 25th October, 2024 through video conferencing

The 70th meeting of the Technical-cum-Cost Committee-I (TCC-I) of the National Mineral Exploration Trust (NMET) was held via video conferencing under the chairmanship of Dr. S. Ravi, Deputy Director General (DDG), Geological Survey of India (GSI) and Chairman, TCC, NMET, on 24th and 25th October 2024.

Members of TCC-I, NMET and representatives from DGM, Chhattisgarh, DMG Karnataka, DMG Goa, DMG, Odisha, CSIR-IMMT, MECL, KIOCL, Bhushilp Mine and Minerals, OMC, , Mining Tech Consultancy Services Ltd, DMG Maharashtra, , Gemcokati, , GeoMarine, Indian Mine Planner and Consultant, Geo Technical Mining Solutions, Critical Mineral Trackers, , Kartikay Exploration and Mining Services private Limited, Geo Exploration and Mining Solution, Tata Steel Ltd, Maheshwari Mining Pvt Ltd and PRB Infra have attended the meeting through their respective VC modes. The list of participants is enclosed in Annexure-1.

Shri C. Parthasarathi, Director, GSI and Member Secretary, TCC-I, 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, Chairman of TCC-I, NMET, extended a warm welcome all TCC members and participants representing various NEAs and NPEAs. In his opening remarks, he suggested that all NEAs and NPEAs should complete the G4 items within 10 months as instructed by Ministry of mines and also focus more on critical and strategic commodities instead of bulk minerals like limestone, dolomite, iron ore etc.

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

Agenda 70.1: Technical evaluation of new project proposals

Agenda 70.1.1. Preliminary Exploration (G-3) for Chromite around Umundira & Kateni areas, Dhenkanal and Jajpur Districts, Odisha.

[Implementing Agency: DMG, Odisha]

- a. The study area is NW extension of Sukinda ultramafic complex of Odisha, Jajpur and forms a part of Iron Ore Supergroup.
- b. During the field season of 1999-2001, petrographic study conducted by DoMG, Odisha identified disseminations and stringers of chromite within the ultramafic rocks of the Umundira Valley.
- c. The findings reported Cr₂O₃ content ranging from trace amounts up to 8.21% in in-situ soil and trace to 15.87% in laterite, suggesting a promising potential for further exploration at G3 level.


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- d. The area of interest lies within a Total Magnetic Intensity (TMI) 1VD anomaly zone, with an additional TMI anomaly detected in the northern part near Umundira village.
- e. Nickel concentrations range from 20 ppm to 3400 ppm in in-situ soil and from 50 ppm to 1200 ppm in laterite, while cobalt concentrations range from 10 ppm to 300 ppm in in-situ soil and from 40 ppm to 300 ppm in laterite.
- f. The committee reviewed the item and found that the proposal was not properly prepared. They recommended providing data related to previous work conducted in and around the area, particularly the outcomes from the G4 stage, and requested that the item be presented again. However, DMG, Odisha was unable to present the item.

Recommendation of TCC:

The committee reviewed the item and recommended DMG, Odisha to resubmit it after including data from previous work in the area, particularly the G4 stage results.

Agenda 70.1.2 Reconnaissance Survey (G-4) for Chromite around Balarampur-Ajaypur area of Keonjhar District, Odisha.

[Implementing Agency: DMG, Odisha]

- a) The block lies within the Bonai-Keonjhar belt and falls in SOI toposheet No.73G/12.
- b) Occurrences of dunite, peridotite, and serpentinite, along with mineral potential, have been reported in the area, where these formations are associated with gabbro, pyroxenite, and orthopyroxenite.
- c) The Malayagiri lineament crosses the area, accompanied by several other lineaments, giving the structural and lithological controls a strong resemblance to those of the Sukinda Valley.
- d) Bouguer anomalies in the area range from -7 to -27 mGal, while magnetic anomalies vary between -225 and -895 nT.
- e) Chromium presence in stream sediments (based on GSI's NGCM data) ranges from 171 to 2567 ppm, with notable values at 2181, 1164, and 976 ppm, indicating promising chromite potential in the area. Stream sediment samples from the 1998-99 field season show Cr_2O_3 at 7.45% adjacent to the proposed area.
- f) The TMI 1VD map also highlights high magnetic anomalies within the proposed block, marking these as key interest areas. Additionally, the geological map reveals three low- to medium-angle thrusts at the granite gneiss and quartzite contact margins, passing through the proposed area, suggesting potential loci for the emplacement of ultrabasic or ultramafic rocks within these weakened zones.
- g) After detailed review, the TCC-I committee suggested that DMG conduct a site visit, and present the data again with sample values.



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Recommendation of TCC:

The committee approved the item in principle and recommended that DMG, Odisha conduct fieldwork, and present the item at the upcoming TCC meeting with some chemical analysis.

Agenda 70.1.3. Reconnaissance (G-4) for Manganese around Kandhal area of Rairakhol Tahasil, Sambalpur District, Odisha.

[Implementing Agency: DMG, Odisha]

- a) The proposed area belongs to Eastern Ghat Supergroup (Proterozoic Eastern Ghat Belt) and falls in SOI toposheet no.73C/4.
- b) Manganese floats were found in an east-west-trending nala from Sangamalia R.F. and nearby hillsides located about 750 m southwest of Kandhal village with no prior MnO₂ exploration reported.
- c) During the pre-field visit DMG, Odisha collected five manganese (grab) samples which showed MnO₂ content of 45.87% to 62.64%, supporting the proposal for G4-stage manganese exploration to estimate reconnaissance resources and plan further exploration, ultimately facilitating state government block auctioning.
- d) The committee raised concerns about the extensive forest cover in the proposed area, in response, DMG, Odisha informed them that they had received written assurance for work permission.
- e) The committee further suggested that, given the area is primarily covered by granite/gneiss and Charnockite (as shown in the map presented), DMG, Odisha should focus on khondalite, quartzite and calc-granulite (if present) for this exploration. Drilling under scout category will be carried out in Phase-II after review. DGPS survey is suggested only to fix the boreholes not for fixation of boundaries of G4 area.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for “Reconnaissance (G-4) for Manganese around Kandhal area of Rairakhol Tahasil of Sambalpur District, Odisha” with an estimated cost of Rs. 73.95 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 2A & 2B. The item will be reviewed after 5 months.

Agenda 70.1.4. Preliminary Exploration (G-3) for Bauxite in Kalychochra Block, Rayagada District, Odisha.

[Implementing Agency: DMG, Odisha]

- a. The proposed area belongs to Eastern Ghat Terrane (EGT) or Eastern Ghat Mobile Belt (EGMB) and falls in SOI toposheet no. 65I/15.
- b. DMG, Odisha reported that geological mapping and sampling (grab and channel samples) were conducted in Baphilimali Plateau by GSI in 1970-71 and 1976-77, and by MECL from 1978-83, with findings indicating promising bauxite potential.


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- c. Both agencies drilled on the Baphilimali Plateau, identifying bauxite grades above 45% Al_2O_3 , but 1:25000 scale mapping has not been carried out in the proposed area.
- d. Adjacent to the Kalychochra Plateau (about 2.5 km away), Baphilimali Plateau is actively mined by Utkal Alumina Ltd.
- e. DMG, Odisha informed that exposed vertical scarps under 5 m high in proposed area indicates laterite horizons.
- f. Bauxite deposits on Baphilimali Plateau indicate a bauxite horizon of 9.5 to 11.5 m with grades exceeding 45% Al_2O_3 , while +30-40% Al_2O_3 in lateritic bauxite is considered sub-grade ore. Field observations and chemical analysis suggest that Kalychochra Plateau shares all necessary characteristics for bauxitization.
- g. Expanding upon these facts, the area is proposed for G3 stage preliminary exploration with NMET funding
- h. The committee reviewed the item and instructed that previous work, not properly reflected in the proposal, be highlighted.
- i. The committee felt that the area within the block boundary might not be as promising as expected, so they advised DMG to modify and reduce the block size.
- j. Considering the lack of promising data, the committee advised DMG, Odisha to work out modalities to execute the item in 2 phases. In the first stage, mapping and sampling followed by drilling in the second phase.

Recommendation of TCC:

The committee approved the proposal and instructed DMG to submit the final cost sheet.

Agenda 70.1.5. General Exploration (G-2) for Molybdenum in Amalgamated Vellakkal Cluster Block (12.0 Sq. km) Uttangarai Sector, Harur-Uttangarai Belt (HUB), District- Krishnagiri, Tamil Nadu.

[Implementing Agency: MECL]

- a) The proposed Amalgamated Vellakkal Cluster is a part of Harur-Uttangarai Molybdenum Belt of Tamil Nadu and falls in part of toposheet no. 57L/8.
- b) In the 67th TCC meeting, MECL proposed a G2 stage investigation for molybdenum ore in the Mannadipatti Central area. The committee recommended MECL to arrange a VC meeting with the Joint Secretary (Critical Minerals), SU: TNP, GS/C Chennai, and NMET to discuss the possibility of amalgamation previously explored blocks so as to augment the existing resources. Following these instructions, MECL subsequently proposed the Amalgamated Vellakkal Cluster Block for exploration.
- c) The Amalgamated Vellakkal Cluster, part of the Uttangarai sector within the Harur-Uthangarai Molybdenum Belt (HUB), consists of four sub-blocks namely Vellakkal North, Central, South, and West. G3-level exploration was completed in the Central Block (FS 2019-20), while the North, South, and West Blocks were covered by reconnaissance exploration with limited scout drilling by GSI (FS 1998-2000). The current G2-level exploration aims to estimate Mo


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resources under the 332 category of the UNFC in the combined Vellakkal Block, with specific objectives to assess resource potential

- d) During FS 1998-2000, GSI conducted reconnaissance exploration in Vellakkal sub-blocks—North (390.10m across 4 scout boreholes), Central (300.05m in 3 boreholes), South (350.25m in 4 boreholes), and West (275.75m in 3 boreholes)—under an MoU with TAMIN.
- e) The work identified Molybdenum-rich anomalous zones, marking three priority areas spanning 1.5-line km, and recommended further exploration. Subsequent concept-oriented drilling during FS 2001-02 and FS 2010-11 in Vellakkal Central Block confirmed shear-controlled mineralization at depth.
- f) G3-stage exploration in this block later established a 1025m strike length with resources of 1.439 mt at 243.63 ppm Mo (0.01% cutoff), 0.35 mt at 389.57 ppm Mo (0.03% cutoff), and 0.117 mt at 537.92 ppm Mo (0.05% cutoff), recommending for further exploration and G3-stage exploration in the adjacent South Block.
- g) Although Vellakkal Central Block was initially put up for auction by the Ministry of Mines (MoM) in 2023-24, its small size and limited resources attracted little interest, leading to the annulment of the auction. MoM then advised amalgamating nearby blocks to increase the block size for a future auction. Following this guidance, MECL combined Vellakkal's Central, North, South, and West Blocks into a 12 sq. km. amalgamated Vellakkal Block. This amalgamated block will undergo phased G2-stage exploration to better estimate its resource potential and support future auction efforts.
- h) MECL informed that they have planned in-filling boreholes keeping 50m spacing (first level) in central block because boreholes at 100m spacing have already been drilled.
- i) After a thorough review, the committee suggested that upgrading separate block individually before amalgamation would be a more effective approach. It was decided that G2 stage exploration would be conducted in the Central Block, while a G3 stage investigation is recommended for two separate blocks, i.e. North and South Blocks. The Western Block may be considered for exploration after a few months. MECL revised the proposal in the same line and presented two separate items as follows:
 - General exploration (G2 stage) for molybdenum in Vellakkal Central Block, Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu.
 - Preliminary exploration (G3) for molybdenum in Vellakkal North Block (2.90 Sq.Km.) & Vellakkal South Block (1.55 Sq.Km.), Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for “General exploration (G2 stage) for molybdenum in Vellakkal Central Block, Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu” with an estimated cost of Rs. 1121.18 lakhs (including GST) within time schedule of 15 months and submission of report as per Annexures 3A & 3B. The item will be reviewed after 6 & 12 months subsequently.


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The committee recommended the proposal for the approval of EC for "Preliminary exploration (G3) for molybdenum in Vellakkal North Block (2.90 Sq.Km.) & Vellakkal South Block (1.55 Sq.Km.), Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu" with an estimated cost of Rs. 911.82 lakhs (including GST) within time schedule of 15 months and submission of report as per Annexures 4A & 4B. The item will be reviewed after 6 & 12 months subsequently.

Agenda 70.1.6. Preliminary Exploration (G-3) for Limestone in Mundra-Chilaiblock Block (4.38 Sq. km) District- Yavatmal, Maharashtra.

