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CIN: U10200DL2008PTC183269

To **08/10/2024**

The Director
National Mineral Exploration Trust
Ministry of Mines
F-114, Shastri Bhawan,
New Delhi-110001

Subject: Submission of Detailed Project report for G-4 Stage Reconnaissance survey for Graphite & Vanadium in and around Lalpani area, Lohit District, Arunachal Pradesh

Reference: In Principal Approved project for Submission of DPR in 69th TCC-II held on 26th Sept 2024

Dear Sir,

We are NABET Accredited Notified Private Exploration Company under Ministry of mines, Govt Of India Vide Notification SR No 528 dated 14th September, 2023 under Category-A.

Please refer to the meeting under reference we hereby submitting the detail project report on the above subject to NMET. It is requested to kindly consider our DPR for further necessary action.

Regards,

Nitin Kohad
DGM (Business Development/ Geology)

DPR ON RECONNAISSANCE SURVEY FOR GRAPHITE & VANADIUM IN AND AROUND LALPANI AREA, LOHIT DISTRICT, ARUNACHAL PRADESH (UNFC: G-4)

COMMODITY: GRAPHITE, VANADIUM & REE

BY

KARTIKAY EXPLORATION AND MINING SERVICES PRIVATE LIMITED

PLACE: NAGPUR

DATE: 08.10.2024

Summary of the Block for Reconnaissance Survey (G4 Stage)

GENERAL/BASIC INFORMATION ABOUT THE PROPOSED BLOCK

	Features	Details
	Block Name	Lalpani
	Exploration Agency	Kartikay Exploration and Mining Services Pvt. Ltd, Nagpur
	Commodity	Graphite, Vanadium & REE
	Mineral Belt	Garnetiferous Graphite Schist Belt, Garnetiferous Kyanite-Sillimnite Schist Belt.
	Completion period with entire Time Schedule to complete the project	24 Months
	Objectives	The block area occupied by Garnetiferous Schistose rocks. It hosts the Graphite Mineralisation. The area is covered by thick vegetation and terrain is hilly. The are was explored by Geological Survey of India (GSI) in 1966-67 and reported the Graphite in the area. Few research papers indicates the presence of Vanadium and REE associated with Graphitic Schist rocks The following objectives to be taken up during UNFC G4 stage. 1. The Geology of the area to be updated at 1: 12,500 scale. 2. The block to be explored by Sampling, Geophysical Studies, Trenching and drilling component. 3. If, above Exploration strategy is successful then further coarse of action will be proposed. 4. To estimate the resources along with associated elements as per UNFC norms and Minerals (Evidence of Mineral Content) Rules-2015 at G-4 level.

	Whether the work will be carried out by the proposed agency or through outsourcing and details thereof. Components to be outsourced and name of the outsource agency	Work will be carried out by the proposed agency Kartikay Exploration and Mining Services Pvt. Ltd.
	Number of Geoscientists	In Field: 04 Geo-scientists (2 Geologist & 2 Geophysicist) and 1 Surveyor In Headquarter: 02 Geo-scientists (1 Geologist & 1 Geophysicist)
	Expected Field days (Geology, Surveyor)	Details given in cost sheet

1.	**Location**	
	Longitude-Latitude	Easting Northing A) 245333.2649 E 3090292.815 m N B) 237547.6082 E 3101834.177 m N C) 245129.7423 E 3101507.963 m N D) 248848.5926 3090211.654 m N
	Villages	Lalpani
	District	Lohit District
	State	Arunachal Pradesh
2.	**Area (hectares/square kilometres)**	
	Block Area	62.20 sq.km
	Forest Area	NA
	Government Land Area	Data not available
	Private Land Area	Data not available
3.	**Accessibility**	
	Nearest Rail Head	The nearest railway station is Talap which is about 120 km from the deposit
	Road	The deposit is located at Lalpani. Lohit district. It can be approached via Tezu, headquarters of the Lohit district which is connected with Assam by the extension of the Assam Trunk Road (N.H.-37). Lalpani is 60 km from Tezu on the Teau-Hayuliang metalled road and this road cuts across the graphite deposit.
4.	**Hydrography**	

