# Ministry of Mines National Mineral Exploration Trust Minutes of the 72<sup>nd</sup>Technical-cum-Cost Committee (TCC-I) meeting held on

#### 23<sup>rd</sup>and 24<sup>th</sup> December, 2024 through video conferencing

The 72<sup>nd</sup>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 23<sup>rd</sup> and 24<sup>th</sup> December' 2024.

Members of TCC-I, NMET and representatives from GSI, DGM, Chhattisgarh, DMG Karnataka, DGM Maharashtra, DGM Tamil Nadu, DMG, Odisha, MECL, Bhushilp Mine and Minerals, Natural Resources Division-Tata Steel Itd, Telangana Mineral Development Corporation Limited Agency, Mining Tech Consultancy Services Ltd, Gemcokati, Ecomen Mining Pvt. Ltd, Geo Technical Mining Solutions, Critical Mineral Trackers, GMMCO Exploration Technology Services Ltd,Kartikay and Mining Services private Limited, Maheshwari Mining Pvt Ltd and PRB Infraprojects Private Ltd 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-I 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 consult available data of GSI and other organizations before formulating any item. He emphasized that the agencies must submit the proposal within the stipulated time and in the proper format.

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

# Agenda 72.1: Technical evaluation of new project proposals

Agenda 72.1.1. Reconnaissance survey (G-4 stage) for limestone in Kodangal Forest Limestone area, Tekulkode section, Kodangal (west) range Kodangal, Mahabubnagar, Vikarabad District, Telangana.

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Agenda 72.1.2. Reconnaissance survey (G-4 stage) for limestone in Kodangal Revenue area in an around Angadiraichur, Gandlapalli, Darmapur and Tekalakode villages, Kodangal, Vikarabad District, Telangana.

[Implementing Agency: Telangana Mineral Development Corporation Limited (TMDCL)]

- a) The areas belong to the Shahabad Formation of the Bhima Basin and is located within SOI toposheet numbers 56G/8 and 56G/12. The limestone and shale sequence of the Bhīma Group in this region exhibits a sickle-shaped outcrop pattern.
- b) The limestone is characterized by green, purple, and cream hues and possesses a thin, cleavable nature. It is fine-grained, massive, slabby, blocky, and thickly bedded, with a conchoidal fracture and a hardness of 3.5 on the Mohs scale. In the

investigated area, the limestone exhibits a gentle dip ranging from 5° to 8° towards the south and caps the purple shale sequence, forming a gently south-sloping flat terrain.

- c) Prospecting and geological mapping were undertaken by GSI in parts of Mahaboobnagar District, Andhra Pradesh, during the 1985–86 field season, with limestone mineralization being reported. Systematic geological mapping was also carried out in parts of Hayathnagar, Chevella, and Tandur Talukas of Hyderabad and Rangareddy Districts, Andhra Pradesh, during the 1986–87 field season.
- d) The committee observed that the proposed blocks are adjacent, with only a small portion covering limestone areas, and raised concerns about their irregular shape.
- e) TMDCL explained that the shape was modified due to the presence of forest and revenue land.

#### **Recommendation of TCC-I:**

The committee recommended TMDCL to merge the two blocks into a single block focusing exclusively on limestone and prepare a G3 stage proposal with few analytical data, and resubmitting it for review.

### Agenda 72.1.3Reconnaissance Survey (G-4 Stage) for Graphite, Dumburuneli Block, Rayagada District, Odisha.

#### [Implementing Agency: MMPL]

- a) The area is part of the Eastern Ghats Mobile Belt (EGMB) and falls within SOI toposheet number 65M/11. The proposed block is fringed by the Darukona Block to the north and the Kanapulisi Block to the south, both of which have already been explored under NMET funding.
- b) Graphite schist appears as thin, discontinuous units within the metapelitic rocks of the Khondalite group and has been documented in several locations. It is mediumto coarse-grained, greyish-white in color, with graphite flakes aligned in parallel, defining the schistosity. Graphite deposition is controlled by both lithology and structure, occurring along contact zones between khondalite and granite gneiss, as well as along foliation planes that show evidence of at least two generations of folding
- c) During recent field visit, graphite-bearing litho-units of variable dimensions were observed near Bhaleri village, with graphite occurring as schist-type deposits. Grab sample analyses by Maheshwari Mining Pvt. Ltd. showed fixed carbon (FC) content ranging from 4.48% to 14.35%.
- d) The committee noted partial overlap of the proposed area with GSI's Cluster 23. After review, the committee instructed MMPL to present the outcomes of the Darukona Block (to the north) and the Kanapulisi Block (to the south).
- e) Accordingly, MMPL presented the detailed outcomes of the ongoing blocks. Upon detailed review of the outcomes from these ongoing blocks, the committee agreed to recommend the proposed block and approved its costing.

#### Recommendation of TCC-I:

The committee recommended the proposal for approval of EC for "Reconnaissance Survey (G4 Stage) for Graphite in and around Dumburuneli area, Rayagada District, Odisha" with an estimated cost of  $\gtrless$  137.70 lakh (including GST) within time schedule of 10 months for carrying out the proposed work and submission of report as per Annexures - 2A & 2B. The item will be reviewed after 05 months.

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# Agenda 72.1.4. Preliminary Exploration (G-3 Stage) for Limestone, Mangrur, Adilabad District, Telangana).

[Implementing Agency: MMPL]

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# Agenda 72.1.5. Preliminary Exploration (G-3 Stage) for Limestone, Ponar, Adilabad District, Telangana.

#### [Implementing Agency: MMPL]

- a) These areas form parts of The Penganga Group of sedimentary rocks and lies within SOI toposheet numbers 56I/14.
- b) The limestones in the Penganga area range from thin to thick-bedded, with colors varying from light grey to dark grey, white to pinkish-white, and buff. They feature calcareous shale partings along the bedding planes. The dominant thinly to thickly bedded limestone type extensively covers the region and is prominently exposed along the Penganga River. At the base, these limestones include an intraformational conglomerate, followed by a succession of light grey and pale pink limestones interbedded with dark grey dolomite.
- c) In the riverbed and along the banks at Mangurda, the beds trend NW-SE and dip at 20°–25° towards the northeast. The Mangurda Limestone likely extends downstream along the Penganga River to the interstate boundary with Maharashtra, which intersects the river midway between Mangurda and Parsola, continuing further east.
- d) DGM Maharastra developed a block in Bahilampur area with avg grade of limestone is CaO: 46.53, MgO: 3.3, SiO2:7.2, Fe2O3: 2.7. 10 samples collected by MMPL during their recent field visit collected 10 samples which yielded 23.15% to 55.43% CaO
- e) During 70th TCC both the items were presented as one G4 proposal and after review the committee suggested to formulate 2 separate G3 items.
- f) The committee noted that comments from DMG, Telangana, were still pending but proceeded to review the item since more than a month had passed.
- g) After review, the committee suggested removing shale from the proposed block, allowing a maximum of 10% inclusion. Concerns were also raised regarding the forest cover in the proposed area.

#### Recommendation of TCC-I:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3 Stage) for Limestone in Mangrur block, Adilabad District, Telangana" with an estimated cost of 69.74 lakh (including GST) within time schedule of 08 months for carrying out the proposed work and submission of report as per Annexures - 3A& 3B. The item will be reviewed after 03 months.

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The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3 Stage) of Limestone in Ponar Block, Adilabad District, Telangana" with an estimated cost of ₹ 104.08 lakh (including GST) within time schedule of 08 months for carrying out the proposed work and submission of report as per Annexures - 4A & 4B. The item will be reviewed after 04 months.

Agenda 72.1.6. Preliminary Exploration (G-3 stage) for limestone, Khatera, Yavatmal District, Maharashtra for.

[Implementing Agency: MMPL]

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Agenda 72.1.7. Preliminary Exploration (G-3 stage) for limestone, Gadghat, Yavatmal District, Maharashtra. [Implementing Agency: MMPL]

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- a) This area forms part of The Penganga Group of sedimentary rocks and lies within SOI toposheet numbers 56I/13.
- b) The Penganga area features thin to thick-bedded limestones in shades of light grey, dark grey, white, pinkish-white, and buff, with calcareous shale partings. These limestones, prominently exposed along the Penganga River, include a basal intraformational conglomerate followed by light grey and pale pink limestones interbedded with dark grey dolomite.
- c) At Mangurda, the beds trend NW-SE with a  $20^{\circ}-25^{\circ}$  dip northeastward, extending downstream to the Maharashtra border. DGM Maharashtra developed a limestone block in Bahilampur with an average grade of CaO: 46.53%, MgO: 3.3%, SiO<sub>2</sub>: 7.2%, and Fe<sub>2</sub>O<sub>3</sub>: 2.7%. MMPL field samples showed CaO content ranging from 25.11% to 51.06%.
- d) After thorough review, the committee recommended to combine the blocks into a single item for G3 stage investigation. If the resource estimation is higher, separate reports will be generated for two sub-blocks. However, if the resource is lower, a single report will be prepared and circulated. Accordingly MMPL was advised to plan for uniform borehole planning for the entire area.

### Recommendation of TCC-I:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3 Stage) of Limestone, Gadeghat -Khatera block, Yavatmal District, Maharashtra" with an estimated cost of  $\gtrless$  231.43 lakh (including GST) within time schedule of 10 months for carrying out the proposed work and submission of report as per Annexures - 5A & 5B. The item will be reviewed after 05 months.

#### Agenda 72.1.8. Reconnaissance Survey (G4 Stage) For REE prospects in Nellikudur Block in parts of Mahabubabad & Warangal Rural Districts, Telangana. [Implementing Agency: CMT]

- a) The proposed item belongs to Peninsular Gneissic Complex II (PGC-II) and falls in SOI toposheet no. 560/10.
- b) In FS 1988-89, GSI identified notable Cerium (over 1000 ppm) and Lanthanum (300–500 ppm) values in toposheets 56O/9 and 56O/13. Geochemical mapping and the presence of Cerium-bearing allanite in younger granites indicates about REE enrichment. Additionally, strategic minerals like Strontium, Gallium, and Zirconium remain unexplored here, presenting future exploration potential.
- c) Three Cerium and Lanthanum clusters were demarcated, with the Nellikudur block showing high concentrations: Cerium (300–2800 ppm) and Lanthanum (150–1215 ppm)
- d) CMT informed the committee that a team has already visited the field, collected samples and submitted and the results were not received at that time. The committee granted in-principle approval with a modified title focusing solely on REE exploration.
- e) During 71st TCC, the committee found that out of the six samples analysed only one sample indicates 1241 ppm of tREE and other samples yielded 233ppm to 739ppmn.
- f) The committee suggested CMT to resubmit the detailed project and come back for review again with ppt by highlighting the zones of interest, potential rock and exploration strategy.
- g) During 72nd TCC, CMT reported to the house that NGCM data from toposheets 56O/9, 10, and 13 indicate a maximum total REE value of 6052 ppm, with Ce values reaching up to 2827 ppm, La up to 1215 ppm, and Zr up to 3044 ppm.



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h) The committee observed that the values were generally not encouraging, except for a few stream sediment samples from the northern part of the proposed area. However, the committee recommended to conduct mapping at 1:12,500 scale and suggested to determine the orientation of soil sampling during the review.

### **Recommendation of TCC-I:**

The committee recommended the proposal for approval of EC for "Reconnaissance survey (G4) for REE and associated minerals in Nellikudur area Mahabubabad and Warrangal districts, Telangana" with an estimated cost of  $\gtrless$  103.15lakh (including GST) within time schedule of 10 months for carrying out the proposed work and submission of report as per Annexures - 6A & 6B. The item will be reviewed after 06 months.

#### Agenda 72.1.9. Preliminary Exploration (G-3) for Bauxite in Kalychochra Block, Rayagada District, Odisha.

#### [Implementing Agency: DMG, Odisha]

- a) The proposed area is part of East Coast Bauxite and falls in SOI toposheet no. 65I/15.
- b) The area features flat-topped denudational plateaus characteristic of lateritic residuum enriched with bauxite of varying thickness and grade. Extensive exploration under the Eastern Ghat Bauxite Project, undertaken by GSI, DoMG, and MECL, has detailed the largest plateaus in the region.
- c) The present block hosts a smaller plateau with a capping area of approximately 2.24 sq. km and well-defined scarp faces with a developed lateritic profile. Analysis of 13 grab samples reveals Al<sub>2</sub>O<sub>3</sub> content ranging from 27.209% to 61.413% and SiO<sub>2</sub> content from 0.667% to 4.061%, indicating significant economic potential.
- d) Moreover, the Baphilimali plateau, located a short distance away, is actively mined by M/s Utkal Alumina, with proven resources of 157.656 million tonnes of metallurgical-grade bauxite. This indicates that the plateau needs to be explored in detail.
- e) The item was approved during 70th TCC meeting and kept pending for want of cost sheet, which was not provided by DMG, Odisha. In response, DMG, Odisha informed that the block was modified and re-presented in the 72nd TCC.
- f) After review, the committee recommended conducting mapping at a 1:4000 scale over a 3.83 sq. km area and advised not to carry out pitting and trenching.

#### Recommendation of TCC-I:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3) for Bauxite in Kalychochra block, Rayagada district, Odisha" with an estimated cost of ₹ 99.56 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per Annexures - 7A & 7B. The item will be reviewed after 05 months.

Agenda 72.1.10. Preliminary Exploration (G-3 Stage) for Bauxite in Nittadgi Block, Honnavar Taluka, Uttar Kannada District, Karnataka.

### [Implementing Agency: PRB Infra Limited]

- a) GSI mapped Kanara District during FS 1968-69.After a 1962-63 survey of Nittadgi Plateau, Honnavar Taluk and identified alumina-rich pockets. Detailed exploration included grid holes, trial pits, boreholes, and 100 tonnes of bauxite extraction. From FS 1964-73, Karnataka's DMG estimated 1.34 million tonnes of aluminous laterite reserves with 40-54% Al<sub>2</sub>O<sub>3</sub>.
- b) The block was recently put up for auction but could not proceed due to missing data.