[Implementing Agency: MECL]

- a) The proposed Mundra-Chilai Limestone block, part of the Penganga Beds (SOI toposheet no. 55I/13), is based on lapsed lease areas around Hiradhwara village, granted under section 10(A) 2(B) of the MMDR Act-15.
- b) The Directorate of Geology and Mining (DGM), Maharashtra, requested MECL to explore these areas vide letter no. Tech/1848/2023/260, dated 23/01/2024, located east of the Hiwardhara lapsed lease area where limestone was reported.
- c) During 2004-2005, M/s Bajrang Sales Pvt. Ltd. conducted prospecting in the Hiwardhara area (39.98 hectares), establishing a limestone resource of 4.0 million tons (CaO:30.50%-51.00%, MgO:2.00%-19.30%, and SiO₂: 2.8%-8.0%).
- d) The proposed exploration block lies east of the Hiwardhara lease area. MECL conducted field visits in the Hiradhwara, Ganeshpura, Mundra, and Chilai areas and collected four samples, yielding analyses of 34.27%-54.50% CaO, 0.69%-16.62% MgO, and 0.81%-3.68% SiO₂.
- e) Based on the exploration data, field observations, and demand for limestone, MECL proposed to conduct Preliminary Exploration (G-3) in the Mundra-Chilai Block.

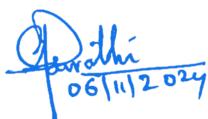
Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3) for Limestone in Mundra-Chilaiblock Block (4.38 Sq. km) District- Yavatmal, Maharashtra" with an estimated cost of Rs. 90.63 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 5A & 5B. The item will be reviewed after 4 months.

Agenda 70.1.7. Preliminary Exploration (G-3) for Limestone in Hiwardhara-Ganeshpura Block (2.81 Sq. km) District- Yavatmal, Maharashtra.

[Implementing Agency: MECL]

- a. The proposed Hiwardhara-Ganeshpura Limestone block, part of the Penganga Beds (SOI toposheet no. 55I/13), based on lapsed lease areas granted by the State Government of Maharashtra in and around Hiwardhara and Ganeshpura villages, Zari-Jamni and Wani Tehsil, Yavatmal.


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- b. The Directorate of Geology and Mining (DGM), Maharashtra, requested MECL to explore these lapsed 10(A) 2(B) mining lease areas vide their letter no. Tech/1848/2023/260, dated 23/01/2024."
- c. In 2004-2005, M/s Bajrang Sales Pvt. Ltd. prospected 39.98 hectares in the Hiwardhara area, establishing a limestone resource of 4.0 million tons with sample analysis showing CaO from 30.50%-51.00%, MgO from 2.00%-19.30%, and SiO2 from 2.8%-8.0%.
- d. MECL later reviewed the DGM data and observed surface limestone indications in the area, collecting three additional samples that yielded CaO from 37.34%-52.10%, MgO from 0.70%-9.03%, and SiO2 from 3.94%-8.60%.
- e. Considering the request of DGM, Maharashtra, available exploration data, field visit by MECL geologists and demand for limestone, MECL has planned to carry out exploration in the Hiwardhara-Ganeshpura Block.
- f. The committee advised MECL to modify the block excluding railways, roads falling within the boundary and reconcile the target.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3) for Limestone in Hiwardhara-Ganeshpura Block (2.81 Sq. km) District- Yavatmal, Maharashtra" with an estimated cost of Rs. 93.84 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 6A & 6B. The item will be reviewed after 4 months.

Agenda 70.1.8. Preliminary Exploration (G-3) for Gold and associated minerals in Killarhatti Block, Koppal & Raichur Districts, Karnataka.

[Implementing Agency: Mining Tech Consultancy Services Ltd]

- a) Killarhatti block is part of Hungund-Kushtagi Schist belt and falls within the Survey of India Toposheet no. 57 A/5.
- b) The area is known for its gold mineralization potential. Gold mineralization was reported by the Geological Survey of India (GSI) near Amrapur and Killarhatti villages, particularly along the contact zones of banded iron formations (BIF) and schistose rocks, where significant signs of historic mining activity and alteration processes, such as shearing, brecciation, silicification, and carbonatization, have been observed.
- c) Geochemical analyses of samples from these workings indicated gold values ranging from <0.1 g/t to 1 g/t Au. Recent studies under the Regional Mineral Targeting program (2019-22) carried out by GSI yielded promising results, prompting GSI to recommend further exploration, particularly in the area between the Amrapur and Killarhatti blocks.
- d) The proposal was already granted in-principle approval for G3-level exploration. Hence, MTCS has proposed this G3 stage item within the Killarhatti Block to further assess its mineral potential.
- e) Upon review, the committee advised MTCL to consult the recent G4 stage of GSI in the area and incorporate the outcome. Accordingly, MTCS modified and presented the G4 stage proposal incorporating the suggestions given by the committee.


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Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Reconnaissance Survey for gold and associated minerals in Killarhatti area, Koppal & Raichur, Karnataka" with an estimated cost of Rs. 374.35 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 7A & 7B. The item will be reviewed after 4 months.

Agenda 70.1.9. Preliminary Exploration G-3 of Vanadium and Gallium-Bearing aluminous laterite in Mundalli Block (5.08 Sq Km), Uttara Kannada District, Karnataka.

[Implementing Agency: Geo Marine Solution Pvt. Ltd]

- a) The proposed area falls in part of SOI Toposheet No. 48K/9
- b) In FS 1963-64, DMG Karnataka conducted a detailed investigation of the Mundalli block, estimating 17.16 lakh tons of aluminous laterite with Al_2O_3 content ranging from 40-50% and SiO_2 values between 1-19%, averaging 8-10%. Considering the outcome of the work the workers recommended for upgradation of the Mundalli block to G3-level exploration.
- c) After conducting a joint field inspection by DMG and GSI officials, it was agreed to expand the target area and proceed with G3 stage exploration under NMET funding to prepare the block for potential ML auction. Consequently, DMG Karnataka assigned Geo Marine Solutions Pvt. Ltd. (NPEA) to take up the exploration.
- d) In October 2024, Geo Marine Solutions conducted a reconnaissance field survey in Mundalli, and collected 3 grab samples and the analytical data shows Al_2O_3 values between 22%-30%, Gallium values between 51 ppm -75 ppm, and V_2O_5 values between 1100 ppm -1500 ppm indicating the potentiality of the area for critical minerals Gallium and Vanadium.
- e) Additionally, two stream sediment samples from GSI's NGCM database, within the Mundalli block boundary, reported Gallium values upto 31 ppm and 34 ppm.
- f) After a thorough review and detailed discussions, the committee recommended renaming the project as "Preliminary Exploration for Aluminous Laterite and Associated Critical Elements (V, Ga, & REE) in Mundalli Block, Uttara Kannada District, Karnataka." The committee advised Geomarine to implement a drilling grid at 400m x 400m spacing, with flexibility for adjustments if needed, and suggested to modify the block boundary to exclude areas intersected by railway lines and highways.

Recommendation of TCC:

The committee recommended the proposal for the approval of EC for "Preliminary Exploration for Aluminous Laterite and Associated Critical Elements (V, Ga, & REE) in Mundalli Block, Uttara Kannada District, Karnataka" with an estimated cost of Rs. 90.92 lakhs (including GST) within time schedule of 10 months and submission of report as per Annexures 8A & 8B. The item will be reviewed after 5 months.


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Dr. S. S. Rao
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Agenda 70.1.10. Preliminary Exploration (G3) For Bauxite in Nittadgi Area Taluka-Honnavar, District-Uttar Kannada, Karnataka.

[Implementing Agency: PRB Infraprojects]

- a) The GSI conducted systematic geological mapping in parts of Kanara District during the FS 1968-69, following a 1962-63 reconnaissance survey of Nittadgi Plateau, Honnavar taluk, North Kanara district, which identified alumina-rich pockets.
- b) This led to a detailed exploration involving grid holes, trial pits, boreholes, and the extraction of 100 tonnes of bauxite for quality assessment and pilot plant trials.
- c) From FS 1964-73, Karnataka's Directorate of Mines and Geology (DMG) further explored the block, estimating 1.34 million tonnes of aluminous laterite reserves with Al₂O₃ content ranging from 40-54%.
- d) The block was recently put up for auction but could not proceed due to missing data. Later, a joint field inspection was carried out by DMG and GSI and it was decided to expand the block and a G3-stage exploration under NMET funding was recommended to make the block viable for mineral licensing.
- e) DMG then allocated a larger block to PRB Infraprojects Pvt. Ltd. Accordingly, PRB geologists visited the site and collected five rock samples and the chemical analysis of the samples yielded Al₂O₃:25.86% to 56.68% (Avg.43.448%), Fe₂O₃: 1.6% to 42.21% (Avg. 20%), SiO₂: 5.63% to 15.62% (Avg. 10.17%) and TiO₂: 1.24% to 2.39% (Avg.1.822%).
- f) The committee noted that prior studies and relevant literature were not consulted or presented, particularly a G4-stage study conducted by GSI in FS: 2016-17 in the proposed area.

Recommendation of TCC:

The committee recommended to consult all GSI and other available reports, plot relevant data on the map, and present it in the next meeting. Additionally, committee suggested to exclude the railway tracks and roads when finalizing the block boundaries.

Agenda 70.1.11. Reconnaissance Survey (G-4 stage) for Iron Ore in Arewada – Hitapadi Block (27 sq km), District: Gadchiroli, Maharashtra.

[Implementing Agency: Gemcokati Exploration Private Limited]

- a) The area, located within the Bastar Craton in the Central Indian Peninsular Shield on SOI toposheet no. 65A/11, was initially approved by the 37th Executive Committee held on 23rd September 2024. with a condition to modify the block due to pending litigations.
- b) GemcoKati modified the block and presented it at the 70th TCC, where DGM Maharashtra indicated that only around 27 sq km could be considered for work. Subsequently, GemcoKati revised the block.

Recommendation of TCC:

The committee approved the modified block and the revised cost recommended Rs. 16.58 lakhs with 6 months timeline as in Annexure 9A & 9B.


P. D. Dutt
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Dr. S. S. Patil
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70.1A. Procurement project

Agenda 70.1A.1 Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities

[Implementing Agency: IMMT]

- a) IMMT presented the proposal for procurement of Mineral Liberation Analyser (MLA) with an estimated cost of ₹785 Lakhs in the 67th TCC of NMET. Again, in the 68th & 69th TCC meetings, the proposal was discussed.
- b) The committee advised IMMT to consult agencies like NGRI, GSI, and relevant organizations using the instrument. Road map should also be prepared to extend the facility to other organizations under National Facility Category.

Recommendation of TCC:

The Committee advised to submit the revised proposal at the earliest.

Agenda 70.2 Review of Ongoing Projects/Completed Project & Timeline Extension

Agenda 70.2.1. Reconnaissance Survey (G-4) for Graphite and Sulphide in Ganacharpura Block (33.60 Sq. Km), Kolar District, Karnataka

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 30th EC Meeting held on 06th June, 2023. The sanction order was issued on 26th June, 2023 with timeline of 08 months and approved cost was INR 92,96,121/- . In the 62nd TCC meeting held on 28th & 29th February and 01st March, 2024, time extension upto 31.05.2024 (3 months) was accorded.
- b) MECL informed that exploration in the block has been completed and the comments of the Peer reviewer has been complied. The resource estimated in the block is given below:

Resources (in Million Tonnes) at the Cut off +2% FC & Minimum 1m True Thick

Resource Category	Resources (Million tonnes)		Moisture %	Ash %	VM %	FC %	Cut-off Grade	UNFC Code
	Gross Geol.	Net Geol.						
Reconnaissance	0.556	0.445	0.65	86.28	2.65	10.41	+2 FC	334

- c) MECL informed that prominent band of ferruginous quartzite is exposed in the high altitude (866 msl) in the west of the block. BFQ is trending towards NNE-SSW direction with sub vertical dip towards easterly. Graphite bearing quartz schist occurs as thin intercalations in banded ferruginous quartzites
- d) The committee noted the outcome of the project and agreed for GR submission with extension of timeline upto 31st October 2024

Recommendation of TCC:

The Committee agreed for submission of GR and recommended time extension upto 31st October 2024.


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Agenda 70.2.2. Reconnaissance survey (G4) for manganese ore in Taljuri-Gunchadihi block, District: Balangir, Odisha.

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 27th EC Meeting held on 10th January, 2023. The sanction order was issued on 03rd February, 2023 with timeline of 14 months and approved cost was INR 1,66,59,625/-.
- b) The committee was apprised that the project was prematurely concluded due to local issues.
- c) MECL informed that time extension upto 31st August 2024 was approved in the 35th EC of NMET held on 16th May 2024. MECL reported that the block was reviewed during the 69th TCC meeting in September, 2024, where it was recommended to submit the geological report with time extension upto 31st October 2024.
- d) MECL informed that the GR has been peer reviewed and all the comments/suggestion of the reviewer has been attended.

Recommendation of TCC:

The Committee agreed for submission of GR by 31st October 2024.

Agenda 70.2.3. Preliminary Exploration (G-3) for Gold in Kakol Block (29.06 sq. km), Haveri District, Karnataka.

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 31st EC Meeting held on 12th September, 2023. The sanction order was issued on 05th October, 2023 with timeline of 12 months and approved cost was INR 4,48,27,471/-.
- b) MECL informed that exploration work is in progress and geophysical work is being carried out in the block. MECL requested for time extension for the project.
- c) The committee reviewed the project and advised MECL to interpret the geophysical data and prepare the drilling plan in the area narrowed down for detailed mapping.

