**Ministry of Mines**
**National Mineral Exploration Trust**
**Minutes of the 71st Technical-cum-Cost Committee-I (TCC-I) meeting held on 25th and 26th November, 2024 through video conferencing**

The 71st 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 25th and 26th November, 2024.

Members of TCC-I, NMET and representatives from Geo Exploration and Mining Solutions, Mining Tech Consultancy Services Limited, Critical Mineral Tracker, GSI, IBM, DGM, Chhattisgarh, DGM, Maharashtra, DMG, Goa, DGM, Odisha, MMPL, CSIR-IMMT, MECL, OMC, Kartikay Exploration and Mining Services private Limited\, Maheshwari Mining Pvt Ltd, Gemcokati, GeoMarine, Tata Steel Ltd and PRB Infra Projects Pvt. 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 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 emphasized the importance of timely submission of proposals by all NEAs and NPEAs. He explained that early submission provides the committee and associated agencies adequate time to thoroughly examine the proposals, and give detailed feedback.

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

## Agenda 71.1: Technical evaluation of new project proposals

### Agenda 71.1.1. Preliminary Exploration (G-3 stage) for Tungsten and associated Minerals between Kuhi and Khobna Block, 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. 55O/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% $WO_3$ in Kuhi Sub Block (Zone I), 3.36 MT X 0.304% $WO_3$ 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. 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) Expanding upon this, MECL proposed to take up G3 stage proposal for tungsten (W) in the block.
g) Upon review, it is found that the scout drilling carried out by MECL in the gap area showed Sn values in the range of 300 to 400 ppm but could not meet the required stopping thickness.
h) As Kuhi and Khobna sub-blocks could not be auctioned separately, MECL has been advised 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.

***Recommendation of TCC-I***

***The committee recommended MECL to prepare a proposal by combining all the three blocks with exploration plan under G2 stage. Further, MECL is advised to attempt ore body modeling to have a comprehensive approach on the mineralization. It was suggested to consolidate the area into a single block, addressing all discussed points, and present it in the next TCC meeting.***

**Agenda 71.1.2 Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block, Ariyalur and Perambalur Districts, Tamil Nadu.**
**[Implementing Agency: Geo Exploration and Mining Solutions]**

a) The proposed block is a part of Ariyalur Cretaceous formation and falls in part of SOI toposheet no.58M/03 and 58M/04
b) In 1975, the Department of Geology and Mining conducted detailed investigation for limestone east of Ariyalur town (formerly in Trichy district) on behalf of the Tamil Nadu Cements Corporation, carrying out exploration in five phases. Subsequently, MECL, KIOCL, and GSI conducted extensive geological exploration in the vicinity of the proposed block to assess mineral resources and evaluate its geological potential.
c) The limestone in this area is yellowish to dirty white or brown, hard, compact, and fossil-rich, with pelecypods, gastropods, corals, Gryphea, Alectrionia, and Inoceramus, making it ideal for the cement industry. Calcareous marl intercalations, ranging from millimeters to a few centimeters in thickness, are common. The marly limestone, due to its clay-rich composition, is softer and less consolidated.
d) While the occurrence of fossiliferous limestone of the Kallankurichchi Formation is well-established in the proposed area, exploration has been relatively limited compared to the southern part, where limestone mines are operational within the same formation.

e) Expanding upon these Geo Exploration and Mining Solutions has proposed the item to identify and quantify different grades of limestone according to the specific requirements of various industries.
f) The committee conducted a thorough review and advised GEMS to rationalize the drilling plan, restricting boreholes to limestone.
g) The exploration agency has to restrict drilling not more than 2 to 3 m in the rock underlying the limestone. Except the stratigraphic borehole, which may go up to 180 m depth, all other 12 boreholes in the block should be judiciously closed after intersecting the targeted limestone.
h) The committee also recommended against conducting geophysical studies and pitting or trenching.

***Recommendation of TCC-I***

***The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block, Ariyalur and Perambalur Districts, Tamil Nadu." with an estimated cost of Rs. 257.41 lakhs (including GST) within time schedule of 8 months and submission of report as per Annexures 2A & 2B. The item will be reviewed after 4 months.***

**Agenda 71.1.3. Preliminary Exploration (G-3 Stage) for limestone in Kulumur Block (7.64 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**
**[Implementing Agency: Geo Exploration and Mining Solutions]**

a) The proposed block is a part of Ariyalur Cretaceous formation and falls in part of SOI toposheet no. 58M/03 and is the northern extension of proposed Chokkanathapuram Block
b) In 1975, the Department of Geology and Mining conducted detailed investigation for limestone east of Ariyalur town (formerly in Trichy district) on behalf of the Tamil Nadu Cements Corporation, carrying out exploration in five phases. Subsequently, MECL, KIOCL, and GSI conducted extensive geological exploration in the vicinity of the proposed block to assess mineral resources and evaluate its geological potential.
c) The limestone is yellowish to dirty white or brown, hard, compact, and rich in fossils like pelecypods, gastropods, corals, Gryphea, Alectrionia, and Inoceramus, making it ideal for the cement industry. It features calcareous marl intercalations, varying from millimetres to a few centimeters in thickness. The marly limestone is softer and poorly consolidated due to its clay-rich composition.
d) While the occurrence of fossiliferous limestone of the Kallankurichchi Formation is well-established in the proposed area, exploration has been relatively limited compared to the southern part, where limestone mines are operational within the same formation.
e) Based on this background, Geo Exploration and Mining Solutions has proposed a project to identify and quantify limestone of varying grades to meet the specific requirements of diverse industries.
f) Geo Exploration and Mining Solutions informed the committee that shale, often associated with sandstone, is now being utilized in the ceramic industry. However, the committee did not approve drilling any lithology other than limestone.



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g) Since in the adjoining Chokkanathapuram block stratigraphic borehole has been approved, in Kulumur block all the 14 boreholes should be judiciously closed after intersecting the targeted limestone.
h) Similarly, geophysical components like IP, SP, resistivity and magnetic surveys are also not recommended.

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

***The committee recommended the proposal for the approval of EC for "Preliminary exploration (G3 stage) for limestone in Kulumur Block, Ariyalur and Perambalur Districts, Tamil Nadu" with an estimated cost of Rs. 267.77 lakhs (including GST) within time schedule of 8 months and submission of report as per Annexures 3A & 3B. The item will be reviewed after 4 months.***

**Agenda 71.1.4. Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka.**

**[Implementing Agency: Mining Tech Consultancy Services Limited]**

a) The proposed gold block is a part of Ranebennur Formation of Chitradurga Group of Shimoga-Dharwar schist belt and falls in part of SOI toposheet no. 48 N/6.
b) The lithounits in and around the area are BIF, argillite/greywacke suite of rocks along with chert, quartzite and metabasalt and gold mineralization is reported from BIF
c) GSI conducted exploration in the Chinmulgund area (outside the proposed block) between 1970 and 1992, reporting 0.84 million tonnes of ore with an average width of 3.5 m, grading 4.38 g/t, and containing 3807 kg of gold. In the Salagudda area, gold values ranged from <0.1 ppm to 12 ppm.
d) During FSP 2020-21, GSI explored the Chinnikatti area, finding higher Au values concentrated in the southern BIF band, while the northern band was sparsely auriferous. Of 50 samples, 12 showed 32–100 ppb Au, 9 showed 104–400 ppb, and 8 ranged from 595 to 7880 ppb. This led to identifying two potential zones: Chinnikatti South-Southeast (CSSE) and South Bisalhalli blocks. The block consists of three parallel but discontinuous BMQ bands exposed in strike length of about 2 km and the width is varies from 1 meter to 10m. In CSSE, band 1 BRS samples contained 37–90 ppb Au, band 2 showed 294–546 ppb, and band 3 recorded up to 2420 ppb in BRS and 7880, 1000, and 142 ppb in trench samples.
e) The item was proposed in the 69th TCC meeting for in-principle approval, where the Committee advised MTCS to review previous and recent works, conduct a field visit, analyze samples, and present findings. Following this, MTCS reviewed GSI reports, conducted a site visit, collected rock chip samples, and revised the area from 23.60 sq. km to 7 sq. km based on the findings and recommendation of 69th and 70th TCC-I meeting
f) Again during the 70th (TCC-I) meeting, the Committee advised to submit the project proposal along with cost estimates to undertake preliminary exploration. Accordingly, MTCS has prepared the project proposal to carry out preliminary exploration (G3) in Chinnikatti over an area of 7.00 Sq.km.
g) Mining Tech Consultancy Services Limited reported that they visited the area and collected samples from both argillite and quartz veins but did not get encouraging



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results. The committee was informed that GSI had conducted exploration in adjoining areas, and the Geological Memorandum (GM) of those areas had been handed over to the State DGM. However, the gap area (proposed) was not considered promising.

h) The committee advised Mining Tech Consultancy Services Limited to focus in an area of 07 sq.km instead of earlier proposed 23.6 sq.km.

i) Detailed mapping on 1:2000 scale will be confined to about 2.5 to 3 sq.km area engulfing the BIFs and the quartz vein. Rest of the area will be assessed through only surface sampling on 1:12500 scale and geophysical surveys.

j) Drilling will be carried out at systematic interval over the BIFs and random intervals over quartz vein. Boreholes of first level will have to be drilled for 50 m vertical depth.

k) Since the area of operation is very small, the agency is advised to use the data of GSI for stream sediment sampling and ASTER studies.

***Recommendation of TCC-I***

***The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka." with an estimated cost of Rs. 454.86 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 4A & 4B. The item will be reviewed after 4 & 8 months.***

**Agenda 71.1.5. Reconnaissance Survey (G-4 Stage) for Precious Metals – Gold (Au) and associated elements in "Kosgi Block" Vikarabad and Narayanpet Districts, Telangana.**

**[Implementing Agency: Critical Mineral Tracker]**

a) The proposed area is a part of Granite-Gneiss terrain of PGC-II and falls in part of SOI toposheet no. 56 G/12,G/16 and 56H/9.

b) The item is based on geochemical anomalies identified by GSI during the National Geochemical Mapping (NGCM), with zirconium (Zr) values ranging from 600 ppm to 2500 ppm and gold (Au) values from 1.0 ppb to 24.0 ppb, uniformly distributed across the block.

c) During a recent field visit, Critical Mineral Trackers conducted a reconnaissance study in the Kosgi Block Area, collecting six bedrock samples. These samples yielded promising gold assay values ranging from 0.50 ppm to 1.46 ppm, with sheared granites showing higher gold concentrations.

d) Additionally, the rubidium-to-strontium ratios of the granite samples (1.68, 1.24, 42.6, 2.34, and 3.93) suggest the Kosgi granite lacks an evolved nature.

e) CMT presented that globally, grey granites are known for their gold mineralization potential, and in the study area, the granite composition ranges from adamellite to granodiorite. Notably, granites around Kosgi contain specks of pyrite with silvery-yellow reflectivity, identified as arsenopyrite, which could be the carrier of gold.

f) Following recommendations from the 68th TCC meeting, two potential zones were identified within the with 93.96 sq.km area namely Zone-1 (26.5 sq. km) in the northern part of the block and Zone-2 (3.5 sq. km) in the southern part.



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g) The item was again presented in 69th TCC-I and the committee found the item not promising for gold mineralization due to the lack of substantial evidence of shearing and potential gold-bearing rocks.

***Recommendation of TCC-I***

***Since the proposal was already reviewed in the 69th TCC Meeting and has not been recommended as CMT did not provide any evidences of gold values in the block, the proposal is not considered for review in the 71st TCC-1 meeting.***

**Agenda 71.1.6. Preliminary Exploration (G-3 Stage) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udupi District, Karnataka. [Implementing Agency: Critical Mineral Tracker]**

a) The proposed area is a part of Laterite belt in Western Ghats and falls in part of SOI toposheet no. 48 K/9. The studied area represents a part of northwestern region of Karnataka and is in close vicinity to the west coast.
b) DMG, Karnataka has investigated Govindagudde/Sedigudde block by mapping the area on 1:2000 scale and estimated 77000 tonnes.
c) Laterite in the area occurs as 4–6 m thick sheet-like masses on plateau tops, with dark brown to pale pink weathered surfaces and vertical tubes filled with gray to pinkish-brown clay. The laterite in the area is characterized by Al2o3 content ranging from 34 to 54%.
d) The NGCM data reveals significant concentrations of critical minerals, with hafnium (Hf) ranging from 2.13 to 29.08 ppm, zirconium (Zr) from 137 to 1091 ppm, and arsenic (As) from 1.26 to 18.9.
e) In Sedigudde plateau 9 nos prospecting pits admeasuring 1.5ml * 2.5m m were sunk to a depth of 1.0m to 2.0m depth. During the pitting the lateritic material obtained in each pit was sampled with an interval of 50 cm.47 samples were generated .A reserve of 53,000tons has been estimated in an area of two hectare upto a depth of 2m and with 50% recovery.
f) DMG, Karnataka has allocated Sedigudde plateau to Critical Mineral Trackers vide proceedings of the 7th meeting of technical committee (Exploration) held on 23/09/2024 to carry out G3 investigation (Copy enclosed).
g) A field visit confirmed the presence of laterite in the area, with numerous outcrops observed on the hilltops. These outcrops display a variety of minerals, including red hematite, black manganese oxide, and light yellow to white limonite and clay minerals.
h) After review, the committee observed that only a few samples analyzed showed >40% $Al_2O_3$, while the $SiO_2$ content was notably high (25-52%). However, the committee noted that $Al_2O_3$ values might increase in the lower part.
i) Since it is the DMG awarded block, the committee decided to relook the area and It was advised to conduct mapping at a 1:4000 scale and plan boreholes at 400m spacing. Additionally, the committee recommended shifting and drilling boreholes B9, B12, and B13 further south.



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***Recommendation of TCC-I***

***The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka." with an estimated cost of Rs. 45.33 lakhs (including GST) within time schedule of 6 months and submission of report as per Annexures 5A & 5B. The item will be reviewed after 3 months.***

**Agenda 71.1.7. Preliminary Exploration (G3) 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 70$^{th}$ 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 data. Following this, Tata Steel held a meeting with the Odisha office and shifted the block boundary eastward.
f) However, upon review, the committee found the database insufficient. DMG, Odisha, informed that a G4 stage study had been conducted in the area, which Tata Steel had not consulted. Tata Steel responded that the report was unavailable on NGDR. The committee assured that the report would be provided by the NMET Secretariat. Tata Steel expressed interest in carrying out a G4 stage program.

***Recommendation of TCC-I***

***The committee advised Tata Steel to review all relevant literature by GSI, MECL, and DMG, collect and analyze samples from the area, and reshape the proposal. The revised proposal should exclude areas already explored by other agencies and be resubmitted for in-principle approval.***

**Agenda 71.1.8. Reconnaissance survey (G4 stage) for REE in Nellikadur block in parts of Mahabubabad and Warangal Rural Districts, Telangana.**

**[Implementing Agency: Critical Mineral Trackers (CMT)]**



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a) The proposed item belongs to Peninsular Gneissic Complex II (PGC-II) and falls in SOI toposheet no. 56O/10.
b) In FS 1988-89, GSI identified notable Cerium (over 1000 ppm) and Lanthanum (300–500 ppm) values in toposheets 560/9 and 560/13. 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-I, 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.

***Recommendation of TCC-I***

***The item was not approved and recommended 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.**

## 71.2 Procurement project

**Agenda 71.2.1. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: IIMT, Bhubaneswar]**

a) IMMT presented the proposal for procurement of Mineral Liberation Analyser (MLA) with an estimated cost of ₹785 Lakhs in the 67th TCC of NMET. The proposal was discussed further in the 68th 69th & 70th TCC meetings
b) The committee advised IMMT to consult agencies like NGRI, GSI, and relevant organizations using the instrument and submit revised proposal.
c) IMMT presented the details of the of the proposals received from 2 vendors- Tescan Make Mineralogy Analyzer (TIMA) FESEM model TIMA GMS with CL detector , Labindia Instruments Pvt. Ltd with cost of ₹ 1350 Lakhs( including GST) and FE-SEM with Dual EDS & Mineralogy Software (Automated Mineralogy Solution), Carl Zeiss India (Bangalore) Pvt. Ltd. of ₹ 640 Lakhs( including GST).
d) In view of the details presented by IMMT, the committee recommended to procure MLA with 04 EDS detectors. Considering that this facility is available for Tescan Make Mineralogy Analyzer (TIMA) FESEM model TIMA GMS with CL detector , Labindia Instruments Pvt. Ltd only, the committee recommended the same.



