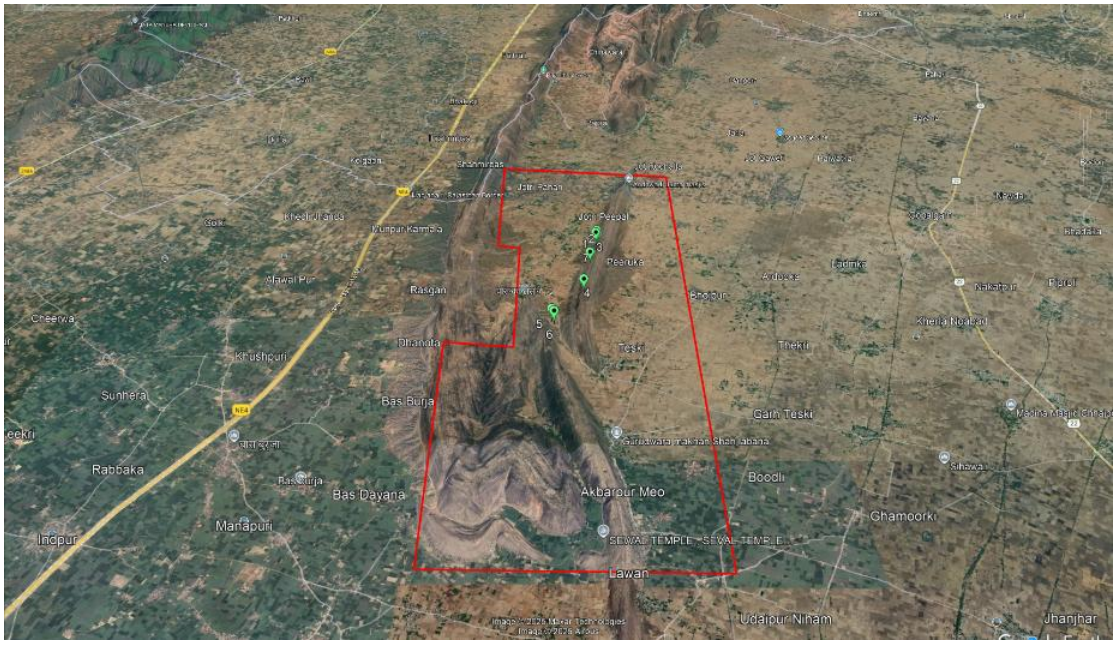
DPR for G4 stage Mineral exploration under NMEDT

Commodity: Base metals and Associated Mineralization, Area=30 Sq. Km.

Location: Near Village- Jotri-Peepal, Tehsil- Pahadi & Seekri, District-Deeg, State-Rajasthan (INDIA)



Notified Private Exploration Agency

Date of Submission: 10.01.2026

Submitted By:

Steiger Geoscience and Engineering Private Ltd
2-2-24/A46, DD Colony, Bagh Amberpet, Hyderabad
Telangana-500013, (INDIA)
karunakar@steigergeoscience.in

Accreditation No. NABET/AEA/24/010

Gazette Notification by MoM, GoI: S. O. 4561(E) dated 17.10.2024

Contents

SUMMARY OF THE BLOCK FOR G4 STAGE EXPLORATION

	Features	Details
	Block ID	
	Current Exploration Agency	Steiger Geoscience and Engineering Private Limited
	Previous Exploration Agency	1. Geological Survey of India (WR), Rajasthan (1971-72, 1972-73) 2. Department of Mines and Geology, Rajasthan (2007-08 & 2016-17)
	Previous Geological Reports & Investigations	1) A Report on Systematic Geological Mapping in Jalalpur-Jotri-Gangora Area, Alwar and Bharatpur Districts, Rajasthan, (Field Season 1971-72) by A. R. Das, Geological Survey of India, WR. An Inferred Geological map was prepared on 1:63,360 scale. (Report & Map attached) 2) Exploratory Drilling for Lead in Jotri-Pirakha Areas, Bharatpur District, Rajasthan, (Field Seasons 1975-76 and 1976-77) by R. S. Neogi, Geological Survey of India. 0.4 sq km area (over old workings found in the area) geological and geochemical mapping carried out at 1:1000 scale and 5 angular boreholes (<100m deep) drilled No encouraging results observed in the boreholes. 3) DMGR explored during field sessions from 2007–08 to 2016–17 for base metals and associated minerals. Chemical analysis of 21 spot samples revealed lead (Pb) concentrations in 15 samples, ranging from 0.23% to 9.5%. Silver was detected in all samples, with values between 0.95 ppm and 11.25 ppm. GR is not available.
	Commodity	Base metal and Associated Mineralization
	Mineral Belt	North Delhi Fold Belt
	Completion Period with entire time schedule to complete the project	15 months
	Objectives	The present exploration program is targeted at assessing mineral potentiality through: • Detailed litho-structural geological mapping @1:12,500 scale supported by drone topography, drone magnetic survey and geochemical surveys. • Delineation of structures, sheared contact of phyllites and quartzites of the Ajabgarh-Formation and associated shear zones which host mineralisation. Wide spaced Geophysical survey (IP, SP & Gravity) over potential areas to identify vertical and lateral presence of mineralization and to further identify target areas for drilling. • Scout drilling at high potential of the areas. • On locating potential areas based on G-4 level Mineral Exploration works, further exploration will be seamlessly continued as Phase 2 detailing after the review and recommendations of the TCC, NMEDT.

<table>
<tr><td></td><td>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</td><td>Geological mapping, Geochemical sampling, Geophysical surveys will be done by company itself.
Core drilling, Sample analysis will be done by outsourcing with MoU companies.
Resource estimation and Geological study report shall be prepared by in-house resources of company.</td></tr>
<tr><td></td><td>Name/ Number of Geoscientists</td><td>Geologists- 2 nos., Geophysicists – 2 nos., Surveyor – 1 no</td></tr>
<tr><td></td><td>Expected Field days (Geology, Geophysics, Surveyor)</td><td>150 days: Field Geologist Days
60 days: HQ Geologist Days
60 days: Field Geophysicist
20 days: HQ Geophysicist
10 days: Surveyor Days</td></tr>
<tr><td>1.</td><td colspan="2">Location</td></tr>
<tr><td></td><td>Latitude & Longitude</td><td>Coordinates of Corner Points of the Block
<table>
<tr><th>Point</th><th>Latitude</th><th>Longitude</th></tr>
<tr><td>A</td><td>27° 39' 57.71" N</td><td>76° 59' 00.37" E</td></tr>
<tr><td>B</td><td>27° 39' 57.80" N</td><td>77° 00' 51.92" E</td></tr>
<tr><td>C</td><td>27° 35' 00.73" N</td><td>77° 00' 51.93" E</td></tr>
<tr><td>D</td><td>27° 35' 00.78" N</td><td>76° 58' 37.34" E</td></tr>
<tr><td>E</td><td>27° 37' 03.44" N</td><td>76° 58' 37.27" E</td></tr>
<tr><td>F</td><td>27° 37' 03.53" N</td><td>76° 59' 13.75" E</td></tr>
<tr><td>G</td><td>27° 38' 35.86" N</td><td>76° 59' 13.70" E</td></tr>
<tr><td>H</td><td>27° 38' 36.00" N</td><td>76° 59' 00.37" E</td></tr>
</table></td></tr>
<tr><td></td><td>Villages</td><td>Jotri-Peepal</td></tr>
<tr><td></td><td>Tehsil/ Taluka</td><td>Pahadi & Seekri</td></tr>
<tr><td></td><td>District</td><td>Deeg</td></tr>
<tr><td></td><td>State</td><td>Rajasthan</td></tr>
<tr><td>2.</td><td colspan="2">Area (hectares/ square kilometers)</td></tr>
<tr><td></td><td>Block Area</td><td>30 Sq. km.</td></tr>
<tr><td></td><td>Forest Area</td><td>No Forest Area (checked with the kml boundaries provided by Department of Forest, Government of Rajasthan & SOI Toposheet- 54A/14 & 54E/2)</td></tr>
<tr><td></td><td>Government Land Area</td><td>Not Available</td></tr>
<tr><td></td><td>Private Land Area</td><td>Not Available</td></tr>
<tr><td>3.</td><td colspan="2">Accessibility</td></tr>
<tr><td></td><td>Nearest Rail Head</td><td>The nearest railway station is at Deeg</td></tr>
<tr><td></td><td>Road</td><td>Firojpur-Jhirka-Pahari metal road joins the state Highway No.13 at Firojpur-Jhirka.</td></tr>
<tr><td></td><td>Airport</td><td>Jaipur International AirPort ≈ 200 km.</td></tr>
<tr><td>4.</td><td colspan="2">Hydrography</td></tr>
<tr><td></td><td>Local Surface Drainage Pattern (Channels)</td><td>The area is characterized by dendritic pattern of drainage.</td></tr>
<tr><td></td><td>Rivers/ Streams</td><td>NA</td></tr>
<tr><td>5.</td><td>Climate</td><td></td></tr>
<tr><td></td><td>Mean Annual Rainfall</td><td>Average annual rainfall of the district is 327mm.</td></tr>
<tr><td></td><td>Temperatures (January) (Minimum)
Temperature (May) (Maximum)</td><td>Minimum: 18 °C
Maximum: 34 °C</td></tr>
<tr><td>6.</td><td>Topography</td><td></td></tr>
</table>

	Toposheet Number	54A/14 & 54 E/2
	Morphology of the Area	The block area is mixed of flat and undulating terrain. The highest elevation is 416 mRL, minimum is 174 mRL.
7	**Availability of baseline geoscience data**	
	Geological Map (1:50K/ 25K)	Available on Bhukosh portal (1:50K) Previous work in area.
	Geochemical Map	NGCM data downloaded from NDGR portal. GSI exploration 1975-77. Geochemical dispersion map (1:1,000 scale) is prepared over small parts (0.5 sq km) of the block where old workings exist.
	Geophysical Map (Aero geophysical, Ground geophysical, Regional as well as local scale GP maps)	NAGPM airborne data Alwar – Neem ka Thana block FSP 2016-18 (Magnetic & Radiometric) 500m spaced lines Data Downloaded from NGDR portal
8	Justification for taking up Exploration	**i. Geological Setting-** The target area lies within a favorable geological province known to host base metal mineralization, such as Proterozoic sedimentary basins & volcanic-sedimentary sequences. Preliminary geological, geophysical, or geochemical data indicate promising signatures that warrant detailed investigation. ii. **Potential Indications of Mineralization**- This area holds promising surface signatures of mineralization present in form of old workings. Many surface samples collected during previous studies represent good indicative values of Lead, Zinc, which further warrants advance technology exploration in this area for base metal mineralization. The presence of 1.5 km long old workings, mine dumps and Gossan zones iii. NAGPM (NGDR) airborne data (Magnetic Tilt derivative map, Radiometric Total Count derivative map) indicating regional structural trends extending beyond old workings. iv. Site visit twice by Steiger Geoscience Team and consultation with experts indicating the mineralisation in this block is associated with vein quartz and controlled by the sub-vertical shear zone. v. **Technological Advantage**- Over the period of time, technology has evolved. Innovative Geological and Geophysical survey methods have been introduced and accessibility to this outskirt area has become an add-on advantage to carry out extensive exploration activities in the area. Access to high-resolution geophysical survey provides detailed behavior of sub-surface litho units and presence of associated mineralization. This shall help to track sub surface vertical extensions and lateral extensions of mineralization observed in old workings.

Preliminary Field Inspection by Steiger Geoscience.

A technical team from Steiger Geoscience conducted site inspections at the proposed Jotri Peepal base-metal block on November 26 and December 20, 2025. The visits focused on assessing site conditions and collecting geological samples for evaluation. The lithology of the area represented by an alternating sequence of quartzite and phyllite belonging to the Ajabgarh Formation of the Delhi Group. The **Lith units** of this area have been subjected to acute folding, faulting and shearing.

There are three major lithounit associations namely, phyllite, quartzite and interbedded quartzite-phyllite.

Interbedded quartzite-phyllite: The rocks of this unit occur at the lower contours forming generally the outer fringes of the folds.

Quartzite: Overlying the interbedded quartzite-phyllite sequence, the quartzite generally forms a crest of the ridges. The quartzite is generally light to dark grey in colour, fine to medium grained and well-bedded to massive.

Phyllites: These occupy the core of the main folded sequence and is well exposed in the area to the south of Piraka and along the eastern slope of the western limb of the major macro-syncline from Khori to south of Basai.

Quartz veins: Quartz veins of varying sizes are seen intruding the phyllites and quartzites.

Brecciated rock: The Brecciated zone of > 60 m. length in northern part is generally found to occur parallel to the old workings and shears. The zone is gossanised and limonitised.

MINERALISATION: The evidence of mineralisation in the area includes presence of gossans, old workings, limonite, brecciated rocks and nine dumps. Primary sulphides in the form of galena associated with vein quartz ore noted at a few places.

More than seven small old workings for lead and mine dumps are seen along the western flank of the Thekri-Andhwari ridge. These old workings are spread over a strike length of 1.5 km. following a sheared contact of phyllites and quartzites of the Ajabgarh-Formation.

Steiger Geoscience Technical team collected several samples at different sites in the block and analyzed using handheld XRF (Elvax Prospector 3) Analysis of Spot and in situ Samples of the Jotri-Pipal Base-metal Block and results of Pb, Zn, Cu, Ni, Fe & Ag are shown in the table below

Name	Easting	Northing	Pb (%)	Zn (%)	Cu (ppm)	Ni (ppm)	Fe (%)	Ag (ppm)	Total Base Metal (%)
JP-01	697288.335	3059301.692	0.33	0.01	44		6.34	0.16	0.35
JP-02	697288.335	3059301.692	2.72	0.13			27.72		2.85
JP-03	697314.856	3059303.562	0.42	0.04		198	9.80	1	0.49
JP-05	697202.685	3058696.575	1.25	0.14	105	311	22.37	0.3	1.42
JP-04	697325.642	3059362.813	0.97	0.02		181	6.67		1.01
JP-08	697152.896	3058442.839	0.35	0.03			41.29	0.2	0.38
JP-06	697204.517	3058705.361	7.52	0.80	248		45.05	1	8.35
JP-07	697204.517	3058705.361	10.05	0.31			41.46	9	10.36

Fig 1 shows 1:50,000 geology map (GSI) and Google Image with sample locations. 8 samples collected at different sites.