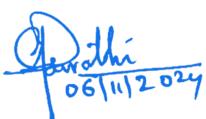
Recommendation of TCC:

The Committee recommended for review the project after completion of Geophysical survey

Agenda 70.2.4. Preliminary Exploration (G-3) for Manganese ore and Graphite in Bharatbahal Block (2.00 sq km), District: Balangir, Odisha

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The sanction order was issued on 28th February, 2024 with timeline of 08 months (up to 27.10.2024) and approved cost was INR 1,37,77,521/-.
- b) MECL informed that the project was reviewed in the 65th TCC, NMET in May 2024. The Topographical Survey and Detailed Mapping (1:2000) is in progress. The committee was apprised that out of 09 boreholes, 04 boreholes have been completed and remaining boreholes will be taken up after harvesting in the area.
- c) Considering the delay in project execution due to monsoons and standing crops, MECL requested for 5 months time extension upto 31st March 2025


P. S. Rathna
06/11/2024


Dr. S. S. Patnaik
06/11/2024

d) In view of the above , the committee agreed for time extension upto 31st March 2025.

Recommendation of TCC:

The Committee recommended for time extension upto 31st March 2025 and instructed MECL to submit the detailed note and explanation for delay to NMET Secretariat

Agenda 70.2.5. Preliminary Exploration (G-3) for Manganese Ore and Graphite in Kanaital block, (Block area- 4.26 sq.km) District: Balangir, Odisha.

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 32nd EC Meeting held on 06th December, 2023. The sanction order was issued on 12th December, 2023 with timeline of 11 months and approved cost was INR 2,23,40,108/-.
- b) MECL informed that the project was reviewed in the 64th TCC, NMET held in April 2024. The exploration has been completed and draft GR prepared is ready to be reviewed.
- c) MECL informed that during drilling , it was found that thickness of the graphite bands intersected was more than the thickness assumed at the time of proposing the item. Hence, an additional 44m drilling had been carried out . The total drilling meter age carried out is 899m in 12 boreholes. Accordingly, 235 nos.of additional core samples was also carried out . MECL sought approval for additional drilling of 44m and 235 samples with timeline extension up to 30th November 2024 for GR submission.
- d) In view of the above , the committee approved addition quantum of 44m drilling and 235 samples costing ₹15.4 Lakhs with time extension upto 15th December 2024

Recommendation of TCC:

The Committee approved additional quantum of 44m drilling and 235 samples with additional cost of ₹ 242.38 Lakhs as given in Annexure 10 with time extension upto 15th December 2024

Agenda 70.2.6. Preliminary Exploration (G-3) for Manganese Ore and Graphite in Larambha block, (Block area- 2. 57sq.km) District: Balangir, Odisha

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 32nd EC Meeting held on 06th December, 2023. The sanction order was issued on 12th December, 2023 with timeline of 11 months and approved cost was INR 2,14,13,609/-.
- b) MECL informed that all the field activities have been completed. However, sampling and analysis are in progress. MECL sought for time extension upto 31st December 2024.
- c) The committee agreed for 1.5 months time extension upto 31st December 2024 for GR submission.

Recommendation of TCC:

The Committee recommended for time extension upto 31st December 2024 for GR submission.


Parvathi
06/11/2024


Dr. S. S. Patnaik
06/11/2024

Agenda 70.2.7. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities.

[Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 33rd EC Meeting held on 23rd February, 2024. The Office Memorandum was issued on 1st March, 2024 with timeline of 12 months and approved cost was INR 3244.87 Lakh.
- b) The committee was informed that MECL floated global tender for Hyperspectral Core scanner with XRF and WD-XRF and GeM tender floated for Gamma Ray Spectrometer. The permission for Global Tender of Hyperspectral Core Scanner with LIBS from MoM, Gol has been received and process to float global tender is in progress.
- c) Based on further market survey and tendering process, MECL arrived at an estimated cost of Rs. 47.90 cr. of procurement of instruments for capacity augmentation. The tender cost estimated by MECL as per specification drawn is Rs. 55.89 cr. including GST and 3 years of CAMC.
- d) MECL informed that the final cost of instrument s will be determined upon the completion of each individual tender. Hence, the committee requested to consider revised estimated cost of Rs. 55.89 cr. including GST and 3 years of CAMC/extended warranty and accord approval for the ratification of the previously approved estimated cost of Rs. 47.90 cr. including GST and 3 years AMC
- e) After , due deliberation the committee directed MECL to present the revised proposal with comparative table indicating the deviations from initial proposal submitted to and approved by NMET in detail in the next TCC meeting

Recommendation of TCC:

The Committee deferred the revision of cost of procurement of instruments for capacity augmentation until submission of requisite information by MECL in next TCC meeting. Purchase order will have to issued only after the approval of EC.

Agenda 70.2.8. Preliminary Exploration (G-3) for Gold in Dimirimunda Block (Area-5.0 Sq. Km) in Keonjhar district of Odisha.

[Implementing Agency: OMC]

- a) OMC informed that the project was approved in the 31st EC Meeting held on 12th September, 2023. The sanction order was issued on 05th October, 2023 with timeline of 12 months and approved cost was INR 2,01,98,905/-.
- b) OMC informed geological mapping has been completed in the area. Through mapping and sampling, it was noted that quartz veins within chlorite schist are inconsistent and are localised near Shear zones/Fault planes traversing. Out of numerous samples, only 1 sample indicates ppb level Au. Minor gold value also detected in thin chrome rich cherty veins within chlorite schist, however multiple samples from these veins show mineralization of gold but inconsistently.
- c) OMC apprised that the drone magnetic survey was performed over an area 44.5 km². The western margin of the Dimirimunda block was surveyed in detail at 50 m line spacing to bring out finer details of the Malyagiri Shear zone. The samples in the zone show consistency in Ni-Co-Cr-Cu-Pb-Zn along with Vanadium values.
- d) OMC informed that there is a delay in completion of project due to unavailability of vendors for conducting IP survey through the tendering route .Further, delay of


Debadatta
06/11/2024


Arun
06/11/2024

geological mapping was caused due to very dense forest cover and incessant monsoon season (July-October).In view of above, OMC requested 08 months timeline extension for completion of the project.

e) The committee opined that the project may be reviewed again after completion of geophysical survey in the 72nd TCC meeting to be held in December 2024.In case , gold values are still not found encouraging, the project may be prematurely concluded after submission of justification from OMC. Meanwhile, the committee agreed for time extension upto 31st December 2024.OMC is also advised to submit proper note and explanation for delay to NMET secretariat.

Recommendation of TCC:

The Committee recommended for review of project in the 72ndTCC meeting and approved time extension upto 31st December 2024.

Agenda 70.2.9. Preliminary Exploration (G-3) for Gold in Salaikana Block (Area-3.38 Sq. Km) in Keonjhar district of Odisha.

[Implementing Agency: OMC]

- a) OMC informed that the project was approved in the 31st EC Meeting held on 12th September, 2023. The sanction order was issued on 05th October, 2023 with timeline of 12 months and approved cost was INR 2,01,98,905/-.
- b) OMC reported that geological mapping has been completed in the block. During sampling, 37 additional BRS samples were analysed. OMC informed that mapping and sample analysis did not provide encouraging gold value.
- c) In view of the above, the committee advised to conclude the project and submit the GR by 04th January 2025. The committee approved 37 additional samples. Also suggested OMC to submit the report under suitable category of UNFC.

Recommendation of TCC:

The Committee recommended concluding the project and approved additional 37 samples and 3 months time extension upto 4th January 2025 for GR submission.

Agenda 70.2.10. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities.

[Implementing Agency: DGM Maharashtra]

- a) DGM, Maharashtra informed that the project was approved in the 27th EC Meeting held on 10th January, 2023. The sanction order was issued on 24th March, 2023 with timeline of 12 months and approved cost was INR 4,42,61,500/-.
- b) DGM, Maharashtra informed that after tendering and negotiating with the L1 bidder the total cost of the instruments were ₹5,43,74,815/- which is 1,01,13,315/- more than the approved total amount by NMET. Approval was sought from the committee for the additional amount.
- c) The TCC opined that the additional cost is very high, almost 22 % of the approved cost. The committee advised DGM, Maharashtra to submit the details of L1 along with comparative statement of cost for each of the equipment to NMET for consideration of EC.

Recommendation of TCC:

The Committee recommended DMG, Maharashtra to submit details of the additional cost for each of the equipment for consideration of EC.


Dr. Parathi
06/11/2024


Dr. Devi
06/11/2024

Agenda 70.2.11. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities.

[Implementing Agency: DMG Karnataka]

- a) DMG Karnataka informed that the 2 projects were approved by NMET to procure Machinery Laboratory Equipment/instruments etc- (i) The OM for Ore/Polarizing Microscope with transmitted/incident light was issued on 15.07.2022 for a cost of 25 Lakhs, which was enhanced to 37 Lakhs in the 31st EC meeting of NMET held on 12th September 2024. The OM in this regard was issued on 18.10.2023 with time extension upto 31.08.2024. (ii) Furthermore, as per the approval of the 27th EC meeting of NMET held on 10th January 2023, ₹4,17,00,000/- was sanctioned (sanction order was issued on 24th March, 2023). The timeline for the project has been approved upto 30.09.2024.
- b) DMG Karnataka updated the status of both the projects and requested for time extension upto 31st March 2024 for project (i) and 31st October 2025 for project (ii).
- c) Considering the status of the tendering process carried out by the state and the recommendation of the internal committee with nominated members of IISC and GSI, state unit , the committee decided to recommend time extension till 31st March 2024 for project(i) and 31st October 2025 project (ii)..

Recommendation of TCC:

The Committee recommended for time extension upto 31st March 2025 for project (i) and 31st October 2025 for project (ii).

Agenda 70.2.12. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities.

[Implementing Agency: DMG Goa]

- a) DMG, Goa informed that the project was approved in the 36th EC Meeting held on 29th July, 2024. The sanction order was issued on 10th September, 2024 with timeline of 12 months (up to 09.09.2025) and approved cost was INR 59,92,000/-.
- b) DMG, Goa informed that the cost submitted by the L1 bidder is more than the approved SOC of NMET and sought for approval of revised cost.
- c) Considering that the additional cost is very high, the committee advised DMG Goa to submit the details of L1 along with comparative statement of cost for each of the equipment to NMET for consideration of EC.

Recommendation of TCC:

The Committee recommended DMG, Goa to submit details of actual and additional cost for each of the equipment for consideration of EC.

Agenda 70.2.13. Preliminary exploration for Manganese in Hardatal block (1.38 sq. km), District: Balangir, Odisha.

[Implementing Agency: DMG Odisha]

- a) DMG, Odisha informed that the project was approved in the 25th EC Meeting held on 29th June, 2022. The sanction order was issued on 04th September, 2023 with timeline of 09 months and approved cost was INR 1,52,36,385/-.
- b) DMG, Odisha reported that the mineral exploration in the block has been completed and the suggestion / comments of the Peer Reviewer have been attended. DMG Odisha requested for 2 months time extension upto 31st October 2024.


P. Devaraj
06/11/2024


A. K. Sahoo
06/11/2024

c) The committed noted the peer reviewer comments and suggested DMG, Odisha to submit the IPR compliance report in table format and recommended time extension upto 15th November 2024 for submission of GR.

Recommendation of TCC:

The Committee agreed for submission of GR and recommended time extension upto 15th November 2024 .

Agenda 70.2.14. Preliminary exploration (G3) for graphite around Naringapanga block (S & W) (0.143 sq. km) block, District: Rayagada, Odisha.

[Implementing Agency: DMG Odisha]

- a) DMG Odisha informed that the project was approved in the 27th EC Meeting held on 10th January, 2023. The sanction order was issued on 04th September, 2023 with timeline of 09 months and approved cost was INR 1,20,92,849/-.
- b) DMG Odisha reported that the block was reviewed during the 64th TCC meeting on April 25, 2024. In the 37th EC of NMET held on 23rd September 2024, time extension upto 4.11.2024 was approved. The committee was apprised that drilling has been completed in the block and three months' time is required to execute the additional work like check sample analysis, preparation of GR etc
- c) The committee reviewed the project and suggested DMG, Odisha to expedite the chemical analysis and submit the GR for review in the next TCC-I meeting. Besides also recommended for timeline extension upto 31st December 2024.

