



**Final Geological Report (GR) on
“Reconnaissance Survey (G4 Stage) for
Basemetal in Thal-Didihat-Askot area,
Pithoragarh district, Uttarakhand”**

Geovale Services Pvt. Ltd.
Earth System Science for sustainable Development

August, 2026



**GEOVALE
SERVICES**
Planetary Science And Technology for Sustainable Development



**GEOVALE
SERVICES**

Planetary Science And Technology for Sustainable Development

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Project Title: Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand.

Project Code: 23/445/2024-NMET/600.

Project Timeline: 12th March 2024 to 31th August, 2026.

Project Location: Thal-Didihat-Askot areas, Pithoragarh District, Uttarakhand.

National Mineral Exploration and Development Trust Secretariat (NMEDT)

Ministry of Mines
9th Floor, Jeevan Prakash LIC Building
Kasturba Gandhi Marg,
New Delhi-110001

E-mail Id: nmet-mines@gov.in

**Project executed as NPEA:
Geovale Services Pvt. Ltd.**

3rd Floor, Anaya Chambers,
GN 38/5, Salt Lake, Sec -V,
Kolkata - 700091

Website: <http://geovale.com/>

Project Coordinators

Mr. Biplob Chatterjee (Author)
CEO and Director (Consulting)

Dr. Joy Gopal Ghosh (Author)
Principal, Geology & Exploration

Dr. Taraknath Pal (Author)
Principal, Geology & Exploration

Dr. Tapan Pal
Principal, Geology & Exploration

Project Leader

Dr. Tanwita Deb (Author)
Senior Project Manager (Exploration)

Project Manager

Arnab Mallick (Author)
Project Manager (Exploration)

Technical Area Experts

Nupur Adhikary (Author)
Senior Project Manager (Geology and Geospatial Services)

Sujoy Payra (Author)
Senior Project Manager (Geospatial Services)

Chiranjib Banerjee (Author)
Senior Project Manager (Geotech Services)

Prabir Bhattacharya
Project Manager (Geospatial Services)

Rabiya Parween
Project Scientist (Geospatial Services)

Krishna Prasad (Author)
Senior Consultant (Geophysics)

Team Members

Shivani Gupta (Author)

Project Geologist (Exploration)

Sarita Mahato (Author)

Project Manager (Exploration)

Upasana Mondal (Author)

Project Geologist (Exploration)

Bhuwan Sharma (Author)

Project Geologist (Exploration)

Archisman Dhar (Author)

Project Geologist (Exploration)

Pratik Mukherjee (Author)

Project Geologist (Exploration)

Dakshi Sarkar (Author)

Project Geologist (Exploration)

Contents

1. सारांश	1
1.1 अन्वेषण कार्यक्रम अभिकल्पना एवं क्रियान्वयन प्रक्रिया	1
1.2 92 वर्ग किमी खंड में प्रादेशिक-स्तरीय अन्वेषण	2
1.3 अस्कोट-नारेट संधि-मंडल (ZONE - 1) में संभावना-स्तरीय अन्वेषण	4
1.4 परिणाम	5
1.5 संस्तुतियाँ (Recommendations)	6
1. Executive Summary	7
1.1 Exploration Programme Design and Process of Execution	7
1.2 Regional-Scale Exploration Across the 92 sq. km Block	8
1.3 Prospect-Scale Exploration of the Askot–Naret Hinge Zone (Zone 1).....	9
1.4 Outcomes.....	10
1.5 Recommendations	10
2. Introduction and Exploration Rationale	14
2.1 Administrative Details of the Project.....	14
2.2 Investigating agency.....	15
2.3 Objectives of Investigation.....	16
2.4 Basis for Taking Up Investigation:	16
2.5 Nature, quantum and timeline of work (NQT):.....	17
2.6 Personnel Involved:.....	18
2.7 Mode of Operation of Different Working Components and Associated Agency:	21
2.8 Acknowledgements:	21
2.9 Summary of work strategy and report writing:	22
2.10 Report Framework.....	23
3. Property Description.....	27
3.1 Location and Accessibility	27
3.2 Physiography and terrain analyses:	28
3.3 Climate	29
3.4 Flora and Fauna.....	30
3.5 Forest Cover	31
3.6 Satellite Remote Sensing data acquisition and processing:	32
4. Previous Work and Project Generation (Prefield Studies)	47
4.1 Regional Geology:.....	47
4.2 Previous Work in the Regional Area.....	51



4.3	Mineral Exploration within the Askot block.....	56
4.4	Observations and Recommendations from Previous Work	59
5.	Introduction of Mineral System Analyses and its parameters	63
5.1	Exploration Design and Transition to Field Validation	64
5.2	Initiating Stage 2: Data Validation Field Program.....	65
5.3	Exploration Design for the Zone 1 (Askot–Naret Hinge Zone).....	68
6.	Geoscientific Activities: Methodological Record of the Askot Base-Metal Exploration Programme.....	73
6.1	Preamble.....	73
6.2	Geospatial Analysis (Remote Sensing):.....	74
6.2.1	Process description:.....	74
6.2.2	Derivatives prepared and their exploration significance.....	75
6.2.3	SOP adopted:.....	75
6.2.4	QC protocol adopted	76
6.2.5	Data collected and generated.....	76
6.3	Geological-Structural Mapping.....	77
6.3.1	Process description.....	78
6.3.2	Derivative mapping inputs and their role	79
6.3.3	SOP adopted:.....	79
6.3.4	QC protocol adopted	80
6.3.5	Data collected and generated.....	81
6.3.6	Annexure listing	81
6.4	Surface Sampling - Grab and Bedrock.....	81
6.4.1	Process description.....	82
6.4.2	Derivative sampling outputs and their role	83
6.4.3	SOP adopted.....	84
6.4.4	QC protocol adopted	85
6.4.5	Data collected and generated.....	85
6.5	Stream Sediment Sampling	85
6.5.1	Process description.....	86
6.5.2	Derivative sampling outputs and their role	87
6.5.3	SOP adopted.....	87
6.5.4	QC protocol adopted	88
6.6	Pitting and Trenching.....	89
6.6.1	Pitting.....	91
6.6.2	Trenching.....	93



6.6.3	Annexure listing	94
6.7	Petrology of Surface and Subsurface Samples.....	94
6.7.1	Process description.....	95
6.7.2	Derivative outputs and their interpretive role	95
6.7.3	SOP adopted.....	95
6.7.4	QC protocol adopted	96
6.7.5	Data collected and generated.....	96
6.7.6	Annexure listing	97
6.8	Geochemical Assay - XRF (Major Oxide Analysis).....	97
6.8.1	Process and Derivative Outputs	98
6.8.2	SOP and QA/QC Protocol.....	98
6.8.3	Annexure listing	99
6.9	Geochemical Assay - ICP-MS (Trace Element and REE Analysis).....	99
6.9.1	Process and Derivative Outputs	99
6.9.2	SOP Protocol.....	99
6.9.3	Annexure listing	100
6.10	X-Ray Diffraction (XRD) for Surface and Subsurface Samples.....	100
6.10.1	Process description.....	100
6.10.2	Derivative outputs and interpretive role.....	100
6.10.3	SOP adopted.....	101
6.10.4	QC protocol adopted	101
6.10.5	Data collected and generated.....	101
6.10.6	Annexure listing	101
6.11	Geophysics - Vertical Electrical Sounding (VES)	102
6.11.1	Process description.....	102
6.11.2	Derivative outputs and interpretive role.....	103
6.11.3	SOP adopted.....	103
6.11.4	QC protocol adopted	104
6.11.5	Data collected and generated.....	105
6.11.6	Annexure listing	106
6.12	Scout Drilling	106
6.12.1	Process description.....	106
6.12.2	Derivative outputs and interpretive role.....	107
6.12.3	SOP adopted.....	108
6.12.4	QC protocol adopted	109
6.12.5	Data collected and generated.....	110

6.12.6	Annexure listing	110
7.	Surface Geoscience and Target Generation.....	112
	Regional-scale exploration of the Askot block	112
7.1	Regional Geology:.....	112
7.2	Geological Map by GSI.....	112
7.3	Geological mapping (Scale: 1:12,500) of the Askot regional block:	113
7.4	Description of rock types of the Askot regional block.....	116
7.4.1	Granite Gneiss:	116
7.4.2.	Quartzite:	120
7.4.3.	Amphibolite:	122
7.4.4.	Chlorite schist:	126
7.4.5.	Leuco Granite:	130
7.4.6.	Phyllite:	132
7.4.7.	Limestone:	134
7.5	Structure of the Askot regional block:	136
7.6	Metamorphism of the Askot regional block:.....	143
7.7	Ore mineralogy in the Askot regional block	145
7.8	Geochemical Analysis for surface sampling of the Askot regional block:	149
7.9	Element-wise Surface Bedrock Geochemical Anomaly for Askot regional block: 150	
7.9.1	Copper (Cu) anomaly map	150
7.9.2	Lead (Pb) anomaly map.....	153
7.9.3	Zinc (Zn) anomaly map	156
7.9.4	Cobalt (Co) anomaly map.....	158
7.9.5	Molybdenum (Mo) anomaly map.....	160
7.9.6	Tin (Sn) anomaly map	162
7.9.7	Antimony (Sb) anomaly map	165
7.9.8	Bismuth (Bi) anomaly map.....	167
7.9.9	Tellurium (Te) anomaly map.....	170
7.9.10	Thallium (Tl) anomaly map.....	171
7.9.11	Tungsten (W) anomaly map	173
7.10	Statistical analysis of surface geochemical data and Interpretation of anomalous zones 174	
7.11	Element-wise Stream Sediment Geochemical Anomaly	183
7.11.1	Cu stream-sediment anomaly	183
7.11.2	Pb stream-sediment anomaly map.....	185
7.11.3	Zn stream-sediment anomaly map.....	186

7.11.4	Co stream-sediment anomaly map	189
7.11.5	Mo stream-sediment anomaly map.....	191
7.11.6	Bi stream-sediment anomaly map	193
7.11.7	Sb stream-sediment anomaly map.....	195
7.11.8	Sn stream-sediment anomaly map.....	197
7.11.9	Te stream-sediment anomaly map.....	199
7.11.10	Tl stream-sediment anomaly map.....	201
7.11.11	W stream-sediment anomaly map.....	203
7.12	XRF data analyses and interpretation:.....	204
	Surface Geoscience in Askot-Naret Hinge Zone (Zone 1)	209
7.13	Structural mapping at Askot-Naret Hinge Zone.....	209
7.14	Mineralogy of ore zone and ore textures	211
	Massive Texture	212
	Disseminated Texture	213
	Stringer (Stockwork) Texture	214
	Banded and Laminated Texture	215
	Brecciated Texture	216
	Replacement Texture	217
	Fracture-Filling Texture	218
	Pressure-Shadow and Cataclastic Texture	219
	Granoblastic (Recrystallized) Texture	220
	Genetic Interpretation	221
7.15	Surface Geochemical Analysis of the Askot-Naret Hinge Zone.....	221
7.15.1	Surface Bedrock Copper (Cu) Anomaly	223
	Spatial distribution	223
	Geological interpretation	223
	Exploration significance	224
7.15.2	Surface Bedrock Lead (Pb) Anomaly.....	224
	Spatial distribution	224
	Geological interpretation	224
	Exploration significance	225
7.15.3	Surface Bedrock Zinc (Zn) Anomaly	225
	Spatial distribution	225
	Geological interpretation	226
	Exploration significance	226
7.15.4	Surface Bedrock Bismuth (Bi) Anomaly.....	226



Spatial distribution	226
Geological interpretation	227
Exploration significance.....	227
7.15.5 Surface Bedrock Antimony (Sb) Anomaly	227
Spatial distribution	228
Geological interpretation	228
Exploration significance.....	228
7.15.6 Surface Bedrock Tin (Sn) Anomaly	229
Spatial distribution	229
Geological interpretation	229
Exploration significance.....	229
7.15.7 Surface Bedrock Tungsten (W) Anomaly	230
Spatial distribution	230
Geological interpretation	230
Exploration significance.....	231
7.15.8 Surface Bedrock Molybdenum (Mo) Anomaly	231
Spatial distribution	231
Geological interpretation	232
Exploration significance.....	232
7.15.9 Surface Bedrock Tellurium (Te) Anomaly	232
Spatial distribution	233
Geological interpretation	233
Exploration significance.....	233
7.15.10 Surface Bedrock Thallium (Tl) Anomaly	233
Spatial distribution	234
Geological interpretation	234
Exploration significance.....	234
Element-wise Anomaly Classes	234
7.15.11 Stream sediment Copper (Cu) Anomaly	236
7.15.12 Stream sediment Lead (Pb) Anomaly	237
7.15.13 Stream sediment Zinc (Zn) Anomaly	239
7.15.14 Stream sediment Bismuth (Bi) Anomaly	240
7.15.15 Stream sediment Molybdenum (Mo) Anomaly	242
7.15.16 Stream sediment Antimony (Sb) Anomaly	243
7.15.17 Stream sediment Tin (Sn) Anomaly	245
7.15.18 Stream sediment Tungsten (W) Anomaly Map	246

7.15.19	Stream sediment Tellurium (Te) Anomaly	247
7.15.20	Stream sediment Thallium (Tl) Anomaly	249
7.16	VES Geophysical Survey and Interpretation of the Askot-Naret Hinge Zone....	250
7.16.1	Processing and Inversion	250
7.16.2	Synthesis: What VES Confirms About the Mineral System	255
	Supergene enrichment and concealed sulphide mineralization.....	255
7.17	Gold data analyses by fire assay technique and interpretation:	255
7.18	Mercury data analyses by fire assay technique and interpretation:	256
8.	Exploration by Scout Drilling Target Testing	259
8.1	Objectives and Rationale for Scout Drilling	259
8.2	Drilling and Sampling Methodologies	260
8.3	Overview of the Drilling Programme.....	261
8.4	Core Handling and Sampling Methodology.....	265
8.5	Drillhole Planning	266
8.6	Askot-Naret Hinge Zone–VMS Target	266
8.7	Details of Borehole.....	267
8.7.1	GSPL/ASK/BH01 and GSPL/ASK/BH02	267
	Geochemical results	273
	Weighted-average interpretation	274
	Geochemical results	284
	Weighted-average interpretation	285
8.7.2	GSPL/ASK/BH03.....	290
	Geochemical results	296
	Weighted-average interpretation	297
8.7.3	GSPL/ASK/BH04.....	297
	Geochemical results	300
	Weighted-average interpretation	301
8.7.4	XRD data analyses and interpretation:	303
8.7.5	EPMA results and significance.....	317
8.7.6	Implications for the Volcanogenic Massive Sulphide (VMS) System and block Fertility 321	
8.7.7	Recommendations for Future Drilling.....	322
8.7.8	Summary of the Boreholes	322
	EXTENSION OF THE ASKOT MINERALIZATION, EVALUATION OF REGIONAL EXPLORATION TARGETS AND EXPLORATION TARGET POTENTIAL	324
9.	Extension of the Askot Mineralization, Evaluation of Regional Exploration Targets and Exploration Target Potential	325

9.1	Exploration target potentials (Zone 1, 2, and 3).....	325
i)	Exploration target potential in Zone 1	327
10.	Conclusion and Recommendations	333
10.1	Conclusions	333
	Regional Geological, Structural and Mineral-Systems Framework.....	333
	Regional Exploration and Generation of New VMS Targets	334
	Extension of the Known Askot VMS Deposit	334
	Conclusion.....	335
10.2	Recommendations	336
	Recommendation 1 – G3-Exploration of the Extended and Established Askot Mineralisation (Zone 1).....	336
	Recommendation 2 – G3 stage Exploration for Target Definition and Testing of the two VMS-Style Mineralisation zone (Zone 2 and Zone 3).....	337
11.	Reference	341
12.	Locality index	344
13.	Annexure I_Field Observation Points.....	347
	Annexure II_Structural Data of Field Observation Points.....	378
	Annexure III_Pitting and Trenching Location Points.....	398
	Annexure IV_Chemical Assay Values of XRF Analyses for Surface Samples	399
	Annexure V_Chemical Assay Values of ICPMS Analyses for Surface Samples	400
	Annexure VI_Chemical Assay Values of AAS Analyses for Surface Samples.....	435
	Annexure VII_AAS analysis (Check Samples) for Surface Samples	451
	Annexure VIII_Chemical Assay Values of Gold (Au) by Fire Assay Technique for Surface Samples	453
	Annexure IX_Chemical Assay Values of mercury (Hg) for Surface Samples.....	455
	Annexure X_Thin section samples for surface petrographic study	456
	Annexure XI_Resistivity Survey (VES) Raw Data	458
	Annexure XII_2D models of Geophysical (VES) survey.....	648
	Annexure XIII_Chemical Assay Values of AAS Analyses for Boreholes.....	680
	Annexure XIV_ICPMS Data of Borehole Samples.....	691
	Annexure XV_XRD Data of Borehole Samples	697
	Annexure XVI_List of thin section samples for petrographic study	697