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***Recommendation of TCC-I***

***The committee recommended Mineral Liberation Analyser (MLA) with cost estimate of of ₹ 1350 Lakhs ( incl. all taxes ) with timeline of 12 months.***

**Agenda 71.2.2. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities- ArcGIS software.**
**[Implementing Agency: GSI]**

a) GSI informed that in March 2022, 60 nos. of earlier installed Floating licenses of ArcGIS software were upgraded to ArcGIS 10.3 to the Enterprise Agreement (EA) program for a period of thirty months and the period has ended on 30th September 2024.

b) GSI has been using ESRI's ArcGIS software for two decades for various geoscientific projects . This is an essential tool for scientific deliverables such as maps, reports, analytical models etc. that serve the base of the Field Season Programme of GSI. Further, GSI has developed comprehensive geoscientific repositories, including the Geospatial Portal (OCBIS), National Geoscience Data Repository (NGDR) and National Landslide Forecasting Centre (NLFC), which store a wide range of geological, geophysical, geochemical, and other geospatial data using the ArcGIS desktop platform.

c) In view of above, there is high demand for ArcGIS Desktop advance version along with the extensions for the ongoing NGDR projects, NGLM, NLFC, Map compilation, FSP projects of GSI as well as for GSITI.ArcGIS software also benefits for Mineral Exploration projects with Data Integration, Spatial Analysis, etc.

d) GSI informed that the software can be distributed amongst the different offices of GSI (Region and State Unit) and GSITI for uninterrupted services of ArcGIS software for technical assignments of Field Season Programmes of GSI.

e) The committee was informed that as per the delegation of financial power, financial power of DG GSI is of rupees twenty Crores (Rs. 20,00,00,000).

f) GSI informed that base price offered by ESRI is ₹ 10,16,94,916 (Ten crore sixteen lakh ninety four thousand nine hundred and sixteen only) plus 18 % GST of ₹ 1,83,05,084 (one crore eighty three lakh thirty five thousand eighty four only), with a total amount of ₹ 12,00,00,000/- (Twelve Crore only) for the duration of 5 years . However, **based on the last purchase price, the price has been agreed at Rs. 11,00,00,000/- (Rupees Eleven Crores only).** GSI informed that the proposal is within the financial power of DG GSI and in this regard necessary administrative approval and financial sanction has been obtained from DG GSI.



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***Recommendation of TCC-I***

***The committee recommended ₹11,00,00,000/- incl. all taxes (₹ Eleven Crores only) towards procurement of latest version of ArcGIS software under Enterprise Agreement (EA) programme for 5 years for Geological Survey of India by upgrading the existing inventory with timeline of 12 months.***

**Agenda 71.2.3. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: GSI]- upgradation of Geosoft Software Licenses**

a) GSI informed that Geosoft software is a user-friendly software for processing and interpretation of geophysical data. The present OEM of the software is M/s Seequent Burlington (Bentley System) which is the sole authorized Indian distributor of Geosoft software.

b) The committee was informed that presently, twenty licenses of Geosoft (Ver. 9.7) are available in GSI for which software maintenance contract expired on 31st March 2020. As of today, nineteen (19) out of twenty (20) number of Geosoft licenses are working condition but there is a time dependent module of the software which expired its operation period and needs to be resolve by upgrading a minimum of nine (09) software - one for each Geophysics Division of GSI. Further/s Seequent (OEM) and M/s DATACODE (only Indian Vendor) expressed their inability to provide any further technical support to these existing conventional versions of the software licenses. Non-availability of the updated version of the Geosoft modules (like 2D/ 3D inversion) as well as end of support of the software seriously jeopardises the regular geophysical data processing and interpretation exercises pertaining to the FSP items of Geophysics Divisions, GSI.

c) GSI apprised that considering the wide uses of the Geosoft software in different domain (land, marine and airborne) and processing, interpretation and 2D/3D modelling of geophysical data of various categories to augment mineral exploration activities of GSI, up gradation of the conventional Geosoft licenses to yearly subscription-based license is an urgent requirement for execution geophysical FSP items. This is particularly necessary for completion (advance processing and interpretation) and monitoring of the NGPM and NAGMP projects - in-house and outsourced. The upgraded version (Ver. 2024.1) of the Geosoft will resolve the many issued in the previous version.

d) The estimated cost of up gradation of the conventional Geosoft Licenses to subscription-based Enterprise Licenses arrived from communication with the Mi s. DATACODE (Indian vendor) and asking for an estimated quotation.

GSI, NR upgraded two licenses of Geosoft in 2022 vide GeM Contract No. GEMC-511687732481620 dated 15.03.2022 with total cost of Rs. 90305400/- inclusive of all taxes. National Remote Sensing Centre, Hyderabad procured



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one license of Oasis Montaj vide Contract No. GEMC- 511687771734422 dated 02-02-2024 at the cost of Rs. 7699500/- inclusive of all taxes.

The last upgradation of conventional licenses under three years CAMC (in 2017) contact was executed in 2019 for twenty licenses vide Purchase Order No. 255/A/103/ 19/ Cos/AP&M/ 26B-2017 dated 09.09.2019 with total cost of Rs. 3,36 ,39 ,672/ -.

e) The year wise breakup of fund required from NMET:

| **Year wise Estimated Cost in USD and INR (conversion date: 20.11.2024 @ ₹84.38)** | | | |
|---|---|---|---|
| **Geosoft (Oasis Montaj)** | **No. of Licenses** | **1st Year USD/ (INR)** | **2nd Year USD/ (INR)** |
| **Geophysics Standard (GROUND)** | 7 | $354130 (₹ 29881489) | $371840 (₹ 31375859) |
| **Airborne Field** | 1 | $39050 (₹ 3295039) | $41000 (₹ 3459580) |
| **Geophysics Advance** | 1 | $86750 (₹ 7319965) | $91090 (₹ 7686174) |
| **Total Estimated yearly cost in USD (INR)** | | $479930 (₹ 40496493) | $503930 (₹42521613) |
| **Grand Total for 2 Years (in INR) Without GST** | | **₹ 8,30,18,107** | |

f) Since the upgraded licenses are yearly subscription-based Enterprise License, no AMC or CAMC are required. The vendor will provide all the support required during the subscription period.

g) GSI's proposes for accordance of administrative approval and financial sanction from NMET for the upgradation of nine (09) Geosoft (Oasis Montaj) licenses for a period of two years may for an amount of ₹8,30,18,107 (Eight crore thirty lakh eighteen thousand one hundred and seven only) Plus 18% GST of ₹1,49,43,259/- (One crore forty-nine lakh forty-three thousand two hundred fifty-nine only). with a total amount of ₹9,79,61,366/-(Nine crore seventy-nine lakh sixty-one thousand three hundred sixty-six only) for the duration of 2 years.

***Recommendation of TCC-I***

***The committee recommended the upgradation of nine (09) Geosoft (Oasis Montaj) licenses for a period of two years with estimated cost ₹9,79,61,366/- incl. all taxes (Nine crore seventy-nine lakhs sixty-one thousand three hundred sixty-six only) for the duration of 2 years within timeline of 12 months.***

**Agenda 71.2.4. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: IBM]**

a) IBM informed NMET has already approved 4 projects to procure Machinery Laboratory Equipment/instruments etc with total cost of ₹2440 Lakh. The procuremet of the approved equipment's are in the process of completion. Further, there is an urgent need to procure additional process equipment and characterization & analysis instruments for conducting R&D studies of critical mineral & complex ores. In view of present need and future requirement, a proposal has been prepared combining the requirement of 3 Mineral Processing Laboratories of IBM.

b) IBM present the details of proposed equipment's as given below:

**A. Requirements of New Facility for MMPL, Nagpur**

| S.no | Equipment name | Qty | Approx Cost (in Lakh)- including all taxes |
|---|---|---|---|
| **NEW FACILITY** | | | |
| 1 | High Pressure Grinding Rolls (HPGR) | 1 | 100 |
| 2 | High Gradient Magnetic Separator (Vertical Pulsating) | 1 | 90 |
| 3 | Rare Earth Roll Separator (3 Intensities) | 1 | 35 |
| 4 | High Rate Thickener Test Unit | 1 | 40 |
| 5 | Jameson Flotation Cell | 1 | 60 |
| 6 | Fluidized Bed Roasting unit with Cylinders & accessories | 1 | 100 |
| 7 | High Temp. Furnace with Vacuum &Gas Inlet Provision | 1 | 30 |
| 8 | Mini Flotation Circuit | 1 | 75 |
| **REPLACEMENT OF EXISTING FACILITY** | | | |
| 9 | Wet variable magnetic separator | 1 | 45 |
| 10 | Wilfley Table (Coarse and fine decks) | 1 | 30 |
| 11 | Pressure Filtration Test Unit | 1 | 50 |
| **Mineralogy – Characterization Instruments** | | | |
| REPLACEMENT OF EXISTING FACILITY | | | |
| 12 | EPMA with accessories and ancillary units | 1 | 1500 |
| 13 | TG-DTA with accessories & ancillary units | 1 | 90 |
| **Chemical – Analysis Instruments** | | | |
| **NEW FACILITY** | | | |
| 14 | GF-AAS with accessories | 1 | 70 |
| **Total** | | **14** | **2315** |

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**B. Requirements of New Facility and Replacement of existing facility for RMPL, Bengaluru**

| NEW FACILITY | | | |
|---|---|---|---|
| **S.no** | **Equipment name** | **Qty** | **Approx Cost (in Lakh) )- including all taxes** |
| 1 | High Gradient Magnetic Separator (Vertical Pulsating) | 1 | 90 |
| 2 | High-Rate Thickener Test Unit | 1 | 40 |
| **REPLACEMENT OF EXISTING FACILITY** | | | |
| 3 | Pressure Filtration Test Unit | 1 | 50 |
| 4 | Bench top XRD with accessories and ancillary units | 1 | 98 |
| **Chemical – Analysis Instruments** | | | |
| **NEW FACILITY** | | | |
| 5 | ED-XRF with accessories & ancillary units | 1 | 120 |
| **Total** | | **5** | **398** |

**C. List of requirements of New Facility for RMPL, AJMER**

| NEW FACILITY | | | |
|---|---|---|---|
| **S.no** | **Equipment name** | **Qty** | **Approx Cost (in Lakh) incl. all taxes** |
| **1** | Spiral WW6, FM, HG and MG config. (Each 1 No.) | 1 | 75 |
| **2** | Electrostatic Roll Separator | 1 | 65 |
| **3** | High Intensity Disc Magnetic Separator (Dry) | 1 | 30 |
| **4** | Column Flotation | 1 | 40 |
| **5** | Centrifugal Gravity Concentrator | 1 | 25 |
| **6** | Wet Variable Intensity Magnetic Separator | 1 | 45 |
| **Total** | | 6 | 280 |
| **Grand Total** | | **25** | **2993** |

***Recommendation of TCC-I***

***The committee recommended*** **₹2993 Lakhs incl. all taxes towards procurement of Laboratory Equipment/instruments for IBM with timeline of 24 months.**

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## Agenda 71.3 Review of Ongoing Projects/Completed Project & Timeline Extension

**Agenda 71.3.1. Preliminary Exploration (G-3 stage) for Manganese and Graphite in Kanaital Block, Balangir District, Odisha.**
**[Implementing Agency: MECL]**

a) MECL informed that the project was approved in the 32nd EC Meeting held on 06th December, 2023. The sanction order was issued on 12th December, 2023 with timeline of 11 months and approved cost was INR 2,23,40,108/-.
b) The progress of the project was reviewed. The committee noted comments and compliance of internal peer review and advised MECL to submit final GR within approved timeline.

***Recommendation of TCC-I***

***The committee recommended to submit the final GR on or before 30.11.2024. The committee recommended time line upto 30th November 2024.***

**Agenda 71.3.2. Preliminary Exploration (G-3 Stage) for Gold in Kakol Block, Haveri District, Karnataka.**
**[Implementing Agency: MECL]**

a) MECL informed that the project was approved in the 31st EC Meeting held on 12th September, 2023. The sanction order was issued on 05th October, 2023 with timeline of 12 months and approved cost was INR 4,48,27,471/-.
b) As per the approved minutes of the last TCC, outcome of the IP, SP, Resistivity, magnetic and TDEM surveys carried out in an area of 07 sq.km of Kakol LSM Block has been reviewed.
c) The committee observed that the project has time line up to 31st October, 2024. The committee advised that out of the 20 nos. of planned boreholes, MECL may carry out drilling in alternate boreholes. Based on the outcome of the in-filling, boreholes have to be planned and completed. Further, committee recommended timeline up to 04.04.2025 to complete the project.

***Recommendation of TCC-I***

***The committee recommended to carry out drilling judiciously and to come back for review in the month of February, 2025 with drilling data. The committee recommended 6 months' time extension up to 04th April, 2025 to complete the project .***

**Agenda 71.3.3. Reconnaissance Survey (G-4 stage) for QPC hosted Gold Mineralization and Copper in Kalasapura Block, Chikkamagaluru District, Karnataka.**
**[Implementing Agency: MECL]**

a) MECL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The sanction order was issued on 27th February, 2024 with timeline of 12 months (up to 26.02.2025) and approved cost was INR 1,52,40,702/-.
b) The project was reviewed and found that Au and Cu mineralization from the samples collected quartz pebble conglomerate (QPC) and amphibolite is not encouraging.



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c) The committee observed that some of the higher values reported from the amphibolite are falling in close proximity with the railway line and may pose feasibility issue later for further exploration. In view of above, the committee agreed for pre-mature closure of the project. The revised cost sheet may be presented in the final review.

***Recommendation of TCC-I***

***The committee commended to complete the requisite target and submit the report on or before 27th February, 2025 .***

**Agenda 71.3.4. Reconnaissance Survey (G-4 stage) for Gold in Bargur Block, Krishnagiri District, Tamil Nadu.**
**[Implementing Agency: MECL]**

a) MECL informed that the project was approved in the 33rd EC Meeting held on 19th February, 2024. The sanction order was issued on 27th February, 2024 with timeline of 12 months (up to 26.02.2025) and approved cost was INR 2,50,28,266/-.
b) The project was reviewed and found that encouraging Au values have been reported from the quartz veins observed in close proximity to the old workings dug over amphibolite.
c) As the area in the extension of the old workings are under soil cover, MECL iwas advised to initiate geophysical surveys at the earliest so as to plan drilling.

***Recommendation of TCC-I***

***MECL is recommended to complete the IP, SP and Resistivity survey and come back for review along with drilling plan***

**Agenda 71.3.5. Preliminary Exploration (G-3 Stage) for Manganese ore in Dhavalapur Block, Nagpur District, Maharashtra.**
**[Implementing Agency: MECL]**

a) MECL informed that the project was approved in the 35th EC Meeting held on 16th May, 2024. The sanction order was issued on 10th June, 2024 with timeline of 12 months (up to 09.06.2025) and approved cost was INR 2,31,59,625/-.
b) Upon review, it was found that MECL could not complete the target due to non-availability of FC.

***Recommendation of TCC-I***

***MECL is recommended to pursue the matter with Dept. of Forests and also seek help from DMG, Maharashtra to obtain forest clearance***

**Agenda 71.3.6. Ground Gravity-Magnetic survey under NGPM programme.**
**[Implementing Agency: GSI]**

a) GSI informed that project was approved and sanctioned Rs. 327 Crore (Rs. 385.86 Crore including GST) for outsourcing of NGPM survey in 2099 toposheets covering 13.5 lakh sq km area in 36 months (08.09.2021 – 07.09.2024). Project has been extended up to 07.09.2026 vide NMET OM dated 29.08.2024.

b) GSI informed that currently the toposheets are being outsourced through six Regional Headquarters of GSI, located in Kolkata, Nagpur, Lucknow, Jaipur, Hyderabad and Shillong, under overall technical monitoring of HQ, Kolkata

| Gravity/ magnetic survey | Phase-I | Phase-II | Phase-III | Total |
|---|---|---|---|---|
| **Total number of toposheets for outsourcing** | 500* | 800 | 799 | 2099 (13.50 lakh sq. km.) |
| **Budget requirement** | Rs. 70 Cr (@Rs. 5000 per GM station) | Rs. 123 Cr (@Rs. 5500 per GM station) | Rs. 134 Cr (@Rs. 6000 per GM station) | Rs. 327 Cr (Rs. 385.86 Cr including GST) |

c) The committee was informed that 500 toposheets of phase-I has been prioritized and selected from areas of National Aerogeophysical Mapping Blocks of GSI. Outsourcing for 324 priority TS of phase-I, and 159 TS of phase-II has been carried out.

d) Status of NGPM outsourcing till 15.11.2024

- Total No. of Toposheets for outsourcing: 2099 (13.5 lakh sq km)
- No. of TS outsourced: 483 TS for Rs. 59.75 Cr
- Tender basis: 225 TS through 8 contracts for Rs. 26.41 Cr
- Nomination basis: 258 TS through 8 contracts for Rs. 33.34 Cr
- Work completion: 225 TS (1.48 lakh sq km)
- No. of TS under tendering and nomination process: 121 TS
- No. of TS covered with in house projects: 472 TS
- No. of TS pending for NGPM outsourcing: About 1000 (to be allotted till 2026)
- Estimated expenditure for NGPM outsourcing for about 1600 TS (483 + 121 + 1000): Rs. 235 Cr (inclusive of GST)
- Total TS outsourced from May to October of FS 2024-25: 311

e) GSI also presented the current status of the outsourced NGPM projects. The committee was informed that limited resources (instruments, skilled manpower and experience) of the available vendors, submission of insufficient documents along with bid, slow bid evaluation process due to frequent seeking of shortfall documents from bidders & Delay in execution of work and submission of final deliverables including technical reports contributed to the delaying of projects.

f) The committee informed that GSI to take necessary step to minimize the constrains.