Recommendation of TCC:

The Committee recommended for time extension upto 31st December 2024 for GR submission

Agenda 70.2.15. Reconnaissance Survey (G4) for Gold in Yediyur area, Yediyur - Karighatta schist belt, Mandya district, Karnataka

[Implementing Agency: KIOCL]

- a) KIOCL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The sanction order was issued on 28th February, 2024 with timeline of 10 months (up to 27.12.2024) and approved cost was INR 1,29,16,573/-.
- b) KIOCL informed that Detailed LSM work was completed over 50.00 Sq.km at 1:12,500 scale. Total 100nos of BRS and 55 nos of trench samples have been collected. Primary analysis of 100 samples for Au content by Fire Assay method the 21 samples have resulted 0.06 to 1.29 g/t.
- c) Detailed sampling was carried out in zone 2 (BRS, channel and trenching). KIOCL requested approval to carry out drilling work (500m) in 5 Scout boreholes indicated locations in BIF gold potential zones.(03 boreholes in Zone II and 1 borehole each in Zone III and Zone IV) .
- d) It was apprised that 03 BH's falling in private land and 02 BH's falling in Hatna reserved forest area. If the committee approved, KIOCL will submit the request to State forest dept. for grant of forest permission for drilling work.
- e) The committed noted the outcome and suggested KIOCL to initiate drilling across the potential zone along the profiles with anomalous values.

Recommendation of TCC:

The Committee recommended KIOCL to initiate drilling across the potential zone.


Dr. B. S. R. Reddy
06/11/2024


Dr. B. S. R. Reddy
06/11/2024

Agenda 70.2.16. Reconnaissance Survey (G-4) for REE and RM mineralisation in Samalpatti area, Syenite–Carbonatite Complex, Krishnagiri District, Tamil Nadu.

[Implementing Agency: KIOCL]

- a) KIOCL informed that the project was approved in the . In the 37th EC of NMET held on 23rd September 2024.
- b) KIOCL informed that 69th TCC-NMET has recommended ICP-MS (Inductively Coupled Plasma Mass Spectrometry) method for carrying out 34 element analysis.
- c) KIOCL laboratory is equipped with ICP-OES sequential technique for performing 34 element analysis.KIOCL has analyzed considerable number of samples using ICP-OES for a period of year and the results were cross verified with NABL accredited labs as external check. The analytical results were observed to be comparable.Hence KIOCL requested for approval of the committee to carry out 34-element analysis using the ICP-OES sequential technique in place of ICPMS study.

Recommendation of TCC:

The Committee agreed to carry out 34-element analysis using the ICP-OES sequential technique in place of ICPMS study and cost as per SOC of NMET.

Additional Discussion

Preliminary Exploration, G3 (Phase-I) in Block 'A' For Ni-Cr-Cu, PGE-Au-REE in Mafic-Ultramafic Bodies in Hadanur-Tagadur Belt, Mandya District, Karnataka (Block area- 7 sq. km)

[Implementing Agency: Geoexpore]

- a) The committee was informed that as per the comments of the peer reviewer the GR is to be submitted in G4 stage. Hence, the GR has been submitted titled , "Reconnaissance Survey (G4) For Ni-Cr-Cu, PGE-Au-REE Around Aichanahalli – Chokkanahalli Block In Mafic-Ultramafic Bodies Of Hadanur-Tagadur Belt, Mandya District, Karnataka".
- b) Further, the committee was requested to approve cost of 10 samples for petrographic study and revised rate of Peer Reviewer's charges to Rs.30000 instead of Rs. 10000.

Description	NMET SoC Item Si. No.	Unit	NMET Rates (2020)	NMET Approved QTY	NMET Approved Amount
Complete Petrographic/ Ore microscopic study/ Mineragraphic studies for Polished Sections	4.3.4	Per Sample	4232	10	42,320
			Sub Total	42,320	
			GST 18%	7,618	
			Total	49,938	

Recommendation of TCC:

The Committee agreed 10 samples for petrographic study amounting to ₹49,938, and enhancement of Peer Reviewer's charges to ₹ 30000 alongwith revision of GR title to "Reconnaissance Survey (G4) For Ni-Cr-Cu, PGE-Au-REE Around Aichanahalli – Chokkanahalli areas, Hadanur-Tagadur Belt, Mandya District, Karnataka"

Parthi
06/11/2024

Oliver
06/11/2024

Agenda 70.4. Project Evaluation for In-Principle Approval

Agenda 70.4.1. Preliminary Exploration (G3) for Copper in Kottapatti area, Dharampuri District, Tamil Nadu.

[Implementing Agency: Geo Technical Mining Solutions]

- a) The proposed area falls in part of SOI toposheet no. 57L/12.
- b) The committee reviewed the item but did not approve it because the NPE agency belongs to Category B and is not allowed to explore non bedded mineral prospect as per the policy.

Recommendation of TCC:

The committee does not approve the item because under current policy the NPE agency is classified as Category B which is not permitted to explore non-bedded minerals.

Agenda 70.4.2. Reconnaissance survey (G4) for Limestone Rupapeth, District– Yavatmal, Maharashtra.

[Implementing Agency: Indian Mine Planner and Consultant]

- a) The proposed area about 28.43 sq km surrounding the villages Rupapeth, Shivapur, Jamuldhara and Mangulhira in toposheet no 561/14, Yavatmal district.
- b) DGM, Maharashtra has conducted a field visit collected samples from limestone mainly from Mangurda Limestone of Penganga Group yielding encouraging values.
- c) The committee noted that a limestone exploration proposal for the same area was already submitted by Maheswari Mining, though IMPC claimed prior submission. The committee decided to verify which entity submitted first, with the final decision pending this confirmation.

Recommendation of TCC:

The committee will decide on the item after confirming with DMG, Maharashtra which agency submitted the application first.

Agenda 70.4.3. Reconnaissance survey for iron ore (G4) in Maseli area, Gadcharoli districts, Maharashtra.

[Implementing Agency: Kartikay Exploration and Mining Services private Limited.]

- a) The proposed area falls in part of SOI toposheet nos. 64D/5 and 64D/9.
- b) The area is known for its iron ore deposits, with expired leases reporting significant iron ore presence.
- c) A recent field by Kartikay Exploration and Mining Services private Limited. Ltd visit confirmed the presence of iron in the area.
- d) DGM, Maharashtra informed the committee that while the proposed area does not fall within a tiger reserve, it is still to be confirmed whether it lies within any other sensitive zones.
- e) DGM Maharashtra assured the committee that they would provide the necessary data within two weeks, after which the committee will make a decision.

Recommendation of TCC:

The committee decided to make a decision once the necessary information is received from DMG, Maharashtra.


Dr. S. S. Dhar
06/11/2024


Dr. S. S. Dhar
06/11/2024

Agenda 70.4.4. Reconnaissance survey (G4) for Limestone in Mangrur, Ponar, Adilabad districts, Telengana.

[Implementing Agency: M/s Maheshwari Mining Pvt Ltd]

- a) The proposed area falls in toposheet nos. 56I/13 and 56I/14 and located near Mangurda, Mangrur, Khadgur, Ponar, and Kobhai in Adilabad district, Telangana.
- b) Maheshwari mining informed the committee that the limestone beds of the Mangurda formation are trending NW-SE and dipping 20 to 25 degrees toward the northeast.
- c) Additionally, limestone from the Mangurda formation is found on the opposite side of the Penganga River in Maharashtra's Bahilampur area, where the Directorate of Geology and Mining (DGM) Maharashtra has developed a limestone block with 46.53% CaO, 3.3% MgO, 7.2% SiO₂ and 2.7% Fe₂O₃.
- d) The committee found that comments from GSI/DMG, Telengana have not received yet, hence, decision could not be taken.

Recommendation of TCC:

The committee decided to make a decision once the necessary information is received from DGM, Telengana and SU:Telangana, GSI, Hyderabad.

Agenda 70.4.5. Reconnaissance survey (G4) for Limestone in Bahilampur, Hirapur, Ponar, Yavatmal districts, Maharashtra

[Implementing Agency: M/s Maheshwari Mining Pvt Ltd]

- a) The proposed area falls in toposheet nos. 56I/13 and located near Govindpur, Hirapur, Rajor and Bahilampur.
- b) Maheshwari informed the committee that the limestone beds of the Mangurda formation is the target lithology.
- c) Additionally, limestone from the Mangurda formation is found on the opposite side of the Penganga River in Maharashtra's Bahilampur area, where the Directorate of Geology and Mining (DGM) Maharashtra has developed a limestone block with 46.53% CaO, 3.3% MgO, 7.2% SiO₂ and 2.7% Fe₂O₃.

Recommendation of TCC:

The committee did not approve the item due to overlapping with a block that has already been explored by the Directorate of Geology and Mining (DMG).

Agenda 70.4.6. Reconnaissance survey (G4) for Limestone in Gadeghat, Yedsi, Yavatmal districts, Maharashtra.

[Implementing Agency: M/s Maheshwari Mining Pvt Ltd]

- a) The proposed area falls in toposheet nos. 56I/13 and located in near Khatera, Munjala and Yedsi villages in Yavatmal district, Maharashtra.
- b) Maheshwari informed the committee that the limestone beds of the Mangurda is the target lithology.
- c) Additionally, limestone from the Mangurda formation is found on the opposite side of the Penganga River in Maharashtra's Bahilampur area, where the Directorate of Geology and Mining (DGM) Maharashtra has developed a limestone block with 46.53% CaO, 3.3% MgO, 7.2% SiO₂ and 2.7% Fe₂O₃.

Recommendation of TCC:

After review, the committee suggested that limestone items of this nature may be directly explored under the G3 category. However, a field visit with sample collection must be completed to formulate the items.


D. D. Dattatreya
06/11/2024


Dr. S. S. Patil
06/11/2024

Agenda 70.4.7. Reconnaissance survey (G4) for Limestone in Rupapeth, Chandrapur districts, Maharashtra.

[Implementing Agency: M/s Maheshwari Mining Pvt Ltd]

- a) A 21 sq km area near Rupapet, Mehandi, Khadki, and Chopan villages in Chandrapur district, Maharashtra (toposheet no. 56I/14), is proposed for G4 stage exploration for limestone.
- b) The limestone in this block lies on the Putnur formation, comparable to the Mangurda limestone, with analysis indicating suitability as flux-grade limestone for steel production.
- c) Average assay values for limestone samples from the area have been provided by DGM Maharashtra, confirming its industrial potential (46.53% CaO, 3.3% MgO, 7.2% SiO₂ and 2.7% Fe₂O₃).

Recommendation of TCC:

As discussed earlier, the committee observed that a limestone exploration proposal for this area was already submitted by IMPC, while M/s Maheshwari Mining also claimed an earlier submission. The committee decided to verify which entity applied first, with a final decision to be made following this confirmation.

Agenda 70.4.8. Reconnaissance survey (G4) for Manganese in Faguapada, Karamdihi, Goppur, Lahuraniberna, Sundargarh districts, Odisha.

[Implementing Agency: M/s Maheshwari Mining Pvt Ltd]

- a) The proposed area lies within the Gangpur Group, in SOI toposheet no. 73B/04.
- b) According to GSI, the manganese ore is hosted within gondite, with ore bodies largely resulting from supergene enrichment and primarily localized along fold hinges.
- c) Based on the area's mineral potential, Maheshwari Mining has proposed exploration.
- d) The committee noted partial overlap with DMG's work and advised Maheshwari Mining to exclude this overlapping section. Additionally, the committee recommended adjusting the block boundary to exclude the river and town areas.
- e) The item is approved in principle.

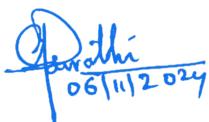
Recommendation of TCC:

The committee suggested that Maheshwari Mining Pvt Ltd to present the item in forthcoming TCC after modifying the block boundary as discussed.

Agenda 70.4.9. Preliminary Exploration (G3) for limestone deposits in Reddipalayam - Thelur - Poyyur block, Ariyalur District, Tamil Nadu.

[Implementing Agency: Geomarine Solutions]

- a) The agency informed the committee that both GSI and DMG have previously explored limestone resources in the area, revealing three major bands with a strike length of 7-7.5 km trending mainly N-S, shifting to NE-SW and NW-SE with a shallow eastward dip (3°-5°).
- b) Surface mapping identified three main limestone beds with widths of 500-700 m each, while subsurface data indicates 5-7 individual bands with thicknesses of 2.5 to 40 m at varying depths. Borehole data from GSI reports show band thickness increasing from south to north and west to east.
- c) Based on these findings, three sub-blocks in toposheet No. 58M/4 were identified for G3 investigation viz. South of Reddipalayam (3.2 sq km), NW of Thelur (3.2 sq km) and Poyyur (5.2 sq km)


06/11/2024


06/11/2024

d) The committee noted that the proposed blocks fall within sandstone on the geological map. The agency responded that the limestone is actually overlain by sandstone. However, the committee found this unsuitable for exploration, as the sandstone layer could complicate future auctioning, even if the item gives positive results.

Recommendation of TCC:

The committee suggested Geomarine to formulate and submit a suitable proposal.

Agenda 70.4.10. Reconnaissance Survey (G4) for Iron ore in Kawaro Khasgaon Area (2.00 sq, kms) situated in the village Khasgaon (Anthagard Rly station), Tahsil Bhanupratapur, District-Uttar Baster Kanker, State –Chhattisgarh.