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- c) DMG and GSI later expanded the block and recommended G3-stage exploration under NMET funding. The block was allocated to PRB Infra projects Pvt. Ltd and 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%).
- d) 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.
- e) The committee recommended to consult all GSI and other available reports, plot relevant data on the map, and present it in the next meeting. Further the committee suggested to exclude the railway tracks and roads when finalizing the block boundaries.
- f) PRB presented the DPR in 71st TCC-I and the committee thoroughly reviewed the proposal and asked PRB to carry out in-filling boreholes among the early drilled boreholes.
- g) PRB stated that the possibility of infilling boreholes is minimal due to the patchy nature of the body, making it challenging to intersect even with additional drilling. As such, a G3 stage investigation is not feasible at this stage.
- h) Finally, during 71st TCC-I meeting the committee recommended conducting detailed mapping of the area before making further decisions and advised PRB to present the proposal in the next TCC-I meeting, suggesting mapping at a 1:4000 scale and initial drilling of 600m. Based on the mapping outcomes, the committee will determine the borehole planning.
- Accordingly, PRB presented the item and after review the committee felt that borehole planning should partially be modified, however, the committee decided that let PRB carry out mapping, sampling and the final borehole planning would be decided during review

# Recommendation of TCC-I:

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3) for Bauxite in Nittadgi Block, Uttara Kannada district, Karnataka" with an estimated cost of ₹ 140.64 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per Annexures - 8A & 8B. The item will be reviewed after 04 & 08 months.

Agenda 72.1.11. General Exploration (G-2) for Tungsten and Associated Minerals in amalgamated Kuhi and gap area between Kuhi and Khobna Blocks, Nagpur District, Maharashtra. .

# [Implementing Agency: MECL]

- a) The block lies at the southern margin of CITZ and the northern margin of the Bastar Craton and falls in part of SOI toposheet no. 550/08
- b) The proposed block is strategically located within two tungsten-rich zones, Kuhi and Khobna, where the Geological Survey of India (GSI) has conducted extensive studies and established significant tungsten resources viz. 2.046 MT X 0.132% WO<sub>3</sub> in Kuhi Sub Block (Zone I), 3.36 MT X 0.304% WO<sub>3</sub> in Khobna Block both explored up to the G2 stage.
- c) MECL conducted further G4 exploration, including mapping, bedrock sampling, channel sampling, and scout drilling in the Kuhi-Khobna-Agargaon Gap Area.

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Utilizing geophysical anomalies identified by GSI beneath soil cover, MECL drilled scout boreholes, intersecting tungsten-mineralized zones with grades of 400 ppm in all boreholes.

- d) DGM, Maharashtra put up the block for auction but due to a lack of participation, the auction was annulled.
- e) Subsequently, a meeting involving GSI, MECL, and SBICAP discussed the status of the 5th tranche of critical and strategic mineral blocks. It was highlighted that the area between Kuhi and Khobna Blocks had been explored at the G4 level and the resource estimation was not done at that stage due to the lower grades but the mineralized zones exhibit promising potential. The promising mineralized zones can be explored further for augmentation of resources and grade at 400ppm cutoff.
- f) Based on this, MECL proposed to take up G3 stage proposal for tungsten (W) in the block during 71<sup>st</sup> TCC-I meeting.
- g) Upon review, the committee advised MECL to amalgamate the all the three blocks, i.e. Kuhi, Khobna and the current Gap area blocks, and plan drilling accordingly under G2 stage so as to augment the resource as well as to have sizeable block.
- h) Accordingly, MECL proposed the G2 stage item in amalgamated Kuhi and gap area between Kuhi and Khobna Blocks in 72<sup>nd</sup> TCC meeting.
- i) The committee again reviewed the item thoroughly and raised the issue over conducting G2 stage program in the gap area where only G4 stage work has been carried out.
- j) Finally the committee advised MECL to carry out the item in two phases: first, G3 stage work in gap area including detailed mapping and drilling. If the results are positive, the amalgamated block can be upgraded. Costing was prepared accordingly for the gap area only

# Recommendation of TCC-I

The committee recommended the proposal for approval of EC for "Preliminary Exploration (G3) for Tungsten & Associated Minerals in Bodkipet block (intervening area between Kuhi and Khobna blocks), District: Nagpur, Maharashtra." with an estimated cost of ₹ 415.32 lakh (including GST) within time schedule of 12 months for carrying out the proposed work and submission of report as per Annexures - 9A &9B. The item will be reviewed after 04 & 08 months.

#### Agenda 72.1.12. Reconnaissance Survey (G-4) for Zr and Base Metals mineralization in Toluvantangal-Odiyandal Block, Kallakurichi District, Tamil Nadu. [Implementing Agency: MECL]

- a) The area forms part of the granulite belts of Peninsular Archaean Complex and falls in SOI toposheet nos. 58I/13 and 58M/01.
- b) The Mamandur deposit, located northwest of this proposed block, was first discovered by GSI in 1956 and it was recommended for detailed work.
- c) The State Geology Branch of the Tamil Nadu Government also carried out geochemical and geophysical survey and drilling under the UN mineral Development Project (Terziev 1971).
- d) Subsequently, GSI identified two ore shoots: a sphalerite-rich polymetallic zone and a chalcopyrite-rich zone. The sphalerite-rich ore body is lens-shaped, with a strike length of 300 m, an average width of 3.15 m, and a depth of 280 m. Reserves are

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estimated at 0.66 million tonnes, containing 5.39% Zn, 1.19% Pb, 0.48% Cu, and approximately 40 g/t Ag. The chalcopyrite ore body extends over a strike length of 180m with a width of about 7 m and depth persistence of 34 m.

- e) NGCM data indicates Zr (up to 725.2 ppm), Pb (up to 16.4 ppm), Zn (up to 54.6 ppm), and Cu (up to 36.60 ppm), suggesting the area's mineralization potential.
- f) Moderately high Bouguer gravity and magnetic anomalies, along with proximity to a NE-SW trending geological contact or fault, further support exploration potential.
- g) Based on these indicators, the area is proposed for zirconium (Zr) and base metal (Pb, Cu, and Zn) mineralization.

#### Recommendation of TCC-I:

The committee noted that the presented copper values are not that promising to formulate a G4 stage investigation. However, it advised that the item could be reconsidered if further supporting evidence is provided.

#### Agenda 72.3 Review of Ongoing Projects/Completed Project & Timeline Extension

# Agenda 72.3.1.Preliminary Exploration (G-3 Level) for Manganese and Graphite in Larambha Block, Balangir District, Odisha. [Implementing Agency: MECL]

- a) MECL informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 12<sup>th</sup> December, 2023 with timeline of 11 months and approved cost was INR 2,23,40,108/-.
- b) The project was reviewed in 64<sup>th</sup> and 70<sup>th</sup> TCC meeting of NMET in April and October 2024. The GR has been completed and comments of the peer reviewer have been incorporated.
- c) The committee was informed that mineralized ore bodies are discontinuous and lensoidal and occur in pocket. General trend of the mineralization is NE-SW at places it is N-S and dipping towards SSE to E with an amount 50° to 80°. Net in-situ Geological Resources (in million tonnes) for Manganese is 0.36 with 16.07Mn %. Net in-situ Geological Resources (in million tonnes) for Graphite is 0.61 with 6.2 FC %.Vanadium has been found invariably associated with graphite and ranges from 183 pmm to 1358ppm. Out of 18 samples, 14 samples have more than 400ppm and 10 samples have more than 500ppm.
- d) MECL informed that the type of deposit is of low grade of nature and block may be auctioned as composite license.
- e) The committee noted the outcome of the project and agreed for GR submission.

#### Recommendation TCC

The TCC recommended submission of GR.

Agenda 72.3.2.Preliminary Exploration (G-3 Stage) Malangtoli Iron Ore (C-sub block), Districts- Sundargarh & Kendujhar, Odisha. [Implementing Agency: MECL]

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- a) MECL informed that the project in Malangtoli "C" sub block at G-3 stage was approved in 08<sup>th</sup> meeting of EC held on 12<sup>th</sup> June 2018 with timeline of 12 months and approved cost was INR 1201.55 Lakhs.
- b) MECL informed that online application seeking forest clearance was applied on 20.09.2019 and FC has not been received till date.
- c) Meanwhile MECL had conducted G3 level of exploration in Malangtoli "D", "E", "G" and "H" sub blocks.
- d) Recently, DMG, Odisha informed that Malangtoli "C" sub block of MECL falls within the restructured Mangaltoli area and allotted to different OMC for G2 level of exploration. Hence, the block was withdrawn from MECL.
- e) MECL informed that no work has been carried out in the "C" sub block and no advance has been received against the block. MECL sought approval of TCC-1 to withdraw the said block from NMET funding.
- f) In view of above, the committee agreed for cancellation of the project.

The TCC recommended cancellation of the project "Preliminary Exploration (G-3 Stage) Malangtoli Iron Ore (C-sub block), Districts- Sundargarh & Kendujhar, Odisha" to EC of NMET.

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

# [Implementing Agency: MECL]

a) The committee was informed that 60th Technical-cum-Cost Committee (TCC) meeting held on 27th & 28th December, 2023, has recommended the procurement proposal of instruments for capacity augmentation to EC. Further, MECL informed that the project was approved in the 33rd EC Meeting held on 23<sup>rd</sup> February, 2024. The OM was issued on 1<sup>st</sup> March, 2024 with timeline of 12 months and approved cost was INR 3244.87 lakh.EC

<b>S.</b>	Name of Equipment	Rate	Unit	Amount		
No.		(approx. in		(in Lakh)		
		Lakh)				
1	Hyper Spectral Core Scanner with LIBS	1868.00	01	1868.00		
2	Hyper Spectral Core Scanner with XRF	1110.00	01	1110.00		
3	Gamma Ray Spectrophotometer	30.00	02	60.00		
4	WD-XRF	206.87	01	206.87		
Total (excluding GST, custom duties etc.)						

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- b) The EC also mentioned that NMET will not bear cost of AMC for more than three years after warranty of one year.
- c) The committee was informed that, global tender of Hyperspectral Core scanner with XRF and Core Scanner with LIBS are active. The GeM tender of Gamma Ray spectrometer and Global tender of WD-XRF has been completed.

			Details of NMET Approved Instruments			Details of Proposed instruments after Tendering					
SI.N o	Equipm et	Qu ant ity	Cost of instru ments	CAM C/ Exte nded Warr anty cost (in cr.)	GST (18%)	Total cost Exclu ding CAM C&GS T (in Lakhs )	Cost of instr umen ts	CAMC/ Extend ed Warran ty cost (in cr.)	GST (18%)	Total cost includ ing CAMC &GST	Addition al Cost (in Lakhs)
1	Gamma ray Spectro meter	2	60 (30 x 2 instrum ents)	-	-	60	53.38	Include d	9.61	67.26	7.26
2	WD-XRF	1	206.87	-	-	206.8 7	205.9 3	41.52		247.45	40.66
						267.8 7		41.52		314.71	46.84

- d) MECL sought approval for revised cost for procurement of 02 nos. of Gamma ray Spectrometer amounting 67.26 Lakhs and WD- XRF costing 247.45 Lakhs. This will include CAMC/ extended warranty +GST (18%).
- e) In view of the above, the committee recommended the revised cost along with recommendation for including CAMC/ extended warranty and GST (18%).

The TCC recommended revised cost for procurement of 02 nos. of Gamma ray Spectrometer amounting 67.26 Lakhs and WD- XRF costing 247.45 Lakhs. This will include CAMC/ extended warranty +GST (18%) to EC of NMET.

72.3.4. Preliminary Exploration (G-3 Stage) for Gold & assoc. minerals in Sirigeri Block (2 sq.km.), Ballari district, Karnataka. [Implementing Agency: DMG Karnataka]

a) DMG Karnataka informed that the project was approved in the 32<sup>nd</sup> EC Meeting held on 06<sup>th</sup> December, 2023. The sanction order was issued on 1ĺ<sup>th</sup> December, 2023 with timeline of 12 months and approved cost was INR HÊ ĺ ÊTÌ Ê HÌ /-.

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- b) DMG Karnataka apprise that progress of the project and informed that the project has been delayed due to standing crops. DMG requested for 6 months time extension for completion of project.
- c) The committee noted the progress and advised to review the project after completion of trenching .Drilling is to be started after next review of the project.

The TCC advised review of the project after trenching in month of February /March 2025. The committee recommended 6 months' time extension upto 14<sup>th</sup> June 2025 for GR submission.

#### 72.3.5. Multi-sensor aero-geophysical surveys over blocks 14 under National Airborne Geophysical Mapping Programme (NAGMP). [Implementing Agency: GSI]

- a) GSI informed that the project "Multi Sensor Aero-geophysical surveys over blocks 13 to 22 under National Airborne Geophysical Mapping Programme (NAGMP) was approved at an estimated cost of ₹243.98 Cr. (including 18% GST) in 21st EC meeting held on 19th July, 2021.
- b) GSI informed that the Memorandum of Agreement (MoA) for NAGMP Block-14 was signed between GSI and consortium of M/s Sander Geophysics India Pvt. Ltd (Lead Partner) and Project Implementing Agency (PIA) M/s Pan India Consultants Pvt. Ltd. on 20.07.2022 with contract validity till 31.01.2024 and subsequently, Addendum-1 to the MoA was signed on 26.12.2023 with the contract timeline validity extended till 28.02.2025.
- c) The committee was apprised that that PIA has informed that due to considerable delays in obtaining DGCA/MHA permissions, the PIA could not start the survey operation during the flying season 2022-23. In the flying season of 2023-24, two aircrafts were mobilized to the survey block during February, 2024 and survey was initiated with one aircraft on 11th March, 2024 from Sawai Madhopur air base, Rajasthan. The 2nd aircraft was moved to OGP Block-6 for the completion of data acquisition. After completion of data acquisition in Block-6, the 2nd Aircraft was mobilized to Sawai Madhopur air base on 12th June, 2024 and continued the survey operation over Block-14 till 30th June, 2024. A total of 72,344 Line Km (30%) was completed till June, 2024 and the survey work was temporarily suspended due to monsoon. The aircraft were relocated to Sri Lanka for maintenance operations.
- d) It was informed that for resuming the surveys in the current flying season 2024-25, the PIA applied to DGCA for reimporting the aircrafts from Sri Lanka.
- e) One Aircraft reached India on 13th November, 2024 at Bengaluru and subsequently the custom clearance was completed from Bengaluru Airport. Due to bad weather and very low visibility at Delhi the aircraft was moved from Bengaluru Airport to Bhopal Airport on 29th November, 2024 for carrying out the DGCA inspection & NSOP endorsement.
- f) Further, around 70% of NAGMP Block-14 is falling under the restricted flying zones controlled by Gwalior & Agra Airforce stations and Army training base at Jhansi. PIA has to take NOCs for the restricted flying zones from Airforce Head Quarter at Delhi. This also requires frequent co-ordination with Air Force stations at Gwalior & Agra and Army base at Jhansi during the survey operation. The current contract

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timeline is dependent on many these unknown factors resulting in delays to cover the entire Block-14.

