

**SUBMISSION OF DPR ON PRELIMINARY
EXPLORATION (G3 STAGE) OF VANADIUM,
GRAPHITE AND ASSOCIATED MINERALS IN POTRI
DHEK BLOCK, TEHSIL- LOHAGHAT, DISTRICT -
CHAMPAWAT, UTTARAKHAND “UNDER NMEDT”**

TOPOSHEET NO- 62C/3, BLOCK AREA: - 2.73 SQ. KM

- IN PRINCIPLE APPROVED IN 100TH MEETING OF TCC-I HELD ON 13TH & 14TH JULY 2026
- DPR APPROVED ON 102ND TCC-1 HELD ON 11TH TO 13TH AUGUST 2026
- PSC APPROVAL 12TH PROJECT SANCTIONING COMMITTEE (PSC) MEETING, NMEDT HELD ON 1.09.2026)

**COMMODITY: VANADIUM, GRAPHITE AND ASSOCIATED
MINERALS**

UNIQUE PROPOSAL ID: - ME/IND/G3/UK/P/26-27/019



**VIBRANT TECHNO LAB PRIVATE LIMITED
(QCI/NABET ACCREDITED, CATEGORY ‘A’ NPEA)**

**PLOT NO. Q-39, SHRINGARPURA, NARAYAN VIHAR,
BHANKROTA, JAIPUR, RAJASTHAN 302026**

**E-mail: project@vibranttechnolab.com, bd@vibranttechnolab.com,
Mobile: + 91 9549956601, Website <http://vibranttechnolab.com>**

**PLACE: JAIPUR
DATE: 04.08.2026**

Summary of the Proposed Potri Dhek for G3 stage exploration

Sl No	Features	Details
	Unique Proposal ID	ME/IND/G3/UK/P/26-27/019
	Exploration Agency	Vibrant Techno Lab Private Limited
	Exploration Agency Address	Plot No -39, Shringarpura, Narayan Vihar, Q, Ajmer Road, Jaipur, Raj. 302026
	Previous Exploration Agency	GSI
	Previous stage Geological Report)	G-4
	Commodity	Vanadium, Graphite and Associated Minerals
	Mineral Belt	Almora Group of rocks in District Champawat, Lesser Himalaya, Uttarakhand
	Completion Period with entire schedule to complete the project	12 months
	Objectives	To delineate Vanadium, Graphite and Associated Minerals in Potri Dhek Block and assess its resource potential through exploratory drilling (G3 stage). ❖ Detailed mapping of the proposed area on scale of 1:2000. Total area of proposed block is 2.73 sq. km. ❖ Collection of BRS/Channel/Trench samples based on the earlier work and VTL systematic geological mapping. ❖ Ground geophysical survey (self-potential) to identify the down dip extension of potential zone which may help in the planning of boreholes. ❖ Analysis of the collected BRS/Channel/Trench samples. ❖ Systematic drilling to delineate the strike and dip continuity of the mineralized zone. ❖ Analysis of the unidentified mineralized zone/lodes of borehole samples. ❖ Estimation of resource as per the guidelines of UNFC and NMEDT. ❖ Final Report preparation and submission to NMEDT.
	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	The exploration scheme in Village of Potri Dhek Area will be carried out by Vibrant Techno Lab Pvt Ltd with the following work plan: 1. Block demarcation through DGPS. 2. Detailed geological mapping (1:4000 scale) survey through Drone/DGPS. 3. BRS/Channel/Trench samples. 4. Geophysical work 5. Borehole profile section preparation and location of boreholes. 6. BH core logging and core sampling. 7. Chemical data synthesis. 8. Geophysical data synthesis. 9. Ore zones calculations, Resource estimation. 10. Preparation of Geological Report as per Minerals (Evidence of Mineral Contents) Amendment Rules 2015 including further course of exploration program. Out-source: Nevertheless, the Vibrant Techno Lab Private Limited would outsource some of the specialized works mentioned below: - 1. Core drilling, 2. Preparation of thin and polished sections of BRS, CS and PS.

		3. Chemical analysis and petrological work will be outsourced from GSI chemical lab/petrological lab, Western region, Jaipur, Rajasthan and other NABL accredited laboratories.																					
	Name / Number of Geoscientists	Geologist 2 Geophysicist 1																					
	Expected Field days (Geology, Geophysics, Surveyor)	Geologist party days in field: 125 Geologist party days in HQ: 40 Surveyor – 30 days																					
1.	Location																						
	Latitude & Longitude	Potri Dhek Block, Champawat district of Uttarakhand. (G-3 Stage). Proposed block falls in the toposheet No. 62C/3. <table border="1"> <thead> <tr> <th>Pillar</th><th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr> <td>A</td><td>29°24'45.50"N</td><td>80°2'44.44"E</td></tr> <tr> <td>B</td><td>29°24'15.99"N</td><td>80°4'14.83"E</td></tr> <tr> <td>C</td><td>29°23'33.38"N</td><td>80°3'56.68"E</td></tr> <tr> <td>D</td><td>29°23'48.13"N</td><td>80°3'11.49"E</td></tr> <tr> <td>E</td><td>29°24'09.44"N</td><td>80°3'20.56"E</td></tr> <tr> <td>F</td><td>29°24'24.19"N</td><td>80°2'35.37"E</td></tr> </tbody> </table>	Pillar	Latitude	Longitude	A	29°24'45.50"N	80°2'44.44"E	B	29°24'15.99"N	80°4'14.83"E	C	29°23'33.38"N	80°3'56.68"E	D	29°23'48.13"N	80°3'11.49"E	E	29°24'09.44"N	80°3'20.56"E	F	29°24'24.19"N	80°2'35.37"E
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	Villages	Potri Dhek, Bandela Dhek, Banrari, Bunga Phartiyal, Thuwamara																					
	Tehsil/ Taluk	Lohaghat																					
	District	Champawat																					
	State	Uttarakhand																					
2.	Area (hectares/ square kilometres)																						
	Block Area	2.73 sq.km																					
	Forest Area	Nil																					
	Government Land Area	Data not available																					
	Private Land Area	Data not available																					
3.	Accessibility																						
	Nearest Rail Head	Tanakpur is the nearest railway station, about 85 km from proposed block area.																					
	Road	The field area is situated in Champawat district of Uttarakhand state with Champawat and Lohaghat being the important localities near the field area. NH-9 is passing from eastern side of the area, connecting Champawat and Lohaghat. The area is approachable by metalled roads from Lohaghat. Most of the area is approachable by metalled roads and the forest covered and interior parts can be approached by foot tracks.																					
	Airport	Dehradun & Pantnagar are the nearest airport from the study area.																					
4	Hydrography																						
	Local Surface Drainage Pattern (Channels)	The overall drainage system of the area is dendritic type in nature. The dendritic drainage pattern is indicative of uniformly resistant, homogeneous strata whereas the trellis pattern could indicate the presence of regional scale plunging fold. Runi Gad, Saina Gad, Saula Gad, Nanbori Gad and Bhala Gad are the major streams present in the area. Also, the streams provide vertical sections of the strata they cut through along their course, hence good avenues for field studies.																					
	Rivers/ Streams	Runi Gad, Saina Gad, Saula Gad, Nanbori Gad and Bhala Gad are the major streams present in the area.																					
5	Climate																						
	Mean Annual Rainfall	The average rainfall is 1700-1800mm																					
		The climate of the area is humid subtropical to temperate, influenced by altitude and the Himalayan monsoon. Summers are mild to warm, with maximum temperatures generally ranging between 25° – 31°C, while winters are cold, the minimum																					

	Temperatures (December) (Minimum) Temperatures (June) (Maximum)	temperature often dropping to around 2° to -4°C. The region receives an average annual rainfall of about 1,700 – 1,800 mm, mostly concentrated during the June to September monsoon. Snowfall may occur during the peak winter months, especially in January. -4°C. 31 °C.
6	Topography	
	Toposheet Number	Part of SOI Toposheet no. 62C/3
	Morphology of the Area	The study area forms part of Lesser Himalaya and exhibits rugged topography. The elevation in the area ranges from 1530 to 1900 m above msl as calculated from Toposheet.
7	Availability of baseline geoscience data	
	Geological Map (1:50K/25K)	1:50000 & 1:12500 Scale GM
	Geochemical Map	NGCM Data is available in NGDR. Previous geochemical sample analysis data were used to plan G3 level exploration in the area.
	Geophysical Map (Aero-geophysical, Ground geophysical, Regional as well as local scale GP maps)	Data is not available in NGDR
8	Justification for taking up G3 stage mineral exploration	A. Background Information A G-4 stage reconnaissance survey was conducted by GSI (<i>Kumar & Manna, 2023</i>) over an area of 50 sq. km. to assess the potential for vanadium and allied metals mineralization. The study was undertaken in accordance with the Field Season Programme 2022–23 and covered areas represented in Survey of India toposheet number 62C/3. The primary objective of the survey was to delineate potential lithological units and carry out systematic sampling to evaluate the mineral potential of the region. Large-scale geological mapping at a scale of 1:12,500 was carried out in and around Chaura, Sirmoli, and Lohaghat areas of Champawat district, Uttarakhand. Total 50 nos. of bedrock samples, 50 nos. channel samples, 15 nos. pitting and trenching samples, 11 nos. petrochemical samples, 15 nos. petrographic samples, 05 nos. XRD samples and 30 nos. fixed carbon and sulphur samples were collected. Regionally, the area comprises rocks of Proterozoic age belonging to the Gumalikheth Formation of Almora Group and very little exposure of Champawat Granite. The rocks of Gumalikheth Formation are phyllitic in nature and based on physical properties, can be further divided into buff phyllite and grey phyllite with carbonaceous bands. The buff coloured phyllite is exposed in the eastern and central parts of the field area. It is fine grained with silky sheen present on the foliation surfaces and devoid of carbonaceous matter. The grey phyllite is the dominant lithology present in the area which is grey coloured, fine grained to occasionally gritty and does not soil hands. Carbonaceous phyllite in the study area is thinly foliated, soils hand, greasy to feel and exhibit dull luster on a freshly broken surface. It occurs as bands within grey phyllite indicating changing depositional environment. The vanadium and barium mineralization is associated with the carbonaceous phyllite in the area and could be syngenetic to diagenetic. The BRS and channel samples (total 100 nos.) show Vanadium values range of 33 to 5212 ppm with median 578 while the Barium values range from 164 to 40518 ppm with a median 4798. The Yttrium values range from 23 to 444 ppm with median 103 while the Molybdenum values range from 0.85 to 288 ppm with median value 63. The encouraging values of V, Ba, Y and Mo in the area indicate a promising potential for V and associated mineralization.