	Local Surface Drainage Pattern (Channels)	Physiographically, the deposit is located in the outer ranges of the N.E.F.A Himalaya at an altitude of 1,375 m from the mean sea level. It is bounded on the western and northern sides by deep gorges; on the two other sides, hill ranges continue for a certain distance. The surface drainage pattern of the area is Subdendritic to Subangular
	Rivers/Streams	The Tellu river alongwith its tributaries forms the main drainage of the area.
5.	**Climate**	
	Mean Annual Rainfall	The climate is humid; average annual rainfall being from 400 cm to 500 cm. Because of the heavy ra ins, the area supports a thick growth of vegetation.
	Temperatures	The average annual highest temperature in Lohit District is 30.0°C (86.0°F) The average annual lowest temperature in Lohit District is 6.1°C (43.0°F)
6.	**Topography**	
	Topo sheet Number	92A/5 & 91D/8
	Morphology of the Area	The deposit is located in the outer ranges of the N.E.F.A Himalaya at an altitude of 1,375 m from the mean sea level. It is bounded on the western and northern sides by deep gorges; on the two other sides, hill ranges continue for a certain distance.
7.	**Availability of base line geoscience data**	
	Geological Map (1:50K/25K)	Bhukosh Portal (available map 1:50,000 scale)
	Geochemical Map	GSI collected samples in FS 1966-67
	Geophysical Map (Aeromagnetic, ground geophysical, Regional as well Also cal scale maps)	NA

8.	**Justification for taking up Preliminary Survey**	i) The Govt. of India enacted the MMDR AmendmentAct-2015 duly introducing the system of auction for allocation of Mineral Concessions including Graphite, Vanadium in order to boost exploration of critical minerals. The justification of taking item in G4 stage is mentioned hereunder ii) Prospecting for Graphite and Vanadium deposits in and around **Lalpani areas** of toposheet no. 92A/5, 91D/8 resulted in identification of Graphite bearing Garnetiferrous Schist. ((PROGRESS REPORT FOR 1966 - 67) By D. R. Nandy & A. Basak Geologists. Geological Survey of India 1967), reported The grade of the graphite 5 to 6% approximately. iii) The Geological survey of India Carried out Exploration in Lalpani area and established Garnetiferous schist containing flaky Graphite. iv) Length of the Graphite zone is reported to be 1100m and width around 300m. V) The literature survey indicated that Vanadium mineralisation is associated with Carbonaceous rocks in Arunachal Pradesh. From aforesaid mentioned background information, it has been noticed that in this block the Graphite is reported but the the systematic exploration work has not been carried-out yet. Hence we are proposing the Exploration programm with Mapping, Sampling, Geophysical Survey, Trenching & Drilling.

DETAILED PROPOSAL FOR RECONNAISSANCE SURVEY FOR GRAPHITE & VANADIUM IN AND AROUND LALPANI AREA, LOHIT DISTRICT, ARUNACHAL PRADESH (UNFC: G-4)

1. Introduction

1.1.0 Graphite, also known as plumbago or black lead or mineral carbon, is a stable form of naturally occurring carbon. Structurally, graphite is known to crystallise in hexagonal system and occurs in layered & lamellar form with grey-to-black metallic lustre and a greasy feel. Natural graphite is categorised into two commercial varieties (i) crystalline (flaky) graphite and (ii) amorphous graphite. Both flaky and amorphous varieties of graphite are produced in India. Besides natural graphite, there is synthetic or artificial graphite which is manufactured on a large-scale in electric furnaces, using anthracite or petroleum coke as raw feed.

1.1.1 Graphite occurrences are reported from various States but the deposits of economic importance are located in Chhattisgarh, Jharkhand, Odisha and Tamil Nadu. As per NMI database, based on the UNFC system, the total reserves/resources of graphite as on 1.4.2020 have been placed at about 211.62 million tonnes, out of which 8.56 million tonnes are in the Reserves category and 203.6 million tonnes are placed under Remaining Resources category. Arunachal Pradesh accounts for 36% of the total resources which is followed by Jammu & Kashmir (29%), Jharkhand (9%) Madhya Pradesh (5%) Odisha (9%), and Tamil Nadu (4%). However, in terms of reserves, Tamil Nadu has the leading share of about 36% followed by Zharkhand (30%) and Odisha (33%) of the total reserves.