- g) GSI informed that the mobilization of the 2nd aircraft is getting delayed due to the low visibility and bad weather conditions prevailing currently in North India and is likely to arrive in India only in the last week of December, 2024.
- h) In view of the above, PIA has submitted letter to RSAS, GSI to extend the timeline further by 13 months i.e. from 01.03.2025 to 31.03.2026, to complete the Contract of NAGMP Block-14 and the detailed break up for completion of the project are furnished as below:

Detail of the work	Timelines	Justification
Completion of data acquisition (4 months from the expiry date 28.02.2025)	December, 2024 to June 2025	Approx. 10,000 Line Km in December 2024 with one aircraft and approx. 26,500 line-km per month with two aircrafts for 6 months (Jan to June 2025)
Data compilation, processing and data interpretation and generation of maps, etc. (6 months)	July, 2025 to December, 2025	Database compilation, data processing, TS-QC review, corrections & approval. Data integration with available legacy data, identification of potential mineral zone, map generation, report writing, GSI team discussion, etc. for 6 months.
GSI and TS-QC review (2 months)	January-Feb, 2026	Detailed review by TS-QC as well as GSI involving joint meetings for 2 months.
Final revisions, printing binding and approval (1 months)	March, 2026	Final corrections and submission for 1 month.

g) GSI has requested an extension timeline by 13 months i.e. from 01.03.2025 to 31.03.2026 for completion of the project.

# Recommendation TCC

The TCC recommended timeline extension of 13 months i.e. from 01.03.2025 to 31.03.2026 for Multi-sensor aero-geophysical surveys over block 14 without cost escalation.

72.3.6.Multi-sensor aero-geophysical surveys over blocks 5 under National Airborne Geophysical Mapping Programme (NAGMP). [Implementing Agency: GSI]

a) GSI informed that the Memorandum of Agreement (MoA) for OGP Block-5 was signed between GSI and the consortium of M/s Sander Geophysics Limited (Lead

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Partner) and the Project Implementing Agency (PIA) M/s Pan India Consultants Pvt. Ltd. on 30.06.2023 with contract validity till 31st January, 2026.

- b) The committee was apprised that aero-geophysical surveys over block-5 was sanctioned by NMET in 2018 and thereafter in the 30th EC of NMET held on 6th June 2023, financial sanction of USD 68,35, 603.12 including GST was ratified.
- c) GSI informed that financial sanction was received from NMET on 01.05.2023 with the contract timeline duration of 12 months, which is not sufficient to complete the project. Subsequently, GSI submitted a proposal to NMET for extension of the contract timeline from 30.04.2024 to 31.01.2026 (19 months) for completion of the project. The timeline of the contract was extended by NMET till 28.02.2025 vide NMET OM dated 17.08.2023. GSI once again sent a request letter to NMET on 30.08.2023 for extending the contract timeline of Block-5 till 31.01.2026.
- d) Subsequently, the matter was discussed during the review meeting of ministry, MoM, where it was suggested to re-submit the request for the extension of timeline at end of the existing timeline i.e. 28.02.2025, after some progress is made. At present Milestone-1 has been completed.
- e) Currently, one Aircraft has reached India on 13th November, 2024 at Bengaluru and subsequently the custom clearance was completed from Bengaluru Airport. Due to bad weather and very low visibility at Delhi (where DGCA inspection was scheduled to take place), the aircraft was moved to Bhopal Airport on 29th November, 2024 for carrying out the NSOP endorsement and DGCA clearance. After the improvement in the weather and visibility conditions, the 2nd aircraft will also be mobilized to the Block-5.
- f) In view of the above to complete the Contract of OGP Block-5, the extension of the timeline for 11 months i.e. from 28.02.2025 to 31.01.2026 as per the detailed break up furnished as below, sought:

Detail of	Schedule	Justification
the work	time of	
	commenc	
	ement	
Completio n of data acquisition	January, 2025	6 months for completion of data acquisition.
Data compilatio n, processing and data interpretati on and generation	July, 2025	Database compilation, data processing, TS-QC review, corrections & approval.Data integration with available legacy data, identification of potential mineralzone, map generation, report writing,



of maps, etc.		GSI team discussion, etc.for 4 months.
GSI and TS-QC review	November , 2025	Detailed review by GSI for 2 months.
Final revisions, printing binding and approval	January, 2026	Final corrections and submission for 1 month.

- a) GSI apprised that an internal committee has thoroughly discussed about the projected timeline required to complete the data acquisition, processing, integration, interpretation, submission of all final reports, deliverables and review by GSI. For successful completion of the project with fulfilment of the objective, the committee recommended for extension of the project up to 31.01.2026 i.e. 11 months extension without any cost escalation and imposing any penalty on the PIA.
- b) In view of above, GSI sought approval for extension of project timeline from 01.03.2025 to 31.01.2026 i.e. 11 months with effect from the issue of the Extension order without any financial impact for the successful completion of the aerogeophysical survey project by the PIA of OGP Block-5.

The TCC recommended timeline from 01.03.2025 to 31.01.2026 i.e. 11 months without any financial impact for the successful completion of the aerogeophysical survey project by the PIA of OGP Block-5

#### 72.3.7.Multi-sensor aero-geophysical surveys over blocks 15 under National Airborne Geophysical Mapping Programme (NAGMP). [Implementing Agency: GSI]

- a) GSI 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) The committee was apprised that the Memorandum of Agreement (MoA) for Block-15 between GSI and PIA M/s Xcalibur McPhar Private Limited (formerly known as M/s McPhar International Private Limited) in consortium with M/s Xcalibur Multiphysics Group of companies with Xcalibur Geophysics Spain S.L as a holding company, was signed on 17.02.2023 with contract validity till 28.02.2025.
- c) GSI informed that as per project timeline, first seven (7) months (which includes 4 months of monsoon/non-flying season i.e. June, 2023 to September, 2023) was allocated for obtaining all necessary permissions from DGCA, MHA, etc., and import of aircrafts and mobilization to the survey area for the initiation of the survey. However, due to the delays in obtaining all the necessary permissions the survey was initiated only on 23rd February, 2024 with single aircraft i.e. VH-ZKG till 16th July, 2024. A total of 71,459 Line Km (37%) was completed till July, 2024 and the survey work was temporarily suspended due to monsoon break.



- d) GSI informed that the PIA has not received permission from DGCA for inclusion of two aircrafts i.e. ZS-ULM & ZS-UMB over NAGMP Block-15 into existing survey permit of Block-15 due to administrative issues despite several letters from DG, GSI and DDG & HoD, RSAS to DGCA and MHA. The aircrafts with the installed equipment were lying idle for more than three months. Due to the onset of monsoon in July, 2024, the aircraft were sent out of India by the PIA for some other project.
- e) Further, in the current flying season, due to prevailing monsoon in the survey area, during October, 2024 to December, 2024 and some technical snag of aircrafts the PIA initiated the surveys with only one aircraft on 4<sup>th</sup> December, 2024. NOC application for importing the 2<sup>nd</sup> aircraft i.e. VH-ZKA was submitted to DGCA on 10<sup>th</sup> September, 2024 and is still awaited.
- f) PIA has submitted the letter to RSAS, GSI to extend the timeline by 12 months i.e. from 01.03. 2025 to 28.02.2026 to complete the NAGMP Block-15 targets. The detailed break up for completion of the project are furnished as below:

Detail of the work	Schedule time of commencement	Justification				
Completion of data acquisition	December, 2024	1 month @ approx. 15,000 Line Km. with one aircraft and another 4 months @ approx. 30,000 line-km per month with two aircrafts.				
Data compilation and processing	May, 2025	Database compilation, data processing, TS-QC review, corrections & approval for 4 months.				
Data interpretation and generation of maps, etc.	September, 2025	Data integration with available legacy data, identification of potential mineral zone, map generation, report writing, GSI team discussion, etc. for 3 months.				
GSI and TS-QC review	December, 2025	Detailed review by TS-QC as well as GSI involving joint meetings for 2 months.				
Final revisions, printing binding and approval	February, 2026	Final corrections and submission for 1 month.				

g) GSI informed that an internal committee has thoroughly discussed about the projected timeline required to complete the data acquisition, processing, integration, interpretation, submission of all final reports, deliverables and review by GSI. For successful completion of the project with fulfillment of the objective, the committee recommended for extension of the project up to 28.02.2026 i.e. 12



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months extension without any cost escalation and imposing any penalty on the PIA

h) In view of the above, GSI sought approval of the competent authority for extension of project timeline of from 01.03.2025 to 28.02.2026 i.e. 12 months with effect from the issue of the Extension order without any financial impact for the successful completion of the aero-geophysical survey project by the PIA of NAGMP Block-15.

#### Recommendation TCC

The TCC recommended extension of project timeline of from 01.03.2025 to 28.02.2026 i.e. 12 months without any financial impact for the successful completion of the aero-geophysical survey of NAGMP Block-15.

#### 72.3.8. Preliminary Exploration (G-3 Stage) for Iron and Manganese in Ramghad Block, Bellari District, Karnataka [Implementing Agency: DGM Karnataka (M/s Ecomen Mining Pvt. Ltd.)]

- a) M/s Ecomen Mining Pvt. informed that the project was approved in the 35<sup>th</sup> EC Meeting held on 16<sup>th</sup> May, 2024. The sanction order was issued on 10<sup>th</sup> June, 2024 with timeline of 12months (up to 09.06.2025) and approved cost was INR 1,64,36,127/-.
- b) Ecomen presented the progress of the project and requested for addition 80 m drilling along with 40 nos. of additional core samples.
- c) The committee recommended M/s Ecomen Mining Pvt.Ltd. to maintain 45<sup>o</sup>-50<sup>o</sup> borehole angle and try to intersect both the BIF bands in a profile line through single borehole.
- d) Upon hearing the request from DMG, Karnataka to give the agency of some flexibility in locating the boreholes due to hostile terrain condition, the committee advised the agency to arrange for the field visit of Member Secretary, TCC-I to finalize the borehole location.
- e) The committee agreed for the drilling in the block with additional meterage of 80m and additional sampling of 40 core samples.

# Recommendation TCC

The TCC recommended drilling in the block with additional 80m and additional sampling of40 core samples and also seek guidance of Member Secretary, TCC-I in fixation of borehole points.

#### 72.3.9. Preliminary Exploration (G-3 Stage) for Limestone in Alda Block, Raipur & Balodabazar-Bhatapara Districts, Chhattisgarh [Implementing Agency: DGM, Chhattisgarh]

- a) DGM Chhattisgarh informed that the project was approved in the 33<sup>rd</sup>EC Meeting held on 19th February 2024. The sanction order was issued on 28.02.2024 with timeline of 10 months and approved cost was INR 1,59,77,570/-.
- b) DGM presented the progress of the project and informed that the GR will be submitted by March 2025. DGM requested for 3 months' timeline extension.

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- c) The committee noted the progress and agreed for 3 months' time extension for GR submission.
- d) The committee further advised DGM, Chhatisgarh to recheck the analysis by wet chemical method as the existing analysis show exorbitant values of LOI.

The committee recommended 3 months' time extension upto 27<sup>th</sup> March 2025 for GR submission along with check analysis through chemical method.

#### 72.3.10. Reconnaissance Survey (G4 Stage) of Graphite in Dindo-Belkurta-Basera Block, Balrampur District, Chhattisgarh. [Implementing Agency: MMPL]

- a) MMPL informed that the project was approved in the 31<sup>st</sup> EC Meeting held on 12<sup>th</sup>September, 2023. The sanction order was issued on 5<sup>th</sup> October, 2023 with timeline of 12 months and approved cost was INR 1,04,63,931/-.
- b) MMPL informed that the project has been completed and the Peer Reviewer's comments have been received.MMPL informed that in the 69<sup>th</sup> TCC of NMET TCC had approved time extension upto 31<sup>st</sup> December 2024. Again MMPL requested time extension upto 31<sup>st</sup> January 2025 for modification of GR as per comments of TCC1 and Peer reviewer.
- c) The committee after reviewing the GR informed MMPL to justify the drilling and trenching.
- d) The committee agreed for GR submission by 31<sup>st</sup>January 2025 and asked to submit detailed justification for the delay.

#### .Recommendation TCC

# The TCC recommended time extension of 1 month upto 31<sup>st</sup> January 2025 for submission of GR to EC of NMET.

# **Additional Review**

#### 72.3.12. Multi-sensor aero-geophysical surveys over block 6 under National Airborne Geophysical Mapping Programme (NAGMP). [Implementing Agency: GSI]

- a) GSI informed thatMulti-Sensor Aero-geophysical Surveys over Obvious Geological
- b) Potential areas of India, Blocks-6 and 8 was approved in the 19th EC of NMET held on 26th March, 2021 with total cost of INR 84.79 Crores for both the blocks. The OM F. No.6/2/2015-NMET/291 in this regard was released on dated 31st March, 2021. Out of the INR 84.79 Crores for 2 blocks i.e., Blocks 6 & 8, rupees 39,85,74,529/- was the sanctioned amount for OGP Block-6.
- c) Multi-Sensor Aero-geophysical Surveys over OGP Block 8 has been completed with total expenditure ₹44,72,81, 852.
- d) In case of OGP Block 6, GSI has sent the request letters to Director NMET dated 06.04.2021 & 17.05.2021 to issue revised Office Memorandum in USD for Block-6. Subsequently, GSI received a letter from the Director & HoD, NMET.
- e) In reply, NMET stated that "In case GSI enters into a contract with a foreign agency through a global tender requiring payment in USD and there is variation in cost of the project on the higher side due to variation on exchange rate at the time of

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execution of the project, an appropriate proposal, with justification, can be submitted to NMET then".