Key elements including Pb, Zn, Cu, Ni, Fe, and Ag were analyzed using an ElvaX ProSpector 3 handheld XRF analyzer. This device was utilized for both spot and in-situ measurements to determine the elemental

composition of the block.

Primary Findings: Analysis revealed total metal content ranging from 0.3% to 10%. Dominant Mineralization: Lead (Pb) was identified as the majority mineral component within the samples

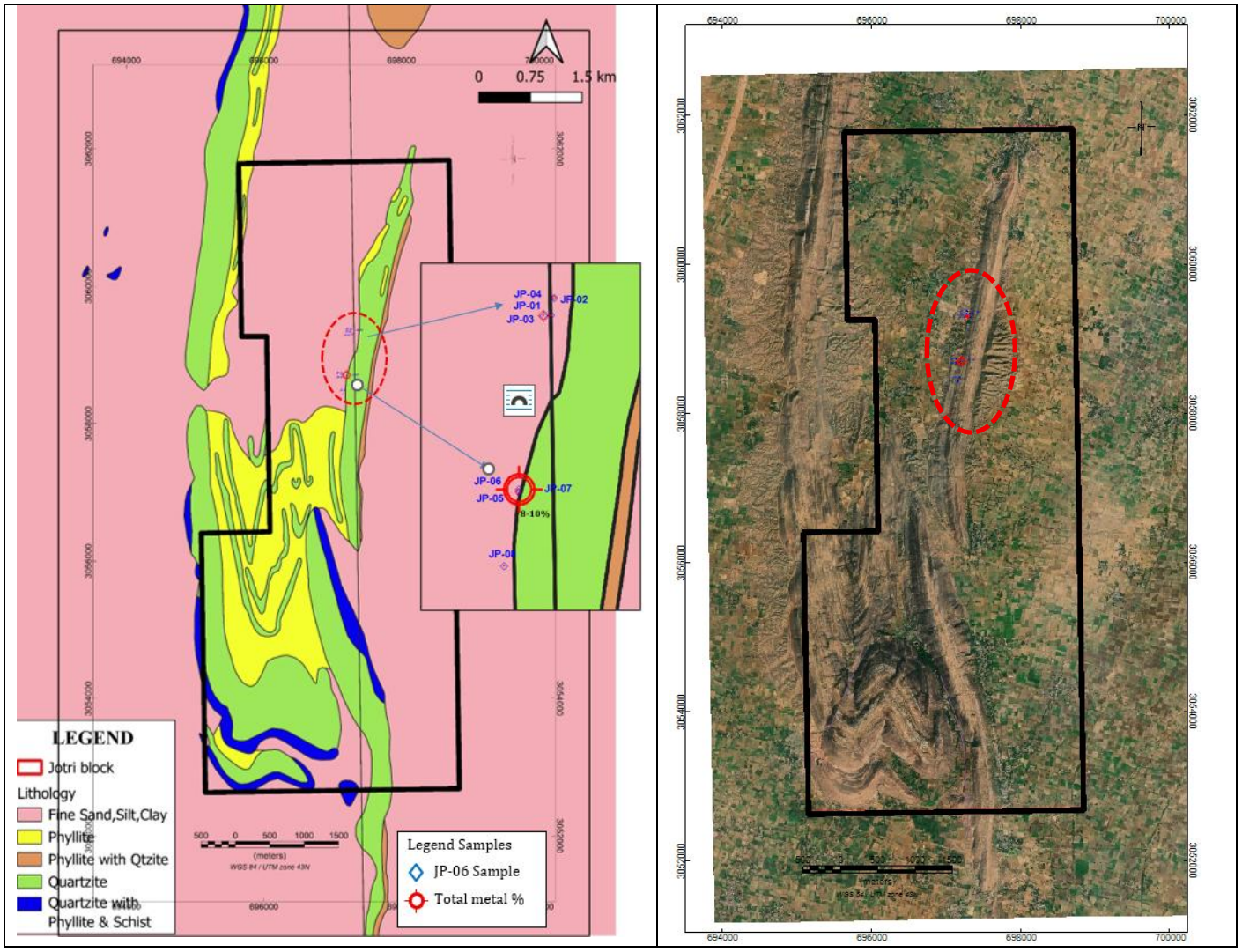
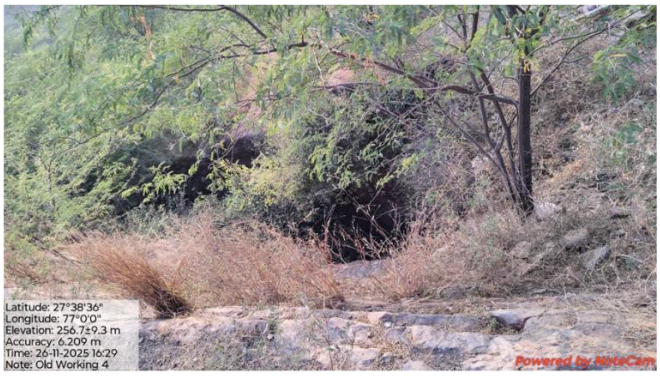
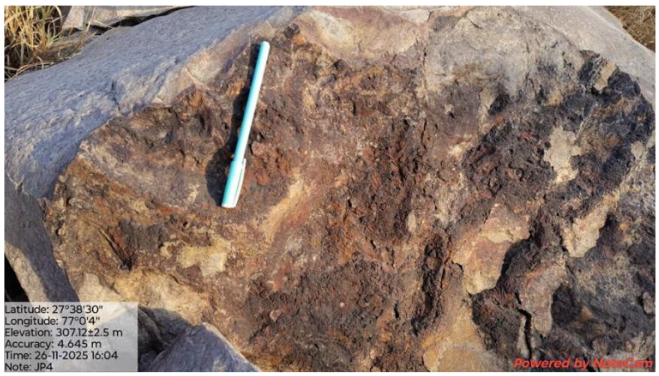


Fig 1: Field visit - Sample locations on Geology map and Google map

Field Photos Site Visit 26 Nov 2025 & 20 Dec 2025





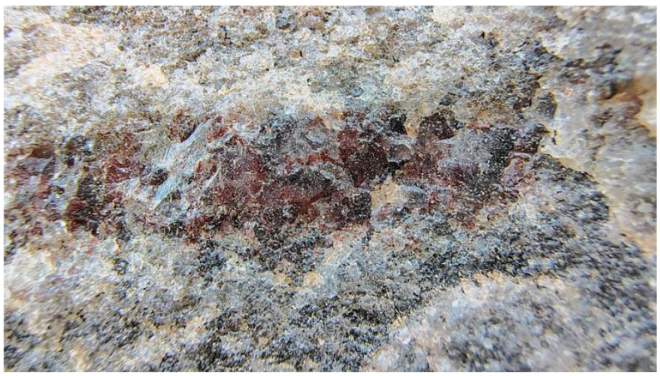


Fig 2: Site visit - Field Photographs

Elvatech

Date: 12/20/2025, 11:21 AM
Sample name: jpp3

Alloy grade isn't identified.

Fe:	63431.952	±	441.283 ppm
Ti:	24927.031	±	1537.131 ppm
K:	21524.705	±	5005.770 ppm
Pb:	3326.998	±	53.245 ppm
Zr:	634.823	±	8.967 ppm
Mn:	499.352	±	200.821 ppm
V:	415.409	±	705.874 ppm
Rb:	324.764	±	8.842 ppm
Ba:	253.664	±	29.955 ppm
Cr:	157.793	±	348.632 ppm
Zn:	97.249	±	26.179 ppm
Sr:	88.609	±	6.311 ppm
Ce:	75.901	±	51.512 ppm
Eu:	62.782	±	23.646 ppm
Th:	46.475	±	17.055 ppm
Ga:	46.238	±	23.443 ppm
Cu:	44.005	±	37.006 ppm
Nb:	14.912	±	4.265 ppm
Y:	13.221	±	9.314 ppm
Sn:	7.138	±	0.532 ppm
Mo:	3.757	±	0.489 ppm
Ag:	0.164	±	0.301 ppm

Elvatech

Date: 12/21/2025, 11:13 PM
Sample name: JPP1 sample

Alloy grade isn't identified.

Fe:	277220.010	±	810.292 ppm
Pb:	27199.188	±	180.952 ppm
K:	11994.413	±	3401.552 ppm
Ti:	6369.178	±	1108.748 ppm
Ca:	1698.091	±	1930.243 ppm
Zn:	1319.580	±	60.370 ppm
Zr:	688.435	±	12.626 ppm
Ba:	583.517	±	43.770 ppm
As:	337.207	±	141.826 ppm
Mn:	313.719	±	171.348 ppm
Rb:	172.078	±	13.039 ppm
Eu:	166.016	±	38.097 ppm
Ce:	139.953	±	75.465 ppm
Ga:	117.931	±	58.055 ppm
Sr:	88.136	±	11.377 ppm
Y:	43.114	±	25.624 ppm
Nb:	42.265	±	7.799 ppm
Sn:	11.124	±	0.719 ppm
Sb:	4.928	±	0.874 ppm
Mo:	4.874	±	0.745 ppm

Elvatech

Date: 12/20/2025, 11:50 AM
Sample name: jpp-ow2

Alloy grade isn't identified.

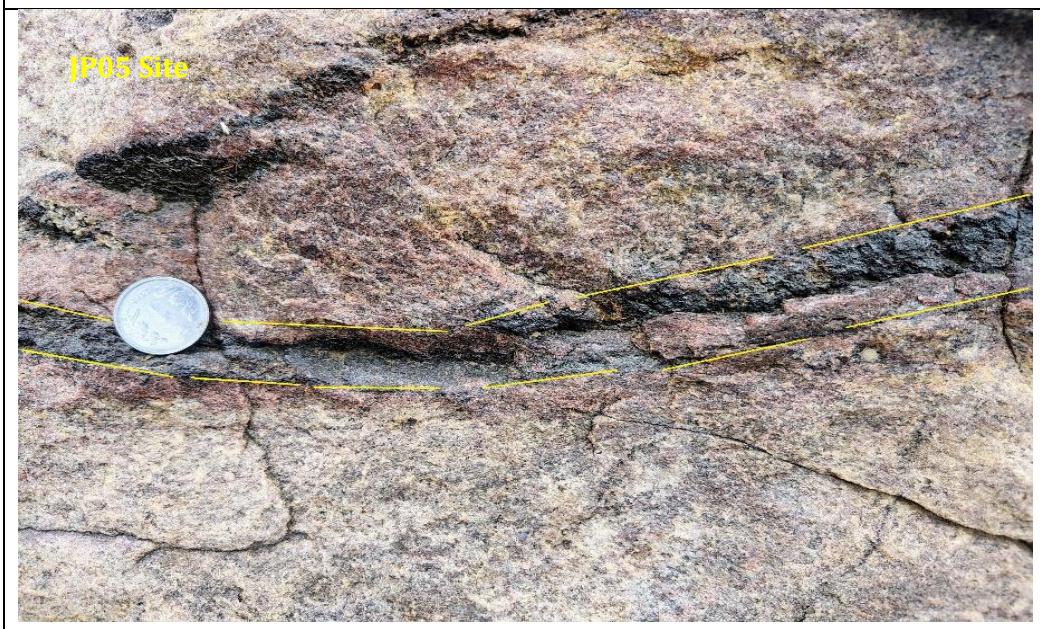
Fe:	98016.051	±	587.025 ppm
Pb:	4240.142	±	75.152 ppm
K:	3548.512	±	5649.609 ppm
Zn:	445.749	±	38.968 ppm
Pr:	250.210	±	124.014 ppm
Ni:	197.965	±	64.942 ppm
La:	70.063	±	49.119 ppm
Sb:	24.779	±	0.939 ppm
Zr:	8.064	±	3.613 ppm
Sn:	7.396	±	0.686 ppm
Mo:	5.104	±	0.351 ppm
Sr:	3.217	±	5.895 ppm
Ag:	1.061	±	0.415 ppm

Elvatech

Date: 12/20/2025, 2:28 PM
Sample name: ow1

90% match to 25 MoCr 4

Fe:	66714.205	±	503.878 ppm
Pb:	9678.971	±	103.347 ppm
Mn:	1653.810	±	221.633 ppm
Zn:	223.025	±	32.970 ppm
Ni:	180.615	±	58.957 ppm
Ga:	104.565	±	34.563 ppm
Ce:	100.919	±	60.051 ppm
Eu:	86.515	±	26.742 ppm
Zr:	43.501	±	4.492 ppm
Rb:	25.294	±	6.778 ppm
Sr:	21.928	±	6.493 ppm
Sn:	7.386	±	0.630 ppm
Mo:	4.563	±	0.352 ppm
Nb:	3.814	±	3.869 ppm



Elvatech

Date: 12/20/2025, 1:34 PM
Sample name: ow-7-photo result coin wit

Alloy grade isn't identified.

Fe:	223711.648	±	855.797 ppm
Pb:	12454.344	±	160.436 ppm
Ti:	2670.117	±	1422.566 ppm
Ca:	2548.513	±	2640.365 ppm
Zn:	1359.327	±	68.382 ppm
Mn:	759.460	±	229.759 ppm
As:	730.144	±	117.704 ppm
Ni:	311.350	±	101.724 ppm
Zr:	155.947	±	8.688 ppm
Ba:	106.566	±	48.351 ppm
Cu:	105.277	±	69.122 ppm
Sr:	27.399	±	10.603 ppm
Rb:	12.081	±	10.318 ppm
Sb:	10.248	±	1.166 ppm
Sn:	9.657	±	0.936 ppm
Mo:	4.233	±	0.596 ppm
Cd:	0.400	±	0.641 ppm
Ag:	0.322	±	0.556 ppm

Elvatech

Date: 12/21/2025, 11:45 PM
Sample name: n ow 7 small-sample result

Alloy grade isn't identified.

Fe:	450547.614	±	1072.783 ppm
Pb:	75238.244	±	802.852 ppm
As:	18216.349	±	487.111 ppm
Zn:	8004.691	±	222.047 ppm
K:	2878.777	±	3874.919 ppm
Mn:	580.368	±	311.849 ppm
Nd:	359.156	±	325.020 ppm
Ga:	282.253	±	173.820 ppm
Cu:	248.257	±	165.130 ppm
Sb:	127.456	±	2.931 ppm
Eu:	127.382	±	71.592 ppm
La:	113.070	±	94.604 ppm
Ba:	75.258	±	70.783 ppm
Sr:	39.455	±	31.149 ppm
Rb:	15.282	±	36.356 ppm
Sn:	9.637	±	1.499 ppm
Mo:	4.931	±	1.208 ppm
Ag:	0.910	±	0.996 ppm
Cd:	0.604	±	1.157 ppm

Fig 3: Field sample Photographs and analysis results of 8 samples

The mineralisation in this block is associated with vein quartz and controlled by the sub-vertical shear zone. Systematic mapping with advance Geophysics support may result in identifying concealed mineralisation in this area.

