Ministry of Mines
National Mineral Exploration Trust

Minutes of the 50thTechnical-cum-Cost Committee [TCC] meeting held on 2nd and 3rd March, 2023 in hybrid mode at DGCO, GSI, New Delhi

The 50th meeting of Technical-cum-Cost Committee [TCC] of National Mineral Exploration Trust [NMET] was held under the chairmanship of Shri Janardan Prasad, Additional Director General, Geological Survey of India (ADG, GSI), and Chairman, TCC, NMET on 2nd & 3rd March, 2023 at DGCO, GSI, New Delhi in hybrid mode. The TCC members and representatives of GSI, MECL, KIOCL, CGM Gujarat and M/s. Geovale Services Pvt. Ltd. attended the meeting in-person at DGCO, GSI, New Delhi and representative from CMPDI, DGM Nagaland, DGM Ladakh, DGM Uttar Pradesh and DGM Chhattisgarh attended the meeting through their respective VC nodes.

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

Shri Suresh Chandra, Director, GSI and Member Secretary, TCC-NMET, welcomed Shri Janardan Prasad, ADG, GSI & Chairman, TCC; Members of the TCC and participants representing various Notified Exploration Agencies [NEAs]. He conveyed that a total 18 new project proposals including 4 proposals on financial assistance for procurement of machinery/laboratory equipment/instruments etc., have been received from different NEAs/NPEAs and State DGMs/DMGs for technical cum cost evaluation by the committee.

Shri Vivek Kumar Sharma, Director & HoD, NMET welcomed Chairman TCC, Members of TCC and participants representing various NEAs/NPEAs. He conveyed that during the current financial year, maximum expenditure has been made through NMET fund and the target for the next financial year has been doubled by the Ministry. The NEAs and NPEAs are expected to come out with the quality projects to meet the target for next year.

Shri Janardan Prasad, ADG, GSI and Chairman, TCC welcomed the members and other participants from various NEAs/NPEAs. He expressed that the NEAs/NPEAs should bring the quality proposals for consideration of TCC so that the maximum number of auctionable blocks could be generated. He also suggested that the NEAs should visit the area, collect/ analyze at least few samples before envisaging project in any area. He also conveyed that significant fund has been earmarked for project formulation in SoC of NMET and recently this amount has been enhanced. He reiterated the need to get the clearance from the State DGMs and GSI before submitting the project to TCC. He welcomed representative of M/s. Geovale Services Pvt. Ltd. as the first NPEA to participate in the TCC.

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

Agenda wise discussions are summarized as follows.

50.1: Technical evaluation of new project proposals:

50.1.1: Reconnaissance Survey (G4) for Coal in Khapia Block, North Karanpura Coalfield, District: Hazaribagh, Jharkhand. [Implementing Agency: CMPDI]

a) Khappia Block is situated in the south-central part of the North Karanpura coalfield. Geologically the area is exposed by complete sequence of Gondwana Supergroup ranging from Talchir, Karharbari, Barakar, Barren Measure and Raniganj formations.

b) It has been submitted that the North Karanpura Coalfield is characterized by the presence of five coal seams belonging to Karharbari Formation and their splits belongs to Barakar Formation. Total 16 coal seams have been reported from the adjoining Bundu block out of which, 10 seams are more than one meter thickness. It is expected that the grade of coal may vary from G6 to G12.

c) The committee suggested that the boreholes should be planned in dip and strike direction so that the entire area may be covered. Committee expressed that the drilling upto Talchir formation may not be required in the proposed Khapia block as the geological variation of the block is already established in the adjoining Bundu block.

d) Committee suggested that the G4 stage exploration may be taken up by deploying 1:10,000 scale, and 1100m drilling in four boreholes.

e) Committee suggested modifications in borehole plan and accordingly the borehole plan was modified by CMPDI. Committee suggested that the special tests should not be conducted for coal seams less than 0.5m thickness.

f) The proposal was sent to GSI for comments, in response to this GSI has submitted that there is no overlapping of block area with any of blocks already explored earlier by GSI. Therefore, Khapia Coal Block can be taken up for G4 stage exploration.

g) The project will be reviewed after six months and completion of two boreholes.

The committee recommended the proposal Reconnaissance Survey (G4 stage) for coal in Khapia Block, North Karanpura Coal field, District: Hazaribagh, Jharkhand for approval of EC, at an estimated cost of Rs.161.48 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 2A & 2B.

50.1.2: Reconnaissance Survey (G4) for Tin and Associated Minerals in Larpura Block, District: Niwari, Madhya Pradesh. [Implementing Agency: MECL]

a) Geologically the area is exposed by the Bundelkhand Gneissic Complex (BGC) comprising of granitic rocks of composition ranging from tonalite-trondhjemite to granodiorite-granite. BGC witnesses several episodes of acidic magmatism represented by grey granite, coarse porphyritic pink granite, medium grained biotite granite, aplite and rhyolite/granite porphyries. These granitoids incorporate older enclaves of banded magnetite quartzite, amphibolite, meta-ultramafites, schists and trondhjemitic gneisses.

b) The proposal was sent to GSI for their comments, in response to this, GSI has submitted that the proposed Larpura-REE block proposed by MECL does not overlap with work carried out/proposed by GSI.

c) MECL has submitted that the anomalous values of Cerium (Ce) and Zirconium (Zr) were recorded over granite and granite gneisses of Bundelkhand Gneissic complex. Only two samples are showing more than 1000ppm TREE.

d) It has been submitted that during the period between 1961 and 1986, GSI has carried out geological mapping in parts of Lalitpur district and has provided detailed account of different granitoid phases of BGC. Systematic geological mapping in parts of Jhansi district carried out in between 1971-83 and sulphides, pyrophyllites and building materials are reported from the study area.

e) During FS 2010-12, NGCM work has been carried out by GSI in the study area along with geological mapping in 1:50,000 scale. Seven stream sediment samples from the proposed block showing Sn value 4.14 ppm to 7.04 ppm.

f) Based on detailed deliberations, the committee opined that recorded NGCM values for Tin (Sn) in the proposed block ranges from 0.5 to 9.0 ppm and are not encouraging hence further exploration may not be fruitful.

The committee suggested not to take up exploration in the proposed block as the NGCM data reported from the area are not encouraging for exploration of Tin and associated mineration.

50.1.3: Reconnaissance Survey (G4) for REE Mineralization in Rudrawathi Block, District: Tiruppur, Tamil Nadu. [Implementing Agency: MECL]

a) The proposal was discussed in 46th TCC meeting held in October 2022 wherein the Committee suggested to:

   i. Collate all available geological and geochemical data acquired by GSI.

   ii. Contour map of LREE and HREE be prepared by using geochemical data of GSI. The anomalous REE unit cells may be marked to demarcate the possible potential loci for further exploration.

   iii. Lease hold area may be excluded from the proposed block area.

   iv. The localities of Allanite occurrences reported by earlier worker may be included in the block.

b) Further committee suggested to submit the revised proposal after attending the comments/suggestions. Now MECL has submitted the revised proposal (G4 stage) for REE minerals over 126.00 sq. km involving geological mapping on 1:12,500 scale, exploratory mining and laboratory studies.

c) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that Northern part of proposed block is overlapping with RMT investigation proposed to be taken up in FS: 2023-24. GSI has also conveyed that the toposheet no 58F/5 and 58F/9 have been covered under NGCM program and geochemical anomaly data is available for the entire area. The Directorate of Geology and Mining, Government of Tamil Nadu informed that some parts of the proposed block

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area fall under lease hold for minor minerals.

d) MECL has submitted that the lease hold area has been excluded from the proposed block.

e) Geologically the granulite gneiss terrain of central Tamil Nadu is divided into three distinct litho-tectonic domains, viz. northern Nilgiri-Sittampundi domain, central Dharapuram domain and southern Kodaikkanal domain. The block is represented by hornblende-biotite gneiss with enclaves of pyroxene granulite of Migmatite Gneissic complex belonging to central Dharapuram domain.

f) It has been submitted that few sporadic occurrences of Allanite have been observed in the pegmatite and quartz veins exposed in east of Suryanallur and north-west of Sirukkinar localities. It is pertinent to mention that the Allanite is a most common rare earth mineral of sorosilicate group and vital for REEs.

g) It has been conveyed that the high geochemical anomaly of TREE has been observed in the geochemical data collected by GSI from the proposed block. Based on Allanite occurrence and TREE geochemical anomaly, MECL has proposed to take up G4 stage reconnaissance survey in the proposed block.

h) It has been conveyed that the values of LREE ranges between 107.5 ppm and 2817.2ppm; HREE ranges between 9.7 ppm and 518.2 ppm; TREE ranges between 117.8ppm and 2903.7ppm in NGCM data collected from toposheet no. 58 F/05 & 58 F/09.

i) After the detailed deliberation the committee suggested to take up G4 stage exploration for REE minerals in Rudrawathi Block by deploying geological mapping on 1:12,500 scale over 126.00 sq.km., pitting of 200 cu.m., geochemical sampling from second order stream, BRS, studies.

j) The project will be reviewed after six months.

The committee recommended the proposal for approval of EC for Reconnaissance Survey (G4) for REE Mineralization in Rudrawathi Block, District: Tiruppur, Tamil Nadu at an estimated cost of Rs. 71.83 Lakh (including GST) and time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 3A & 3B.

50.1.4: Reconnaissance Survey (G4) for REE Mineralization in Sarnu Block, District: Barmer, Rajasthan. [Implementing Agency: MECL]

a) The proposal, Sarnu block (130. sq. km.), was discussed in 48th TCC meeting held in December 2022 wherein the committee suggested that a revised proposal, if required, may be submitted in next TCC after excluding the overlapping area being taken up by GSI and DMG, Rajasthan to avoid duplication.

b) Now MECL has submitted revised proposal for G4 stage exploration (118.10 sq. km) after excluding the overlapping area by deploying geological mapping on 1:12,500, pitting, ground geophysical survey, laboratory studies, whole rock studies and

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petrological studies.

c) The proposal was sent to GSI for their comments, in response to this, GSI has submitted that the northern part of the area is overlapping with ongoing "Regional Mineral Targeting for Rare metals, Base metals, Rare Earth Elements in Malani Igneous Suite, Barmer and Jodhpur districts, Northwestern Rajasthan." FS: 2020-21, 2021-22 & FS: 2022-23. Few boreholes are also drilled in this part and chemical analysis is awaited and further proposal for detail exploration is planned based on chemical analysis. The southern part is overlapping with "Reconnaissance survey for REE and rare metals in Trishooliya-Sanapa-Dandali area of Malani Igneous Suit, Barmer district, Rajasthan." proposal submitted for scrutiny at RMH-II office, GSI, WR. It will be submitted as an additional item for FS: 2023-24 for approval to the NMH-II office.

d) It has been conveyed that nine Bhs were drilled (1609.40m) in Kamthai south east block and 5 Bhs drilled (805.65m) in Kamthai East Block and 5.41 MT (proved + probable) reserve for REE has been established. All these boreholes were logged by the AMD and till now no anomalous values of the U and Th has been reported by AMD. Therefore, it is expected that the REE zones are free from any radioactive occurrences.

e) Geologically the area is exposed by the rocks of Malani Igneous Suite comprising maroon colored, fine-grained rhyolite with light grey, tabular feldspar and vitreous quartz in a glassy groundmass. MECL further conveyed that same lithounit such as Phonolite, Ijolite etc. alkaline rocks etc. have been recorded earlier in the proposed block area.

f) Committee opined that the available gravity, magnetic and radiometric data from GSI may be collated as the high-resolution data is available for block – I, to avoid any duplication. Further, committee suggested that the additional project proposed for FS 2023-24 over the same area should be dropped by GSI.

g) After detailed deliberations the Committee suggested to take up the G4 stage exploration in Sarnu block by deploying Geological mapping over 118.10 sq. km (1: 12,500 scale), geophysical survey (Radiometric= 30lkm), pitting/trenching, BRS, etc.

h) Committee further opined that the rate of Radiometric survey will be reimbursed as per SoC of GSI as the rates for Radiometric data acquisition are not available in SoC of NMET.

i) The project will be reviewed after six months.