1.1.2 The world resources of graphite are believed to exceed 800 million tonnes of recoverable graphite However, world reserves of graphite have been placed at 320 million tonnes of which Turkey accounts for 28% followed by China (23%), Brazil (22%), Madagascar & Mozambique (8% each), Tanzania 5%, India & Uzbekisthan (2% each) and Mexico & Dem. P. R. of Korea (1% each). World production of graphite was 1.12 million tonnes in 2020 as compared to 1.39 million tonnes in 2019 Austria was the leading producer, with a share of about 58% which is followed by Brazil (8%), Canada (4%), Madagascar (5%) and Dem. P.R of Korea (4%).

1.1.3 The increasing demand of Graphite in the country in recent years can be eased with the exploration of new Graphite deposits of economic importance.

1.1.4 In view of the auction policy of the Government of India and demand of more explored blocks Government of India amended the MM (D & R), 1957 in 2021 allowing Private Agencies to be a stake holders in explorations of major minerals in a time bound manner in which the funds will be provided by the NMET instituted by Govt. Of India (Notification, NPEA, 2021).

1.1.5 Considering the Government policies and demand for Graphite and other Critical Minerals our agency M/s Kartikay Exploration And Mining Services Private Limited selected the area and presented in the 69th TCC-II held on 27th Sept 2024 for In Principal approval. The Committee of NMET suggested to modify the boundary and to prepare the detailed Project Report. Accordingly we have prepared the DPR and submitting to NMET for approval of DPR in the upcoming TCC of NMET.

1.2.0 Previous work

Progress Report For 1966 - 67) By D. R. Nandy & A. Basak Geologists. Geological Survey of India 1967).

1.3.0 Location and Accessibility

The deposit is located at Lalpani. Lohit district. It can be approached via Tezu, headquarters of the Lohit district which is connected with Assam by the extension of the Assam Trunk Road (N.H.-37). Lalpani is 60 km from Tezu on the Teau-Hayuliang metalled road and this road cuts across the graphite deposit. The nearest railway station is Talap which is about 120 km from the deposit. The area falls in toposheet number 92A/5 & 91D/8.

1.4.0 Physiography & Drainage

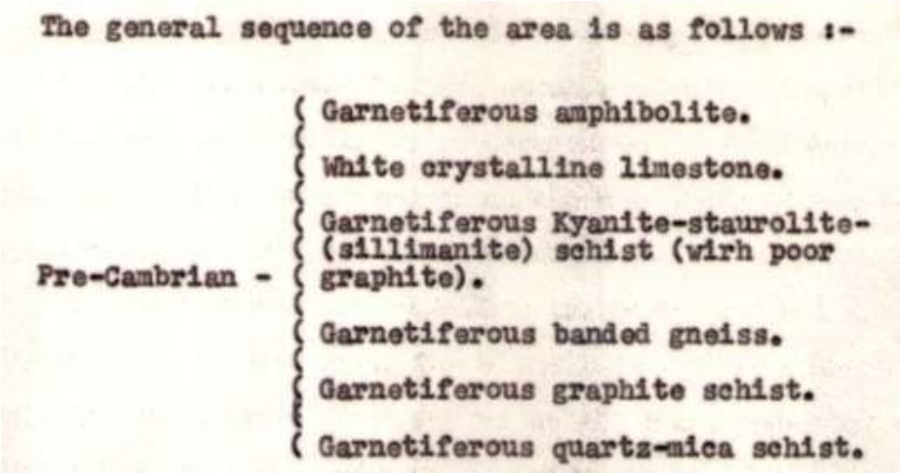
The deposit is located in the outer ranges of the N.E.F.A Himalaya at an altitude of 1,375 m from the mean sea level. It is bounded on the western and northern sides by deep gorges; on the two other sides, hill ranges continue for a certain distance. The Tellu river alongwith its tributaries forms the main drainage of the area.

1.5.0 Climate and Vegetations

The climate is humid; average annual rainfall being from 400 cm to 500 cm. Because of the heavy rains, the area supports a thick growth of vegetation.