- f) Further, on the request of GSI, NMET in the 36th EC meeting held on 29th July 2024, approved additional amount of USD 60,204.8418 (equivalent to INR 50,27,104/-) toward additional work undertaken by PIA.
- g) However, it was informed that due to the variation in USD at the time of approval of the project and the present, the total cost of the project has increased.
- h) The project cost in USD is as follows: -

a. Original cost sanction as per OM dated 31st March, 2024 =USD 5,433,109.3056

b. Additional cost sanction as per OM dated 14th August, 2024=USD 60.204.8418

### Total in USD USD 5,493,314.1474

a) In view of the above, the revised proposal is submitted to NMET for providing approval in USD 5,493,314.1474 for NAGMP Block-6.

#### Recommendation TCC

The TCC recommended to revise the approved cost of Multi-sensor aerogeophysical surveys over Block 6 from INR to USD with the total cost USD 5,493,314.1474/-

# 72.4. Review of procurement proposals

72.4.1. 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 27<sup>th</sup> EC Meeting held on 10<sup>th</sup> January, 2023. The sanction order was issued on 24.03.2023 with timeline of 12 months and approved cost was INR 4,42,61,500/-.
- b) The committee was informed that the review of the procurement was carried out in the 71<sup>st</sup> TCC-1 meeting of NMET held in November 2024.In the 35<sup>th</sup> EC meeting of NMET held on 16<sup>th</sup> May 2024, timeline for the project was extended upto 30<sup>th</sup> September 2024, due to imposing of Model code of Conduct (MCC )during assembly election and thereafter Lok Sabha elections.
- c) DGM, Maharastra informed that procurement process is on the verge of completion and the orders are to be dispatched soon. In view of above DGM Maharashtra sought time extension upto March 2025 for completion of procurement.

#### **Recommendation TCC**

The TCC recommended time extension up to 15<sup>th</sup> March 2025 for completion of the procurement process and submission of reconciled final bills.

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#### 72.5 Project Evaluation for In–Principle Approval

Agenda 72.5.1. Preliminary exploration (G-3 Stage) for Limestone in Mangrur, Adilabad, Telangana. [Implementing Agency: Gemkokati]

#### Recommendation of TCC-I:

The committee did not review the item because the area has already been allotted to MMPL.

#### Agenda 72.5.2.Reconnaissance Survey (G-4 Stage) for Lithium in Kodagu Karnataka. [Implementing Agency: GMMCO]

- a) The proposed area falls in SOI toposheet no. 48P/11
- b) Some of the surface geochemical samples analyzed under the NGCM project have given anomalous Lithium results ranging from 96 ppm to 353 ppm.
- c) The committee noted that the reported values are less than 400ppm. However, GMMCO was advised to visit the area and confirm the presence of Li bearing pegmatite, collect samples and analyse.

#### Recommendation of TCC-I:

The committee advised conducting a field visit to confirm the presence of lithium-bearing pegmatites, collect samples, and perform detailed analysis and come for in-principle approval again

# Agenda 72.5.3. Reconnaissance Survey (G-4 Stage) for Lithium in Mandaya, Karnataka.

#### [Implementing Agency: GMMCO]

- a) The proposed area falls in SOI toposheet no. 57D/10 and 57D/11. The area belongs to Sargur Group of rocks and characterized by Mafic to Ultramafic rocks, which have experienced extensive shearing and potential for Pegmatite intrusions.
- b) According to the existing literature and research papers published, the area is covered by Rare Metal and Lithium bearing pegmatites.
- c) Atomic Minerals Directorate (AMD) has carried out exploration activity for the Raremetal Pegmatite's around the region. Some of their analysis results are showing anomalous Lithium values.
- d) The committee observed that the northwest portion of the proposed area overlaps with Geoexplore's working area, while the southern portion is occupied by a reservoir, and advised that these parts be excluded.
- e) Additionally, the committee noted that GMMCO identified pegmatites using ASTER data analysis and recommended conducting a field survey to verify and confirm the findings.

#### Recommendation of TCC-I:

The committee advised conducting a field visit to confirm the presence of lithium-bearing pegmatites, collect samples, and perform detailed analysis and come for in-principle approval again

Agenda 72.5.4. Reconnaissance Survey (G-4 Stage) for Manganese in Tudi-Vanduva, Andhra Pradesh [Implementing Agency: GMMCO]

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- a) The proposed block lies within the Eastern Ghat Complex, exposes Charnockite and Khondalite group rocks favorable for Manganese deposits.
- b) Nearby, Manganese mines like Garbham, Chipurupalle, and Garividi, along with similar mineralized zones, are mapped in the 50K Geology.
- c) A study by Singh, V.K., and Sahoo, R.K. reports Manganese mineralization in Rayavalasa and Tudi villages, Andhra Pradesh, specifically noting Manganese ores in the Tudi area.
- d) The committee observed that approximately 50% of the proposed area overlaps with GSI's ongoing item

#### **Recommendation of TCC-I:**

The committee did not approve the item because approximately 50% of the proposed area overlaps with GSI's ongoing project.

#### Agenda 72.5.5. Reconnaissance Survey (G-4 Stage) for Lithium in Amreshwara, Karnataka

#### [Implementing Agency: GMMCO]

- a) The area falls in toposheet no 56D/11 and 56D/12
- b) Literature reveals the presence of Lithium-bearing pegmatites near Amareshwar.
- c) These pegmatites occur as thin, tabular to lens-shaped discordant intrusions within Precambrian banded amphibolites over a narrow zone of 0.25 × 2.5 km, peripheral to granitic intrusions. Mineralogical studies report an average spodumene content of 26% (Li<sub>2</sub>O: 6.95%, Fe<sub>2</sub>O<sub>3</sub>: 1.14%).
- d) The committee observed that the proposed area fully overlaps with GSI's ongoing item

#### Recommendation of TCC-I:

The committee did not approve the item because the proposed area overlaps with GSI's ongoing project.

# Agenda 72.5.6. Reconnaissance Survey (G-4 stage) for Bauxite in Irlavada, Andhra Pradesh.

#### [Implementing Agency: GMMCO]

- a) The area falls in toposheet no 65G/13
- b) The proposed block lies near the Katamrajkonda block which is a potential pocket of bauxite in the area.
- c) The Katamrajkonda bauxite deposit spans 1.8 sq. km, with estimated reserves of 42.6 million tonnes averaging 48.33%  $AI_2O_3$  and 2.2%  $SiO_2$ . Block-1 contains 46.76%  $AI_2O_3$ , and Block-2 has 49.90%  $AI_2O_3$ , with deposit widths ranging from 8 to 14.62 meters. The bauxite capping forms a continuous 14.62-meter-thick blanket with minimal khondalite partings.
- d) GSI recommended detailed drilling and pitting to evaluate the quality and thickness of the Katamrajkonda bauxite cappings, given their extensive area, uniformity, and significant thickness, along with nearby smaller cappings.
- e) The committee noted that GSI has already worked in the area and estimated resources.

#### **Recommendation of TCC-I:**

The committee did not approve the item as the area has already been explored by GSI under G3 stage.

# Agenda 72.5.7. Reconnaissance Survey (G-4 Stage) for Limestone in Poosaripatti, Tamil Nadu.

[Implementing Agency: Geotechnical and Mining Solution]

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- a) The area falls in toposheet no 58G/3
- b) The committee noted that GSI has already worked in the area and carved out LSM out of it. However, the committee advised to identify suitable band, collect sample and submit a proposal for G3 Stage item if data supports.
- c) DGM, Tamil Nadu told that they will submit their comments shortly.

### Recommendation of TCC-I:

# The committee recommended Geotechnical and Mining Solution to come for in-principle approval again

# Agenda 72.5.8. Reconnaissance Survey (G-4 Stage) for Limestone in Usilampatti Utthapanicknoor area, Tamilnadu

### [Implementing Agency: Geotechnical and Mining Solution]

- a) The area falls in toposheet no 58F/16
- b) The committee reviewed the item and noted that the depth persistence of limestone in the area extends up to 2-3 meters, with three existing mines and four leases in the region.

### Recommendation of TCC-I:

The committee did not approve the item for feasible for G4 stage investigation.

# Agenda 72.5.9. Reconnaissance Survey (G-4 stage) for Magnesite in Pudupalayam, Muthanur area, Tamil Nadu.

### [Implementing Agency: Geotechnical and Mining Solution]

- a) The area falls in toposheet no 57L/15
- b) GSI has conducted exploration for magnesite during FS:1966-67 in the area and reported some resource too.
- c) Moreover the proposed area is overlapping with GSI's work carried out in FS:2017-18 and 1994-95

# Recommendation of TCC-I:

The committee did not approve the item due to overlapping issue.

# Agenda 72.5.10. Reconnaissance Survey (G-4 Stage) for Titanium , Vanadium and Lithium in Machalipattanum, Andhra Pradesh.

# [Implementing Agency: Critical Mineral Trackers]

- a) The area is a part of Machilipatnam (Bandar) Tidal Flat, Krishna Delta and falls in toposheet no 65H/4.
- b) Mapping of coastal Quaternaries by GSI (1984–1995) reported 3.1% TiO2 in tidal flats, primarily from ilmenite (FeO.TiO2).
- c) Titanium, vanadium, and lithium, identified as critical elements, are globally extracted from brines, tidal clays, and salt lakes.
- d) This prompted their inclusion in our study of the Machilipatnam tidal flat. Chemical analysis of tidal clays revealed titanium (up to 1.6%), vanadium (291 ppm), and lithium (31.23 ppm).
- e) The item was proposed in 71st TCC-I meeting and after review, the committee felt that CMT presented the item but could not show substantial evidences for mineralization proposed to explore.
- f) AMD informed that, as per the Atomic Minerals Concession Rules (AMCR), 2016, all cases of Beach Sand Minerals (BSM) are considered above threshold if

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monazite is present in any proportion within Total Heavy Minerals (THM). Therefore, any exploration of BSM in coastal areas must include analysis for all seven BSM mineral classes, including monazite.

- g) Finally the committee CMT to collect sample and analyze for monazite, based on the analytical outcome, the committee will decide further course of action.
- h) Accordingly, CMT analysed samples for monazite and reported absence of monazite.
- i) CMT expressed that they are going to deal with clay only but the committee raised the concern over the fact that there is no flowchart for extraction of Ti, V from clay.
- j) The committee suggested the item should go to PRISM and in reply CMT informed that they already proposed the item to PRISM but they advised to present the item to TCC

#### Recommendation of TCC-I:

The item is not approved and advised CMT to prepare project in format prescribed by PRISM.

# 72.5.11: Reconnaissance survey (G-4 Stage) for Titanium and associated minerals in Dahegaon, Maharashtra

#### [Implementing Agency: Indian Mine Planner]

- a) The proposed G4 stage exploration targeting titanium falls in SOI toposheet no. 64C/07 around the villages of Dahegaon, Manegaon, and, Gondiya district, Maharashtra.
- b) The titanium is primarily associated with gabbroic basic rocks in massive banded form. Samples collected by MSMC from the southern part of the area show an average TiO<sub>2</sub> content of 12.47%.
- c) DMG, Maharastra informed the house they suspect the proposed area overlaps with already existing lease area and regarding this DMG, Maharastra will submit their comments soon

#### Recommendation of TCC-I

The committee decided to take a call on the item only after obtaining the comments from DGM, Maharastra.

#### 72.5.12: Preliminary exploration (G-3 Stage) for Iron Ore in Bhanu area, Chhattisgarh. [Implementing Agency: Kartikay Exploration and Mining Services Private Limited]

- a) The area falls in part of SOI toposheet no. 64H/3
- b) GSI has conducted reconnaissance survey in the area during 2006-07 and has reported the presence of magnetite-specularite band and BMQ bands in this area.
- c) Based on this, Kartikay has proposed the item
- d) The committee reviewed the proposal thoroughly and agreed for DPR in forthcoming TCC. However, the committee advised the agency to exclude the northwestern part of the proposed area due to the presence of a State Highway.

#### Recommendation of TCC-I

The committee advised Kartikay Exploration and Mining Services Private Limited to prepare and submit the DPR.

72.5.13: Reconnaissance survey (G-4 Stage) for REE in Mulanur area, Tamil Nadu. [Implementing Agency: Maheshwari Mining Pvt Ltd.]

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- a) The proposed block lies east of the Rudrawathi Block (Toposheet 58F/09), explored by MECL at the G4 stage for REEs under NMET fund.
- b) MECL collected 25 bedrock samples from mapped pegmatites, showing ΣREE concentrations of 81.20–2851.30 ppm (avg. 908 ppm), ΣLREE of 22.00–2769.18 ppm (avg. 830 ppm), and ΣHREE of 9.2–426.2 ppm (avg. 78.1 ppm).
- c) Additionally, 200 pit samples from weathered regolith horizons show ΣREE of 95.20–4182.47 ppm (avg. 526.28 ppm), ΣLREE of 84.04–4086.91 ppm (avg. 489.17 ppm), and ΣHREE of 4.7–61.96 ppm (avg. 17.77 ppm).
- d) The committee observed that MMPL neither provided any data specific to the proposed area, nor they consulted NGCM and NGPM data for the area proposed.

#### **Recommendation of TCC-I**

The committee recommended compiling all relevant data pertaining to the proposed area for further review and reconsideration for in-principle approval.