List of Figures

Figure 0.1.1 Reccomonded Three G3 blocks (violet polygons) in the Askot block.....	12
Figure 2.1 Flowchart showing project workflow for the Askot project.....	23
Figure 3.1 Location and Accessibility Map of Askot Block.....	28
Figure 3.2 Physiography map shows the geomorphic landforms in Askot block.....	29
Figure 3.3 Chir-pine Forest at Baragaon area.....	30
Figure 3.4 Chir-pine Forest at Askot area.....	30
Figure 3.5 Rhododendron at Sirakot area.....	31
Figure 3.6 Deodar at Didihat area.....	31
Figure 3.7 Banj oak at Ghorpatta area.....	31
Figure 3.8 Sal Forest at Unchakot area.....	31
Figure 3.9 Forest area of the Askot block shown on 50K geological map.....	32
Figure 3.10 Elevation map in and around Askot Block, legend differ from previous use same.....	34
Figure 3.11 Contour map of the Askot block.....	35
Figure 3.12 Slope map of the Askot block.....	35
Figure 3.13 Hillshade Map of the Askot block.....	37
Figure 3.14 Drainage map of the Askot block.....	38
Figure 3.15 Red scheme map of the Askot block.....	39
Figure 3.16 LULC Map of the Askot Block.....	40
Figure 3.17 Argillic-Phyllic-Propylitic Alteration Map of the Askot block.....	42
Figure 3.18 Iron Oxide rich Alteration Map of the Askot block.....	43
Figure 3.19 Lineament Map of the Askot block.....	44
Figure 4.1 Geological and structural map of the Askot area and surrounding (after Pant et. al., 2012)....	48
Figure 4.2 Regional geological map of the Inner Lesser Himalaya showing the previous exploration in the region (modified after Mandal et. al., 2016).....	60
Figure 5.1 Models of world class VMS occur in clusters.....	69
Figure 6.1 Field observation points of the Askot Block.....	77
Figure 6.2 Foliation within phyllitic rock (Turgoli area).....	78
Figure 6.3 Foliation within quartzite rock (Askot area).....	78
Figure 6.4 Surface Bedrock location of Askot block.....	82



Figure 6.5 Collection of surface grab bedrock samples	83
Figure 6.6 Collection of surface grab bedrock samples	83
Figure 6.7 Stream sediment locations of Askot block.	86
Figure 6.8 Collection and processing of stream sediments	87
Figure 6.9 Collection and processing of stream sediments	87
Figure 6.10.a Pitting and Trenching location in the Askot block area.....	90
Figure 6.11.b Pitting and Trenching location in the Askot block area.	91
Figure 6.12: Excavation of the Pit (ASK/PT01), west of Sirakot area.	92
Figure 6.13 Excavation of the Pit (ASK/P10), west of Bera area.	92
Figure 6.14 Excavation of the Pit (ASK/PT03), east of Gadali area.	92
Figure 6.15 Excavation of the Pit (ASK/PT08), east of Gadali area.	92
Figure 6.16 Surface XRF location of Askot block.....	98
Figure 6.17 VES data collection in Gadali area.....	105
Figure 6.18 VES data collection in Baragaon area.....	105
Figure 6.19 Borehole 01 drilling site at ~200 m east of Baragaon area.	107
Figure 6.20 Borehole 02 drilling site at ~200 m east of Baragaon area.	107
Figure 6.21 Borehole 03 drilling site ~900 m northeast of Baragaon area.	107
Figure 6.22 Borehole 04 drilling site at ~100 m north of Mouchora area.	107
Figure 7.1 Geological map by geological Survey of India.	113
Figure 7.2 Large scale geological map with structural data of the study area.....	114
Figure 7.3 Large scale geological map with structural data of the study area.	115
Figure 7.4 cross section (1:12500) of Askot area (Prepare by Geovale services).....	115
Figure 7.5 Outcrop Section of unweathered granite Gneiss in the Santikunj area, Askot	117
Figure 7.6 Road cut section of weathered granite gneiss, Askot.....	117
Figure 7.7 Granite gneiss shows the presence of delta shaped feldspar porphyroclasts, near Ghorpatta area, Askot.....	117
Figure 7.8 Hand specimen of the tourmaline bearing granite gneiss, Narayannagar.	117
Figure 7.9 Photomicrograph of granite gneiss with feldspar augen warped by the sericite mica and biotite (sample Id. 114633), Gadali.....	118
Figure 7.10 Photomicrograph of granite gneiss sample showing small grains of sericite mica in feldspar (sample Id. 114635), Narayanagar, Askot.....	118
Figure 7.11 Photomicrograph of granite gneiss sample showing perthitic intergrowth (sample Id. 114635), Narayannagar.....	119



<i>Figure 7.12 Photomicrograph of granite gneiss sample showing mortar texture (sample Id. 114633), Gadali.....</i>	<i>119</i>
<i>Figure 7.13 Photomicrograph of granite gneiss sample showing large tourmaline crystals (sample Id. 114635), Narayannagar</i>	<i>119</i>
<i>Figure 7.14 Photomicrograph of granite gneiss sample showing perthitic intergrowth (sample Id. 114633), Gadali.....</i>	<i>119</i>
<i>Figure 7.15 Quartzite outcrop, Pantgaon area.</i>	<i>120</i>
<i>Figure 7.16 Field outcrop of quartzite with prominent foliation, Patet area.....</i>	<i>120</i>
<i>Figure 7.17 Quartzite outcrop Sirakot area.</i>	<i>121</i>
<i>Figure 7.18 Field outcrop of quartzite Dhunga area.....</i>	<i>121</i>
<i>Figure 7.19 Quartzite rock composd of the recrystallized quartz grains and a few mica and tourmaline (Sample Id: 114627).</i>	<i>122</i>
<i>Figure 7.20 Sericitic mica developed along the foliation plane (Sample Id: 114627)</i>	<i>122</i>
<i>Figure 7.21 Quartz grains shows annealing and Sub parallel alignment of micaceous layer (Sample Id: 114647).</i>	<i>122</i>
<i>Figure 7.22 Quartz grains with undulose extinctions and sericitic mica developed along the foliation plane (Sample Id: 114647).</i>	<i>122</i>
<i>Figure 7.23 Field outcrop of Amphibolite shoes deformation, west of Naret area.</i>	<i>122</i>
<i>Figure 7.24 Quartz vein in Amphibolite, north of Sitoli area</i>	<i>122</i>
<i>Figure 7.25 Mineralization in amphibolite, north of Didihat area.</i>	<i>123</i>
<i>Figure 7.26 Field outcrop of.....</i>	<i>123</i>
<i>Figure 7.27 Mineralization in brecciated qtz veins in amphibolite, south west of Mouchora area.....</i>	<i>123</i>
<i>Figure 7.28 Mineralization in brecciated qtz veins in amphibolite, west of Sitoli area.....</i>	<i>123</i>
<i>Figure 7.29 Amphibolite with prominent F1 foliation, near Pantgaon area (Sample Id: 114626).</i>	<i>124</i>
<i>Figure 7.30 Amphibolite with prominent F1 foliation, near Narayangar area 9A470, 114636).</i>	<i>124</i>
<i>Figure 7.31 Amphibole and mica in parallet orientation with prominent F1 foliation, near Askot area (Sample Id:114637)</i>	<i>124</i>
<i>Figure 7.32 Amphibole and mica in parallet orientation with prominent F1 foliation, near Askot area (Sample Id: 114637).</i>	<i>124</i>
<i>Figure 7.33 Large amphibole grain show sieve texture and mica wrapping shows foliation, near Narett area (Sample Id: 114639).....</i>	<i>125</i>
<i>Figure 7.34 Amphibole and mica grains show F1 and F2 foliation, near Naret area (Sample Id: 114640).</i>	<i>125</i>
<i>Figure 7.35 Epidote grains align along ore mineralization in amphibolite near Didihat area (Sample Id: 114642).</i>	<i>125</i>



Figure 7.36 Epidote grains align along ore mineralization in amphibolite near Didihat area (Sample Id: 114642)	125
Figure 7.37 Amphibolite with traces of chalcopyrite and galena.	125
Figure 7.38 Amphibolite with traces of chalcopyrite and galena.	125
Figure 7.39 Crenulation cleavage in chlorite schist, west of Askot area.	126
Figure 7.40 Well developed schistosity over chlorite schist, east of Didihat area	126
Figure 7.41 Malachite stream flowing over chlorite schist, east of Gadali area.....	126
Figure 7.42 Pucker in chlorite schist, east of Gadali area	126
Figure 7.43 Well developed schistosity over chlorite schist, west of Didihat area	127
Figure 7.44 Thin chlorite flakes at chlorite schist outcrop, west of Pasma area	127
Figure 7.45 Mineralization along with quartz vein in chlorite schist, south of Sirakot area.....	127
Figure 7.46 Augen shaped quartz vein in chlorite schist, at Sirakot area	127
Figure 7.47 Swerving of micaceous layer around garnet porphyroblast in chlorite schist (Sample Id: 114630)	128
Figure 7.48 Sub parallel alignment of micaceous layer (Sample Id: 114649).....	128
Figure 7.49 Alternate felsic and mafic layer segregation in Chlorite schist (Sample Id: 114650)	128
Figure 7.50 Alternate felsic and mafic layer segregation in Chlorite schist (Sample Id: 114650)	128
Figure 7.51 Sericitic mica developed along the foliation plane (Sample Id: 114645)	129
Figure 7.52 Sericitic mica developed along the foliation plane (Sample Id: 114645)	129
Figure 7.53 Quartz grains with undulose extinctions (Sample Id: 114649).....	129
Figure 7.54 Quartz grains with undulose extinctions (Sample Id: 114649).....	129
Figure 7.55 Swerving of micaceous layer around garnet porphyroblast in chlorite schist.....	129
Figure 7.56 Sub parallel alignment of micaceous layer.....	129
Figure 7.57 Leucogranite with prominent F1 foliation, at Baragaon area.....	130
Figure 7.58 Leucogranite with small tourmaline grains, northwest of Gadali area.	130
Figure 7.59 Leucogranite near southeast of Mouchora area.....	130
Figure 7.60 Leucogranite with mica along foliation plane southeast of Mouchora area.....	130
Figure 7.61 Leucograite shows annealing texture Baragaon area ((Sample Id: 114628)	131
Figure 7.62 Tourmaline in leucogranite near Gadali area (Sample Id: 114646)	131
Figure 7.63 Tourmaline in leucogranite near Gadali area (Sample Id:114646).....	131
Figure 7.64 Tourmaline with undulose quartz grains in leucogranite near Gadali area (Sample Id: 114646)	131

<i>Figure 7.65 Tourmaline with undulose quartz grains in leucogranite near Mouchora area (Sample Id: 114628)</i>	<i>131</i>
<i>Figure 7.66 feldspar grains in leucogranite near Mouchora area (Sample Id: 114628).....</i>	<i>131</i>
<i>Figure 7.67 Gossan in phyllite with prominent foliation, west of Turgoli area.</i>	<i>132</i>
<i>Figure 7.68 Carb phyllite with prominent foliation, north of Nimathi area.</i>	<i>132</i>
<i>Figure 7.69 Phyllite with prominent F1 foliation, south of Adichoura area.</i>	<i>133</i>
<i>Figure 7.70 Crenulation cleavage in phyllite with prominent F1 foliation, at Patet area.</i>	<i>133</i>
<i>Figure 7.71 Phyllite shows phyllitic foliation (Sample Id: 114634).</i>	<i>134</i>
<i>Figure 7.72 Phyllite shows strong foliation and the presence of epidote (Sample Id: 114634).</i>	<i>134</i>
<i>Figure 7.73 Field photograph of grey massive limestone west of Ranikhet.....</i>	<i>135</i>
<i>Figure 7.74 Field photograph of banded limestone north of Pampsiyari.</i>	<i>135</i>
<i>Figure 7.75 Field photograph of dissolution in Limestone south of Pampsiyari.....</i>	<i>135</i>
<i>Figure 7.76 Field photograph of limestone bed north of Ranikhet.</i>	<i>135</i>
<i>Figure 7.77: Limestone with large calcite grains, near Ranikhet area (Sample Id: 114629).....</i>	<i>136</i>
<i>Figure 7.78: Limestone with large calcite grains with quartz veins, near Ranikhet area (Sample Id: 114629).</i>	<i>136</i>
<i>Figure 7.79: Limestone with calcite grains and quartz veins, near pampsiyari area (Sample Id: 114648).....</i>	<i>136</i>
<i>Figure 7.80: Limestone with calcite grains near pampsiyari area.(Sample Id: 114648)</i>	<i>136</i>
<i>Figure 7.81: Bedding in quartzite of Berinag Formation west of pampsiyari area.....</i>	<i>137</i>
<i>Figure 7.82: Bedding in Limestone Phyllite alternate bands west of Dhunga area.</i>	<i>138</i>
<i>Figure 7.83: Cross Bedding in quartzite of Berinag Formation south of Debichuna area.....</i>	<i>139</i>
<i>Figure 7.84: Field photograph of stromatolite in limestone.</i>	<i>139</i>
<i>Figure 7.85: Field photograph of stromatolite in limestone.</i>	<i>139</i>
<i>Figure 7.86: Field photograph of stromatolite in limestone.</i>	<i>140</i>
<i>Figure 7.87: Field photograph of stromatolite in limestone.</i>	<i>140</i>
<i>Figure 7.88: Flat-Ramp-Duplex Structure in Askot area.</i>	<i>141</i>
<i>Figure 7.89 Development of S2-foliation by metamorphic differentiation and reorientation of micaceous minerals along S1-foliation in the chlorite schist (106335).....</i>	<i>142</i>
<i>Figure 7.90 Development of S2-foliation by metamorphic differentiation and reorientation of micaceous minerals along S1-foliation in the chlorite schist (106335).....</i>	<i>142</i>
<i>Figure 7.91 Folded amphibole in amphibolite with sulphide also folded.</i>	<i>143</i>
<i>Figure 7.92 Development of S1-foliation by parallel alignment of the biotite muscovite around the garnet (L393, 114630).....</i>	<i>143</i>

Figure 7.93 Gossan associated with phyllite, west of Turgoli area.....	146
Figure 7.94 Chalcopyrite, pyrite associated with phyllite, north of Thal area.....	146
Figure 7.95 Disseminated chalcopyrite associated with phyllite.....	146
Figure 7.96 Disseminated chalcopyrite associated with phyllite.....	146
Figure 7.97 Malachite and Chalcopyrite associated with amphibolite, north of Didihat area.....	147
Figure 7.98 Amphibolite with quartz veins, north of Sitoli area.....	147
Figure 7.99 Chalcopyrite associated with amphibolite.....	147
Figure 7.100 Chalcopyrite associated with amphibolite.....	147
Figure 7.101 Azurite associated with the chloritic schist rock, north of Baragaon area.....	148
Figure 7.102 Azurite-Malachite associated with the chloritic schist rock, north of Baragaon area.....	148
Figure 7.103 Malachite flow east of Gadali area.....	149
Figure 7.104 Malachite-Azuroite, south of Gadali area.....	149
Figure 7.105 The presence of chalcopyrite in VMS.....	149
Figure 7.106 The presence of chalcopyrite, pyrite, and Sphalerite in VMS.....	149
Figure 7.107 Surface bedrock Copper (Cu) anomaly map over the Askot-Didihat-Thal belt.....	151
Figure 7.108 Surface bedrock Lead (Pb) anomaly map over the Askot-Didihat-Thal belt.....	154
Figure 7.109 Surface bedrock Zinc (Zn) anomaly map over the Askot-Didihat-Thal belt.....	157
Figure 7.110 : Surface bedrock Cobalt (Co) anomaly map over the Askot-Didihat-Thal belt.....	159
Figure 7.111: Surface bedrock Molybdenum (Mo) anomaly map over the Askot-Didihat-Thal.....	161
Figure 7.112 Surface bedrock Tin (Sn) anomaly map over the Askot-Didihat-Thal belt.....	163
Figure 7.113 Surface bedrock Antimony (Sb) anomaly map over the Askot-Didihat-Thal belt.....	166
Figure 7.114 Surface bedrock Bismuth (Bi) anomaly map over the Askot-Didihat-Thal belt.....	168
Figure 7.115 Surface bedrock Tellurium (Te) anomaly map over the Askot-Didihat-Thal belt.....	170
Figure 7.116 Surface bedrock Thallium (Tl) anomaly map over the Askot-Didihat-Thal belt.....	172
Figure 7.117 Surface bedrock Tungsten (W) anomaly map over the Askot-Didihat-Thal belt.....	173
Figure 7.118 Histogram of Pb concentration with frequency curve. Mean=976.61, Median=19.00, Mode=5.00, Skewness=8.66, Kurtosis=81.25. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization.....	175
Figure 7.119 Histogram of Zn concentration with frequency curve. Mean=227.81, Median=89.50, Mode=5.00, Skewness=4.97, Kurtosis=28.36. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization.....	175