		The area requires further exploration, both through reconnaissance to trace the strike continuity of the carbonaceous phyllite bands and through G-3 stage investigation for resource estimation B. Recommendation & Justification: In view of the presence of encouraging V and Ba values, the study area has a promising potential for Vanadium resource. The authors recommend for G-3 stage exploration in central portion of the study area around Jakh and Kutali. The Balai block coordinates of the proposed G-3 project are: Jakh block coordinates <table border="1"> <thead> <tr> <th>Point</th><th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr> <td>A</td><td>29°25'13.1"N</td><td>80°00'44.2"E</td></tr> <tr> <td>B</td><td>29°24'50.2"N</td><td>80°01'46.1"E</td></tr> <tr> <td>C</td><td>29°24'13.9"N</td><td>80°01'32.9"E</td></tr> <tr> <td>D</td><td>29°24'36.9"N</td><td>80°00'30.9"E</td></tr> </tbody> </table> The authors also recommend G-4 stage project in the strike continuity of exposed carbonaceous bands, further westward from the current study area, to further explore the carbonaceous bands and ascertain their mineral potential. The Khuteli block coordinates of the proposed G-4 project are: Khuteli block coordinates <table border="1"> <thead> <tr> <th>Point</th><th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr> <td>A</td><td>29°29'58.95"N</td><td>79°49'28.71"E</td></tr> <tr> <td>B</td><td>29°28'33.16"N</td><td>79°48'35.92"E</td></tr> <tr> <td>C</td><td>29°25'32.99"N</td><td>79°57'59.40"E</td></tr> <tr> <td>D</td><td>29°27'09.74"N</td><td>79°58'31.85"E</td></tr> </tbody> </table> Justification: TCC-I Observation: - The committee reviewed the proposal and accorded in-principle approval and advised the agency to submit a detailed DPR for consideration in upcoming TCC-I meeting. TCC-I Recommendations: - The committee accorded in-principal approval to the proposal. The agency was advised to submit a detailed DPR for consideration within 3 months. (copy of MoM enclosed) In compliance to the TCC- I observation & Recommendation, VTL hereby submits DPR of Potri Dhek Block for consideration. GSI has collected 11 Channel samples & 4 Bed Rock samples in the proposed block area during field work (Kumar & Manna, 2023). High values of BRS are as follows: - <table border="1"> <thead> <tr> <th>V (ppm)</th><th>Ba (ppm)</th><th>Mo (ppm)</th></tr> </thead> <tbody> <tr> <td>69-2134</td><td>1888-4903</td><td>0.97-104.69</td></tr> </tbody> </table> Channel sample are as below: - <table border="1"> <thead> <tr> <th>V (ppm)</th><th>Ba (ppm)</th><th>Mo (ppm)</th></tr> </thead> <tbody> <tr> <td>85-2705</td><td>2464-18813</td><td>3.54-125.05</td></tr> </tbody> </table> Besides, six mineralized bands of Carbon phyllite occur in the proposed block (ca. Thickness 20-80 meter with strike extension of ca. 900 meter intermittently exposed). Only one GSI sample is falling in the proposed block which contain fixed carbon 1.25%. However, in the NW strike continuity, the graphite bands contain good values of fixed carbon which is expected to occur in proposed block also in continuity.	Point	Latitude	Longitude	A	29°25'13.1"N	80°00'44.2"E	B	29°24'50.2"N	80°01'46.1"E	C	29°24'13.9"N	80°01'32.9"E	D	29°24'36.9"N	80°00'30.9"E	Point	Latitude	Longitude	A	29°29'58.95"N	79°49'28.71"E	B	29°28'33.16"N	79°48'35.92"E	C	29°25'32.99"N	79°57'59.40"E	D	29°27'09.74"N	79°58'31.85"E	V (ppm)	Ba (ppm)	Mo (ppm)	69-2134	1888-4903	0.97-104.69	V (ppm)	Ba (ppm)	Mo (ppm)	85-2705	2464-18813	3.54-125.05
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9	Geospatial scrutiny completed using KML/coordinate dataset and AOI assessed (including exploration activities, mining areas, eco zones, dependencies)	No exploration activities have been carried out in proposed block according to NGDR. There is no mining lease available in the block area according to NGDR. No Eco zones available in the proposed block area according to forest department KML. No any dependencies in the proposed block area according to NGDR																																										
10	Overlap study of previous	Reconnaissance survey for Vanadium and allied metals mineralization in																																										

	exploration work carried out in any exploration agencies/departments, or ongoing/proposed exploration work by any agencies/departments done	Almora Group of rocks, Chaura, Sirmoli and Lohaghat Areas, Champawat Districts, Uttarakhand (G-4 Stage) has been carried out by GSI, Mission II FSP 2022-23. (Final report submitted in Oct. 2023) G4 Stage exploration has been carried out by GSI and promising result have been observed and recommended for further exploration there for we are proposing for G3 stage exploration in the G4 block.
11	Existing leases (ML/CL/EL etc.) in and around project area verified through NGDR/State DGM/Ministry of Mines. existing leases (minor mineral) in the project area verified through NGDR	There is no existing mining lease available in the proposed block area according to NGDR.
12	Whether the area falling within the buffer zone of International Boundary, Wildlife sanctuary, no-go zone, Biodiversity Park etc.	No

1. BLOCK SUMMARY

1.1 Physiography

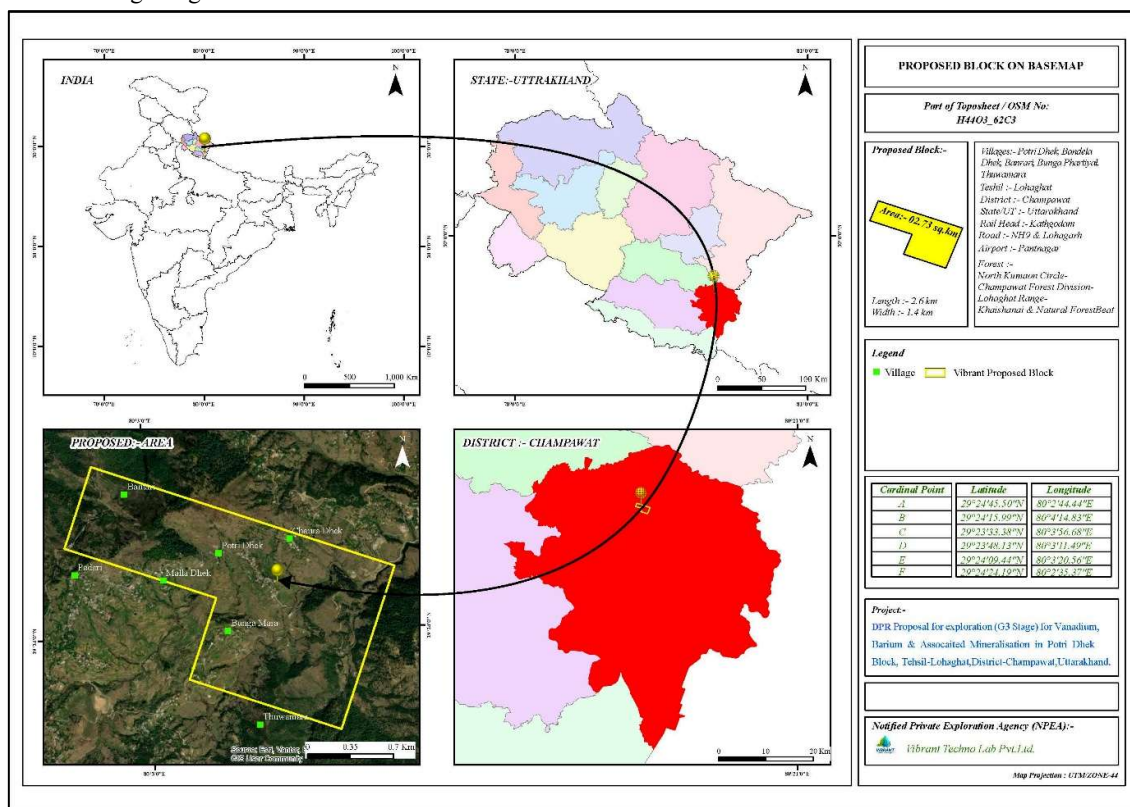
The proposed Potri Dhek block is part of the Survey of India toposheet No. 62C/3, District-Champawat Uttarakhand. The proposed block marked on toposheet no 62C/3 is attached. Total area of the block is 2.73 sq. km. The study area forms part of Lesser Himalaya and exhibits rugged topography. The elevation in the area ranges from 1530 to 1900 above msl as calculated from Toposheet.

Drainage: The overall drainage system of the area is dendritic type in nature. The dendritic drainage pattern is indicative of uniformly resistant, homogeneous strata whereas the trellis pattern (around Banasur area) could indicate the presence of regional scale plunging fold. Runi Gad, Saina Gad, Saula Gad, Nanbori Gad and Bhala Gad are the major streams present in the area. Also, the streams provide vertical sections of the strata they cut through along their course, hence good avenues for field studies.

Location and Accessibility: The location of the field area within Uttarakhand state is shown below. The field area is situated in Champawat district of Uttarakhand state with Champawat and Lohaghat being the important localities near the field area. NH-9 cuts across the area on its right flank, connecting Champawat and Lohaghat. The area is approachable by metalled roads and the forest covered and interior parts can be approached by foot tracks. Tanakpur is the nearest railway station, about 85 km from Lohaghat.