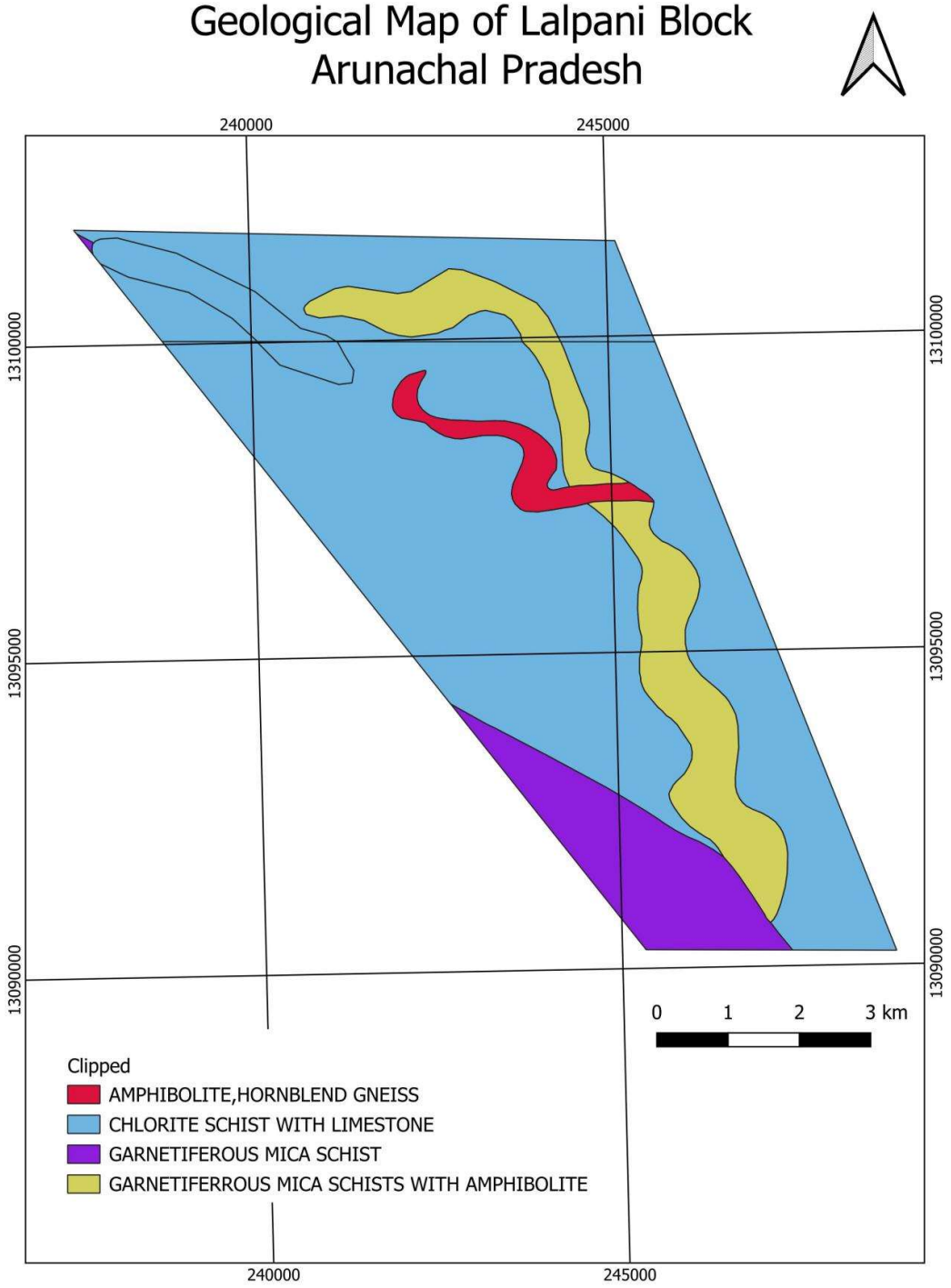
2.0 Regional Geology and Structure

The graphite-bearing schist occurs in a sequence of parametamorphites and garnetiferous amphibolite. The garnetiferous graphite-schist of the above succession is the main graphite-bearing body here; garnetiferous Kyanite-staurolite-(sillimanite) schist contains minor flakes of graphite.