Figure 7.120 Histogram of Ag concentration with frequency curve. Mean=3.23, Median=1.00, Mode=1.00, Skewness=5.07, Kurtosis=25.01. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 176

Figure 7.121 Histogram of Ba concentration with frequency curve. Mean=276.85, Median=134.50, Mode=5.00, Skewness=6.20, Kurtosis=46.66. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 176

Figure 7.122 Histogram of Cd concentration with frequency curve. Mean=0.98, Median=0.50, Mode=0.50, Skewness=5.59, Kurtosis=33.45. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 176

Figure 7.123 Figure: Histogram of Sb concentration with frequency curve. Mean=10.13, Median=3.00, Mode=1.00, Skewness=6.55, Kurtosis=49.72. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 176

Figure 7.124 Histogram of Mo concentration with frequency curve. Mean=3.61, Median=1.00, Mode=0.50, Skewness=5.96, Kurtosis=44.94. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 177

Figure 7.125 Histogram of Ni concentration with frequency curve. Mean=35.98, Median=23.50, Mode=5.00, Skewness=3.61, Kurtosis=17.71. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 177

Figure 7.126 Histogram of Co concentration with frequency curve. Mean=31.80, Median=20.00, Mode=2.00, Skewness=3.62, Kurtosis=20.74. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 177

Figure 7.127 Histogram of Fe concentration with frequency curve. Mean=51840.36, Median=41218.50, Mode=0.38, Skewness=1.76, Kurtosis=4.34. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 177

Figure 7.128 Histogram of S concentration with frequency curve. Mean=5657.81, Median=500.00, Mode=100.00, Skewness=8.51, Kurtosis=78.15. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 178

Figure 7.129 Histogram of V concentration with frequency curve. Mean=181.56, Median=99.50, Mode=9.00, Skewness=1.79, Kurtosis=4.12. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization..... 178

Figure 7.130 Histogram of Cu concentration with frequency curve. Mean=99.69, Median=55.00, Mode=48.00, Skewness=12.34, Kurtosis=168.59. 178

Figure 7.131 Histogram of Pb concentration with frequency curve. Mean=40.00, Median=24.00, Mode=19.00, Skewness=9.78, Kurtosis=113.02..... 178

Figure 7.132 Histogram of Zn concentration with frequency curve. Mean=140.05, Median=109.00, Mode=93.00, Skewness=8.79, Kurtosis=85.40. 179

Figure 7.133 Histogram of Bi concentration with frequency curve. Mean=3.79, Median=5.00, Mode=5.00, Skewness=2.19, Kurtosis=11.89..... 179

Figure 7.134 Histogram of Mo concentration with frequency curve. Mean=1.19, Median=1.00, Mode=1.00, Skewness=9.04, Kurtosis=89.82.	179
Figure 7.135 Histogram of Sb concentration with frequency curve. Mean=3.33, Median=1.00, Mode=1.00, Skewness=1.77, Kurtosis=3.31.	179
Figure 7.136 Histogram of Sn concentration with frequency curve. Mean=9.39, Median=7.00, Mode=1.00, Skewness=3.01, Kurtosis=15.53.	179
Figure 7.137 Histogram of Te concentration with frequency curve. Mean=3.56, Median=5.00, Mode=5.00, Skewness=1.51, Kurtosis=3.67.	179
Figure 7.138 Histogram of Tl concentration with frequency curve. Mean=10.46, Median=2.00, Mode=1.00, Skewness=1.08, Kurtosis=0.09.	180
Figure 7.139 Histogram of W concentration with frequency curve. Mean=6.33, Median=5.00, Mode=5.00, Skewness=2.86, Kurtosis=10.35.	180
Figure 7.140 Histogram of Ba concentration with frequency curve. Mean=407.52, Median=398.00, Mode=330.00, Skewness=0.35, Kurtosis=0.22.	180
Figure 7.141 Histogram of Cd concentration with frequency curve. Mean=3.78, Median=5.00, Mode=5.00, Skewness=-0.96, Kurtosis=-0.97.	180
Figure 7.142 Histogram of Co concentration with frequency curve. Mean=23.19, Median=20.00, Mode=18.00, Skewness=1.13, Kurtosis=1.08.	180
Figure 7.143 Histogram of Ni concentration with frequency curve. Mean=41.23, Median=40.00, Mode=52.00, Skewness=2.81, Kurtosis=17.51.	180
Figure 7.144 Histogram of Cr concentration with frequency curve. Mean=162.38, Median=127.00, Mode=84.00, Skewness=2.63, Kurtosis=9.74.	181
Figure 7.145 Histogram of Fe concentration with frequency curve. Mean=17055.04, Median=5220.00, Mode=1000.00, Skewness=1.42, Kurtosis=1.09.	181
Figure 7.146 Histogram of V concentration with frequency curve. Mean=122.23, Median=111.00, Mode=63.00, Skewness=0.88, Kurtosis=0.73.	181
Figure 7.147 Histogram of Al concentration with frequency curve. Mean=85322.09, Median=89000.00, Mode=50000.00, Skewness=-0.34, Kurtosis=-0.35.	181
Figure 7.148 Histogram of Ca concentration with frequency curve. Mean=13061.23, Median=9300.00, Mode=5000.00, Skewness=2.69, Kurtosis=12.86.	182
Figure 7.149 Histogram of Sr concentration with frequency curve. Mean=109.04, Median=98.00, Mode=71.00, Skewness=0.70, Kurtosis=-0.13.	182
Figure 7.150 Histogram of Ti concentration with frequency curve. Mean=3934.00, Median=4062.00, Mode=500.00, Skewness=0.26, Kurtosis=-0.41.	182
Figure 7.151 Histogram of Zr concentration with frequency curve. Mean=17.65, Median=14.00, Mode=10.00, Skewness=1.48, Kurtosis=2.06.	182

<i>Figure 7.152 Maximum-to-P95 anomaly strength diagram. Elements with high Max/P95 ratios contain extreme outliers and therefore indicate distinct anomalous populations above the regional stream-sediment background.....</i>	<i>182</i>
<i>Figure 7.153 Spearman correlation heatmap for selected base-metal, pathfinder and lithological elements. Positive associations help identify geochemical suites and distinguish polymetallic anomalies from lithological background effects.....</i>	<i>182</i>
<i>Figure 7.154 Stream-sediment Cu anomaly map over the Askot block.</i>	<i>183</i>
<i>Figure 7.155 Stream-sediment Pb anomaly map over the Askot block.</i>	<i>185</i>
<i>Figure 7.156 Stream-sediment Zn anomaly map over the Askot block.....</i>	<i>187</i>
<i>Figure 7.157 Stream-sediment Co anomaly map over the Askot block.</i>	<i>189</i>
<i>Figure 7.158 Stream-sediment Mo anomaly map over the Askot block.</i>	<i>191</i>
<i>Figure 7.159 Stream-sediment Bi anomaly map over the Askot block.</i>	<i>193</i>
<i>Figure 7.160 Stream-sediment Sb anomaly map over the Askot block.....</i>	<i>195</i>
<i>Figure 7.161 Stream-sediment Sn anomaly map over the Askot block.....</i>	<i>197</i>
<i>Figure 7.162 Stream-sediment Te anomaly map over the Askot block.</i>	<i>199</i>
<i>Figure 7.163 Stream-sediment Tl anomaly map over the Askot block.</i>	<i>201</i>
<i>Figure 7.164 Stream-sediment W anomaly map over the Askot block.</i>	<i>203</i>
<i>Figure 7.165 Potential mineral Target zones in Askot regional area.</i>	<i>209</i>
<i>Figure 7.166 Detailed structural analysis shows Regional moderately steep near reclined overturned fold with complex 'M' patterns in the Askot-Naret Hinge Zone.</i>	<i>211</i>
<i>Figure 7.167 Chalcopyrite, galena and bornite in VMS, Naret area.....</i>	<i>213</i>
<i>Figure 7.168 Chalcopyrite, galena and bornite in VMS, Naret area.....</i>	<i>213</i>
<i>Figure 7.169 Chalcopyrite and bornite in VMS, Naret area.....</i>	<i>213</i>
<i>Figure 7.170 Chalcopyrite, galena and bornite in VMS, Naret area.....</i>	<i>213</i>
<i>Figure 7.171 Disseminated chalcopyrite with chlorite schist.....</i>	<i>214</i>
<i>Figure 7.172 Disseminated pyrite with chlorite schist.....</i>	<i>214</i>
<i>Figure 7.173 Disseminated pyrite, chalcopyrite, galena with chlorite schist.....</i>	<i>214</i>
<i>Figure 7.174 Disseminated chalcopyrite, pyrite with chlorite schist.</i>	<i>214</i>
<i>Figure 7.175 Stringer chalcopyrite with chlorite schist.....</i>	<i>215</i>
<i>Figure 7.176 Stringer chalcopyrite with chlorite schist.</i>	<i>215</i>
<i>Figure 7.177 A362 Stringer chalcopyrite with chlorite schist.</i>	<i>215</i>
<i>Figure 7.178 Stringer chalcopyrite with chlorite schist.</i>	<i>215</i>
<i>Figure 7.179 Banded Chalcopyrite in chlorite schist.....</i>	<i>216</i>



Figure 7.180 Banded pyrite in chlorite schist.....	216
Figure 7.181 Brecciated chalcopyrite and galena with chlorite schist.....	216
Figure 7.182 Brecciated chalcopyrite, bornite and galena with chlorite schist.....	216
Figure 7.183 Brecciated chalcopyrite with chlorite schist.....	217
Figure 7.184 Brecciated chalcopyrite and bornite with chlorite schist.	217
Figure 7.185 Replacement chalcopyrite with chalcocite with chlorite schist.	217
Figure 7.186 Replacement chalcopyrite with pyrite with chlorite schist.	217
Figure 7.187 Replacement chalcopyrite with chalcocite with chlorite schist.	218
Figure 7.188 Replacement pyrite with chalcocite with chlorite schist.	218
Figure 7.189 Fracture fill chalcopyrite with chlorite schist.	218
Figure 7.190 Fracture fill chalcopyrite with chlorite schist.	218
Figure 7.191 Galena and Sphalerite with amphibolite.	219
Figure 7.192 sphalerite with amphibolite and chlorite schist.....	219
Figure 7.193 Arsenopyrite shows pressure shadow	219
Figure 7.194 pyrite shows pressure shadow	219
Figure 7.195 Pyrite and bornite in pressure shadow.....	220
Figure 7.196 Pyrite bornite in pressure shadow.....	220
Figure 7.197 Recrystallized pyrite and chalcopyrite.....	220
Figure 7.198 Recrystallized pyrite and chalcopyrite.....	220
Figure 7.199 Recrystallized pyrite and chalcopyrite.....	221
Figure 7.200 Recrystallized pyrite and chalcopyrite.....	221
Figure 7.201 Surface bedrock Copper (Cu) anomaly map of the Askot-Naret hinge area	223
Figure 7.202 Surface bedrock Lead (Pb) anomaly map of the Askot-Naret hinge area	224
Figure 7.203 Surface bedrock Zinc (Zn) anomaly map of the Askot-Naret hinge area	225
Figure 7.204 Surface bedrock Bismuth (Bi) anomaly map of the Askot-Naret hinge area	226
Figure 7.205 Surface bedrock Antimony (Sb) anomaly map of the Askot-Naret hinge area.....	227
Figure 7.206 Surface bedrock Tin (Sn) anomaly map of the Askot-Naret hinge area.....	229
Figure 7.207 . Surface bedrock Tungsten (W) anomaly map of the Askot-Naret hinge area	230
Figure 7.208 . Surface bedrock Molybdenum (Mo) anomaly map of the Askot-Naret hinge area.....	231
Figure 7.209 Surface bedrock Tellurium (Te) anomaly map of the Askot-Naret hinge area.....	232
Figure 7.210 Surface bedrock Thallium (Tl) anomaly map of the Askot-Naret hinge area	233

<i>Figure 7.211 Stream-sediment Copper (Cu) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>237</i>
<i>Figure 7.212 Stream-sediment Lead (Pb) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>238</i>
<i>Figure 7.213 Stream-sediment Zinc (Zn) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 01)</i>	<i>240</i>
<i>Figure 7.214 Stream-sediment Bismuth (Bi) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>241</i>
<i>Figure 7.215 Stream-sediment Molybdenum (Mo) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>243</i>
<i>Figure 7.216 Stream-sediment Antimony (Sb) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>244</i>
<i>Figure 7.217 Stream-sediment Tin (Sn) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>245</i>
<i>Figure 7.218 Stream-sediment Tungsten (W) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>247</i>
<i>Figure 7.219 Stream-sediment Tellurium (Te) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>248</i>
<i>Figure 7.220 Stream-sediment Thallium (Tl) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).....</i>	<i>249</i>
<i>Figure 7.221 IPI2WIN Model of ASK_VES_25</i>	<i>251</i>
<i>Figure 7.222 IPI2WIN Model of ASK_VES_53</i>	<i>251</i>
<i>Figure 7.223 VES location points map on Askot block.....</i>	<i>252</i>
<i>Figure 7.224 Geological Cross section with VES value</i>	<i>253</i>
<i>Figure 7.225 Geological Cross section with VES value</i>	<i>254</i>
<i>Figure 7.226 Gold anomaly map of Askot block</i>	<i>256</i>
<i>Figure 7.227 Mercury anomaly map of Askot block</i>	<i>257</i>
<i>Figure 8.1 Borehole Locations on Lithological map of Askot Block.....</i>	<i>264</i>
<i>Figure 8.2 Malachite Stream, around 200 m east of Baragaon village.....</i>	<i>268</i>
<i>Figure 8.3 Hematite, limonite and secondary copper Staining, east of Baragaon village at BH 01 and 02</i>	<i>268</i>
<i>Figure 8.4 VES-01 profiling in Askot over BH 01and 02.....</i>	<i>268</i>
<i>Figure 8.5 Malachit in brecciated qtz-chlorite schist adjacent to BH01and BH 02, east of Baragaon village</i>	<i>268</i>
<i>Figure 8.6 Litholog of Borehole 1, ~200 m east of Baragaon village.....</i>	<i>269</i>