1.0 BLOCK SUMMARY

1.1 Physiography

The proposed block area is located in the Jotri-Peepal, Deeg district in the NE part of Rajasthan. The area is characterized by long NNE-SSW trending hill ranges with a broad valley in between in the central part. The terrain surrounding these ranges is almost flat and covered by alluvium and blown sand. The hills rise to a height of 100 to 130 meters above the surrounding plain which is at about average 200 meter above the M.S.L. Background Geology (Regional Geology & Geology of the Block).

The geological details of the area and adjoining parts were described by Heron (1917) who classified the rocks of Delhi System into Raialo Series, Alwar Series and Ajabgarh Series. Banerjee (1980) suggested the formational classification of Raialo group, Alwar group and Ajabgarh group. The exposed rocks in the study area belong the Delhi Supergroup, part of North Delhi Fold Belt (NDFB) and are distributed in three main sedimentary sub-basins. These sub-basins are namely- the Bayana-Lalsot, the Alwar and the Khetri-Ajmer-Pindwara sub-basins from east to west (Singh, 1988). The stratigraphy of the Alwar sub-basin for the Delhi Super Group is as given below (Chakrabarti et al. 2004).

Ajabgarh Group	Arauli Formation
	Bhakrol Formation
	Thana-Ghazi Formation
	Seriska Formation
	Kushalgarh Formation
	----------Local unconformity----------
Alwar Group	Papgarh Formation
	Kankwarhi Formation
	Rajgarh Formation
	----------Local unconformity----------
Raialo Group	Tehla Formation
	Serrate Quartzite Formation
	Dogeta Formation
	----------Unconformity----------

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

The lithology of the area represented by an alternating sequence of quartzite and phyllite belonging to the Ajabgarh Formation of the Delhi Group. These, at places, are intruded by post-Delhi pegmatite and quartz veins. The general geological succession established in this area based on the sedimentary

features and regional structures is as follows: -

Sub-recent to recent			Blown sand & alluvium
Post-Delhi intrusive			Pegmatites & quartz vein
Delhi Group	Ajabgarh	Formation	Phyllite Quartzite Interbedded quartzite-Phyllite

However, for the convenience of description in the report the above units have broadly been grouped into three major litho-unit associations namely, phyllite, quartzite and interbedded quartzite-phyllite:

The litho units of this area have been subjected to acute folding, faulting and shearing and two sets of fold system have been recognized. The earlier generation folds include the formation of two major, synclines and one major anticline on N 5°-10°E axial plane with the plunge varying from 10°-35°. The later generation folds are represented by open anticlines and synclines where axes plunge towards west to WNW at an angle between 45°-70°.

1.3 Mineral Potentiality based on geology, geophysics, ground geochemistry etc.

Geological Background

The proposed block lies within Toposheet Nos. 54A04 and 54E12, approximately 34 km east of Alwar. The area shows promising surface indications of mineralization, evidenced by more than seven old workings first documented by K.L. Bhola (1935) and later by B.D. Pathak (1948, 1972).

Regional Investigations

Mineral exploration in the Bharatpur and Alwar districts has a long history. Early studies by Jain (1965), Bakliwal et al. (1976), and Negi (1977, 1978) reported mineralization in the Jotri–Golpahari–Pirakha area, located east of Toposheet 54A/14. Later, Datta & Ravindra (1980) provided a comprehensive account of the geology and mineral resources of Alwar district, consolidating earlier findings and highlighting its potential for base metal exploration.

Local Geology

The lithology of the block is represented by an alternating sequence of quartzite and phyllite belonging to the Ajabgarh Formation of the Delhi Group. Along the western slope of the Thekri–Andhwari ridge, near Jotri village, the quartzite–phyllite contact is sheared. This discontinuous shear zone hosts quartz veins containing veinlets of galena, which are exposed in several old workings.

Mineralization Potential

- The block lies within a favorable geological province known to host base metal mineralization, particularly in Proterozoic sedimentary basins and volcanic–sedimentary sequences.
- The area, marked by multiple old workings, was systematically explored by DMGR during field sessions from 2007–08 to 2016–17. Chemical analysis of 21 spot samples revealed lead (Pb) concentrations in 15 samples, ranging from 0.23% to 9.5%. Silver was detected in all samples, with values between 0.95 ppm and 11.25 ppm
- Current site visit and Previous surface sampling has yielded encouraging values of lead and zinc, further supporting the potential of this area for systematic base metal and associated minerals exploration warrants systematic study with advanced technology to look for any potential concealed mineralisation.

Fig 4: Geology Map 1:50,000 (left) & 40 Ha block explored @1:1000 in 70's (right)

GSI NAGPM airborne data – Alwar Neem Ka Thana FSP 2016-18 (Magnetic and Radiometric 500m spaced lines) study indicates broad structures and anomalous zones (Fig 5).

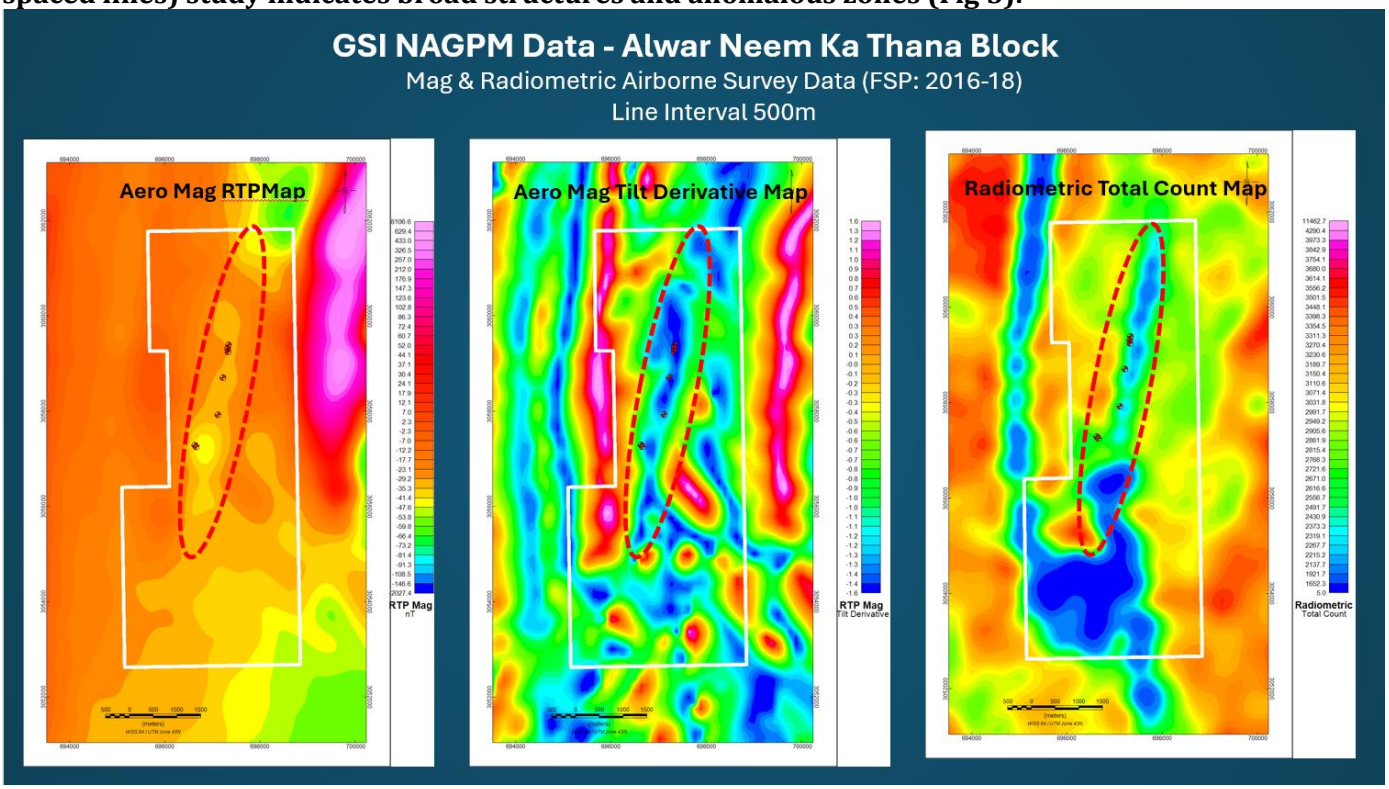


Fig 5: NAGPM Aero Mag (RTP & TDR) & Radiometric (TC) enhanced Maps

- NAGPM airborne survey data is acquired at 500m line intervals. Close grid (50 / 100m) Magnetic survey and detailed geological mapping may help in delineating litho-structural information and identifying anomalous zones for further ground follow up with advanced geophysical surveys.

1.4 Scope for Proposed Exploration and Objectives

- To assess the mineralization of base metals and other associated minerals in the proposed area under G4 level systematic exploration and map the entire block at 1:12,500 scale (or other appropriate scale) by employing drone technology and wide spaced geophysical surveys under Phase 1.

- If Phase 1 outcome has some interesting anomalies indicating strike and dip continuity of mineralisation, a proposal will be put up to the TCC, NMET with the findings for seamlessly upgrading to detailed Phase 2 of Mineral Exploration including core drilling of 3 holes of 300m each.

Justification:

i. The block lies within a favorable geological province known to host base metal mineralization, particularly in Proterozoic sedimentary basins and volcanic–sedimentary sequences.

ii. The **presence** of 1.5 km long old workings, mine dumps and Gossan zones

iii. NAGPM (NGDR) airborne data (Magnetic Tilt derivative map, Radiometric Total Count derivative map) indicating regional structural trends extending beyond old workings.

iv. Site visit twice by Steiger Geoscience Team and consultation with experts indicating the mineralisation in this block is associated with vein quartz and controlled by the sub-vertical shear zone.

v. Systematic mapping with advance Geophysics support may result in identifying concealed mineralisation in this area.

1.5 Recommendation of G4 Stage Mineral Exploration Report

No G4 exploration work report available in the block. Only GSI Geological Reports over small part of the block (40 Ha) of 1971-76 are available.

1.6 Objectives

i. Geological Mapping & sampling @ 1:12,500 scale over entire Block and other appropriate scale over shortened area.

ii. Drone Topography and Drone Magnetic Survey to support geological interpretation of Litho-structural mapping and anomalous zones identification

iii. Wide spaced Ground Geophysics (SP, IP & Gravity) to generate Targets for drill testing

iv. With the approval of TCC proceed to Phase 2 Exploration involving detailed ground Geophysics (SP, IP & Gravity)

v. Core Drilling of 3 holes (900m), Sampling, Lab analysis

vi. Report writing on the basis of outcome of field investigation and analysis results As per MEMC rules and Amendments.

2.0 PREVIOUS WORK

Hacket (1877) was the first geologist who carried out reconnaissance work in the north-eastern part of Rajasthan including the area under discussion. Heron (1917) has published the work of results of systematic mapping carried out by him between 1911-1914 in this region and revised the classification given by C.A. Hacket and geological mapping of area to the west of the present area was carried out by M.A. Siddique (1968).

The lead occurrence in Jotri was first reported by K.L. Bhola (1935) and subsequently by B.D. Pathak (1948, 1972). and R.S. Jain (1965) carried out reconnaissance survey of this occurrence in connection with the study of possible occurrences of copper in Bharatpur district.

Following work has been conducted in the said area and adjoining area-

a. A Report on Systematic Geological Mapping in Jalalpur-Jotri-Gangora Area, Alwar and Bharatpur Districts, Rajasthan During FS 1971-72 by GSI Jaipur

b. Department of Mines and Geology, Rajasthan During FS 2016-17

a. A Report on Systematic Geological Mapping in Jalalpur-Jotri-Gangora Area, Alwar and Bharatpur Districts, Rajasthan During FS 1971-72 by GSI Jaipur

This report deals with the systematic geological mapping carried out over an area of about 410 sq.km. on parts of toposheet No.54A/14 and 54E/2 (R.F. 1:63,360) in Jalalpur-Jotri-Gangora-area, Alwar and Bharatpur, districts, Rajasthan, during the field season l971-72. The area comprises largely of pelitic and psammitic metasediments represented by an interbedded sequence of phyllites and quartzites belonging to the Ajabgarh Formation of Delhi group and metamorphites and post Delhi pegmatites and quartz veins.

CHEMICAL ANALYSIS OF 44 CHIP SAMPLES

P.R.No.	Ref. No.	Cu ppm	Pb ppm	Zn ppm	Co	Ni
1274-1	GP/R1/1	L-50	L-50	100	L-50	L-50
2	GP/R1/2	"	"	100	"	"
3	GP/R1/3	600	"	100	"	"
4	GP/R1/4	L-50	"	200	"	"
5	GP/R1/5	"	"	100	"	ii
6	GP/R1/6	"	50	600	"	"
7	GP/R1/7	L-50	L-50	100		"
8	GP/R1/8	"	"	100	"	"
9	GP/R1/9	"	50	100	"	"
10	GP/R1/10	"	300	100		"
11	GP/R1/11	50	M-1000	100	"	"
12	GP/R2/1	50	L-50	50.	"	"
13	GP/R2/2	L-50	"	50		"
14	GP/R2/3	"	"	50		"

P.R.No.	Ref. No.	Cu ppm	Pb ppm	Zn ppm	Co	Ni

L: Less than & M: More than

15	GP/R2/4	100		50		"
16	GP/R2/5	L-50	"	50	"	"
17	GP/R2/6	"	50	50		"
18	GP/R2/7	100	L-50	100		"
19	GP/R2/8	L-50	50	50		"
20	GP/R2/9	"	50	100		"
21	GP/R2/10	"	800	50	"	"
22	GP/R2/11	"	400	300	"	"
23	GP/R3/1	"	50	50		"
24	GP/R3/2	"	50	50		"
25	GP/R3/3	"	150	150	"	"
26	GP/R3/4	"	100	50	"	"
27	GP/R3/5	"	L-50	150	"	"
28	GP/R3/6	100	"	100		"
29	GP/R3/7	L-50	"	200	"	"
30	GP/R3/8	"	"	50		"
31	GP/R3/9	"	50	100		"
32	GP/R3/10	50	50	100		"
33	GP/R3/11	L-50	100	600	"	"
34	GP/R4/1	100	L-50	50	"	"
35	GP/R4/2	100		50	"	"
36	GP/R4/3	L-50	"	50	"	"
37	GP/R4/4	100	250	100	"	"
38	GP/R4/5	50	L-50	150	"	"
39	GP/R4/6	L-50	"	50	"	"
40	GP/R4/7	"	150	100	"	"
41	GP/R4/8	"	L-50	L-50	"	"
A2	GP/R4/9	"		400	"	"
43	GP/R4/10	"	300	50		"
44	GP/R4/11	"	L-50	L-50		"

The presence of old workings, mine dumps and favorable geological structure in Jotri and related Golpahari area warranted detailed investigation of this area by plane table mapping (1:1000 scale) and systematic geochemical sampling. Geophysical survey was also warranted to know the nature and behavior of the shear zone at depth in Jotri area and to find out whether the fault zone, along which Golpahari is located, extends further north and is mineralized.

b. Exploration by Department of Mines and Geology, Rajasthan During FS 2016-17

During 2016-17, investigation for locating base metal and noble metal was taken up n/v Jotri Peepal, Piruka Teski in Pahari Tehsil, Bharatpur district, Rajasthan. An area of 50.0 sq.km. was mapped on 1:50000 scale, 15.0 sq.km. on 1:10,000 scale and 2.0 sq.km. on 1:4,000 scale. Lead mineralization is confined to the western intercalated quartzite and phyllite contact in the Khola Piruka in old pit measuring 40 m x 3 m x 2 m area and in the Gol Pahari area mineralization is exposed to the surface of quartzite in old pits in the form of disseminated galena Specks.