STRUCTURE

The geological structure of the area in which the graphite schist occ urs consists of a conformable sequence of moderately dipping parametamorphites and garnetiferous amphibolite which represents a limb of a northeasterly plunging reclined fold. The general strike of the formations is N50°-60°W and dip 50° to 60° towards NE. There are a number of mesoscopic reclined folds plunging towards NNE in the area. Mineral lineations plunge at 30° to 40° towards NNE. A reclined fold has been mapped in the northwestern part of the graphite schist body.


Geological Map of Lalpani Block
Arunachal Pradesh
240000
245000
13100000
13095000
13090000
0
1
2
3 km
Clipped
AMPHIBOLITE,HORNBLEND GNEISS
CHLORITE SCHIST WITH LIMESTONE
GARNETIFEROUS MICA SCHIST
GARNETIFERROUS MICA SCHISTS WITH AMPHIBOLITE

DESCRIPTION OF THE ROCK TYPES

Garnetiferous amphibolite :- A comparatively thick band of basic rocks occurs to the hanging wall side of the parametamorphic sequence. The rock is composed mainly of green hornblende, xenoblastic plagioolase together with epidote, biotite and iron ores. At places, abundant sub-hedral garnet crystals are developed uniformly in the rock, flame bands are free of garnet and are composed mostly of green hornblende, chlorite and some plagioolase together with epidote. This band contains a thin lens of graphite schist.

Exposure crystelline limestones - In the southwest of the amphibolite schist is an impure crystalline limestone sand whose thickness has been estimated at 250 m. It is partly white and partly grey banded crystalline limestone.

Schist - On both sides of the impure limestone band, a coarsely garnetiferous schist occurs. Garnetiferous graphite schist lenses with relatively rich graphite content and occasional garnetiferous amphibo-lite boudins occur within this rock

Garnetiferous banded gneiss - Underlying the above schist is a banded gneiss. It is a medium to coarse grained rock with alternate quartzose and mafic bands. The bands are relatively thin and are comparable to each other.

Garnetiferous graphite schist - A prominent graphite bearing schist band occurs further to the southwest and is on the average 300 m in thickness It is the main graphite bearing rock in the area It is a dark grey schistose rock composed of garnet, muscovite, biotite, graphite, quartz and epidote together with occasional staurolite grains Garnet is porphyroblastic with helicitic arrangements of graphite which are finer when they are within the garnet crysta ls than those ouourring outside A rim of coarse graphite flakes is also present In most oases around the garnet porphyro-blasts.

Garnetiferous quartz-mica schist: This rock occurs as a thin lens and in association with the main graphite schist body. It is brownish grey medium grained rock and is composed of mostly quartz with biotite, muscovite and garnet. Incipient schistosity is developed by the parallel arrangement of the mica flakes. At places, garnet alters to biotite.

3.0 Mineral Potentiality based on Geology and Ground survey

Graphite occurs as one of the constituents of the garnetiferous graphite schist The main graphite-bearing schist has been mapped for a strike length of 1,100 m and on the average at is 300 m wide. Towards the footwall, the graphite schist gradually grades to a coarse grained garnetiferous quartz-muscovite-schist which in turn is followed by garnetiferous amphibolite. Most part of the hanging wall of the body has been eroded away along a gorge. To the northeast corner, it is seen in contact with garnetiferous banded gneiss. In the west, the band is cut off by a gorge. Some lenses and bands of garnetiferous graphite schist occur within the poorly graphite-bearing coarse grained garnetiferous Kyanite-staurolite-(sillimanlte) schist.

Graphite occurs mainly as fine to medium grained flakes within the schist and also as inclusions and coatings in and around garnet crystals. There are occasional concentration of graphite in clots and patches measuring upto 8 mm in length and 2 cm in width. Graphite flakes are oriented parallel to the planes of schistosity and are associated with micas. There are some graphite rich bands upto 1 m thick in the garnetiferous graphite schist and In the coarse grained garnetiferous Kyanite-staurolite-(sillimanite) schist. 15 such bands have been aapped. Graphite occurring in these bands is very soft and earthy in nature.

There is an overburden of graphitic soil and graphite schist boulder throughout the area, the thickness of which varies from 50 m to a few metres as seen as seen in the road cuttings and in the trenches duged by GSI.