***Recommendation of TCC-I***

***The Committee noted the progress of the project and advised GSI to expedite the work.***

**Agenda 71.3.7. Reconnaissance survey (G-4 stage) for iron ore in Gopaltola (Salhewara) Block, District- Rajnandgaon, Chhattisgarh.**
**[Implementing Agency: DGM Chhattisgarh]**



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a) DGM Chhattisgarh informed that the project was approved in the 11th EC Meeting held on 11th February, 2019. The sanction order was issued on 07th march, 2024 with timeline of 31.07.2024 (as extended by 33rd EC) and approved cost was INR 1,08,57,300/-.
b) DGM, Chhattisgarh informed that the project has been completed and complied with the comments of internal peer review. Timeline to complete the project was 31st October, 2024.
c) Upon review of the project, the committee raised concerns on the drilling strategy adopted and informed DGM, Chhattisgarh to revise the cost sheet commensurate with achieved work components.

***Recommendation of TCC-I***

***The committee recommended time extension 15th December, 2024 for submission of GR along with revised cost sheet to NMET secretariat.***

**Agenda 71.3.8. Preliminary exploration (G-3 stage) for graphite around Naringapanga block (S & W) (0.143 sq. km) block, District: Rayagada, Odisha.**
**[Implementing Agency: DGM Odisha]**

a) DGM Odisha informed that the project was approved in the 27th EC Meeting held on 10th January, 2023. The sanction order was issued on 04th September, 2023 with timeline of 9 months and approved cost was INR 1,20,92,849/-.
b) DGM, Odisha presented the work and informed the committee that the project has been completed and report is ready for submitting for internal peer review. Timeline to complete the project is 31st December, 2024.
c) Upon review of the project, the TCC-1 suggested DGM, Odisha to submit the report for IPR at the earliest and come back for review again with IPR compliance report.

***Recommendation of TCC-I***

***The committee recommended DGM, Odisha to submit the report for peer review and present compliance report for review in the 72nd TCC-1meeting.***

**Agenda 71.3.9. Preliminary Exploration (G-3 stage) for Iron Ore in Khandadhar Sub Block - E (8.797 sq.km), Sundargarh District, Odisha.**
**[Implementing Agency: OMC]**

a) OMC 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 12 months and approved cost was INR 7,99,38,943/-.
b) Upon review of the project, the TCC-1 found that OMC did not put adequate effort to obtain FC and suggested OMC to submit the GR with resources estimated under G4 stage. If the block is annulled in auction then OMC may submit the proposal for drilling along with FC.

***Recommendation of TCC-I***

***The committe recommended OMC to submit the report under G4 stage at the earliest and submit the revised cost sheet to NMET secretariat***

**Agenda 71.3.10. Preliminary Exploration (G-3 stage) for Iron in Madhyapur Block (6.5 Sq.Km), Keonjhar District, Odisha.**
**[Implementing Agency: OMC]**

a) OMC informed that the project was approved in the 32nd EC Meeting held on 06th December, 2023. The sanction order was issued on 15th December, 2023 with timeline of 12 months and approved cost was INR 1,97,07,639/-.
b) OMC informed TCC-1 that all the assigned work, except drilling, in the project has been completed and sought approval for dropping drilling component as the threshold value of Fe is non-encouraging. The timeline to complete the project is 15th Dec. 2024.
c) Upon review of the project, the TCC-1 found that OMC can estimate resources under G4 stage as the required threshold value of Fe from BMQ is only 15%.
d) In order to prepare the GR and IPR, time line extension is granted up to 14th March, 2025.

***Recommendation of TCC-I***

***The committee recommended OMC to submit the report under G4 stage @15% Fe cut-off at the earliest and submit the revised cost sheet to NMET secretariat. The committee approved time extension up to 14th March 2025.***

**Agenda 71.3.11. Reconnaissance Survey (G-4 stage) for Graphite in Lamer-Panga Block (49 sq. Km) in Kalahandi District of Odisha.**
**[Implementing Agency: OMC]**

a) OMC informed that the project was approved in the 26th EC Meeting held on 25th August, 2022. The sanction order was issued on 20th September, 2022 with timeline of 12 months and approved cost was INR 1,46,68,539/-.
b) The TCC-1 reviewed the progress of the item and approved the time line extension up to 15th Dec. 2024.

***Recommendation of TCC-I***

***The TCC recommended timeline extension up to 15th December, 2024 for submission of final GR.***

**Agenda 71.3.12. Preliminary Survey (G-3 stage) for Graphite in Lamer-Panga Block-B (12. 994 sq. Km) in Kalahandi District of Odisha.**
**[Implementing Agency: OMC]**

a) OMC informed that the project was approved in the 27th EC Meeting held on 10th January, 2023. The sanction order was issued on 03rd September, 2023 with timeline of 14 months and approved cost was INR 2,16,60,170/-.
b) OMC presented the item and sought timeline extension up to 31st December, 2024 from 31st October, 2024.
c) Upon review, the committee suggested to submit the report at the earliest and complete the IPR. In order to accomplish all the process timeline has been approved up to 31st January, 2025.

***Recommendation of TCC-I***

***The committee recommended timeline extension up to 31st January, 2025 for submission of final GR along with revised cost sheet to NMET secretariat***

**Agenda 71.3.13. Reconnaissance Survey (G-4 Stage) for Graphite in Darukona Block (119 sq.km.), Rayagada District, Odisha.**



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**[Implementing Agency: MMPL]**

a) MMPL informed that the project was approved in the 32nd EC Meeting held on 06th December, 2023. The sanction order was issued on 15th December, 2023 with timeline of 12 months and approved cost was INR 1,73,81,649/-.
b) MMPL presented the progress of the item and sought approval for enhanced target of 36 l.km from 350 to 386 l.km along with time line extension up to 31st March 2025 for completing the target. Timeline to complete the project exits up to 15th December, 2024.
c) Upon review, the TCC-1 advised MMPL to submit a table showing block wise geophysical survey (l.km) and present the detailed outcome of the geophysical survey to NMET.
d) The detailed outcome, revised target, GR and IPR compliance report of the project will have to be submitted for review in February, 2025

***Recommendation of TCC-I***

***The committee recommended timeline extension up to 31st March, 2025 and advised MMPL to submit a table showing block wise geophysical survey (l.km) and present the detailed outcome of the geophysical survey to NMET***

**Agenda 71.3.14. Reconnaissance Survey (G-4 stage) for Kanapulisi Graphite Block (98.3 sq.km.), Rayagada District, Odisha.**
**[Implementing Agency: MMPL]**

a) MMPL informed that the project was approved in the 32nd EC Meeting held on 06th December, 2023. The sanction order was issued on 15th December, 2023 with timeline of 12 months and approved cost was INR 1,69,49,726/-.
b) MMPL presented the progress of the item and sought approval up to 30th April, 2025.
c) Upon review, the TCC-1 advised MMPL to complete the target at the earliest and recommended timeline only up to 31st March, 2025.

***Recommendation of TCC-I***

***The committee recommended timeline extension up to 31st March, 2025 advised MMPL to get the item reviewed again in February, 2025.***

**Agenda 71.3.15. Preliminary exploration for limestone in Rupapeth Block, Chandrapur District, Maharashtra (G-3 stage).**
**[Implementing Agency: DGM Maharashtra (M/s Gemcokati Exploration Pvt]**

a) M/s Gemcokati Exploration Pvt. Ltd. informed that the project was approved in the 35th EC Meeting held on 16th May, 2024. The sanction order was issued on 10th June, 2024 with timeline of 10 months (Up to 09.04.2025) and approved cost was INR 95,99,632/-
b) The M/s Gemcokati Exploration Pvt.Ltd presented the progress and informed the committee that all the targets in the item have been achieved and drilling has been initiated in the non-forest area.
c) Upon review, the committee advised Gemcokati Exploration Pvt.Ltd to pursue FC and expedite drilling and complete the target within approved timeline.

***Recommendation of TCC-I***

***The committee recommended Gemcokati Exploration Pvt.Ltd to pursue with the Dept. of Forests for FC and expedite drilling***



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**Agenda 71.3.16. Preliminary Exploration (G-3) for Limestone in Sawalhira (East) Block, Chandrapur District, Maharashtra.**
**[Implementing Agency: DGM Maharashtra (M/s Gemcokati Exploration Pvt)]**

a) M/s Gemcokati Exploration Pvt. Ltd. informed that the project was approved in the 35th EC Meeting held on 16th May, 2024. The sanction order was issued on 10th June, 2024 with timeline of 10 months (Up to 09.04.2025) and approved cost was INR 86,70,545/-
b) The M/s Gemcokati Exploration Pvt.Ltd presented the progress and informed the committee that all the targets in the item have been achieved and drilling is to be initiated after obtaining FC.
c) Upon review, the committee advised Gemcokati Exploration Pvt.Ltd to pursue FC and expedite drilling and complete the target within approved timeline.

***Recommendation TCC***

***The committee recommended Gemcokati Exploration Pvt.Ltd to pursue with the Dept. of Forests for FC and expedite drilling***

## 71.4 Review of procurement proposals

**Agenda 71.4.1. 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 sanctioned for ₹ 442.615 Lakhs, for the purpose of strengthening mineral exploration activities within the state with estimated costs as follows:

### a) Geological and sample processing items/instruments-

| Name of Equipment | Total Estimated cost (in Lakh) |
|---|---|
| (i) Rock cutting machines floor mounted (1 no.) | 1.8 |
| (ii) Section grinding /polishing machine-double disc (1 no.) | 1.8 |
| (iii) Section mounting Press-spring type (1 no.) | 0.165 |
| (iv) Core cutting machine (1 no.) | 1.7 |
| (v) Pol Trinocular Research Microscope with imaging system and Pelcon automatic point counter (1 no.) | 25.2 |
| (vi) XMET8000 Expert Geo handheld XRF Analyzer (1 no.) | 30 |

### b) Chemical laboratory instruments-

| Name of Equipment | Total Estimated cost (in Lakh) |
|---|---|
| (i) ICP-MS (1 no.) | 170 |
| (ii) Crusher (1 no.) | 10 |
| (iii) Vibratory cup mill (1 no.) | 10 |
| (iv) Pulveriser (1 no.) | 10 |

### c) Drilling activities instruments/items-

| Name of Equipment | Total Estimated cost (in Lakh) |
|---|---|
| (i) Drilling rig Truck Mounted (600m capacity) (1 no.) | 80 |
| (ii) Drilling rig Tractor mounted (1 no.) | 50 |
| (iii) Reciprocating pump set (trolly mounted) (1 no.) | 10 |
| (iv) Centrifugal pumping set (Multi stage 2 cylinder) (2 nos.) | 1.8 |
| (v) NQ drill rode 3 m long (225 nos.) | 33.75 |
| (vi) 6" casing plug to NW box (20 nos.) | 2 |
| (vii) NQ core barrel 3m long (10 nos) | 3.5 |
| (viii) NX Casing Diamond bit (30 nos.) | 0.9 |

b) DGM Maharashtra initiated the procurement process, however, it was observed that the lowest bidders (L1) have quoted an amount Rs. 1.11 Cr. higher than the estimated costs approved by the NMET Committee.

c) Director, DGM, Maharashtra proposed that NMET may grant additional amount of Rs. 1.11 Cr or allow utilizing the incentive received for successful auctioning of Mineral Block. Further, DGM Maharashtra requested for surrender of pulveriser amounting to 10 lakhs approved in 27$^{th}$ EC of NMET held on 10$^{th}$ January 2023.

d) The committee informed that incentive received can be utilised for purchase of exploration equipment's/laboratory .Further , the committee agreed for surrender of pulveriser and informed that the ₹10 Lakhs will be deducted from the approved cost of ₹ 442.615 Lakhs.

***Recommendation of TCC-I***

***The committee advised DGM, Maharashtra to write to NMET Secretariat in detail for the release of fund and agreed for Surrender of Pulveriser amounting to ₹10 Lakhs.***

**Agenda 71.4.2. Financial Assistance from NMET funds to procure Machinery Laboratory Equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DMG Goa]**

a) The DGM, Goa informed the committee that procurement of the approved items are in progress and sought release of fund along with extension of timeline up to 31$^{st}$ March, 2025 so as to complete the procurement.

***Recommendation of TCC-I***

***The committee recommended DGM, Goa to write to NMET Secretariat in detail for the release of fund and timeline up to 31$^{st}$ March, 2025.***

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## Agenda 71.4. Project Evaluation for In-Principle Approval

**Agenda 71.4.1. Reconnaissance survey (G-4 stage) for Rare Earth Elements in "Koppal Block" Koppal District, Karnataka.**
**[Implementing Agency: Critical Mineral Trackers]**

a) The proposed area is located around Koppal town in Karnataka, falls within the granites are correlatable to Closepet and falls in SOI toposheet no. 57 A/2 and 57 A/6.
b) The item has been proposed based on the geochemical anomalies generated by GSI during the National Geochemical mapping.
c) The dominant lithology exposed in the area consists of pink porphyritic granite, traversed by three sets of dolerite dykes.
d) Based on NGCM data, the maximum recorded total LREE values reach up to 5878 ppm. The presence of accessory minerals such as titanite, monazite, allanite, apatite, zircon, and opaques within these granites significantly enhances the potential of this area as a promising source for REE minerals.
e) The committee was informed that the proposed block is overlapping with GSI's on-going item and the rest part has also been proposed for FS:2025-26

***Recommendation of TCC-I***
***The committee does not approve the item at this stage***

**Agenda 71.4.2. Reconnaissance survey (G-4 stage) for Cr, Ni, PGE in Holinarsipura Block, Hassan District, Karnataka.**
**[Implementing Agency: Critical Mineral Trackers]**

a) The proposed area, falls within Holinarsipura schist of Sargur Group and falls in SOI toposheet no. 57 D/5 & 6.
b) The item has been proposed based on the significant values recorded in NGCM and in bedrock samples of ultramafic lithounits in the Sargur belt.
c) The NGCM data revealed significant values for chromium, with a maximum of 8043 ppm, and nickel, with a maximum of 689 ppm.
d) Additionally, the peridotites, serpentinites, and komatiites in the area recorded high chromium values of up to 2475 ppm and nickel values of up to 1200 ppm. These ultramafic rocks are highly conducive to the presence of PGE (Platinum Group Element) minerals
e) The committee found that the GSI has already worked for PGE exploration in the area during FS:2013-14 and moreover it is also overlapping with the proposed block of GSI for FS:2025-26.

***Recommendation of TCC-I***
***The committee suggested CMT to bring G3 stage investigation proposal for in-principle approval if possible.***

**Agenda 71.4.3. Reconnaissance survey (G-4 stage) Titanium, Vanadium & Lithium in Machilipatnam, Krishna district, Andhra Pradesh.**
**[Implementing Agency: Critical Mineral Trackers.]**

a) The proposed area falls in SOI toposheet no. 65 H/4.



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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 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 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.

***Recommendation of TCC-I***

**The committee didn't approve the and suggested CMT to resubmit the proposal with substantial evidences of mineralization for V, Ti, Li and monazite.**

**Agenda 71.4.4. Reconnaissance survey (G-4 stage) for chromium, Nickel, Cobalt, Titanium, Vanadium, Gallium, Lithium, REE With Aluminium Laterites in Nandrukh-Salela area Sindhudurg district, Maharashtra.**
**[Implementing Agency: Kartikay Exploration and Mining Services private Limited]**

a) The proposed area falls in SOI toposheet no. 47H/12
b) The area, located in the Western Ghats, is renowned for its aluminum laterite, which is a significant source of bauxite ore and a potential host for critical minerals such as cobalt, vanadium, gallium, hafnium, chromium, and niobium.
c) GSI studies indicate the presence of extensive lateritic cover, while NGCM data highlight the area's potential for gold (Au), platinum group elements (PGE), nickel (Ni), and chromium (Cr). The $Al_2O_3$ content, as reported by NGCM, ranges from 21% to 22%.
d) The committee found that a major part of the proposed area is overlapping with GSI's ongoing block.
e) The committee suggested KEMPL to consult literature and concentrate in the western extension of the GSI's block.