#### 72.5.14: Reconnaissance Survey (G-4 Stage) for Critical Minerals associated With Aluminium Laterites near Nandrukh-Salel, Maharashtra. [Implementing Agency: Kartikay Exploration and Mining Services Private Limited]

- a) The area falls in part of SOI toposheet no. 47H/12
- b) GSI initially reported a lateritic cover in the area, with NGCM data from 2001-03 supporting the presence of critical minerals.
- c) Reconnaissance in toposheet 48H/12 for Au, PGE, Ni, and Cr also indicated positive trends for the area's potential. NGCM data shows Al<sub>2</sub>O<sub>3</sub> values ranging from 21% to 22%. Based on these findings, the item was proposed.
- d) The committee found that comments from state DGM of Maharastra have not been received. In response DGM, Maharastra informed that they will send their comments shortly.

#### **Recommendation of TCC-I**

The committee decided to take a call on the item only after obtaining the comments from DGM, Maharashtra.

#### 72.5.15: Reconnaissance Survey (G-4 Stage) for iron Ore in Nawagarh-Nelsod-Antagarh Area Taluka-, District - Uttar Bastar Kanker, Chhattisgarh. [Implementing Agency: PRB Infraprojects Pvt.Ltd.]

The item was not reviewed as it was decided to directly present the DPR. It will be reviewed in the next meeting.

#### **Recommendation of TCC-I**

The committee decided to review the item in the next meeting.

### 72.5.16: Preliminary Exploration (G-3 Stage) of Copper, Rangmangli, Nagpur District, Maharashtra.

#### [Implementing Agency: Bhushilp Mines and Minerals Pvt. Ltd]

- a) The area falls in part of SOI toposheet no. 55P/05.
- b) The committee was informed by the DGM, Maharashtra, that the area proposed by Bhushilp overlaps with an area that has already been identified and selected for a composite license.

#### Recommendation of TCC-I

The committee did not approve the item in its current form. However, Bhushilp has the option to revise their proposal, addressing the identified issues, and resubmit it with comprehensive justifications.

# 72.5.17: Reconnaissance survey (G-4 Stage) for base metal – gold and associated minerals in Rajnanadgaon district, Chhattisgarh. [Implementing Agency: Maheshwari Mining Pvt Ltd.]

- a) The proposed area falls in parts of Survey of India toposheets 64D/10,64 D/13 and 64D/14.
- b) In 1996-97, GSI identified gold prospects in the Dangarh-Chauki area, Rajnandgaon District, with 97 of 220 samples yielding 1–25 gold grains per 5 kg of soil. The area is witnessed with four to five N-S trending shear zones with auriferous tuffite and gabbro, supported by geochemical analysis. Three low-grade auriferous zones were delineated.
- c) Further sampling by GSI and Mira Exploration Pvt. Ltd. revealed anomalous values of Au, Ag, Cu, Pb, As, Ni, and Pt/Pd. The Mira Jobtola project reported multielement anomalies, with Cu exceeding 2000 ppb in MMI analysis, indicating potential for polymetallic and precious metal mineralization.
- d) DGM, Chhattisgarh reported that the proposed area overlaps with an exploration proposal by the CMDC-HCL joint venture, which is already submitted to NMET and pending approval.

### Recommendation of TCC-I

The committee decided to place both MMPL and CMDC-HCL proposals on hold until clarification comes from NMET.

#### 72.5.18: Preliminary Exploration (G-3 Stage) for Gold in Dublabeda-Bhaleidihi block, Mayurbhanj District, Odisha.

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

- a) The proposed block belongs to Gorumahisani Schist Belt and falls in Survey of India (SOI) Toposheet No. 73J/3. The item has already obtained in principle approval.
- b) The block is located at the contact zone of the Singhbhum granitic complex and greenstone rocks, hosting abundant quartz veins, small bands of sulfatic chert, and known gold mineralization in Kudarkocha, along with potential occurrences in Jashipur, Suraigora, Idlekocha, and Sapaghara.
- c) The proposed block lies just south of the Jashipur (N) block, where GSI's detailed exploration reported gold concentrations of up to 42.3 g/t in borehole samples. BRS samples from the region also indicate significant gold values of up to 800 ppb, mainly in talc-serpentine chlorite schist with carbonate, quartz veins, and occasional sulfides.
- d) A recent field visit by TATA confirmed the presence of similar host lithology in the proposed block, along with shear planes and extensive NE-SW trending silicification, aligning with the southern extension of the Kudarkocha gold mine. Based on these findings, a G3 stage gold exploration program over a 3.88 sq. km area is proposed.
- e) The item was initially presented in the 70th TCC meeting, where the committee recommended that the Natural Resource Division, Tata Steel, modify the block boundary to include the auriferous chert and resubmit the item with all relevant

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data. Following this, Tata Steel held a meeting with the Odisha office and shifted the block boundary eastward.

- f) The revised DPR, presented at the 71st TCC-I Meeting, was advised for further review of literature by GSI, MECL, and DMG, sample collection, and analysis to strengthen the proposal.
- g) After carrying out four-day field survey in December 2024, the proposal has been resubmitted for the 72nd TCC-I Meeting for in-principle approval.

#### **Recommendation of TCC-I**

The committee did not approve the item considering the values presented by TATA dose not suffice for conceiving a G3 item at this stage.

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# List of participants attended 72nd meeting of Technical-cum-cost Committee (TCC-I) of NMET held on 23<sup>rd</sup> and 24<sup>th</sup> December, 2024 through video conferencing mode

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	Annexure 2A								
Es	Estimated cost for Reconnaissance Survey (G4 Stage) for Graphite in and around Dumburuneli area, Rayagada District, Odisha								
	Total area: 72.14 sq km, Period of Completion: 10 months BH: 5 nos Meterage: 500m , review: after 5 months								
			MMPL						
			Rates as	s per NMET	Estim	ated Cost of the			
			SoC	2020-21	Р	roposal			
S. No.	Item of Work *	Unit *	SoC-	Rates as per SoC *	Qty. (b)	Total Amount (Rs)	Remarks		
			Item No.	(a)		(a*b)			
Α	Geological Mapping Other Geological Work & Surveying								
	Geological mapping, (1:12500 scale) & Trenching , drilling work								
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2. b	11,000	120	1320000			
ii	b. Labours Charges; Base rate (for 2 labours per Geologist	day	5.7	526	240	126240	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.		
	c. Charges for Geologist per day (HQ)	day	1.2. a	9,000	45	405000			
	d. Geophysical Survey (S.P. Survey)	per L Km	3.3a	29,600	5	148000			

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	Su	1999240					
В	Survey work						
а	DGPS Survey for BH fixation & RL determination	Per Point of observation of observation	1.6.2	19,200	5	96000	Bore hole: 5
b	Charges of one qualified surveyor with Total Station for carrying out topographical survey in different RF and surface contouring at different interval, fixation of borehole and determination of co- ordinates & Reduced Level (RL) of the boreholes with total station etc.		1.6.1a	8,300	0	0	
с	Labours Charges for survey work;	day	5.7	526	0	0	
	Sı	b-Total B				96,000	
С	Trenching/Pitting						
	a) Trenching	per cu.m	2.1.1	3,300	100	330000	
	b) Pitting	per cu.m	2.1.2	3,800	50	190000	
	Sı	ub Total C				520000	
D	DRILLING (In -house)						
1	Drilling in hard rock	m	2.2.1.4a	11,500	500	5750000	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	5	100000	As per actuals
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	5	10000	
5	Transportation of Drill Rig & Truck	Km	2.2.8	36	1,708	61488	Raniganj to Rayagada to and

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	associated per drill (1 rig)						fro
6	Monthly Accomodation Charges for drilling Camp (up to Rigs)	month	2.2.9	50,000	2	100000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	250000	1	250000	
8	Drilling Camp Winding up Cost	Nos	2.2.9a	250000	1	250000	
9	Road Making (Rugged Terrain)	Km	2.2.10a	22,020	5	110100	As per actuals if or when required
10	Drill Core Preservation	per m	5.3	1,590	200	318000	
11a	Charges for one Sampler per day	one sampler per day	1.5.2	5,100	37	188700	
11b	Labours (4 Nos)	day	5.7	526	148	77848	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	Sub Total D					7216136	
Е	LABORATORY STUDIES						
1	Chemical Analysis						
i)	(a) Proximate analysis for graphite (BRS: 50; PT: 100; BH Core: 100)	per sample	4.1.16	3000	250	750000	
	(b) Proximate analysis for graphite 10% external check	per sample	4.1.16	3000	25	75000	
ii)	(b) Analysis for associated trace element (Vanadium)	per sample				0	

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Obtoilzous

	(c) Analysis for associated REE+ Vanadium (ICPMS 14 elements)	per sample	4.1.13	5380	20	107600	
iii)	(d) Petrochemical studies (PCS)	per sample	4.1.15a	4200	10	42000	
	Physical & Petrological Studies					0	
	Preparation of thin section	Nos	4.3.1	2,353	10	23530	
iv)	Study of thin section	Nos	4.3.4	4,232	10	42320	
	Digital Photographs	Nos	4.3.7	280	10	2800	
vi)	Bulk density analysis	Nos	4.8.1	1,605	2	3210	
	SEM Studies	per hour					
2	EPMA studies	per hour	4.4.1	8,540	0	0	
i	Total E					1046460	
ii	Total A to E				1,08,77,83 6	3	
iii	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		543892	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
iv	Peer review Charges		As per EC decision	30,000	1	30,000	
v	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		217557	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
) tara 06	thi 101/2025		33				Qui

Objoilzors

						meeting while clearing the proposal.
vii	Total Estima	ated Cost withou	ut GST		1,16,69,28	
	Provisior	ı for GST (18% o	of J)		2100471	GST will be reimburse as per actual and as per notified prescribed rate
viii	Total Estir	Total Estimated Cost with GST				
				Rs. In Lakhs	137.7	
Note :						
1	Strict adherence to the Ministry of Fin	ance's and GFR	guidelines	is mandatory. Every	y transaction m	nust adhere to GFR rule 21.
2	In case of delay/non- performance, th per prevailing govt. of India rules/guid	e appropriate ac lelines on procu	ction will be rement.	e taken by competer	nt authority ag	ainst delinquent agency as
3	If any part of the project is outsource NMET SoC. In case of execusion component/project is required.	d, the amount w of the project	vill be reimb by NEA or	ursed as per the Pa its own, a Certif	ragraph 3 of N iate regarding	MET SoC and Item no. 6 of non outsourcing of any
4	Necessary efforts should be made to	minimize any ad	lverse impa	ct on the environme	ent during explo	oration activities.
5	Any item of work not mentioned abov	e shall be added	as per So	× -		

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														Anı	nexur	e 2B
Time	Schedule/ Action Plan for Reconr	naissance Su	irvey ( Dis	G4 S strict,	tage) , Odi	) for ( sha	Graphi	ite in a	and ar	ound l	Dumb	urune	eli aro	ea, Ra	ayaga	da
S. No.	Particulars	Months	1	2	3	4		5	6	7	8		9	10	11	12
1	Camp Setting	Months														
2	Geologist Party days (1 Party)	days														
3	Geophysist Party days															
4	Survey Party days (1 Party)	days					_					_				
6	Drilling (2 rig)	m					view					view				
7	Sampling days for Trench & Core Sampling (1 Party)	days					Rev					Rev				
8	Camp winding	Months														
9	Laboratory Studies	days														
10	Geologist days, HQ	days														
11	Report Writing with Peer Review	days														

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							Annexure 3A
	Estimated cost for Preliminary Explo	ration (G3 Sta	age) for Lin	nestone in N	langrur	<sup>r</sup> block, Adil	abad District, Telangana
	Total area: 2.51 sq km, Peri	od of Comple	etion: 8 mo	onths BH: 4r	10s 200	m , review:	after 3 months
			MMPL		1		
			Rates as per NMET			nated Cost of the	
			SoC 2	2020-21	Pr	oposal	
S. No.	Item of Work *	Unit *	SoC-	Rates as per SoC *	Qty.	Total Amount (Rs)	Remarks
			Item No.	(a)	(D)	(a*b)	
Α	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:4,000 scale), contouring & Trenching , drilling work						
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2. b	11,000	90	990000	1:4,000 scale mapping of 2.51 sq km, BRS sampling and Drilling 4 Boreholes
ii	b. Labours Charges; Base rate (for 2 labours per Geologist	day	5.7	526	180	94680	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	c. Charges for Geologist per day (HQ)	day	1.2. a	9,000	30	270000	
	Sub	1354680					
В	Survey work						
а	DGPS Survey for BH fixation & RL determination	Per Point of observation of	1.6.2	19,200	8	153600	Bore hole: 4 Cardinal points 4

Oblottors

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b	Charges of one qualified surveyor with Total Station for carrying out topographical survey in different RF and surface contouring at different interval, fixation of borehole and determination of co- ordinates & Reduced Level (RL) of the boreholes with total station etc.		1.6.1a	8,300	30	249000	For Topographical survey
С	Labours Charges for survey work;	day	5.7	522	120	63120	4 labours per day
	Sub-Total B					4,65,720	
С	Trenching/Pitting						
	a) Trenchs	per cu.m	2.1.2	3,300	0	0	
	Sub Total C					0	
D	DRILLING (after review)- In -house						
1	Drilling up to (Soft Rock) 800x800 grid	m	2.2.1.4a	7,168	200	1433600	Depth : 50m
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	4	80000	As per actual
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	4	8000	
5	Transportation of Drill Rig & Truck associated per drill (1 rig)	Km	2.2.8	36	2,614	94104	Raniganj to Adilabad to and fro (1307 km one way)
6	Monthly Accomodation Charges for drilling Camp (up to Rigs)	month	2.2.9	50,000	1	50000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	250000	1	250000	
8	Drilling Camp Winding up Cost	Nos	2.2.9a	250000	1	250000	
9	Road Making (Flat Terrain)	Km	2.2.10a	22,020	2	44040	As per actuals if or when required
10	Drill Core Preservation	per m	5.3	1,590	150	238500	
11a	Charges for one Sampler per day	one sampler per day	1.5.2	5,100	28	142800	

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11b	Labours (4 Nos)	day	5.7	526	112	58912	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	Sub Total D					2649956	
E	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Analysis of major oxides by XRF	Nos	4.1.15a	4,200	50	210000	
ii)	Surface Check samples (10% External)					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	5	21000	
iii)	Trench & Check Samples from Trench					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	0	0	
	Trench samples					0	
iv)	Trench Check samples (10% External)					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	0	0	
V)	BH Core samples						
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	150	630000	
vi)	BH Core samples (10%External)						
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	15	63000	
2	Physical & Petrological Studies					0	

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i	Preparation of thin section	Nos	4.3.1	2,353	10	23530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42320	
iii	Preparation of polish section	Nos	4.3.2	1549	5	7745	
iv	study of polished section	Nos	4.3.4	4,232	5	21160	
V	Digital Photographs	Nos	4.3.7	280	10	2800	
vii	Bulk density analysis	Nos	4.8.1	1,605	2	3210	
	SEM Studies	per hour					
viii	EPMA studies	per hour	4.4.1	8,540	0	0	
	Τα	otal E		·		1024765	
F	Tota	al A to E				54,95,121	
G	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		274756	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
н	Peer review Charges		As per EC decision	30,000	1	30,000	
I	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		109902	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.
J	Total Estimated	Cost withou	Cost without GST				
к	Provision for	1063760	GST will be reimburse as per actual and as per notified prescribed rate				
L	Total Estimate		6973540				
				Rs. In La	akhs	69.74	
Note:							

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1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of 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.
5	Any item of work not mentioned above shall be added as per SoC.