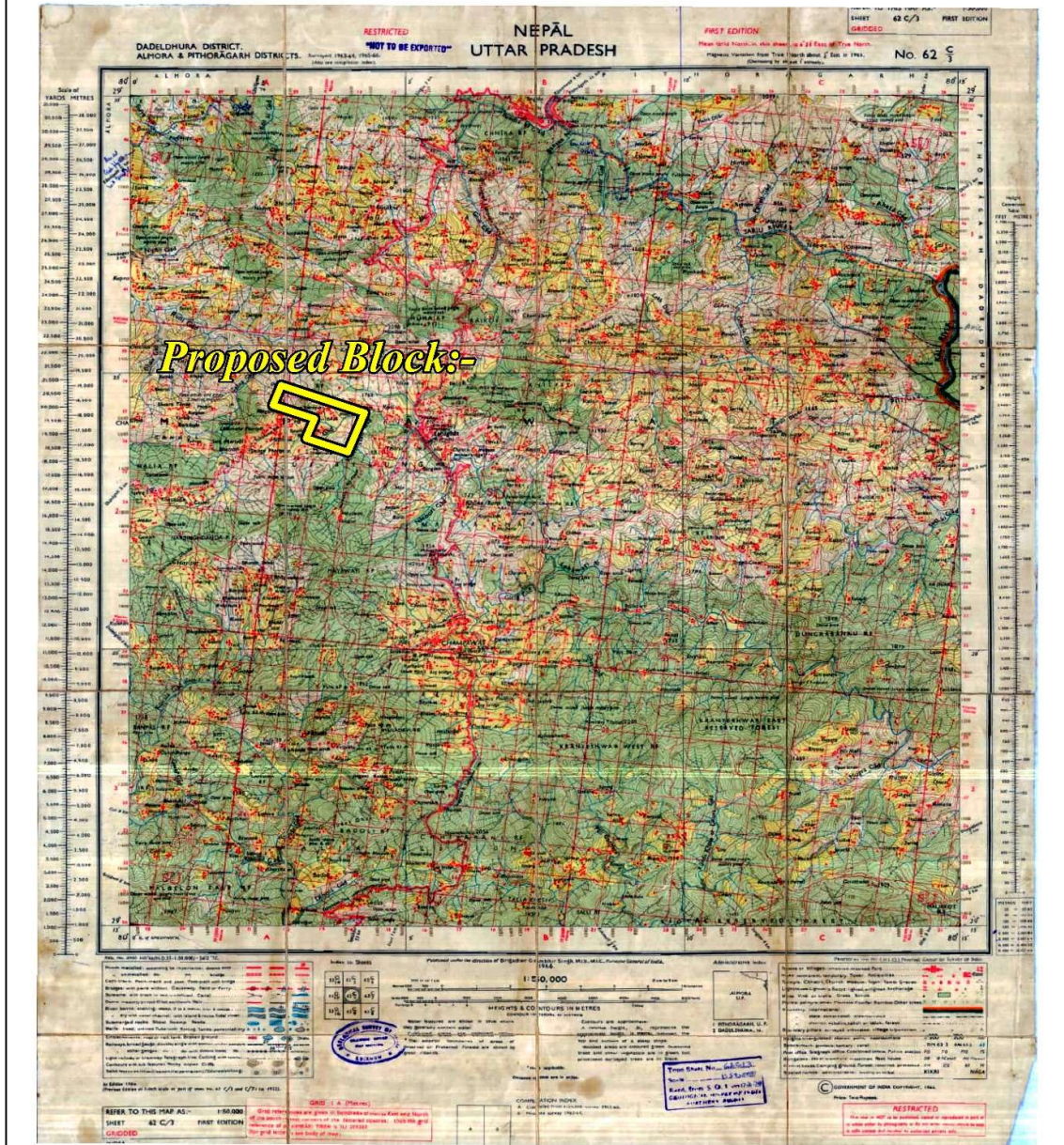
Climate: The climate of the area is humid subtropical to temperate, influenced by altitude and the Himalayan monsoon. Summers are mild to warm, with maximum temperatures generally ranging between 25° – 31°C, while winters are cold, the minimum temperature often dropping to around 2° to -4°C. The region receives an average annual rainfall of about 1,700 – 1,800 mm, mostly concentrated during the June to September monsoon. Snowfall may occur during the peak winter months, especially in January.

Flora and fauna: The main flora in the area consists of Chir (*Pinus roxburghii*), Deodar (*Cedrus deodara*), Dhak (*Betula osperia*) and common shrubs and herbs are Bhang (*Cannabis sativa*), Brahmi (*Centella asiatica*) and Chameli (*Jasminum pubes*). Tea plantation is carried out around Mayawati and Lohaghat areas. The main fauna consists of animals like Leopard (*Panthera Pardus*), Goral (*Nomophadis goral*), Monkey (*Macaca macatta*), deers, wild boars and himalayan bears. Many birds of migrating natures are also found.



Location Map of the Potri Dhek area

Proposed G3 Block On Survey of India Toposheet 62C/3



Topographical Map of Potri Dhek area (62C/3)

1.2 Background Geology (Regional Geology, Geology of the Block)

The Himalayan rock sequence is subdivided into four major morphotectonic units, from south to north, the Sub-Himalaya, the Lesser Himalaya (Inner and Outer), the Greater Himalaya and the Tethyan Himalaya. The field area lies in the Outer Lesser Himalayan region located within the Almora Klippe. Geologically, on a regional scale, the area exposes rocks of Ramgarh, Almora and Garhwal Groups and Quaternary sediments. The rocks of Almora Group of undifferentiated Proterozoic age are delineated from rocks of Ramgarh Group along South Almora Thrust (SAT) in the south and from rocks of

Garhwal Group along North Almora Thrust (NAT) in the north. It is classified into Gorakhnath, Gumalikhet and Chura Formations.

Regional stratigraphy

Table: 5.1 Generalized Regional Stratigraphic sequence in the study area (Source: GSI Miscellaneous publication, 2019)

Age	Group		Lithology
Holocene	Newer Alluvium		Fine sand, silt, gravel, cobble, and occasional boulders embedded in unoxidized arenaceous matrix
Undifferentiated Pleistocene	Older Alluvium	Kapkot Alluvium	Cobble, pebble, gravel and occasional boulder embedded in yellow brown oxidised sandy matrix
Meso-Proterozoic	Garhwal	Pithoragarh	Violet to pink dolomite at places highly siliceous, dolomitic limestone, limestone and phyllite
		Rautgara	Fine to medium grained thinly bedded purple quartzite inter-bedded with slate, phyllite, chlorite schist and metabasite
Undifferentiated Proterozoic	Almora	Champawat Granite	Fine to medium leucocratic granite and granodiorite
		Chaura	Garnet-mica schist, feldspathic schist
		Gumalikhet	Carbonaceous phyllite, quartzite and schist
		Gorakhnath	Augen gneiss, Muscovite gneiss interbedded with quartzite, Quartzite, garnetiferous mica schist with bands of quartzite
	----- Almora Thrust -----		
	Ramgarh	Swala	Biotite schist, para and ortho gneiss, minor quartzite band and intrusive granite
		Maula	Thickly bedded quartzite, biotite schist and paragneiss
		Bhandoli	Chlorite schist with sericite quartzite band

GEOLOGY OF THE PROPOSED AREA

The study area is located within the Gumalikhet Formation of the Almora Group of rocks. The litho-units exposed in the area are phyllitic rocks belonging to Gumalikhet Formation of the Almora Group and leucocratic granite representing the Champawat Granite. General strike of the rocks is NW-SE and dipping towards North. Based on physical and mineralogical parameters observed in field, the phyllitic rocks of Gumalikhet Formation have been categorized into buff phyllite, grey phyllite and carbonaceous phyllite. The colour of the units is genetic in nature and can be seen on freshly broken surfaces. The basement for Gumalikhet Formation is Ramgarh Group of rocks. The proposed stratigraphy in the field area is depicted below.