***Recommendation of TCC-I***

***The committee advised Kartikay to conduct a preliminary field visit, collect samples from the area (excluding GSI's ongoing exploration area), and resubmit the proposal for in-principle approval.***

**Agenda 71.4.5. Reconnaissance survey (G-4 stage) for base metal – gold and associated minerals in Rajnanadgaon district, Chattisgarh.**
**[Implementing Agency: M/s Maheshwari Mining Pvt Ltd]**

a) The proposed area falls in SOI toposheet no. 64D/10,64 D/13,64D/14.



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b) In F.S. 1996–97, GSI identified three low-gold prospect zones: Bhagwantola, Ambagarh-Chauki, and Goplinchua. Au values in soil and bedrock samples ranged from <0.10 to 0.20 ppm, except for 0.70 ppm in a smoky quartz vein at Bhagwantola. Goplinchua samples yielded Au values of <0.10 to 0.10 ppm, with gold grains observed after panning.
c) Mira Exploration Pvt. Ltd. conducted a reconnaissance survey over 418.25 sq. km, identifying potential for Au, Ag, Cu, Pb, Ni, and PGEs (Pt: 2.1 ppb, Pd: 1 ppb, Au: 1 ppb). Notable values include Cu: 1616 ppm, Pb: 585 ppm, Zn: 237 ppm, Ag: 2.3 g/t, Pb: 2.4%, Ag: 23 g/t, Cu: 3700 ppm, Au: 58 ppb, and Bi: 35 ppb.
d) GSI rock sample results reported Pb (40 ppm to 3.15%), Ag (1 to 24 g/t), and Au (0.1 to 0.5 g/t)
e) The committee observed that the proposed area was previously explored by GSI during FS:94-97 at a 1:50,000 scale. DGM Chhattisgarh also informed that HCL has applied to work in the same area, but the exact coordinates are not currently available. DGM will confirm the precise location after verifying the coordinates.

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

***The committee decided to review the item for in-principle approval after obtaining comments from DGM Chhattisgarh.***

**71.5.6. Preliminary exploration (G-3 stage) for Aluminous laterite; Vanadium and Gallium (Critical Minerals) in Mundalli block, Uttara Kannada dist., Karnataka. [Implementing Agency: Geomarine Solutions].**

a) Item was not reviewed as it was already approved.

**Agenda 71.4.7. Reconnaissance Survey (G-4 stage) for PGE and associated mineralization in Darekasa-Kopalgarh Block (84 Sq km), District: Gondia, Maharashtra.**
**[Implementing Agency: Gemco Kati Exploration Private Limited]**

a) The proposed area falls in SOI toposheet no. 64C/11 and 64C/12
b) Baula-Nausahi in Odisha is India's only proven PGM deposit. Preliminary studies in the Sukinda ultramafic field showed platinum values of 2–400 ppb and palladium of 1–500 ppb (IBM Minerals Yearbook 2022).
c) A PGE-bearing section was identified in an NMET block north of the proposed area in MP, along a fault zone in basalt rocks.
d) Adjacent studies in Balaghat, MP, yielded promising PGE values of 231–331 ppb, suggesting further exploration potential in the Gondia region, Maharashtra.
e) GemcoKati informed that their team visited the area, collected samples, and analyzed them, with one sample yielding a total PGE value of 111 ppb.
f) However, the committee noted that similar items (Maneri) in the surrounding areas have faced delays due to the unavailability of Forest Clearance (FC). Geology of the current block is same of Maneri block.
g) Even the chemical values of bedrock channel samples from the Maneri prospect too was not encouraging.

***Recommendation of TCC-I***



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***The committee decided to await the completion of work in the surrounding areas, based on which decision may be arrived in the current block.***

**71.5.8: Reconnaissance survey (G4 stage) for Manganese and associated minerals in and around Rugudihi, Keonjhar District, Odisha.**
**[Implementing Agency: Tata Steel].**

a) The proposed exploration block area falls immediate west to the Kolrudkura block which was worked by GSI and reported manganese mineralization.
b) After drilling 26 boreholes totalling 1500.25m it was mentioned in the reports that the western part of the area was found to be more promising than the eastern part of the block. The block proposed here for preliminary exploration is falling towards west of the explored Kolrudkura block of GSI.
c) The present proposed exploration block shares common boundary in south with the Katasai manganese mine, a 2020 expired mine which had 0.648 million tonnes of estimated resources at an average grade of 15.35% Mn at 10% Mn cutoff.
d) During recent field visit in the area, Natural Resources Division, Tata Steel Limited observed presence of manganese and collected 15nos of samples from pits yielding manganese value from 1.1% Mn to 37.5% Mn
e) Tata Steel informed the committee that the item is proposed for G3 stage of exploration. Area proposed for exploration encompasses lot of expired leases.
f) Upon review, the TCC-1 sought the opinion of DMG, Odisha to comment. DMG, Odisha informed the committee that it is working on the expired leases and decision would be arrived shortly.

***Recommendation of TCC-I***

***The committee decided to await the completion of work in the surrounding areas and decision on expired leases by the Govt. of Odisha before taking a call on this item.***

**Agenda 71.5.9. Preliminary exploration (G-3 stage) for Bauxite at Nittadgi block, Uttar Kannada, Karnataka state.**
**[Implementing Agency: PRB Infra projects Pvt. Ltd]**

a) The GSI conducted systematic geological mapping in parts of Kanara District during the FS 1968-69, following a 1962-63 reconnaissance survey of Nittadgi Plateau, Honnavar taluk, North Kanara district, which identified alumina-rich pockets.
b) This led to a detailed exploration involving grid holes, trial pits, boreholes, and the extraction of 100 tonnes of bauxite for quality assessment and pilot plant trials.
c) From FS 1964-73, Karnataka's Directorate of Mines and Geology further explored the block, estimating 1.34 million tonnes of aluminous laterite reserves with Al2O3 content ranging from 40-54%.
d) The block was recently put up for auction but could not proceed due to missing data. Later, a joint field inspection was carried out by DMG and GSI and it was decided to expand the block and a G3-stage exploration under NMET funding was recommended to make the block viable for mineral licensing.

e) DMG then allocated a larger block to PRB Infraprojects Pvt. Ltd. Accordingly, PRB geologists visited the site and collected five rock samples and the chemical analysis of the samples yielded Al2O3:25.86% to 56.68% (Avg.43.448%), Fe2O3: 1.6% to 42.21% (Avg. 20%), SiO2: 5.63% to 15.62% (Avg. 10.17%) and TiO2: 1.24% to 2.39% (Avg.1.822%).

f) The committee noted that prior studies and relevant literature were not consulted or presented, particularly a G4-stage study conducted by GSI in FS: 2016-17 in the proposed area.

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

h) PRB presented the DPR and the committee thoroughly reviewed the proposal and asked PRB to carry out in-filling boreholes among the early drilled boreholes.

i) 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.

***Recommendation of TCC-I***

***The committee recommended conducting detailed mapping of the area before making further decisions and advised PRB to present the proposal in the next TCC 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.***

**Additional Discussion**

The Executive Committee of NMET (EC) in its 34th Meeting held on 13th March, 2024, delegated the Power for Timeline Extension of NMET funded projects to Technical-cum-Cost Committee (TCC) of NMET for ongoing projects up to 03 months (only on one occasion). Beyond 03 months, the proposals will be submitted to EC for approval after due recommendation of TCC.

On further clarification from competent authority , it was informed that TCC may approve time extension upto 3 months only in the first instance. In any other case, the proposal for time extension is to be approved by EC only.

In view of the above , the following proposals for time extension recommended in the 68th TCC of NMET held on 28th , 29th & 30th August 2024 is recommended to the EC for approval:

i. **Reconnaissance Survey (G-4 Stage) for Manganese in Taljuri-Ghunchadihi Block (80.00 Sq. Km), Balangir District, Odisha**

***Recommendation of TCC-I***

***The committee*** *recommended 2 months' time extension up to 31st October 2024.*

ii. **Preliminary exploration (G3 stage) for Limestone in Katamadevarahalli Limestone Block, Gulbarga, Karnataka**

***Recommendation of TCC-I***

***The committee recommended 2 months time extension upto 15th September 2024.***



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**Annexure 1**

**List of participants attended 71st meeting of Technical-cum-cost Committee (TCC) of NMET held on 25th and 26th November, 2024 through video conferencing mode**

| S.no | Name | Designation | Email ID | Contact No | Organization |
|---|---|---|---|---|---|
| 1 | Dr. S. Ravi, | Dy. Director General, SU: Karnataka & Goa, GSI Bangalore | s.ravi1@gsi.gov.in | 9441138834 | Chairman, TCC |
| 2 | Shri. I.R. Kirmani | ADG (Retd.), GSI | irkirmani@yahoo.com | 9414014723 | Member TCC |
| 3 | Shri. Hemraj Suryavanshi | Addl. Director General (Retd.), GSI | hemraj.nmet@gmail.com | 9425603674<br>7477042176 | Member TCC |
| 4 | Shri. K. Koteswara Rao | Dy.D.G. (Retd.) GSI | kkrao1957@gmail.com | 9000117969 | Member TCC |
| 5 | Dr. S. K. Kulshrestha | DDG-RMH-III, NER, GSI, Shillong | s.kulshrestha@gsi.gov.in | 9413330658 | Member TCC |
| 6 | Dr.E.V.S.S.K. Babu | Scientist (G), NGRI | evsskbabu@ngri.res.in | 9441535852 | Member TCC |
| 7 | Shri. S.K. Adhikari | Chief Mining Geologist, IBM, Nagpur | skadhikari@ibm.gov.in | 7588690545 | Member TCC |
| 8 | Shri. P.K. Maharana | DGM (Finance), NALCO, Bhubaneswar | pmaharana@rediffmail.com | 8500669500 | Member TCC |
| 9 | Shri. Ravi Kumar Gupta | General Manager (Finance) HCL, Kolkata | ravi_g@hindustancopper.com | 9433274328 | Member TCC |
| 10 | Smt. Vandana | Cost Accounts Officer, RSAS, Bangalore, GSI | vandana@gsi.in | 8660939235 | Member TCC |
| 11 | Shri. C. Parthsarathi | Director, GSI & Member Secretary, TCC-NMET, GSI, Bengaluru | c.parthasarathi@gsi.gov.in | 9483186932 | Member Secretary |
| 12 | Sanjay Kankane | Joint Director (Geology) | dgmgeology@gmail.com | 9826753151 | DGM Chhattisgarh |
| 13 | Pradeep Singh | Dy. Director General & Head of National Mission-1A | pradeep.singh@gsi.gov.in | 9810233957 | GSI, CHQ, National Mission-1A, Kolkata |
| 14 | Dr. Bijay Krishna Nandi | Dy. Director General & Head of National Mission-1B | bijay.nandi@gsi.gov.in | 7044062193 | GSI, CHQ, National Mission-1B, Kolkata |
| 15 | Dr. Nabendu Majumdar | Director (Geophysics) | n.majumdar@gsi.gov.in | 9432372358 | GSI, CHQ, National |

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| | | | | | |
|---|---|---|---|---|---|
| | | | | | Mission-1A, Kolkata |
| 16 | Dr. Shuva Shankha Ganguli | Director (Geophysics) | shuva.ganguli@gsi.gov.in | 8985409410 | GSI, CHQ, National Mission-1B, Kolkata |
| 17 | Dr. Linashree Dalabehera | Director (Geology) | l.dalbehera@gsi.gov.in | 7003659261 | GSI, CHQ, MIIIA, Kolkata |
| 18 | Harshika Kishore | Asst. Geologist | harshika.kishore@gsi.gov.in | 9051456710 | GSI, CHQ, MIIIA, Kolkata |
| 19 | Dr. Shivakumar I. Angadi | Principal Scientist | shivakumar@immt.res.in | 8763866142 | CSIR-IMMT Bhubaneswar |
| 20 | Dr. Manju Unnikrishnan | Sr. Principal Scientist | manju@immt.res.in | 6742379462 | CSIR-IMMT Bhubaneswar |
| 21 | Manoj Kumar | Scientist | manojkumar@immt.res.in | 9494064036 | CSIR-IMMT Bhubaneswar |
| 22 | Shri P. Ravindran | GM (Exploration) | Ravindran.mecl@gmail.com | 9407607309 | MECL, Nagpur |
| 23 | Shri Shrikant Sharma | Senior Manager (Geology) | Shrikant.mecl@gmail.com | 9131229758 | MECL, Nagpur |
| 24 | Shri S. K. Satapathy | Senior Manager (Geology) | Sksatapathy4u@gmai.com | 9993617090 | MECL, Nagpur |
| 25 | Md. Dastageer | Manager (Geology) | dastageermd@gmail.com | 9560739350 | MECL, Nagpur |
| 26 | Shri Kaddala Lakshamanarao | Manager (Geology) | Lakshmanarao.mecl@gmail.com | 9000779192 | MECL, Nagpur |
| 27 | Shri Mayank Dixit | Asst. Manager (Geology) | mayankdixit@mecl.co.in | 9981771626 | MECL, Nagpur |
| 28 | Shri Kashung Chinaoshang | Asst. Manager (Geology) | Kashung301088@gmail.com | 9620456684 | MECL, Nagpur |
| 29 | Dr. Prasanta Kumar Nayak | Sr. Manager ( Geo) | pknayak@odishamining.in | 9438039323 | OMC Ltd. |
| 30 | Dr. Lingaraj Sahoo | Sr. Manager ( Geo) | lingaraj.sahoo@odishamining.in | 9437603370 | OMC Ltd. |
| 31 | Mr. Rajdeep Behera | Sr. Manager ( Geo) | rajdeep.behera@odishamining.in | 9438786086 | OMC Ltd. |
| 32 | Mr. Asim Chatterjee | Program Manager | asim@idpex.in | 7763807656 | OMC Ltd.(STC) |
| 33 | Dr.T.Rajesham | Project Coordinator & Technical Director | rajeshamterala@gmail.com | 9110333190 | Critical Mineral Trackers |



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| | | | | | |
|---|---|---|---|---|---|
| 34 | K.Nageswara Rao | Director-Geology,PR & Co-ordination | knrao.ag.mines@gmail.com | 7893847742 | Critical Mineral Trackers |
| 35 | K.Mahender Reddy | Director - Geology & Mineral Exploration | mahikam.reddy0@gmail.com | 9032012955 | Critical Mineral Trackers |
| 36 | S.Soma Rama Murthy | Director - Geology & Mineral Exploration | soma.ramamurthy@gmail.com | 9490685131 | Critical Mineral Trackers |
| 37 | S.Uma Maheswara Rao | Director - Geology & Mineral Exploration | umraohyd@gmail.com | 7993935619 | Critical Mineral Trackers |
| 38 | Mr.Vikram K.Y | Director-Operations, HR, Admin, Finanace | yelliahvikram@gmail.com | 9849574333 | Critical Mineral Trackers |
| 39 | Dr. Dillip R. Kanungo | Chief Ore Dressing Officer & Director(OD)I/c | codo@ibm.gov.in | 8237047897 | IBM, Nagpur |
| 40 | Dr.Ifthikhar Ahmed | Managing Partner - Project Coordinator | ifthiahmed@gmail.com | 9442278601 | Geo Exploration and Mining Solutions |
| 41 | Balkrishan Vishawakarma | Senior Geologist | balkrishan.v@maheshwaree.com | 9651143638 | NPEA - Maheshwari Mining Pvt Ltd |
| 42 | Promit Roy | Geologist | promit.roy@maheshwaree.in | 6289104640 | NPEA - Maheshwari Mining Pvt Ltd |
| 43 | Shravya Mehta | Geologist | shravya.mehta@maheshwaree.in | 8349962239 | NPEA - Maheshwari Mining Pvt Ltd |
| 44 | Deepak Rathod | Principal Consultant | deepak.rathod@mtcspl.com | 6358935667 | NPEA-MTCS |
| 45 | Santosh Kumar Sadangi | Senior Project Consultant | santoshkumar.sadangi@mtcspl.com | 7486025037 | NPEA-MTCS |
| 46 | Suman Aich | Senior Project Consultant | suman.aich@mtcspl.com | 7227038405 | NPEA-MTCS |
| 47 | Ritwik Ganguly | Staff Consultant | ritwik.ganguly@mtcspl.com | 7908626708 | NPEA-MTCS |
| 48 | Rajib Deb | Principal Geologist | rajib.deb@tatasteel.com | 6203507651 | Natural Resources Division-Tata Steel ltd. |



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**Annexure 2A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block (8.5 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**
**Name of the Exploration Agency - Geo Exploration and Mining Solutions**