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								Anr	nexure 3B
Time Schedule/ Action Plan for Preli	iminary Ex	(ploration (	(G3 Stage	) for Limest	tone in Ma	ngrur bloc	k, Adilabad	I District, T	elangana
					Months				
Item of work	1	2	3		4	5	7	8	9
Camp Setup									
Large Scale Mapping (1:4000									
Bed Rock Sampling									
Chemical analysis of surface samples				Ν					
systematic drilling at 800x800 Grid									
Core sampling and its preparation				_ ¥					
Chemical analysis of Core Samples									
Processing of Analytical data									
Preparation of geologcial report									

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							Annexure 4A
	Estimate cost for Preliminary Explo	ration (G3 S	tage) of Lin	nestone in P	onar B	lock, Adilaba	nd District, Telangana
	Total area: 5.04 sq km, Peric	od of Comple	etion: 8 mor	nths BH: 8 n	os 400	m , review: a	fter 4 months
			MMPL				
			Rates as	per NMET	Esti	mated Cost of the	
			SoC	2020-21	F	Proposal	
S. No.	Item of Work *	Unit *	SoC-	Rates as	Qty.	Total Amount (Rs)	Remarks
			Item No.	(a)	(b)	(a*b)	
			*				
Α	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:4,000 scale), Contouring , topographical survey & drilling work						
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2. b	11,000	100	1100000	1:4,000 scale mapping of 5.04 sq km, BRS sampling and drilling of 12 Nos. Boreholes
ii	b. Labours Charges; Base rate (for 2 labours per Geologist	day	5.7	526	240	126240	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	c. Charges for Geologist per day (HQ)	day	1.2. a	9,000	40	360000	
	Sub Total- A			•		1586240	1

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В	Survey work						
а	DGPS Survey for BH fixation & RL determination	Per Point of observation of observation	1.6.2	19,200	14	268800	Bore hole: 8 Cardinal points 6
b	Charges of one qualified surveyor with Total Station for carrying out topographical survey in different RF and surface contouring at different interval, fixation of borehole and determination of co- ordinates & Reduced Level (RL) of the boreholes with total station etc.		1.6.1a	8,300	30	249000	For Topographical survey
С	Labours Charges for survey work;	day	5.7	522	180	94680	4 labours per day
	Sub-Total B					6,12,480	
С	Trenching/Pitting						
	a) Trenchs	per cu.m	2.1.2	3,300	0	0	
	Sub Total C					0	
D	DRILLING (after review)- In -house						
1	Drilling up to (Soft Rock) 800x800 grid	m	2.2.1.4a	7,168	400	2867200	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	8	160000	As per actuals
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	8	16000	
5	Transportation of Drill Rig & Truck associated per drill (1 rig)	Km	2.2.8	36	0	0	Mobilization charges given to adjacent block in Mangrur Block
6	Monthly Accomodation Charges for drilling Camp (up to Rigs)	month	2.2.9	50,000	1	50000	



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7	Drilling Camp Setting Cost	Nos	2.2.9a	250000	0	0	
8	Drilling Camp Winding up Cost	Nos	2.2.9a	250000	0	0	Camp set up in Mangrur Block
9	Road Making (Flat Terrain)	Km	2.2.10a	22,020	1	22020	As per actuals
10	Drill Core Preservation	per m	5.3	1,590	350	556500	
11a	Charges for one Sampler per day	one sampler per day	1.5.2	5,100	55	280500	
11b	Labours (4 Nos)	day	5.7	526	220	115720	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	Sub Total D					4067940	
E	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Analysis of major oxides by XRF	Nos	4.1.15a	4,200	50	210000	
ii)	Surface Check samples (10% External)					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	5	21000	
iii)	Trench & Check Samples from Trench					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	0	0	
	Trench samples					0	

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iv)	Trench Check samples (10% External)					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	0	0	
V)	BH Core samples						
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	350	1470000	
vi)	BH Core samples (10%External)						
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	35	147000	
2	Physical & Petrological Studies					0	
i	Preparation of thin section	Nos	4.3.1	2,353	10	23530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42320	
iii	Preparation of polish section	Nos	4.3.2	1549	5	7745	
iv	study of polished section	Nos	4.3.4	4,232	5	21160	
v	Digital Photographs	Nos	4.3.7	280	10	2800	
vii	Bulk density analysis	Nos	4.8.1	1,605	2	3210	
	SEM Studies	per hour					
viii	EPMA studies	per hour	4.4.1	8,540	0	0	
	Tot	al E	•		·	1948765	
F	Total		82,15,425				
G	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		410771	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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н	Peer review Charges		As per EC decision	30,000	1	30,000			
I	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		164309	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.		
J	Total Estimated	Cost without	GST			88,20,505			
к	Provision for	1587691	GST will be reimburse as per actual and as per notified prescribed rate						
L	Total Estimated	d Cost with G	ST			1,04,08,196			
				Rs. In La	khs	104.08			
Note:									
1	Strict adherence to the Ministry of Finance	ce's and GFR	guidelines	is mandato	ory. Ev	ery transactio	n must adhere to GFR rule 21.		
2	In case of delay/non- performance, the a prevailing govt. of India rules/guidelines	ppropriate ac on procurem	tion will be ent.	e taken by co	ompete	ent authority a	against delinquent agency as per		
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.								
5	Any item of work not mentioned above s	hall be added	l as per So	С.					

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								Ann	exure 4B			
Time Schedule/ Action Plan for Pre	eliminary l	Exploratio	n (G3 Stag	ge) of Lim	estone in Ponar	<sup>·</sup> Block, Ad	ilabad Dis	strict, Tela	ngana			
	Months											
Item of work	1	2	3	4		5	6	7	8			
Camp Setup												
Large Scale Mapping (1:4000												
Bed Rock Sampling												
Chemical analysis of surface												
samples					5							
systematic drilling at 800x800 Grid					RE							
Core sampling and its preparation												
Chemical analysis of Core Samples												
Processing of Analytical data												
Preparation of geologcial report												

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							Annexure 5A
E	Estimate cost for Preliminary Exploration (G	3 Stage) of	Limesto	ne, Gadegl	hat -Kha	atera block, Yavat	mal District, Maharashtra
	Total area: 11.96 sq km, Period of Con	npletion: 1	0 months	s BH: 19 no	s Meter	rage: 950 m , revie	ew: after 5 months
			MMP	L			
			Rates as per NMET		Estimated Cost of the		
			SoC 2	2020-21		Proposal	
S. No.	Item of Work *	Unit *	SoC-	Rates as	Qtv.	Total Amount (Rs) (a*b)	Remarks
			Item No.	per SoC *	(b)		
			*	(4)			
Α	Geological Mapping Other Geological Work & Surveying						
	Geological mapping, (1:4,000 scale) & drilling work						
i	a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work	day	1.2. b	11,000	180	1980000	1:4,000 scale mapping of 11.96 sq km and drilling of 19 Nos. Boreholes
ii	b. Labours Charges; Base rate (for 2 labours per Geologist	day	5.7	526	360	189360	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	c. Charges for Geologist per day (HQ)	day	1.2. a	9,000	45	405000	
	Sub Total- A					2574360	
В	Survey work						
а	DGPS Survey for BH fixation & RL determination	Per Point of observatio n of	1.6.2	19,200	25	480000	Bore hole: 19 Cardinal points 6

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		observatio n					
b	Charges of one qualified surveyor with Total Station for carrying out topographical survey in different RF and surface contouring at different interval, fixation of borehole and determination of co- ordinates & Reduced Level (RL) of the boreholes with total station etc.		1.6.1a	8,300	45	373500	For Topographical survey
С	Labours Charges for survey work;	day	5.7	526	180	94680	4 labours per day
	Sub-Total B					9,48,180	
С	Trenching/Pitting						
	a) Trenchs	per cu.m	2.1.2	3,300	0	0	
	Sub Total C					0	
D	DRILLING (after review)- In -house						
1	Drilling up to (Soft Rock) 800x800 grid	m	2.2.1.4a	7,168	950	6809600	
3	Land / Crop Compansation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	19	380000	As per actuals
4	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	19	38000	
5	Transportation of Drill Rig & Truck associated per drill (2 rig)	Km	2.2.8	36	5,228	188208	Raniganj to Adilabad (1307 KM one way) to and fro
6	Monthly Accomodation Charges for drilling Camp (up to Rigs)	month	2.2.9	50,000	2	100000	
7	Drilling Camp Setting Cost	Nos	2.2.9a	250000	2	500000	
8	Drilling Camp Winding up Cost	Nos	2.2.9a	250000	2	500000	
9	Road Making (Flat Terrain)	Km	2.2.10a	22,020	5	110100	As per actuals if or when required
10	Drill Core Preservation	per m	5.3	1,590	800	1272000	

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11a	Charges for one Sampler per day	one sampler per day	1.5.2	5,100	121	617100	
11b	Labours (4 Nos)	day	5.7	526	484	254584	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
	Sub Total D					10769592	
Е	LABORATORY STUDIES						
1	Chemical Analysis						
i)	Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)						
	a. Analysis of major oxides by XRF	Nos	4.1.15a	4,200	80	336000	
ii)	Surface Check samples (10% External)					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	8	33600	
iii)	Trench & Check Samples from Trench					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	0	0	
	Trench samples					0	
iv)	Trench Check samples (10% External)					0	
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	0	0	
v)	BH Core samples						
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	800	3360000	
vi)	BH Core samples (10%External)						
	a. Analysis of major oxides samples by XRF	Nos	4.1.15a	4,200	80	336000	

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2	Physical & Petrological Studies					0	
i	Preparation of thin section	Nos	4.3.1	2,353	10	23530	
ii	Study of thin section	Nos	4.3.4	4,232	10	42320	
iii	Preparation of polish section	Nos	4.3.2	1549	5	7745	
iv	study of polished section	Nos	4.3.4	4,232	5	21160	
v	Digital Photographs	Nos	4.3.7	280	10	2800	
vii	Bulk density analysis	Nos	4.8.1	1,605	5	8025	
	SEM Studies	per hour					
viii	EPMA studies	per hour	4.4.1	8,540	0	0	
	Total	E				4171180	
F	Total A t	to E				1,84,63,312	
G	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		750000	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
н	Peer review Charges		As per EC decision	30,000		30,000	
I	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		369266	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.
J	Total Estimated Cost without GST	-				1,96,12,578	
к	Provision for GST (18% of J)	3530264	GST will be reimburse as per actual and as per notified				

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				prescribed rate					
L	Total Estimated Cost with GST		2,31,42,842						
	R	231.43							
Note:				-					
1	Strict adherence to the Ministry of Finance's and GFR guidelines is m	nandatory. E	very 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 reimburs NMET SoC. In case of execusion of the project by NEA on it component/project is required.	ed as per th s own, a (	e Paragraph 3 o Certifiate regard	f NMET SoC and Item no. 6 of ing non outsourcing of any					
4	Necessary efforts should be made to minimize any adverse impact or	n the enviro	nment during exp	ploration activities.					
5	Any item of work not mentioned above shall be added as per SoC.								