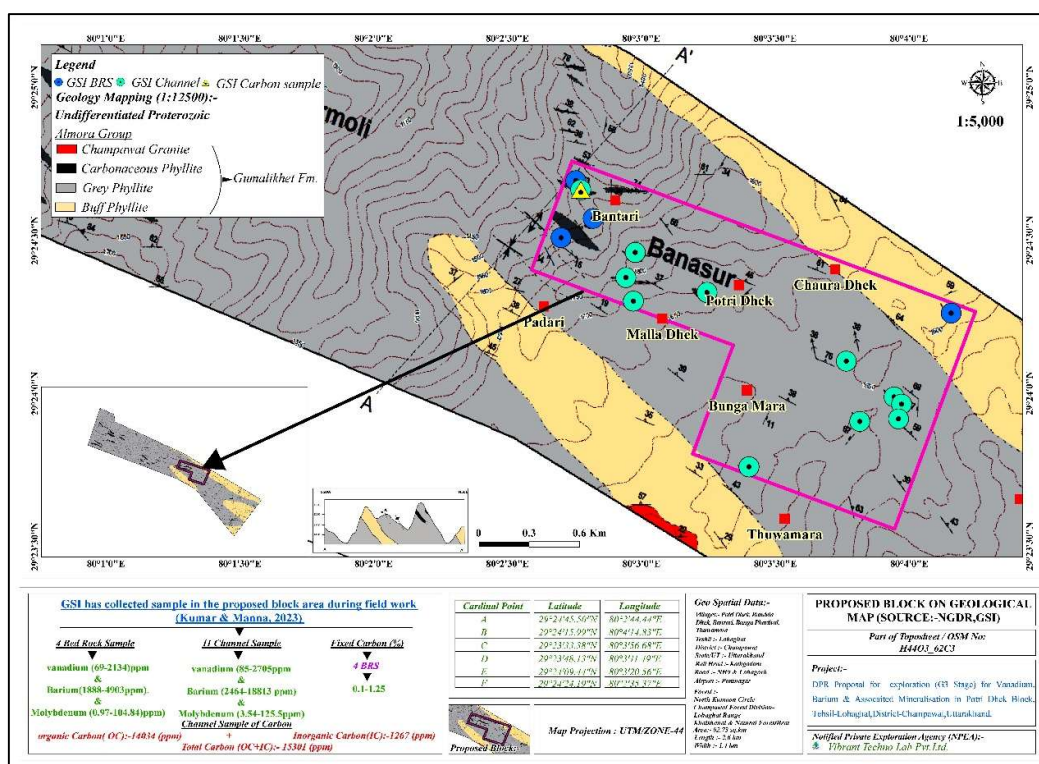
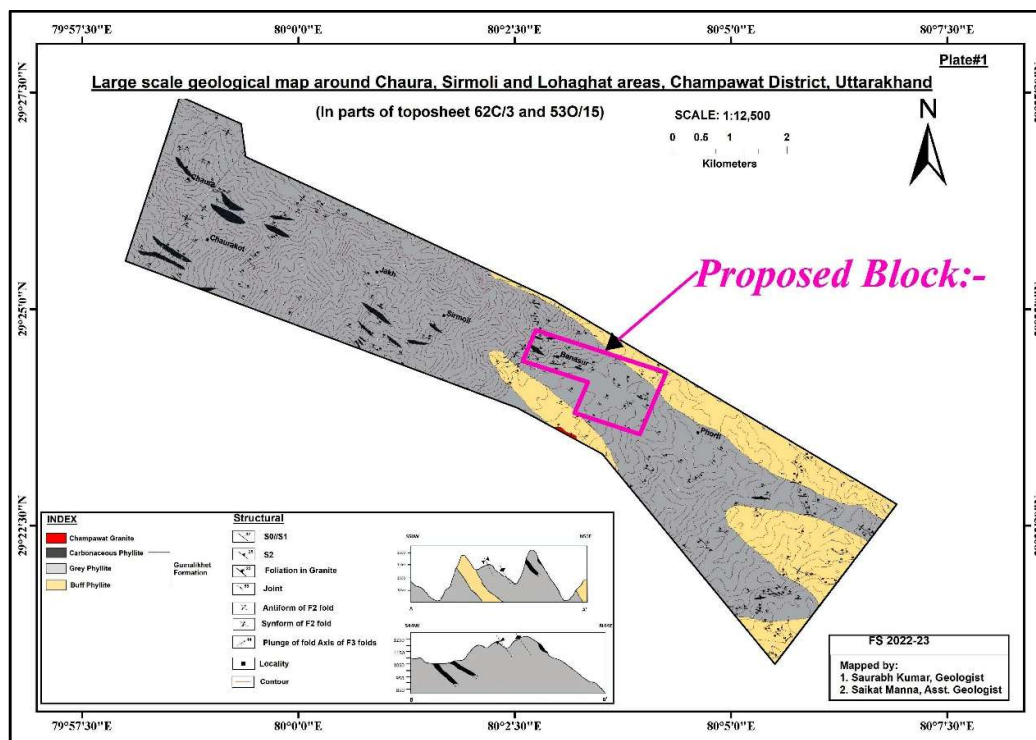
The buff phyllite is exposed in the NE & SW parts of the block area. It is fine grained with silky sheen present on the foliation surfaces and devoid of carbonaceous matter.

The grey phyllite is the dominant lithology present in the area. It is grey coloured, fine grained to occasionally gritty and does not soil hands. It is sulphidized at places with yellow-brown staining, pyrite encrustations, pungent sulphurous smell with sulphur and iron leaching. The pyrite crystals follow the bedding/foliation planes indicating their syn-depositional nature, which later leached out showing orange-yellow coatings. Such bands are found around Balai, Khuna Bora, Khuna Malak, Lamkaniya areas.

Carbonaceous phyllite is thinly foliated, soils hand, greasy to feel and exhibit dull luster on a freshly broken surface. It occurs as bands within grey phyllite indicating changing depositional environment. Its width varies from few cm to nearly 80 m. Thick carbonaceous phyllite bands are present in the central portions of the proposed block area around Bantari, Banasur and Balai areas. Pyrite crystals and sulphur leaching within the carbonaceous bands can be conspicuously seen at places along Haldu Ki Gad.

Stratigraphic succession of the block area

Group	Formation	Lithology
Almora	Gumalikhet	Carbonaceous Phyllite Grey Phyllite Buff Phyllite



1.3 Mineral potentiality based on geology, geophysics, ground geochemistry etc:

A G-4 stage reconnaissance survey was conducted by GSI (*Saha and Ranjan, 2023*) over an area of 50 sq. km. to assess the potential for vanadium and allied metals mineralization. The study was undertaken in accordance with the Field Season Programme 2022–23 and covered areas represented in Survey of India toposheet number 62C/3. The primary objective of the survey was to delineate potential lithological units and carry out systematic sampling to evaluate the mineral potential of the region. Large-scale geological mapping at a scale of 1:12,500 was carried out in and around Chaura, Sirmoli, and Lohaghat areas of Champawat district, Uttarakhand

Total 50 nos. of bedrock samples, 50 nos. channel samples, 15 nos. pitting and trenching samples, 11 nos. petrochemical samples, 15 nos. petrographic samples, 05 nos. XRD samples and 30 nos. fixed carbon and sulphur samples were collected.

GSI has collected 11 Channel samples & 4 Bed Rock samples in the proposed block area during field work (Kumar & Manna, 2023).

High values of BRS are as follows: -

V (ppm)	Ba (ppm)	Mo (ppm)
69-2134	1888-4903	0.97-104.69

Channel sample are as below: -

V (ppm)	Ba (ppm)	Mo (ppm)
85-2705	2464-18813	3.54-125.05

Besides, six mineralized bands of Carbon phyllite occur in the proposed block (ca. Thickness 20-80 meter with strike extension of ca. 900 meter intermittently exposed). Only one GSI sample is falling in the proposed block which contain fixed carbon 1.25%. However, in the NW strike continuity, the graphite bands contain good values of fixed carbon which is expected to occur in proposed block also in continuity.

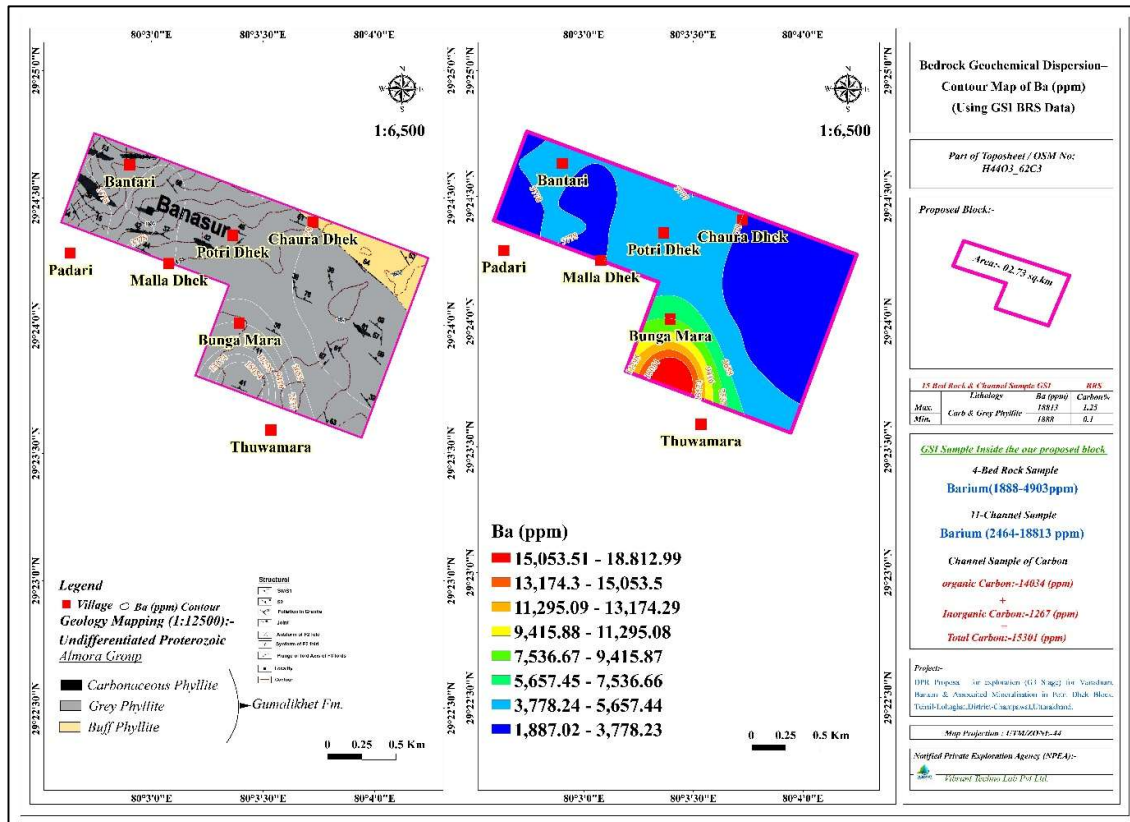
The area requires further exploration, both through reconnaissance to trace the strike continuity of the carbonaceous phyllite bands and through G-3 stage investigation for resource estimation.

Based on Geophysics: No data available in NGDR portal and GSI reports.