<i>Figure 8.7 Borehole Sample shows chalcopyrite and sphalerite</i>	<i>270</i>
<i>Figure 8.8 Borehole Sample shows Malachite</i>	<i>270</i>
<i>Figure 8.9 Gossan in Borehole sample.....</i>	<i>270</i>
<i>Figure 8.10 Borehole Sample shows shearing in Chlorite-sericite schist</i>	<i>270</i>
<i>Figure 8.11 Borehole Sample shows chalcopyrite and pyrite.....</i>	<i>270</i>
<i>Figure 8.12 Borehole Sample shows chalcocite</i>	<i>270</i>
<i>Figure 8.13 Weightage average of mineralized zone after geochemical analysis of Borehole 1, ~200 m east of Baragaon village</i>	<i>272</i>
<i>Figure 8.14 Weightage average of mineralized zone after geochemical analysis of Borehole 1, ~200 m east of Baragaon village</i>	<i>272</i>
<i>Figure 8.15 Weightage average of mineralized zone after geochemical analysis of Borehole 1, ~200 m east of Baragaon village</i>	<i>273</i>
<i>Figure 8.16 Geochemical analysis of Borehole 1, ~200 m east of Baragaon village.....</i>	<i>273</i>
<i>Figure 8.17 (111771) Sericite-Chlorite schist shows well-developed schistosity.....</i>	<i>276</i>
<i>Figure 8.18 (111776) Chlorite sericite schist with phenocrysts of quartz wrapping by chlorite, sericite and biotite.</i>	<i>276</i>
<i>Figure 8.19 (111784) Brecciated quartz in Sericite-Chlorite schist shows well-developed schistosity in plane polalized light</i>	<i>276</i>
<i>Figure 8.20 111784 Brecciated quartz in Sericite-Chlorite schist shows well-developed schistosity in cross polalized light.....</i>	<i>276</i>
<i>Figure 8.21 111785 Bornite covelite and sphalerite sulphide association in VMS.....</i>	<i>277</i>
<i>Figure 8.22 111785 Chalcopyrite, and sphalerite in Volcanogenic Massive Sulphides</i>	<i>277</i>
<i>Figure 8.23 111779: Biotite-sericite-chlorite schist shows preferred flakey mineral orientation</i>	<i>277</i>
<i>Figure 8.24 Fig111784: Biotite-sericite-chlorite schist shows preferred flakey mineral orientation</i>	<i>277</i>
<i>Figure 8.25 111785 Chlcopyrite and sphalerite in VMS.</i>	<i>278</i>
<i>Figure 8.26 111785: Chalcopyrite and bornite in VMS.</i>	<i>278</i>
<i>Figure 8.27 Litholog of Borehole 2, ~200 m east of Baragaon village</i>	<i>280</i>
<i>Figure 8.28 Borehole sample shows galena and sphalerite in massive sulphides</i>	<i>280</i>
<i>Figure 8.29 Borehole Sample shows Bornite.....</i>	<i>280</i>
<i>Figure 8.30 Borehole Sample shows dessiminations of chalcopyrite veins in sericite chlorite schist host</i>	<i>280</i>
<i>Figure 8.31 Borehole Sample shows massive sulphides (chalcopyrite) in sericite chlorite schist host</i>	<i>280</i>
<i>Figure 8.32 Borehole Sample shows galena in sericite chlorite schist host</i>	<i>281</i>

Figure 8.33 Borehole Sample shows malachite staining.....	281
Figure 8.34 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village	281
Figure 8.35 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village	282
Figure 8.36 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village	283
Figure 8.37 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village	283
Figure 8.38 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village	284
Figure 8.39 111761 Chalcopyrite in chlorite schist.....	287
Figure 8.40 : 111762 chalcopyrite bornite in VMS.....	287
Figure 8.41 111762 Chalcopyrite, galena, sphalerite and bornite in VMS.	287
Figure 8.42 111762 Chalcopyrite, galena, and sphalerite in VMS.	287
Figure 8.43 111763 Chalcopyrite and arsenopyrite in chlorite schist host.	287
Figure 8.44 111763 chlorite and sericite grains are parallel to foliation, quartz grains shows undulows extinction.....	287
Figure 8.45 111764 Ductile chalcopyrite in chlorite schist host.....	288
Figure 8.46 111764 Ductile chalcopyrite in chlorite schist host chlorite grains are parallel to foliation	288
Figure 8.47 111774 chlorite and sericite grains are parallel to foliation, quartz grains show undulows extinction.....	288
Figure 8.48 111766 Pyrite, chalcopyrite and magnetite in sericite chlorite schist.	288
Figure 8.49 111766 Pyrite and magnetite in schist.....	288
Figure 8.50 111770 Chlorite, biotite parallel to foliation, in sericite chlorite schist	288
Figure 8.51 111764 Ductile chalcopyrite in sericite chlorite schist host	289
Figure 8.52 111764 Ductile chalcopyrite and bornite in sericite chlorite schist host.....	289
Figure 8.53 Corelation in between BH01 and BH 02.....	290
Figure 8.54 : Malachite, azurite staining west of Borehole 03.....	291
Figure 8.55 Azurite staining west of Borehole 03	291
Figure 8.56 : VES profiling in Askot around BH 03.....	291
Figure 8.57 Massive sulphide and Malachite in brecciated qtz-chlorite schist adjacent to Askot mine dump area.....	291
Figure 8.58 Litholog of Borehole 3, ~900 m northeast of Baragaon village.....	293

Figure 8.59 Borehole Sample shows limonite and tenorite	294
Figure 8.60 Borehole Sample shows Galena and sphalerite	294
Figure 8.61 Iron oxides in Borehole sample	294
Figure 8.62 Borehole Sample shows chalcocite along brecciated qtz vein in Chlorite-sericite schist.....	294
Figure 8.63 Weightage average of mineralized zone after geochemical analysis of Borehole 3, ~900 m northeast of Baragaon village.....	295
Figure 8.64 Weightage average of mineralized zone after geochemical analysis of Borehole 3, ~900 m northeast of Baragaon village.....	295
Figure 8.65 Weightage average of mineralized zone after geochemical analysis of Borehole 3, ~900 m northeast of Baragaon village.....	296
Figure 8.66 Azurite staining, southeast of Borehole 04	298
Figure 8.67 Gossan in chlorite schist southeast of Borehole 04.....	298
Figure 8.68 : VES profiling at Mouchora near BH 04	298
Figure 8.69 Brecciated qtz-chlorite schist west to BH 04 area.	298
Figure 8.70 Borehole Sample shows chalcopyrite under lens.	299
Figure 8.71 Borehole Sample shows Galena and sphalerite	299
Figure 8.72 Borehole Sample shows chalcopyrite and bornite under lens.....	299
Figure 8.73 Drillcore Sample shows mineralized veins along qtz-sericite- chlorite schist	299
Figure 8.74 Litholog of Borehole 4, ~100 m north of Mouchora village	300
Figure 8.75 Weightage average of mineralized zone after geochemical analysis of Borehole 4, ~100 m north of Mouchora village	301
Figure 8.76 Weightage average of mineralized zone after geochemical analysis of Borehole 4, ~100 m north of Mouchora village	302
Figure 8.77 Weightage average of mineralized zone after geochemical analysis of Borehole 4, ~100 m north of Mouchora village	302
Figure 8.78 XRD Measurement Information of 114611	303
Figure 8.79 XRD Measurement Information of 114611	304
Figure 8.80 XRD Measurement Information of 114612	305
Figure 8.81 XRD Measurement Information of 114612	305
Figure 8.82 XRD Measurement Information of 114613	306
Figure 8.83 XRD Measurement Information of 114613	307
Figure 8.84 XRD Measurement Information of 114614	307
Figure 8.85 XRD Measurement Information of 114614	308

<i>Figure 8.86 XRD Measurement Information of 114615</i>	<i>309</i>
<i>Figure 8.87 XRD Measurement Information of 114615</i>	<i>309</i>
<i>Figure 8.88 XRD Measurement Information of 114616</i>	<i>310</i>
<i>Figure 8.89 XRD Measurement Information of 114616</i>	<i>310</i>
<i>Figure 8.90 XRD Measurement Information of 114610</i>	<i>311</i>
<i>Figure 8.91 XRD Measurement Information of 114610</i>	<i>312</i>
<i>Figure 8.92 XRD Measurement Information of 114617</i>	<i>313</i>
<i>Figure 8.93 XRD Measurement Information of 114617</i>	<i>313</i>
<i>Figure 8.94 XRD Measurement Information of 114618</i>	<i>314</i>
<i>Figure 8.95 XRD Measurement Information of 114618</i>	<i>314</i>
<i>Figure 8.96 XRD Measurement Information of 114619</i>	<i>315</i>
<i>Figure 8.97 XRD Measurement Information of 114619</i>	<i>316</i>
<i>Figure 8.98 Backscatter image of the 11780 shows the presence of quartz and apatite.</i>	<i>320</i>
<i>Figure 8.99 Backscatter image of the 362 shows the presence of arsenopyrite.....</i>	<i>320</i>
<i>Figure 8.100 Backscatter image of the 482 shows the presence of pyrite</i>	<i>320</i>
<i>Figure 8.101 Backscatter image of the 651 shows the presence of arsenopyrite,</i>	<i>320</i>
<i>Figure 8.102 Backscatter image of the 111766 shows the presence of chalcopyrite.....</i>	<i>320</i>
<i>Figure 8.103 Backscatter image of the 111766 shows the presence of chalcopyrite and sphalerite.....</i>	<i>320</i>
<i>Figure 8.104 Backscatter image of the 111766 shows the presence of chalcopyrite.....</i>	<i>321</i>
<i>Figure 8.105 Backscatter image of the 111762 shows the presence of galena and sphalerite.</i>	<i>321</i>
<i>Figure 8.106 Backscatter image of the A363 shows the presence of chalcopyrite and arsenopyrite.....</i>	<i>321</i>
<i>Figure 8.107 Backscatter image of the A363 shows the presence of arsenopyrite.</i>	<i>321</i>
<i>Figure 9.1 Potential Exploration Target zones based on bedrock chemical analyses.....</i>	<i>325</i>
<i>Figure 9.2 Potential anomalous zones identified by geovale from stream sediment datasets</i>	<i>326</i>
<i>Figure 9.3 Strikelength of VMS orebody in Askot-Naret Hinge Zone.....</i>	<i>327</i>
<i>Figure 10.2.1 Reccomonded Three G3 blocks (violet polygons) in the Askot block.</i>	<i>339</i>

List of Tables

Table 2.1 Administrative Details of the Project	15
Table 2.2 Details of Investigating agency	15
Table 2.3 Nature and quantum and timeline of work (NQT):	17
Table 2.4 Personnel Involved	19
Table 4.1 Stratigraphy of the Himalaya (after Valdiya, 1980).	48
Table 4.2 Statigraphic table of lithounits of this Prospect Block (after GSI and Mondal et. al., 2016).	50
Table 4.3 Regional Mineral Exploration around the Askot block	54
Table 4.4 Mineral Exploration within the Askot block	58
Table 7.1 The grade of metamorphism of the rocks from Askot study area.	144
Table 7.2 Summary of Copper (Cu) Geochemistry in Bedrock Samples	150
Table 7.3 Shows the a few higher copper anomalies (details in Annexure):	151
Table 7.4 Summary of Lead (Pb) Geochemistry in Bedrock Samples	153
Table 7.5 Table shows a few high anomalous Lead data (details in annexure)	154
Table 7.6 Summary of Zinc (Zn) Geochemistry in Bedrock Samples	156
Table 7.7 Table shows a few high anomalous Zinc data (details in annexure)	157
Table 7.8 Table shows a few high anomalous Cobalt data (details in annexure)	158
Table 7.9 Molybdenum (Mo) Geochemistry in Bedrock Samples	160
Table 7.10 Table shows a few high anomalous Molybdenite data (details in annexure)	161
Table 7.11 Summary of Tin (Sn) Geochemistry in Bedrock Samples	162
Table 7.12 Table shows top 20 strongly anomalous sn samples ($\geq 10 \times$ crustal abundance).	163
Table 7.13 Summary of Antimony (Sb) Geochemistry in Bedrock Samples	165
Table 7.14 Table shows a few high anomalous Antimony data (details in annexure)	166
Table 7.15 Summary of Bismuth (Bi) Geochemistry in Bedrock Samples	168
Table 7.16 Table shows a few high anomalous Antimony data (details in annexure)	168
Table 7.17 Table shows a few high anomalous Antimony data (details in annexure)	170
Table 7.18 Table shows a few high anomalous Antimony data (details in annexure)	172
Table 7.19 Table shows a few high anomalous Tungsten data (details in annexure)	174

Table 7.20 Highest Cu stream-sediment values and interpreted anomaly zones.....	184
Table 7.21 Highest Pb stream-sediment values and interpreted anomaly zones.....	186
Table 7.22 Highest Zn stream-sediment values and interpreted anomaly zones.....	188
Table 7.23 Highest Co stream-sediment values and interpreted anomaly zones.....	190
Table 7.24 Highest Mo stream-sediment values and interpreted anomaly zones.	192
Table 7.25 Highest Bi stream-sediment values and interpreted anomaly zones.	194
Table 7.26 Highest Sb stream-sediment values and interpreted anomaly zones.	196
Table 7.27 Highest Sn stream-sediment values and interpreted anomaly zones.	198
Table 7.28 Highest Te stream-sediment values and interpreted anomaly zones.	200
Table 7.29 Highest Tl stream-sediment values and interpreted anomaly zones.	202
Table 7.30 Highest W stream-sediment values and interpreted anomaly zones.....	204
Table 7.31 Ore Mineralogy and Textural Characteristics of the Askot Regional Block including Askot Naret VMS Zone)	212
Table 7.32 Element-wise Anomaly Classes	234
Table 7.33 Summary of Copper (Cu) Geochemistry in Askot Stream-Sediment Samples.....	236
Table 7.34 Summary of Lead (Pb) Geochemistry in Askot Stream-Sediment Samples	238
Table 7.35 Summary of Zinc (Zn) Geochemistry in Askot Stream-Sediment Samples	239
Table 7.36 Summary of Bismuth (Bi) Geochemistry in Askot Stream-Sediment Samples.....	240
Table 7.37 Summary of Molybdenum (Mo) Geochemistry in Askot Stream-Sediment Samples.....	242
Table 7.38 Summary of Antimony (Sb) Geochemistry in Askot Stream-Sediment Samples	243
Table 7.39 Summary of Tin (Sn) Geochemistry in Askot Stream-Sediment Samples	245
Table 7.40 Summary of Tungsten (W) Geochemistry in Askot Stream-Sediment Samples	246
Table 7.41 Summary of Tellurium (Te) Geochemistry in Askot Stream-Sediment Samples.....	248
Table 7.42 Summary of Thallium (Tl) Geochemistry in Askot Stream-Sediment Samples	249
Table 8.1 Borehole Location and Depth	265
Table 8.2 Geochemical results.....	274
Table 8.3 Geochemical results.....	284
Table 8.4 Geochemical results BH03	296
Table 8.5 Geochemical results BH04	300
Table 9.1 Askot-Naret Mineral Potential Block	328
Table 9.2 Table shows the rank wise mineral potential zones and associated properties.....	330

CHAPTER-1

EXECUTIVE SUMMARY



1. सारांश

मैसर्स जियोवेल सर्विसेज़ प्राइवेट लिमिटेड, जो एक श्रेणी-A अधिसूचित निजी अन्वेषण अभिकरण (NPEA) है, को राष्ट्रीय खनिज अन्वेषण एवं विकास न्यास (NMEDT), खान मंत्रालय द्वारा एक G4 चरण (पूर्वक्षण) अन्वेषण परियोजना प्रदान की गई। परियोजना का शीर्षक है “थल-डीडीहाट-अस्कोट क्षेत्र, पिथौरागढ़ जनपद, उत्तराखंड में आधारभूत धातु (बेसमेटल) हेतु पूर्वक्षण सर्वेक्षण (G4 चरण)” (परियोजना कोड 23/445/2024-NMET/600, स्वीकृति दिनांक 1 अप्रैल 2024)। यह परियोजना ज्ञात अस्कोट बहुधात्विक सल्फाइड निक्षेप के चतुर्दिक 92 वर्ग किमी क्षेत्र को आच्छादित करती है, जो अस्कोट, थल, डीडीहाट एवं जौलजीबी गाँवों, तहसील धारचूला, जनपद पिथौरागढ़, उत्तराखंड में स्थित है। अस्कोट निक्षेप का पूर्व में भारतीय भूवैज्ञानिक सर्वेक्षण (GSI) एवं मिनरल एक्सप्लोरेशन कॉर्पोरेशन लिमिटेड (MECL) द्वारा अध्ययन किया जा चुका है, तथा इसे ज्वालामुखीजनित बृहत् सल्फाइड (VMS) तंत्र के रूप में निरूपित किया गया है।

इस अन्वेषण के तीन उद्देश्य थे। प्रथम, भूविवर्तनिक क्षेत्र (geotectonic domain) की भूवैज्ञानिक, संरचनात्मक, विवर्तनिक एवं खनिज-तंत्र संबंधी समझ विकसित करना। द्वितीय, प्रादेशिक अन्वेषण के माध्यम से ज्ञात अस्कोट निक्षेप से परे अतिरिक्त VMS-प्रकार के लक्ष्यों की पहचान करना। तृतीय, पूर्वक्षण ड्रिलिंग के माध्यम से यह परीक्षण करना कि क्या ज्ञात अस्कोट खनिजीकरण, उसकी संरचनात्मक स्थिति को समुचित रूप से समझे जाने पर, विस्तारित होता है।