**BH: 13, Drilling: 1200, Time line: 8 months , Review : 4 months(after mapping & sampling)**

| S. No | Nature of work | Unit | Rate as per NMET SoC March 2020 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item- S. No. | Rates as per SoC | Qty | Total Amount (Rs) | |
| 1.1 | Headquarters geologist | 1 no | 1.2 | 9000 | 30 | 270000 | |
| 1.2 | Field Geologist (Geological Mapping -1:4000 with contouring, sampling, core logging, sample processing) | 1 nos | 1.2 | 11,000 | 120 | 1320000 | |
| | Labour | | 5.7 | 522 | 240 | 125280 | |
| 1.3 | Surveyor | 1no. | 1.6.1b | 8,300 | 30 | 249000 | |
| 1.4 | Casual labour (field work including geological mapping , surveying) | 1 nos. | 5.7 | 522 | 120 | 62640 | As per rates prescribed by Central Labour Commission rates or respective State Govt. whichever is higher. |
| 1.5 | Sampler (marking of cores, core splitting, crushing, powdering, cone & quartering, sample packing, labeling) | 1no, | 1.5.2 | 5100 | 110 | 561000 | |
| | Labour | | 5.7 | 522 | 440 | 229680 | |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Total (1)** | | | | | | **2587920** | |
| | **Drilling (in-house)** | | | | | | |
| 2.1 | Core Drilling (sedimentary rock) | m | 2.2.1.1b | 7168 | 1200 | 86,01,600 | MoC rate |
| 2.2 | Land or crop compensation | Per borehole | 5.6 | 20000 | 13 | 2,60,000 | As per actual |
| 2.3 | Construction of concrete Pillar (12"x12"x30") | Per borehole | 2.2.7a | 2,000 | 17 | 34,000 | 13+4 |
| 2.4 | Rig mobilization charges (Transportation of Drill Rig & Truck associated per Drill) | Km | 2.2.8 | 36 | 400 | 14,400 | Salem to Ariyallur (to and fro) |
| 2.5 | Monthly Accommodation Charges for drilling Camp | Rig/month | 2.2.9 | 50,000 | 4 | 2,50,000 | |
| 2.6 | Drilling Camp Setting Cost | nos | 2.2.9a | 2,50,000 | 1 | 2,50,000 | |
| 2.7 | Drilling Camp Winding up Cost | nos | 2.2.9b | 2,50,000 | 1 | 2,50,000 | |
| 2.8 | Approach Road Making | Km | 2.2.10.a | 22,020 | 8 | 1,76,160 | As per actuals |
| 2.9 | Bore Hole Fixation and determination of coordinates& Reduced Level of the boreholes and by DGPS | Nos | 1.6.2 | 19,200 | 13 | 2,49,600 | 13 boreholes + 1 base station |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2.1 | Drill Core Preservation (complete borehole plus mineralized cores of all the remaining Bhs) | m | 5.3 | 1,590 | 800 | 26,71,200 | Entire drill core including soil will be analyzed. |
| **Total (2)** | | | | | | **1,27,56,960** | |
| 3 | Laboratory studies | | | | | | |
| 3.1 | Primary BH Samples (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4,200 | 800 | 33,60,000 | Major oxide |
| 3.2 | BH Check Samples Internal 5% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4200 | 0 | 0 | Major oxide 5% internal sample |
| 3.3 | BH Check Samples Internal 10% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | nos | 4.1.15a | 4200 | 80 | 3,36,000 | Major oxide 10% internal sample |
| **Total (3)** | | | | | | **36,96,000** | |
| 4 | Petrological studies | | | | | | |
| **4.1** | Preparation of thin section | Nos. | 4.3.1 | 2,353 | 10 | 23,530 | |
| **4.2** | Petrological Study of thin section for optical properties | Nos. | 4.3.4 | 4,232 | 10 | 42,320 | |
| **4.3** | Bulk Density | Nos. | 4.8.1 | 1605 | 5 | 8,025 | |
| **Total (4)** | | | | | | **73,875** | |
| **Total (1+2+3+4)** | | | | | | **1,91,14,755** | |



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|---|---|---|---|---|---|---|---|
| **5 Miscellaneous** | | | | | | | |
| 5.1 | Preparation of Exploration Proposal | Nos | 5.1 | 2% of project cost | 1 | 5,51,529.90 | 5 hard copies with 1 soft copy |
| 5.2 | Geological report preparation | Nos | 5.2 | A Minimum of Rs. 7.5 lakhs or 3% of the work whichever is more | 1 | 8,27,294.85 | 5 hard copies with 1 soft copy Additional copy @Rs.3000/- per copy |
| 5.3 | Report Peer Review Charges | | | lumpsum | | 30,000 | |
| **Total (1+2+3+4+5)** | | | | | | **2,05,23,580** | |
| 6 | GST (18%) | | | | | **52,17,357.60** | |
| **GRAND TOTAL (1+2+3+4+5+6)** | | | | | | **2,57,40,937** | |
| | **or Say Rs. In Lakhs** | | | | | **257.41** | |

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**Annexure 2B**

**Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block (8.5 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**

| | **months** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | Review | 5th | 6th | 7th | 8th |
| **Camp set up, Detailed Geological Mapping on 1:4000 scale** | | | | | | | | | |
| **Subsurface drilling** | | | | | | | | | |
| **Core Sample (CS)** | | | | | | | | | |
| **Chemical assay studies** | | | | | | | | | |
| **Synthasis of all available data** | | | | | | | | | |

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**Annexure 3A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for limestone in Kulumur Block (7.64 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**
**Name of the Exploration Agency - Geo Exploration and Mining Solutions**

**Bh.:14 , Drilling: 1200m, Timeline : 8 months , Review : 4 months (after mapping & sampling)**

| S. No | Nature of work | unit | Rate as per NMET SoC March 2020 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item- S. No. | Rates as per SoC | Qty | Total Amount (Rs) | |
| 1.1 | Headquarters geologist | 1 no | 1.2 | 9000 | 30 | 270000 | |
| 1.2 | Field Geologist | 1 no | 1.2 | 11,000 | 120 | 1320000 | |
| | Casual labour | 1 no | 5.7 | 522 | 240 | 125280 | |
| 1.3 | Surveyor | 1no. | 1.6.1b | 8,300 | 30 | 249000 | |
| 1.4 | Casual labour | 1 no | 5.7 | 522 | 120 | 62640 | As per rates prescribed by Central Labour Commission rates or respective State Govt. whichever is higher. |
| 1.5 | Sampler (marking of cores, core splitting, crushing, powdering, cone & quartering, sample packing, labeling) | 1 no | 1.5.2 | 5100 | 110 | 561000 | Processing of 1740 CS, 10 PCS @ 3 samples per day per sampler (approx.) |
| | Labour | 1 no | 5.7 | 522 | 440 | 229680 | |
| **Total (1)** | | | | | | **25,87,920** | |
| 2.1 | Core Drilling (sedimentary rock) | m | 2.2.1.4a | 7168 | 1200 | 86,01,600 | MoC rate |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2.2 | Land or crop compensation | Per borehole | 5.6 | 20000 | 14 | 2,80,000 | As per actuals |
| 2.3 | Construction of concrete Pillar (12"x12"x30") | Per borehole | 2.2.7a | 2,000 | 20 | 40,000 | 14+6 |
| 2.4 | Rig mobilization charges (Transportation of Drill Rig & Truck associated per Drill) | Km | 2.2.8 | 36 | 400 | 14,400 | |
| 2.5 | Monthly Accommodation Charges for drilling Camp | Rig/month | 2.2.9 | 50,000 | 4 | 2,00,000 | Period required for drilling 1740m @ 14 boreholes |
| 2.6 | Drilling Camp Setting Cost | nos | 2.2.9a | 2,50,000 | 1 | 2,50,000 | |
| 2.7 | Drilling Camp Winding up Cost | nos | 2.2.9b | 2,50,000 | 1 | 2,50,000 | |
| 2.8 | Approach Road Making | Km | 2.2.10.a | 22,020 | 8 | 1,76,160 | As per actuals |
| 2.9 | Bore Hole Fixation and determination of coordinates& Reduced Level of the boreholes and by DGPS | Nos | 1.6.2 | 19,200 | 14 | 2,68,800 | 14 boreholes + 1 base station |
| 2.1 | Drill Core Preservation (complete borehole plus mineralized cores of all the remaining Bhs) | m | 5.3 | 1,590 | 800 | 27,66,600 | Entire drill core including soil will be analyzed. |
| **Total (2)** | | | | | | **1,28,47,560** | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3 | Laboratory studies | | | | | | |
| 3.1 | Primary BH Samples (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4,200 | 800 | 33,60,000 | Major oxide |
| 3.2 | BH Check Samples Internal 5% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4200 | 0 | 3,65,400 | Major oxide 5% internal sample |
| 3.3 | BH Check Samples Internal 10% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | nos | 4.1.15a | 4200 | 80 | 7,30,800 | Major oxide 10% internal sample |
| **Total (3)** | | | | | | **44,56,200** | |
| 4 | Petrological studies | | | | | | |
| 4.1 | Preparation of thin section | Nos. | 4.3.1 | 2,353/- | 10 | 23,530 | |
| 4.2 | Petrological Study of thin section for optical properties | Nos. | 4.3.4 | 4,232/- | 10 | 42,320 | |
| 4.3 | Bulk Density | Nos. | 4.8.1 | 1605/- | 3 | 4,815 | |
| **Total (4)** | | | | | | **70,665** | |
| **Total (1+2+3+4)** | | | | | | **1,99,62,345** | |
| **5. Miscellaneous** | | | | | | | |
| 5.1 | Preparation of Exploration Proposal | Nos | 5.1 | 2% of project cost | 1 | 5,67,284.10 | 5 hard copies with 1 soft copy |
| 5.2 | Geological report preparation | Nos | 5.2 | A Minimum of Rs. 7.5 lakhs or 3% of work | 1 | 8,50,926.15 | 5 hard copies with 1 soft copy Additional copy @Rs.3000/- per copy |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | whichever is more | | | |
| 5.3 | Report Peer Review Charges | | | lumpsum | | 30,000 | |
| **Total (1+2+3+4+5)** | | | | | | **2,14,10,555** | |
| 6 | GST (18%) | | | | | **53,66,234.70** | |
| **GRAND TOTAL (1+2+3+4+5+6)** | | | | | | **2,67,76,789.95** | |
| | **or Say Rs. In Lakhs** | | | | | **267.77** | |


**Annexure 3B**

**Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for limestone in Kulumur Block (7.64 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**

| | months | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | Review | 5th | 6th | 7th | 8th |
| **Camp set up, Detailed Geological Mapping on 1:4000 scale** | | | | | | | | | |
| **Subsurface drilling** | | | | | | | | | |
| **Core Sample (CS)** | | | | | | | | | |
| **Chemical assay studies** | | | | | | | | | |
| **Synthasis of all available data** | | | | | | | | | |


**Annexure 4A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka**
**Name of the Exploration Agency - Mining Tech Consultancy Services Ltd. (MTCS)**
**Total Area - 7 sqkm (Detailed Mapping 4 sq.km); No. of Boreholes- 10, Drilling Meterage- 1000 ; Completion Time - 12 months, Review : 4 & 8 months**

| Sl. No. | Item of work | Unit | Rates as per NMET SoC 2020-21 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item -Sl No. | Rates per Unit as per SOC (Rs) | Quantum | Total Amount (Rs) | |
| A | GEOLOGICAL MAPPING (1:2000 with contouring) & ASSOCIATED ACTIVITIES (IN-HOUSE) | | | | | | |
| 1 | Charge for procurement of Satellite Imagery (CartoDEM, 2.5m posting, DSM, 14km x 14km scene) for Remote sensing, multispectral and DEM data analysis | Lumpsum | 1.1 | 0 | 2 | - | As per Actuals |
| 2 | Geologist (HQ) - 1 No | day | 1.2 | 9,000 | 40 | 3,60,000 | |
| 3 | Geologist (Field) - 2 No | day | 1.2 | 11,000 | 150 | 16,50,000 | 2 Geologists will be deployed for 45 days each |
| 4 | Labor (Field) - 2 No per Geologist | day | 5.7 | 522 | 300 | 1,56,600 | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher. |
| 5 | Trenching | cubic meter | 2.1.1 | 3,300 | 200 | 6,60,000 | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 6 | Sampler - 1 No | day | 1.5.2 | 5,100 | 83 | 4,23,300 | |
| 7 | Labor (Sampling) - 4 Nos | day | 5.7 | 522 | 332 | 1,73,304 | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher. |
| | | | | | Sub-Total A | 34,23,204 | |
| B | GEOPHYSICAL SURVEY (OUT SOURCING) | | | | | | |
| 1 | I.P. cum-resistivity, S.P. Magnetic Survey | 10 Lkm | 3.4b | 14,48,693 | 7 | 1,01,40,851 | Rs 14,48,693 per 8-10 Lkm, Total BOQ 70 LKm |
| | | | | | Sub-Total B | 1,01,40,851 | |
| C | SURVEY WORK (IN-HOUSE) | | | | | | |
| 1 | Topographical Survey (on 1:2000 Scale) | day | 1.6.1a | 8,300 | 35 | 2,90,500 | |
| 2 | Labor (Field) - 4 No for Survey work | day | 5.7 | 522 | 140 | 73,080 | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher |
| | | | | | Sub-Total C | 3,63,580 | |
| D | EXPLORATORY DRILLING (IN-HOUSE) | | | | | | |
| 1 | Drilling upto 300m (very Hard Rock) | m | 2.2.1.4a | 12,650 | 1000 | 1,26,50,000 | 1st level of drilling with 10 inclined exploratory Boreholes have been proposed. |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2 | BH deviation survey by multishot camera | per m | 2.2.6 | 330 | 1000 | 3,30,000 | |
| 3 | Land / Crop Compensation (in case the BH falls in agricultural Land) | per BH | 5.6 | 20,000 | 5 | 1,00,000 | As per actuals |
| 4 | Construction of concrete Pillar (12"x12"x30") | per BH | 2.2.7a | 2,000 | 10 | 20,000 | As per actuals |
| 5 | Transportation of Drill Rig & Truck associated per drill | km | 2.2.8 | 36 | 2500 | 90,000 | Transportation of 1 drill rigs from Parsa, Chhattisgarh to Karnataka (to &fro) |
| 6 | Accommodation Charges for drilling Camp (upto two drill Rigs) | month | 2.2.9 | 50,000 | 3.5 | 1,75,000 | Total 3.5 months considered for completion of exploratory drilling |
| 7 | Drilling Camp Setting Cost | Nos | 2.2.9a | 2,50,000 | 1 | 2,50,000 | 1 drilling rig |
| 8 | Drilling Camp Winding up Cost | Nos | 2.2.9b | 2,50,000 | 1 | 2,50,000 | 1 drilling rig |
| 9 | Road Making (Flat Terrain) | km | 2.2.10a | 22,020 | 10 | 2,20,200 | As per Actuals |
| 10 | Drill Core Preservation | per m | 5.3 | 1,590 | 500 | 7,95,000 | One complete Bh plus mineralized part of all Bhs to be preserved in core boxes and hand over to Core repository |
| 11 | Geologist (Field) - 1 No | day | 1.2 | 11,000 | 0 | - | |
| 12 | Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS | Per Point of observation | 1.6.2 | 19,200 | 10 | 1,92,000 | |
| 13 | Charge of Surveyor for Borehole fixation | day | 1.6.1a | 8,300 | 0 | - | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 14 | Labor (Field) - 2 No for Survey work | day | 5.7 | 522 | 0 | - | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher |
| 15 | Sampler - 1 No | day | 1.5.2 | 5,100 | 0 | - | |
| 16 | Labour (Sampling) - 4 Nos | day | 5.7 | 522 | 0 | - | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher |
| | | | | | Sub-Total D | 1,50,72,200 | |
| E | LABORATORY STUDIES | | | | | | |
| 1 | Chemical Analysis (ICP-MS Ni-S Fire Assay) | | | | | | |
| a | Bedrock+Trench | Nos | 4.1.5d | 11,800 | 300 | 35,40,000 | |
| b | Core Samples | Nos | 4.1.5d | 11,800 | 300 | 35,40,000 | Sample length -50 cm |
| c | Check samples(10% external) | Nos | 4.1.5d | 11,800 | 60 | 7,08,000 | |
| 2 | Physical & Petrological Studies | | | | | | |
| *a* | *Petrographic Studies (Bedrock+Core Samples)* | | | | | | |
| i | Preparation of thin section | Nos | 4.3.1 | 2,353 | 15 | 35,295 | |
| ii | Study of thin section | Nos | 4.3.4 | 4,232 | 15 | 63,480 | |
| *b* | *Mineragraphic Studies (Bedrock Samples)* | | | | | | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| i | Preparation of polish section | Nos | 4.3.2 | 1,549 | 15 | 23,235 | |
| ii | Study of polished section | Nos | 4.3.4 | 4,232 | 15 | 63,480 | |
| *c* | *Digital Photographs* | Nos | 4.3.7 | 280 | 20 | 5,600 | |
| *d* | *Specific Gravity Determination* | Nos | 4.8.1 | 1,605 | 5 | 8,025 | |
| *e* | *XRD Analysis (Bedrock Samples)* | Nos. | 4.5.1 | 4,000 | 10 | 40,000 | |
| | | | | | Sub-Total E | 80,27,115 | |
| F | GEOLOGICAL REPORT PREPARATION (IN-HOUSE) | | | | | | |
| a | Geological Report Preparation charge<br>(5 Hard copies with a soft copy) | Lumpsum | 5.2 | For the projects having cost exceeding 300 lakhs - A minimum of Rs 9 lakhs or 3% of the value of work whichever is more | | 11,10,809 | |
| | | | | | Sub-Total F | 11,10,809 | |
| G | EXPLORATION PROPOSAL PREPARATION (IN-HOUSE) | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| a | Preparation of Exploration Proposal (5 Hard copies with a soft copy) | Lumpsum | 5.1 | 2% of the Cost or Rs. 3.8 Lakhs whichever is lower | 1 | 3,80,000 | |
| | | | | | Sub-Total G | 3,80,000 | |
| H | PEER REVIEW | | | | | | |
| a | Report Peer Review | Lumpsum | As per EC decision | 30,000 | 1 | 30,000 | |
| | | | | | Sub-Total H | 30,000 | |
| | Operational charges | | | | | | To be given |
| | Tendering cost | | | | | | |
| PROJECT COST WITHOUT GST | | | | | | 3,85,47,759 | |
| **18% GST** | | | | | | 69,38,597 | |
| **TOTAL PROJECT COST** | | | | | | 4,54,86,355 | |
| **Say in lakh** | | | | | | **454.86** | |