3.0 BLOCK DESCRIPTION

The block is located near village Jotri-Peepal in Deeg district. The area falls in SOI Toposheet-54A/14 & 54E/2. The area of the block is 30 Sq Km. Geographic location of the block is as under:

Block corner points	Latitude	Longitude
A	27° 39' 57.71" N	76° 59' 00.37" E
B	27° 39' 57.80" N	77° 00' 51.92" E
C	27° 35' 00.73" N	77° 00' 51.93" E
D	27° 35' 00.78" N	76° 58' 37.34" E
E	27° 37' 03.44" N	76° 58' 37.27" E
F	27° 37' 03.53" N	76° 59' 13.75" E
G	27° 38' 35.86" N	76° 59' 13.70" E
H	27° 38' 36.00" N	76° 59' 00.37" E

4.0 PLANNED METHODOLOGY

In line with the stated objectives, the following exploration scheme has been formulated in compliance with MEMC Rules to identify mineralization within the block. The activities to be undertaken are detailed below. -

4.1 Geological Mapping Plan

Phase 1:

- Conduct a drone-based detailed LiDAR topographic survey at 1:4,000 scale + Drone Magnetic Survey @100m spacing.
- Undertake systematic geological mapping at 1:12,500 scale (or other appropriate scale) across the entire block.
- Fill gaps in existing information and generate data on surface structures, geological set-up, and mineralization indicators.

Phase 2:

Carry out detailed geological mapping at 1:2,000 **/4,000** scale over selected areas delineated through Phase 1 integrated studies (Geology, Geochemistry, and Geophysics).

4.2 Geochemical Survey Plan (Surface Samples – BRS, Channel Samples)

- **Surface Sampling:**
  - Collect samples during geological mapping from outcrops/exposures of base metals across an area of 30 sq. km.
  - Where systematic grid sampling is not feasible, adopt random sampling from available exposures.
  - Additional samples will be taken from old workings and slag deposits.
- **Sample Volume:**
  - Approximately 750 surface samples will be collected across the block.
  - Based on lithological variations and mineralization presence, 100 representative samples will undergo chemical analysis to characterize the block.
- **Pitting Program:**
  - Excavate 10 pits of dimensions 2m × 2m × 2m in areas near old workings or suspected mineralization zones.
  - Purpose: To obtain subsurface samples and validate surface geochemical anomalies.

4.3 Geophysical Survey Plan-

Geological and geochemical surveys will delineate target areas, which will subsequently be investigated using a suite of geophysical methods. The program will be executed in phases, as outlined below:

4.3.1 Phase I: Reconnaissance Geophysical Survey

Objective: To establish a broad understanding of magnetic behavior, shallow sub-surface structures, and lithological variations across the block under two parts.

Part I:

- Drone magnetic survey across the entire block.
- Conducted in parallel with geological mapping (1:12,500 scale) and geochemical surveys.
- Enhances geological mapping and geochemical sampling.
- Identifies preliminary target zones for detailed ground surveys

Part II:

- Ground surveys (SP, IP Resistivity, and Gravity) focused on target areas identified through integrated interpretation of geological, geochemical, and drone magnetic data.
- Line spacing: 400m.
- Purpose: Generate sub-surface lithological profiles, define structural controls, and delineate potential mineralization host zones.
- Outcome: Identification of lateral and vertical extensions of mineralization trails observed at surface.

4.3.2 Phase II: Detailed Geophysical Survey

Objective: To delineate promising prospect zones for exploratory drilling.

- Close-Grid Surveys:
- Line spacing: 200m.
- Methods: Ground Magnetic Survey, Gravity Survey, and Deep IP High-Resolution Survey.
- Outcome: Identification of high-potential locations for exploration core drilling.

4.4. Core Drilling, Logging, and Sampling Plan

A total of **900 m of core drilling** is proposed, distributed across **three boreholes** strategically located to cover the block area.

- Each borehole will be drilled to a maximum depth of 300 m.
- Final borehole locations and depths will be confirmed after reviewing results from geological mapping, geochemical surveys, and geophysical investigations.

4.4.1 Systematic geological core logging will be undertaken for each borehole.

- Detailed logging will capture:
  - Lithological and physical characteristics (color, grain size, texture, banding).
  - Core recovery and weathered zones.
  - Mineralogical composition.
  - Micro-structural and structural features.
  - Lithological variations and stratigraphic details.
- Purpose: To establish a comprehensive lithological and structural framework of the subsurface formations.

4.4.2 Core Sampling

- **Primary Sampling:**
  - Mineralized sections of the drill core (base metals and associated mineralization) will be sampled as primary material.
  - Drill core will be split into **two equal halves**:
  - One half prepared and analyzed as the **primary sample**.
  - The other half retained as a **duplicate archive**.
- **Secondary Uses of Duplicate Core:**
  - Specific gravity determination.
  - Petrographic and minerographic studies.
  - Long-term preservation for future reference and validation.

4.5. Laboratory Studies

4.5.1 **Chemical Analysis of Surface Samples** (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples): A total 750 nos of samples shall be collected.

- 100 primary samples & 10 check samples (10%) will be analyzed for Base metals and Associated Mineralization and out of these 05 samples will be analyzed for Whole elemental analysis.

4.5.2 **Chemical Analysis of core drilling samples**: Core drill samples will be analyzed for Base metals and Associated Mineralization:

- 100 nos. (on 1 m interval as per lithological variations, mineralization presence) of primary and 10 check samples (10%) will be analyzed for Base metals and Associated Mineralization and out of these 05 samples will be analyzed for Whole

elemental analysis.

- 25 nos. of composite samples would be prepared from the mineralized zones of primary drill core samples of each borehole by mixing the primary samples in length proportion.

4.5.3 **Petrological Studies**- Thin and polished section studies on drill cores samples would be done to ascertain the petrographic characteristics. These samples would be drawn from ore zones and host rocks. A provision of 5 specimens for petrographic in the block.

4.5.4 **Specific Gravity Determination**: To derive the tonnage factors, 05 nos. of samples for mineralized zones are proposed to be subjected for specific gravity determination. The samples are to be drawn from ore zones/ mineralized zones.

5.0 NATURE QUANTUM AND TARGET

Nature and Quantum of work proposed:

PHASE 1 Exploration over 30 sq km (G4 Stage)

S. No	Description of Work	Unit	Proposed Quantum of Work
A	**Geological Work and Surveying**		
i)	**Geological Mapping on 1:12,500 Scale for 30 sq. km. or other appropriate scale over potential area**	Sq.km.	30
ii)	**Drone LiDAR Topographic survey & Drone Magnetic survey**	Sq km.	30
iii)	**Surface / Out crop/Core sampling/Pitting (Primary)**	Nos.	275
B	**Pitting/Trenching**		
i)	Pitting (2m*2m*2m)	Cum	80
C	**Geophysical Survey**		
	Drone Magnetic Survey	L.km.	500
	Gravity Survey	Stations	400
	S.P. Survey	L.km.	20
	I. P. Survey	L.km.	20
D	**Laboratory Studies**		
i)	**Chemical Analysis of surface samples:** XRF (Major Oxides + traces - 24 elements) Testing of surface rock / soil samples (Primary + 10% Check samples)	nos	55
ii)	**Chemical Analysis of surface Samples:** ICP-MS analysis for base metal and other associated mineralisation. (Primary + 10% Check samples)	nos	110
iii)	**Fire Assay for Precious Metals (Au & Ag):** Surface Samples (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples) (Primary + 10% Check samples)	nos	110
iv)	**Petrological Studies (Surface and BH Core Samples)**		
	i) Preparation of polished thin section	Nos.	25
	ii) Complete Petrography / Ore microscopic study / minera-graphic report	Nos.	25
	iii) EPMA study	Hrs	4

PHASE 2 Exploration over shortened potential area with approval from TCC, NMEDT

S. No	Description of Work	Unit	Proposed Quantum of Work
A	**Geophysical Survey**		
i)	Gravity Survey	Stations	400
ii)	S.P. Survey	L.km.	20
iii)	I. P. Survey	L.km.	20
B	**Exploratory Drilling**		
i)	Drilling up to 300m each borehole (Medium Hard Rock) for 03 Boreholes.	m	900
ii)	Drill Core Preservation (assuming 80% recovery)	m	720
C	**Geological Work - Core Sampling /Logging**		
	Drill Core Sampling	nos	385
	Drill Core Logging	m	900
	Survey: Demarcation of block boundary	noa	11
D	**Laboratory Studies**		
i)	**Chemical Analysis of Drill core samples:** XRF (Major Oxides + traces - 24 elements) Testing of surface rock / soil samples (Primary + 10% Check samples)	nos	55
ii)	**Chemical Analysis of Drill core Samples:** ICP-MS analysis for base metal and other associated mineralisation. (Primary + 10% Check samples)	nos	165
iii)	**Fire Assay for Precious Metals (Au & Ag)**: Surface Samples (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples) (Primary + 10% Check samples)	nos	165
iv)	**Petrological Studies (Surface and BH Core Samples)**		
	i) Preparation of polished thin section	Nos.	10
	ii) Complete Petrography / Ore microscopic study / minera-graphic report	Nos.	10
	iii) EPMA study	Hrs	5
v)	Specific Gravity	Nos.	10
E	**Report Preparation (Hard copies)**	Nos.	5
	Report Preparation (Soft copy)	Nos.	1

6.0 Exploratory Drilling

- Core drilling with 03 boreholes in depth range of approximately 300 m. is planned.
- Type of Drilling: Core drilling.
- Borehole size: The holes shall be drilled in NQ size.
- While drilling, wherever water table is encountered, depth of the water table should be recorded and to be mentioned in the driller logs.

- The core recovery in all the formation should be at least 80 to 85% except in fault zone, weathered zone, soil, sand and structurally disturbed area.
- **Borehole spacing (As per MEMC 2015)**

Type of deposit	Lenticular bodies of all dimensions including bodies occurring en echelon, silicified linear zones of composite veins. Lenses, pockets, stockworks; irregular shaped modest to small sized bodies
Sub Type	Iron and manganese ore bodies in lateritoid terrain, pockety bauxite and nickel-cobalt laterites, base metal sulphides of Cu-Pb-Zn Sb-Hg, pediform chromite, auriferous quartz reefs, PGM, graphite lenses, molybdenum, tin bodies, pyrite, skarn bodies of scheelite, wollastonite, fluorite etc., vermiculite, magnesite, insitu silimanie and kyanite lenses etc.
MEMC Rules Provision	Bore-hole spacing along strike may be kept 200-100m or closer interval

7.0 MANPOWER DEPLOYMENT

For Geological Mapping	
Area (Sq. Km)	30 Sq.km.
Field workdays	90+60 = 150
HQ workdays	30+30 = 60
Labour workdays	220+30 = 250
Sampler	40+30 = 70
For Survey	
Demarcation of block boundary	11 nos
Field workdays	10
Pitting	
Volume in Cum	80 (for 10 pits)
Geophysical Survey	
Field workdays	70+ 60 =130
HQ workdays	30+20 = 50
Core drilling	
No. of Boreholes	03
Average Drilling depth m (each borehole)	300
Meterage	900
Laboratory Studies	
Number of Primary samples + Check samples analysis (Sample count)	275(250+25) + 385 (350+35)= 660

8.0 BREAK UP OF EXPENDITURE

Cost Proposal for G4 stage Mineral exploration under NMEDT. Commodity: Base metals and Associated Mineralization Near Village- Jotri-Peepal, Tehsil- Pahadi & Seekri, District-Deeg, State-Rajasthan **Area of the Block -30 Sq Km; Nos. of Borehole - 03; Depth of each borehole- 300m (BGL); Completion Time - 15 Months; Review Month: After 3rd month, 6th month, 9th Month & 12th month**							
S. No.	**Item of Work**	**Unit**	**SoC Item - Sl No**	**Rates as per NMEDT new SoC dated 4/12/2025**	**Estimated Cost of the Proposal**		**Remarks**
				Rates as per SoC	**Qty.**	**Estimated Cost (INR)**	
A	**GEOLOGICAL WORK**						
1	**Mapping 1:12,500 for 30 Sq km and 1:4,000 for 10 Sq km**	Sq. km.	1.1	18,300	30	**5,49,000**	
i)	Geologist at HQ for related geological work	day	1.2.1a	10,500	30	**3,15,000**	
iii)	Geologist at field for related geological work (2 Geologist party for 45 days each)	day	1.2.1b	14,500	90	**13,05,000**	
iii)	2 labours/ party (As per rates of Central Labour Commissioner). 4 labour for 2 parties for 45 days	day	5.8	541	180	**97,380**	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher.
vi)	Charges for one Sampler (for Surface sampling)	day	1.2.1b	7,850	40	**3,14,000**	
v)	Labours for sampling work (4 Nos)	day	5.8	541	40	**21,640**	Amount will be reimbursed as per the notified rates by the Central Labour Commissioner or respective State Govt. whichever is higher
2	**PITTING** (2m*2m*2m) **10 pits proposed**	Per cum	2.1.3	4,125	80	**3,30,000**	10 pits
3	**SURVEY**: Demarcation of block boundary, fixation of borehole & determination of coordinates and Reduced Level (RL) of the borehole (including charges for labours deployed for the work)	Per Point of observation	1.3.2	24,000	11	**2,64,000**	Block boundary points- 8, Borehole-03
					Sub-Total A	**31,96,020**	