1.1 अन्वेषण कार्यक्रम अभिकल्पना एवं क्रियान्वयन प्रक्रिया

VMS निक्षेप सामान्यतः समूहों (clusters) में पाए जाते हैं। अतः ज्ञात अस्कोट अयस्क-पिंड को एक व्यापक खनिज तंत्र के प्रमाण के रूप में माना गया, न कि एक पृथक निक्षेप के रूप में। इसी आधार पर, खनिज तंत्र विश्लेषण (Mineral System Analysis, MSA) प्रारूप का उपयोग करते हुए, अन्वेषण को संपूर्ण 92 वर्ग किमी खंड में विस्तारित करना उचित ठहराया गया।



क्रियान्वयन एक चरणबद्ध अभिकल्पना के अनुसार किया गया। चरण-1 में विद्यमान भूवैज्ञानिक, भू-रासायनिक, संरचनात्मक एवं सुदूर संवेदन (remote-sensing) आँकड़ों की डेस्क-समीक्षा की गई। इससे अस्कोट क्रिस्टलीय संकुल तथा निकटवर्ती गढ़वाल समूह की शैलों को वास्तविक भूवैज्ञानिक रुचि के क्षेत्र के रूप में पुष्ट किया गया। चरण-2 में इस विद्यमान ज्ञान को एक परीक्षण-योग्य खनिज-तंत्र प्रतिरूप में परिवर्तित किया गया। इसमें अनुकूल आतिथेय शैल-प्रकार (एम्फिबोलाइट/मेटावोल्केनिक, क्वार्ट्ज़ाइट-शिस्ट संपर्क, चूनामय क्षितिज, विखंडित एवं सिलिकीकृत मंडल), प्रारूपिक परिवर्तन लक्षण (क्लोराइटिकरण, सिलिकीकरण, सेरिसिटीकरण, कार्बोनेट परिवर्तन), तथा संरचनात्मक गलियारे (वलन-वक्र, अपरूपण मंडल, चालन-संपर्क) परिभाषित किए गए, जिनसे खनिजकारी तरल पदार्थों के केंद्रित होने की अपेक्षा थी। चरण-3 में इस प्रतिरूप को क्षेत्र-कार्य तक ले जाया गया, जो दो पूरक धाराओं के माध्यम से भिन्न मापनियों (scales) पर संपन्न हुआ।

1.2 92 वर्ग किमी खंड में प्रादेशिक-स्तरीय अन्वेषण

प्रथम धारा संपूर्ण खंड को आच्छादित करने वाला प्रादेशिक अन्वेषण कार्यक्रम था। उन्नयन (elevation), समोच्च (contour), प्रवणता (slope), पर्वतछाया (hillshade), अपवाह (drainage), भू-उपयोग/भू-आवरण एवं परिवर्तन लक्षणों के भू-स्थानिक विश्लेषण से संरचनात्मक गलियारों एवं परिवर्तन-चिह्नों की पहचान की गई। इसके पश्चात संपूर्ण 92 वर्ग किमी क्षेत्र में 1:12,500 मापनी पर भूवैज्ञानिक एवं संरचनात्मक मानचित्रण किया गया। बहु-तात्विक आधारशैल एवं धारा-अवसाद भू-रासायनिक प्रतिचयन का विश्लेषण XRF, ICP-MS, AAS एवं फायर-ऐसे (fire assay) विधियों से किया गया। परिणामों के सांख्यिकीय उपचार से Cu-Pb-Zn साहचर्य तथा इसके पथ-निर्देशक तत्व-समूह (Au, Ag, Sn, Sb, Bi, Mo, Te, W, Ba, Cd) में वास्तविक तापजलीय (hydrothermal) विषमता को शैलीय पृष्ठभूमि से पृथक किया गया।

इस कार्य से खंड की संरचनात्मक वास्तुकला एक चालन-प्रभावी समतल-ढाल-द्वयी (flat-ramp-duplex) तंत्र के रूप में स्थापित हुई। यह विवर्तनिक रूप से संस्तरित एवं अंतर्गथित शिस्टी क्षितिजों में परिलक्षित होती है, जिसमें द्वि-पीढ़ीगत पर्णिकायन (foliation) इतिहास है: एक प्रारंभिक S1 संरचना, जिसके ऊपर 30-35° पर बाद की S2 दरार (cleavage) आरोपित हुई।



Cu-Pb-Zn सल्फाइड समुच्चय इसी संरचना के अनुदिश पुनर्क्रिस्टलित एवं स्थानिक रूप से पुनर्स्थानांतरित हुआ है। इससे यह पुष्ट होता है कि अस्कोट-प्रकार के खनिजीकरण का विस्तार संरचनात्मक समझ के माध्यम से ही अभिनिर्धारित किया जाना चाहिए, न कि केवल भूतल-उद्भासन (surface exposure) के आधार पर।

नए लक्ष्यों की खोज में प्रादेशिक भू-रसायन की केंद्रीय भूमिका रही। प्रत्येक तत्व हेतु आधारशैल प्रतिचयनों (प्रति तत्व 122-125) की तुलना औसत भू-पर्पटी बाहुल्यता (crustal abundance) से की गई, तथा वास्तविक विषमता को पृष्ठभूमि से पृथक करने हेतु 2×, 5× एवं 10× संवर्धन सीमाओं पर छानबीन की गई। उदाहरणस्वरूप, 18 प्रतिचयनों में Cu का मान भू-पर्पटी मान से 10 गुना अधिक पाया गया तथा 21 प्रतिचयनों में Pb का मान 10 गुना से अधिक पाया गया; Sb, Bi, Sn, Te एवं W हेतु भी तुलनीय केंद्रित समष्टियाँ प्राप्त हुईं। इन संवर्धित समष्टियों को धारा-अवसाद आँकड़ों तथा संरचनात्मक-शैलीय मानचित्र के साथ आलेखित करने पर स्पष्ट हुआ कि विषमता केवल अस्कोट गॉसन मंडल (ZONE - 1) तक ही सीमित नहीं थी। यह दो अन्य, स्थानिक रूप से पृथक गलियारों में संगठित पाई गई।

एक गलियारा खंड के उत्तरी भाग में, तुर्गोली, पुनी गाँव एवं रानीखेत के निकट, तुर्गोली गॉसन तथा संलग्न कार्बनयुक्त-फाइलाइट/काली शैल क्षितिज पर केंद्रित है। यहाँ सल्फाइड-समृद्ध क्वार्ट्ज शिराओं तथा पाइराइट/कोवेलाइट-युक्त गॉसन से आँकड़ा-समुच्चय के कुछ सर्वाधिक प्रबल आधारशैल Sb, Te एवं W मान प्राप्त हुए। संलग्न गंधकयुक्त एम्फिबोलाइट में विषम Ta भी परिलक्षित होता है। समवेत रूप से, यह एक संगत पथ-निर्देशक तत्व-समुच्चय है, जो अस्कोट से भिन्न एक तापजलीय केंद्र की ओर संकेत करता है। दूसरा गलियारा और उत्तर की ओर, डीडिहाट एवं भूमियाथल के निकट, डीडिहाट एम्फिबोलाइट-क्लोराइट-शिस्ट क्षेत्र पर केंद्रित है। यह गौण Cu उच्चता तथा कैल्कोपाइराइट-युक्त एम्फिबोलाइट में Bi संवर्धन द्वारा चिह्नित है। W, Sn, Bi एवं Sb का उच्चीकरण उस स्थान पर भी पाया जाता है जहाँ ज्वालामुखी-अवसादी अनुक्रम खंड के अधिकांश भाग में व्याप्त अंतर्वेधी ग्रेनाइट नाइस (granite gneiss) से संपर्क करता है। यह उस संपर्क-रेखा के अनुदिश एक अतिरिक्त, संरचनात्मक रूप से भिन्न प्रकार के अप्रकट (concealed) लक्ष्य की ओर संकेत करता है।



इन दोनों गलियारों को ZONE - 2 (Zone 2) एवं ZONE - 3 (Zone 3) के रूप में आगे बढ़ाया गया। ये VMS-प्रकार के खनिजीकरण के नवीन, पूर्व में अपरीक्षित समूह हैं, जो पूर्णतः भूतल आधारशैल एवं धारा-अवसाद साक्ष्यों से, ज्ञात अस्कोट निक्षेप से स्वतंत्र रूप से पहचाने गए हैं। NMEDT की सलाह पर, ZONE - 1 में सीमित ड्रिलिंग के परिणामों की प्रतीक्षा में ZONE - 2 एवं ZONE - 3 को स्थगित रखा गया। इनकी पहचान परियोजना के प्रादेशिक-लक्ष्यीकरण उद्देश्य को पूर्ण करती है तथा यह पुष्ट करती है कि अस्कोट खोज एक व्यापक, समूह-शैली VMS-उर्वर पेटी के भीतर स्थित है, न कि एक पृथक घटना के रूप में।

1.3 अस्कोट-नारेट संधि-मंडल (ZONE - 1) में संभावना-स्तरीय अन्वेषण

द्वितीय धारा अस्कोट-नारेट संधि-मंडल (hinge zone) पर केंद्रित एक सुनिश्चित अन्वेषण थी, जो प्रादेशिक स्तर पर पहचाना गया सर्वाधिक अनुकूल गलियारा था। इसमें वलन-संधि (fold-hinge) ज्यामिति का विस्तृत संरचनात्मक मानचित्रण, भूतल एवं आधारशैल भू-रसायन, अयस्क शैलवर्णन (petrography), खनिज विज्ञान तथा परिवर्तन एवं सल्फाइड बनावटों के EPMA अध्ययन सम्मिलित थे। इसमें प्रतिरोधी आधारशैल (resistive basement) के नीचे अप्रकट चालक सल्फाइड क्षितिजों का पता लगाने हेतु 30.3 रेखा-किमी लंबवत विद्युत परिज्ञापन (Vertical Electrical Sounding, VES) भी सम्मिलित था। गड्ढा-खनन एवं खंदक-खनन (101.38 घन मीटर, 20 प्रतिचयन) से सर्वाधिक संभावनाशील स्थलों पर गॉसनी खनिजीकरण उद्भासित हुआ तथा अंतिम ड्रिल-कॉलर चयन में मार्गदर्शन मिला।

इस प्रतिरूप का परीक्षण चार बोरहोलों (GSPL/ASK/BH01 से BH-04) में कुल 601 मीटर पूर्वक्षण कोर-ड्रिलिंग द्वारा किया गया। बारागाँव गाँव के निकट स्थित BH-01 एवं BH-02 में उच्च-कोटि, बहुधात्विक Cu-Pb-Zn-Ag-Au-Sn-Sb-Mo-W खनिजीकरण, कैल्कोपाइराइट-बॉर्नाइट-पाइराइट-गैलेना-स्फेलेराइट ($\pm$ कोवेलाइट/चैल्कोसाइट) के VMS-प्रकार सल्फाइड समुच्चय के साथ, पाया गया। BH-01 में 54-57 मीटर के अंतराल का भारित औसत 0.94% Cu रहा, साथ ही Sn का उन्नत श्रेय भी मिला। BH-02 में 27-29 मीटर गहराई पर शीर्ष पर पहुँचने वाला एक Zn-Pb-Cu-समृद्ध अंतराल पाया गया। अस्कोट खान के निकट स्थित BH-03 में गहराई पर बृहत् सल्फाइड की पुष्टि हुई, जिसमें एक लिथोकैप के नीचे 78-79 मीटर पर उच्च-कोटि Pb-Zn पट्टिका (0.5% Cu, 1.82% Pb, 2.76% Zn, Sn-Ag-Te श्रेय



सहित) सम्मिलित है। मौचोरा गाँव के निकट संधि-मंडल की दक्षिणी भुजा पर स्थित BH-04 में 107-108 मीटर पर Sb-Sn-Bi सहित एक अन्य बहुधात्विक Cu-Pb-Zn मंडल पाया गया। VES परिणामों ने उसी गलियारे में स्वतंत्र रूप से अप्रकट चालक सल्फाइड क्षितिजों का पता लगाया, जिससे ड्रिलिंग एवं भूतल भू-रसायन दोनों की पुष्टि हुई।

समवेत रूप से, इस कार्यक्रम ने दर्शाया कि ज्ञात अस्कोट खनिजीकरण अपनी ऐतिहासिक रूप से मान्यता-प्राप्त सीमाओं से कहीं आगे तक विस्तारित है। इसकी पुष्टि उस गलियारे में हुई जो ऐतिहासिक रूप से अन्वेषित खान क्षेत्र से लगभग 1 किमी पूर्व तथा लगभग 3.5 किमी दक्षिण तक विस्तृत है। अयस्क-वाही VMS क्षितिज की अब प्रादेशिक अपवर्तित (overturned) वलन-संधि की 'M'-आकृति ज्यामिति के अनुरूप व्याख्या की गई है। इसकी अपघाट-दिशा (strike) लंबाई 3 किमी से अधिक है, जबकि GSI एवं MECL द्वारा पूर्व में मान्यता-प्राप्त अयस्क-पिंड लंबाई मात्र 330 मीटर थी। इससे लगभग 3 करोड़ टन (~10-30 मिलियन टन) की अन्वेषण लक्ष्य संभाव्यता (Exploration Target Potential) प्राप्त होती है। श्रेणी लगभग Cu 0.99%, Pb 0.78% एवं Zn 1.34% है, साथ ही Au-Ag-Sn-Sb-Bi-Mo-Te के सारवान अतिरिक्त श्रेय भी हैं – जो पूर्व निक्षेप आकलन 0.80 मिलियन टन से पर्याप्त रूप से बढ़ा है।

1.4 परिणाम

जी4 कार्यक्रम ने अपने पूर्वक्षण अधिदेश (mandate) को तीनों उद्देश्यों में पूर्ण किया है। इसने खंड हेतु एक सुदृढ़, क्षेत्र-सत्यापित भूवैज्ञानिक एवं खनिज-तंत्र प्रारूप का निर्माण किया है। इसने ज्ञात निक्षेप से परे नए, श्रेणीबद्ध प्रादेशिक VMS लक्ष्य (ZONE - 2 एवं ZONE - 3) उत्पन्न किए हैं। तथा इसने ड्रिलिंग के माध्यम से पहली बार यह प्रदर्शित किया है कि ज्ञात अस्कोट निक्षेप एक संरचनात्मक रूप से पुनरावृत्त, पूर्व में मान्यता-प्राप्त की तुलना में सारवान रूप से बड़े खनिजीकृत तंत्र का भाग है। यह ऐतिहासिक आकलन की तुलना में अपघाट-लंबाई एवं अन्वेषण लक्ष्य आकार, दोनों में एक कोटि-क्रम (order-of-magnitude) की वृद्धि है। अस्कोट खंड एक उर्वर, बहुधात्विक VMS प्रांत के रूप में पुष्ट होता है, तथा परिणाम परियोजना को अन्वेषण के अगले चरण की ओर बढ़ाए जाने को न्यायोचित ठहराते हैं। 3 करोड़ टन के आँकड़े को कड़ाई से एक अन्वेषण लक्ष्य संभाव्यता के रूप में पढ़ा जाना चाहिए, न कि एक



वर्गीकृत निक्षेप (classified resource) के रूप में। केवल भूतल-अनुमान के स्थान पर प्रत्यक्ष ड्रिलिंग द्वारा इसकी पुष्टि ही है, जो इस कार्यक्रम के परिणाम को कार्य के पूर्ववर्ती चरणों से विशिष्ट बनाती है।

1.5 संस्तुतियाँ (Recommendations)

इन परिणामों से सीधे दो संस्तुतियाँ प्राप्त होती हैं, जो NMEDT तकनीकी समन्वय समिति द्वारा अनुमोदित कार्यक्षेत्र के अनुरूप हैं:

- ZONE - 1 – विस्तारित एवं स्थापित अस्कोट खनिजीकरण – को अन्वेषण के अगले (जी3/जी2) स्तर की ओर ले जाया जाना चाहिए। इसके लिए एक चरणबद्ध, गहन-स्थित ड्रिलिंग रणनीति आवश्यक है, जो BH-01-BH-04 से प्राप्त दिशा-संकेतों का अनुसरण करते हुए तंत्र के केंद्र तक पहुँचे, न कि पुनः उथले, पूर्वक्षण-प्रकार के छिद्रों तक सीमित रहे। तीन तत्व संस्तुत किए जाते हैं: BH-01-BH-02 क्षेत्र से संधि-मंडल के पूर्वी भाग में प्रबल रूप से खनिजीकृत मंडल की ओर दिशात्मक ड्रिलिंग; दक्षिणी भुजा पर, BH-04 अंतर्वेधन से क्लोराइट-सेरिसाइट परिवर्तन मंडल की ओर, निरंतरता एवं संरचनात्मक नियंत्रणों की स्थापना हेतु ड्रिलिंग; तथा अस्कोट के निकट BH-03 के चतुर्दिक अनुवर्ती परीक्षण, जहाँ भूतल आँकड़े अतिरिक्त संभावित VMS समूहों का संकेत देते हैं।
- ZONE - 2 एवं ZONE - 3 में, ZONE - 1 के समान, संरचनात्मक मानचित्रण, भू-रासायनिक प्रतिचयन एवं अन्वेषणात्मक ड्रिलिंग की जानी चाहिए। इससे वर्तमान संकल्पनात्मक विषमताएँ ड्रिल-योग्य जी3-स्तरीय अथवा संक्षिप्त जी4-स्तरीय लक्ष्यों में परिवर्तित हो सकेंगी। ग्रेनाइट-नाइस संपर्क-रेखा के अनुदिश भी एक सुनिश्चित कार्यक्रम संस्तुत किया जाता है, क्योंकि वहाँ W, Sn, Bi एवं Sb की प्रबल विषमता विद्यमान है। इसे खंड में विस्तृत चुंबकीय-वैद्युत (magnetotelluric, MT) सर्वेक्षण द्वारा समर्थित किया जाना चाहिए, ताकि ग्रेनाइट नाइस पिंड के भीतर ही अप्रकट VMS खनिजीकरण की जाँच हो सके।

इन दोनों संस्तुतियों का क्रियान्वयन थल-डीडीहाट-अस्कोट परियोजना हेतु तार्किक अगला कदम है। गहन-स्थित, लक्ष्योन्मुख ड्रिलिंग से विस्तारित अस्कोट खनिजीकरण के भीतर निक्षेप को परिभाषित किया जा सकेगा। सुव्यवस्थित अनुवर्ती कार्य से खंड भर में शेष VMS-प्रकार की विषमताओं का परीक्षण हो सकेगा।

1. Executive Summary

M/s. Geovale Services Private Limited, a Category-A Notified Private Exploration Agency (NPEA), was awarded a G4-stage (Reconnaissance) exploration project by the National Mineral Exploration and Development Trust (NMEDT), Ministry of Mines. The project is titled “Reconnaissance Survey (G4 Stage) for Basemetal in Thal–Didihat–Askot area, Pithoragarh district, Uttarakhand” (Project Code 23/445/2024-NMET/600, sanctioned 1 April 2024). It covers 92 sq. km around the known Askot polymetallic sulphide deposit, in and around Askot (also known as Askote), Thal, Didihat and Jauljibi villages, Tehsil Dharchula, District Pithoragarh, Uttarakhand. The Askot deposit was historically investigated by GSI and MECL and is interpreted as a Volcanogenic Massive Sulphide (VMS) system.

The investigation had three objectives. First, to develop the geological, structural, tectonic and mineral-systems understanding of the geotectonic domain. Second, to carry out regional exploration and identify additional VMS-style targets beyond the known Askot deposit. Third, to test, through reconnaissance drilling, whether the known Askot mineralisation extends once its structural setting is properly understood.

1.1 Exploration Programme Design and Process of Execution

VMS deposits typically occur in clusters. The known Askot orebody was therefore treated as evidence of a wider mineral system, not an isolated deposit. This justified extending the search across the full 92 sq. km block, using a Mineral System Analysis (MSA) framework.

Execution followed a staged design. Stage 1 was a desktop review of legacy geological, geochemical, structural and remote-sensing data. This confirmed the Askot Crystalline Complex and surrounding Garhwal Group rocks as an area of genuine interest. Stage 2 converted this into a testable mineral-system model. It defined favourable host lithologies (amphibolite/metavolcanics, quartzite-schist contacts, calcareous horizons, brecciated and silicified zones), alteration signatures (chloritisation, silicification, sericitisation, carbonate

alteration), and structural corridors (fold hinges, shear zones, thrust contacts) expected to have focused mineralising fluids. Stage 3 took this model to the field, through two complementary streams working at different scales.

1.2 Regional-Scale Exploration Across the 92 sq. km Block

The first stream was a regional exploration programme covering the entire block. Geospatial analysis of elevation, contour, slope, hillshade, drainage, land-use/land-cover and alteration signatures identified structural corridors and alteration footprints. This was followed by geological and structural mapping at 1:12,500 scale across the full 92 sq. km. Multi-element bedrock and stream-sediment geochemical sampling was analysed by XRF, ICP-MS, AAS and fire assay. Statistical treatment of the results separated lithological background from genuine hydrothermal anomalism in the Cu-Pb-Zn association and its pathfinder suite (Au, Ag, Sn, Sb, Bi, Mo, Te, W, Ba, Cd).

This work established the block's structural architecture as a thrust-dominated, flat-ramp-duplex system. It is expressed in tectonically stacked and imbricated schistose horizons, with a two-generation foliation history: an early S1 fabric overprinted by a later S2 cleavage at 30–35°. The Cu-Pb-Zn sulphide assemblage is recrystallised and locally remobilised along this fabric. This confirms that Askot-style mineralisation must be traced through structural understanding, not assumed from surface exposure.

The regional geochemistry was central to discovering new targets. Bedrock samples for each element were benchmarked against average crustal abundance, and screened at 2×, 5× and 10× enrichment thresholds to separate genuine anomalism from background. 18 samples exceeded 10× crustal Cu and 21 samples exceeded 10× crustal Pb, with comparable focused populations for Sb, Bi, Sn, Te and W. Plotting these enriched populations against the stream-sediment dataset and the structural-lithological map showed the anomalism was not confined to the Askot gossan zone (Zone 1). It organised into two further, exploration target potential near Didihat and Turgoli-Lajem areas.

One exploration targets potential centres on the Turgoli-Lejam gossan and adjoining carbonaceous-phyllite/black-shale horizon in the north of the block (Zone 3), near Turgoli, Puni Gaon and Ranikhet. Sulphide-rich quartz veins and pyrite/covellite-bearing gossan here produced some of the strongest bedrock Sb, Te and W values in the dataset. Anomalous Tl also occurs in adjoining sulphur-rich amphibolite. Together, this is a coherent pathfinder suite

pointing to a hydrothermal centre distinct from Askot. The second exploration target potential situated on the Didihat amphibolite–chlorite-schist domain further north, near Didihat and Bhumiyathal (Zone 2). It is marked by secondary Cu highs and Bi enrichment in chalcopyrite-bearing amphibolite. W, Sn, Bi and Sb are also elevated where the volcano-sedimentary sequence meets the intrusive granite gneiss covering much of the block. This points to a further, structurally distinct style of concealed target along that contact.

These two corridors were carried forward as Zone 2 and Zone 3. They are new, previously untested clusters of VMS-style mineralisation, identified purely from outcrop study, petrographical study, surface bedrock and stream-sediment geochemical evidence, independent of the known Askot deposit. On NMEDT's advice, Zones 2 and 3 were kept in abeyance pending results from limited drilling in Zone 1 (Askot-Naret Hinge zone). Their identification satisfies the project's regional-targeting objective and confirms that the Askot discovery sits within a wider, cluster-style VMS-fertile belt, not as an isolated occurrence.

1.3 Prospect-Scale Exploration of the Askot–Naret Hinge Zone (Zone 1)

The second stream was a focused investigation of the Askot–Naret Hinge Zone (ANHZ), the most favourable exploration target potential identified regionally. It integrated detailed structural mapping of the fold-hinge geometry, surface and bedrock geochemistry, ore petrography, mineralogy and EPMA studies of alteration and sulphide textures. It also included 30.3 line-km of Vertical Electrical Sounding (VES) to detect concealed conductive sulphide horizons beneath the resistive basement. Pitting and trenching (101.38 cubic metres, 20 samples) exposed gossanous mineralisation at the most promising sites and guided the final drill-collar selection.

This model was tested by 601 m of reconnaissance core drilling across four boreholes (GSPL/ASK/BH01 to BH-04). BH-01 and BH-02, (~200 m east of Baragaon area), intersected high-grade, polymetallic Cu-Pb-Zn-Ag-Au-Sn-Sb-Mo-W mineralisation, with a VMS-type sulphide assemblage of chalcopyrite-bornite-pyrite-galena-sphalerite ($\pm$ covellite/chalcocite). Analysed samples at 6–10 m, 16m, 54–57 m interval in BH-01 averaged 0.94% Cu with an elevated Sn. BH-02 intersected a Zn-Pb-Cu-rich interval peaking at 13–19, 20–21, 24–25, 27–32, 34–36 m depth (0.99% Cu, 0.78% Pb, 1.34% Zn, with Au-Ag-Bi-Mo-Sn-Te. BH-03, (~900 m northeast of Baragaon area), confirmed massive sulphides at depth, including a high-grade Pb-Zn lens at 78–79 m (0.5% Cu, 1.82% Pb, 2.76% Zn, with Sn-Ag-Te) beneath a lithocap.



BH-04, on the southern limb (~100 m north of Mouchora village), intersected a further polymetallic Cu-Pb-Zn zone with associated Sb-Sn-Bi at 107–108 m. VES results independently detected conductive, concealed sulphide horizons across the same exploration target potential, corroborating the drilling and surface geochemistry.

Together, this programme showed that the known Askot mineralisation extends well beyond its historically recognised limits. This was verified across a corridor extending roughly 1 km east and about 3.5 km south of the historically explored Askot mine area. The ore-bearing VMS horizon is now interpreted possibly to mimic the 'M'-shaped geometry of the regional overturned fold hinge. Its strike length exceeds 3 km, against the 330 m orebody length previously recognised by GSI and MECL. This gives an Exploration Target Potential of about ~10-30 million tonnes. Grades are approximately Cu 0.99%, Pb 0.78% and Zn 1.34%, with significant additional Au-Ag-Sn-Sb-Bi-Mo-Te — substantially larger than the earlier previous resource estimate of 0.80 million tonnes.

1.4 Outcomes

The G4 programme has fulfilled its reconnaissance mandate on all three counts. It has built a sound, field-verified geological and mineral-systems framework for the block. It has generated new, ranked regional VMS targets (Zones 2 and 3) beyond the known deposit. And it has demonstrated, for the first time through drilling, that the known Askot deposit is part of a structurally repeated, materially larger mineralised system than previously recognised. This is an order-of-magnitude increase in both strike length and exploration target size over the previously estimate. The Askot Block is confirmed as a fertile, polymetallic VMS province, and the results justify advancing the project to the next stage of exploration. The ~10 to 30-million-tonne figure should be read strictly as an Exploration Target Potential, not a classified resource. Its confirmation through direct drilling, rather than surface inference alone, is what distinguishes this programme's outcome from earlier phases of work in the area.

1.5 Recommendations

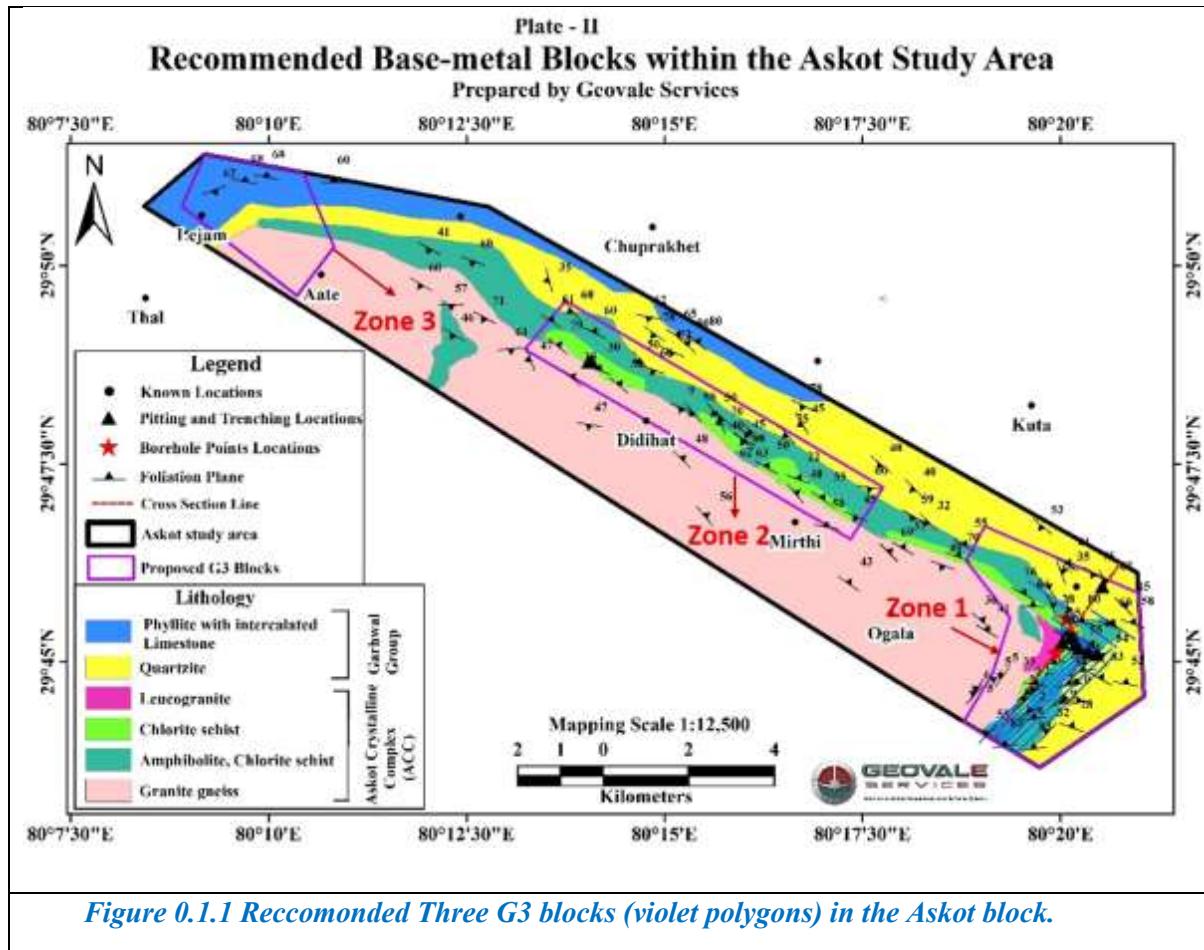
Two recommendations follow directly from these outcomes, consistent with the scope endorsed by the NMEDT Technical Coordination Committee:

- Zone 1 — the extended and established Askot mineralisation — should move to the next (G3/G2) level of exploration. This calls for a phased, deep-seated drilling strategy that

follows the vectors from BH-01–BH-04 into the core of the system, rather than further shallow, reconnaissance-style holes. Three elements are recommended: directional drilling from the BH-01–BH-02 area toward the strongly mineralised eastern part of the hinge zone; drilling on the southern limb, from the BH-04 intersection into the chlorite-sericite alteration zone, to establish continuity and structural controls; and follow-up testing around BH-03, near Askot, where surface data indicate possible additional VMS clusters.

- Zones 2 and 3 should be taken up for structural mapping, geochemical sampling and exploratory drilling, similar to Zone 1. This would convert the current anomalies into drill-ready G3-level. A focused programme is also recommended along the granite-gneiss contact, given the strong W, Sn, Bi and Sb anomalism there. This should be supported by a detailed magnetotelluric (MT) survey across the block, to test for concealed VMS mineralisation within the granite gneiss itself.

Implementing these two recommendations is the logical next step for the Thal–Didihat–Askot project. Deep-seated, targeted drilling would define the resource within the extended Askot mineralisation. Systematic follow-up would test the remaining VMS-style anomalies across the block.



CHAPTER-2

INTRODUCTION

2. Introduction and Exploration Rationale

The National Mineral Exploration and Development Trust (NMEDT) of Ministry of Mines, India awards different exploration projects to different Notified Private Exploration Agencies (NPEAs) after comprehensive review of proposals received from them. Accordingly, M/s. Geovale Services (one of the NPEAs) was submitted a G4 stage exploration project titled “Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand”. The project area (covers an area of 92 sq. km.) is in and around the Didihat, Askot and Thal areas of Uttarakhand State and is part of Survey of India Toposheet Number 62C/01, 62C/05, and 62C/06.

The Askot polymetallic sulphide deposit is interpreted as a Volcanogenic Massive Sulphide (VMS) system formed in a Proterozoic extensional tectonic setting and later modified by deformation and metamorphism. Its lenticular, stratabound, polymetallic sulphide bodies hosted within volcano-sedimentary rocks strongly support a VMS affinity (GSI Miscellaneous Publication No. 30, Part XIII-A (2019)). Since VMS deposits commonly occur as clusters or camps, the known Askot orebody may represent only one part of a larger mineralized system. This provides a strong geological basis for expanding exploration beyond the existing deposit. The complex structural evolution of the region, including folding, shearing, and metamorphism, may have concealed or displaced additional sulphide lenses and satellite deposits. Consequently, the exploration programme was designed to investigate the broader 92 sq. km. Askot Block.