The committee recommended the proposal for approval of EC for Reconnaissance Survey (G4) for REE Mineralization in Sarnu Block, District: Barmer, Rajasthan at an estimated cost of Rs. 69.92 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per Annexure- 4A & 4B.

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50.1.5: Reconnaissance Survey (G4) for Copper and Associated Minerals in Kanakagiri Block, District: Koppal, Karnataka. [Implementing Agency: MECL]

The MECL has withdrawn the proposal.

50.1.6: Preliminary Exploration (G3) for Manganese & Graphite In Kumiapali-Antapali-Rengali Amalgamated Block, District: Balangir, Odisha. [Implementing Agency: MECL]

a) Geologically, the block area lies in the northern part of the Eastern Ghats Super Group of rocks belonging to the meta-sedimentary sequence of Precambrian Khondalite. The rock types exposed in the area are calc-silicate, quartzite (Mn bearing), granite gneiss, amphibolite and quartz and pegmatite vein.

b) During 2018 to 2021, MECL has carried out exploration over Kumiapali (G-4), Antapali (G-4), Rengali (G-4) and Rengali (G-2) blocks, and established 0.339 MT resources with an average grade of 21.29% Mn at 18% Mn cut-off and 2.582 MT resources with an average grade of 14.34% Mn at 10% Mn cut-off in the blocks. Besides this, a resource of 0.308 MT graphite with 4.41% FC at 2% FC cut-off was also established in Rengali (G-2) Block.

c) Based on deliberation, the committee opined that the proposed block is sufficiently explored and adjoined two blocks have been explored up to G2 stage, hence the block may be considered for auction at ML and further second level exploration may be carried out by the lessee.

The committee suggested to consider the block for auctioning al ML as the adjoining two blocks have been sufficiently explored upto G2 stage and resource was already established.

50.1.7: Reconnaissance Survey (G4) for Iron, Manganese and Associated Minerals in Salaiya Block Districts: Jabalpur, Katni & Umaria, Madhya Pradesh. [Implementing Agency: MECL]

a) Geologically the area is exposed by the Mahakoshal Group of rocks comprising quartz veins, quartz porphyry veins, mafic and ultramafic intrusive, phyllite with bands of quartzite, conglomerate dolomite, limestone with bands of BIF, Manganiferous chert, quartzite and metabasalts, pyroclasts.

b) The proposal was discussed in 49th TCC meeting held in January 2023 wherein the committee suggested to collate the available geoscience data of GSI, analyze few samples from the area and in case of encouraging results, a revised proposal may be submitted in the next TCC, if warranted.

c) Now, MECL has submitted a revised after collecting/ analysing four samples from the area. BIF, Phyllite, dolomite occurrences had been encountered during geological

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traverses. The analytical results of four samples are given below:

Sample ID	Latitude	Longitude	Fe_2O_3%	Al_2O_3%	SiO_2%	Mn%	P_2O_5 %
P-2	23.59763853°	80.24949566°	35.09	18.69	18.03	0.13	0.21
P-3	23.59601691°	80.24915334°	20.46	37.94	7.69	0.37	0.17
P-7	23.58033148°	80.16496483°	50.86	6.96	6.65	0.14	0.33
P-8	23.60811101°	80.22541042°	35.22	18.54	18.37	0.07	0.29

d) MECL has conveyed that the proposed area is free hold area and no exploration with respect to Iron and Manganese has been carried out with in the block.

e) Based on detailed deliberation, the committee agreed to take up the G4 stage exploration in over 110.56 sq. km. by deploying geological mapping on1:12,500 scale, geochemical sampling, laboratory studies, whole rock studies and petrological studies and mineralographic studies. The committee also suggested to analyze 10 samples from dolomite and 5 samples from BIF for gold through fire assay.

f) The project will be reviewed after six months.

The committee recommended the proposal for approval of EC for Reconnaissance Survey (G4) for Iron, Manganese and Associated Mineralsin Salaiya Block Districts: Jabalpur, Katni & Umaria, Madhya Pradesh at an estimated cost of Rs.50.27 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 5A & 5B.

50.1.8: Reconnaissance Survey (G4) for Tin & Associated Minerals in Nayakheda Area, District: Shivpuri-Datia, Madhya Pradesh. [Implementing Agency: MECL]

a) Geologically the block area is represented by Bundelkhand granitoids, Porphyritic Coarse-grained granite, Porphyritic medium grained granite and Chambal alluvium. On the basis of feldspar petrography 10 different types of granites were distinguished by GSI in 1958.

b) During FS 2015-16, GSI has carried out NGCM work over toposheet no. 54K/08 and parts of toposheet No. 54K/04, along with geological mapping in 1:50,000 scale. The Sn value in the proposed area ranges from 0.5 ppm to 10.93 ppm whereas the upper crustal abundance for Sn is 3ppm. Seven stream sediment samples from the proposed block showing Sn value 6.50 ppm, 5.76 ppm, 5.58 ppm, 5.79 ppm, 5.58 ppm, 4.40 ppm and 4.34 ppm. There are also two samples giving TREE values of 893 ppm and 798 ppm having LREE values of 813 ppm (Ce-403 ppm) & 679 ppm (Ce-323 ppm) respectively.

c) Based on deliberations the committee opined that NGCM values reported from the area are not encouraging, hence further exploration may not be fruitful.

The committee suggested not to take up exploration in the proposed block as the NGCM values are not encouraging for exploration of Tin and associated minerals.

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50.1.9: Preliminary Exploration (G3) for Limestone in Naddisinur-1 and-2 Blocks, Bhima Basin, District: Gulbarga, Karnataka. [Implementing Agency: MECL]

a) Geologically the proposed block lies on the Bhima Basin and the lithounits exposed in this area belong to the Shahabad formation of Bhima Group. Sediments of Bhima Group are structurally least disturbed and preserve their horizontal bedded character originally impressed at the time of deposition.

b) The Shahabad formation is comprised of various limestones such as micritic, massive, cherty etc. The basin is well known for its reserves of limestone and the newly discovered Uranium occurrence near Gogi.

c) MECL has conveyed that Department of Mines & Geology, Govt. of Karnataka has consented to carry out exploration in the proposed Naddisinur-1 and Naddisinur-2 blocks vide letter No. DMG/Plan/53695/VOL-III/2022-23 dated 17/11/2022.

d) MECL has submitted that the qualitative assessment based on the interpretation from nearby data could not done especially for important factors like silica, MgO and others, which have a key role in qualitative standardization of limestone for cement and other industries. Limestone having high silica and MgO cannot be utilized for cement manufacturing process without blending with high grade limestone and the same may not be suitable for clinker manufacturing process. The proposed exploration will locate and quantify the different grade of limestone based on the requirement for the different industries. In view of this, the G3 stage exploration is required before auctioning of block.

e) It has been submitted that the entire Bhima basin was mapped by GSI and exploration at different stages was carried out in a scattered manner. Further MECL has also established limestone resource of 530.80MT in 2018-19, with average grade 45.45% CaO, 1.00% MgO, 11.59% SiO_2 in Diggaon Block and 385.35 MT with average grade 45.66% CaO, 0.55% MgO ,12.98% SiO2 in Udagi Block of net in-situ resource of cement grade limestone. Keeping in view the resource established in the nearby blocks, MECL has proposed to take up G3 stage exploration for Limestone in Naddisinur-1 and 2 Blocks.

f) The proposal was sent to GSI for their considered comments. In response to this GSI has submitted that the G4 stage equivalent work for flux grade limestone was carried out by GSI out during FS 1964-65 in the proposed block. No work on large scale has been carried out by GSI and no new proposal are planned for the forthcoming field season.

g) Based on detailed deliberation, committee suggested to take up G3 stage exploration in Naddisinur-1 and 2 blocks by deploying geological mapping on 1:4,000 scale over 12.09 sq.km, 450m drilling through 10 boreholes (5 boreholes in each block), laboratory studies and petrological studies.

The committee recommended the proposal for approval of EC for Preliminary Exploration (G3) for limestone in Naddisinur-1 and 2 Blocks, Bhima Basin, District: Gulbarga, Karnataka at an estimated cost of Rs.137.57 Lakh (including GST) in time schedule of 10 months for carrying out the proposed work and submission of report as per annexure- 6A & 6B.

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50.1.10: Reconnaissance Survey (G4) for Gold and basemetals in Nagavanda block, Districts: Davangere, Haveri and Shivamogga, Karnataka. [Implementing Agency: KIOCL]

a) The proposed block was discussed in 38th TCC meeting held in February 2022 wherein the committee suggested to submit the G3 stage proposal by incorporating analytical values for gold, basemetal, and other available geological data in the next TCC meeting.

b) Now, KIOCL has submitted a revised proposal for G4 stage of exploration as the previous work carried out by GSI was aimed for establishment of BIF zones and works were restricted only for surface investigation.

c) Geologically the area comprised of Peninsular Gneissic complex and older granitoids of Archean age forming the basement, overlain by Chitradurga Group of rocks of Dharwar Supergroup. Chitradurga Group of rocks is further divided into Jhandimatti, Joldhal, Medur and Ranibennur Formations, later intruded by younger intrusive such as dolerite dykes and quartz veins.

d) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that the proposed Nagavanda block (63.32 sq.km under G4 stage) falls within the existing G4 stage Iron ore block explored by GSI during FS 2015-17.

e) It has been submitted that the team of KIOCL visited the area around Nagavanda block during the months of September 2022 and January 2023 to assess the site conditions. During the field visit, the team has observed BIF, carbonaceous shale, quartz porphyry, andesite, meta-Ultramafic, meta-gabbro and phyllite lithologies in the area. KIOCL has collected four samples from the area and the analyses of the samples is given below:

BRS Nos	Lab 1	Lab 2				Sample location
	Cu%	Cu %	Mo (ppm)	Ag (ppm)	W (ppm)	
34 BRS 35	0.08	0.11	9.05	0.51	1.81	Pit 1
34 BRS 36	0.02	0.03	2.35	0.21	1.51	Pit 1
34 BRS 37	5.88	7.33	7.14	0.63	1.91	Carbonaceous shale dump indicating malachite strain
34 BRS 52	10.23	12.14	7.85	1.01	1.70	

f) Committee opined that the sample collected from dump may have reported misleading values and should not be considered as promising. Committee also suggested that the samples should always be collected from the fresh rock exposures.

g) After detailed deliberations the committee suggested that the G4 stage exploration may be taken up by collecting BRS, trench/pit samples. Further 500m drilling (5 conditional boreholes) may be deployed in case of encouraging results reported through BRS and trench/pit sample analyses.

h) The outcome of project will be reviewed after six months.

The committee recommended the proposal "Reconnaissance Survey (G4) for Poly-metallic Mineralisation (Au, Cu, Ni, Co) in Dharwar-Shimoga Schist belt around Nagavanda area, District: Dhavangere, Haveri and Shimoga, Karnataka" for approval of EC, with an

estimated cost of Rs.147.63 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 7A & 7B.

50.1.11: Preliminary Exploration (G3) for amalgamated Limestone Block in Jevargi area, District: Kalburgi, Karnataka. [Implementing Agency: KIOCL]

a) The proposed block falls under the Bhima Group. Geologically area comprises of Peninsular Gneisses, Eastern Block Greenstone Belts and Younger Granitoids of Archean age forming the basement, overlaid by Bhima Group of rocks. Bhima Group of rocks is further divided into Rabanapalli, Shahabad, Hulkal, Katamadevarahalli and Harwal Formations. Major part of the area is covered by Limestone.

b) KIOCL has proposed to take up exploration in four blocks as detailed below:

Sl. No.	Block ID	Extent (in sq. km)
1	KIOCL_20_KA_KLB 07	5.00
2	KIOCL_21_KA_KLB 08	5.00
3	KIOCL_23_KA_KLB 11	5.00
4	KIOCL_25_KA_KLB 13	5.00
Total		**20.00**

c) The proposal was sent to GSI for their considered comments. In response to this GSI has submitted that the G4 stage equivalent work for flux grade limestone was carried out by GSI out during FS 1964-65 in the proposed block. No work on large scale has been carried out by GSI and no new proposal are planned for the forthcoming field season.

d) KIOCL has conveyed that the proposal was discussed during the SGPB meeting wherein the DGM, Karnataka suggested that the proposal may be taken up through NMET funding.

e) KIOCL has submitted that the qualitative assessment based on the interpretation from nearby data could not done especially for important factors like silica, MgO and others, which have a key role in qualitative standardization of limestone for cement and other industries. Limestone having high silica and MgO cannot be utilized for cement manufacturing process without blending with high grade limestone and the same may not be suitable for clinker manufacturing process. The proposed exploration will locate and quantify the different grade of limestone based on the requirement for the different industries. In view of this, the G3 stage exploration is required before auctioning of block.

f) After detailed deliberations the committee opined that the G3 stage exploration may be taken up KIOCL in the proposed four blocks by deploying geological mapping (1: 4,000 scale), 900m drilling in 20 boreholes (5 boreholes in each block). However, a letter on demand and supply of limestone in the proposed area needs to be submitted by the DGM, Karnataka.