&

Agenda 70.4.11. Reconnaissance Survey (G4) for Iron ore in Nawagarh-Nelsod Area (7.27 sq, kms) situated in the village Nawagarh, District-Kanker, State Chhattisgarh. [Implementing Agency: M/s PRB Infra]

- a) The proposed Kawaro Khasgaon Area, located within Survey of India (SOI) Toposheet No. 64 H/4,
- b) Geological Survey of India (GSI) has conducted regional level work and confirmed the presence of iron ore in the area. During a recent field visit, PRB Infra observed exposures of Banded Hematite Quartzite (BHQ) with massive specularite bands at two hilltops in the Kawaro Khasgaon area.
- c) Similarly, the proposed Nawagarh-Nelsod Area falls within SOI Toposheet No. 64 D/16 & 64, where GSI's regional studies have also reported iron ore presence. The committee was informed of an estimated 2.00 million tonnes of iron ore resources in the nearby North Metabodli Iron Ore Block, which is adjacent to the proposed Nawagarh-Nelsod Area. Additionally, an active iron ore mine is located close to this proposed block.
- d) DMG, Chhattisgarh opined that the proposed area is small for a G4 stage exploration

Recommendation of TCC:

After a detailed discussion the committee advised PRB Infra to combine both the areas and prepare a G4 stage item and present a DPR in next TCC meeting.

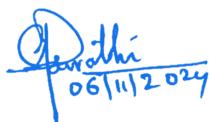
Agenda 70.4.12. Reconnaissance Survey (G4) for Iron ore in Jahlur Area (20.60 sq, kms) situated in the village Jahlur, District-Kanker, State Chhattisgarh.

[Implementing Agency: M/s PRB Infra]

- a) The proposed Kawaro Khasgaon Area falls in Survey of India (SOI) Toposheet No. 64 H/3& 64H/4.
- b) In the 2008-09 field season, the Geological Survey of India (GSI) conducted iron ore prospecting in the Parwi area, Kanker District, Chhattisgarh, reporting iron (Fe) content ranging from 58.83% to 66.01%.
- c) During a recent field visit, PRB Infra observed Banded Magnetite Quartzite (BMQ) with significant specularite and magnetite bands exposed in four hilltops as discontinuous bands trending north-south and NNW-SSE between Khora in the north and Jahlur in the south.
- d) However, the DMG, Chhattisgarh informed the committee that the area is already auctioned and currently under litigation.

Recommendation of TCC:

The committee does not approve the item.


Dr. P. S. Rathore
06/11/2024


Dr. P. S. Rathore
06/11/2024

Agenda 70.4.13. Preliminary Exploration (G3) for PGE and Nickle in Gondpipari, Gadcharoli District, Maharashtra.

[Implementing Agency: M/s Bhushilp Mine and Minerals]

- a) The proposed area falls in SOI toposheet no. 56 M/9, 10 & 13
- b) The committee reviewed the item in which Bhushilp Mine and Minerals proposed a G3 stage investigation in 170 sq km area.
- c) The committee stated that the 170 sq km area proposed for G3 stage investigation is excessive and found the area is not significantly potential.
- d) Considering the fact that GSI has already conducted exploration in 18 blocks within this region, the committee advised Bhushilp to propose a G4 stage investigation as an extension to GSI's existing work area.

Recommendation of TCC:

The committee recommended Bhushilp Mine and Minerals to propose a G4 stage investigation in extension of GSI's working area.

Agenda 70.4.14. Preliminary Exploration (G3) for Tungsten in parts of Jashpur and Dharmajawah Tehsil, Raigarh District, Chhattisgarh.

[Implementing Agency: M/s Bhushilp Mine and Minerals]

- a) The proposed area falls in SOI toposheet no. 64N/15
- b) The committee reviewed the item in which Bhushilp Mine and Minerals proposed a G3 stage investigation in 0.5 sq km area.
- c) The committee was informed that the block boundary provided by Bhushilp Mine and Minerals actually covers >200 sqkm area which is unacceptable.
- d) Hence, the committee advised Bhushilp to fix the issue and submit a revised proposal.

Recommendation of TCC:

The committee recommended to finalize the target area and submit a revised proposal.

Agenda 70.4.15. Preliminary Exploration (G3) for Gold in Dubiabera, Mayurbhanj District, Odisha.

[Implementing Agency: M/s Natural Resource Division Tata Steel]

- a) The proposed block falls in Survey of India (SOI) Toposheet No. 73J/3
- b) The proposed block area is located immediately south of the Jashipur (N) block, where GSI's detailed exploration has reported gold concentrations up to 42.3 g/t in borehole samples. BRS samples from this region also show significant gold concentrations of up to 800 ppb, primarily within talc-serpentine chlorite schist containing carbonate, quartz veins, and occasional sulfides.
- c) TATA conducted a recent field visit in the area, confirming the presence of similar host lithology in the proposed block.
- d) Based on these, a G3 stage exploration program for gold over a 3.93 sq. km area is proposed.
- e) The item is approved in principle.

Recommendation of TCC:

The committee recommended Natural Resource Division Tata Steel to bring the detailed DPR in the next TCC with modified block containing the auriferous chert within the boundary.

Agenda 70.4.16. Reconnaissance Survey (G4) strategic and REE prospects in Nellikudur Block in Parts of Mahabubabad & Warangal Districts, Telangana.

[Implementing Agency: M/s. Critical Mineral Trackers]

Georothi
06/11/2024

John
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- a) The proposed block falls in Survey of India (SOI) Toposheet No. 56O/10
- b) In FS 1988-89, GSI identified notable Cerium (over 1000 ppm) and Lanthanum (300–500 ppm) values in toposheets 560/9 and 560/13.
- c) Geochemical mapping and the presence of Cerium-bearing allanite in younger granites indicates about REE enrichment
- d) Strategic minerals like Strontium, Gallium, and Zirconium remain unexplored here, presenting future exploration potential.
- e) Three Cerium and Lanthanum clusters were demarcated, with the Nellikudur block showing high concentrations: Cerium (300–2800 ppm) and Lanthanum (150–1215 ppm)
- f) CMT informed the committee that a team has already visited the field, collected samples and submitted and the results are yet to receive.

Recommendation of TCC:

The committee recommended the item be approved for presentation at the forthcoming TCC meeting with a modified title focusing solely on REE exploration.

Agenda 70.4.17. Preliminary Exploration (G-3) for Limestone in Namangunam, Kadur, Chokkanathapuram, Vellur villages in Ariyalur & Perambalur district, Tamil Nadu.

[Implementing Agency: Geo Exploration and Mining Solutions]

- a) The proposed area falls in Survey of India (SOI) Toposheet No. 58M/3 & 58M/4.
- b) The committee thoroughly reviewed the proposal and found that the existing geological data show promising indicators for further exploration.
- c) In light of these findings, the committee recommended that Geo Exploration and Mining Solutions proceed with developing a G3 stage exploration proposal with detailed plans for drilling, sampling, and data analysis and to be ready to present this item at the forthcoming TCC meeting.
- d) Additionally, the committee suggested to modify the project title by using a single village name to improve clarity and focus.

Recommendation of TCC:

The committee approved the proposal in-principle approval and advised Geo Exploration and Mining Solutions to formulate a G3 stage item and present in the next TCC.

Agenda 70.4.18. Preliminary Exploration (G-3) for Limestone in Kulumur block Ariyalur and Perambalur Districts, Tamil Nadu.

[Implementing Agency: Geo Exploration and Mining Solutions]

- a) The proposed area falls in Survey of India (SOI) Toposheet No. 58M/3 & 58M/4.
- b) After reviewing the proposal, the committee noted that the current geological data in the area are promising.
- c) Accordingly, they advised Geo Exploration and Mining Solutions to prepare a G3-level exploration proposal for systematic assessment of limestone in the area.
- d) The title should have a single village name to enhance clarity in reports and presentations.

Recommendation of TCC:

The committee approved the proposal in-principle approval and advised Geo Exploration and Mining Solutions to formulate a G3 stage item and present in the next TCC.


Dr. S. Parathippan
06/11/2024


Dr. S. Parathippan
06/11/2024

List of participants attended 70th Technical-cum-cost Committee (TCC) meeting of NMET held on 24th and 25th October, 2024 through videoconferencing

S. No.	Name/ Designation	Email ID	Contact No	Organization
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Parthi
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Shri Ratnakant Govenkar
06/11/2024


Shri P. Ravindran GM (Exploration)
06/11/2024

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Dr. P. D. Datti
06/11/2024


Dr. S. R. Sharma
06/11/2024

Annexure 2A

Estimate Cost for Reconnaissance (G-4) for Manganese around Kandhal area of Rairakhol Tahasil of Sambalpur District, Odisha

Area: 50 sq.km, Drilling : 4 Bhs, 200m , Timeline: 10 months , Review : 5 months

Sl. No.	Item of Work	Unit	SoC item Sl. No.	Rate as per SoC (in Rs)	Quantum of Work	Total Amount (Rs.)	
1	GEOLOGICAL WORK						
i)	Charges for One Geologist - Field	per day	1.3	11,000	140	1540000.00	
ii)	Charges for One Geologist - HQ	per day	1.3	9,000	30	270000.00	
iii)	Labours (per day	5.7	522	280	146160.00	(Amount will be reimbursed as per notified rates by central labour Commission rates or respective State Govt. Whichever is higher)
iv)	Charges for one Sampler	per day	1.5.2	5,100	17	86700.00	
v)	Labours (4 Nos.)	day	5.7	522	68	35496.00	(Amount will be reimbursed as per notified rates by central labour Commission rates or respective State Govt. Whichever is higher)
Sub Total-A						2078356.00	
2	Survey (Outsourcing)						
i)	Survey Party days (One Surveyor Charges)	day	1.6.1a	8,300	0	-	

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ii)	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	4	76800.00	
iii)	Labours (4 Nos) Base Rate- As per rates of state labour commission Rs. 450*4=1800/-	day	5.7	1,800	0	-	(Amount will be reimbursed as per notified rates by central labour Commission rates or respective State Govt. Whichever is higher)
	Sub Total- B					76800.00	
3	DRILLING (Outsourcing)						
i)	Drilling (scout) - hard rock	per m	2.2.1.4	11,500	200	2300000.00	4 BHs(40-50m depth)
ii)	Construction of concrete pillar(12"x12"x30")	Per Bore hole	2.2.7a	2,000	0	0.00	
iii)	Monthly Accomodation charges for drilling camp (up to 2 rigs)	Per Months	2.2.9	50,000	0	0.00	
iv)	Camp setting	Per drill	2.2.9a	2,50,000	0	0.00	
v)	Camp winding	Per drill	2.2.9b	2,50,000	0	0.00	
vi)	Approach road making	Per km	2.2.10b	32,200	0	0.00	to check
v)	Drill core preservation	Per m	5.3	1,590	80	127200.00	
	Sub Total- C					2427200.00	

Parathhi
06/11/2024

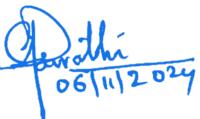
Parathhi
06/11/2024

4	PITTING						
i)	Pitting	Cu.m	2.1.2	3,800	40	152000.00	
ii)	Trenching	Cu.m	2.1.1	3,330	40	133200.00	
	Sub Total-D					285200.00	
5	LABORATORY STUDIES						
1	Chemical Analysis						
i)	XRF	Per Sample	4.1.15a	4,200	125	525000.00	50 Core, 75 Pit +Trench+ BRS
ii)	Check samples -XRF	Per Sample	4.1.15a	4,200	13	54600.00	
iii)	Composite samples for 5 radicals (MnO ₂ , Al ₂ O ₃ , SiO ₂ , Fe ₂ O ₃ , and LOI)	Per Sample	4.1.1	8,157	0	0.00	
2	Physical Analysis						
i)	Estimation of major oxides by XRF technique	Per Sample	4.1.15a	4200	0	0.00	
ii)	X-RD Studies	Per Sample	4.5.1	4,000	5	20000.00	
iii)	Preparation of thin section	Per Sample	4.3.1	2,353	10	23530.00	
iv)	Petrographic studies	Per Sample	4.3.4	4,232	10	42320.00	
v)	Preparation of polished section	Per Sample	4.3.2	1,549	5	7745.00	
vi)						0.00	
	Bulk density	Per Sample	4.1	3,540	2	7080.00	
vii)	Rock powdering	Per Sample	4.3.12	2,520	0	0.00	
	Sub Total-E					680275.00	
	Total A+B+C+D+E					5547831.00	

Parvathi
06/11/2024

Parvathi
06/11/2024

	Total Outsourced Cost					2504000.00	
F	Tender Preparation, publishing & finalisation	One time	2.3			50080.00	
	Operational Charges		6.0	i		250400	
G	Geological Report Preparation	One no.(5 hard copies,) along with soft copy	5.2			277391.55	
H	Peer Review					30000.00	
I	Proposal preparation		5.1			110956.62	
	TOTAL (A+B+C+D+E+ F + G + H +I)					6266659.17	
	GST (18%)					1127998.65	
	Grand Total					7394657.82	
	Rs. In Lacs					73.95	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						


D. S. Dharavi
06/11/2024


Mr. S. S. Patil
06/11/2024

Annexure 2B

Time Schedule/ Action plan for Reconnaissance (G-4) for Manganese around Kandhal area of Rairakhol Tahasil of Sambalpur District, Odisha