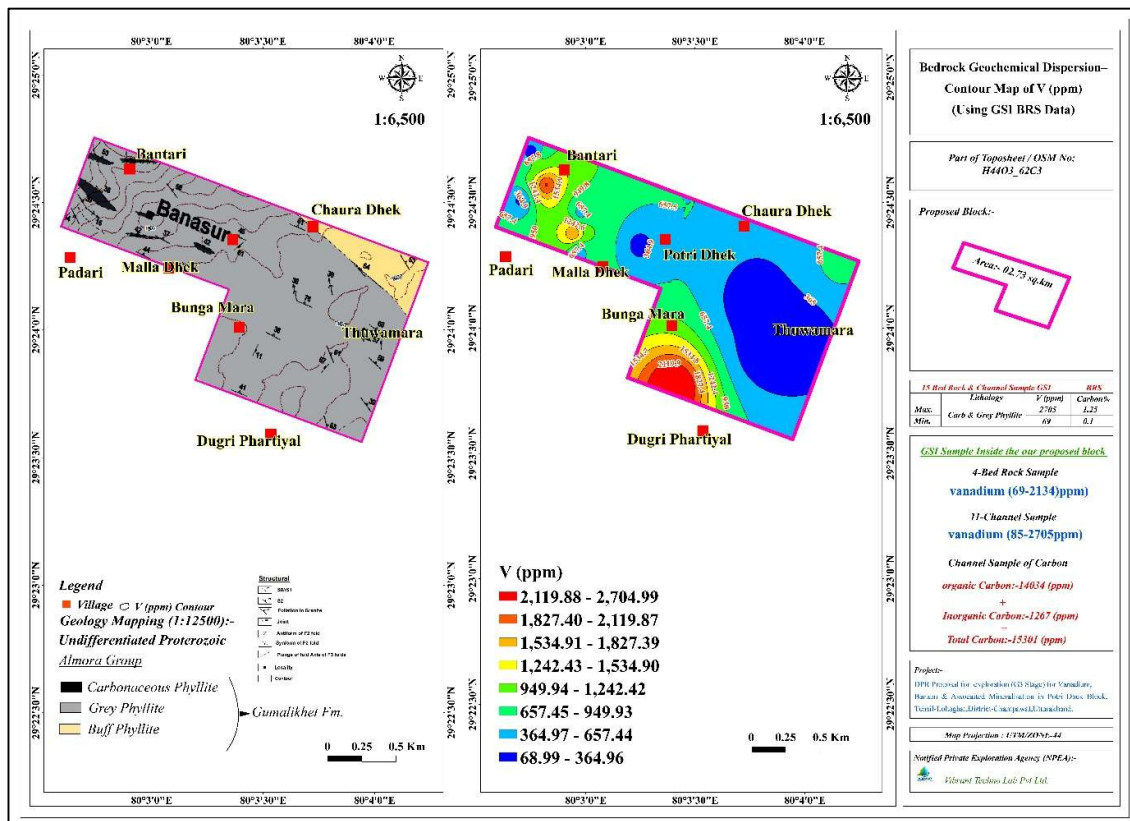
Based on Ground Geochemistry: GSI has collected 11 Channel samples & 4 Bed Rock samples in the proposed block area during field work (Kumar & Manna, 2023).

Table: - High Values in Channel & Bed Rock samples (GSI-2023) in VTL proposed block

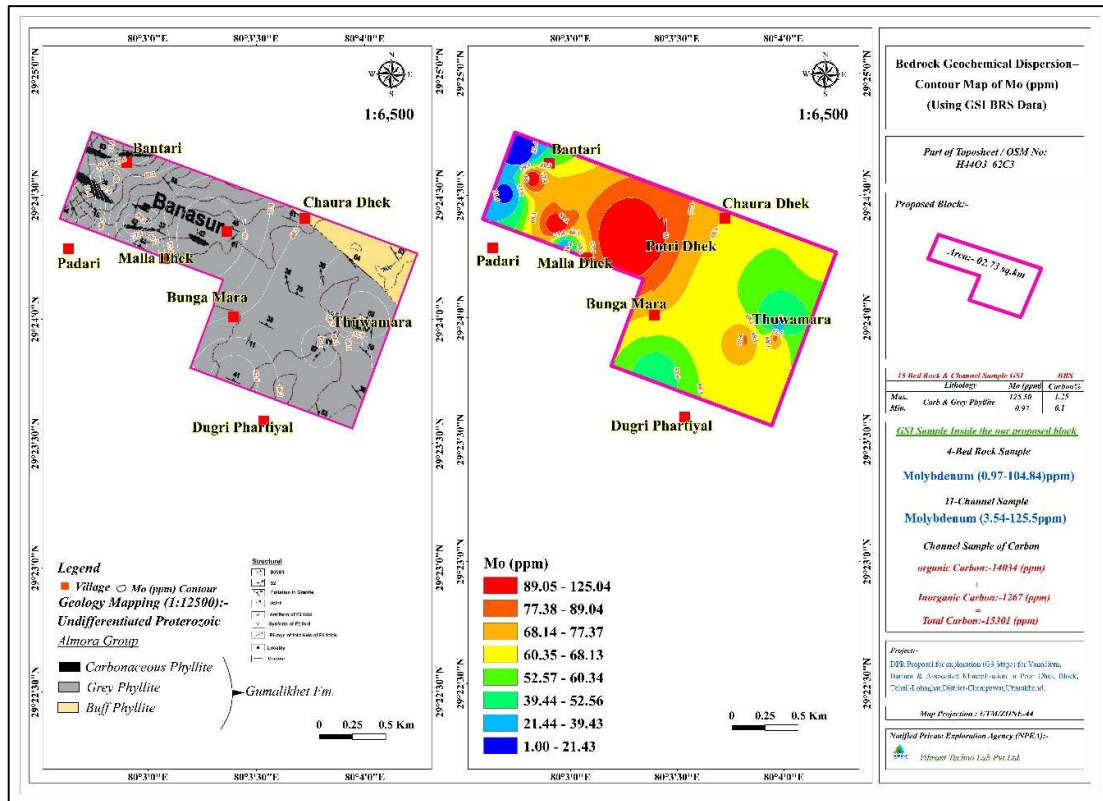
Sample	Lithology	Latitude	Longitude	V (ppm)	Ba (ppm)	Mo (ppm)	FC%
BRS-1	Carbonaceous Phyllite	29.409528	80.047	2134	4903	104.79	1.25
BRS-2	Carbonaceous Phyllite	29.408472	80.045	323	2155	12.97	-
BRS-34	Carbonaceous Phyllite	29.404361	80.069278	769	2114	63.66	-
BRS-42	Carbonaceous Phyllite	29.411583	80.045917	69	1888	0.97	-
CH-6	Carbonaceous Phyllite	29.407667	80.049611	565	2547	75.72	-
CH-7	Carbonaceous Phyllite	29.406306	80.049028	1773	5145	112.16	-
CH-8	Carbonaceous Phyllite	29.411083	80.046222	1174	5642	3.54	< 1
CH-22	Carbonaceous Phyllite	29.40175	80.06275	108	2888	60.35	-
CH-25	Carbonaceous Phyllite	29.398472	80.063583	85	3499	78.92	-
CH-33	Carbonaceous Phyllite	29.396	80.056694	2705	18813	46.47	-
CH-38	Carbonaceous Phyllite	29.405028	80.0495	534	2573	33.11	< 1
CH-39	Carbonaceous Phyllite	29.4055	80.054083	294	4033	125.05	-
CH-42	Carbonaceous Phyllite	29.399806	80.065722	269	2788	46.17	-
CH-43	Carbonaceous Phyllite	29.399417	80.066194	216	2464	23.8	-
CH-44	Carbonaceous Phyllite	29.398611	80.066	363	3367	81.15	-



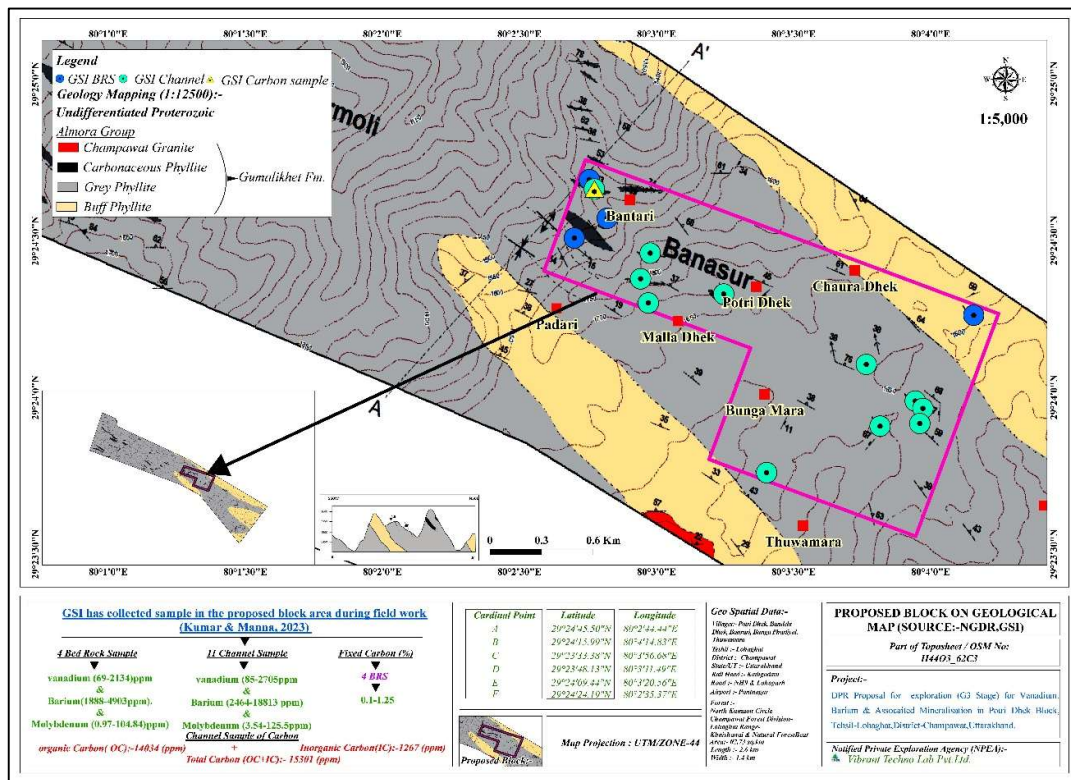
BRS Dispersion map (Ba) Proposed Block area



BRS Dispersion map (V) Proposed Block area



BRS Dispersion map (Mo) Proposed Block area



Geological map of Proposed VTL Block with GSI BRS & Channel Sample Location

1.4 Scope for Proposed Exploration

This project proposes a preliminary exploration programme at the G-3 stage, which will include detailed geological mapping on a scale of 1:4,000 covering an area of 2.73 sq. km along with a total of about 2700 metres of drilling (27 BH) in Phase-I & II.