4.0 Scope of proposed exploration

Reconnaissance survey (G-4) for Graphite & Vanadium Block in and around Lalpani area, Lohit District, Arunachal Pradesh, the Geological mapping at 1: 12,500 scale, DGPS survey of Block Boundary, Sampling, Geophysical Survey, Trenching, Analysis and drilling is proposed.

4.1 Block description

The proposed G-4 block for Graphite, Vanadium and associated minerals falling in Survey of India Toposheet No. 92A/5 & 91D/8 which covers an area of 62.0 sq. km in and around Lalpani village. The block location is given in PLATE-I. The Co-ordinates of the corner points of the block area both geodetic and UTM are given in below table

Coordinates of cardinal points of Lalpani Block Area (62.20 Sq.Km)					
Sl. No.	Corner	DDMMSS(WGS84)		UTM 47R	
	Points	LONGITUDE	LATITUDE	Easting(X)	Northing(Y)
1	A	96°24'44.8196"	27°54'47.9246"	245333.2649	3090292.815
2	B	96°19'51.0640"	28°00'57.1637"	237547.6082	3101834.177
3	C	96°24'28.6803"	28°00'51.8855"	245129.7423	3101507.963
4	D	96°26'53.3601"	27°54'47.6875"	248848.5926	3090211.654

5.0 Planned Methodology

In accordance to the objective set for Reconnaissance survey (G-4) for Graphite & Vanadium Block in and around Lalpani area, Lohit District, Arunachal Pradesh, the Geological mapping at 1: 12,500m, Sampling, Geophysical Survey, Trenching and drilling is proposed. The Exploration shall be carried out as per Minerals (Evidence of Mineral Contents) Rule-2015. Accordingly, the following scheme of exploration is formulated in order to achieve the objectives. The details of different activities to be carried out are presented in subsequent paragraphs.

5.1 Topographical Survey

Measurement of Co-ordinates of the Block Boundary using DGPS will be done. For Geological mapping, Trench location demarcation, Geophysical Line alignment, measurement of Co-ordinates & RL of the proposed boreholes etc, Handheld GPS will be used.

5.2 Geological Mapping

The Geological Mapping shall be done at 1:12,500 scale. The entire area of 62.00 Sq. Km will be scanned through geological traverses with the help of handheld GPS and brunton compass. During traversing demarcation of Graphite bearing horizons and other litho-units will be done. Further, validation of the available geological and existing litho structural data shall be done. Demarcation of contacts of different formations, identification of different rock formation, structural features etc will be recorded in detail.

5.3 Geophysical Survey

Based on the output Geological map of 1:12,500m the potential graphite bearing mineralised zone will be taken up for geophysical survey. Geophysical techniques to be adopted are Gravity, Magnetic and Self-potential survey. Considering the existing geological map of the area and hilly terrain initially 1,000 station of Gravity, 1,000 station of Magnetic & 20 Line km Self-potential survey at 400m interval with 20m spacing interval shall be done.

5.4 Pitting/ Trenching

Pitting and trenching will be done to expose the mineralised zone and to study the behavior of the orebody. It is proposed to take up pitting over the graphite mileralized zones at specific interval along the strike and dip with each dimention of 1m x 1m x 1m. Based on existing Geological map 20 trenches of 10mx1mx1m is proposed. During course of prospecting the quantity and location may vary.

5.5 Drilling

Based on the outcome of geological mapping and Geophysical survey, pitting trenching and analytical results of surface, Grab samples the exploratory drilling of 1st level interval and few 2nd level interval will be done. At this stage of G-4 level of exploration a tentative meterage of 1,000m of drilling is proposed.

5.6 Sampling

During the course of mapping, grab samples will be collected from the surface exposures and pit wall/floor sections to examine the grade of ore. 120 BRS samples will be collected from the surface exposures. 30 numbers shall be collected from the pit wall/floor and approx 160 number of samples will be collected from the 20 numbers of trenches at 1m interval. The representative samples shall be prepared in field in triplicate. One part shall be forwarded to NABL accredited laboratory for analysis.

During Core drilling the borehole core would be systematically logged.

around 200 samples will be generated from the mineralised zone. The mineralised part of drill core will be sampled as primary sample. The individual sample will be split into two equal halves and one part will be preserved in the core box for future reference and will be stored in core library. The half splited core will be crushed, coning quartering and pulverization one part will be sent to the NABL accredited laboratory for analysis. The length of each sample will be kept 1m within the ore zone depending upon he width of particular type of graphite or and its physical character.