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The committee recommended the proposal for approval of EC for Preliminary Exploration (G3) for amalgamated Limestone Block in Jevargi area, District: Kalburgi, Karnataka subject to submission of consent letter from DMG Karnataka, at an estimated cost of Rs.206.33 Lakh (including GST) in time schedule of 12 months for carrying out the proposed work and submission of report as per annexure- 8A & 8B.

50.1.12: Reconnaissance Survey (G4) for REE prospect in Idar Granite, Districts: Sabarkantha and Mahesana, Gujarat. [Implementing Agency: CGM Gujarat (NPEA: Services Pvt. Ltd.)]

a) Geologically the proposed block is represented by the parts of the eastern highlands of Gujarat comprising Godhra granite, Idar granite and Sendra Ambaji granite. The Godhra Granite occurs as a NW-SE trending linear batholith intrusive into Aravalli metasediments whereas Sendra Ambaji granite and Idar granite occurs as series of stocks intrusive into Delhi metasediments. It is likely that these granites could be important for mineralization generally associated with post arc magmatism (Li, Ta, REE, HFSE etc.).

b) It has been submitted that there is large variation in the modal and chemical composition of these granites which suggest crystal fractionation was a dominant differentiating mechanism causing variation in the granites. Chemically, the SiO_2 content varies from 70% to 82%, total alkali varies from 7% to 10% and Na_2O/ K_2O varies from 0.4 to 1.5. Structurally, miarolitic cavities, Unidirectional Solidification Textures (UST) are common in these granites and these features indicates that the magma was emplaced in the shallow depth. The emplacement of a highly differentiated fluorine rich A-type granite at shallow depth is considered to be fertile for HFSE elements (Zr, Hf, Nb, Ta) and rare metals like Sn-Li-REE. In view of above the CGM, Gujarat has proposed to take up exploration in the proposed block.

c) The proposal was sent to GSI for their considered comments. In response to this, GSI has submitted that the northern part of the proposed Block is extensively explored by GSI for strategic minerals (Sn-W-Ta-Nb) right from 1980s to recent past. Further, a G4 stage exploration was carried out by GSI for tin-tungsten during F.S: 2017-18, a G3 Project for strategic minerals was carried out in Nadri area during F.S: 2019-22. The resources (UNFC 333) estimated for Sn and W at 0.02% cutoff and of Li at 0.04% cutoff are 14.69 MT, 0.70 MT, and 13.53 MT respectively with average grade of 0.038% Sn, 0.11 % W and 0.053 % Li. Taking into consideration the outcome of G3 Block, GSI is planning to upgrade this item to G2 Stage and explore the extension area of this block.

d) The CGM, Gujarat also conveyed that some mining lease also exists in the proposed area.

e) Keeping the above in view and after detailed deliberation, the Committee opined that the area is sufficiently explored by GSI and also under consideration for G2 stage exploration, therefore the area may not be considered for similar type of exploration.

Keeping in view of above, the committee suggested not to take up exploration in the proposed block.

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50.1.13: Reconnaissance Survey (G4) for Ni and PGE prospects in Limbdi-Meghpar Titoi area, District: Jamnagar, Gujarat. [Implementing Agency: CGM Gujarat (NPEA: Geovale Services Pvt. Ltd.)]

a) Geologically, the proposed area is represented by the Gaj Formation (clay and marl), Bhatia Formation (laterite bauxite, bauxitic laterite, and saprolite) and Deccan Volcanics (porphyritic and amygdaloidal basalt) in ascending order and intrusive of dolerite dykes and picritic basalt.

b) It has been submitted that the picritic basalt occurs as intrusive body in basaltic flows and their exposure is very limited in the area. Some joints filled with secondary material have been reported within the Picritic basalt and nickel value (85 to 735ppm) has been reported from secondary material by GSI in 2008.

c) GSI in 2008, had recorded positive correlation amongst chalcophile elements (Ni, Cu, Cr and Co). It is pertinent to mention that the PGE elements are strongly chalcophile, and there may be a possibility that the picrite also hosts PGE elements as sulphide minerals. GSI (2008) also reported some representative analyses of PGE elements in the picrite samples varying between 10ppb to 69 ppb for Pt, 20 to 311 ppb for Pd and 0.3 to 2.6 ppb for Ir.

d) The proposal was sent to GSI for their considered comments, in response to this GSI has submitted that GSI has not taken up any exploration work for PGE recently in the area proposed by M/s Geovale Services Pvt. Ltd.

e) After detailed deliberation the Committee suggested to take up G4 stage exploration in the proposed Limbdi-Meghpar Titoi area by deploying geological mapping (1: 12,500 scale), ground magnetic survey (2000 points), electro-magnetic survey (350 sounding) and sample analyses.

f) In first stage the picrite occurrences need to be demarcated along with sample analyses. The outcome of the first phase will be reviewed after seven months.

The Committee recommended the proposal for approval of EC for Reconnaissance Survey (G4) for Ni and PGE prospect in Limbdi-Meghpar Titoi area, District: Jamnagar, Gujarat at an estimated cost of Rs. 263.41 Lakh (including GST) in time schedule of 18 months for carrying out the proposed work and submission of report as per annexure- 9A & 9B.

50.1.14: Reconnaissance Survey (G4) for evaluation of placer Xenotime propect in Ujol and Vasva River basin, Districts: Dahod, Chhota Udaipur and Panchmahal, Gujarat. [Implementing Agency: CGM Gujarat (NPEA: Geovale Services Pvt. Ltd.)]

a) It has been submitted that the catchment area of Ujol and Vasva rivers include Godhra Granite, high grade metasediments of Lunavada Group and pre-Champaner Granite Gneiss. The Godhra granite includes different phases of granite like massive grey granite, porphyritic grey granite, porphyritic pink granite, massive pink granite, biotite granite and quartz syenites.

b) The Ujol river west of Devgadh Baria area and Vasva river near Zoz area are known for alluvial placer deposits of xenotime, florencite, monazite, ilmenite, zircon, etc. in which

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xenotime content varies from 1% to 2.5% in the Ujol river and 0.5% to 1% in the Vasva river.

c) It has been conveyed that the area is occupied by HREE-HFSE fertile A-type granites. GSI's NGCM data, AMD's panning data from two river sediments indicates high chance of xenotime-monazite in older terraces of the area. Zone of interaction between the Godhra Granite and phosphate being host rocks are additional primary source.

d) The proposal was sent to GSI for their comments, in response to this GSI has submitted the following:

   i) The geochemical survey (2016) over toposheet nos. 46F/14, 15 and 46J/2 and 3 revealed a high concentration of ΣREE (1000 to 8537 ppm) in the composite samples as well as soil sample falling in the central part of the four toposheets, based on which GSI, SU: Gujarat carried out G4 stage exploration for REE & Rare metals from F.S.: 2017-18 to F.S: 2021-22. The G4 Stage exploration in the southern part of 46F/14 suggests that the stream sediments recorded 511.96 to 10218.58 ppm TREE. The heavy minerals separated after panning from the Vaswa river and its tributaries yield anomalous ΣREE value ranging from 6.19% to 31.23%. Chemical analysis suggests that the area is potential for secondary type of REE hosted in stream sediments and regolith.

   ii) Based on the outcome of G4 stage exploration in GSI has carried out a G3 Stage exploration to target the regolith over the granitoid during F.S: 2020-21 and another G3 Project is also approved for F.S: 2023-24.

   iii) Besides this, a research project has been carried out by GSI in F.S: 2017-19 in the Godhra granite which suggests REE and RM bearing nature of the pegmatites. Based on field observation and laboratory studies, it is inferred that granitic pegmatite contains Nb-Ta-Fe-Mn phases, Ti-Fe-Nb-Ta grain within albitic plagioclase, Nb-Ti-Ta in graphic host, Ti-Nb-Sn-Fe within muscovite, Y+Th+U+Zr grain in albitic plagioclase, monazite, zircon, xenotime, thorite, tin, scheelite, garnet and bismuth. While the samples of host granite contain Monazite in majority with Thorite, Xenotime and Zircon.

e) Keeping the above in view, the Committee opined that the area has been explored by GSI at various stages and also under consideration for further stage of exploration, hence project may not be taken up by CGM, Gujarat to avoid duplication efforts.

Keeping in view of above, the committee suggested not to take up the project in the proposed block to avoid duplication of efforts.

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50.2.: Proposals on financial assistance for procuremnent of Machinery/laboratory equipment

50.2.1: Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DGM, Nagaland]

a) The DGM Nagaland has submitted the proposal of ₹ 258.90 lakhs for procurement of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities as Minister of Mines has announced to provide finanacial assistance of ₹ 5.00 Cr. for each North Eastern Region States for their strengthening their capacity in October, 2022.

b) It has been conveyed that TCC recommended an amount of ₹ 2,76,56,000/- for approval of EC towards procurement of equipment's/software's for DGM, Nagaland in its 48th TCC & in review meeting of 48th TCC held on 22nd and 23rd December, 2022 & 31st January,2023 respectively. Therefore an amount of ₹ 2,23,44,000/- is still remaning for DMG, Nagaland out of ₹ 5.00Cr.

c) The commiittee evaluated the proposal for procurement of machinery/ laboratory equipment/instruments etc. and after detailed discussion with representative of DMG Nagaland, the procurement of following item was agreed:

S. No.	Name of the Item	Quantity	Estimated cost per unit (₹)	Total Estimated cost (₹)
1	WD-XRF	1	2,00,00,000	2,00,00,000
2	Press Pellet Machine	1	3,90,000	3,90,000
Total				**2,03,90,000**

The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equpment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at Rs. 203.90 Lakhs.

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

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50.2.2: Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DGM, Ladakh]

a) The department of Geology and Mining Ladakh has submitted the proposal for procurement of truck mounted hydraulically operated DTH-cum-Odex drilling Rig with its acccessory,protable XRF, water quality analyzer, Arc GIS software DGPS and total Station for enhancing their exploration activites.

b) The commiittee evaluated the proposal for procurement of machinery/ laboratory equipment/instruments etc. and after detailed discussion with representative of DMG Ladakh, and procurement of following items was agreed:

S. No.	Instrument Name	Number of Items	Estimated Cost per unit ₹	Proposed cost ₹	Remarks
1	Hydrostatic truck mounted drlll machine with 600 m to 1000 m capacity (600m truck mounted hydrostatic rig without CAMC, without operator and without accessories. Without spare and lubricants however pump is the intergral part of the rig.	1	8000000	8000000	Cost provided by GSI
a	Bits, drill rod, casing and core barrel	For 1 year requirement	8000000	8000000	Cost provided by GSI
2	Portable XRF for chemical analysis of Minerals/ rock samples	1	1000000	1000000	Cost estimate as per DGM, Ladakh
4	GIS Software	1	1300000	1300000	
5	DGPS	1	1600000	1600000	Cost provided by GSI
6	Total Station	1	696000	696000	Cost provided by GSI
			Total	**20596000**	

The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equpment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at ₹ 205.96 Lakhs.

The committee opined that due process of procurement inculding item wise cost estimation as per extant Government of India financial rules be followed by DGM, Ladakh in consent with the competent authority of State Department/ State Financial Wing

(Division). The state Govt. should also ensure full utilization of the instruents/ software to be procured.