		1	2	3	4	Review	5	6	7	8	9	10
1	Camp Setting											
2	Geological Party Days											
3	Pitting /Trenching & Sampling											
4	DGPS survey /BH Fixation											
5	Core Dilling											
6	Core Sample Preparation											
7	Sample processing & Analysis											
8	Camp Winding											
9	Data analysis, Geological Report Writing											
10	Geologist Party days, HQ											
11	Peer Review											


Dr. P. S. Mohanty
06/11/2024


Dr. B. K. Patra
06/11/2024

Annexure 3A

Estimate Cost for General exploration (G2 stage) for molybdenum in Vellakkal Central Block, Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu

Total Area - 1.1 Sq Km; Nos. of Borehole - 35 (10 Bh X 100 m -level 1, 14 BH X175m - Level 2, 11BhX 250 m - Level 3); 6200m approx.drilling Borehole depth range - 100m to 250 m approx. ; Completion Time - 15 Months, Review : 6 & 12 months

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	GEOLOGICAL WORK						
1	Borhole logging & Sampling & Geological map updation & Report writing				1.1 sq.km.		
a	Charges for Geologist per day at HQ	day	1.3a	9,000	60	5,40,000	
b	Charges for Geologist per day at field	day	1.3b	11,000	200	22,00,000	
c	Labour for Geologist (2 Nos)	day	5.7	522	400	2,08,800	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	149	7,59,900	
e	Labours for sampling work (4 Nos)	day	5.7	522	596	3,11,112	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total A					40,19,812	
B	DRILLING						

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06/11/2024

Parathai
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a	Drilling - Hard rock	m	2.2.1.4a	11,500	6,200	7,13,00,000	
b	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	6,200	20,46,000	
c	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	35	7,00,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
d	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	35	70,000	
e	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	9,920	3,57,120	To & fro for 4 Rigs from Nagpur
f	Monthly Accomodation Charges for drilling Camp (up to 4 Rigs)	month	2.2.9	1,00,000	6	6,00,000	
g	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	4	10,00,000	
h	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	4	10,00,000	
i	Road Making (Flat Terrain)	Km	2.2.10a	22,020	4	88,080	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
j	Drill Core Preservation	per m	5.3	1,590	1,300	20,67,000	
Sub Total B						7,92,28,200	
C	Survey Work						
a	DGPS Survey of Block Boundary cardinal points by DGPS + BH fixation & RL determination	Per Point of observation	1.6.2	19,200	39	748800	4 Points for Block Boundary + 35 Bhs


D. D. Patil
06/11/2024


Dr. S. S. Patil
06/11/2024

	Sub-Total C					7,48,800	
D	Borehole Geophysical Logging	5 Bhs of 350m each	3.12	622.22	6,200	38,57,764	
	Sub-Total D					38,57,764	
E	LABORATORY STUDIES						
1	<u>Chemical Analysis</u>						
i)	Primary samples (BH core)						
	a. For Sn, Mo, W, Ag, Bi by AAS Method	Nos	4.1.7a & b	2,506	1,050	26,31,300	
	b. Composite samples for 34 Elements by ICP-MS	Nos	4.1.14	7,731	40	3,09,240	
ii)	External Check samples (10%) BH Core						
	a. For Sn, Mo, W, Ag, Bi by AAS Method	Nos	4.1.7a & b	2,506	105	2,63,130	
iii)	Petrographic & Mineragraphic samples (Bh Core Samples)						
a	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
b	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
c	Preparation of polished section	Nos	4.3.2	1,549	10	15,490	
d	Complete mineragraphic study report	Nos	4.3.4	4,232	10	42,320	

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e	Digital Photographs	Nos	4.3.7	280	10	2,800	
f	Sp. Gravity Determination	No.	4.8.1	1,605	10	16,050	
	Total - E					33,46,180	
F	Beneficiation studies						
	Laboratory scale ore beneficiation	Lumpsum	SoC of IBM	3,00,000	1	3,00,000	
	Total - F					3,00,000	
G	Geotechnical studies						
i	Porosity, Uniaxial compressive strength, tensile strength, Young's modulus elasticity, triaxial compressive strength (cohesion & angle of internal friction) and bulk density etc.	No.	4.8.2, 4.8.4c, 4.8.5, 4.8.7, 4.8.9 & 4.10	23,212	10	2,32,120	
ii	Transportation of drill core by postal service		Lumpsum	10,000	-	-	
	Total - G					2,32,120	
	Sub Total (A to G)					9,17,32,876	
H	Geological Report Preparation		5.2	For the projects exceeding Rs.300 Lakhss: A Minimum of Rs. 9 lakhs or		27,51,986	

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				3% of the work whichever is more			
I	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1/28th EC	2% of the Cost or Rs. 5.0 Lakhs whichever is lower		5,00,000	EA has to submit the Hhard copies and soft copies of final proposal along with maps and plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
J	Peer review Charges		As per EC decision			30,000	Cost Estimated for two peer review of 2 blocks seperately (Naddisinur-1 and Naddisinur-2 Blocks)
K	Total Estimated Cost without GST					9,50,14,862	
L	Provision for GST (18% of H)	%				1,71,02,675	GST will be reimburse as per actual and as per notified prescribed rate
M	Total Estimated Cost with GST					11,21,17,537	
				Rs. In Lakhs	1,121.18		
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						

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Annexure 3B

Time Schedule/ Action plan for General exploration (G2 stage) for molybdenum in Vellakkal Central Block, Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu

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Annexure 4A

Estimate cost for Preliminary exploration (G3) for molybdenum in Vellakkal North Block (2.90 Sq.Km.) & Vellakkal South Block (1.55 Sq.Km.), Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu

Total Area - 4.4 sq.km. (2.9 sq.km+1.55 sq.km); Nos. of Borehole - North 15 BH (1st level -10BH X100m , 2nd level 5 BHx 200m)= 2000 m approx. , South 15 BH(1st level -10BH X100m , 2nd level 5 BHx 200m)= 2000m approx. ; Total drilling 4000m approx. Borehole depth range - 100M upto 200m; Completion Time - 15 Months, Review 6 & 12 months

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	GEOLOGICAL WORK						
1	Detailed Geological mapping (1:2000 scale, Borhole logging & Sampling	1:2000 scale			4.45 sq.km.		(Vellakkal North Block 2.9 sq.km. + Vellakkal South Block 1.55 sq.km.)
a	Charges for one Geologist per day at HQ	day	1.3a	9,000	60	5,40,000	
b	Charges for Geologist per day at field	day	1.3b	11,000	300	33,00,000	2 blocks
c	Labour for Geologist (2 Nos)	day	5.7	522	600	3,13,200	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 per day (1 Party)	one sampler per day	1.5.2	5,100	163	8,31,300	

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e	Labours for sampling work (4 Nos)	day	5.7	522	652	3,40,344	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub Total A					53,24,844	
B	Ground Geophysical Survey						
a	IP. Induced Polarization (I.P) cum Resistivity S.P and Magnetic	Per Line Km	3.4b	14,48,693	7.3	1,05,75,459	(8 -10 line Km=14,48,693/-) (30Lkm cummulative) 73 LKM
b	Geophysicist party days (HQ) for Data processing & Report	per day	3.18	9,000	30	2,70,000	
	Sub-Total B					1,08,45,459	
C	Trenching/Pitting						
	a) Excavation of Trenches	per cu.m	2.1.1.	3,330	300	999000	(150 cum x2)
	Sub Total C					9,99,000	
D	DRILLING						
a	Drilling -Hard rock	m	2.2.1.5a	11,500	4,000	4,60,00,000	(2000m in 15 Bhs Vellakkal North+2000m in 15 Bhs Vellakkal South)
b	Borehole deviation Survey by Multishot Camera	m	2.2.6	330	4,000	13,20,000	
c	Land / Crop Compansation (in case the BH falls in agreeicultural Land)	per BH	5.6	20,000	30	6,00,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH


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							with certification from local authorities
d	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	30	60,000	
e	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	-	-	Rigs from Central Vellakal Block to be deployed
f	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	6	3,00,000	
g	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	-	-	
h	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	-	-	
i	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
j	Drill Core Preservation	per m	5.3	1,590	950	15,10,500	
	Sub Total D					4,99,00,600	
E	Survey Work						

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a	BH fixation & RL determination by DGPS	Per Point of observation	1.6.2	19,200	39	748800	30 BH points+4 +5 boundary points
b	Charges of Surveyor (1 party) for Topographical survey 1:2000 scale (4.4 sq.km with 1m contour interval)	one surveyor per day	1.6.1a	8,300	45	373500	
c	Labours Charges for survey work;	day	5.7	522	180	93960	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 E					12,16,260	
F	Borehole Geophysical Logging (including I.P., S.P. Magnetic Susceptibility, Resistivity/ Induction Sonde, Dual Density etc)	5 Bhs of 350m each	3.12	622.25	4,000	24,89,000	10, 88, 941
	Sub-Total F					24,89,000	
G	LABORATORY STUDIES						
1	<u>Chemical Analysis</u>						
i)	Primary samples (Bedrock/channel & Trench)						
	a. For Sn, Mo, W, Ag, Bi by AAS Method	Nos	4.1.7a & b	2,506	250	6,26,500	(50 Bedrock/channel+200 Trench)
	b. Bedrock/channel/Trench for 34 radicals by ICP-MS	Nos	4.1.14	7,731	10	77,310	

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ii)	External Check samples (10%) (Bedrock/channel)					-	
	a. For Sn, Mo, W, Ag, Bi by AAS Method	Nos	4.1.7a & b	2,506	25	62,650	
	Primary samples (BH core)						
	a. For Sn, Mo, W, Ag, Bi by AAS Method	Nos	4.1.7a & b	2,506	900	22,55,400	(14m MZ including HW+FW)
	b. Composite samples for 34 Elements by ICP-MS	Nos	4.1.14	7,731	30	2,31,930	
	External Check samples (10%) BH Core						
	a. For Sn, Mo, W, Ag, Bi by AAS Method	Nos	4.1.7a & b	2,506	90	2,25,540	
iii)	Petrological samples (Surface+BH core Samples)						
i	Preparation of thin section	Nos	4.3.1	2,353	20	47,060	
ii	Complete petrographic study report	Nos	4.3.4	4,232	20	84,640	
iii	Preparation of polished section	Nos	4.3.2	1,549	20	30,980	
iv	Complete mineralogic study report	Nos	4.3.4	4,232	20	84,640	
v	Digital Photographs	Nos	4.3.7	280	20	5,600	
	Total - G					37,32,250	
	Sub Total (H to N)					7,45,07,413	
O	Geological Report Preparation		5.2	For the projects exceeding Rs.300 Lakhss: A Minimum of Rs. 9		22,35,222	

D. Rathinam
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				lakhs or 3% of the work whichever is more			
P	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1/28th EC	2% of the Cost or Rs. 5.0 Lakhs whichever is lower		5,00,000	EA has to submit the Hhard copies and soft copies of final proposal along with maps and plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
Q	Peer review Charges		As per EC decision			30,000	Cost Estimated for two peer review of 2 blocks seperately (Naddisinur-1 and Naddisinur-2 Blocks)
R	Total Estimated Cost without GST					7,72,72,635	
S	Provision for GST (18% of H)	%				1,39,09,074	GST will be reimburse as per actual and as per notified prescribed rate
T	Total Estimated Cost with GST					9,11,81,710	
				Rs. In Lakhs		911.82	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						

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Annexure 4B

Time Schedule/ Action Plan for Preliminary exploration (G3) for molybdenum in Vellakkal North Block (2.90 Sq.Km.) & Vellakkal South Block (1.55 Sq.Km.), Uttangarai Sector, Haru-Uttangarai Belt, District-Krishnagiri, Tamil Nadu

Sl. No.	Activities	Unit	MONTHS												13	14	15
			1	2	3	4	5	6	7	8	9	10	11	12			
1	Camp Setting	Month															
2	Survey work	Months															
3	Geological mapping (1:2000 scale) in 4.45 sq.km. associated sampling	2.6 sq.km.															
4	Ground Geophysical survey	50 Lkm															
5	Geophysical Report	1															
6	Trenching work	100 cu.m.															
7	Surface Drilling (4 rig) & associated works	m.															
8	Geologist Party days in field (2 Party)	day															
9	Sampling Party days, Core Sampling (1 party)	day															
10	Camp Winding	Month															
11	Laboratory Studies	Nos.															
12	Geologist Party days in HQ (1 Party)	day															
13	Geological Report Writing with Peer Review	Month															

Review

Review



P. Dilli
06/11/2024



O. Luni
06/11/2024

Annexure 5A

Estimate Cost for Preliminary Exploration (G-3) for Limestone in Mundra-Chilaiblock Block (4.38 Sq. km) District- Yavatmal, Maharashtra

Total Area - 4.38 Sq Km; Nos. of Borehole - 06; 300m Borehole depth range - 50m (BGL); Completion Time - 10 Months, Review: 4 months