5.7 Analysis

All the generated samples will be analysed for Al2o3, Sio2, Ash, FC, LOI, Proximate analysis, Vanadium. Around 20 samples will be analysed for REE, Preparation of thin section and study of thin sections.

6.0 Nature Quantum and Target

Details of the particular, Quantum and the targets are tabulated in Table below:-

Envisaged Quantum of proposed work in and around Lalpani area, Lohit District of Arunachal Pradesh G-4 Stage

Sl. No.	Item of Work	Unit per	Proposed Quantum of work
1	**Topographic survey** DGPS Survey for Boundary and borehole locations	Point	20
2	**Geological Survey:** Mapping at 1:12,500	Sq Km	62.20
3	**Geophysical Survey:**		
	Gravity	Point	1000
	Magnetic	Point	1000
	Self Potential	Line Km	20
4	**Pitting:** 30 pits (2mx1mx1m)	Cu. M	60
	Trenching: 20 (8mx1mx1m)	Cu. M	160
5	**Chemical Analysis**: BRS 120; Pit 30; Trench 160; Core 200; Petrographic 20 and Sp Gravity 5	Nos	535
6	**Drilling: Core Drilling**	meters	1,000
7	**Report Preparation**	Nos	1

7.0 Break-up of Expenditure

Tentative Cost has been estimated based on Schedule of Charges (SoC) of projects funded by National Mineral Exploration Trust (NMET) w.e.f. 01/04/2020. The total estimated cost is Rs. 1472.89 Lakh. The Details of tentative cost estimates is given in below tables followed by Tentative Time schedule/action plan for proposed Exploration work (G-4)

Estimated cost for Exploration Work (G-4) for Graphite & Associated ore in and around Lalpani Block, Lohit District of Arunachal Pradesh [Block area-62.20 sq.km; Schedule timeline-24 months]

			Rates as per NMET SoC 2020-21		Estimated Cost of the Proposal		
S.No.	Item of Work	Unit	SoC-Item-Sl No.	Rates as per SoC	Qty.	Amount (Rs)	Remarks
A							
1	**SURVEY WORK**						
	Bore Hole Fixation and determination of co-ordinates & Reduced Level of the boreholes and By DGPS	Nos	1.6.2	19,200	20	3,84,000	15 Boreholes and 1 base station and 4 corners of Block
	GEOLOGICALWORK						
	Charges for two Geologist for **Geoligcal Mapping** - Field	Per day	1.5.1a	11,000	360	39,60,000	Total duration of 6 months for 2 Geologist
	Charges for one Geologist per-HQ	Per day	1.5.1a	9,000	60	5,40,000	
	3 labours / party (Rs 526/day/labour) (As per rates of Central Labour Commissioner)	day	5.7	526	1080	5,68,080	total 6 labours for 2 parties for 180 days. Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt whichever is higher
	Charges for one Geologist for Core **logging & sample demarcation** - Field	Per day	1.5.1a	11,000	150	16,50,000	Drilling of 1,000m in 5 months
	Charges for one Geologist per-HQ	Per day	1.5.1a	9,000	30	2,70,000	
	3 labours / party (Rs 526/day/labour) (As per rates of Central Labour Commissioner)	Per day	5.7	526	450	2,36,700	3 labour due to hilly interior and thick vegetation area
	Charges for one Geologist for **Pitting & Trenching** - Field	Per day	1.5.1a	11,000	60	6,60,000	
	CoreSampling-**1Samplers**	Per day	1.5.2	5,100	150	7,65,000	