B	**DRONE TOPOGRAPHIC SURVEY**						
1	**DRONE LiDAR TOPOGRAPHIC SURVEY**	Sq. km.	7f	50,000	30	**15,00,000**	Drone Topographic survey - Ortho Mosaic Image, DEM, DSM, DTM, Drainage system, Land use - Land cover
				Sub-Total B		**15,00,000**	
C	**GEOPHYSICAL SURVEY PHASE - I**						
i)	Drone Magnetic Survey 30 sq km area @ 100m & infill at Target areas @ 50m line interval	Sq. km.	7a	6,000	500	**30,00,000**	30 Sq km area with 100m line interval and infill at 50m line interval + tie lines = 500 lkm
ii)	Gravity Survey @ 50m station interval	Stations	3.1a	3,800	400	**15,20,000**	20-line kilometers survey over anomalous zones @50m station interval
iii)	S.P. Survey @10m station intervals	L.km.	3.3a	62,140	20	**12,42,800**	20-line kilometers survey over anomalous zones @10m station interval
iv)	Induced polarisation (Dipole - Dipole) 10-20 line kilometers	L.km.	3.4a	69,950	20	**13,99,000**	20-line kilometers survey over anomalous zones @50m dipole spacing
v)	Geophysicist at HQ for related Geophysical work	day	3.18a	10,500	30	**3,15,000**	
vi)	Geophysicist at field for related Geophysical work	day	3.18b	14,500	70	**10,15,000**	
				Sub-Total C		**84,91,800**	
D	**LABORATORY STUDIES - Surface Samples**						
1	**Chemical Analysis of Surface Samples**						
i)	XRF (Major Oxides + traces - 24 elements) Testing of surface rock / soil samples	Nos	4.1.17a	4,200	50	**2,10,000**	
ii)	**Check samples 10%**	Nos	4.1.17a	4,200	5	**21,000**	
iii)	**Surface Samples** (Bed Rock/Channel/ Ptting Samples) ICP-MS for base metal and other associated mineralisation	Nos	4.1.16f	7,400	100	**7,40,000**	
iii)	Check samples 10%	Nos	4.1.16f	7,400	10	**74,000**	
iv)	**Surface Samples** (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples) Precious metals (Gold & Silver) analysis by Fire Assay	Nos	4.1.5a	5,000	100	**5,00,000**	
v)	Check Samples 10%	Nos	4.1.5a	5,000	10	**50,000**	

2	**Petrographic studies**						
i)	Preparation of polished thin section of rock	Nos	4.3.2	800	25	**20,000**	
ii)	Complete petrographic / Ore microscopic study / mineragraphic report	Nos	4.3.3	2,800	25	**70,000**	
iii)	EPMA studies	Hrs	4.4.1	10,500	4	**42,000**	
				Sub-Total D		**17,27,000**	
				Sub-Total A+B+C+D		**1,49,14,820**	**PHASE 1 Ends - Review for moving to next stage**
E	**GEOPHYSICAL SURVEY PHASE-II**						
i)	Gravity Survey @ 50m station interval	Stations	3.1a	3,800	400	**15,20,000**	20 line kilometers survey over anomalous zones @50m station interval
ii)	S.P. Survey @ 10m station intervals	L.km.	3.3a	62,140	20	**12,42,400**	20-line kilometers survey over anomalous zones @10m station interval
iii)	I. P. Survey	L.km.	3.4a	69,950	20	**13,99,000**	20 line kilometers survey over anomalous zones @50m dipole spacing
iv)	Geophysicist at HQ for related Geophysical work	day	3.18a	10,500	20	**2,10,000**	
v)	Geophysicist at field for related Geophysical work	day	3.18b	14,500	60	**8,70,000**	
				Sub-Total E		**52,41,400**	
F	**EXPLORATORY DRILLING**						
i)	Drilling in Hard rock (Outsource)	m	2.2.1.1d	10,000	900	**90,00,000**	03 Nos of BH up to 300 m depth each BH
ii)	Land/Crop Compensation	Nos.	5.6	30,000	3	**90,000**	
iii)	Construction of concrete Pillar	per BH	2.2.7	2,000	3	**6,000**	
iv)	Borehole plugging by cement	per borehole	2.2.8	10,000	3	**30,000**	
v)	Miscellaneous charges	lumpsum	2.2.9	20% of drilling cost or 15 Lakhs with maximum ceiling of 15 Lakhs.	1	**15,00,000**	
				Sub-Total F		**1,06,26,000**	

G	**GEOLOGICAL WORK - CORE SAMPLING /LOGGING**						
i)	Geologist at HQ for related geological work	day	1.2.1a	10,500	30	**3,15,000**	
ii)	Geologist at field for related drilling activity (1 Geologist party)	day	1.2.1b	14,500	60	**8,70,000**	
iii)	Charges for one Sampler (for Surface and Core sampling)	one sampler per day	1.2.1b	7,850	30	**2,35,500**	
iv)	Labours for sampling work (4 Nos)	day	5.8	541	30	**16,230**	
				Sub-Total G		**14,36,730**	
H	**LABORATORY STUDIES - Drill Core Samples**						
1	**Chemical Analysis of Drill Core Samples**						
i)	**Drill Core Samples** (Bed rock / Channel / Ptting Samples) - XRF (Major Oxides + traces - 24 elements) Testing	Nos	4.1.17a	4,200	50	**2,10,000**	
ii)	**Check samples 10%**	Nos	4.1.17a	4,200	5	**21,000**	
iii)	**Drill Core Samples** (Bed Rock/Channel/ Ptting Samples) ICP-MS for base metal and other associated mineralisation	Nos	4.1.16f	7,400	150	**11,10,000**	
iii)	Check samples 10%	Nos	4.1.16f	7,400	15	**1,11,000**	
iv)	**Drill Core Samples** (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples) Precious metals (Gold & Silver) analysis by Fire Assay	Nos	4.1.5a	5,000	150	**7,50,000**	
v)	Check Samples 10%	Nos	4.1.5a	5,000	15	**75,000**	

2	**Petrographic Studies - Drill Core Samples**						
i)	Preparation of polished thin section of rock	Nos	4.3.2	800	10	**8,000**	
ii)	Complete petrographic / ore	Nos	4.3.3	2,800	10	**28,000**	

	microscopic study/ mineragraphic report						
iii)	EPMA studies	Hrs	4.4.1	10,500	5	**52,500**	
iv)	Specific Gravity measurement	Nos	4.8.1	2,500	10	**25,000**	
				Sub-Total G		**23,90,500**	
	Total Estimated Cost without GST	**Sub-Total A+B+C+D+E+F+G+H =**				**3,46,09,850**	
I	**Preparation of Exploration Proposal**	no	5.1	2% of the Cost or Rs. 5 Lakhs whichever is lower	1	**5,00,000**	
J	**Geological Report Preparation**	no	5.2	Reconnaissance Survey/ Preliminary exploration/General exploration/Detailed copy exploration exceeding ₹150 lakh: 7.5 Lakhs.	1	**7,50,000**	Cost per 5 Hard copies of report along with soft copy.
K	**Drill Core Preservation**	per m.	X	1590	720	**11,44,800**	
L	**3D Ore body modelling using software**	no	5.4	as per actuals (as per current market conditions 300000 to model ore body using 03 boreholes in one section)	1	**3,00,000**	as applicable
	Total Estimated Cost without GST	**Sub-Total A+B+C+D+E+F+G+I+J+K+L=**			⇨	**3,73,04,650**	
	Provision for GST (18% of G)	**%**		**Total Estimated Cost with GST**	⇨	**67,14,837**	GST will be reimburse as per actual and as per notified prescribed rate
	GRAND TOTAL				⇨	**4,40,19,487**	
				or Say Rs. In Lakhs		***440.19***	

Note - If any part of the project is outsourced, the amount will be reimbursed as per the Paragraph 3 of NMEDT SoC and Item no. 6 of NMEDT SoC. In case of execution of the project by NEA on its own, a Certificate regarding non outsourcing of any component/project is required.

Time schedule

The proposed exploration programme envisages geological mapping, topographic survey, Scout drilling, laboratory studies and geological report preparation, All activities have been planned with overlapping and tentative timeline has been worked out for total 15 months for the proposed project completion.

S. No.	Activities	Months																	
		1	2	3	First Review	4	5	6	Review - Decision for moving to next stage of exploration	7	8	9	Review - Decision for moving to next stage of exploration	10	11	12	13	14	Final Review	15
1	Camp Mobilization & Setting																			
2	Geologist Work in HQ (1 Party) (Legacy data compilation & Interpretation - Planning surveys)																			
3	Geological mapping (1:12,500) & sampling																			
4	Drone Topographical Survey																			
5	Drone Magnetic Survey																			
6	Laboratory Studies (QA/QC & Analysis)																			
7	Data Integration & Target Generation																			
8	Geophysical Survey (SP, IP & Gravity- Phase 1)																			
9	Geological mapping (1:2,000) & sampling																			
10	Pitting																			
11	Geochemical data Analysis																			
12	Laboratory Studies (QAQC & Analysis)																			
13	Data Integration & Target Generation																			
14	Geophysical Survey (SP, IP & Gravity- Phase 2)																			
15	Data Integration & Drill Target Generation																			
16	Core Drilling																			
17	Geologist in field (1 Party)																			
18	Drill Core Logging, Sampling & Despatch to Lab (1 party)																			
19	Laboratory Studies (QAQC & Analysis)																			
20	Other Analysis & Geological Report preparation																			
21	Camp closing																			
22	Geological Report finalisation & Submission																			
Note	1. Commencement of project may be reckoned from the day the exploration acreage is available along with all statutory clearances.																			
Note	2. Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problem may be additional to above time line.																			

9.0 REFERENCES-

- A Report on Systematic Geological Mapping in Jalalpur-Jotri-Gangora Area, Alwar and Bharatpur Districts, Rajasthan During FS 1971-72 by GSI Jaipur
- Exploration by Department of Mines and Geology, Rajasthan During FS 2016-17
- Bhukosh (www.gsi.gov.in)
- NGDR Portal
- Bhuvan, GSI
- Survey of India Toposheet

LIST OF ANNEXURES

Annexure 1: BLOCK BOUNDARY CORNER POINTS COORDINATES

Annexure 2: NATURE QUANTUM AND TARGET

Annexure 3: MANPOWER DEPLOYMENT

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Plate 2: Map showing proposed block over SOI toposheets

Plate 3: Geological map showing geological setup in and around proposed block

Plate 4: Geological map showing small area exploration block within the proposed block

Plate 5: Location map of showing position of old workings

Plate 6: Map showing position of rock samples collected during Site visit

Plate 7 to Plate 9: Photograph of Sample, Location & XRF results

Plate 10: Field Photos Site Visit 26 Nov 2025 & 20 Dec 2025

Plate 11: GSI NAGPM – Magnetic & Radiometric airborne enhanced Maps

ANNEXURE 1

BLOCK BOUNDARY CORNER POINTS COORDINATES

The block is located near village Jotri-Peepal in Deeg district. The area falls in SOI Toposheet- 54A/14 & 54E/2. The area of the block is 30 Sq Km. Geographic location of the block is as under:

Block corner points	Latitude	Longitude
A	27° 39' 57.71" N	76° 59' 00.37" E
B	27° 39' 57.80" N	77° 00' 51.92" E
C	27° 35' 00.73" N	77° 00' 51.93" E
D	27° 35' 00.78" N	76° 58' 37.34" E
E	27° 37' 03.44" N	76° 58' 37.27" E
F	27° 37' 03.53" N	76° 59' 13.75" E
G	27° 38' 35.86" N	76° 59' 13.70" E
H	27° 38' 36.00" N	76° 59' 00.37" E

ANNEXURE 2

NATURE QUANTUM AND TARGET

Nature and Quantum of work proposed:

PHASE 1 Exploration over 30 sq km (G4 Stage)

S. No	Description of Work	Unit	Proposed Quantum of Work
A	**Geological Work and Surveying**		
i)	**Geological Mapping on 1:12,500 Scale for 30 sq. km. or other appropriate scale over potential area**	Sq.km.	30
ii)	**Drone LiDAR Topographic survey & Drone Magnetic survey**	Sq km.	30
iii)	**Surface / Out crop/Core sampling/Pitting (Primary)**	Nos.	275
B	**Pitting/Trenching**		
i)	Pitting (2m*2m*2m)	Cum	80
C	**Geophysical Survey**		
	Drone Magnetic Survey	L.km.	500
	Gravity Survey	Stations	400
	S.P. Survey	L.km.	20
	I. P. Survey	L.km.	20
D	**Laboratory Studies**		
i)	**Chemical Analysis of surface samples:** XRF (Major Oxides + traces - 24 elements) Testing of surface rock / soil samples (Primary + 10% Check samples)	nos	55
ii)	**Chemical Analysis of surface Samples:** ICP-MS analysis for base metal and other associated mineralisation. (Primary + 10% Check samples)	nos	110
iii)	**Fire Assay for Precious Metals (Au & Ag):** Surface Samples (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples) (Primary + 10% Check samples)	nos	110
iv)	**Petrological Studies (Surface and BH Core Samples)**		
	i) Preparation of polished thin section	Nos.	25
	ii) Complete Petrography / Ore microscopic study / minera-graphic report	Nos.	25
	iii) EPMA study	Hrs	4

ANNEXURE 2 contd.