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	GEOLOGICAL WORK						
1	Mapping (1:4000), Borhole logging & Sampling & Report writing						
a	Charges for one Geologist per day at HQ	day	1.3a	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	day	1.3b	11,000	100	11,00,000	
c	Labour for Geologist (2 Nos)	day	5.7	522	200	1,04,400	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	39	1,98,900	
e	Labours for sampling work (4 Nos)	day	5.7	522	156	81,432	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

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2	Survey (on 1:4000 Scale)						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardinal points by DGPS	Per Point of observation	1.6.2	19,200	13	2,49,600	Block cardinal point- 7 Borehole- 6
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring at 2m interval
c	Labours (4 Nos)	day	5.7	522	120	62,640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
	Sub-Total A					23,15,972	
B	DRILLING						
1	Drilling -Soft rock	m	2.2.1.1b	7,168	300	21,50,400	MoC Rate
2	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	6	1,20,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	13	26,000	
4	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	400	14,400	To & fro Nagpur
5	Monthly Accommodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	1,50,000	
6	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
7	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	

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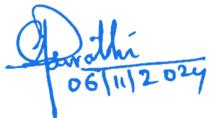
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8	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
9	Drill Core Preservation	per m	5.3	1,590	270	4,29,300	
	Sub Total B					35,00,200	
C	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Primary samples						
	a. For 10 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O, Na2O and LOI by XRF	Nos	4.1.15a	4,200	280	11,76,000	10 BRS, 270 Core samples
ii)	External Check samples (10%)						
	a. For 10 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O, Na2O and LOI by XRF	Nos	4.1.15a	4,200	28	1,17,600	
iii)	Petrological samples (Bh Core Samples)						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii	Study of Thin Section	Nos	4.3.4	4,232	5	21,160	
iv)	Bulk Density Determination						
	Bulk Density	No.	4.1	3,540	2	7,080	
	Total - C					13,33,605	
D	Sub Total (A to C)					71,49,777	
E	Geological Report Preparation		5.2	ii		3,57,489	EA has to submit the final Geological Report in Hard Copies (5 Nos) and soft copy to NMET


P. D. Dhar
06/11/2024


O. L. Suri
06/11/2024

F	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1			1,42,996	EA has to submit the Hhard copies and soft copies of final proposal along with maps and plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
G	Peer review Charges		As per EC decision			30,000	
H	Total Estimated Cost without GST					76,80,261	
I	Provision for GST (18% of H)	%				13,82,447	GST will be reimburse as per actual and as per notified prescribed rate
J	Total Estimated Cost with GST					90,62,708	
				Rs. In Lakhs		90.63	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						


P. Datti
06/11/2024


A. K. Suri
06/11/2024

Annexure 5B

Time Schedule/ Action Plan for Preliminary Exploration (G-3) for Limestone in Mundra-Chilaiblock Block (4.38 Sq. km) District- Yavatmal, Maharashtra

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


Parvathi
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Annexure 6A

Estimate Cost for Preliminary Exploration (G-3) for Limestone in Hiwardhara-Ganeshpura Block (2.81 Sq. km) District- Yavatmal, Maharashtra

Total Area - 5.72 Sq Km; Nos. of Borehole - 06; 300M Borehole depth range - 50m (BGL); Completion Time - 10 Months, Review: 4 months

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	GEOLOGICAL WORK						
1	Mapping (1:4000), Borehole logging & Sampling & Report writing, including Topographic survey						
a	Charges for one Geologist per day at HQ	day	1.3a	9,000	30	2,70,000	
b	Charges for one Geologist per day at field	day	1.3b	11,000	100	11,00,000	
c	Labour for Geologist (2 Nos)	day	5.7	522	200	1,04,400	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	39	1,98,900	
e	Labours for sampling work (4 Nos)	day	5.7	522	156	81,432	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher


D. Patil
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O. Patil
06/11/2024

2	Survey (on 1:4000 Scale)						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardinal points by DGPS	Per Point of observation	1.6.2	19,200	25	4,80,000	Block cardinal point- 19 Borehole- 6
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	30	2,49,000	Contouring at 2m interval
c	Labours (4 Nos)	day	5.7	522	120	62,640	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
Sub-Total A						25,46,372	
B	DRILLING						
1	Drilling -Soft rock	m	2.2.1.1b	7,168	300	21,50,400	MoC Rate
2	Land / Crop Compansation (in case the BH falls in agreeultural Land)	per BH	5.6	20,000	6	1,20,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	25	50,000	Block cardinal point- 19 Borehole- 6
4	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	400	14,400	To & fro
5	Monthly Accomodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	1,50,000	

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6	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
7	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
8	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	1,10,100	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
9	Drill Core Preservation	per m	5.3	1,590	270	4,29,300	
	Sub Total B					35,24,200	
C	LABORATORY STUDIES						
1	<u>Chemical Analysis</u>						
i)	Primary samples						
	a. For 10 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O, Na2O and LOI by XRF	Nos	4.1.15a	4,200	280	11,76,000	10 BRS, 270 Core samples
ii)	External Check samples (10%)						
	a. For 10 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O, Na2O and LOI by XRF	Nos	4.1.15a	4,200	28	1,17,600	
iii)	Petrological samples (Bh Core Samples)						
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765	
ii	Study of Thin Section	Nos	4.3.4	4,232	5	21,160	
iv)	Bulk Density Determination						


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	Bulk Density	No.	4.1	3,540	2	7,080	
	Total - C					13,33,605	
D	Sub Total (A to C)					74,04,177	
E	Geological Report Preparation		5.2	ii		3,70,209	EA has to submit the final Geological Report in Hard Copies (5 Nos) and soft copy to NMET
F	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1			1,48,084	EA has to submit the Hhard copies and soft copies of final proposal along with maps and plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
G	Peer review Charges		As per EC decision			30,000	
H	Total Estimated Cost without GST					79,52,469	

Parvathi
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I	Provision for GST (18% of H)	%				14,31,444	GST will be reimburse as per actual and as per notified prescribed rate
J	Total Estimated Cost with GST					93,83,914	
				<i>Rs. In Lakhs</i>		93.84	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						


P. D. Dhillon
06/11/2024


O. L. Lohia
06/11/2024

Annexure 6B

Time schedule/ Action Plan for Preliminary Exploration (G-3) for Limestone in Hiwardhara-Ganeshpura Block (2.81 Sq. km) District- Yavatmal, Maharashtra.

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

Review


Dr. D. D. Patil
06/11/2024


Dr. D. D. Patil
06/11/2024

Annexure 7A

Estimate Cost for Reconnaissance Survey for gold and associated minerals in Killarhatti area, Koppal& Raichur, Karnataka
Total Area - 14.00 sqkm; No. of Borehole-4 bhs, 500 m Scout drilling: Completion Time - 10 months, Review: 4 months

Sl. No.	Item of work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -SI No.	Rates per Unit as per SOC (Rs)	Quantum	Total Amount (Rs)	
A	GEOLOGICAL MAPPING (1:12,500) & ASSOCIATED ACTIVITIES						
a	Charge for procurement of Satellite Imagery (CartoDEM, 2.5m posting, DSM, 14km x 14km scene) for Remote sensing, multispectral and DEM data analysis	Lumpsum	1.1	Satellite imagery/ Aerial Photo	1	6,290	As per actual
b	Geologist (HQ) - 1 No	day	1.2	9,000	30	2,70,000	
c	Geologist (Field)	day	1.2	11,000	90	9,90,000	
d	Labor (Field) - 2 No per Geologist	day	5.7	522	180	93,960	Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher
e	Trenching	cubic meter	2.1.1	3,300	100	3,30,000	
f	Sampler - 1 No	day	1.5.2	5,100	40	2,04,000	
g	Labor (Sampling) - 4 Nos	day	5.7	522	160	83,520	Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher

Parvathi
06/11/2024

Parvathi
06/11/2024

					Sub-Total A	19,77,770	
B	GEOPHYSICAL SURVEY(Oursourced)						
a	IP, Resistivity Magnetic survey & S.P. Survey	10 Lkm	3.4b	14,48,693	10	1,44,86,930	Total 100LKM approx.
b	IP (Dipole-Dipole) Survey	10 Lkm	3.4a	69,950	0	-	
c	Geophysicist (Field) - 1 No	day	3.18	11,000	0	-	
d	Charge of Surveyor for Geophysical survey layout work	day	1.6.1a	8,300	0	-	
e	Labor (Field) - 4 No.	day	5.7	522	0	-	Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher
f	Geophysicist (HQ) - 1 No	day	3.18	9,000	0	-	
					Sub-Total B	1,44,86,930	
C	SCOUT DRILLING- in house						
a	Scout Drilling upto 300m (Hard Rock)	m	2.2.1.4a	11,500	500	57,50,000	
b	BH deviation survey by multishot camera	per m	2.2.6	330	0	-	
c	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	4	80,000	as per actual
d	Construction of concrete Pillar (12"x12"x30")	per BH	2.2.7a	2,000	4	8,000	as per actual
e	Transportation of Drill Rig & Truck associated per drill	km	2.2.8	36	2500	90,000	To & Fro from Raighad , Chhattisgarh
f	Accommodation Charges for drilling Camp (upto 1 Rigs)	month	2.2.9	50,000	3.0	1,50,000	


Devi
06/11/2024

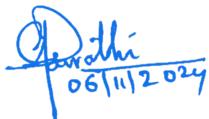

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g	Drilling Camp Setting Cost	No	2.2.9a	2,50,000	1	2,50,000	
h	Drilling Camp Winding up Cost	No	2.2.9b	2,50,000	1	2,50,000	
i	Road Making (Flat Terrain)	km	2.2.10a	22,020	15	3,30,300	As per actual
j	Drill Core Preservation	per m	5.3	1,590	200	3,18,000	
k	Geologist (Field) - 1 No	day	1.2	11,000	0	-	
l	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	4	76,800	
m	Charge of Surveyor for Borehole fixation	day	1.6.1a	8,300	0	-	
n	Labor (Field) - 2 No for Survey work	day	5.7	522	0	-	Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher
o	Sampler - 1 No	day	1.5.2	5,100	47	2,39,700	
p	Labour (Sampling) - 4 Nos	day	5.7	522	80	41,760	Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher
					Sub-Total C	75,84,560	
D	LABORATORY STUDIES						
01	Chemical Analysis (ICP-MS Ni-S Fire Assay)						
a	Bedrock+Stream Samples	No	4.1.5d	11,800	175	20,65,000	25 SSS, 150 BRS including grid pattern sampling
b	Trench Samples	No	4.1.5d	11,800	50	5,90,000	
c	Core Samples	No	4.1.5d	11,800	100	11,80,000	
d	Check samples - [External (10%)]	No	4.1.5d	11,800	33	3,89,400	


P. S. Sankar
06/11/2024

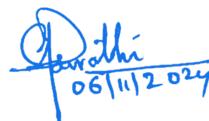

P. S. Sankar
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1A	ICPMS(including 10% check samples)	No.	4.1.14	7,731	55	4,25,205	Sampling to be carried at potential Au
02	XRF Analysis						
a	XRF Analysis for Major Oxides	No	4.1.15a	4,200	20	84,000	
3	Physical & Petrological Studies						
a	Petrographic Studies (Bedrock+Core Samples)						
i	Preparation of thin section	No	4.3.1	2,353	10	23,530	
ii	Study of thin section	No	4.3.4	4,232	10	42,320	
b	Mineragraphic Studies (Bedrock Samples)						
i	Preparation of polish section	No	4.3.2	1,549	10	15,490	
ii	Study of polished section	No	4.3.4	4,232	10	42,320	
c	Digital Photographs	No	4.3.7	280	10	2,800	
d	Specific Gravity Determination	No	4.8.1	1,605	5	8,025	
e	XRD Analysis (Bedrock Samples)	No	4.5.1	4,000	5	20,000	
					Sub-Total D	48,88,090	
	TOTAL COST					2,89,37,350	
E	GEOLOGICAL REPORT PREPARATION						


Dr. S. S. Dhar
06/11/2024


Mr. S. S. Dhar
06/11/2024

a	Geological Report Preparation charge (5 Hard copies with a soft copy)	Lumpsum	5.2	iii		8,68,121	
F	EXPLORATION PROPOSAL PREPARATION						
a	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	Lumpsum	5.1		1	5,00,000	
G	PEER REVIEW					30000	
	Tendering Cost					2,89,739	
	Operational Charges					10,99,347	
PROJECT COST WITHOUT GST						3,17,24,556	
18% GST						57,10,420	
TOTAL PROJECT COST						3,74,34,976	
	Rs. In Lacs					374.35	
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 NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiicate 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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06/11/2024

Annexure 7B

Time Schedule/ Action Plan for Reconnaissance Survey for gold and associated minerals in Killarhatti area, Koppal& Raichur, Karnataka

P. Parthi
06/11/2024

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06/11/2024

Annexure 8A

Estimate Cost for Preliminary Exploration for Aluminous Laterite and Associated Critical Elements in Mundalli Block, Uttara Kannada District, Karnataka