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										Ann	exure 5B		
Time Schedule/ Action Plan for Preli	minary	Explora	ation (G M	i3 Stag aharas	e) of Lin shtra	nestone, Ga	deghat -	Khatera bl	ock, Yav	atmal Di	istrict,		
	Months												
Item of work	1	2	3	4	5		6	7	8	9	10		
Camp Setup													
Large Scale Mapping (1:4000													
Bed Rock Sampling													
Chemical analysis of surface samples						iew							
systematic drilling at 800x800 Grid						sev.							
Core sampling and its preparation						<u> </u>							
Chemical analysis of Core Samples													
Processing of Analytical data													
Preparation of geologcial report													

Preparation or 52-

	Name of the Exploi	ration Agency -	- Critical Minera	I Trackers, H	yderabad					
			CMT	<b></b>		<u> </u>				
	Total Area -154 sq.km ; No of Borehol	es- 4 nos, 200n	n ; Completion	Time -10 moi	nths , Review	after 6 month				
Rates as per NMET SoC Proposal Reference Proposal										
S.NO	Item of Work	Unit	SoC-Item-SI No.	Rates as per SOC	Quantum	Total Amount(Rs)				
Α	Geological Work									
1	Large Scale Geological Mapping(1:12500) & sampling – Geologist field-days	154 sq.km	1.2	11000	150	16,50,000				
2	Geologists(HQ)days, pre & post field interpretation 15 +30 days	One Geologist Per Day	1.2	9000	45	4,05,000				
3	Pitting-150 Nos each one size 1*1*1m(1 Cu.m each)	Per Cu.m	2.1.2	3800	150	5,70,000				
4	Trenching	Per Cu.m	2.1.1	3300	0	0				
5	sampler	60 days	1.5.2	5100	45	2,29,500				
6	Labour attached to sampler	labours	1.5.2	526	240	1,26,240				
7	Labour for Geologist	Labour/Field workers	5.7	526	300	1,57,800				
	Sub-Total -A					31,38,540				
В	Survey Work:									
1	DGPS Survey	Per Point	1.6.2	19,200	4	76,800				

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	Sub-total-B					76,800	
С	Core Drilling (After Review of mapping and analytical results)- Outsourced						
1	core drilling :4 points( each 50m deep)	Per meter	2.2.1.4	11,500	200	23,00,000	Hard rock
2	Construction of BH pillar(12"*12"*30")	Per pillar	2.2.7a	2000	0	0	4 pillars
3	**Mob & demob drilling machine & iner BH shifting	Per shifting	lumpsum		0	0	
4	Compensation for 4 Bhs		5.6	20,000	0	0	
5	Drill core preservation in GI boxes	Per meter	5.3	1590	100	1,59,000	
	Sub total-C					24,59,000	
D	Laboratory Studies						
1	Trench Samples (20*5=100 nos):ICP-MS	Per Sample (17 elements)	4.1.13	5380	0	0	
	BRS and Stream Sediment samples:ICP- MS(including 10% Check samples )	Per Sample (17 elements)	4.1.13	5380	138	7,42,440	100 BRS + 25 SSS(+10% check)
2	Pitting Sample:-ICP-MS(including 10% Check samples )	Per Sample(17 elements)	4.1.13	5380	165	8,87,700	150+15
3	Core drilling Samples-ICP-MS+ 10 % check	Per sample(14 Elements	4.1.13	5380	55	2,95,900	
4	Preparation of standard thin section	Per sample	4.3.1	2353	30	70590	30 sections
5	Complete petrographic/oremicroscopic/mineragraphic studies	Per sample	4.3.4	4232	30	126960	30 sections

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6	EPMA	Hours	4.4.1	8540	10	85,400	10 samples
	Sub-total-D					22,08,990	
	TOTAL (A+B+C+D)					78,83,330	
F	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	-	5.1	2% of the project cost subject to a maximum of 5 lakhs	1	1,57,667	2% of the Project cost.
	Geological Report			5% of the			5% of the
G	(5 Hard copies with a soft copy)		5.2	Project cost		3,94,167	Project Cost.
	Additional Copy			1000	0	0	
	Peer Review Charges			30000		30000	
	Tender Processing cost					46000	
	Operational Charges					2,30,000	
	Projec	t Cost without	GST			8,77,41,163	
		18% GST				1573409	
	То	tal Project Cos	st			10314572	
			103.15				
1	Strict adherence to the Ministry of Finance 21.	:e's and GFR ູ	juidelines is ma	Indatory. Ever	y transactio	n must adhere	to GFR rule
2	In case of delay/non- performance, the ap per prevailing govt. of India rules/guideline	propriate actio es on procurer	n will be taken l nent.	by competent	authority ag	ainst delinque	nt agency as

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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.
5	Any item of work not mentioned above shall be added as per SoC.

			_									Α	nnexure 6B
Tim	e Schedule/ Action Plan for R	econna	aissan	ce sur and W	vey (G larrang	4) for R gal distri	EE al icts, 1	nd asso Felanga	ciated mi na	nerals in N	ellikudur	r area Mah	abubabad
Sno	Activity	Unit	Months										
			1	2	3	4		5	6	7	8	9	10
1	Geologist Party Days HQ	Day s											
2	Geologist Party Days Field	Day s											
3	Sampling (Pitting)	Day s											
4	Laboratory Studies	Day s					view						
5	Core Drilling	Day s					Re						
6	Survey Party Days	Day s											
8	Post Field Interpretation	Day s											
9	Report Compilation & Submission	Day s											

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	Annexure 7A												
	Estimate Cost for Preliminary Exploration (G3) for Bauxite in Kalychochra block, Rayagada district , Odisha Area: 3.83 sq.km, Drilling 300m, 10 bh, Timeline: 12 months, Review: after 5 months												
	DMG, Odisha												
c			Rates as	per NMET SoC 2020-21	Esti ti	mated Cost of ne Proposal							
3. No.	Item of Work *	Unit *	SoC- Item No. *	Rates as per SoC * (a)	Qty. (b)	Total Amount (Rs) (a*b)	Remarks						
Α	Geological Mapping Other Geological Work & Surveying												
i	Geological Mapping, Core Logging (Charges for one Geologist per day at field Rs.11000/-) 1:4000 Scale, Contouring	day	1.2	11,000	150	16,50,000							
ii	Labours Charges; Base rate	day	5.7	526	300	1,57,800	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.						
iii	Charges for one Geologist per day Rs. 9000/	day	1.2	9,000	45	4,05,000							
iv	Sampler	day	1.5.2	5,100	52	2,65,200							
v	Labours (4 Nos) Base Rate	day	5.7	526	208	1,09,408	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.						

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		25,87,408					
В	Survey work -Outsourced						
а	Survey Party days (One Surveyor Charges)	day	1.6.1a	8,300	45	373500	For Topographical Survey
b	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS	Per Point of observation	1.6.2	19,200	15	288000	
С	Labours (4 Nos) Base Rate	day	5.7	526	0	0	
	Sub-Total B					6,61,500	
С	Mineral Investigation						
	Drilling (Outsourcing)						
1	Drilling (10 BHs X 30m depth each)- soft rock	m	2.2.1.4a	7,168	300	21,50,400	
3	Approach Road making for Rugged-Hilly terrain	per km	2.2.10b	32,200	0	-	
	Drill core Preservation	Per m	5.3	1590	300	4,77,000	
С	Sub Total-C				·	26,27,400	
Geo	physical Survey	NA					
D	Laboratory Studies						
	Chemical Analysis (in-house)						
1	Primary samples for 5 radicals (Al2O3, SiO2, Fe2O3, TiO2 and LOI)-220 core sample + 100 Grab/scrap sample by XRF	4.1.15a	Per Sample	4,200	320	13,44,000	
2	Check samples Internal for 5 radicals (Al2O3, SiO2, Fe2O3, TiO2 and LOI)-10% of 220 core sample	4.1.15a	Per Sample	4,200	0	-	

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3	Check samples External for 5 radicals (Al2O3, SiO2, Fe2O3, TiO2 and LOI)-10% Check	4.1.15a	Per Sample	4,200	32	1,34,400	
4	Composite samples for 5 radicals (Al2O3, SiO2, Fe2O3, TiO2 and LOI)	4.1.15a	Per Sample	4,200	10	42,000	
5	Determination of Trihydrate Alumina (THA-140° C)	4.1.17b	Per Sample	2,000	10	20,000	
6	Determination of Monohydrate Alumina (MHA-240° C)	4.1.17c	Per Sample	3,500	10	35,000	
7	ICPMS (34 elements Analysis including HREE & LREE) MECL/NGRI Lab.	4.1.14	Per Sample	7,731	10	77,310	
8	Estimation of major oxides by XRF technique and 5 elements (Ti, S, P,Ga & Fe) {4200+(421*5)}	4.1.15a	Per Sample	6305	20	1,26,100	
		Sub total-D		-	-	17,78,810	
Е	Petrological Studies (in-house)						
1	Preparation of standard thin section	4.3.1	Per Sample	2,353	10	23,530	
2	Preparation of polished section	4.3.2	Per Sample	1,549	10	15,490	
3	Complete petrographic/ore microscopic study of rock sample	4.3.4	Per Sample	4,232	10	42,320	
4	Complete Mineragraphic study report of rock sample	4.3.4	Per Sample	4,232	10	42,320	
5	Digital Photographs	4.3.7	Per Sample	280	10	2,800	
			1,26,460				
F	Mineral Physics Studies (in-house)						

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1	X-RD Studies	4.5.1	Per Sample	4,000	10	40,000	
		Sub Total-F				40,000	
G	Geotechnical Laboratory (in-house)						
1	Determination of in-situ bulk density	4.1	Per Sample	3,540	10	35,400	
		35,400					
Н							
Ι	Total Outsourcing Cost					28,11,900	
J	Geological Report Preparation	5 Hard copies with a soft copy	5.2	ii		3,92,849	
к	Peer review Charges As per EC decision						
L	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	2% of the Cost or Rs. 5.0 Lakhs whichever is less		1,57,140	
М	Tender Processing Cost			2.3		56,238	
Ν	Operational Cost		6	i		2,81,190	
0	Total Estin	GST will be reimburse as per actual and as per notified prescribed rate					
Р	Provisio						
Q	Total Est	99,55,620.42					
R				Rs. In Lakhs	6	99.56	

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1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of 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.
5	Any item of work not mentioned above shall be added as per SoC.

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													Ann	exure 7E
Tim	e Schedule/ Action plan for Pre	liminar	y Explo	oration	(G3) fo	r Bauxit	e in	Kalych	nochra k	olock, R	ayagad	la distri	ct , Odis	sha
	Wark Correspondents		Work Period in month											
51. NO.		1	2	3	4	5		6	7	8	9	10	11	12
1	Camp Setting													
2	Detailed Geological Mapping on scale 1:4000													
3	Topographic Survey, DGPS of Corner point						3							
4	Drilling (10 BHs)						švie							
6	Core Logging & sampling						Re							
7	Sample processing & analysis													
8	Camp winding													
9	Analysis, compilation of data & preparation of Geological report with peer review													

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						Ann	nexure 8A
	Estimated cost for Preliminary Exploration (G3) for B	auxite in N	ittadgi Blo	ck, Uttara k	Kannada d	listrict, Karnataka	1
Are	a 4.40 Sq km, BH: 400x400 Grid, 30 BH, 600m drilling Aver	age depth-2	20m, Time	line: 12 mo	nths , Rev	view : after 4 & 8 n	nonths
	PRB	Infra Ltd.					
Item	Item of Work	ltem	SOR S Ra	or No & tes	Esti	mated Cost	
Sr No.	Item	Unit	Sr. No.	Rates	Qty.	Amount (Rs)	
Α	Survey work						
1	DGPS Survey for BH fixation & RL determination(30 Borehole + 14 Boundary Points)	Per Point	1.6.2	19,200	44	844800	
2	Charges of Surveyor 2mtr contour (1 party) for Geological mapping survey & Block boundary demarcation	one surveyor per day	1.6.1a	8,300	40	332000	
3	4 Labours for survey work;	day	5.7	526	160	84160	
	Sub Total- A					1260960	
В	GEOLOGICAL WORK (Mapping1:4000 scale)						
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	45	4,05,000	
iii	2 labours/ party	day	5.7	522	300	1,56,600	
iv	Sampling -1 Samplers	day	1.5.2	5,100	34	1,73,400	
v	Sampling 4 labours/ party	day	5.7	526	136	71,536	
	Sub Total- B					24,57,736	
С	PITTING						
i	Pitting	Cu m	2.1.1	3330	30	99,900	
	Sub Total- C					99,900	
D	LABORATORY STUDIES						
1	Chemical Analysis						

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Check samples for for 5 radicals i.e. Al2O3, SiO2, O3,TiO2 and LOI Combined determination of Tri hydrate Alumina A- 40°c) and Mono hydrate Alumina (MHA-240°c) & ctive Silica (per Bh 2 Sampel)	Nos	4.1.15a	4,200	24		
Combined determination of Tri hydrate Alumina A- 40°c) and Mono hydrate Alumina (MHA-240°c) & ctive Silica (per Bh 2 Sampel)				27	1,00,800	
Combined determination of Tri hydrate Alumina A- 40°c) and Mono hydrate Alumina (MHA-240°c) & ctive Silica (per Bh 2 Sampel)		1			0	
		4.1.17a	6700	5	33,500	
sical,Petrological, Mineralogical Studies					0	
studies for identification of minerals (Random)		4.5.1	4000	10	40,000	
OES/ICP-MS (sequential technique) sample kage for 34 elements i.e.16 other elements viz. a,In,Be,Ge,Mo,Cr,Ta,W,Ba,Co,Rb,Sr,Zr,Nb,Ni,: 18 viz. La Pr,Nd,Sm,Eu,Gd,Tb,Dy,Ho,Er,Tm,Yb,Lu,Sc,Y:02 nides viz.U,Th (Per BH 2 Sample)		4.1.14	7731	10	77,310	
paration of thin section	Nos	4.3.1	2,353	10	23,530	
ly of thin section	Nos	4.3.4	4,232	10	42,320	
al Photographs	Nos	4.3.7	280	20	5,600	
technical Laboratory						
tu Bulk Density		4.10	3540	3	10,620	
Total- D	1				13,41,680	
					0	
teo tu	chnical Laboratory Bulk Density otal- D ING- in house	chnical Laboratory Bulk Density Dtal- D ING- in house	Integraphs     Integraphs     Integraphs       chnical Laboratory     Integraphs     Integraphs       Bulk Density     4.10       otal- D       ING- in house	Integraphs     Integraphs     Integraphs     Integraphs       chnical Laboratory     Image: Christian Contemporation of the second contemporatio	Integraphs     Integraphs     Integraphs     Integraphs     Integraphs       chnical Laboratory     Image: Constraint of the second sec	Integraphs       Integraphs       Integraphs       200       200       0,000         chnical Laboratory       Integraphs       Integraphs       Integraphs       10,620         Bulk Density       Integraphs       Integraphs       Integraphs       10,620         btal- D       Integraphs       Integraphs       Integraphs       0         ING- in house       Integraphs       Integraphs       Integraphs       0

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i	Core Drilling (30BH) 600Mtr.Grid 400x400m 20mtr Avg.Depth.+(2BH up to 30Mt)	m	2.2.1.1b	7,168	600	43,00,800	
ii	Land / Crop Compansation (As Per Requirment)	per BH	5.6	20,000	0	0	
iii	Construction of concrete Pillar (30 Borehole + 14 Boundary Points)	per BH	2.2.7a	2,000	44	88,000	
iv	Transportation of Drill Rig & associated (1Rig 2200km.Up & Dn)	Km	2.2.8	36	2,400	86,400	1 drill from Nagpur to Nittadgi - to & fro
v	Monthly Accomodation Charges for drilling Camp (up to 2 Rigs)	month	2.2.9	50,000	3	1,50,000	
vi	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
vii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
viii	Approach Road Making (Hilly Terrain)	Km	2.2.10a	22,020	5	1,10,100	As per actual
ix	Core Preservation (Aprox 70% of Drill core 420 & 2BH Complet 60Mtr.)	m	5.3	1,590	450	7,15,500	
	Sub Total- E					59,50,800	
	Total A to F		-	_		1,11,11,076	
G	Geological Report Preparation (A minimum of Rs.2. 5 lakhs or 5% of the value of work whichever is more)	1No.	5.2	ii		5,55,554	
н	Peer review Charges	1No.		30000		30,000	
Ι	Preparation of Exploration Proposal (2% of the Cost or Rs. 5 Lakhs whichever is lower)	1No.	5.1			2,22,222	
J	Total Estimated Cost without	GST				1,19,18,851	
K	Provision for GST (18% of	I)				2145393	
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L	Total Estimated Cost with GST	1,40,64, 245							
М	Rs. In lakhs 140.64								
Note:									
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every t 21.	ransaction must adhere to	GFR rule						
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.								
5	Any item of work not mentioned above shall be added as per SoC.								