PHASE 2 Exploration over shortened potential area with approval from TCC, NMEDT

S. No	Description of Work	Unit	Proposed Quantum of Work
A	**Geophysical Survey**		
i)	Gravity Survey	Stations	400
ii)	S.P. Survey	L.km.	20
iii)	I. P. Survey	L.km.	20
B	**Exploratory Drilling**		
i)	Drilling up to 300m each borehole (Medium Hard Rock) for 03 Boreholes.	m	900
ii)	Drill Core Preservation (assuming 80% recovery)	m	720
C	**Geological Work - Core Sampling /Logging**		
	Drill Core Sampling	nos	385
	Drill Core Logging	m	900
	Survey: Demarcation of block boundary	noa	11
D	**Laboratory Studies**		
i)	**Chemical Analysis of Drill core samples:** XRF (Major Oxides + traces - 24 elements) Testing of surface rock / soil samples (Primary + 10% Check samples)	nos	55
ii)	**Chemical Analysis of Drill core Samples:** ICP-MS analysis for base metal and other associated mineralisation. (Primary + 10% Check samples)	nos	165
iii)	**Fire Assay for Precious Metals (Au & Ag)**: Surface Samples (Bed Rock/Channel/Soil/ Stream Sediment/ Pitting Samples) (Primary + 10% Check samples)	nos	165
iv)	**Petrological Studies (Surface and BH Core Samples)**		
	i) Preparation of polished thin section	Nos.	10
	ii) Complete Petrography / Ore microscopic study / minera-graphic report	Nos.	10
	iii) EPMA study	Hrs	5
v)	Specific Gravity	Nos.	10
E	**Report Preparation (Hard copies)**	Nos.	5
	Report Preparation (Soft copy)	Nos.	1

ANNEXURE 3

MANPOWER DEPLOYMENT

Reconnaissance Survey (G4 Stage) exploration under NMEDT

Commodity: Base metals and Associated Mineralization, Location: Near Village- Jotri-Peepal, Tehsil- Pahadi & Seekri, District-Deeg, State-Rajasthan (INDIA)

For Geological Mapping	
Area (Sq. Km)	30 Sq.km.
Field workdays	90+60 = 150
HQ workdays	30+30 = 60
Labour workdays	220+30 = 250
Sampler	40+30 = 70
For Survey	
Demarcation of block boundary	11 nos
Field workdays	10
Pitting	
Volume in Cum	80 (for 10 pits)
Geophysical Survey	
Field workdays	70+ 60 =130
HQ workdays	30+20 = 50
Core drilling	
No. of Boreholes	03
Average Drilling depth m (each borehole)	300
Meterage	900
Laboratory Studies	
Number of Primary samples + Check samples analysis (Sample count)	275(250+25) + 385 (350+35)= 660

Plate 1

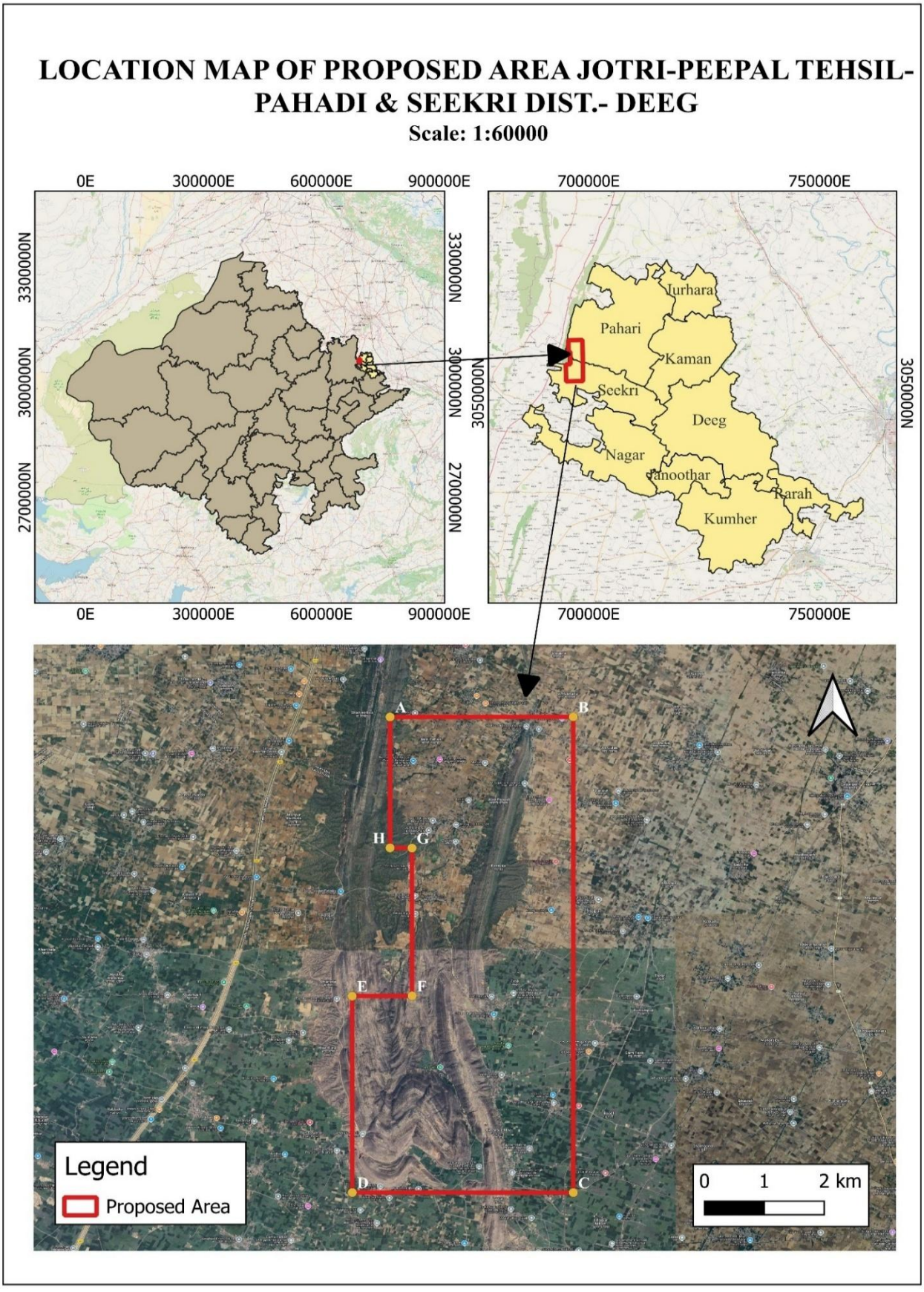

LOCATION MAP OF PROPOSED AREA JOTRI-PEEPAL TEHSIL-PAHADI & SEEKRI DIST.- DEEG
Scale: 1:60000
0E
300000E
600000E
900000E
3300000N
3000000N
2700000N
700000E
750000E
3050000N
Jurhara
Pahari
Kaman
Seekri
Deeg
Nagar
Janoothar
Karah
Kumher
A
B
C
D
E
F
G
H
Legend
Proposed Area
0
1
2 km

Plate 2

TOPOSHEET MAP OF PROPOSED AREA N/V JOTRI-PEEPAL, TEHSIL- PAHADI & SEEKRI DIST.- DEEG

Scale 1:40000

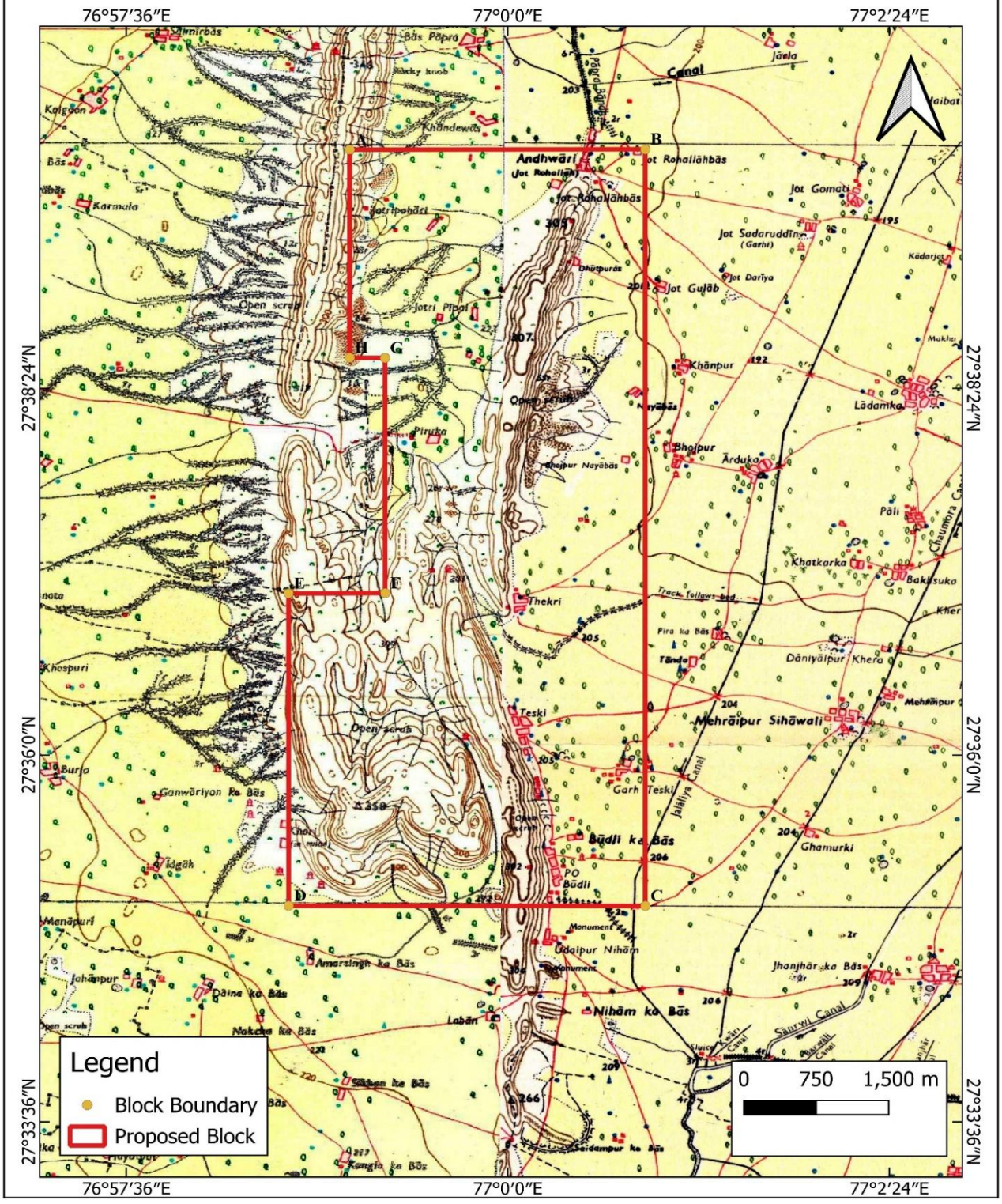


Plate 3

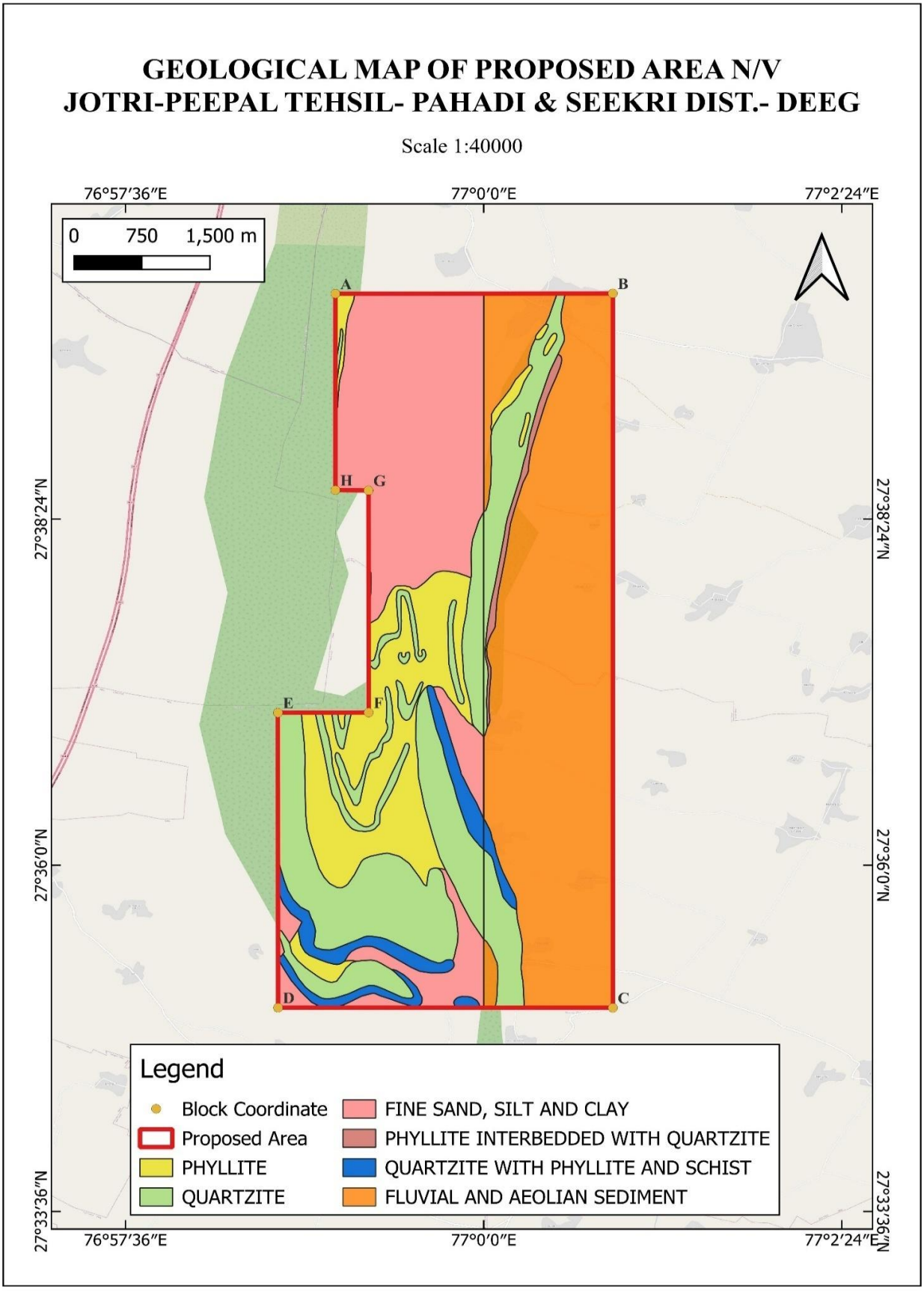

GEOLOGICAL MAP OF PROPOSED AREA N/V
JOTRI-PEEPAL TEHSIL- PAHADI & SEEKRI DIST.- DEEG
Scale 1:40000
76°57'36"E
77°0'0"E
77°2'24"E
27°38'24"N
27°36'0"N
27°33'36"N
0 750 1,500 m
A
B
C
D
E
F
G
H
Legend
Block Coordinate
Proposed Area
PHYLLITE
QUARTZITE
FINE SAND, SILT AND CLAY
PHYLLITE INTERBEDDED WITH QUARTZITE
QUARTZITE WITH PHYLLITE AND SCHIST
FLUVIAL AND AEOLIAN SEDIMENT