This report documents the G4 stage exploration work and findings for Basemetal using data from remote sensing, large scale geological mapping (1:12,500 scale), geochemical sampling, geophysical investigations, petrographic and mineralogical analyses, and drilling data analyses. The integrated results have been interpreted within a Mineral Systems Analysis (MSA) framework to understand basemetal-hosted mineral systems, emphasizing evaluation of protolith characteristics, crustal-scale tectonic controls, fluid-flow pathways, metamorphic and metasomatic enrichment processes, mechanisms of mineral concentration. If found suitable then a few G3 stage exploration projects would be generated.

2.1 Administrative Details of the Project

The following table summarizes key details of the project, including geographical coverage, administrative jurisdictions, target commodities, and project timeline:



Table 2.1 Administrative Details of the Project

1	Project Name	Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand.		
2	Project Code	23/445/2024-NMET/600		
3	Commodity	Basemetal		
4	Tehsil	Dharchula		
5	District	Pithoragarh		
6	Nearby villages	Askot, Thal, Didihat, Jauljibi		
6	State	Uttarakhand		
7	Project area	92 Square Kilometers		
8	Survey of India Toposheet No.	62C/01, 62C/05, 62C/06		
9	Date of commencement of the project	1 st April, 2024		
10	Boundary coordinates of the project area	Boundary Coordinates	Latitude	Longitude
		A	29.742625	80.350835
		B	29.727741	80.328882
		C	29.74609	80.29852
		D	29.84576	80.14049
		E	29.85673	80.15326
		F	29.84567	80.21287
		G	29.76871	80.34943

2.2 Investigating agency

The key information about the investigating agency is provided in the table below:

Table 2.2 Details of Investigating agency

Name:	Geovale Services Private Limited
Postal address:	3rd Floor, Anaya Chambers, Block GN, Plot 38/5, Sector V, Salt Lake, Kolkata- 700091, West Bengal

Telephone Number (Office):	+91 9007706145
Mobile No.:	+91 9007706145
Telephone Number (Residence):	+91 9836070621
E-Mail address:	biplob.chatterjee@geovale.com
Date of accreditation granted by QCI-NABET:	23 March, 2022
Date of expiry of accreditation:	22 March, 2030
Category of the NPEA	Category A

2.3 Objectives of Investigation

- To explore the mineral potential for Basemetal (identify VMS discharge zones) in the block area.
- To identify Basemetal mineralization targets for next stage of exploration.

2.4 Basis for Taking Up Investigation:

As mentioned above, the Askot polymetallic sulphide deposit is interpreted as a Volcanogenic Massive Sulphide (VMS) system based on its geological characteristics, previous GSI studies, and confirmation from mine-dump sample analysis. Since VMS deposits commonly occur as clusters of genetically related orebodies, the known Askot deposit indicates a fertile mineral system and provides a strong rationale for exploring the surrounding region for additional concealed mineralized centres.

Earlier work in the Thal–Didihat–Askot region has also proved the existence of Basemetal and subordinate gold mineralization controlled by structure in the Lesser Himalayan crystallines. Disseminated chalcopyrite in recrystallized magnesite-dolomite zones was noted in the Agar-Dewalthal and Boraagar regions (Sehgal, 1960; Ramji and Agarwal, 1968), and galena-dominated lead-zinc mineralization in silicified dolomite was reported from Shishkhani area (Ramji, 1969). Geophysical prospecting and drilling in the Askot-Barigaon-Didihat belt traced NW-SE trending polymetallic sulphide deposits in schists, quartzites, and amphibolites, yielding promising Cu-Pb-Zn grades (Srivastava and Pathak, 1970; Narayan et. al., 1972; Ghose et. al., 1975). Follow-up exploration by MECL has further ascertained the existence of a structurally controlled Cu-Pb-Zn deposit with high total metal values (MECL, 1980; 1992). Other lead-zinc and subordinate gold deposits reported from contiguous regions further suggest

the metallogenic prospect of the region (Govil et. al., 2018; Mishra and Talwar, 2008) and thus form a sound exploration rationale for the current study (detailed are discussed in Chapter 4).

In view of the growing national demand for Basemetals and the strategic importance of augmenting indigenous mineral resources, the present project has been designed to upgrade the exploration level through phased and scientifically structured investigations. The exploration strategy integrates large-scale geological mapping, systematic geochemical sampling, geophysical surveys, and exploratory drilling to establish subsurface continuity, grade distribution, and the overall geometry of mineralized zones.

The project, therefore, aims not only to identify and delineate economically viable mineralized bodies but also to develop a comprehensive geological and structural framework of the area suitable for Basemetal deposits. The outcomes of this investigation are expected to contribute significantly toward mineral resource augmentation, improved metallogenic understanding of the belt, and strengthening the national mineral inventory in alignment with long-term resource security objectives.

2.5 Nature, quantum and timeline of work (NQT):

Table 2.3 Nature and quantum and timeline of work (NQT):

Sl. no.	Nature of work	Target assigned	Achievement	Remarks
1	Geospatial Data Analysis	92 sq. km.	92 sq. km.	-
2	Geological Mapping (1:12,500) & Sampling	92 sq. km.	92 sq. km.	-
3	Pitting	100 cubic meters, 20 samples.	101.38 cubic meters, 20 Samples.	-
4	Geochemical Analysis			
	(a) XRF (major oxides)	20 samples	20	-
	(b) XRF Check Samples (major oxides)	2 samples	2	-
	(c) ICPMS (34 elements)	200 samples	200	-
	(d) AAS	200 samples	200	-
	(e) AAS Check Samples	20 samples	20	-



Sl. no.	Nature of work	Target assigned	Achievement	Remarks
	(d) Analysis for Gold by fire assay technique	50	50	-
	(e) Analysis for Hg by fire assay technique	-	7	-
5	Petrological study	20 samples	25	-
	Thin section preparation	20 samples	25	
	Microscopic study	20 hours	8 hrs	
	EPMA			
6	Geophysical survey (a) Resistivity Profiling	30-line km	30.3-line km	-
7	Core Drilling (After Review) [03 boreholes-600 meter; Upto 300-meter depth, 02 boreholes]	600 meters	601 meters	-
	Core drilling preservation	500 meters	500 meters	-
8	Geochemical Analysis (BH samples)			
	(a) AAS	(a) 100 samples	100	-
	(b) AAS check sample	(b) 10 Samples	10	-
	(c) ICPMS (34 elements)	(c) 20 samples	20	-
	(d) XRD	(d) 10 samples	10	
	(e) EPMA	(e) 10 hrs.	8	
9	Petrological studies (BH samples)			
	a) Thin section preparation	(a) 10 samples	10	-
	b) Microscopic studies	(b) 10 samples	10	-
10	Geological Report	1	1	-

2.6 Personnel Involved:

The successful execution of the project was made possible through the efforts of a dedicated team of geoscientists, field personnel and technical experts. The table below lists the team members and their respective roles.

Table 2.4 Personnel Involved

Sl. No.	Team Members	Designation/ Role	Project Responsibilities
1	Biplob Chatterjee	Director and CEO, PC (NABET)	Overall project supervision, strategic oversight, verification of project protocols, review of outcomes and report.
2	Dr. Joy Gopal Ghosh	Principal Consultant (Exploration), PC (NABET)	Conceptualization of exploration models, Mineral System Analyses (MSA) study, determination of project protocols, technical design and guidance, peer review of findings and report.
3	Dr. Taraknath Pal	Principal Consultant (Exploration), PC (NABET)	Project management and project administration.
4	Dr. Tapan Pal	Principal Consultant (Exploration)	Geological and petrological supervision.
5	Dr. Tanwita Deb	Senior Project Manager (Exploration), TM (NABET)	Overall coordination of field operations, interpretation of geochemical data, petrographical study, all data integration and analyses.
6	Arnab Mallick	Project Manager, (Exploration), TM (NABET)	Project Manager: Mapping and sampling, field coordination, field assistance, supervision, pitting, trenching, geophysical survey and drilling managements, and report preparation.
7	Shivani Gupta	Project Geologist (Exploration), TM (NABET)	Field assistance and sample processing. Conducting VES geophysical data acquisition.
9	Dr. Archisman Dhar	Project Geologist (Exploration) TM (NABET)	Field assistance, and data documentation. Geological fieldwork and geochemical sampling. Core logging, litholog preparation, and report writing.

Sl. No.	Team Members	Designation/ Role	Project Responsibilities
10	Pratik Mukherjee	Project Geologist (Exploration) TM (NABET)	Field assistance, Core logging, litholog preparation, sample processing, and report writing.
11	Nupur Adhikary	Senior Project Manager (Geology and Geospatial Services, TAE (NABET)	Supervision on geospatial data management and project administration.
12	Dr. Suparna Goswami	Senior Project Manager (Exploration), TM (NABET)	Project administration.
13	Chiranjib Banerjee	Senior Project Manager (Geotechnical), TAE (NABET)	Drilling and project management plan supervision.
14	Krishna Prasad	Senior Consultant (Geophysics), TAE (NABET)	Geophysical survey design, data quality assessment and supervising.
15	Upasana Mondal	Project Geologist (Exploration), TM (NABET)	Geophysical data acquisition, data documentation and compilation.
16	Dakshi Sarkar	Project Geologist (Exploration), TM (NABET)	Field assistance, map preparation and sample processing.
17	Sujay Payra	Senior Project Manager (Geospatial Services), TAE (NABET)	Overall coordination of geospatial activities and remote sensing interpretation.
18	Prabir Bhattacharya	Project Manager (Geospatial Services)	Satellite data processing, map generation, DEM analysis and GIS integration.

2.7 Mode of Operation of Different Working Components and Associated Agency:

The "Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand" was conducted through a multi-disciplinary approach that integrated geological, geophysical, mineralogical and geochemical methodologies.

For geochemical analyses, the project partnered with the Inspectorate Griffith Commodities Division, Bureau Veritas, at its Gandhidham Laboratory in Gujarat, to ensure high analytical precision. Additionally, check sample analyses were conducted at Shiva Analytical, Bengaluru, Karnataka, to validate data accuracy and reproducibility.

Advanced mineralogical and characterization studies, including X-ray Diffraction (XRD) and EPMA analyses were carried out at the Geological Survey of India (GSI), Faridabad, Kolkata and Bengaluru.

This integrated and collaborative approach ensured the highest standards of analytical accuracy, data reliability and interpretational robustness in evaluating the basemetal deposits of the Askot area.

2.8 Acknowledgements:

This project was funded by the National Mineral Exploration and Development Trust (NMEDT), Ministry of Mines, Government of India, under Project Sanction File No: 23/445/2024-NMET/600, dated 1st April, 2024. The project's technical design and periodic review were undertaken by the Technical and Cost Committee (TCC) and the Executive Committee (EC) of NMEDT, whose valuable insights and guidance are gratefully acknowledged.

We express our sincere gratitude to EC, TCC and HOD of NMEDT for awarding us this project. Technical and Financial review by the GSI SU Uttarakhand is sincerely acknowledged. Administrative support extended by the State DGM, Government of Uttarakhand is highly acknowledged. We are indebted to Sh. Arup Kumar Bora, Director (Retd.), GSI, the NMEDT nominated Peer Reviewer, for his critical review and recommendations.

Lastly, we express our sincere gratitude to the local administration, forest officials and the villagers in and around the Askot-Thal-Didihat area of Uttarakhand for their cooperation,

logistical assistance and steadfast support during the fieldwork, which was instrumental in the successful completion of the project.

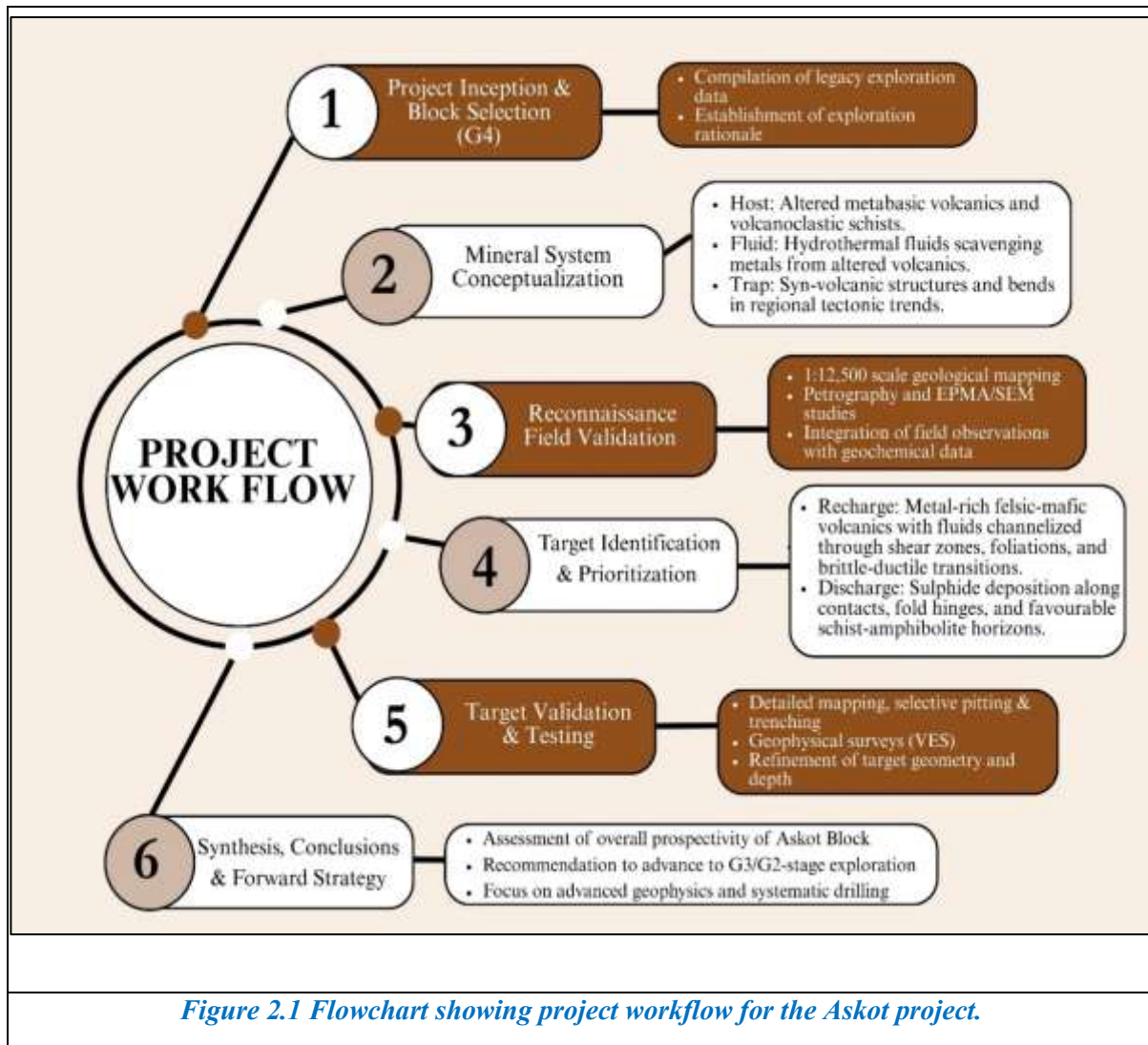
2.9 Summary of work strategy and report writing:

Askot Block Exploration Workflow: The systematic execution of the project workflow is illustrated below (Figure 2.1), highlighting the sequential stages from planning and field investigation to data analysis and reporting.

- i. Review of legacy data.
- ii. Large Scale Mapping (LSM, 1:12,500 scale).
- iii. Detailed geochemical characterization (by XRF, AAS, ICPMS, Gold Fire Assay XRD, and EPMA) of various litho-units.
- iv. Subsurface studies including shallow geophysical methods (Resistivity).
- v. Trenching and pitting to delineate drilling targets.

The project work provides the following outputs:

- i. An updated geological map.
- ii. Channel and Stream/Bedrock Geochemical datasets.
- iii. Vertical Electrical Sounding (VES) anomaly maps.
- iv. A prioritized list of targets for subsequent core drilling and exploration. The targets are also tested through scout drilling.