The drilling programme will consist of 10 first-level inclined boreholes planned at a 200 m × 400 m grid spacing to intersect the mineralisation at around 30 m vertical depth, with an average borehole depth of about 100 m owing to the undulating topography. Remaining 17 bore holes will be taken up after getting mapping & core mineralization result of Phase-I. All boreholes will be inclined, with borehole angle varying between 45° and 50°, depending on local terrain condition and geological constraints.

1.5 Recommendations of previous exploration work: A G-4 stage reconnaissance survey was conducted by A G-4 stage reconnaissance survey was conducted by GSI (*Kumar & Manna, 2023*) over an area of 50 sq. km. to assess the potential for vanadium and allied metals mineralization. The study was undertaken in accordance with the Field Season Programme 2022–23 and covered areas represented in Survey of India toposheet number 62C/3.

In view of the presence of encouraging V and Ba values, the study area has a promising potential for Vanadium resource. The authors recommend for G-3 stage exploration in central portion of the study area around Jakh and Kutali. The Balai block coordinates of the proposed G-3 project are:

Jakh block coordinates

Point	Latitude	Longitude
A	29°25'13.1"N	80°00'44.2"E
B	29°24'50.2"N	80°01'46.1"E
C	29°24'13.9"N	80°01'32.9"E
D	29°24'36.9"N	80°00'30.9"E

The authors also recommend G-4 stage project in the strike continuity of exposed carbonaceous bands, further westward from the current study area, to further explore the carbonaceous bands and ascertain their mineral potential. The Khuteli block coordinates of the proposed G-4 project are:

Khuteli block coordinates

Point	Latitude	Longitude
A	29°29'58.95"N	79°49'28.71"E
B	29°28'33.16"N	79°48'35.92"E
C	29°25'32.99"N	79°57'59.40"E
D	29°27'09.74"N	79°58'31.85"E

1.6 Objectives of Exploration

To delineate Vanadium, Graphite and Associated Minerals in Potri Dhek Block and assess its resource potential through exploratory drilling (G3 stage).

- ❖ Detailed mapping of the proposed area on scale of 1:2000. Total area of proposed block is 2.73 sq. km.
- ❖ Collection of BRS/Channel/Trench samples based on the earlier work and VTL systematic geological mapping.
- ❖ Ground geophysical survey (self-potential) to identify the down dip extension of potential zone which may help in the planning of boreholes.
- ❖ Analysis of the collected BRS/Channel/Trench samples.
- ❖ Systematic drilling to delineate the strike and dip continuity of the mineralized zone.
- ❖ Analysis of the unidentified mineralized zone/lodes of borehole samples.
- ❖ Estimation of resource as per the guidelines of UNFC and NMEDT.
- ❖ Final Report preparation and submission to NMEDT.

2.0 PREVIOUS WORK

- A G-4 stage reconnaissance survey was conducted over an area of 50 sq. km. to assess the potential for vanadium and allied metals mineralization in FS 2022-23 by GSI.
- Total 100 nos. of bedrock and channel samples have been collected from carbonaceous phyllite and grey phyllite units to ascertain the vanadium and allied metal mineralization in the area.
- The analytical values of Vanadium (V), Barium (Ba), Yttrium (Y) and Molybdenum (Mo) obtained are very encouraging. The highest value of Vanadium obtained is 3627 ppm. The highest value of Ba obtained is 30,093 ppm. The highest value obtained for Y is 265 ppm. For Mo, the highest value obtained is 246.44 ppm. Fixed Carbon analysis of 3 samples shows BRS-8 with 6.26% FC and CH-35 with 2.32% FC.

As the area is highly promising for the Vanadium, Graphite, Barium and allied minerals, the area is recommended for further stage of exploration (G3). In order to delineate prospective zones and as per the recommendation the **Potri Dhek block** is being proposed for further exploration under G3 stage.

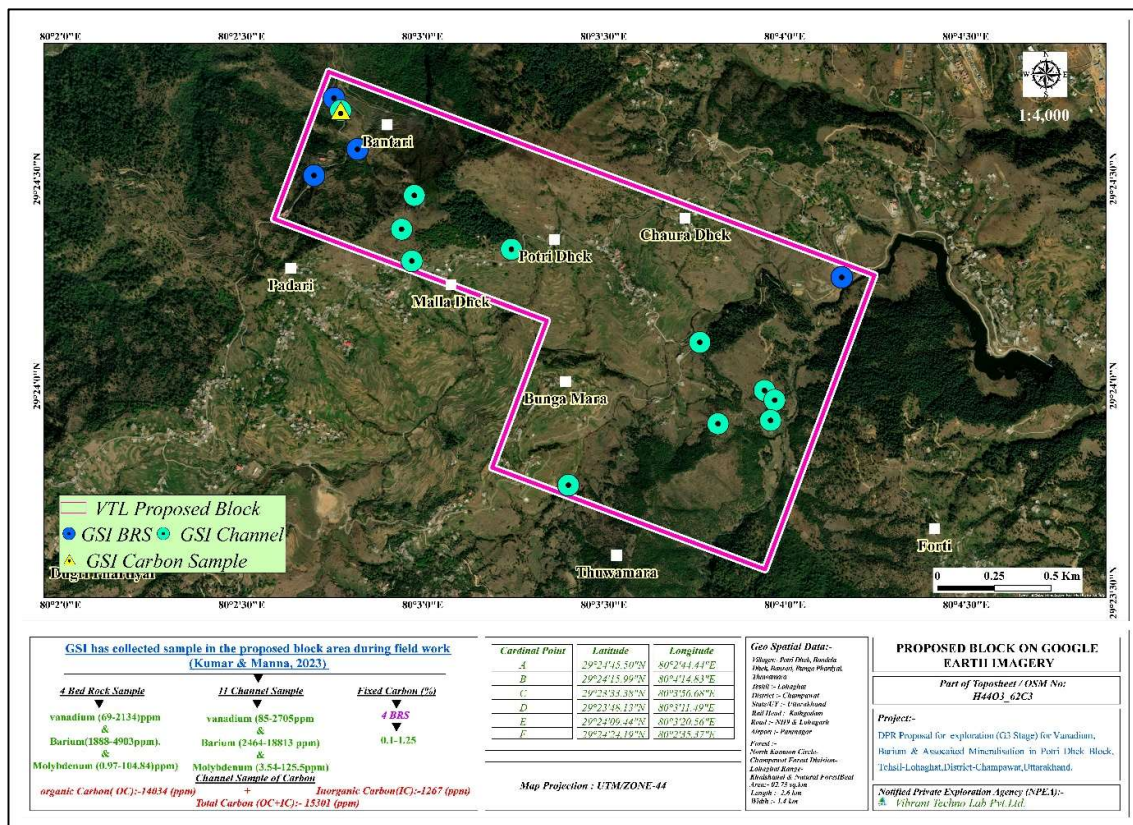
3.0 BLOCK DESCRIPTION

Proposed G3 investigation area

The area falls under Survey of India Toposheet no. 62C/3 and covers about 2.73 sq. km. Localities present in the vicinity include Potri Dhek, Bandela Dhek, Banrari, Bunga Phartiyal, Thuwamara villages. The coordinates of the proposed Potri Dhek cardinal points are given in table below.

Table: - Cardinal points of the VTL proposed Block

Pillar	Latitude	Longitude
A	29°24'45.50"N	80°2'44.44"E
B	29°24'15.99"N	80°4'14.83"E
C	29°23'33.38"N	80°3'56.68"E
D	29°23'48.13"N	80°3'11.49"E
E	29°24'09.44"N	80°3'20.56"E
F	29°24'24.19"N	80°2'35.37"E



Google Earth map showing Potri Dhek boundary

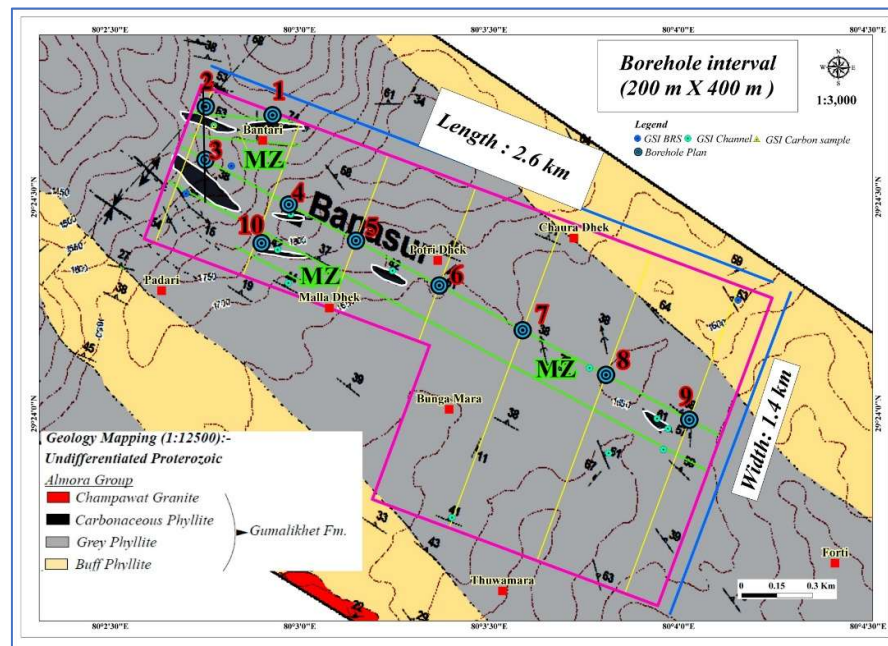
4.0 PLANNED METHODOLOGY

4.1 Methodology of exploration: An area of 2.73 sq. km has been proposed in the Potri Dhek Block, Champawat District, Uttarakhand, for undertaking G-3 stage exploration targeting Vanadium, Barium & associated mineralisation. The exploration programme has been designed in line with the objectives of preliminary exploration (G-3) and will be carried out in compliance with the provisions of the Minerals (Evidence of Mineral Contents) Rules, 2015 and the Minerals (Evidence of Mineral Contents) Amendment Rules, 2021.