Plate 4

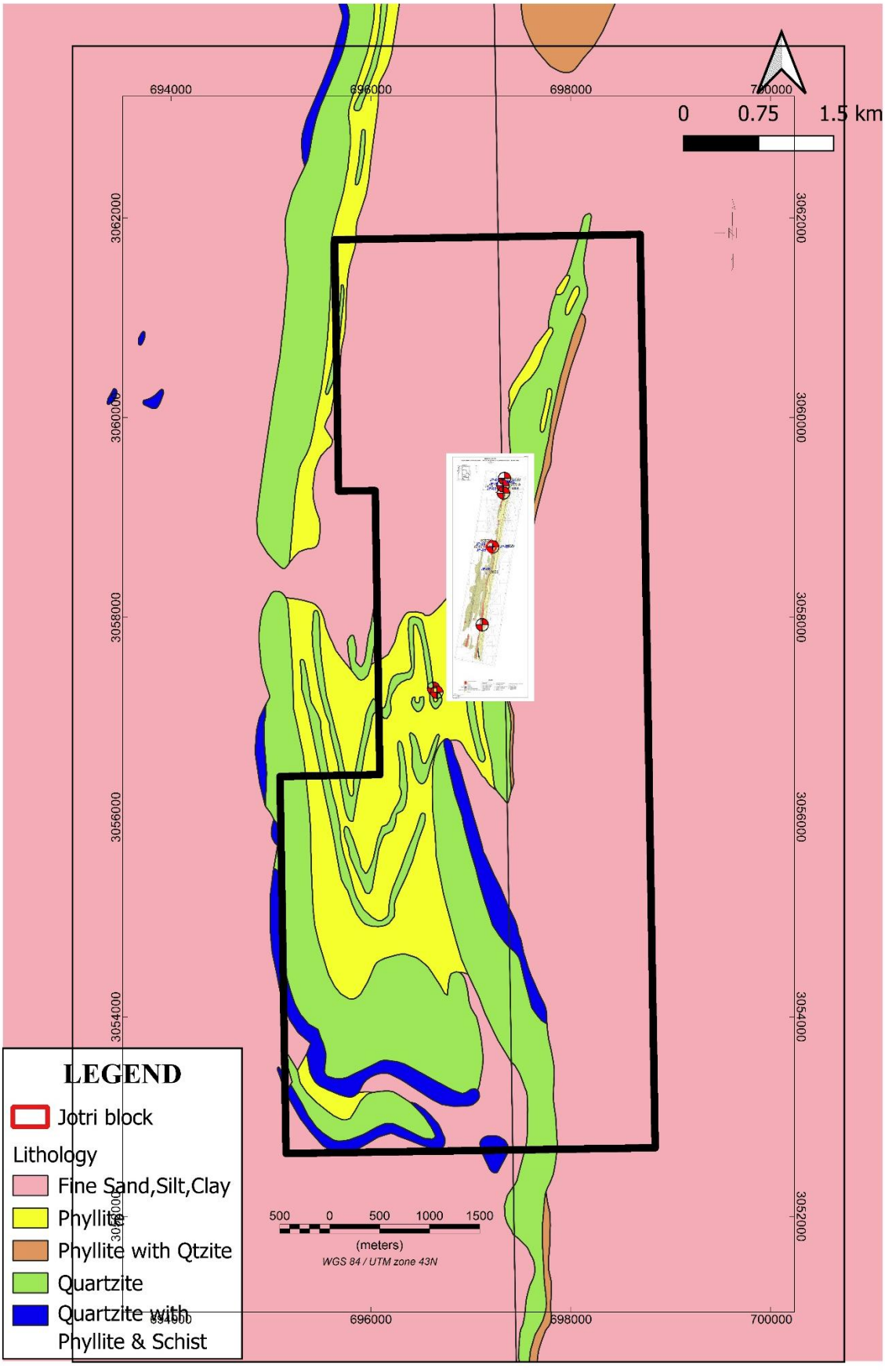

694000
696000
698000
700000
0 0.75 1.5 km
3062000
3060000
3058000
3056000
3054000
3052000
LEGEND
Jotri block
Lithology
Fine Sand,Silt,Clay
Phyllite
Phyllite with Qtzite
Quartzite
Quartzite with Phyllite & Schist
500 0 500 1000 1500
(meters)
WGS 84 / UTM zone 43N

Plate 5

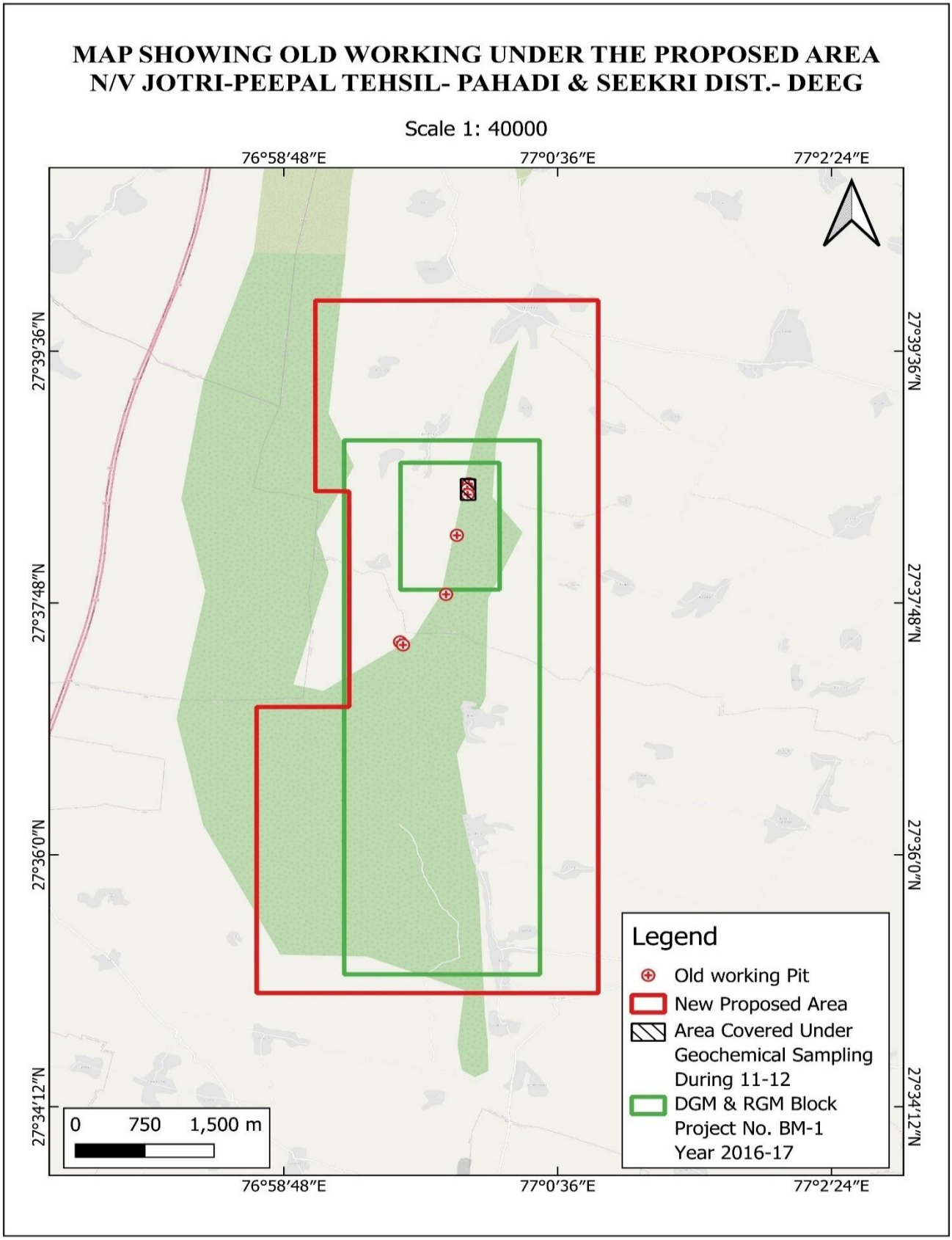

MAP SHOWING OLD WORKING UNDER THE PROPOSED AREA
N/V JOTRI-PEEPAL TEHSIL- PAHADI & SEEKRI DIST.- DEEG
Scale 1: 40000
76°58′48″E
77°0′36″E
77°2′24″E
27°39′36″N
27°37′48″N
27°36′0″N
27°34′12″N
0
750
1,500 m
Legend
Old working Pit
New Proposed Area
Area Covered Under Geochemical Sampling During 11-12
DGM & RGM Block
Project No. BM-1
Year 2016-17

Plate 6

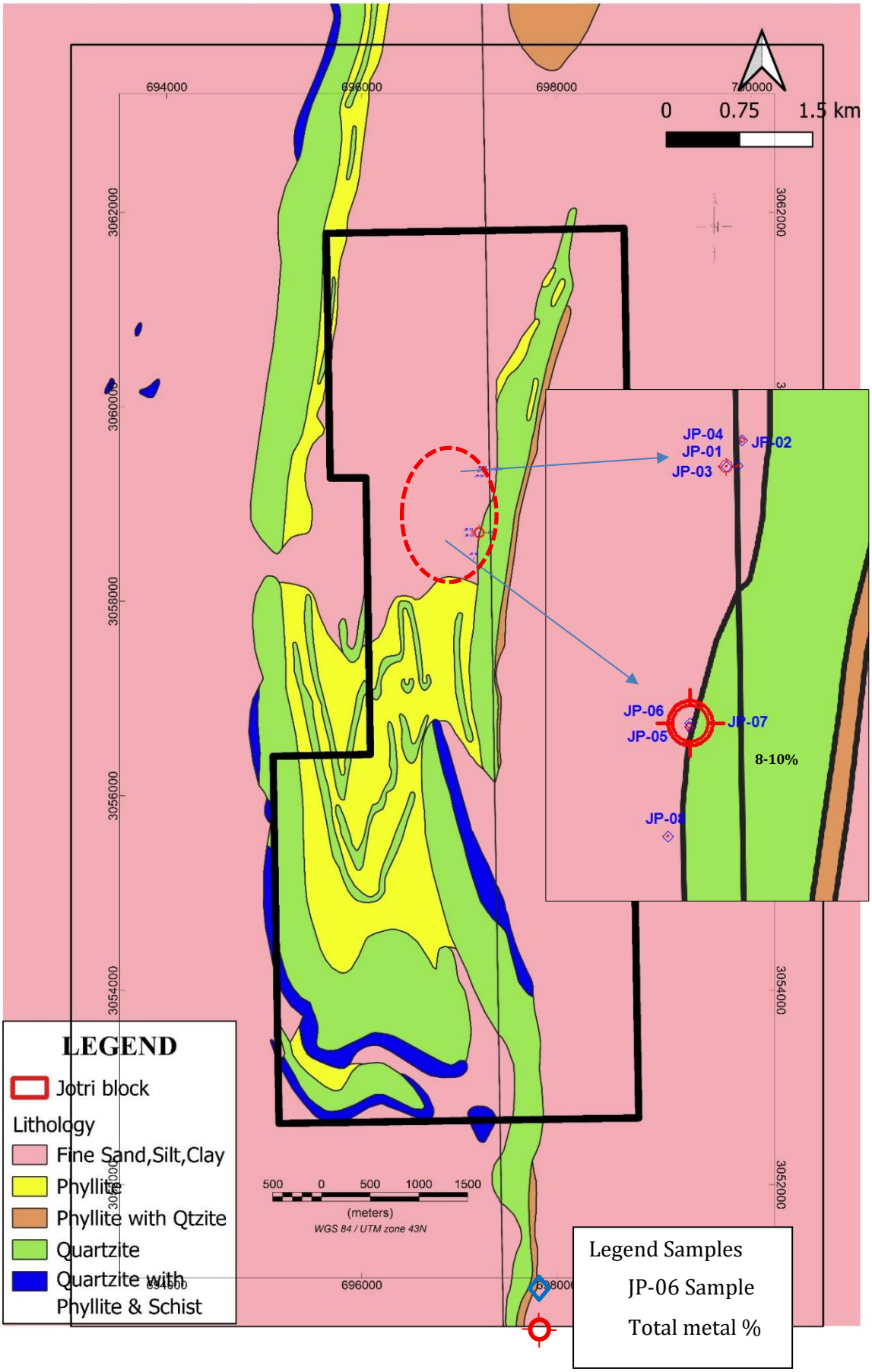

694000
696000
698000
0 0.75 1.5 km
3062000
3060000
3058000
3056000
3054000
3052000
JP-04
JP-01
JP-03
JP-02
JP-06
JP-05
JP-07
8-10%
JP-08
LEGEND
Jotri block
Lithology
Fine Sand,Silt,Clay
Phyllite
Phyllite with Qtzite
Quartzite
Quartzite with Phyllite & Schist
500 0 500 1000 1500
(meters)
WGS 84 / UTM zone 43N
Legend Samples
JP-06 Sample
Total metal %

Plate7

Elvatech

Date: 12/20/2025, 11:21 AM
Sample name: jpp3

Alloy grade isn't identified.

Fe:	63431.952	±	441.283 ppm
Ti:	24927.031	±	1537.131 ppm
K:	21524.705	±	5005.770 ppm
Pb:	3326.998	±	53.245 ppm
Zr:	634.823	±	8.967 ppm
Mn:	499.352	±	200.821 ppm
V:	415.409	±	705.874 ppm
Rb:	324.764	±	8.842 ppm
Ba:	253.664	±	29.955 ppm
Cr:	157.793	±	348.632 ppm
Zn:	97.249	±	26.179 ppm
Sr:	88.609	±	6.311 ppm
Ce:	75.901	±	51.512 ppm
Eu:	62.782	±	23.646 ppm
Th:	46.475	±	17.055 ppm
Ga:	46.238	±	23.443 ppm
Cu:	44.005	±	37.006 ppm
Nb:	14.912	±	4.265 ppm
Y:	13.221	±	9.314 ppm
Sn:	7.138	±	0.532 ppm
Mo:	3.757	±	0.489 ppm
Ag:	0.164	±	0.301 ppm

Elvatech

Date: 12/21/2025, 11:13 PM
Sample name: JPP1 sample

Alloy grade isn't identified.