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														Annex	xure 8B
	Time Schedule/ Action plar	n for Pre	liminary	Explor	ation (C	G3) for	Bauxite	e in Nitta	adgi Bloo	ck, Uttar	a Kan	nada di	strict, K	arnataka	a
	Item of Work	1	2	3	4		5	6	7	8		9	10	11	12
1	Pre field preparation														
2	DetailedMapping(1:4,000),Bed rock Sampling and Chemical analysis														
3.	Drilling & Chemical analysis					ew					ew				
4.	Review					Revi					Revi				
5	Interpretation of analytical data, finalization of lithologs, plates														
6.	Review & report preparation/ Peer review														
7.	Final submission														

							Annexure 9A
Esti [Bloc	mated cost for Preliminary Explor K k area- 5.39 sq. km; BH No. 11 nos	ation (G3) fo Juhi and Kho S., BH Depth	or Tungsten obna blocks - 110m , To	& Associat s), District: Notal drilling months]	ed Mine Vagpur, 1210m ,	rals in Bodki Maharashtra Schedule tir	pet block ( intervening area between neline- 12 months, Review : after 4 & 8
				MECL			
			Rates as SoC 2	per NMET 2020-21	Estim	ated Cost of	
S. No.	Item of Work	Unit	SoC-	Rates as	tne	Proposal	Remarks
			Item -SI No.	per SoC	Qty.	Amount (Rs)	
Α	GEOLOGICAL WORK						`
1	Borehole logging, sampling & Report writing Mapping scale: 1:2000 with contouring						
i	Charges for one Geologist- Field	day	1.2	11,000	180	19,80,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	45	4,05,000	
iii	2 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	526	360	189,360	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Samplers charges Labour charge not included	day	1.5.2	5,100	100	5,10,000	
v	4 labours/ party for smpling (As per rates of Central Labour Commissioner)	day	5.7	526	400	210,400	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	Survey (on 1:2000 Scale)						

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i	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS and boundary coordinates	Per Point of observation	1.6.2	19,200	17	3,26,400	11 BHs and 6 boundary coordinates
ii	Charges of Surveyor	one surveyor per day	1.6.1a	8,300	30	2,49,000	
iii	Labours Charges for survey work;	day	5.7	522	120	62,640	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 T	otal- A	39,33,280	
В	PITTING AND TRENCHING						
i	Trenching (1m x 1.5mx 10 m) x 10 trenches	Cu m	2.1.1	3330	200	6,66,000	
				Sub T	otal- B	6,66,000	
В	GEOPHYSICAL SURVEY						
i	IP, SP, Resistivity and Magnetic Survey	8-10 line km	3.4b	1448693	6	86,92,158	60 L.Km
	Geophysicist man days (HQ) for interpretation and report	days	3.18	9,000	20	1,80,000	
				Sub T	otal- C	88,72,158	
с	DRILLING-after review of Mapping, surface sample & trench sample results & Geophysical results						
i	Drilling upto 300m (Hard Rock),	m	2.2.1.4a				

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	2 Rigs			11,500	1,210	1,39,15,000	
ii	Borehole deviation Survey	m	2.2.6	330	1,210	3,99,300	
iii	Borehole Geophysical logging	5 Bhs of 350m each	3.12	622.25	1,210	7,52,923	Base rate Rs. 10, 88, 941/1750=622.25m
iv	Land / Crop Compansation	per BH	5.6	20,000	11	2,20,000	Amount will be reimburse as per actuals or max. Rs. 20000 per BH with certification from local authorities
v	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	11	22,000	
vi	Transportation of Drill Rig & Truck associated per drill (2 rig)	Km	2.2.8	36	300	10,800	Certification in this regard is required to be provided. to & fro = 150 km
vii	Monthly Accomodation Charges for drilling Camp	month	2.2.9	50,000	3	1,50,000	
viii	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	2	5,00,000	
ix	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	2	5,00,000	
x	Approach Road Making (Flat Terrain)	Km	2.2.10a	22,020	6	1,32,120	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed later
xi	Core Preservation: One complete borehole plus mineralised cores of all the remaining Bhs	m	5.3	1,590	450	7,15,500	
				Sub T	otal- B	1,73,17,643	
D	LABORATORY STUDIES						
1	Chemical Analysis						
i	Primary Samples						



	Bedrock/Channel Analysis for 7 Radicals W, Cr, Mo, Ta, Nb, V and Sn by AAS method	Nos	4.1.7a & 7b	3,176	40	1,27,040	
	Trench sample Analysis for 7 Radicals W, Cr, Mo, Ta, Nb, V and Sn by AAS method	Nos	4.1.7a & 7b	3,176	150	4,76,400	
	Borehole core Analysis for 7 Radicals W, Cr, Mo, Ta, Nb, V and Sn by AAS method	Nos	4.1.7a & 7b	3,176	440	13,97,440	Sn & Ta to be analysed by ICPMS
	Gold by Fire Assay	Nos	4.1.5a	2,380	88	2,09,440	
ii	Check samples						
	External Check for Bedrock/channel sample (10 % of Primary samples) for 7 Radicals W, Cr, Mo, Ta, Nb, V, and Sn by AAS method	Nos	4.1.7a & 7b	3,176	4	12,704	
	External check for Trench sample (10 % of Primary samples) for 7 Radicals W, Cr, Mo, Ta, Nb, V and Sn by AAS method	Nos	4.1.7a & 7b	3,176	15	47,640	
	External check for borehole core sample (10 % of Primary samples) for 7 Radicals W, Cr, Mo, Ta, Nb, V, and Sn by AAS method	Nos	4.1.7a & 7b	3,176	44	1,39,744	
iii	Composite samples for Tungsten for 7 Radicals W, Cr, Mo, Ta, Nb, V and Sn by AAS method	Nos	4.1.7a & 7b	3,176	11	34,936	

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| Е    |   |       | 3,36,56,955 |       |    |          |  |
|------|---|-------|-------------|-------|----|----------|--|
|      |   |       |             |       |    |          |  |
|      |   |       | 28,67,874   |       |    |          |  |
| ix   | XRD   | Nos   | 4.5.1       | 4,000 | 10 | 40,000   |  |
| viii | ЕРМА  | hours | 4.4.1       | 8,540 | 10 | 85,400   |  |
| vi   | Specific gravity studies  | Nos   | 4.8.1       | 1,605 | 10 | 16,050   |  |
| v    | Digital Photographs   | Nos   | 4.3.7       | 280   | 10 | 2,800    |  |
| iv   | Complete mineragraphic study report   | Nos   | 4.3.4       | 4,232 | 10 | 42,320   |  |
| iii  | Preparation of polished section   | Nos   | 4.3.2       | 1,549 | 10 | 15,490   |  |
| ii   | Complete petrographic study<br>report   | Nos   | 4.3.4       | 4,232 | 10 | 42,320   |  |
| i    | Preparation of thin section   | Nos   | 4.3.1       | 2,353 | 10 | 23,530   |  |
| 2    | Physical & Petrological<br>Stusies  |       |             |       |    |          |  |
| iv   | ICP-MS studies (34 Trace<br>elements-<br>Cd,Sn,W,Sb,Ce,Nb,Ba,La,Bi,Co,<br>Ni, Sr, Mo, V** etc). | Nos   | 4.1.14      | 7,731 | 20 | 1,54,620 |  |

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F	Geological Report Preparation		5.2	For the projects having cost exceeding Rs. 300 lakhs - A minimum of Rs. 9.0 lakhs or 3% of the value of work whichever is more	10,09,709	
G	Peer review Charges		As per EC decision		30,000	
Н	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	5,00,000	
I	Total Estimated Cost without G	ST			3,51,96,663	
J	Provision for GST (18% of I)		63,35,399	GST will be reimburse as per actual and as per notified prescribed rate		
К	Total Estimated Cost with GST		4,15,32,062			
			415.32			
Note:						

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1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.
2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of 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.
5	Any item of work not mentioned above shall be added as per SoC.

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	Annexure 9B															
Time	Time Schedule/ Action Plan for Preliminary Exploration (G3) for Tungsten & Associated Minerals in Bodkipet block (intervening area between Kuhi and Khobna blocks), District: Nagpur, Maharashtra. [Block]															
S. No.	Particulars	Months	1	2	3	4		5	6	7	8		9	10	11	12
1	Camp Setting	Months														
2	Geologist Party days (1 Party)	days														
3	Geophysist Party days															
4	Survey Party days (1 Party)	days					S €					Μê				
6	Drilling (2 rig)	m					<u>evi</u>					<u>evi</u>				
7	Sampling days for Trench & Core Sampling (1 Party)	days					Ř					Re				
8	Camp winding	Months														
9	Laboratory Studies	days														
10	Geologist days, HQ	days														
11	Report Writing with Peer Review	days														

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### Government of India Ministry of Mines National Mineral Exploration Trust Technical cum Cost Committee [TCC]

### F. No.: 6/4/2015-NMET/

## New Delhi, 8<sup>th</sup> January 2025

# Corrigendum

With reference to the minutes of 72<sup>nd</sup>TCC Meeting held on 23<sup>rd</sup> and 24<sup>th</sup> December, 2024 the following modifications may be noted w.r.t the Agenda 72.3.3:

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

a) The committee was informed that 60<sup>th</sup> Technical-cum-Cost Committee (TCC) meeting held on 27<sup>th</sup> & 28<sup>th</sup> December, 2023, has recommended the procurement proposal of instruments for capacity augmentation to EC. Further, MECL informed that the project was approved in the 33<sup>rd</sup> EC Meeting held on 23<sup>rd</sup> February, 2024. The OM was issued on 1<sup>st</sup> March, 2024 with timeline of 12 months and approved cost was INR 3244.87 lakh.EC

<b>S.</b>	Name of Equipment	Rate	Unit	Amount	
No.		(approx. in	(in Lakh)		
		Lakh)			
1	Hyper Spectral Core Scanner with LIBS	1868.00	01	1868.00	
2	Hyper Spectral Core Scanner with XRF	1110.00	01	1110.00	
3	Gamma Ray Spectrophotometer	30.00	02	60.00	
4	WD-XRF	206.87	01	206.87	
Total	3244.87				

- b) The EC also mentioned that NMET will not bear cost of AMC for more than three years after warranty of one year.
- c) The committee was informed that, global tender of Hyperspectral Core scanner with XRF and Core Scanner with LIBS are active. The GeM tender of Gamma Ray spectrometer and Global tender of WD-XRF has been completed.
- d) MECL sought approval for revised cost for procurement of 02 nos. of Gamma ray Spectrometer amounting 67.26 Lakhs (including GST@18%) and WD- XRF costing 291.99 Lakhs (including CAMC and GST @18%).The details of the revised cost is as given below:

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			Deta	nils of NME Instrum	T Appro nents	oved	Details	of Propos	ed instrum	ents after	Tendering
S.N	Equipment	Qty	Cost of Equip.	CAMC/ Extend ed Warrant y cost (in cr.)	GST (18%)	Total cost Excludi ng CAMC &GST (in Lakhs)	Cost of Equip.	CAMC/ Extende d Warrant y cost (in cr.)	GST (18%)	Total cost includi ng CAMC& GST	Additional Cost (in Lakhs)
1	Gamma ray Spectrometer	2	60 (30 x 2 instrum ents)	-	-	60	57.00	0.00	10.26	67.26	7.26
2	WD-XRF	1	206.87	-	-	206.87	205.93	41.52	44.54	291.99	85.12
						266.87		41.52		359.25	92.38

e) In view of the above, the committee recommended the revised cost along with recommendation for including cost for CAMC and GST (18%), wherever applicable.

### **Recommendation TCC**

The TCC recommended revised cost for procurement of 02 nos.of Gamma ray Spectrometer amounting 67.26 Lakhs (including GST@18%) and WD-XRF costing 291.99 Lakhs (including CAMC and GST @18%) to EC of NMET.

The other text of the minutes will remain unchanged.

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- 1. Dr. S. Ravi, Dy. Director General, Su: Karnataka & Goa, GSI, Bangalore.
- 2. Sh. I.R. Kirmani, ADG (Retd.), GSI.
- 3. Shri Hemraj Suryavanshi, Additional Director General (Retd.), GSI.
- 4. Sh. K. Koteshwar Rao, Dy.D.G. (Retd.), GSI.
- 5. Shri S. K. Adhikari, Chief Mining Geologist, IBM, Nagpur.
- 6. Sh. SK Kulshrestha , DOG-RMH-III, NER, GSI, Shillong.
- 7. Dr. EV.S.SK Babu, Scientist (G), NGRI.
- 8. Sh. K.L. Mundra, Additional Director, AMD, Hyderabad.
- 9. Sh. Alok Kumar Deputy Secretary, Ministry of Mines.
- 10. Smt. Geetika Sharma, IAS, Deputy Secretary & in-charge of NMET, Ministry of Mines.
- 11. Shri Ravi Kumar Gupta, GM (Finance) Hindustan Copper Limited, Kolkata.
- 12. Sh. P. K. Maharana, AGM (Finance), NALCO, Bhubaneswar.
- **13.** Smt. Vandana, Cost Accounts Officer, RSAS, Bangalore, GSI.