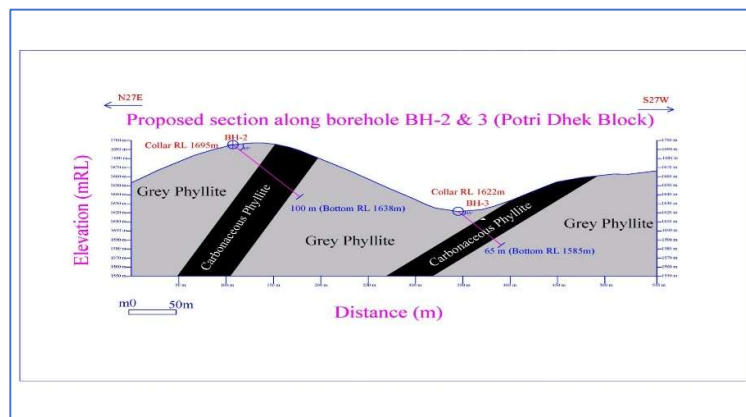
The primary objective of the proposal is to establish both the strike and depth continuity of the mineralised zones delineated during the earlier exploration carried out by the Geological Survey of India (GSI) in Field Season 2022–23 at the G-4 stage. Accordingly, a systematic scheme of exploration has been formulated to achieve these objectives. The detailed description of the proposed exploration activities is presented in the following sections.

- a) **Geological mapping (1:2000 scale):** Geological mapping will be done on the entire 2.73 sq. km. area on 1: 2,000 scale. Outcrop boundaries marking the lithological variations along with their contact and structural features, if any, will be covered during the mapping. Surface mineralized zones will be identified and demarcated on map.
- b) **Surveying:** The block boundary will be surveyed by DGPS/Total station. WGS-84 datum will be used for the demarcation of proposed area boundary points. The total block area will be contoured to create a topographical map with 5m of contour interval. The rock boundaries and contact of lithological units will be mapped using total station. Further, during the drilling programme, the survey party will carry out borehole fixation and determination of the reduced levels and coordinates of the proposed 10 nos. of inclined boreholes.
- c) Total 35 number of BRS/Channel samples will be collected from various lithounits based on the surface evidence of mineralization. A total of 50 cubic metres of trenching will be undertaken to examine the strike continuity in the unexposed part mineralisation identified during the G-4 stage of exploration. From these trenches, about 70 nos. of samples, each of 1 metre length, will be systematically collected for chemical analysis to assess the grade and continuity of mineralisation.
- d) **Geophysical survey:** As per the previous exploration practices and in order to delineate the depth continuity of mineralised zones, a ground geophysical survey in the form of self-potential survey is proposed. A total of 15-line kilometres (Lkm) of survey has been planned with the objective of identifying graphite and vanadium bearing horizons. The interpretation of the geophysical data will aid in delineating potential zones of mineralisation and will also provide valuable inputs for refining borehole locations and subsequent sampling strategies.
- e) **Core Drilling:** The drilling activities will be taken up after completion of geological mapping & Geophysical work and review of the analytical results.
- f) **Drill Core Logging:** The borehole core will be systematically logged for rock types, structural features, textures, intersection of ore zones, types of mineralisation, and the identification of various ore minerals. Logging for the determination of Rock Quality Designation/determination (RQD) will also be carried out.
- g) **Drill Core Sampling:** During the geological logging of drill cores, mineralised zones will be marked on the basis of the visual estimation of mineralization, concentration of ore minerals and lithology. Length of the samples may vary accordingly.
- h) **Laboratory studies:**
 - ❖ **BRS/Channel samples:**
 - ✓ A total of **25** nos. BRS/channel and **3** nos. check (10%) samples will be analysed for V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y by XRF method.
 - ✓ Total of **10** nos. BRS/channel and **1** nos. check (10%) samples will be analysed for fixed carbon by Graphite Proximate Analysis.
 - ❖ **Trench Samples:**
 - ✓ A total of **50** nos. trench samples and **5** nos. check (10%) samples will be analysed for V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y by XRF method.
 - ✓ A total of **20** nos. trench samples and **2** nos. check (10%) samples will be analysed for fixed carbon by Graphite Proximate Analysis.
 - ❖ **Core Sample: -**

- ✓ A total of **200** nos. trench samples and **20** nos. check (10%) samples will be analysed for V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y by XRF method.
 - ✓ A total of **50** nos. trench samples and **5** nos. check (10%) samples will be analysed for fixed carbon by Graphite Proximate Analysis.
- ❖ **EPMA studies:** A total of **5** nos. samples shall be subjected to EPMA studies for determine of the quantitative and qualitative chemical composition of mineral.
 - ❖ **Raman Spectroscopy-** A total of **10** nos. of samples.
 - ❖ **Sp. Gravity & Bulk Density:** - A total of **6** nos. of samples.
 - ❖ **h) Petrological Studies:** A total of **20** nos. of samples shall be subjected to Petrological Studies.
- 3.2 **Estimation of resources:** - Estimation of resources will be done according to UNFC norms and the Minerals Evidence & Mineral Contents (MEMC) Rule—2015 at the G-3 level and to meet the NMET objectives.
- 3.3 **Report preparation:** - Submission of reports will be done as per the recommendations of NMET in compliance with G3 level as per MEMC 2015 and suggestions for follow-up work to upgrade the project, if deemed necessary.



Proposed tentative Borehole plan on Geological map of Potri Dhek block



Tentative Geological Cross Section Along Proposed borehole no. BH-2 & 3 of Potri Dhek block

5.0 NATURE, QUANTUM AND TARGET

The nature and quantum of work proposed are given in Table:

DPR submission for G3 Stage Preliminary exploration for the Vanadium, Graphite and Associated Minerals in Potri Dhek block, Tehsil-Lohaghat, District - Champawat, Uttarakhand, Area-2.73 sq.km, Scale:1:2,000			
Sl. No.	Item of work	Unit	Qty.
1.	Geological mapping (1:2,000)	Sq.km	2.73
2.	a. DGPS Survey of 06 boundary points	Days	6 days
	b. Surveyor for topographic mapping in 1:2000 scale and contouring at 5m interval	Days	30 days
3.	a. Trench 10 nos. (5 X 1 X 1)	Cubic meters	50
4.	Ground geophysical survey (SP survey)	Lkm	15 Lkm
6	Drilling (10 Borehole Average 65-100-meter depth)	Meter	800
7	Construction of concrete Pillar (12"x12"x30")	Per BH	10
8	Borehole plugging by cement	Per BH	10
9	Borehole Deviation Test	Per Shot	133
10	Drill core preservation	Per meter	50
11	Laboratory studies (Primary Sample)		
	1. Graphite Proximate Analysis (BRS & Trench)	Per Sample	10 +20 (=30)
	2. Graphite Proximate Analysis (10%) Check samples)	Per Sample	3
	3. Analysis of BRS/Channel, Trench sample for quantitative analysis of 14 REE elements+9 Trace element (V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y) by ICPMS	Per Sample	25+50 (=75)
	4. BRS/Channel, Trench External (10%) Check samples)	Per Sample	7
	Core Drilling Analysis		
	1. Analysis of core sample for quantitative analysis of 14 REE elements+9 Trace element (V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y) by ICPMS	Per Sample	200
	2. 10% Check samples	Per Sample	20
	3. Graphite Proximate Analysis core sample	Nos.	50
	4. Graphite Proximate Analysis (10%) Check samples)	Nos.	5
	Physical & Petrological Studies		
	1. Complete petrographic /ore microscopic study/mineragraphic report of rock sample (along with 5 nos. digital photo micrographs)	Nos.	20
	2. EPMA	Nos.	5
	3. Specific Gravity	Nos.	3
	4. Raman Spectroscopy	Nos.	10
	5. Bulk Density	Nos.	3
12	Prepare Geological Report	Day	60

6. EXPLORATORY DRILLING

This project proposes a preliminary exploration programme at the G-3 stage, which will include detailed geological mapping on a scale of 1:2,000 covering an area of 2.73 sq. km along with a total of about 800 meters of drilling (10 BH) in Phase-II.

The drilling programme will consist of 10 first-level inclined boreholes planned at a 200 m × 400 m grid spacing to intersect the mineralisation at around 30 m vertical depth, with an average borehole depth of about 65-100m owing to the undulating topography. All boreholes will be inclined, with borehole angle varying between 45° and 50°, depending on local terrain condition and geological constraints.

7. MANPOWER DEPLOYMENT

1) Geological Mapping (DM) (1:2000) with contouring

- a) No. of Geologist: 125 man-days in field+ 40 HQ man-days with 2 Labour (125x2) 250 Days
- b) No. of Sampler Party: 44 man-days and 4 Labours: (44x4) =176 Days
- c) No. of Surveyor Party: 30 man-days and 4 Labours: (30x4) =120 Days

8.0 TIMELINE

Annexure 2B																	
DPR submission for G3 Stage Preliminary exploration for the Barium, Vanadium and Associated Mineralization in Potri Dhek block, Tehsil-Lohagarh, District - Champawat, Uttarakhand, Area-2.73 sq.km, Scale:1:2,000																	
S.no.			Month	Month	Month	Review		Month	Month	Review	Month	Month	Month	Review	Month	Month	Month
	Activity	Months/ Days	1	2	3		4	5	6		7	8	9		#	#	#
1	Camp setting	months															
2	Geological mapping and Sampling	days															
3	Topographic Survey	days															
4	Geophysical Survey	days															
5	Surface Drilling	m															
6	Core logging and sampling																
7	Laboratory studies	Nos.															
8	Report Writing with Peer Review	months															
9	Camp Winding	months															

10.0MAN POWER DEPLOYMENT

Manpower deployment List shall be provided prior to the commencement of work.

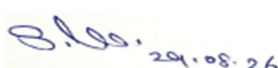
Manpower deployment plan is summarized below.