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**Annexure 4B**

**Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka**

| Activity | Type of Job | Months | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | Review | 5 | 6 | 7 | 8 | Review | 9 | 10 | 11 | 12 |
| Desktop study with Remote sensing, multispectral and DEM data analysis (including obtaining clearances etc) | HQ | | | | | | | | | | | | | | |
| Camp setting | Field | | | | | | | | | | | | | | |
| Topographical Survey (1:2000 scale) | Field | | | | | | | | | | | | | | |
| Geological Mapping (including surface & stream sampling) | Field | | | | | | | | | | | | | | |
| Laboratory Studies of Surface & Stream Samples | Lab | | | | | | | | | | | | | | |
| Geophysical survey (including mobilization & data acquisition) | Field | | | | | | | | | | | | | | |
| Geophysical survey (interpretation & report) | HQ | | | | | | | | | | | | | | |
| Trenching (including logging, sampling etc) | Field | | | | | | | | | | | | | | |
| Laboratory Studies of Trench Samples | Field | | | | | | | | | | | | | | |
| Data compilation, progress review | HQ | | | | | | | | | | | | | | |
| Drill Rig mobilization | Field | | | | | | | | | | | | | | |
| Exploratory Drilling | Field | | | | | | | | | | | | | | |
| Camp winding up | Field | | | | | | | | | | | | | | |
| Laboratory Studies of borehole Samples | Lab | | | | | | | | | | | | | | |
| Data compilation, geological report preparation & submission to NMET | HQ | | | | | | | | | | | | | | |

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**Annexure 5A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udipi District, Karnataka.**
**Name of the Exploration Agency – Critical Mineral Tracker**
**Area : 1.20 sq. km, Drilling: 85m (1bh 25m, 6bh 10m), No. of BH: 07, Borehole depth range- 10m each(1 bh upto 25m); Schedule timeline- 6months Review: After 3 Months]**

| S. No. | Item of Work * | Unit * | Rates as per NMET SoC 2020-21 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item No. * | Rates as per SoC * (a) | Qty. (b) | Total Amount (Rs) (a*b) | |
| **A** | **Geological Mapping Other Geological Work & Surveying** | | | | | | |
| | Geological mapping, (1:4000 scale with contouring) & Pitting , drilling work | | | | | | |
| i | a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work | day | 1.3 | 11,000 | 60 | 6,60,000 | |
| ii | b. Labours Charges; Base rate | day | 5.7 | 522 | 120 | 62,640 | Two Labours |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | c. Charges for Geologist per day (HQ) | day | 1.3 | 9,000 | 25 | 2,25,000 | Pre & Post field |
| | d. Charges for one Sampler per day (1 Party) | one sampler per day | 1.52 | 5,100 | 23 | 1,17,300 | |
| | e. Labours (4 Nos) | day | 5.7 | 522 | 92 | 48,024 | |
| | **Sub Total- A** | | | | | **11,12,964** | |
| **B** | **Ground Geophysical Survey** | | | | | | |
| 1 | IP. Induced Polarization (I.P) cum Resistivity S.P and Magnetic (30 Lkm) | 8-10 Line Km | | | | | |
| 3 | Geophysicist party days (Field) | per day | | | | | |
| 4 | c. Labours Charges | day | | | | | |
| 5 | Geophysicist party days (HQ) | per day | | | | | |
| | **Sub Total- B** | | | | | | |
| **C** | **Survey work** | | | | | | |
| a | DGPS Survey for BH fixation & RL determination | Per Point of observation | 1.6.2 | 19,200 | 17 | 326400 | 10 Block Boundary Points (A to J) + 7 BH Locations |
| b | Charges of Surveyor (1 party) for Topogrphic Mapping in 1:4000 scale | one surveyor per day | 1.6.1a | 8,300 | 20 | 166000 | 2m Interval |
| c | Labours Charges for survey work; | day | 5.7 | 522 | 40 | 20880 | |
| | **Sub-Total C** | | | | | **5,13,280** | |
| **D** | **Pitting** | | | | | | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | a) Excavation of Pitting (upto 2 m depth) | per cu.m | 2.1.2 | 3,800 | 50 | **190000** | |
| **E** | **DRILLING - Outsourced** | | | | | | |
| 1 | Drilling up to 300m Soft Rock) | m | 2.2.1.3 | 7,168 | 85 | 6,09,280 | MoC rate |
| 2 | Construction of concrete Pillar (12"x12"x30") | per borehole | 2.2.7a | 2,000 | - | - | |
| 3 | Transportation of Drill Rig & Truck associated per drill (2 rigs) | Km | 2.2.8 | 36 | - | - | |
| 4 | Monthly Accomodation Charges for drilling Camp (up to 2 Rigs) | month | 2.2.9 | 50,000 | - | - | |
| 5 | Drilling Camp Setting Cost | Nos | 2.2.9a | 2,50,000 | - | - | |
| 6 | Drilling Camp Winding up Cost | Nos | 2.2.9b | 2,50,000 | - | - | |
| 7 | Approach Road Making for Rugged - hilly Terrain | Km | 2.2.10b | 32,200 | 2.6 | 83,720 | |
| 8 | Drill Core Preservation | per m | 5.3 | 1,590 | 85 | 1,35,150 | |
| | **Sub Total E** | | | | | **8,28,150** | |
| **F** | **Borehole Geophysical Logging** | 5 Bhs of 350m each | | | | | |
| **G** | **LABORATORY STUDIES** | | | | | | |
| 1 | **Chemical Analysis** | | | | | | |
| i) | **Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment)** | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE by Fire Assay | Nos | | | | | |
| ii) | **Surface Check samples (10% External)** | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| iii) | **Trench & Check Samples from Trench** | | | | | | |
| | **Trench samples** | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| iv) | **Trench Check samples (10% External)** | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| v) | **BH Core samples** | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements | Nos | | | | | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | c. For PGE | Nos | | | | | |
| vi) | **BH Core samples (10%External)** | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| Vii) | Major Oxides (+10% check) | Nos | 4.1.15a | 149 | 4,200 | 6,25,800 | BH Core samples 85 & Pit Samples 50 |
| Viii) | Analysis of Bauxite(+10% check) | Nos | 4.1.17a | 11 | 6,700 | 73,700 | Combined Determination of (THA - 140 deg C),(MHA-240 deg C) and reactive silica |
| ix) | Analysis of REE,Ga,V (+10% check) | Nos | 4.1.13 | 22 | 5,380 | 1,18,360 | |
| | **Physical & Petrological Studies** | | | | | | |
| 2 | Preparation of thin section | Nos | 4.3.1 | 10 | 2,353 | 23,530 | |
| i | Study of thin section | Nos | | | | | |
| ii | Preparation of polish section | Nos | | | | | |
| iii | study of polished section | Nos | | | | | |
| iv | Digital Photographs | Nos | 4.3.7 | 20 | 280 | 5,600 | |
| v | Whole Rock Analysis | Nos | | | | | |
| vi | Sp. Gravity | Nos | | | | - | |
| vii | SEM Studies | per hour | | | | | |
| | EPMA studies | per hour | | | | | |
| viii | **TOTAL G** | | | | | **8,46,990** | |
| | **Total A to G** | | | | | **34,91,384** | |



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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **H** | **Geological Report Preparation** | **5 Hard copies with a soft copy** | **5.2** | **5.2 (ii)** | | **250000** | |
| **I** | **Peer review Charges** | | | | | **30,000** | Lumpsum as per EC Decision |
| **J** | **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 | | **69,828** | |
| | **Tendering cost** | | | | | | To be calculated |
| | **Operational Charges** | | | | | | |
| **K** | **Total Estimated Cost without GST** | | | | | **38,41,212** | |
| **L** | **Provision for GST (18% of K)** | | | | | **6,91,418** | |
| **M** | **Total Estimated Cost with GST** | | | | | **45,32,630** | |
| **N** | | | | **or Say Rs. In Lakhs** | | **45.33** | |
| | | | | | | | |
| **Note:** | **Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.** | | | | | | |
| **1** | **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.** | | | | | | |
| **2** | **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.** | | | | | | |
| **3** | **Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.** | | | | | | |
| **4** | **Any item of work not mentioned above shall be added as per SoC.** | | | | | | |
| **5** | **SoC Item No, Unit and Rate for each item of work must be as mentioned in the SoC.** | | | | | | |

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**Annexure 5B**

**Time Schedule/ Action plan for Preliminary Exploration (G-3 Stage) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udipi District, Karnataka.**

| S. No. | | | 1 | 2 | 3 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Camp Setting | Months/Days | | | | | | | |
| 2 | Geological Mapping & Sampling | days | | | | | | | |
| 3 | Geophysical survey | L.km | | | | | | | |
| 4 | Geophyscist party days (HQ) for data interpretation & Report | Days | | | | | | | |
| 5 | Pitting/Trenching | cu.m | | | | | | | |
| 6 | Surface Drilling (1 rigs) | m | | | | | | | |
| 7 | Survey Party days | days | | | | | | | |
| 8 | Geologst Man days | days | | | | | | | |
| 9 | Sampler Man days | days | | | | | | | |
| 10 | Camp Winding | months | | | | | | | |
| 11 | Laboratory Studies | Nos. | | | | | | | |
| 12 | Report Writing with Peer Review | months | | | | | | | |

Review

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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, 8th January 2025**

# Corrigendum

With reference to the minutes of 71st TCC Meeting held on 25th and 26th November, 2024 the following modifications may be noted w.r.t the Agenda nos. **71.1.2** , **71.1.3, 71.1.4 and 71.1.6 along with respective Annexures** :

**Agenda 71.1.2 Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block, Ariyalur and Perambalur Districts, Tamil Nadu.**
**[Implementing Agency: Geo Exploration and Mining Solutions]**

a) The proposed block is a part of Ariyalur Cretaceous formation and falls in part of SOI toposheet no.58M/03 and 58M/04
b) In 1975, the Department of Geology and Mining conducted detailed investigation for limestone east of Ariyalur town (formerly in Trichy district) on behalf of the Tamil Nadu Cements Corporation, carrying out exploration in five phases. Subsequently, MECL, KIOCL, and GSI conducted extensive geological exploration in the vicinity of the proposed block to assess mineral resources and evaluate its geological potential.
c) The limestone in this area is yellowish to dirty white or brown, hard, compact, and fossil-rich, with pelecypods, gastropods, corals, Gryphea, Alectrionia, and Inoceramus, making it ideal for the cement industry. Calcareous marl intercalations, ranging from millimeters to a few centimeters in thickness, are common. The marly limestone, due to its clay-rich composition, is softer and less consolidated.
d) While the occurrence of fossiliferous limestone of the Kallankurichchi Formation is well-established in the proposed area, exploration has been relatively limited compared to the southern part, where limestone mines are operational within the same formation.
e) Expanding upon these Geo Exploration and Mining Solutions has proposed the item to identify and quantify different grades of limestone according to the specific requirements of various industries.
f) The committee conducted a thorough review and advised GEMS to rationalize the drilling plan, restricting boreholes to limestone.
g) The exploration agency has to restrict drilling not more than 2 to 3 m in the rock underlying the limestone. Except the stratigraphic borehole, which may go up to 180 m depth, all other 12 boreholes in the block should be judiciously closed after intersecting the targeted limestone.
h) The committee also recommended against conducting geophysical studies and pitting or trenching.

***Recommendation of TCC-I***

***The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block, Ariyalur and Perambalur Districts, Tamil Nadu." with an estimated cost of Rs. 225 lakhs (including GST) within time schedule of 8 months and submission of report as per Annexures 2A & 2B. The item will be reviewed after 4 months.***

**Agenda 71.1.3. Preliminary Exploration (G-3 Stage) for limestone in Kulumur Block (7.64 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**
**[Implementing Agency: Geo Exploration and Mining Solutions]**

a) The proposed block is a part of Ariyalur Cretaceous formation and falls in part of SOI toposheet no. 58M/03 and is the northern extension of proposed Chokkanathapuram Block
b) In 1975, the Department of Geology and Mining conducted detailed investigation for limestone east of Ariyalur town (formerly in Trichy district) on behalf of the Tamil Nadu Cements Corporation, carrying out exploration in five phases. Subsequently, MECL, KIOCL, and GSI conducted extensive geological exploration in the vicinity of the proposed block to assess mineral resources and evaluate its geological potential.
c) The limestone is yellowish to dirty white or brown, hard, compact, and rich in fossils like pelecypods, gastropods, corals, Gryphea, Alectrionia, and Inoceramus, making it ideal for the cement industry. It features calcareous marl intercalations, varying from millimetres to a few centimeters in thickness. The marly limestone is softer and poorly consolidated due to its clay-rich composition.
d) While the occurrence of fossiliferous limestone of the Kallankurichchi Formation is well-established in the proposed area, exploration has been relatively limited compared to the southern part, where limestone mines are operational within the same formation.
e) Based on this background, Geo Exploration and Mining Solutions has proposed a project to identify and quantify limestone of varying grades to meet the specific requirements of diverse industries.
f) Geo Exploration and Mining Solutions informed the committee that shale, often associated with sandstone, is now being utilized in the ceramic industry. However, the committee did not approve drilling any lithology other than limestone.
g) Since in the adjoining Chokkanathapuram block stratigraphic borehole has been approved, in Kulumur block all the 14 boreholes should be judiciously closed after intersecting the targeted limestone.
h) Similarly, geophysical components like IP, SP, resistivity and magnetic surveys are also not recommended.

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

***The committee recommended the proposal for the approval of EC for "Preliminary exploration (G3 stage) for limestone in Kulumur Block, Ariyalur and Perambalur Districts, Tamil Nadu" with an estimated cost of Rs. 225 lakhs (including GST) within time schedule of 8 months and submission of report as per Annexures 3A & 3B. The item will be reviewed after 4 months.***

**Agenda 71.1.4. Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka.**
**[Implementing Agency: Mining Tech Consultancy Services Limited]**

a) The proposed gold block is a part of Ranebennur Formation of Chitradurga Group of Shimoga-Dharwar schist belt and falls in part of SOI toposheet no. 48 N/6.
b) The lithounits in and around the area are BIF, argillite/greywacke suite of rocks along with chert, quartzite and metabasalt and gold mineralization is reported from BIF
c) GSI conducted exploration in the Chinmulgund area (outside the proposed block) between 1970 and 1992, reporting 0.84 million tonnes of ore with an average width of 3.5 m, grading 4.38 g/t, and containing 3807 kg of gold. In the Salagudda area, gold values ranged from <0.1 ppm to 12 ppm.

d) During FSP 2020-21, GSI explored the Chinnikatti area, finding higher Au values concentrated in the southern BIF band, while the northern band was sparsely auriferous. Of 50 samples, 12 showed 32–100 ppb Au, 9 showed 104–400 ppb, and 8 ranged from 595 to 7880 ppb. This led to identifying two potential zones: Chinnikatti South-Southeast (CSSE) and South Bisalhalli blocks. The block consists of three parallel but discontinuous BMQ bands exposed in strike length of about 2 km and the width is varies from 1 meter to 10m. In CSSE, band 1 BRS samples contained 37–90 ppb Au, band 2 showed 294–546 ppb, and band 3 recorded up to 2420 ppb in BRS and 7880, 1000, and 142 ppb in trench samples.
e) The item was proposed in the 69th TCC meeting for in-principle approval, where the Committee advised MTCS to review previous and recent works, conduct a field visit, analyze samples, and present findings. Following this, MTCS reviewed GSI reports, conducted a site visit, collected rock chip samples, and revised the area from 23.60 sq. km to 7 sq. km based on the findings and recommendation of 69th and 70th TCC-I meeting
f) Again during the 70th (TCC-I) meeting, the Committee advised to submit the project proposal along with cost estimates to undertake preliminary exploration. Accordingly, MTCS has prepared the project proposal to carry out preliminary exploration (G3) in Chinnikatti over an area of 7.00 Sq.km.
g) Mining Tech Consultancy Services Limited reported that they visited the area and collected samples from both argillite and quartz veins but did not get encouraging results. The committee was informed that GSI had conducted exploration in adjoining areas, and the Geological Memorandum (GM) of those areas had been handed over to the State DGM. However, the gap area (proposed) was not considered promising.
h) The committee advised Mining Tech Consultancy Services Limited to focus in an area of 07 sq.km instead of earlier proposed 23.6 sq.km.
i) Detailed mapping on 1:2000 scale will be confined to about 2.5 to 3 sq.km area engulfing the BIFs and the quartz vein. Rest of the area will be assessed through only surface sampling on 1:12500 scale and geophysical surveys.
j) Drilling will be carried out at systematic interval over the BIFs and random intervals over quartz vein. Boreholes of first level will have to be drilled for 50 m vertical depth.
k) Since the area of operation is very small, the agency is advised to use the data of GSI for stream sediment sampling and ASTER studies.