50.2.3: Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DGM, Uttar Pradesh]

a) The Directorate of Geology and Mining, Uttar Pradesh, has submitted the project proposals for procurement of machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities with estimated cost of ₹ 52.40 lakhs.

b) Based on detailed deliberations, the commiittee opined that hand held GPS and core spliter may be sufficient to meet the requirement of DGM, Uttar Pradesh as TCC has already recommended resistivity meter and handheld XRF in its 49th meeting.

c) The commiittee was agreed for the procurement of following items:

S. No.	Name of the Item	Quantity	Estimated cost per unit (₹)	Total Estimated cost (₹)	Remarks
1	Hand held GPS	5	95000	475000	Cost estimate as per DGM, U.P.
2	Core Splitter	1	200000	200000	
			Total	**675000**	

The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equpment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at ₹ 6.75 Lakhs.

The committee opined that due process of procurement inculding item wise cost estimation as per extant Government of India financial rules be followed by DGM, U.P. in consent with the competent authority of State Department/ State Financial Wing (Division). The state Govt. should also ensure full utilization of the instruents/ software to be procured.

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50.2.3: Financial assistance from NMET funds to procure machinery/ laboratory equipment/instruments etc. aimed at enhancing the exploration activities. [Implementing Agency: DGM, Chhhattisgarh]

a) Directorate of Geology and Mining, Chhattisgarh has submitted the proposal for procurement of machineries/laboratory equipment/ instruments etc. with an extimated cost of ₹1337.43 lakhs.

b) DGM, Chhtisgarh conyed that apart from exploration of bulk minerals such as limestone,bauxite etc.DGM wants to explore other mineral commodities such as base metals, precious- semi precious minerals etc.therefore they wants to increase capabilites for geological mapping, drilling capacity at faster rate and upgradation laboratory equipments.

c) After the detailed discussion with representative of DGM, commiittee aggreed for procurement of following items:

S. No.	Instrument Name	No. of Items	Estimated Cost per unit (Rs.)	Proposed cost (Rs)	Remarks
1	Digital Camera	2	100000	200000	Cost estimate as per DGM, CG.
2	Brunton Compass	10	10000	100000	Cost provided by GSI
3	Geologist Hammer	10	10000	100000	Cost provided by GSI
4	Hand held GPS	5	30000	150000	Cost estimate as per DGM, CG.
5	UV Lamp	1	2000	2000	Cost estimate as per DGM, CG.
6	Handheld XRF	1	3000000	3000000	Cost provided by GSI
7	Rock Cutting, Polishing and mounting Unit	1	350000	350000	Cost estimate as per DGM, CG.
8	Pulverizer (From 50mm size to 1 micron)	2	4000000	8000000	Cost estimate as per DGM, CG.
9	WD-XRF	1	20000000	20000000	Cost estimate as per DGM, CG.
10	Fusion bead machine	1	2000000	2000000	Cost provided by GSI
11	Press pellet machine	1	390000	390000	Cost provided by GSI
12	Hot plates	2	10000	20000	Cost provided by GSI
13	Muffle Furnace	1	100000	100000	Cost provided by GSI
14	Air Oven	1	55000	55000	Cost provided by GSI
15	Surfer	2	230000	460000	Cost provided by GSI
16	Drilling Machine upto 600 m capacity [Rocdril RD 60 Model]	1	6600000	6600000	Cost estimate as per DGM, CG.

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17	Hydrostatic skid mounted drill machine with 300 m capacity [Rocdril RD 30 Model]	1	5600000	5600000	Cost estimate as per DGM, CG.
18	Core Spliter/core splitter hydrostatic	2	200000	400000	Cost provided by GSI
19	Total Station	1	300000	300000	Cost estimate as per DGM, CG.
Total				**47827000**	

The proposals have been examined and discussed with the representative of the State Government and the Committee in principle agreed to recommend the proposal for consideration of EC. The cost estimates for procurement of equpment's /instruments/ software's etc. are based on the proposal submitted by the State Government or cost restricted to cost provided by IBM or GSI as detailed above. The committee could neither examine the cost reasonableness nor arrive at the cost estimate independently in absence of SoC.

The estimated cost submitted by State Government/ cost restricted to cost provided by IBM or GSI for procurement of items detailed above stands at ₹ 478.27 Lakhs.

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

50.3.: Review of the Geological report/ ongoing projects

50.3.1. Preliminary exploration (G3 stage) for bauxite in Maduapat-1 block, District: Lohardaga, Jharkhand. [Implementing Agency: CMPDI]

a) The 33rd TCC recommended the "Preliminary exploration (G3) for bauxite in Maduapat 1 block, District: Lohardaga, Jharkhand" and accordingly the project was approved in 22nd EC with an estimated cost of Rs 42.98 Lakh with the time period of 12 months.

b) TCC in its 49th meeting held in January, 2023 approved the additional amount of Rs. 39,333/- for 7 m drilling and Rs. 79,800/- for analyses of 19 samples as per SoC of NMET.

c) Now, CMPDI sought approval for analyses of trace trace element i.e. package of 34 elements by ICPMS in one borehole (20 samples) for determination of concentration of other trace elements along with REE analysis of saproplite zone.

d) Committee also suggested that some of the samples may be analysed from NML instead of MECL for cross varification of analytical values.

e) After the detailed deliberation, the committee agreed with the additional analyses of 20 samples at the cost of Rs. 1,54,620/-.

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The committee approved the additional amount of Rs. 1,54,620/- for 20 samples as per para 4.1.14 of SoC of NMET.

50.3.2. Reconnaissance Survey for manganese ore and graphite in Larambha- Kanaital & Purapadar- Bharatbahal Block (135.0 Sq. Km) in Balangir District, Odisha. [Implementing Agency: MECL]

a) The Reconnaissance Survey for manganese ore and graphite in Larambha-Kanaital & Pudapadar-Bharatbahal block was recommended in 38th meeting of TCC held in February 2022 and approved in 23rd meeting of EC held in March 2022 with an estimated cost of Rs. 193.51 Lakh and time period of 18 months.

b) The block was reviewed in 46th TCC held in October 2022 after completion of geological mapping and bedrock sampling. The Committee suggested to carry out approved geophysical survey and trenching work.

c) MECL has conveyed that a total of four potential manganese/graphite bearing zones have been identified in the block.

d) MECL presented the geological map of the block along with SP anomaly & Magnetic anomaly Maps.

e) After the detailed deliberation, the Committee observed that the anomaly map does not follow the trend of geophysical data and geological sequence of rock units. Committee suggested for carefully collection and correlation of geological and geophysical data.

The committee suggested to revalidate the geophysical and geological data acquied through the exploration activities in the area. The committee opind that the proposal will be reviewed again in the next TCC.

50.3.3. Reconnaissance Survey for Sillimanite in Chippilangso Block (37.93 Sq. Km) in Karbi Anglong District, Assam. [Implementing Agency: MECL]

a) The Reconnaissance Survey for Sillimanite in Chippilangso Block (37.93 Sq. Km) in Karbi Anglong District, Assam, was recommended in 34th TCC meting held in October, 2021 and approved in 22nd EC meeting held in December, 2021 with an estimated cost of Rs. 379.47 Lakh and time period of 18 months.

b) The block was reviewed in 46th TCC held in October 2022, wherein the Committee opined that the analytical results are not encouraging hence suggested to conclude the exploration work.

c) Based on review of the exploration outcomes, it has been observed by the Committee that no mappable Silliminatite bodies has been observed in the area. Committee also suggested that the appropriate geological symbols should be used in maps.

d) The Committee expressed his concern over negative outcome of the project. It has been suggested that the NEAs should be cautious while conceiving the proposal to avoid such

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outcomes.

e) Committee opined that a the upgraded map along with older map generated by GSI for the area needs to be presented in the next TCC. Project will be reviewed again.

The committee noted the outcome and suggested that the comparative maps needs to be presented in the next TCC. The project will be reviewed again in the next TCC.

50.3.4. Extension of timeline in respect of Blocks-6 and 8 of Multi-Sensor Aero-geophysical Surveys over Obvious Geological Potential areas of India. [Implementing Agency: GSI]

a) The Multi-Sensor Aerogeophysical Surveys oner Obvious Geological Potential areas of India, Block-6 & 8 was approved in 19th EC meeting held in March, 2021 with an estimated cost of Rs. 84.79 Cr. and time period of 17 months.

b) It has been conveyed that MoA was signed between GSI & M/s Sander Geophysics Ltd., Canada (PIA) on 29.10.2021 for Block 6 and MoA was signed between GSI & M/s McPhar International Pvt. Ltd. (PIA) on 18.11.2021 for Block 8. Accordingly the expiry date for Block -6 & 8 are March, 2023 & April, 2023 respectively.

c) For Block 6, GSI submitted that Low Level Flying Permit for Block 6 was received by the PIA on 17.06.2022 and data cquisition have been started on 05.12.2022 over block-6. SO far PIA has acquired 30,179 Line Km (10.82%) data till 25.02.2023 through single aircraft. The another aircraft designated for the block – 6 has arrived New Delhi on 25.02.2023 and it is expected that the pace of data acquisition will enhance after deployment of second aircraft.

d) For Block 8, GSI submitted that Low Level Flying Permit was received by the PIA on 17.11.2022 and data acquisition have been initiated in 30.11.2022 and so far 1,31,928 Line Km (40.93%) data have been acquired till 25.02.2023.

e) In view of above, GSI sought timeline extension till 31.03.2024 (12 months) for completion of OGP Block-6 and Extension till 31.03.2024 (11 months) for completion of OGP Block-8 .

f) After the detailed deliberation, the committee agreed for time extension up to 31.03.2024 for block 6 and 30.04.2024 for block 8.

Keeping the above in view, the Committee recommended the time extension of 12 months for Block 6 and time extension of 11 months of block 8 without any cost escalation for approval of EC.

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50.3.5: Extension of project contract of TS-QC of heliborne geophysical survey with cost revision. [Implementing Agency: GSI]

a) GSI had submitted the proposal to NMET in July 2018 requesting "Engaging a consultant for interpretation of its existing airborne legacy data and data acquired by Govt. of Odisha for follow-up Heliborne Geophysical Survey by GSI"

b) The financial sanction for the project "Interpretation of legacy data and TS-QC consultancy" for four work components was approved in 9th EC meeting held on 8th August, 2018 at an estimated cost of Rs. 3,37,90,251/-. The four components are given below:

S. No.	Description	Amount (in Rupees)
1	Interpretation of the Legacy data (1,35,422 sq. km.)	98,85,806/-
2	Preparation of final Detailed Project Report (DPR)	17,00,000/-
3	Tender Management	15,50,000/-
4	Technical Supervision & Quality Control (TS-QC) for 55,000 line km.	1,55,00,000/-
	Total	2,86,35,806/-
	GST @ 18%	51,54,445/-
	Sub-Total	**3,37,90,251/-**

c) Further during 33rd TCC meeting held in September 2021, GSI has requested for time extension and correction in target (lkm) and accordingly EC in its 22nd meeting held in December 2021 approved the time overrun of project without cost overrun for 31 months [from May, 2020 to November, 2022] and correction in the figure of TSQC to 50,000 line km at cost of Rs 1,55,00,000/-.

d) Now, GSI has sought for time extension up to 31.05.2024 and reduction in the quantum of the fourth component of TS-QC contract of M/s IDPeX from 50,000 Line Km to 24,595 Line Km, with the following break-up:

1	TS-QC of heliborne survey in areas identified through interpretation of legacy data	23,165 Line Km (approx.)
2	TS-QC over Spin-off area of NAGMP Block-1 survey	1,430 Line Km (approx.)
	Total	24,595 Line Km (approx.)

e) Based on detailed deliberation, the Committee agreed for time extension up to 31.05.2024 and reduction in the quantum of the fourth component of TS-QC contract of M/s IDPeX from 50,000 Line Km to 24,595 Line Km. However, the cost for carrying out TS-QC will be reimbursed as per the MOA signed between GSI and M/s IDPeX on 18.01.2019 at Rs 310 per line km.