Total Area - 4.754 Sq. Km; Drilling- 18 bhs, 200 m, Pitting: 100 cu m Completion Time - 10 Months, Review: 5 months

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC- Item - SI No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	Geological Mapping + Topographical mapping , Other Geological Work & Surveying						
	Geological mapping, (1:4,000 scale)						
i	a. Charges for Geologist per day (Field) for geological mapping, Pitting/trenching & drilling work	day	1.3	11,000	120	13,20,000	
ii	b. Labours Charges; Base rate	day	5.7	522	240	1,25,280	
	c. Charges for Geologist per day (HQ)	day	1.3	9,000	45	4,05,000	
	d. Charges for one Sampler per day (1 Party)	one sampler per day		5,100	41	2,09,100	
	Labours Charges for sampler work(4 labourers)			522	164	85608	

D. D. Datti
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	Sub Total- A					21,44,988	
C	Survey work						
a	Surveyor for topographic survey/DGPS Survey and for BH fixation & RL determination(18pts+7 boundary)	Per Point of observation	1.6.2	19,200	25	480000	
b	Charges of Surveyor (1 party) for topographic mapping in 1:4000 scale	one surveyor per day	1.6.1a	8,300	30	249000	
c	Labours Charges for survey work(2 labourers)	day	5.7	522	120	62640	
	Sub-Total C					7,91,640	
D	Piiting(44 PIT upto 2 m approx)	CU M	2.1.2	3,800	100	380000	Pits in between boreholes
E	DRILLING (in-house)						
1	Core Drilling (soft rock)	m	2.2.3	7,168	200	14,33,600	MoC rate
2	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH					
3	Transportation of Drill Rig & Truck associated per drill (1 rigs)	Km	2.2.8	36	282	10,152	To & from Mangalore
4	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	1	50,000	
5	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	


P. S. Pathi
06/11/2024

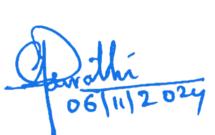

Dr. S. S. Rao
06/11/2024

6	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
7	Drill Core preseration	m	5.3	1,590	180	2,86,200	
	Sub Total E					22,79,952	
G	LABORATORY STUDIES						
1	Chemical Analysis						
v)	BH Core samples						
	Primary + 10 % Check Sample for major oxides and LOI by XRF technique	Nos	4.1.15a	4,200	275	11,55,000	150 core +100 Pit +25 Check
	b.Primary +check samples For REE ,Ga,V and other Trace elements : by ICPMS	Nos	4.1.13	5,380	55	2,95,900	
2	<u>Physical & Petrological Studies</u>						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
iii	Preparation of polished section	Nos	4.3.3	1,185	10	11,850	
ii	petrographic/ore microscopic study	Nos	4.3.4	4,232	20	84,640	
v	Digital Photographs	Nos	4.3.7	280	20	5,600	
	Sub Total G					15,76,520	
H	Total A to H					71,73,100	

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I	Geological Report Preparation	5 Hard copies with a soft copy	5.2	Exploration cost exceeding 50 lakh but less than 150 lakh : A Minimum of ₹2.5 lakh or 5% of the work whichever is more		3,58,655	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					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		1,43,462	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					77,05,217	
M	Provision for GST (18% of J)					13,86,939	GST will be reimburse as per actual and as per notified prescribed rate



Parvathi
06/11/2024



Gururaj
06/11/2024

N	Total Estimated Cost with GST				90,92,156	
					Rs. In Lakhs	90.92
Note:						
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.					
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.					
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.					
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.					



06/11/2024



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Annexure 8B

Time Schedule/ Action plan for Preliminary Exploration for Aluminous Laterite and Associated Critical Elements in Mundalli Block, Uttara Kannada District, Karnataka

S. No.			1	2	3	4	5	Review	6	7	8	9	10
1	Camp Setting	Months											
2	Geological Mapping & Sampling	days											
3	Surface Drilling (1 rigs)	months											
4	Pitting	months											
5	Survey Party days	days											
6	Geologist Man days	days											
7	Sampler Man days	days											
8	Camp Winding	months											
9	Laboratory Studies	Nos.											
10	Report Writing with Peer Review	months											

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06/11/2024

Annexure 9A

Estimate Cost for Reconnaissance Survey (G-4 stage) for Iron Ore in Arewada – Hitapadi Block (27 sq km), District: Gadchiroli, Maharashtra.

Area 27 sq. km, Schedule timeline- 6 months

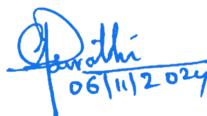
[Review: After 4 Months]

S. No.	Item of Work *	Unit *	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC- Item No. *	Rates as per SoC *	Qty.	Total Amount (Rs)	
					(a)	(b)	
1A	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:12,500 scale) & Trenching , drilling work	Sq. km			27		
i	a. Charges for Geologist per day (Field) for geological mapping	day	1.2b	11000	40	440000	
ii	b. Labours Charges; Base rate	day	5.7	522	80	41760	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	Sub Total- 1A					4,81,760	
1B	Collection of surface samples						
1	BRS, Channel Sampling	Sq. km			27		
3	a. Sampler	per day	1.5.2	5100	8	40,800	
4	c. Labours Charges	day	5.7	522	32	16,704	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
5	Geophysicist party days (HQ)	per day					
	Sub Total- 1B					57,504	

Q. D. Patil
06/11/2024

Q. D. Patil
06/11/2024

	Total (1A to 1B)					5,39,264	
	As this is a programme is a naxalite area					NA	
1C	Charges for Geologist per day (HQ)	day	2a	9000	30	270000	
2	LABORATORY STUDIES						
a	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Au by Fire Assay	Nos	4.1.5a	2380	0	0	
	b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method	Nos				0	
	c. ICPMS for 34 Elements	Nos	4.1.14	7731	10	77,310	
ii)	Surface Check samples (10% External)				0		
	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					
vii)	Major Oxide Analysis						
	a) Estimation of major oxides by XRF/whole rock analysis for primary samples (CaO, MgO, SiO ₂ , Al ₂ O ₃ , LOI, Na ₂ O, Fe ₂ O ₃ , MnO, K ₂ O, TiO ₂ , SO ₃ , P ₂ O ₅ , Cr ₂ O ₃ , ZnO, V ₂ O ₅)	per sample	4.1.15a	4200	50	2,10,000	
	check samples	per sample	4.1.15a	4200	5	21,000	4 check sample of BRS
	PCS for whole rock analysis	per sample	4.1.15a	4200	0	0	
3	Physical & Petrological Studies						
i	Preparation of thin section	Nos	4.3.1	2353	5	11,765	
ii	Petrological report of thin section	Nos	4.3.4	4232	5	21,160	
iii	Preparation of polish section	Nos	4.3.2	1549	5	7,745	
iv	Minerographic report of rock sample	Nos	4.3.4	4232	5	21,160	
v	Digital Photographs	Nos	4.3.7	280	5	1,400	
vi	Whole Rock Analysis	Nos					
vii	Sp. Gravity	Nos					


Dr. P. D. Pathi
06/11/2024


Dr. D. K. Dutt
06/11/2024

viii	XRD Studies	Nos.	4.5.1	4,000	5	20,000	
	Total 2 & 3					3,91,540	
4	Total COST					12,00,804	
5	Geological Report Preparation	5 Hard copies with a soft copy	5.2	i		1,50,000	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
6	Peer review Charges					30,000	
7	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		24,016	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.
8	Total Estimated Cost without GST					14,04,820	
9	Provision for GST (18% of J)					2,52,868	GST will be reimburse as per actual and as per notified prescribed rate
10	Total Estimated Cost with GST					16,57,688	
				Rs. In Lakhs		16.58	
Note:							
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.						
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.						
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.						
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.						


Dr. P. S. Datti
06/11/2024


Dr. S. S. Devi
06/11/2024

Annexure 9B

Time Schedule/ Action plan for Reconnaissance Survey (G-4 stage) for Iron Ore in Arewada – Hitapadi Block (27 sq km),
District: Gadchiroli, Maharashtra.

	Activities	1	2	3	4	REVIEW	5	6
1	Geological mapping							
2	Sampling & Sample preparation							
3	Analytical work							
4	Peer Review							
5	Report Preparation							
6	Submission of Report							



P. D. Patil
06/11/2024



Dr. S. D. Patil
06/11/2024

Annexure 10

Revised Estimated cost for Preliminary Exploration (G3) for manganese ore and graphite in Kanaital blocks, District: Balangir, Odisha.
[Block area- 4.26 sq. km; Nos. of Borehole- 13; Borehole depth range- 50m; Schedule timeline- 11 months]

S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Additional cost		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Amount (Rs)	Qty.	Amount (Rs)	
A	GEOLOGICAL WORK								
1	Mapping (1:2000), Topographical survey, Borehole logging, sampling & Report writing								
i	Charges for one Geologist- Field	day	1.2	11,000	150	16,50,000			
ii	Charges for one Geologist per- HQ	day	1.2	9,000	30	2,70,000			
iii	2 labours/ party (Rs 504/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	522	300	1,56,600			Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Core Sampling -1 Samplers Labour charge not included	day	1.5.2	5,100	76	3,87,600	13	66,300	
v	4 labours/ party (Rs 504/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	522	303	1,58,166	52	27,144	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	Survey (on 1:4000 Scale)								
i	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the	Per Point of observation	1.6.2	19,200	17	3,26,400			13 BHs and 4 boundary coordinates

D. P. Mohanty
06/11/2024

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	boreholes by DGPS and boundary coordinates							
ii	Charges of Surveyor	one surveyor per day	1.6.1a	8,300	40	3,32,000		
iii	Labours Charges for survey work; Base rate - Rs.504	day	5.7	522	160	83,520		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					33,64,286			
B	PITTING AND TRENCHING							
i	Trenching (1m x 2mx 25 m) x 7 trenches	Cu m	2.1.1	3330	300	9,99,000		
Sub Total- B					9,99,000			
C	DRILLING							
i	Drilling upto 300m (Hard Rock) (1 rigs)	m	2.2.1.4a	11,500	855	98,32,500	44	5,06,000
ii	Borehole deviation Survey	m	2.2.6	330	855	2,82,150		
iii	Land / Crop Compansation	per BH	5.6	20,000	13	2,60,000		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	13	26,000		
v	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,050	37,800		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	4	2,00,000		
vii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000		


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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	5	1,10,100			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	375	5,96,250			This amount will be reimbursed after successful delivery of the cores to concerned libraries/authorities
Sub Total- C						1,18,44,800			
D	LABORATORY STUDIES								
1	Chemical Analysis								
i	Primary & Check samples for Manganese								
	a. Primary Samples for 6 radical (Mn, SiO ₂ , P2O ₅ , Fe ₂ O ₃ , MnO ₂ and Insolubles)	Nos	4.1.7a + 7b	2,841	350	9,94,350			Trench-150, BH-200
	b. 10% of primary samples for Co & V	Nos	4.1.7b	670	35	23,450			
	c-External(10%) Check samples from NABL Lab for 6 radical (Mn, SiO ₂ , P2O ₅ , Fe ₂ O ₃ , MnO ₂ and Insolubles)	Nos	4.1.7a + 7b	2,841	35	99,435			
ii	Primary & Check samples for Graphite								
	a. Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for Primary Samples	Nos	4.1.16	3,000	200	6,00,000	235	7,05,000	Trench-50, BH-150
	b. Proximate Analysis for Graphite (Ash, Moisture, V.M. and F.C.) for External (10%) Check Samples NABL Lab	Nos	4.1.16	3,000	20	60,000			
iii	Composite samples for Manganese	Nos	4.1.7a + 7b	2,841					

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iv	Composite samples for Graphite	Nos	4.1.16	3,000				
2	Physical & Petrological Studies							
i	Preparation of thin section	Nos	4.3.1	2,353	5	11,765		
ii	Complete petrographic study report	Nos	4.3.4	4,232	5	21,160		
iii	Preparation of polished section	Nos	4.3.2	1,549	5	7,745		
iv	Complete mineralographic study report	Nos	4.3.4	4,232	5	21,160		
v	Digital Photographs	Nos	4.3.7	280	5	1,400		
vi	Whole Rock Analysis (Major oxide and 8 additional trace elements)	Nos	4.1.15a & b	7,568	5	37,840		
vii	Specific gravity studies	Nos	4.8.1	1,605	5	8,025		
Sub Total- D						18,86,330		
E	Total A to D					1,80,94,416		13,04,444
F	Geological Report Preparation		5.2	For the projects having cost exceeding Rs. 150 lakhs and less than Rs. 300 lakhs - A minimum of Rs. 7.5 lakhs or 3% of the value of work		7,50,000		Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.


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				whichever is more				
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	3,61,888.32			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				1,92,36,304.32			
J	Provision for GST (18% of I)				34,62,534.78		2,34,800	GST will be reimburse as per actual and as per notified prescribed rate
K	Total Estimated Cost with GST				2,26,98,839.10		15,39,243.92	
L	Revised Cost						2,42,38,083.02	
							6.78%	

Note:

- 1 Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
- 2 In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
- 3 If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.
- 4 Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.


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06/11/2024


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06/11/2024