***Recommendation of TCC-I***

***The committee recommended the proposal for the approval of EC for "Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka." with an estimated cost of Rs. 469 lakhs (including GST) within time schedule of 12 months and submission of report as per Annexures 4A & 4B. The item will be reviewed after 4 & 8 months.***

**Agenda 71.1.6. Preliminary Exploration (G-3 Stage) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udupi District, Karnataka.**
**[Implementing Agency: Critical Mineral Tracker]**

a) The proposed area is a part of Laterite belt in Western Ghats and falls in part of SOI toposheet no. 48 K/9. The studied area represents a part of northwestern region of Karnataka and is in close vicinity to the west coast.
b) DMG, Karnataka has investigated Govindagudde/Sedigudde block by mapping the area on 1:2000 scale and estimated 77000 tonnes.
c) Laterite in the area occurs as 4–6 m thick sheet-like masses on plateau tops, with dark brown to pale pink weathered surfaces and vertical tubes filled with gray to pinkish-brown clay. The laterite in the area is characterized by Al2o3 content ranging from 34 to 54%.

d) The NGCM data reveals significant concentrations of critical minerals, with hafnium (Hf) ranging from 2.13 to 29.08 ppm, zirconium (Zr) from 137 to 1091 ppm, and arsenic (As) from 1.26 to 18.9.

e) In Sedigudde plateau 9 nos prospecting pits admeasuring 1.5ml * 2.5m m were sunk to a depth of 1.0m to 2.0m depth. During the pitting the lateritic material obtained in each pit was sampled with an interval of 50 cm.47 samples were generated .A reserve of 53,000tons has been estimated in an area of two hectare upto a depth of 2m and with 50% recovery.

f) DMG, Karnataka has allocated Sedigudde plateau to Critical Mineral Trackers vide proceedings of the 7th meeting of technical committee (Exploration) held on 23/09/2024 to carry out G3 investigation (Copy enclosed).

g) A field visit confirmed the presence of laterite in the area, with numerous outcrops observed on the hilltops. These outcrops display a variety of minerals, including red hematite, black manganese oxide, and light yellow to white limonite and clay minerals.

h) After review, the committee observed that only a few samples analyzed showed >40% $Al_2O_3$, while the $SiO_2$ content was notably high (25-52%). However, the committee noted that $Al_2O_3$ values might increase in the lower part.

i) Since it is the DMG awarded block, the committee decided to relook the area and It was advised to conduct mapping at a 1:4000 scale and plan boreholes at 400m spacing. Additionally, the committee recommended shifting and drilling boreholes B9, B12, and B13 further south.

***Recommendation of TCC-I***

***The committee recommended the proposal for the approval of EC for "Preliminary Exploration ( G-3 Stage ) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udupi District, Karnataka." with an estimated cost of Rs. 44 lakhs (including GST) within time schedule of 6 months and submission of report as per Annexures 5A & 5B. The item will be reviewed after 3 months.***

The other text of the minutes will remain unchanged.

C. Parthasarathi 08/1/25

**[C. Parthasarathi]**
Director, GSI & Member Secretary, TCC- NMET

**To**

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.

**Annexure 2A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block (8.5 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**
**Name of the Exploration Agency - Geo Exploration and Mining Solutions**

**BH: 13, Drilling: 1200, Time line: 8 months , Review : 4 months(after mapping & sampling)**

| S. No | Nature of work | Unit | Rate as per NMET SoC March 2020 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item- S. No. | Rates as per SoC | Qty | Total Amount (Rs) | |
| 1.1 | Headquarters geologist | 1 no | 1.2 | 9000 | 30 | 270000 | |
| 1.2 | Field Geologist (Geological Mapping - 1:4000 with contouring, sampling, core logging, sample processing) | 1 nos | 1.2 | 11,000 | 120 | 1320000 | |
| | Labour | | 5.7 | 522 | 240 | 125280 | |
| 1.3 | Surveyor | 1no. | 1.6.1b | 8,300 | 30 | 249000 | |
| 1.4 | Casual labour (field work including geological mapping , surveying) | 1 nos. | 5.7 | 522 | 120 | 62640 | As per rates prescribed by Central Labour Commission rates or respective State Govt. whichever is higher. |
| 1.5 | Sampler (marking of cores, core splitting, crushing, powdering, cone & quartering, sample packing, labeling) | 1no, | 1.5.2 | 5100 | 110 | 561000 | Processing of 168 CS, 10 PCS @ 3 samples per day per sampler (approx.) |
| | Labour | | 5.7 | 522 | 440 | 229680 | |
| Total (1) | | | | | | 2817600 | |
| | Drilling (in-house) | | | | | | |
| 2.1 | Core Drilling (sedimentary rock) | m | 2.2.1.1b | 7168 | 1200 | 86,01,600 | MoC rate |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2.2 | Land or crop compensation | Per borehole | 5.6 | 20000 | 13 | 2,60,000 | As per actual |
| 2.3 | Construction of concrete Pillar (12"x12"x30") | Per borehole | 2.2.7a | 2,000 | 17 | 34,000 | 13+4 |
| 2.4 | Rig mobilization charges (Transportation of Drill Rig & Truck associated per Drill) | Km | 2.2.8 | 36 | 400 | 14,400 | Salem to Ariyallur (to and fro) |
| 2.5 | Monthly Accommodation Charges for drilling Camp | Rig/month | 2.2.9 | 50,000 | 4 | 2,00,000 | |
| 2.6 | Drilling Camp Setting Cost | nos | 2.2.9a | 2,50,000 | 1 | 2,50,000 | |
| 2.7 | Drilling Camp Winding up Cost | nos | 2.2.9b | 2,50,000 | 1 | 2,50,000 | |
| 2.8 | Approach Road Making | Km | 2.2.10a | 22,020 | 8 | 1,76,160 | As per actuals |
| 2.9 | Bore Hole Fixation and determination of coordinates& Reduced Level of the boreholes and by DGPS | Nos | 1.6.2 | 19,200 | 13 | 2,49,600 | 13 boreholes + 1 base station |
| 2.1 | Drill Core Preservation (complete borehole plus mineralized cores of all the remaining Bhs) | m | 5.3 | 1,590 | 800 | 12,72,000 | Entire drill core including soil will be analyzed. |
| Total (2) | | | | | | 1,13,07,760 | |
| 3 | Laboratory studies | | | | | | |
| 3.1 | Primary BH Samples (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4,200 | 800 | 33,60,000 | Major oxide |
| 3.2 | BH Check Samples Internal 5% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4200 | 0 | 0 | Major oxide 5% internal sample |
| 3.3 | BH Check Samples Internal 10% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | nos | 4.1.15a | 4200 | 80 | 3,36,000 | Major oxide 10% internal sample |
| Total (3) | | | | | | 36,96,000 | |
| 4 | Petrological studies | | | | | | |
| 4.1 | Preparation of thin section | Nos. | 4.3.1 | 2,353 | 10 | 23,530 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4.2 | Petrological Study of thin section for optical properties | Nos. | 4.3.4 | 4,232 | 10 | 42,320 | |
| 4.3 | Bulk Density | Nos. | 4.8.1 | 1605 | 5 | 8,025 | |
| Total (4) | | | | | | 73,875 | |
| Total (1+2+3+4) | | | | | | 1,78,95,235 | |
| 5 Miscellaneous | | | | | | | |
| 5.1 | Preparation of Exploration Proposal | Nos | 5.1 | 2% of project cost | 1 | 3,57,905 | 5 hard copies with 1 soft copy |
| 5.2 | Geological report preparation | Nos | 5.2 | A Minimum of Rs. 7.5 lakhs or 3% of the work whichever is more | 1 | 7,50,000 | 5 hard copies with 1 soft copy Additional copy @Rs.3000/- per copy |
| 5.3 | Report Peer Review Charges | | | lumpsum | | 30,000 | |
| Total (1+2+3+4+5) | | | | | | 1,90,33,140 | |
| 6 | GST (18%) | | | | | 34,25,965 | |
| GRAND TOTAL (1+2+3+4+5+6) | | | | | | 2,24,59,105 | |
| Rs. In Lacs | | | | | | 225 | |
| Note: | | | | | | | |
| 1 | Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21. | | | | | | |
| 2 | In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement. | | | | | | |
| 3 | If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required. | | | | | | |
| 4 | Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities. | | | | | | |

**Annexure 2B**

**Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for limestone in Chokkanathapuram Block (8.5 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**

| | months | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | Review | 5th | 6th | 7th | 8th |
| **Camp set up, Detailed Geological Mapping on 1:4000 scale** | | | | | | | | | |
| **Subsurface drilling** | | | | | | | | | |
| **Core Sample (CS)** | | | | | | | | | |
| **Chemical assay studies** | | | | | | | | | |
| **Synthasis of all available data** | | | | | | | | | |

**Annexure 3A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for limestone in Kulumur Block (7.64 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**
**Name of the Exploration Agency - Geo Exploration and Mining Solutions**

**Bh.:14 , Drilling: 1200m, Timeline : 8 months , Review : 4 months (after mapping & sampling)**

| S. No | Nature of work | unit | Rate as per NMET SoC March 2020 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item- S. No. | Rates as per SoC | Qty | Total Amount (Rs) | |
| 1.1 | Headquarters geologist | 1 no | 1.2 | 9000 | 30 | 270000 | |
| 1.2 | Field Geologist | 1 no | 1.2 | 11,000 | 120 | 1320000 | |
| | Casual labour | 1 no | 5.7 | 522 | 240 | 125280 | |
| 1.3 | Surveyor | 1no. | 1.6.1b | 8,300 | 30 | 249000 | |
| 1.4 | Casual labour | 1 no | 5.7 | 522 | 120 | 62640 | As per rates prescribed by Central Labour Commission rates or respective State Govt. whichever is higher. |
| 1.5 | Sampler (marking of cores, core splitting, crushing, powdering, cone & quartering, sample packing, labeling) | 1 no | 1.5.2 | 5100 | 110 | 561000 | Processing of 1740 CS, 10 PCS @ 3 samples per day per sampler (approx.) |
| | Labour | 1 no | 5.7 | 522 | 440 | 229680 | |
| Total (1) | | | | | | 28,17,600 | |
| 2.1 | Core Drilling (sedimentary rock) | m | 2.2.1.4a | 7168 | 1200 | 86,01,600 | MoC rate |
| 2.2 | Land or crop compensation | Per borehole | 5.6 | 20000 | 14 | 2,80,000 | As per actuals |
| 2.3 | Construction of concrete Pillar (12"x12"x30") | Per borehole | 2.2.7a | 2,000 | 20 | 40,000 | 14+6 |
| 2.4 | Rig mobilization charges (Transportation of Drill Rig & Truck associated per Drill) | Km | 2.2.8 | 36 | 400 | 14,400 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2.5 | Monthly Accommodation Charges for drilling Camp | Rig/month | 2.2.9 | 50,000 | 4 | 2,00,000 | Period required for drilling 1740m @ 14 boreholes |
| 2.6 | Drilling Camp Setting Cost | nos | 2.2.9a | 2,50,000 | 1 | 2,50,000 | |
| 2.7 | Drilling Camp Winding up Cost | nos | 2.2.9b | 2,50,000 | 1 | 2,50,000 | |
| 2.8 | Approach Road Making | Km | 2.2.10.a | 22,020 | 8 | 1,76,160 | As per actuals |
| 2.9 | Bore Hole Fixation and determination of coordinates& Reduced Level of the boreholes and by DGPS | Nos | 1.6.2 | 19,200 | 14 | 2,68,800 | 14 boreholes + 1 base station |
| 2.1 | Drill Core Preservation (complete borehole plus mineralized cores of all the remaining Bhs) | m | 5.3 | 1,590 | 800 | 12,72,000 | Entire drill core including soil will be analyzed. |
| Total (2) | | | | | | 1,13,52,960 | |
| 3 | Laboratory studies | | | | | | |
| 3.1 | Primary BH Samples (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4,200 | 800 | 33,60,000 | Major oxide |
| 3.2 | BH Check Samples Internal 5% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | Nos | 4.1.15a | 4200 | 0 | 0 | Major oxide 5% internal sample |
| 3.3 | BH Check Samples Internal 10% (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5 and LOI) by XRF | nos | 4.1.15a | 4200 | 80 | 3,36,000 | Major oxide 10% internal sample |
| Total (3) | | | | | | 36,96,000 | |
| 4 | Petrological studies | | | | | | |
| 4.1 | Preparation of thin section | Nos. | 4.3.1 | 2,353 | 10 | 23,530 | |
| 4.2 | Petrological Study of thin section for optical properties | Nos. | 4.3.4 | 4,232 | 10 | 42,320 | |
| 4.3 | Bulk Density | Nos. | 4.8.1 | 1605 | 3 | 4,815 | |
| Total (4) | | | | | | 70,665 | |
| Total (1+2+3+4) | | | | | | 1,79,37,225 | |
| 5. Miscellaneous | | | | | | | |
| 5.1 | Preparation of Exploration Proposal | Nos | 5.1 | 2% of project cost | 1 | 3,58,745 | 5 hard copies with 1 soft copy |

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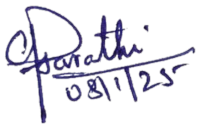
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5.2 | Geological report preparation | Nos | 5.2 | A Minimum of Rs. 7.5 lakhs or 3% of work whichever is more | 1 | 7,50,000 | 5 hard copies with 1 soft copy Additional copy @Rs.3000/- per copy |
| 5.3 | Report Peer Review Charges | | | lumpsum | | 30,000 | |
| Total (1+2+3+4+5) | | | | | | 1,90,75,970 | |
| 6 | GST (18%) | | | | | 34,33,675 | |
| GRAND TOTAL (1+2+3+4+5+6) | | | | | | 2,25,09,644 | |
| Rs. In Lacs | | | | | | 225 | |
| Note: | | | | | | | |
| 1 | Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21. | | | | | | |
| 2 | In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement. | | | | | | |
| 3 | If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required. | | | | | | |
| 4 | Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities. | | | | | | |

**Annexure 3B**

**Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for limestone in Kulumur Block (7.64 Sq Km), Ariyalur and Perambalur Districts, Tamil Nadu.**

| | months | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1st | 2nd | 3rd | 4th | Review | 5th | 6th | 7th | 8th |
| **Camp set up, Detailed Geological Mapping on 1:4000 scale** | | | | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Subsurface drilling** | | | | | | | | | |
| **Core Sample (CS)** | | | | | | | | | |
| **Chemical assay studies** | | | | | | | | | |
| **Synthasis of all available data** | | | | | | | | | |