Activity	Type of Job	Geophysicist (HQ man-day)	Geophysicist (Field man-day)	Geologist (HQ Man-day)	Geologist (Field Man-day)	Labour (Man-day)	Sampler (Man-day)	Surveyor (Man-day)
Geological mapping, Survey, sampling, Geophysical Reinterpretation	Field/ Desk	-	-	40	125	250+120+176=546	30	44
Laboratory studies	Desk +Field	-	-	-	-	-	-	-
Petrographic studies	Desk	-	-	-	-	-	-	-
Geophysical survey	Field	-	-	-	-	-	-	-
Core drilling, logging, sampling	Field	-	-	-	-	-	-	-
Report preparation	Desk	-	-	-	-	-	-	-
Total		-	-	40	125	546	30	44

10.0 Estimated cost sheet

Annexure 4A

Preliminary Exploration for the Vanadium, Graphite and Associated Mineral in Potri Dhek Block, Tehsil-Lohaghat, District - Champawat, Uttarakhand Area-2.73 sq.km, Scale:1:2,000; Drilling Meterage: 800 m, No. of BH: 10. Time Schedule: 12 months. Review after: 3, 6 and 9 months. 1st Phase: Mapping, Surface Sampling and GP survey; 2nd Phase Drilling								
S. No.	Job Description	Unit *	Rates as per NMEDT SoC 2025-26		Estimated Cost of the Proposal As per Previous SoC	Total Amount (Rs) as per SoC 2025-26 (a*b = C)	Hilly terrain of Himalaya region (Total amount X 2)	Remarks
			SoC Item No.*	Rates as per SoC* (a)	Qty. (b)		(c*2)	
A	Geological Mapping (DM) (1:2000) with contouring							
1	Geological Mapping(DM) (1:2000 scale)with Contouring	Sq.km	1.1	18,300	2.73	49,959	99,918	
	Sub Total A					49,959	99,918	
B	Pitting/Trenching							
1	Trench	per cu m	2.1.1	4,125	50	206,250	412,500	5*1*1=5 cu.m. per trench (no. of trench= 10)
	Sub Total B					206,250	412,500	Himalayan Region Rate
C	Other Charges (During Geological mapping & Drilling)							
1	Geologist: In field	Mandays	1.2.1a	14,500	125	1,812,500	3,625,000	Himalayan Region Rate
2	Geologist: at HQ	Mandays	1.2.1a	10,500	40	420,000	420,000	
3	Charges for one sampler per day (for sample preparation)	Mandays	1.2.1b	7,850	44	345,400	690,800	Himalayan Region Rate



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4	Labour charges (Includes Geologist, Surveyor & Sampler)	Mandays	5.8	556	546	303,576	607,152	
7	Surveyor (for mapping & contouring)	Mandays	1.3.1	10,500	30	315,000	630,000	Himalayan Region Rate
8	Drone Topographic Survey	per sq Km	7b	70000	2.73	191,100	382,200	Himalayan Region Rate
9	Demarcation of lease boundary, Fixation of borehole and determination of co-ordinates & Reduced Level (RL) of the boreholes by DGPS (including charges for labours deployed for the work)	Per point of Observation	1.3.2	24,000	16	384,000	768,000	Himalayan Region Rate 10BH + 6 Cardinal Points
	Sub Total C					3,771,576	7,123,152	Himalayan Region Rate
D	Geophysical Survey Work (Outsourced)							
1	Self Potential (8-20 Line Km)	Line km	3.3a	62,140	15	932,100	1,864,200	
	Sub Total-D					932,100	1,864,200	
E	DRILLING (Outsourced)							
1	Drilling up to 300m (Hard Rock), HQ	Meter	2.2.1.1d	10,000	800	8,000,000	16,000,000	Himalayan Region Rate
2	Drill core Preservation	Per meter	5.3	1,590	350	556,500	1,113,000	1 complete BH + Remaining mineralised zone
2	Land / Crop Compansation (in case the BH falls in agricultural Land)	Per BH	5.6	30,000	10	300,000	600,000	As per actuals with 30000 being the maximum ceiling
3	Borehole deviation survey by multi shot survey tool (interval 6 m ; azimuth and inclination to be recorded)	Per shot	2.2.5	330	133	43,890	87,780	Himalayan Region Rate
3	Construction of concrete Pillar (12"x12"x30")	Per BH	2.2.7	2,000	10	20,000	40,000	Himalayan Region Rate

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4	Borehole plugging by cement	Per BH	2.2.8	10,000	10	100,000	200,000	Himalayan Region Rate
	Sub Total E					9,020,390	18,040,780	Himalayan Region Rate
F	Borehole Geophysical Logging (Outsourced)							
1	Borehole Geophysical Logging (5 bh of 350m each)	(5 bh of 350m each)	3.12	1,088,941	0	0	0	Himalayan Region Rate
	Sub Total F					0	0	Himalayan Region Rate
G	LABORATORY STUDIES							
	Primary Samples							
1	Graphite Proximate Analysis (BRS & Trench)	Per sample	4.1.18	3,614	30	108,420	108,420	BRS10 + Trench 20samples
2	Graphite Proximate Analysis (10%) Check samples)	Per sample	4.1.18	3,614	3	10,842	10,842	
3	Analysis of BRS/Channel, Trench sample for quantitative analysis of 14 REE elements+9 Trace element (V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y) by ICPMS	Per sample	4.1.15	7,400	75	555,000	555,000	BRS 25 + Trench 50 samples
4	BRS/Channel, Trench External (10%) Check samples)	Per sample	4.1.15	7,400	7	51,800	51,800	
5	Major oxides (WD XRF) -(oxides + traces- 24 elements)	Per sample	4.1.17a	4,200	0	0	0	
6	Major oxides (WD XRF) -(oxides + traces- 24 elements) (10%) Check samples)	Per sample	4.1.17a	4200	0	0	0	
	Core Drilling Analysis							
1	Analysis of core sample for quantitative analysis of 14 REE elements+9 Trace element (V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y) by ICPMS	Per sample	4.1.15	7400	200	1,480,000	1,480,000	

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2	analysis of core sample for quantitative analysis of 14 REE elements+9 Trace element (V, Ba, Ga, Mo, U, Cu, Pb, Zn, Y) by ICPMS (10% Check Sample)	Per sample	4.1.15	7400	20	148,000	148,000	
3	Graphite Proximate Analysis core sample	Per sample	4.1.18	3614	50	180,700	180,700	
4	Graphite Proximate Analysis (10%) Check samples)	Per sample	4.1.18	3614	5	18,070	18,070	
5	XRD Studies	Per sample	4.5.2	4000	0	0	0	
	Physical & Petrological Studies	Nos						
1	Preparation & study of thin section	Nos	4.3.2	800	20	16,000	16,000	
2	Complete petrographic /ore microscopic study/mineragraphic report of rock sample (along with 5 nos. digital photo micrographs)	Nos	4.3.4	2,800	20	56,000	56,000	
3	EPMA	Nos	4.4.1	10,500	5	52,500	52,500	
4	Specific Gravity	Nos	4.8.1	2,500	3	7,500	7,500	
	Raman Spectroscopy	Nos	4.5.1	2,700	10	27,000	27,000	
5	Bulk Density	Nos	4.8.3	2,500	3	7,500	7,500	
	Sub Total G					2,719,332	2,719,332	
	Total A to G					16,699,607	30,259,882	
I	Total outsourced component (if any)					12,021,572	21,323,812	
	Miscellaneous Charges (Transportation of Drilling Rig, Accommodation for Drill Camp, Camp setting and winding and construction of Approach road		2.2.9	NA in case of outsourcing				
	In case of outsourcing of work, the Technical Supervision cost shall be 10% of the sum of all the outsourced		6	2,000,000	1		2,000,000	

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	work components with a maximum ceiling of ₹ 20 lakh							
J	Geological Report Preparation	Geological Report Preparation	5.2(iii)	750,000	1	750,000	750,000	Reimbursement will be made after submission of the final Geological Report in Hard Copies (5 Nos) and the soft copy to NMEDT.
K	Peer review Charges		As per EC decision	30,000	1	30,000	30,000	
L	Tendering Process Cost						426,476	
M	Preparation of Exploration Proposal (5 Hard copies with a soft copy)	5 Hard copies with a soft copy	5.1	500,000	1	500,000	500,000	EA will be reimbursed after submission of the Hard Copies and the soft copy of the final proposal along with Maps and Plan as suggested by the TCC- NMEDT in its meeting while clearing the proposal.
N	Total Estimated Cost without GST					17,979,607	33,966,358	
O	Provision for GST (18%)					3,236,329	6,113,944	GST will be reimburse as per actual and as per notified prescribed rate
P	Total Estimated Cost with GST					21,215,936	40,080,302	
Q	Rs. In lacs					212.16	400.80	
Note:								
1	Strict adherence to the Ministry of Finance's and GFR guidelines is mandatory. Every transaction must adhere to GFR rule 21.							

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2	In case of delay/non- performance, the appropriate action will be taken by competent authority against delinquent agency as per prevailing govt. of India rules/guidelines on procurement.
3	If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 6 of NMEDT SoC. In case of execution of the project by NEA/NPEA on its own, a Certificate regarding non outsourcing of any component/project is required.
4	Necessary efforts should be made to minimize any adverse impact on the environment during exploration activities.
5	Any item of work not mentioned above shall be added as per SoC.
6	All the Geological Reports and data are to be uploaded on NGDR as per MERT template by the agency.

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REFERENCES

- ❖ NGDR Portal (<https://geodataindia.gov.in/>).
- ❖ **Kumar & Manna (2023)** reconnaissance survey for vanadium and allied metals mineralization in Almora Group of rocks, Chaura, Sirmoli and Lohaghat areas, Champawat district, Uttarakhand (G-4 STAGE) Unpub.GSI report FS 2022-23.
- ❖ **Saha, Tanmoy & Ranjan, Alok (2025)** Reconnaissance survey for Vanadium and allied metals mineralization in Almora Group of rocks, Chaukhuri Mulakot areas, Almora and Champawat Districts, Uttarakhand (G-4 STAGE. Unpub. GSI report FS 2024-25.