	4 labours/ party (Rs 526/day/labour) (As per rates of Central Labour Commissioner)	Per day	5.7	526	600	3,15,600	Total 4 labours for 150 days. Amount will be reimburse as per the notified rates by the Central Labour Commissioner or respective State Govt.whichever is higher
					SubTotal-A	**93,49,380.00**	
B	Pitting (1m x 1m x 2m) x 30	Cu m	2.1.2	3800	60	2,28,000	Length 2m
	Trenching (1m x 1m x 8m) x 20	Cu m	2.1.1	3330	160	5,32,800	Depth 1m
	DRILLING						
i	Drilling upto 300m (Medium hard Rock)(1rigs) HQ Size	m	2.2.1.3a & 2.2.4a	12,120	1000	1,21,20,000	
	PILLARING						
iii	Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a	2,000	15	30,000	
	Borehole plugging by Cement	Meters	2.2.7b	200	1000	2,00,000	
iv	Transportation of Drill Rig & Truck associated per Drill	Km	2.2.8	36	4920	1,77,120	Certification in this regard is required to be provided To & Fro
v	Monthly Accommodation Charges for drilling Camp (upto 1Rigs)	month	2.2.9	50,000	6	3,00,000	
vi	Drilling Camp Setting Cost	Nos	2.2.9a	2,50,000	1	2,50,000	
vii	Drilling Camp Winding up Cost	Nos	2.2.9b	2,50,000	1	2,50,000	
	Approach Road Making (Hilly Terrain)	Km	2.2.10b	32,200	20	6,44,000	
					SubTotal-B	**1,47,31,920.00**	
C	**Geophysical Survey**						
	Charges for 1 Geophysicist in field (without laborer)	Per day	1.5.1a	11,000	150	16,50,000	
	Charges for 1 Geophysicist at Headquarters	Per day	1.5.1a	9,000	90	8,10,000	
	Wages for 4 laborers in field with Geophysicist	day	5.7	526	600	3,15,600	
	Charges for Gravity survey	Per Station	3.1a	3,800	1000	38,00,000	
	Charge for Magnetic survey	Per Station	3.2a	1,800	1000	18,00,000	

	Charge for SP survey	Per Line Km	3.3a	29,600	20	5,92,000	
					SubTotal-C	**89,67,600.00**	
D	**LABORATORYSTUDIES**						
	Proximate analysis for graphite	Per Sample	4.1.16	3000	510	15,30,000	120 BRS; 160 Trench, 30 Pits & 200 from Core Drilling samples will be generated
	Analysis for associated one trace element (Vanadium)	Per Sample	4.1.15b	421	510	2,14,710	
	Analysis for associated REE	Per Sample	4.1.13	5380	20	1,07,600	
	Petrographic studies						
	Preparation of thin sections	Per Sample	4.3.1	2353	20	47,060	
	Study of thin sections	Per Sample	4.3.4	4232	20	84,640	
	Bulk Density/specific gravity Determination	Per Sample	4.8.1	1605	5	8,025	
					SubTotal-D	**19,92,035.00**	
E	**Miscelleneous Charges**						
	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	**5 Hardcopies with a soft copy**	**5.1**	380000	1	3,80,000	EA has to submit the Hard Copies and the soft copy of the final proposal along with Maps and Plan a suggested by the TCC-NMET in its meeting while Clearing the proposal.
	Geological Report Preparation		**5.2.IV**	For the projects having cost exceeding Rs.50 lakhs and less than Rs.150 lakhs- A minimum of Rs.2.5 lakhs or 5% of the value of work Whichever is more		11,11,629	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMET.
	Drill Core Preservation	Per m	5.3	1590	250	3,97,500	Only for 1 bh core and 200m ore zone
	Peer review Charges		**As per EC decision**	10000	3	30,000	
	Land/ Crop compensation	Per BH	5.6	20000	15	3,00,000	Amount will be reimbursed as per actuals or max.Rs.20000perBHwithcertificationfroml

							ocalauthorities
					SubTotal-E	**22,19,129.00**	
K	**Total Estimated Cost without GST**					**3,72,60,064.00**	
	Total Estimated Cost without GST (Northeast Region)					**12,48,21,214.40**	
J	**Provision for GST (18%ofI)**					**2,24,67,818.59**	GST will be reimburse as per actual and as per Notified prescribed rate
K	**Total Estimated Cost with GST**					**14,72,89,032.99**	
							Or Say Rs. In Lakhs 1472.89
Note:							
1	If any part of the project is out sourced,the amount will be reimbursed as per the Paragraph3 of NMETSoCandItemno.6ofNMETSoC.In case of execusion of the project by NEA on its own,a Certifiate regarding non out sourcing of any component/project is required.						