**Annexure 4A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka**
**Name of the Exploration Agency - Mining Tech Consultancy Services Ltd. (MTCS)**
**Total Area - 7 sqkm No. of Boreholes- 10, Drilling Meterage- 1000 ; Completion Time - 12 months, Review : 4 & 8 months**

| Sl. No. | Item of work | Unit | Rates as per NMET SoC 2020-21 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item -Sl No. | Rates per Unit as per SOC (Rs) | Quantum | Total Amount (Rs) | |
| A | GEOLOGICAL MAPPING (1:2000 with contouring) & ASSOCIATED ACTIVITIES (IN-HOUSE) | | | | | | |
| 1 | Charge for procurement of Satellite Imagery (CartoDEM, 2.5m posting, DSM, 14km x 14km scene) for Remote sensing, multispectral and DEM data analysis | Lumpsum | 1.1 | 0 | 2 | - | As per Actuals |
| 2 | Geologist (HQ) - 1 No | day | 1.2 | 9,000 | 40 | 3,60,000 | |
| 3 | Geologist (Field) - 2 No | day | 1.2 | 11,000 | 150 | 16,50,000 | 2 Geologists will be deployed for 45 days each |
| 4 | Labor (Field) - 2 No per Geologist | day | 5.7 | 522 | 300 | 1,56,600 | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher. |
| 5 | Trenching | cubic meter | 2.1.1 | 3,300 | 200 | 6,60,000 | |
| 6 | Sampler - 1 No | day | 1.5.2 | 5,100 | 83 | 4,23,300 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7 | Labor (Sampling) - 4 Nos | day | 5.7 | 522 | 332 | 1,73,304 | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher. |
| | | | | | Sub-Total A | 34,23,204 | |
| B | GEOPHYSICAL SURVEY (OUT SOURCING) | | | | | | |
| 1 | I.P. cum-resistivity, S.P. Magnetic Survey | 10 Lkm | 3.4b | 14,48,693 | 7 | 1,01,40,851 | Rs 14,48,693 per 8-10 Lkm, Total BOQ 70 LKm |
| | | | | | Sub-Total B | 1,01,40,851 | |
| C | SURVEY WORK (IN-HOUSE) | | | | | | |
| 1 | Topographical Survey (on 1:2000 Scale) | day | 1.6.1a | 8,300 | 35 | 2,90,500 | |
| 2 | Labor (Field) - 4 No for Survey work | day | 5.7 | 522 | 140 | 73,080 | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher |
| | | | | | Sub-Total C | 3,63,580 | |
| D | EXPLORATORY DRILLING (IN-HOUSE) | | | | | | |
| 1 | Drilling upto 300m (very Hard Rock) | m | 2.2.1.4a | 12,650 | 1000 | 1,26,50,000 | 1st level of driling with 10 inclined exploratory Boreholes have been proposed. |
| 2 | BH deviation survey by multishot camera | per m | 2.2.6 | 330 | 1000 | 3,30,000 | |
| 3 | Land / Crop Compensation (in case the BH falls in agricultural Land) | per BH | 5.6 | 20,000 | 5 | 1,00,000 | As per actuals |
| 4 | Construction of concrete Pillar (12"x12"x30") | per BH | 2.2.7a | 2,000 | 10 | 20,000 | As per actuals |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5 | Transportation of Drill Rig & Truck associated per drill | km | 2.2.8 | 36 | 2500 | 90,000 | Transportation of 1 drill rigs from Parsa, Chhattisgarh to Karnataka (to &fro) |
| 6 | Accommodation Charges for drilling Camp (upto two drill Rigs) | month | 2.2.9 | 50,000 | 3.5 | 1,75,000 | Total 3.5 months considered for completion of exploratory drilling |
| 7 | Drilling Camp Setting Cost | Nos | 2.2.9a | 2,50,000 | 1 | 2,50,000 | 1 drilling rig |
| 8 | Drilling Camp Winding up Cost | Nos | 2.2.9b | 2,50,000 | 1 | 2,50,000 | 1 drilling rig |
| 9 | Road Making (Flat Terrain) | km | 2.2.10a | 22,020 | 10 | 2,20,200 | As per Actuals |
| 10 | Drill Core Preservation | per m | 5.3 | 1,590 | 500 | 7,95,000 | One complete Bh plus mineralized part of all Bhs to be preserved in core boxes and hand over to Core repository |
| 11 | Geologist (Field) - 1 No | day | 1.2 | 11,000 | 0 | - | |
| 12 | Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes by DGPS | Per Point of observation | 1.6.2 | 19,200 | 10 | 1,92,000 | |
| 13 | Charge of Surveyor for Borehole fixation | day | 1.6.1a | 8,300 | 0 | - | |
| 14 | Labor (Field) - 2 No for Survey work | day | 5.7 | 522 | 0 | - | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher |
| 15 | Sampler - 1 No | day | 1.5.2 | 5,100 | 0 | - | |
| 16 | Labour (Sampling) - 4 Nos | day | 5.7 | 522 | 0 | - | Amount will be reimbursed as per the notified rates by the Central Labor Commission or respective State Govt. whichever is higher |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Sub-Total D | 1,50,72,200 | |
| E | LABORATORY STUDIES | | | | | | |
| 1 | Chemical Analysis (ICP-MS Ni-S Fire Assay) | | | | | | |
| a | Bedrock+Trench | Nos | 4.1.5d | 11,800 | 300 | 35,40,000 | |
| b | Core Samples | Nos | 4.1.5d | 11,800 | 300 | 35,40,000 | Sample length -50 cm |
| c | Check samples(10% external) | Nos | 4.1.5d | 11,800 | 60 | 7,08,000 | |
| 2 | Physical & Petrological Studies | | | | | | |
| *a* | *Petrographic Studies (Bedrock+Core Samples)* | | | | | | |
| i | Preparation of thin section | Nos | 4.3.1 | 2,353 | 15 | 35,295 | |
| ii | Study of thin section | Nos | 4.3.4 | 4,232 | 15 | 63,480 | |
| *b* | *Mineragraphic Studies (Bedrock Samples)* | | | | | | |
| i | Preparation of polish section | Nos | 4.3.2 | 1,549 | 15 | 23,235 | |
| ii | Study of polished section | Nos | 4.3.4 | 4,232 | 15 | 63,480 | |
| *c* | *Digital Photographs* | Nos | 4.3.7 | 280 | 20 | 5,600 | |
| *d* | *Specific Gravity Determination* | Nos | 4.8.1 | 1,605 | 5 | 8,025 | |
| *e* | *XRD Analysis (Bedrock Samples)* | Nos. | 4.5.1 | 4,000 | 10 | 40,000 | |
| | | | | | Sub-Total E | 80,27,115 | |
| *F* | *Total Cost* | | | | | 3,70,26,950 | |
| *G* | *Tendering Cost* | | | | | 1,01,40,851 | |
| | | | | | | | |
| H | GEOLOGICAL REPORT PREPARATION (IN-HOUSE) | | | | | | |
| a | Geological Report Preparation charge (5 Hard copies with a soft copy) | Lumpsum | 5.2 | For the projects having cost exceeding 300 lakhs - A minimum | | 11,10,809 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | of Rs 9 lakhs or 3% of the value of work whichever is more | | | |
| I | EXPLORATION PROPOSAL PREPARATION (IN-HOUSE) | | | | | | |
| **a** | Preparation of Exploration Proposal (5 Hard copies with a soft copy) | Lumpsum | 5.1 | 2% of the Cost or Rs. 3.8 Lakhs whichever is lower | 1 | 5,00,000 | |
| **J** | PEER REVIEW | | | | | | |
| **a** | Report Peer Review | Lumpsum | As per EC decision | 30,000 | 1 | 30,000 | |
| **K** | Operational charges | | | | | 8,82,043 | |
| **L** | Tendering cost | | | | | 2,02,817 | |
| PROJECT COST WITHOUT GST | | | | | | 3,97,52,618 | |
| 18% GST | | | | | | 71,55,471 | |
| TOTAL PROJECT COST | | | | | | 4,69,08,089 | |
| Rs. In Lacs | | | | | | 469 | |

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

**Annexure 4B**

**Time Schedule/ Action Plan for Preliminary Exploration (G-3 Stage) for Gold in Chinnikatti Block, Haveri District, Karnataka**

| Activity | Type of Job | Months | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | Review | 5 | 6 | 7 | 8 | Review | 9 | 10 | 11 | 12 |
| Desktop study with Remote sensing, multispectral and DEM data analysis (including obtaining clearances etc) | HQ | ■ | | | | | | | | | | | | | |
| Camp setting | Field | ■ | ■ | | | | | | | | | | | | |
| Topographical Survey (1:2000 scale) | Field | | ■ | ■ | ■ | | | | | | | | | | |
| Geological Mapping (including surface & stream sampling) | Field | | ■ | ■ | ■ | | | | | | | | | | |
| Laboratory Studies of Surface & Stream Samples | Lab | | | ■ | ■ | | | | | | | | | | |
| Geophysical survey (including mobilization & data acquisition) | Field | | ■ | ■ | ■ | | ■ | | | | | | | | |
| Geophysical survey (interpretation & report) | HQ | | | | | | | ■ | | | | | | | |
| Trenching (including logging, sampling etc) | Field | | | | | | | ■ | | | | | | | |
| Laboratory Studies of Trench Samples | Field | | | | | | | ■ | ■ | | | | | | |
| Data compilation, progress review | HQ | | | | | | | | ■ | ■ | | | | | |
| Drill Rig mobilization | Field | | | | | | | ■ | | | | | | | |
| Exploratory Drilling | Field | | | | | | | | ■ | ■ | | ■ | | | |
| Camp winding up | Field | | | | | | | | | | | | ■ | | |
| Laboratory Studies of borehole Samples | Lab | | | | | | | | | ■ | | ■ | ■ | ■ | |
| Data compilation, geological report preparation & submission to NMET | HQ | | | | | | | | | | | | | ■ | ■ |

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**Annexure 5A**

**Estimate Cost for Preliminary Exploration (G-3 Stage) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udipi District, Karnataka.**
**Name of the Exploration Agency – Critical Mineral Tracker**
**Area : 1.20 sq. km, Drilling: 85m (1bh 25m, 6bh 10m), No. of BH: 07, Borehole depth range- 10m each(1 bh upto 25m); Schedule timeline- 6months Review: After 3 Months]**

| S. No. | Item of Work * | Unit * | Rates as per NMET SoC 2020-21 | | Estimated Cost of the Proposal | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | SoC-Item No. * | Rates as per SoC * (a) | Qty. (b) | Total Amount (Rs) (a*b) | |
| **A** | Geological Mapping Other Geological Work & Surveying | | | | | | |
| | Geological mapping, (1:4000 scale with contouring) & Pitting , drilling work | | | | | | |
| **i** | a. Charges for Geologist per day (Field) for geological mapping & trenching work, drilling work | day | 1.3 | 11,000 | 60 | 6,60,000 | |
| **ii** | b. Labours Charges; Base rate | day | 5.7 | 522 | 120 | 62,640 | Two Labours |
| | c. Charges for Geologist per day (HQ) | day | 1.3 | 9,000 | 25 | 2,25,000 | Pre & Post field |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | d. Charges for one Sampler per day (1 Party) | one sampler per day | 1.52 | 5,100 | 23 | 1,17,300 | |
| | e. Labours (4 Nos) | day | 5.7 | 522 | 92 | 48,024 | |
| | Sub Total- A | | | | | 11,12,964 | |
| **B** | Ground Geophysical Survey | | | | | | |
| **1** | IP. Induced Polarization (I.P) cum Resistivity S.P and Magnetic (30 Lkm) | 8-10 Line Km | | | | | |
| **3** | Geophysicist party days (Field) | per day | | | | | |
| **4** | c. Labours Charges | day | | | | | |
| **5** | Geophysicist party days (HQ) | per day | | | | | |
| | Sub Total- B | | | | | | |
| **C** | Survey work | | | | | | |
| **a** | DGPS Survey for BH fixation & RL determination | Per Point of observation | 1.6.2 | 19,200 | 17 | 326400 | 10 Block Boundary Points (A to J) + 7 BH Locations |
| **b** | Charges of Surveyor (1 party) for Topogrphic Mapping in 1:4000 scale | one surveyor per day | 1.6.1a | 8,300 | 20 | 166000 | 2m Interval |
| **c** | Labours Charges for survey work; | day | 5.7 | 522 | 40 | 20880 | |
| | Sub-Total C | | | | | 5,13,280 | |
| **D** | Pitting | | | | | | |
| | a) Excavation of Pitting (upto 2 m depth) | per cu.m | 2.1.2 | 3,800 | 50 | 190000 | |
| **E** | DRILLING - Outsourced | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1** | Drilling up to 300m Soft Rock) | m | 2.2.1.3 | 7,168 | 85 | 6,09,280 | MoC rate |
| **2** | Construction of concrete Pillar (12"x12"x30") | per borehole | 2.2.7a | 2,000 | - | - | |
| **3** | Transportation of Drill Rig & Truck associated per drill (2 rigs) | Km | 2.2.8 | 36 | - | - | |
| **4** | Monthly Accomodation Charges for drilling Camp (up to 2 Rigs) | month | 2.2.9 | 50,000 | - | - | |
| **5** | Drilling Camp Setting Cost | Nos | 2.2.9a | 2,50,000 | - | - | |
| **6** | Drilling Camp Winding up Cost | Nos | 2.2.9b | 2,50,000 | - | - | |
| **7** | Approach Road Making for Rugged - hilly Terrain | Km | 2.2.10b | 32,200 | 0 | - | |
| **8** | Drill Core Preservation | per m | 5.3 | 1,590 | 85 | 1,35,150 | |
| | Sub Total E | | | | | 7,44,430 | |
| **F** | Borehole Geophysical Logging | 5 Bhs of 350m each | | | | | |
| **G** | LABORATORY STUDIES | | | | | | |
| **1** | Chemical Analysis | | | | | | |
| **i)** | Geochemical Sampling-Surface samples (Bedrock/Channel /Soil/Stream sediment) | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE by Fire Assay | Nos | | | | | |
| **ii)** | Surface Check samples (10% External) | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| **iii)** | Trench & Check Samples from Trench | | | | | | |
| | Trench samples | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| **iv)** | Trench Check samples (10% External) | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| **v)** | BH Core samples | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by ICPMS-34 elements | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| **vi)** | BH Core samples (10%External) | | | | | | |
| | a. Au by Fire Assay | Nos | | | | | |
| | b. For Ag, Ni, Co, Cr, Cu, Pb, Zn, V, Ti by AAS Method | Nos | | | | | |
| | c. For PGE | Nos | | | | | |
| **Vii)** | Major Oxides (+10% check) | Nos | 4.1.15a | 149 | 4,200 | 6,25,800 | BH Core samples 85 & Pit Samples 50 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Viii)** | Analysis of Bauxite(+10% check) | Nos | 4.1.17a | 11 | 6,700 | 73,700 | Combined Determination of (THA - 140 deg C),(MHA-240 deg C) and reactive silica |
| **ix)** | Analysis of REE,Ga,V (+10% check) | Nos | 4.1.13 | 22 | 5,380 | 1,18,360 | |
| | Physical & Petrological Studies | | | | | | |
| **2** | Preparation of thin section | Nos | 4.3.1 | 10 | 2,353 | 23,530 | |
| **i** | Study of thin section | Nos | | | | | |
| **ii** | Preparation of polish section | Nos | | | | | |
| **iii** | study of polished section | Nos | | | | | |
| **iv** | Digital Photographs | Nos | 4.3.7 | 20 | 280 | 5,600 | |
| **v** | Whole Rock Analysis | Nos | | | | | |
| **vi** | Sp. Gravity | Nos | | | | - | |
| **vii** | SEM Studies | per hour | | | | | |
| | EPMA studies | per hour | | | | | |
| **viii** | TOTAL G | | | | | 8,46,990 | |
| | Total A to G | | | | | 34,07,664 | |
| **H** | Geological Report Preparation | 5 Hard copies with a soft copy | 5.2 | i | | 1,70,383 | |
| **I** | Peer review Charges | | | | | 30,000 | Lumpsum as per EC Decision |
| **J** | 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 | | 68,153 | |
| | Tendering cost | | | | | 12,186 | To be calculated |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Operational Charges | | 6 | ii | | 60,928 | |
| **K** | Total Estimated Cost without GST | | | | | 37,49,314 | |
| **L** | Provision for GST (18% of K) | | | | | 6,74,877 | |
| **M** | Total Estimated Cost with GST | | | | | 44,24,191 | |
| **N** | | | | Rs. In Lakhs | | 44 | |
| | | | | | | | |
| **Note:** | | | | | | | |
| **1** | Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21. | | | | | | |
| **2** | In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement. | | | | | | |
| **3** | If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execusion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required. | | | | | | |
| **4** | Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities. | | | | | | |

**Annexure 5B**

**Time Schedule/ Action plan for Preliminary Exploration (G-3 Stage) for aluminous laterite and associated critical minerals in Govindagude & Sudigudde block, Udipi District, Karnataka.**

| S. No. | | | 1 | 2 | 3 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Camp Setting | Months/Days | | | | | | | |
| 2 | Geological Mapping & Sampling | days | | | | | | | |
| 3 | Geophysical survey | L.km | | | | | | | |
| 4 | Geophyscist party days (HQ) for data interpretation & Report | Days | | | | | | | |
| 5 | Pitting/Trenching | cu.m | | | | | | | |
| 6 | Surface Drilling (1 rigs) | m | | | | | | | |
| 7 | Survey Party days | days | | | | | | | |
| 8 | Geologst Man days | days | | | | | | | |
| 9 | Sampler Man days | days | | | | | | | |
| 10 | Camp Winding | months | | | | | | | |
| 11 | Laboratory Studies | Nos. | | | | | | | |
| 12 | Report Writing with Peer Review | months | | | | | | | |

Review

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