Keeping in view of above, Commiittee recommended for time extension of 18 months i.e. up to 31.05.2024 and reduction in the quantum of the fourth component of TS-QC contract of M/s IDPeX from 50,000 Line Km to 24,595 Line Km without any cost escalation.

50.4: The meeting ended with vote of thanks by Director and member Secretary, TCC, NMET.

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List of TCC members attended 50th Technical-cum-Cost Committee (TCC) meeting of NMET held on 2nd & 3rd March, 2023 in hybrid mode at DGCO, GSI, New Delhi

S. No.	Name/Designation	Status	Remarks
1	Shri Janardan Prasad, Addl. Director General & HoD, GSI	Chairman, TCC	Attended Physically
2	Shri Ranjan Kumar Sinha, Controller General (Retd.), IBM	TCC Member	Attended via videoconference
3	Shri Naeem Ahmad, General Manager-Exploration (Retd.), CMPDI Ltd.	TCC Member	Attended Physically
4	Dr. Anjani Kumar, Dy. General Manager (Exploration) & HoD Planning (Retd.), MECL	TCC Member	Attended Physically
5	Additional Director, Atomic Minerals Directorate for Exploration and Research	TCC Member	Not attended
6	Shri Hemraj Suryavanshi, Addl. Director General (Retd.), GSI	TCC Member	Attended Physically
7	Shri Manoj Kumar Patel, Deputy Director General and RMH-II, GSI	TCC Member	Attended Physically
8	Shri Santosh Kumar Adhikari, Chief Mining Geologist, IBM	TCC Member	Attended Physically
9	Shri Vivek Kumar Sharma, Director, NMET, Ministry of Mines	TCC Member	Attended Physically
10	Shri Suresh Chander Director, GSI	Member Secretary, TCC, NMET	Attended Physically
11	Shri Ravi Kumar Gupta, General Manager (Finance) HCL	TCC Member	Attended via videoconference
12	Shri P. K. Maharana, Dy. General Manager (Finance), NALCO	TCC Member	Attended via videoconference
13	Shri Vinay Pal, CAO (Finance), GSI	TCC Member	Not Attended





Annnexure-1

List of participants attended 50th Technical-cum-Cost Committee (TCC) meeting of NMET held on 2nd & 3rd March, 2023 in hybrid mode at DGCO, GSI, New Delhi

S. No.	Name/Designation	Email ID	Contact No	Organisation
1.	Shri Janardan Prasad, ADG & HoD, GSI	janardan.prasad@gsi.gov.in	7763800788	Chairman, TCC
2.	Shri Ranjan Kumar Sinha, Controller General (Retd.) IBM	sinhark57@rediffmail.com	9421777637	Member, TCC
3.	Shri Hemraj Suryavanshi, ADG (Retd.), GSI	hemrajgsi@gmail.com	7477042176	Member, TCC
4.	Dr. Anjani Kumar, DGM (Retd.), MECL	anjanikumar1957.ak@gmail.com	9975350576	Member, TCC
5.	Shri Naeem Ahmed, GM (Retd.), CMPDI	ahmadnaeem17@yahoo.co.in	8588092153	Member, TCC
6.	Shri Manoj Kumar Patel, DDG and RMH-II, GSI	m.patel1@gsi.gov.in	9040011231	Member, TCC
7.	Shri S.K Adhikari, Chief Mining Geologist,	skadhikari@ibm.gov.in	7588690545	IBM, Nagpur, Member
8.	Shri Vivek Kumar Sharma, Director, NMET	vksharma.ofb@gov.in	7024570055	Member, TCC
9.	Shri Ravi Kumar Gupta, General Manager (Finance) HCL	ravi_g@hindustancopper. com	9433274328	Member, TCC
10.	Shri P. K. Maharana, DGM (F), NALCO	pmaharana@rediffmail.co m	8500669500	Member, TCC
11.	Shri Suresh Chander, Director, GSI	suresh.chander@gsi.gov.in	9493860963	Member Secretary,
12.	Shri Maneesh Khar, Director	nmet.mines@gov.in	9462036108	NMET
13.	Dr. Deshraj Trivedi, Senior Geologist	nmet- tcc@gov.in	9419244294	TCC-NMET
14.	Shri H. P. Harish, Deputy Director (Plan)	dir-mines@karnataka.gov.in	9611951313	DMG, Karnataka
15.	Smt. V. Aruna, Joint Director	cgmchennai32@gmail com	9176610967	CGM Tamil Nadu
16.	Shri P. C. Mishra, Joint Director (Geology)	director geology_odisha@yahoo.in	9861465695	DGM Odisha
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23.	Shri S.K. Satpathy, Manager (Geology)	-	9993617090	MECL

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26.	Shri Shankar Reddymalla, Geologist	Shankargeo10@gmail.com	6366384827	KIOCL Ltd.
27.	Dr. Biplob Chatterjee Director (Consulting),	biplob.chatterjee@geovale.com	9007706145	Geovale Services
28.	Dr. Joy Gopal Ghosh, Advisor (Exploration)	jgghosh@gmail.com	9999681366	Geovale Services
29.	Shri N. Longrikaba Director, DGM,	geominenaga@gmail.com	9402024561	Nagaland
30.	Smt. Imlinungla Walling Geologist,	anunglawalling@gmail.com	8787421663	DGM, Nagaland
31.	Shri. Temjen jamir Chemist,	Chimchir7@gmail.com	7005621007	DGM, Nagaland
32.	Shri David Lhoupenyi Nodal officer & Geologist, DGM,	dihoupenyi@gmail.ocm	8787792232	DGM, Nagaland
33.	Dr A. S. Sodhi, Deputy Director	dgmladakh@gmail.com	9419122590	DGM, Ladakh
34.	Shri Jai Prakash, Joint Director	dgmupexp@gmail.com	8887534717	DGM, U.P
35.	Shri R.P. Singh, Geologist	dgmupexp@gmail.com	9621045793	DGM, U.P
36.	Shri Sanjay kankane, Joint Director	dgmgeology@gmail.com	9826753151	DGM Chhattisgarh
37.	Shri P Ramachandra Rao, Director (Geophysics)	pabalu.rao@gsi.gov.in	9292252894	RSAS, GSI
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Annexure- 2A

Estimate Cost for Reconnaissance Survey (G4) for Coal in Khapia Block, North Karanpura Coalfield Distict: Harzaribagh Jharkhand [Block Area 19.10 sq km; Nos Borehole 4 Completion Time 12 Months]								
Sl. No	**Item Work**	**Item no in Soc**	**Unit**	**Rates as per SoC of NMET**	**Rate (Rs)**	**Qty.**	**Amount (Rs)**	**Remarks**
	I- Field operations (Outsourcing)							
A	**DRILLING**							
1	Drilling (As per MoC Rate 2022-23)	2.2.1.1b	m	6775	6775	1100	7452500	Copy of MoC approved Rate is required
B	**GEOPHYSICAL STUDIES**							
1	Borehole Geophysical logging (As per MoC Rate 2021-22)	3.11	m	715	715	1100	786500	Copy of MoC approved Rate is required
					Field operations Total (A+B)		**8239000**	reimbursement of outsource component will be made as per Para 3 of NMET-SoC
	II- Field Work (In House)							
C	**GEOLOGICAL WORK**							
1	Survey Work -1 Surveyor	1.6.1a	Day	8300	8300	25	207500	
2a	Geological Party days-Field - 1 Geologist	1.3 a	Day	11000	11000	60	660000	
2b	Geological Party days-HQ (Data processing & Report Preparation)-1 Geologist	1.3 b	Day	9000	9000	30	270000	
						Sub Total C	**1137500**	
D	**GEOPHYSICAL STUDIES**							
3a	Geophysict Party days-Field (Field Work) - 1 Geologist	3.19	Day	11000	11000	10	110000	
3b	Geophysicst Party days-HQ (Data processing & Report Preparation)-- 1 Geologist	3.19	Day	9000	9000	7	63000	
						Sub Total D	**173000**	
						Field Work Total (C+D)	**1310500**	
	III-Laboratory Studies (In House)							
E	***Band By Band Analysis (Billing as per actuals)***							
a	Ash+Moisture	4.2 6	per sample	700	700	250	175000	

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b	House Keeping	4.2.1	per sample	115	115	250	28750	
c	Sample preparation for Band by Band Analysis	4.2.2	per sample	500	500	250	125000	
F	***Overall analysis (Billing as per actuals)***							
a	Proximate analysis	4.2.7	per sample	935	935	75	70125	
b	Moisture at 60% RH & 40C	4.2.8	per sample	1010	1010	75	75750	
c	GCV	4.2.11	per sample	1505	1505	75	112875	
d	Sample preparation & House Keeping	4.2.3	per sample	795	795	75	59625	
G	***Special Test (Billing as per actuals)***							
a	Ultimate analysis	4.2.17	per sample	9945	9945	16	159120	
b	Total Sulphur	4.2.14	per sample	1900	1900	16	30400	
c	Distribution of Sulpher	4.2.15	per sample	3695	3695	16	59120	
d	HGI including sample preparation	4.2.18	per sample	3805	3805	16	60880	
e	AFT (Ash Fusion Temperature)	4.2.20	per sample	2745	2745	16	43920	
f	Ash analysis	4.2.25	per sample	325	325	16	5200	
h	Ash sample preparation 800ºC from coke for analysis	4.2.5	per sample	875	875	16	14000	
i	Roga Index(Instead of caking Index)	4.2.22	per sample	5365	5365	16	85840	
j	Swelling Index	4.2.23	per sample	2745	2745	16	43920	
k	LTGK coke type	4.2.24		4550	4550	16	72800	
H	**Petrographic analysis (Billing as per actuals)**							
a	Pellet preparation	4.3.^4a	per sample	1160	1160	16	18560	
b	Maceral Analysis (with photomicrography)	4.3.^4e	per sample	25000	25000	16	400000	
c	Microlithotype Analysis (with photomicrography)	4.3.^4g	per sample	25000	25000	16	400000	
d	Mean Ro%	4.3.14j	per sample	16345	16345	16	261520	
					Laboratory Studies (sub-total E to H)		**2302405**	
I	Land crop compensation	5.6	Per bh	20000	20000	4	80000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
						Total (A to I)	**11931905**	
	IV. Miscellaneous Charges (In House)							
J	Preparation of Exploration Propcsal	5.1	2% of approved cost or 3.8 Lakh whichever is lower				238638	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.

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K	Outsourcing process cost (2% of approved project cost or 5 Lakh, whichever is lower)	2.3	2% of approved project cost or 5 Lakh, whichever is lower				164780	will be reimbursed when copy of signed agreement/tender for outsourced component will be submitted.
L	Operational charges for CMPDI	6.(i)			500000		742925	will be reimbursed as per point 3 of NMET-SoC after recalculation when actual cost of outsourcing component will be be provided. The copy of contract agreement for outsourced component and work completion report are also required to reimburse the operational charge
M	Geological Report preparation (5% or 2.5 Lakh whichever is more)	5.2(ii)					596595	
N	Peer review			10000	10000		10000	
	Miscellaneous Charges Total (J to N)						**1752938**	
	Total						13684843	
	GST (@18%)						2463272	GST will be reimburse as per actual and as per notified prescribed rate
	Grand Total						**16148115**	
	Or Say in Lakhs						**161.481151**	**161.48 Lakhs**
	Note- 1) Above rate of drilling, GPL, Chemical, are budgeted rates.							
	2) There are numerous items in chemical analysis. The CIMFR rates will be applied for actual payment.							
	3)For Drilling the approved rates of MoC i.e Rs 6775/- per meter for FY 2022-23 has been considered.							
	4)For Geophysical logging the approved rates of MoC for FY 2021-22 has been taken other rates are as per approved SoC rates.							
	5) GPL rates is Rs 715/- per meter of minimum 6 parameters, the break up is as follow							

	Probe	**SoC item No**	**Rate 2021-22 (in Rs)**
1	Base Log	3.11a	166
2	Dual Density	3.11d	112
3	Natural Gamma	3.11h	99
4	Caliper	3.11g	21
5	SPR	3.11i	42
6	Resistivity	3.11c	42
7	Deviation	3.11m	99
8	Sonic	3.11k	134
	Total		**715**

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6) The number of sample proposed for band by band analysis and Overall analysis is tenatative for budget rate. However the billing will be for actual numbers of samp es
7) Rs 10000/- for Peer review is budgeted rate.