Fe:	277220.010	±	810.292 ppm
Pb:	27199.188	±	180.952 ppm
K:	11994.413	±	3401.552 ppm
Ti:	6369.178	±	1108.748 ppm
Ca:	1698.091	±	1930.243 ppm
Zn:	1319.580	±	60.370 ppm
Zr:	688.435	±	12.626 ppm
Ba:	583.517	±	43.770 ppm
As:	337.207	±	141.826 ppm
Mn:	313.719	±	171.348 ppm
Rb:	172.078	±	13.039 ppm
Eu:	166.016	±	38.097 ppm
Ce:	139.953	±	75.465 ppm
Ga:	117.931	±	58.055 ppm
Sr:	88.136	±	11.377 ppm
Y:	43.114	±	25.624 ppm
Nb:	42.265	±	7.799 ppm
Sn:	11.124	±	0.719 ppm
Sb:	4.928	±	0.874 ppm
Mo:	4.874	±	0.745 ppm

Elvatech

Date: 12/20/2025, 11:50 AM
Sample name: jpp-ow2

Alloy grade isn't identified.

Fe:	98016.051	±	587.025 ppm
Pb:	4240.142	±	75.152 ppm
K:	3548.512	±	5649.609 ppm
Zn:	445.749	±	38.968 ppm
Pr:	250.210	±	124.014 ppm
Ni:	197.965	±	64.942 ppm
La:	70.063	±	49.119 ppm
Sb:	24.779	±	0.939 ppm
Zr:	8.064	±	3.613 ppm
Sn:	7.396	±	0.686 ppm
Mo:	5.104	±	0.351 ppm
Sr:	3.217	±	5.895 ppm
Ag:	1.061	±	0.415 ppm

Plate 8

Elvatech

Date: 12/20/2025, 2:28 PM
Sample name: ow1

90% match to 25 MoCr 4

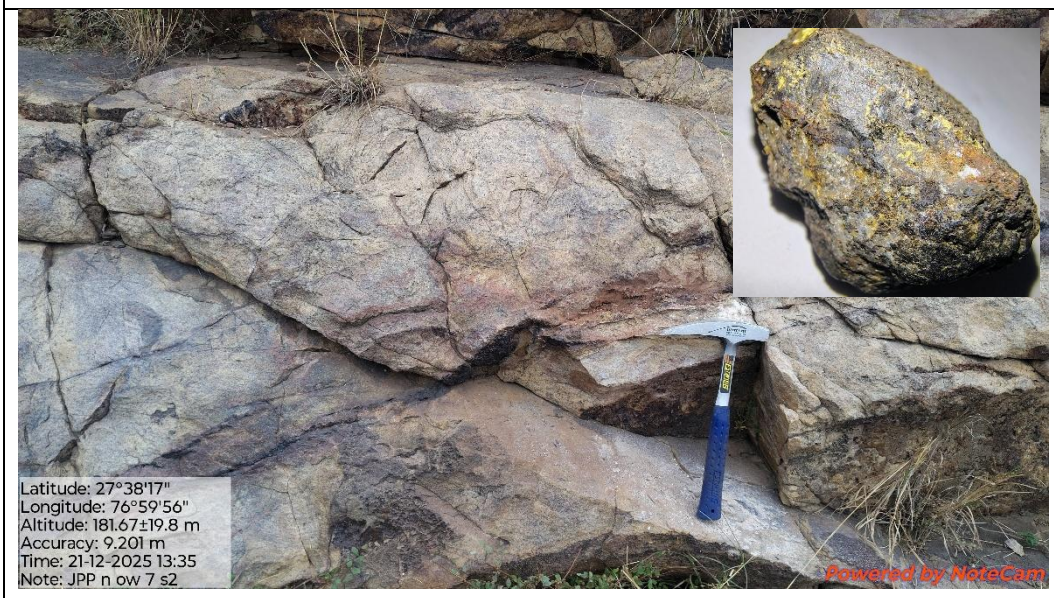
Fe:	66714.205	±	503.878 ppm
Pb:	9678.971	±	103.347 ppm
Mn:	1653.810	±	221.633 ppm
Zn:	223.025	±	32.970 ppm
Ni:	180.615	±	58.957 ppm
Ga:	104.565	±	34.563 ppm
Ce:	100.919	±	60.051 ppm
Eu:	86.515	±	26.742 ppm
Zr:	43.501	±	4.492 ppm
Rb:	25.294	±	6.778 ppm
Sr:	21.928	±	6.493 ppm
Sn:	7.386	±	0.630 ppm
Mo:	4.563	±	0.352 ppm
Nb:	3.814	±	3.869 ppm

Elvatech

Date: 12/20/2025, 1:34 PM
Sample name: ow-7-photo result coin wit

Alloy grade isn't identified.

Fe:	223711.648	±	855.797 ppm
Pb:	12454.344	±	160.436 ppm
Ti:	2670.117	±	1422.566 ppm
Ca:	2548.513	±	2640.365 ppm
Zn:	1359.327	±	68.382 ppm
Mn:	759.460	±	229.759 ppm
As:	730.144	±	117.704 ppm
Ni:	311.350	±	101.724 ppm
Zr:	155.947	±	8.688 ppm
Ba:	106.566	±	48.351 ppm
Cu:	105.277	±	69.122 ppm
Sr:	27.399	±	10.603 ppm
Rb:	12.081	±	10.318 ppm
Sb:	10.248	±	1.166 ppm
Sn:	9.657	±	0.936 ppm
Mo:	4.233	±	0.596 ppm
Cd:	0.400	±	0.641 ppm
Ag:	0.322	±	0.556 ppm



Elvatech

Date: 12/21/2025, 11:45 PM
Sample name: n ow 7 small-sample result

Alloy grade isn't identified.

Fe:	450547.614	±	1072.783 ppm
Pb:	75238.244	±	802.852 ppm
As:	18216.349	±	487.111 ppm
Zn:	8004.691	±	222.047 ppm
K:	2878.777	±	3874.919 ppm
Mn:	580.368	±	311.849 ppm
Nd:	359.156	±	325.020 ppm
Ga:	282.253	±	173.820 ppm
Cu:	248.257	±	165.130 ppm
Sb:	127.456	±	2.931 ppm
Eu:	127.382	±	71.592 ppm
La:	113.070	±	94.604 ppm
Ba:	75.258	±	70.783 ppm
Sr:	39.455	±	31.149 ppm
Rb:	15.282	±	36.356 ppm
Sn:	9.637	±	1.499 ppm
Mo:	4.931	±	1.208 ppm
Ag:	0.910	±	0.996 ppm
Cd:	0.604	±	1.157 ppm

Plate 9

Elvatech

Date: 12/21/2025, 11:49 PM
Sample name: ow 3 sample

Alloy grade isn't identified.

Fe:	414552.633	±	1021.144 ppm
Pb:	100496.207	±	568.475 ppm
As:	3115.753	±	449.620 ppm
Zn:	3082.719	±	143.726 ppm
Ca:	1479.743	±	2248.015 ppm
Pr:	410.878	±	252.331 ppm
Nd:	367.952	±	330.710 ppm
Ga:	192.113	±	166.473 ppm
Sr:	90.421	±	29.386 ppm
Sb:	30.677	±	2.015 ppm
Sn:	9.359	±	1.547 ppm
Ag:	8.729	±	1.167 ppm
Mo:	4.670	±	1.111 ppm
Cd:	0.752	±	1.136 ppm

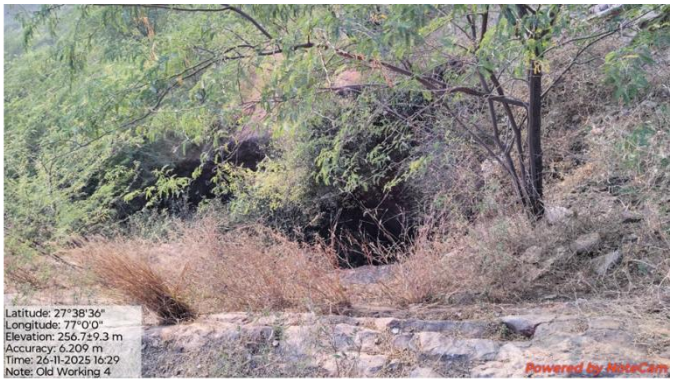
Elvatech

Date: 12/21/2025, 12:43 PM
Sample name: s of ow7 sample result

Alloy grade isn't identified.

Fe:	412881.791	±	796.029 ppm
Ca:	21436.184	±	1614.977 ppm
As:	13547.486	±	127.796 ppm
Pb:	3527.352	±	335.934 ppm
K:	1838.463	±	2681.812 ppm
Sr:	1121.391	±	24.111 ppm
Zn:	273.263	±	56.696 ppm
Pr:	236.026	±	138.437 ppm
Ce:	184.935	±	70.853 ppm
Ba:	121.396	±	40.846 ppm
Eu:	66.797	±	38.202 ppm
Cr:	63.632	±	256.325 ppm
Zr:	16.708	±	10.700 ppm
Sn:	7.392	±	0.781 ppm
Y:	6.551	±	13.950 ppm
Sb:	3.996	±	0.932 ppm
Mo:	3.760	±	0.540 ppm
Cd:	1.386	±	0.590 ppm
Ag:	0.214	±	0.491 ppm

Plate 10: Field Photos Site Visit 26 Nov 2025 & 20 Dec 2025



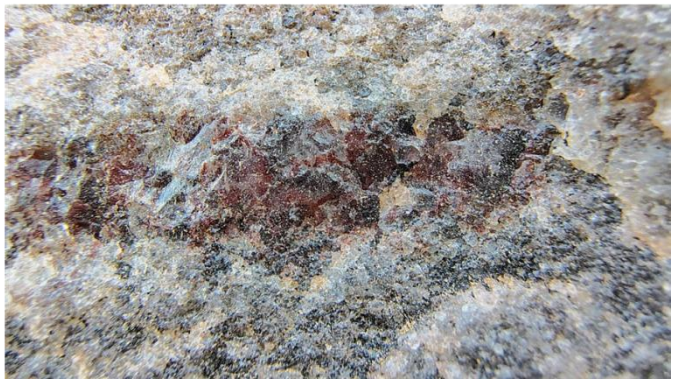
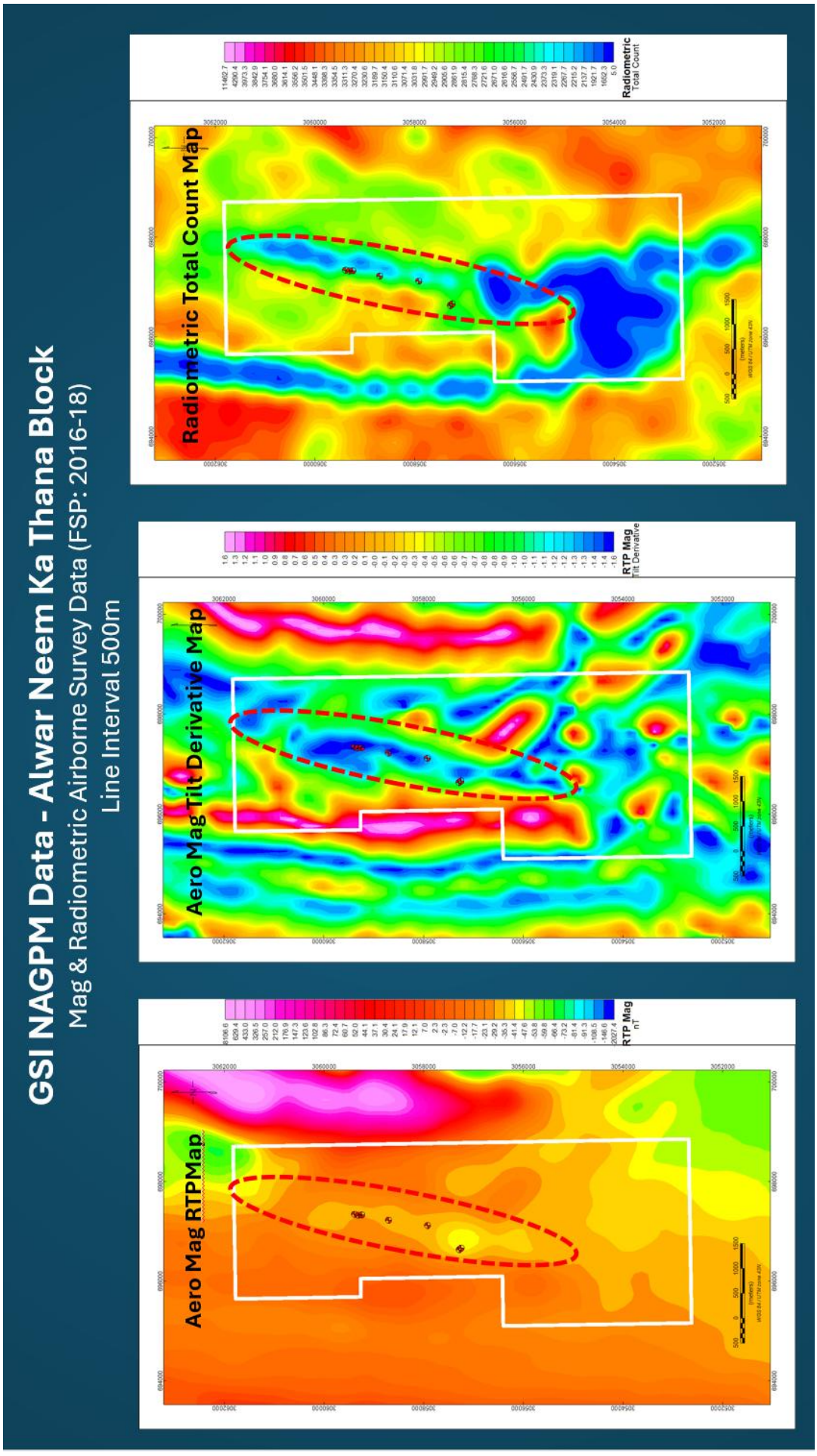


Plate 11


GSI NAGPM Data - Alwar Neem Ka Thana Block
Mag & Radiometric Airborne Survey Data (FSP: 2016-18)
Line Interval 500m
Aero Mag RTPMap
RTP Mag
nT
Aero Mag Tilt Derivative Map
RTP Mag
Tilt Derivative
Radiometric Total Count Map
Radiometric
Total Count