Annexure- 2B

Time Schedule/Action Plan for Khapia Block, North Karanpura Coalfield														
S. No.	Activities													Remarks
		Months	1	2	3	4	5	6	7	8	9	10	11	12	
1	Outsourcing	Months							REVIEW						3 Months
2	Mobilising	Months													1 months
3	Drilling (Nos of rigs-1 rigs)	Months													4 Bh
4	Borehole Geophysical logging	Days													4 Bh
5	Survey Party days (1 Party)	Days													25 Days
6	Geologist Party days, Field (1 Party)	Days													60 Days
7	Geophysict Party days, Field (1 Party)	Days													10 Days
8	Laboratory Studies (Band By Band)	Nos.													210 sample
9	Laboratory Studies (Overall)	Nos.													160 sample
10	Laboratory Studies (Special) & (Petrography)	Nos.													16 Sample
11	Geologist Party days, HQ (1 Party)	Days													30 Days
12	Report Writing & Peer Review	Months													4 Months

Note :- Please add activities accordingly and timelime (months)
Total Time Period of Completion of Project- 12 months from Sanction of Project

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Annexure- 3A

Estimated cost for Reconnaissance Survey (G-4) for REE in Rudrawathi Block, District-Tiruppur, Tamil Nadu Total block area- 126 sq km; Completion Time- 12 Months							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21	Estimated Cost of the Proposal			Remarks
			SoC- Item- S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	**Large scale (LSM) Geological mapping (1:12500)/ Trenching/ Drilling**						
1.1	Large scale (LSM) Geological mapping/ Trenching/ Drilling						
	Geologist man days (1 No.) for Geological map & Report (HQ)	days	1.2b	9,000	60	5,40,000	
	a) Geologist man days (1 No) for Large scale (LSM) Geological mapping/ Trenching/ Drill ng	days	1.2	11,000	150	16,50,000	
	b) Labour (field) for (Tota 4 Nos i.e. 2 workers per one geologist)	per worker	5.7	477	300	1,43,100	Amount will be reimbursed as per the notified rates by the Central Labour Comm ssioner (Rs. 427/- per day) or respective State Govt. whichever is h gher
	c) Sampler for Suface Samples/ Trench Samples / Core Samples Labour charge not included	day	1.5.2	5100	35	1,78,500	
	d) 4 labours/ party (As per rates of Central Labour Commissioner)	day	5.7	477	140	66,780	Amount will be reimbursed as per the notified rates by the Central Labour Comm ssioner (Rs. 427/- per day) or respective State Govt. whichever is h gher
	Sub-Total 1.0					**25,78,380**	
2.0	**Mineral Investigation**						
2.1	Pitting						
	a) Excavation of pits	per cu m	2.1.2	3,800	200	7,60,000	
	Sub-Total 2.0					**7,60,000**	

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3.0	**Laboratory Studies**						
3.1	Chemical Analysis						
	i) Surface sampling (Bed Rock Samples/Stream Sediment & Pit)						
	a. For 34 elemental analysis includes Nb, Sr, Ta, W, Mo, Sn, Rb, Be, Cs, LI & REE ana ysis by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	250	19,32,750	25 BR, 25 Stream & 200 Pit samples (regolith)
	ii) Check Samples (Bed Rock/Soil/Stream Sediment Samples & Pit) - 5% Internal & 10% External						
	a. For 34 elemental analysis includes Nb, Sr, Ta, W, Mo, Sn, Rb, Be, Cs, LI & REE ana ysis by ICP-AES / ICPMS (sequential technique)	per sample	4.1.14	7,731	38	2,93,778	
3.2	**Petrological / Mineralographic studies**						
	a) Preparation of thin section	per sample	4.3.1	2,353	10	23,530	
	b) Study of thin section for petrography	per sample	4.3.4	4,232	10	42,320	
	c) Preparation of polished section	per sample	4.3.2	1,549	5	7,745	
	d) Study of polished section for mineragraphy	per sample	4.3.4	4,232	5	21,160	
	f) XRD Mineral Phase Ana ysis	per sample	4.5.1	4,000	5	20,000	
	Sub-Total 3.0					**23,41,283**	
4.0	**Total (1.0 to 3.0)**					**56,79,663**	
5.0	**Geological Report Preparation**	Nos	5.2	A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more	1	**2,83,983**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
6.0	**Preparation of Exploration Proposal**	**Nos**	**5.1**	2% or Rs. 380000 whichever is less	**1**	**1,13,593**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.

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7.0	**Report Peer Review Charges**	**lumpsum**	**As per EC decision**	**10000**	**1**	**10,000**	
8.0	**Total Estimated Cost without GST (4+5+6+7)**					**60,87,239**	
9.0	**Provision for GST (18%)**					**10,95,703**	GST will be reimbursed as per actual and as per notified prescribed rate
10.0	**Total Estimated Cost with GST**					**71,82,943**	
						71.83	**Say Rs. 71.83 Lakh**
Note:							
*	Marked items not indicated in SoC and required to be taken up during the course of exploration shall be charged separately (as per actuals)						
$	Trenching/Pitting dimensions are tentative may vary depending upon the geology and field conditions						
i	Satellite imageries shall be procured from website/NRSA as the case may be and procurement charges if any shall be charged at actuals						
#	2nd level of work shall be carried out after review of 1st level work i.e. Geological mapping, geochemical sampling and analysis						

Annexure- 3B

Time schedule / Action plan of Reconnaissance Survey (G-4) for REE in Rudrawathi Block, District-Tiruppur, Tamil Nadu
Total block area- 126 sq km; Completion Time- 12 Months

S.No.	Activities	MONTHS											
		1	2	3	4	5	6		7	8	9	10	11	12
1	Camp setting													
2	Geological mapping & Sampling													
	Pitting & Sampling													
3	Sample preparation													
4	Analytical work													
10	Camp winding													
12	Geologist at HQ													
13	Geological report													
14	Peer Review													

Review

* Commencement of project will be reckoned from the day the exploration acreage is available along with all statutory clearances

*Time loss on account of monsoon/agricultural activity/forest clearance/ local law & order problems will be addition to above time line.

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Annexure- 4A

Estimated cost for Reconnaissance Survey (G4) for REE in Sarnu Block, Barmer District, Rajasthan Total block area- 118.10 sq km; Completion Time- 12 Months							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC- Item-S. No.	Rates as per SoC	Qty.	Total Amount (Rs)	
1.0	**Large scale Geological mapping (LSM) (1:12500)/ Pitting**	sq. km.					
a)	Geologist man days (1 No.) for Geological map & Report (HQ)	days	1.2	9,000	60	5,40,000	
b)	Geologist at Field	per day	1.2	11,000	150	16,50,000	LSM, Surface Pitting , Sampling
c)	Labour (field) for (Total 4 Nos i.e. 2 workers per one geologist)	per worker	5.7	477	300	1,43,100	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner (Rs. 427/- per day) or respective State Govt. whichever is higher
d)	Sampler for Surface Samples/ Trench Samples / Core Samples Labour charge not included	day	1.5.2	5100	20	1,02,000	
e)	4 labours/ party (Rs 427/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	477	80	38,160	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner (Rs. 427/- per day) or respective State Govt. whichever is higher
	Sub-Total A					**24,73,260**	
2.0	**Mineral Investigation (Pitting)**						
a)	Excavation of pit up tc 2.0m depth	per cu m	2.1.2	3,800	50	1,90,000	
	Sub-Total B					**1,90,000**	
3.0	**Ground Geophysical Survey**						
a)	Radiometry	LKM	-	200	30 LKM/ 6000 station	12,00,000	As per GSI rate & as per actual; whichever is less
f)	Charges for Geophysicist (HQ)	Charges per day	3.18	9,000	20	1,80,000	
	Sub-Total C					**13,80,000**	

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4.0	**Laboratory Studies (Chemical Analysis)**						
4.1	Bed Rock Samples(Grab/Chip /Channel/Water) + Pit Samples. Analysis of one rock/ soil sample for determination of a package by 34 elements by ICP-AES/ ICPMS (sequential technique) for REE and RM (Primary Samples)	per sample	4.1.14	7,731	150	11,59,650	100 BRS+50 pit sample
	Check samples						
a)	check samples (15%)	per sample	4.1.14	7,731	23	1,77,813	Internal & External
4.2	**Whole rock studies**	per sample	4.1.15a	4,200	10	42,000	
4.3	**Petrological / Mineralographic studies**						
a)	Preparation of thin section	per sample	4.3.1	2,353	10	23,530	
b)	Study of thin section for petrography	per sample	4.3.4	4,232	10	42,320	
c)	XRD analysis for identification of minerals (Random)	per sample	4.5.1	4,000	10	40,000	
	Sub-Total D					**14,85,313**	
5.0	**Total (1.0 to 4.0)**					**55,28,573**	
6.0	**Geological Report Preparation**	Nos	5.2	For the projects having cost up to exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more and Rs. 3000/- per each additional copy.	1	**2,76,429**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.

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7.0	**Preparation of Exploration Proposal**	**Nos**	**5.1**	**380000**	**1**	**1,10,571.46**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC- NMET in its meeting while clearing the proposal.
8.0	**Report Peer Review Charges**	**lumpsum**	**As per EC decision**	**10000**	**1**	**10,000**	Additional Rs.1500 as handling charges should be added
9.0	**Total Estimated Cost without GST (7+8+9+10)**					**59,25,573**	
10.0	**Provision for GST (18%)**					**10,66,603**	GST will be reimburse as per actual and as per notified prescribed rate
11.0	**Total Estimated Cost with GST**					**69,92,176**	
				Say, in Lakhs		**69.92**	
Note:							
*	Marked items not indicated in SoC and required to be taken up during the course of exploration shall be charged separately (as per actuals)						
$	Trenching/Pitting dimensions are tentative may vary depending upon the geology and field conditions						
i	Satellite imageries shall be procured from website/NRSA as the case may be and procurement charges if any shall be charged at actuals.						
#	2nd level of work shall be carried out after review of 1st level work i.e. Geological mapping, geochemical sampling and analysis						

Annexure- 4B

Time schedule / Action plan of Reconnaissance Survey (G-4) for REE in Sarnu Block, Barmer District, Rajasthan

S. No.	Activities	MONTHS											
		1	2	3	4	5	6	REVIEW	7	8	9	10	11	12
1	Camp setting													
2	Geological mapping & Sampling													
3	Sample preparation													
4	Analytical work													
5	Exploratory mining (Pitting)													
6	Sample preparation (Pit samples)													
7	Analytical work													
8	Geophysical Exploration													
9	Camp winding													
10	Geologist at HQ													
11	Geological report													
12	Peer Review													
* Commencement of project will be reckoned from the day the exploration acreage is available along with all statutory clearances														
*Time loss on account of monsoon/agricultural activity/forest clearance/ local law & order problems will be addition to above time line.														

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Annexure- 5A

Cost Sheet for Reconnaissance survey (G4) for Iron, Manganese and associated minerals in Salaiya, Districts: Jabalpur, Katni & Umaria, State: Madhya Pradesh. [Block area- 110.56 sq. km; Nos. of Borehole- 8; Schedule timeline- 12 months]							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item -Sl No.	Rates as per SoC	Qty.	Amount (Rs)	
A	**GEOLOGICAL WORK (1:12,500 scale)**						
i	Charges for one Geologist-Field	day	1.2	11,000	150	16,50,000	
ii	Charges for one Geologist per- HQ	day	1.2	9,000	60	5,40,000	
iii	2 labours/ party (Rs 477/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	477	300	1,43,100	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
iv	Core Sampling -1 Samplers Labour charge not included	day	1.5.2	5,100	35	1,78,500	
v	4 labours/ party (Rs 477/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	477	140	66,780	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
					Sub Total- A	**25,78,380**	
B	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i	**Primary & Check samples for Iron Channel samples)**						
	a. Primary Samples for 4 Radicals Fe, Al2O3, P2O5 & SiO2	Nos	4.1.15a	4,200	250	10,50,000	250 nos. channel samples
	b.Internal & External (15%) Check samples for 4 adicals Fe, Al2O3, P2O5 & SiO2	Nos	4.1.15a	4,200	38	1,59,600	
ii	**Primary & Check samples for gold (BRS/Channel)**						
	a. Primary Samples for Au by Fire Assay	Nos	4.1.5a	2,380	15	35,700	10 samples from Dolomite and BIF contact and 5 samples from BIF
	b.Internal & External (15%) Check samples for 4 Radicals Fe, Al2O3, P2O5 & SiO2	Nos	4.1.5a	2,380	3	7,140	

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2	**Physical & Petrological Studies**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Complete petrographic study report	Nos	4.3.4	4,232	10	42,320	
Iii	Whole Rock Analysis (Major oxice and 8 additional trace elements)	Nos	4.1.15a & b	7,568	10	75,680	
				Sub Total- B		**13,93,970**	
C				**Total A to B**		**39,72,350**	
D	**Geological Report Preparation**		**5.2**	For the projects having cost less than Rs. 50 lakhs - A minimum of Rs. 1.5 lakhs or 5% of the value of work whichever is more		**1,98,618**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
E	**Peer review Charges**		**As per EC decision**			**10,000**	
F	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	2% of the Cost or Rs. 3.8 Lakhs whichever is lower		**79,447**	EA has to submit the Hard Copies and the soft copy of the final proposa along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
G	**Total Estimated Cost without GST**					**42,60,415**	
H	**Provision for GST (18% of I)**					**7,66,874.61**	GST will be reimburse as per actual and as per notified prescribed rate
I	**Total Estimated Cost with GST**					**50,27,289.11**	
				or Say Rs. In Lakhs		**50.27**	
Note:							
1	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of exeousion of the project by NEA on its own, a Certifiate regarding non outsourcing of any component/project is required.						

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Annexure- 5B

Time Schedule for Reconnaissance survey (G4) for Iron, Manganese and associated minerals in Salaiya, Districts: Jabalpur, Katni & Umaria, State: Madhya Pradesh. [Block area- 110.56 sq. km; Schedule timeline- 12 months]															
S. No.		Months/Days	1	2	3	4	5	6	Review	7	8	9	10	11	12
1	Camp Setting	months													
2	Geological Mapping	months													
3	Geologist days	days													
4	Sampling party days	days													
5	Camp winding	months													
6	Laboratory Studies	months													
7	Geologist days, HQ	days													
8	Report Writing with Peer Review	months													

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Annexure- 6A

COST SHEET FOR G-3 LEVEL EXPLORATION FOR LIMESTONE IN PROPOSED NADDISINUR-1 and 2 BLOCKS, DISTRICT- GULBARGA (KALABURAGI) , KARNATAKA

Total Area - 12.09 Sq Km; Nos. of Borehole - 10 ; Borehole depth range - 45m (BGL) ; Completion Time - 10 Months

S.N	Item of Work	Unit	Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		Remarks
			SoC-Item - Sl No.	Rates as per SoC	Qty.	Total Amount (Rs)	
A	**GEOLOGICAL WORK**						
1	**Mapping, Borhole logging & Sampling & Report writing**						
a	Charges for one Geologist per day at HQ	day	1.3	9,000	60	540,000	
b	Charges for one Geologist per day at field	day	1.3	11,000	120	1,320,000	
c	Labour for Geologist (2 Nos)	day	5.7	477	240	114,480	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
d	Charges for one Sampler per day (1 Party)	one sampler per day	1.5.2	5,100	50	255,000	
e	Labours for sampling work (4 Nos)	day	5.7	477	200	95,400	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**Survey (on 1:4000 Scale)**						
a	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and block cardinal points by DGPS	Per Point of observation	1.6.2	19,200	46	883,200	Block cardinal point- 35 Borehole- 10, base station- 1
b	Charges of one Surveyor (1 Party)	one surveyor per day	1.6.1a	8,300	45	373,500	Contouring at 2m interval
c	Labours (4 Nos)	day	5.7	477	180	85,860	Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher

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	Sub-Total A					**3,667,440**	
B	**DRILLING**						
1	Drilling -Soft rock	m	2.2.1.1b	6,775	450	3,048,750	MoC Rate
2	Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6	20,000	10	200,000	Amount will be reimbursed as per actuals or max. Rs. 20000 per BH with certification from local authorities
3	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	10	20,000	
4	Transportation of Drill Rig & Truck associated per drill	Km	2.2.8	36	1,700	61,200	To & fro
5	Monthly Accomodation Charges for drilling Camp (up to 1 Rigs)	month	2.2.9	50,000	3	150,000	
6	Drilling Camp Setting Cost	Nos	2.2.9a	250,000	1	250,000	
7	Drilling Camp Winding up Cost	Nos	2.2.9b	250,000	1	250,000	
8	Road Making (Flat Terrain)	Km	2.2.10a	22,020	4	88,080	Road Making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.
9	Drill Core Preservation	per m	5.3	1,590	405	643,950	This amount will be reimbursed after successful delivery of the cores to concerned libraries/ authorities
	Sub Total B					**4,711,980**	
C	**LABORATORY STUDIES**						
1	**Chemical Analysis**						
i)	**Primary samples**						
	a. For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	Nos	4.1.15a	4,200	400	1,680,000	
ii)	**Check samples Internal (5%) and External(10%)**						
	a. For 9 radicals i.e. CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI by XRF	Nos	4.1.15a	4,200	60	252,000	

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iv)	**Petrological samples (Bh Core Samples)**						
i	Preparation of thin section	Nos	4.3.1	2,353	10	23,530	
ii	Study of Thin Section	Nos	4.3.4	4,232	10	42,320	
v)	**Bulk Density Determination**						
	Bulk Density	No.	4.10	3,540	4	14,160	
	Total - C					**2,012,010**	
D	**Sub Total (A to C)**					**10,391,430**	
E	**Geological Report Preparation**		**5.2**	**For the projects exceeding Rs. 50 Lakhs but less than 150 Lakhs: A Minimum of Rs. 2.5 lakhs or 5% of the work whichever is more**		**1,039,143**	EA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET. 2 Separate GRs for two blocks (Naddisinur-1 and Naddisinur-2 Blocks)
F	**Preparation of Exploration Proposal (5 Hard copies with a soft copy)**	**5 Hard copies with a soft copy**	**5.1**	**2% of the Cost or Rs. 3.8 Lakhs whichever is lower**		**207,829**	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC-NMET in its meeting while clearing the proposal.
G	**Peer review Charges**		**As per EC decision**			**20,000**	Cost Estimated for two peer review of 2 blocks separately (Naddisinur-1 and Naddisinur-2 Blocks)
H	**Total Estimated Cost without GST**					**11,658,402**	
I	**Provision for GST (18% of H)**	**%**				**2,098,512**	GST will be reimburse as per actual and as per notified prescribed rate
J	**Total Estimated Cost with GST**					**13,756,914**	
				or Say Rs. In Lakhs		***137.57***	
Note - If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMET SoC and Item no. 6 of NMET SoC. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.							

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Table- 2: Time schedule (in months) for G-3 Level Exploration for Limestone in Proposed Naddisinur-1 and 2 Blocks, Bhima Basin, District: Gulbarga (Kalaburagi), Karnataka

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

Note: 1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.

2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.

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Annexure- 7A

Cost Estimate for Reconnaissance Exploration (G-4 Level) of Nagavanda Gold and Basemetal Block (Block ID: KIOCL_34_KA_NGBB), Karnataka								
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21		Year 2022-23			Remarks
			SOC Item No	Rates as per SOC	Qty	Amount (Rs)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)*(f)		
1	Interpretation of Aerogeophysical data and NGPM data							
1.1	Charges towards purchase of aerogeophysical maps	nos	1.1	5,400	1.0	5,400	**5,400**	Reimbursement as per prescribed rates
2	**LARGE SCALE GEOLOGICAL MAPPING WORKS (1:12,500 scale :63.3sq km)**							
2.1	Geologist Party days - Field	days	1.2	11,000	150.0	1,650,000	**2,795,300**	
2.2	Geologist Party days - HQ		1.2	9,000	60.0	540,000		
2.3	Labour charges	days	5.7	431	300.0	129,300		
3	**TRENCHING WORKS**							
3.1	Trenching works	cum	2.1.2	3,800	100.0	380,000		
4	**SURVEY WORKS**							
4.1	DGPS Survey (1 Base point+ 7 Boundary points + 5 Borehole points)	days	1.6.2	19,200	5.0	96,000		
5	**DRILLING**							
5.1	Surface Drilling (01 rig - Hard Rock)	m.	2.2.1.4a	11,500	500.0	5,750,000	**6,915,200**	(5 bhs. @ 100 m each)
5.2	Transportation of drill rigs (01unit x 600 km one way)	km	2.2.8	36	600.0	21,600		(To & fro)
5.3	Drilling camp setting cost	per drill	2.2.9a	250,000	1.0	250,000		
5.4	Monthly accommodation charges for drilling camp	monthly basis	2.2.9	50,000	3.0	150,000		
5.5	Drilling camp winding cost	per drill	2.2.9b	250,000	1.0	250,000		
5.6	Approach road making for Rugged - Hilly terrain	Km	2.2.10b	32,200	5.0	161,000		
5.7	Construction of Concrete pillar (12"X 12"X30")	per borehole	2.2.7a	2,000	5.0	10,000		
5.8	Core preservation	m	5.3	1,590	140.0	222,600		(1 Bhs+ mineralized zone)
5.9	Land/Crop compensation (in case the BH fal's in agriculture land)	per borehole	5.6	20,000	5.0	100,000		

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6	**LABORATORY STUDIES**								
6.1	Sample processing works (435 nos)	Sampler charges	days	1.5.2	5,100	42.0	214,200	**286,608**	
6.2		Labour charges	days	5.7	431	168.0	72,408		Amount will be reimbursed for unskilled labour as per the notified rates by the Central Labour Commissioner (Rs.431/- per day) or respective State Govt. whichever is higher)
6.3	Sample analysis by AAS method- 7 radicals (Cu, Pb, Zn, Ag, Mo. W & Sn)	Primary	per sample	4.1.7 a&b	3,176	335.0	1,063,960	**1,225,936**	BRS:100 +SSS:35+ Trench:100+Borehole :100
6.4		Internal Check (5%)		4.1.7 a&b	3,176	17.0	53,992		
6.5		External Check (10%)		4.1.7 a&b	3,176	34.0	107,984		
6.6	Gold analysis by Fire assay method	Primary	per sample	4.1.5a	2,380	100.0	238,000	**273,700**	
6.7		Internal Check (5%)		4.1.5a	2,380	5.0	11,900		
6.8		External Check (10%)		4.1.5a	2,380	10.0	23,800		
6.10	Proximity Analysis of Graphite		per sample	4.1.16	3,000	20.0	60,000	**60,000**	
6.1	Petro studies	Preparation of Thin section	nos	4.3.1	2,353	10.0	23,530	**120,020**	
6.1		Complete Petrological Report of rock sample	nos	4.3.4	4,232	10.0	42,320		
6.1		Preparation of Polished section	nos	4.3.3	1,185	10.0	11,850		
6.1		Mineragraphic studies	nos	4.3.4	4,232	10.0	42,320		
7	**Peer review of report**		lumpsum				10,000	**10,000**	
8	**Sub Total**						**11,692,164**	**11,692,164**	
9	Preparation of Exploration Project Proposal		lumpsum	5.1	2% of the project cost or Rs 3.8 lakh whichever is lower	5 Hard copies along with Soft copy	**233,843**	**233,843**	EA has to submit the Hard copies and the soft copy of the final proposal along with maps and Plan as suggested by the TCC- NMET in its meeting while clearing the proposal.

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10	Exploration Report (5% of (Sl 9 + Sl 10))		5.2(iii)	For the projects having cost exceding Rs 50 lakhs but less than Rs 150 lakhs : A Minimum of Rs. 2.5 lakhs or 5% of the value of work whichever is more	5 Hard copies along with Soft copy	**584,608**	**584,608**	EA has to submit the final Geological Report in Hard Copies (5 nos) and the soft copy to NMET.
11	**GRAND TOTAL (9 to 11)**					**12,510,615**	**12,510,615**	
12	**GST 18%**					**2,251,911**	**2,251,911**	GST will be reimbursed as per actual and as per notified prescribed rate
13	**Grand Total (with GST 18%)**					**14,762,526**	**14,762,526**	**Say Rs.147.63 Lakhs**
	Note:							
	Survey mandays for Forest Clearance works includes Topo survey for making approach to Proposed Borehole (PBH) and Trench points, online filing of Form C, Physical demarcation of Approach roads and Trenches locations, Tree enumeration works, liosoning works with forest officials and arrangement of site visit of forest officials.							

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Annexure- 7B

Sl. No.	Details of Works	Duration in months	1	2	3	4	5	6	7	8	9	10	11	12
1	Camp Setting and Liosoning works with Forest Dept for availing per missions for carrying out LSM works and BRS collection	01												
2	**LARGE SCALE GEOLOGICAL MAPPING** (Includes 63.3 sq km of LSM + 100 nos of BRS + 35 nos of SSS)													
	2.1 Geologist Party days (01 Party)	03												
	2.2 Laboratory Works	03												
3	**Trenching and Surface Drilling works**								6 months from the date of receipt of Forest Clearance under FC act 1980 for Subsurface (Trenching and Drilling) works					
	3.1 Preparatory works for Drilling works (Approach road making)	01												
	3.2 Geologist Party days for Trenching and Drilling works of 500m (01 Party)	03												
	3.3 Laboratory Works	03												
4	**Survey Works**	01												
	4.1 Survey for Forest Clearance works includes Topo survey for making approach to Proposed Borehole (PBH) and Trench points, online filling of Form C, Physical demarcation of Approach roads and Trenches locations, Tree enumeration and liosoning works with forest officials													
	4.2 DGPS Survey (1 Base point + 7 Boundary points + 5 Borehole points) - 1 party	01												
5	**Camp Winding**	01												
6	**Preparation of Reports and Maps**	01												

Review

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Annexure- 8A

Cost Sheet for Preliminary Exploration (G-3 Level) Block in Jevargi area, Kalburgi Amalgamated Limestone Blocks (Block ID: KIOCL_20_KA_KLB), Karnataka

Sl	Item of Work	Unit	Rates as per NMET SoC 2020-21		Year 2021-22			Remarks
			SOC Item No	Rates as per SOC	Qty	Amount (Rs)		
(a)	(b)	(c)	(d)	(e)	(f)	(g)=(e)*(f)		
1	**GEOLOGICAL MAPPING WORKS (1:4,000 scale :20sq km)**							
1.1	Geologist Party days - Field	days	1.2	11,000	150.0	1,650,000	**3,519,180**	
1.2	Geologist Party days - HQ		1.2	9,000	60.0	540,000		
1.3	Labour charges	days	5.7	431	300.0	129,300		
3	**SURVEY WORKS**							
3.1	DGPS survey works	days	1.6.2	19,200	39.0	748,800		(18 Boundary Points + 20 Boreholes+ 1 Basepoint)
3.2	Chargs for 1 Surveyor (1 Party)	One surveyor per day	1.6.1a	8,300	45.0	373,500		Contouring at 2m interval
3.3	Labour charges	days	5.7	431	180.0	77,580		Amount will be reimbursed for unskilled labour as per the notified rates by the Central Labour Commissioner (Rs.431/- per day) or respective State Govt. whichever is higher)
4	**DRILLING**							
4.1	Surface Drilling (01 rig - Soft Rock)	m.	2.2.1.1b	6,775	900.0	6,097,500	**7,669,800**	MoC rate
4.2	Transportation of drill rigs (01 unit x 600 km one way)	km	2.2.8	36	1000.0	36,000		(To & fro) Certification in this regard is required to be provided
4.3	Drilling camp setting cost	per drill	2.2.9a	250,000	1.0	250,000		
4.4	Monthly accommodation charges for drilling camp	monthly basis	2.2.9	50,000	4.0	200,000		
4.5	Drilling camp winding cost	per drill	2.2.9b	250,000	1.0	250,000		
4.6	Approach road making for flat terrain	Km	2.2.10a	22,020	5.0	110,100		Road making will be considered as per the requirement and Road Making Charges will be reimbursed accordingly.

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4.7	Construction of Concrete pillar (12"X 12"X30")		per borehole	2.2.7a	2,000	20.0	40,000		
4.8	Drill Core preservation		m	5.3	1,590	180.0	286,200		@ 1 borehole per block X 4 blocks This amount will be reimbursed after successful delivery of the cores to concerned libraries/ authorities
4.9	Land/Crop compensation (in case the BH falls in agriculture land)		per borehole	5.6	20,000	20.0	400,000		Amount will be reimbursed as per actuals or max. Rs.20000 per BH with certification from local authorities
5	**LABORATORY STUDIES**								
5.1	Sample processing works (1750 nos)	Sampler charges	days	1.5.2	5,100	115.0	586,500	**784,760**	
5.2		Labour charges	days	5.7	431	460.0	198,260		Amount will be reimbursed for unskilled labour as per the notified rates by the Central Labour Commissioner (Rs.431/- per day) or respective State Govt. whichever is higher)
5.3	Sample analysis for Limestone	Primary	per sample	4.1.15a	4,200	900.0	3,780,000	**4,347,000**	9 radicals (CaO, MgO, Al2O3, SiO2, Fe2O3, SO3, P2O5, K2O and LOI) by XRF.
5.4		Internal Check (5%)		4.1.15a	4,200	45.0	189,000		
5.5		External Check (10%)		4.1.15a	4,200	90.0	378,000		
5.6	Petro studies	Preparation of Standard Thin section	nos	4.3.1	2,353	5.0	11,765	**47,085**	
5.7		Complete Petrological Report of rock sample	nos	4.3.4	4,232	5.0	21,160		
5.8	Determination of Bulk density		nos	4.10	3,540	4.0	14,160		
6	**Peer review of report**		lumpsum		10,000	**4**	40,000	**40,000**	
7	**Sub Total**						**16,407,825**	**16,407,825**	
8	Preparation of Exploration Project Proposal		lumpsum	5.1	2% of the project cost or Rs 3.8 lakh whichever is lower	5 Hard copies along with Soft copy	**328,157**	**328,157**	EA has to submit the Hard copies and the soft copy of the final proposal along with maps and Plan as suggested by the TCC- NMET in its meeting while clearing the proposal.

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9	Exploration Report (5% of (Sl 9 + Sl 10))		5.2(iii)	For the projects having cost exceeding Rs 150 lakhs but less than Rs 300 lakhs: A Minimum of Rs. 7.5 lakhs or 3% of the value of work whichever is more	5 Hard copies along with Soft copy	**750,000**	**750,000**	4 Separate GR's for 04 individual Block. EA has to submit the final Geological Report in Hard Copies (5 nos) and the soft copy to NMET.
10	**GRAND TOTAL (9 to 11)**					**17,485,982**	**17,485,982**	
11	**GST 18%**					**3,147,477**	**3,147,477**	GST will be reimbursed as per actual and as per notified prescribed rate
12	**Grand Total (with GST 18%)**					**20,633,458**	**20,633,458**	
	Grand Total in Lakhs (With GST 18%)					**206.33**	**206.33**	**Say Rs.206.33 Lakhs**

Annexure- 8B

Time Schedule Preliminary Exploration (G-3 Level) Block in Jevargi area, Kalburgi Amalgamated Limestone Blocks (Block ID: KIOCL_20_KA_KLB), Karnataka

Sl	Details of Works	Duration in months	1	2	3	4	5	6	7	8	9	10	11	12
1	**CAMP SETTING**	**01**												
2	**LARGE SCALE GEOLOGICAL MAPPING** (Includes 20 sq km of LSM + 100 nos. of BRS + 100 cum Trenching)	**04**												
	2.1 Geologist Party days (01 Party)													
	2.2 Laboratory Works	**03**												
3	**Surface Drilling**	**04**												
	3.1 Drilling works (01 rig - 1200m)													
	3.2 Geologist Party days (01 Party)													
	3.3 Laboratory Works	**04**												
4	**Survey Works**													
	4.1 Survey party days for DGPS survey of 39 points (18 Boundary Points + 20 Boreholes+ 1 Basepoint) and Contouring at 2m interval - 01 party	45 days												
5	**Camp Winding**	**01**												
6	**Preparation of Reports and Maps**	**01**												

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Annexure- 9A

Estimated cost for Reconnaissance Survey (G-4) for Ni & PGE prospect in Limbdi-Meghpar Titoi area, District: Jamnagar, Gujarat [Completion Time- 18 Months]							
S. No.	Item of Work	Unit	Rates as per NMET SoC 2020-21	Rates as per SoC	Estimated Cost of the Proposal		Remarks
			SoC- Item-S. No.		Qty.	Total Amount (Rs)	
1.0	**Large scale (LSM) Geological mapping (1:12500)/ Trenching/ Drilling**						
1.1	Large scale (LSM) Geological mapping/ Trenching/ Drilling						
	Geologist man days (1 No.) for Geological map & Report (HQ)	days	1.2b	9,000	60	540,000	
	a) Geologist Field man days (1 No) for Large scale (LSM) Geological mapping/ Trenching/ Drilling	days	1.2	11,000	300	3,300,000	
	b) Labour (field) for (Total 4 Nos i.e. 2 workers per one geologist)	per worker	5.7	477	600	286,200	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner (Rs. 427/- per day) or respective State Govt. whichever is higher
	Sub-Total 1.0					**4,126,200**	
3.0	**Geophysical Survey**						
3.1	Magnetic Survey	per station	3.2a	1,800	2000	3,600,000	
3.2	Electro Magnetic Survey	Sounding	3.7a	21,197	350	7,418,950	
4	Drilling (scout)	per m	2.2.1.3a	11,500	300	3,450,000	To be outsourced
3.2	**Laboratory studies**						
	Major Oxide (whole rock analysis)	per sample	4.1.15a	4,200	90	378,000	
	34 elements by ICPMS	per sample	4.1.14	7,731	245	1,894,095	
	Sampler Man Days	one sampler per day	1.5.2	5,100	45	229,500	
	Labour Charges (4 Nos)	days	5.7	477	180	85,860	
	Sub-Total 3.0					**17,056,405**	

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4.0	**Total (1.0 to 3.0)**					**21,182,605**	
5.0	**Geological Report Preparation**	Nos	5.2	A Minimum of Rs.7.5 lakh or 3% of the work whichever is more	1	**750,000.00**	NPEA has to submit the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
8.0	**Preparation of Exploration Proposal**	Nos	5.1	2% or Rs. 380000 whichever is less	1	**380,000.00**	NPEA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC- NMET in its meeting while clearing the proposal.
9.0	**Report Peer Review Charges**	umpsum	As per EC decision	10000	1	**10,000**	
10.0	**Total Estimated Cost without GST (7+8+9+10)**					**22,322,605**	
11.0	**Provision for GST (18%)**					**4,018,069**	GST will be reimburse as per actual and as per notified prescribed rate
12.0	**Total Estimated Cost with GST**					**26,340,674**	
					Say, in Lakhs	**263.41**	

Annexure- 9B

Time schedule / Action plan of Reconnaissance Survey (G-4) for Ni & PGE prospect block in Limbdi-Meghpar Titoi area, District: Jamnagar, Gujarat

S. No.	Activities	MONTHS																
		1	2	3	4	5	6	7	Review	8	9	10	11	12	15	16	17	18
1	Geological mapping & Sampling	■	■	■	■	■	■	■		■	■	■						
2	Geophysical Survey		■	■	■	■	■	■		■	■	■	■					
3	Sampling	■	■	■	■	■	■	■		■	■	■						
4	Drilling (scout)									■	■	■	■	■	■			
5	Laboratory studies		■	■	■	■	■	■		■	■	■	■	■	■	■		
6	Geological report															■	■	
7	Peer Review																	■

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