2.10 Report Framework

The report has been organized as a logical sequence of chapters, where each chapter answers a specific scientific or exploration question and naturally leads to the next stage of the investigation. In this way, the report follows the exploration workflow adopted for the Askot VMS Project, progressing from understanding the project area, identifying exploration gaps, developing an exploration strategy, testing that strategy, and finally evaluating the exploration results.

The report begins with **Chapters 1–3**, which establish the foundation of the study. The Executive Summary (**Chapter 1**) provides an overview of the entire project, while the Introduction (**Chapter 2**) presents the project objectives, scope of work, and exploration strategy. **Chapter 3** describes the property, including its location, accessibility, physiography, climate, infrastructure, and previous mining activities.

- *What is previous work on the geology and mineral potential of the Askot block, the limitation of the previous study, and why is further exploration required is describe in Chapter 4.*

This chapter 4 includes all previous geological, geochemical, geophysical, and exploration work conducted within and around the project area. By critically evaluating the available information, the chapter identifies the remaining exploration gaps that limit the understanding of base-metal mineralization.

- *After finding the limitation, how can exploration gaps be addressed using the scientific exploration model is described in Chapter 5.*

This chapter develops the conceptual Volcanogenic Massive Sulphide (VMS) mineral systems model. The chapter explains the geological processes responsible for mineralization and establishes the exploration criteria that guide the investigation.

- *Then, how can the conceptual VMS model be tested in the field described in Chapter 6.*

It describes the integrated exploration workflow, field methodologies, analytical techniques, QA/QC: quality assurance procedures, and laboratory investigations adopted to evaluate the conceptual model and resolve the identified exploration gaps.

- *What evidence is obtained from surface investigations to identify potential mineralized zones is discussed in Chapter 7.*

This chapter presents the results of geological mapping, structural analysis, remote sensing, geophysical surveys, geochemical sampling, petrography, mineralogical investigations, and other surface geoscientific studies carried out across **2 definite area: i. the regional Askot Block and ii. the detailed Askot-Naret Mine area.** These investigations establish the geological controls on mineralization and define the most prospective drilling targets.

- *Based on the above study the mineralized zones identified and at the surface continue below ground is checked for the Askot area and details are given in the Chapter 8*

The drilling is used to verify the continuity, geometry, and characteristics of concealed mineralization. Drill core logging, lithological interpretation, structural analysis, alteration studies, and laboratory analyses provide direct evidence of subsurface mineralization.

- *Can the integrated geological evidence be used to identify additional exploration targets beyond the drilled areas in explains in the Chapter 9*

It integrates all geological, structural, geophysical, geochemical, mineralogical, and drilling datasets to evaluate the extension of mineralization and delineate new prospective exploration targets across the Askot Block.

- *What are the overall findings of the exploration programme, and what should be done in future is presented in Chapter 10*

This chapter synthesizes all results, evaluates the achievement of the exploration objectives, summarizes the significance of the identified mineralized zones, and recommends future exploration strategies for advancing the project.

The remaining chapters provide supporting documentation for the report. **Chapter 11** presents the project expenditure, **Chapter 12** lists the references cited throughout the report, **Chapter 13** provides the locality index, and **Chapter 14** contains the annexures.

Understanding the physical and logistical characteristics of the Askot block is essential for evaluating the exploration potential, operational feasibility, and regional geological significance of the project area. The next chapter, i.e., Chapter 3, presents the property description of the Askot block, including its location, accessibility, physiography, climate, infrastructure, terrain, morphology and alteration related data.

CHAPTER-3

PROPERTY DESCRIPTION



3. Property Description

3.1 Location and Accessibility

The Askot (also known as Askote) exploration block (henceforth named as the **Askot block**) is in the Didihat tehsil of Pithoragarh district, Uttarakhand (Figure 3.1). It is in the Survey of India Toposheet no. 62C/01, 62C/05, and 62C/06 and coordinates ranging from latitude 29.727741°N to 29.856741°N and longitude 80.140479°E to 80.328882°E.

By road: Didihat town of the Pithoragarh district, is situated in the central part of the Askot block whereas Askot and Thal are situated in the eastern side and western side of the Askot block respectively. In the western side of the block, the National Highway 11 runs longitudinally with respect to the Askot block and passing through the Thal–Banar Kot area. Another National Highway 09 traverses the eastern part via Ogla and Askot (Figure 3.1). A metalled road connecting Thal–Didihat–Askot links these two national highways, providing crucial connectivity between the eastern and western regions of the block.

By railway: Didihat is located ~200 km from the Tanakpur railway terminus of the North Eastern Indian Railway, which is accessible by road via Pithoragarh. Didihat can also be reached from Kathgodam railway terminus, followed by road covering a distance of ~274 km via Almora and Pithoragarh. Askot is situated ~310 km from Kathgodam railway station by road, taking the route through Bageshwar and Didihat. The distance between Askot and Didihat is around 15 km via Ogla on a metalled road. Askot lies along the Pithoragarh–Dharchula road and is located about 55 km from Pithoragarh. The eastern part of the area is more habited as compared to western part. The major villages in eastern part are Pasma, Askot, Naret, Barakot, Unchakot, Dhaukot, and Ogla. Bhaisyudi Sandev reserve forest is present in the western sides of Didihat and only a few scattered villages are present in this part. The important villages in western part are Thal, Patet, Lamaghar, Nimathi, Sata, and Karela. Didihat tehsil with few villages viz. Mirthi, Narayangar, Didihat, Dhunga, Sitoli are located in the middle part of the study area.

By airport: The nearest airport to Didihat is Naini Saini Airport, Pithoragarh, is located ~50 km away from Didihat (Figure 3.1).



Footnote: “Askot” is also known as “Askote”; both names refer to the same geographical locality. The term “Askot” is used throughout the text of this report, whereas “Askote” is retained in maps and other source datasets where so represented.

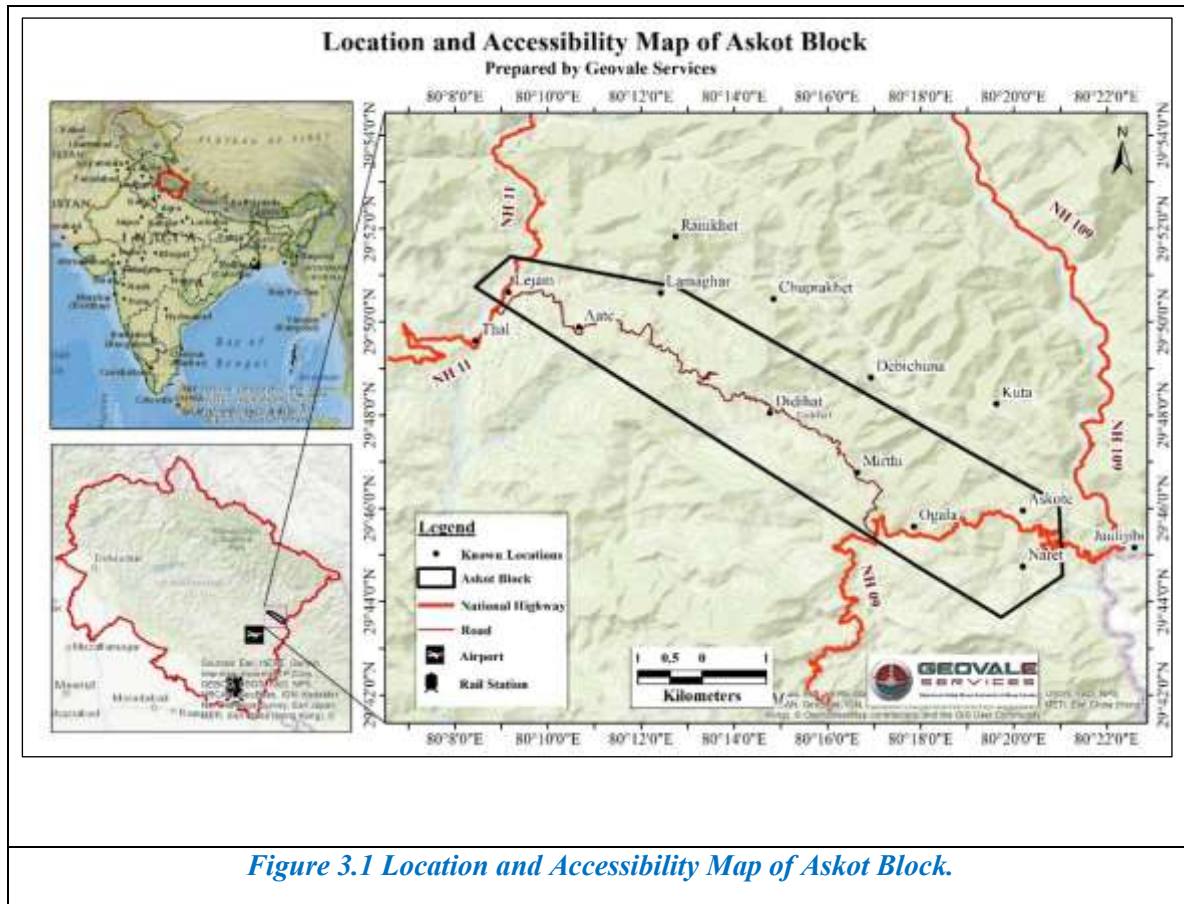


Figure 3.1 Location and Accessibility Map of Askot Block.

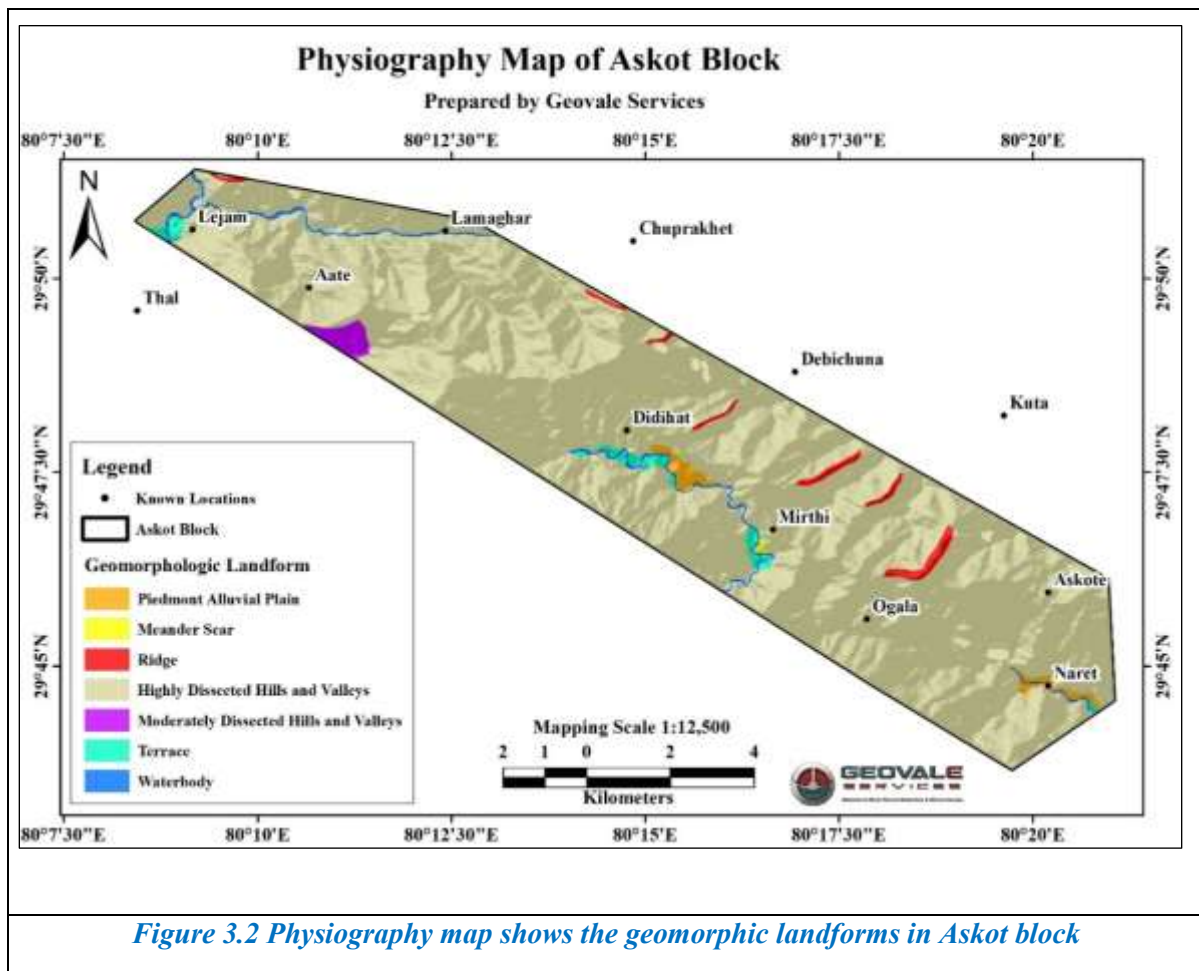
3.2 Physiography and terrain analyses:

The Askot block is characterized by rugged and undulating mountainous terrain (Figure 3.2) typical of the Himalayan belt, with prominent ridge systems, steep hill slopes and narrow intervening valleys. The area forms a part of the Inner Lesser Himalaya, which usually represents rugged topography. The lowest elevation being the Ramganga river bed having elevation of 700 m, situated in the western part of the block. The Ramganga River, which is a tributary to the Sarju River, flows in a north-south direction. The river starts on the southern slopes of the Nandakot massif and is fed by the glaciers on that slope.

Mineability Significance: The rugged mountainous terrain, steep slopes, and deeply incised valleys influence mineability by increasing the complexity of access, infrastructure development, and slope stability management. At the same time, the well-exposed rock



outcrops along hill slopes and river valleys provide favourable conditions for geological mapping and delineation of mineralized zones.



3.3 Climate

The climate of the area is characterised by a temperate to subalpine climate influenced by elevation (ranging from 1,000 to over 3,000 meters) and monsoonal patterns. Summer temperatures (April to June) typically range from 15°C to 28°C in lower elevations, while higher altitudes remain cooler, between 10°C to 20°C. Winters (November to February) are cold, with temperatures dropping to 0°C or below at higher elevations and ranging from 4°C to 12°C in the valley areas. The region receives substantial rainfall during the southwest monsoon (June to September), averaging between 1,500 mm and 2,500 mm annually, with the highest precipitation occurring in July and August. Occasional snowfall is common in areas above 2,200 meters during winter.

3.4 Flora and Fauna

The Inner Lesser Himalaya in the Garhwal Himalaya, particularly the Thal, Didihat, and Askot regions of Pithoragarh district in Uttarakhand, have a rich flora and fauna diversity due to its varied topography and altitudinal range (~700–2,200 meters). The forests transition from subtropical broadleaf species like *Shorea robusta* (Sal), *Mallotus philippensis* (Kamala), and *Bauhinia variegata* (Mountain Ebony) in lower elevations to temperate broadleaf and coniferous forests dominated by *Quercus leucotrichophora* (Banj Oak), *Rhododendron arboreum* (Buransh), *Lyonia ovalifolia* (Angeri), *Cedrus deodara* (Deodar), and *Pinus roxburghii* (Chir Pine) at higher altitudes (Figure 3.3, Figure 3.4, Figure 3.5, Figure 3.6, Figure 3.7, Figure 3.8). The mammals including *Panthera pardus* (Leopard), *Muntiacus muntjak* (Barking Deer), *Semnopithecus schistaceus* (Himalayan Langur), *Capricornis thar* (Himalayan Serow), and *Martes flavigula* (Yellow-throated Marten) are dominated species here. Bird diversity is notable, with species such as *Lophophorus impejanus* (Himalayan Monal), *Pucrasia macrolopha* (Koklass Pheasant), and *Psittacula himalayana* (Slaty-headed Parakeet). Reptiles and amphibians include *Trimeresurus albolabris* (White-lipped Pit Viper), *Calotes versicolor* (Garden Lizard), *Varanus bengalensis* (monitor lizard) and *Scutiger sikimmensis* (Himalayan Frog). This zone serves as a critical biodiversity corridor, especially near Askot Wildlife Sanctuary, which conserves endangered species like the *Moschus leucogaster* (Himalayan Musk Deer).



Figure 3.3 Chir-pine Forest at Baragaon area



Figure 3.4 Chir-pine Forest at Askot area



Figure 3.5 Rhododendron at Sirakot area.



Figure 3.6 Deodar at Didihat area



Figure 3.7 Banj oak at Ghorpatta area



Figure 3.8 Sal Forest at Unchakot area

3.5 Forest Cover

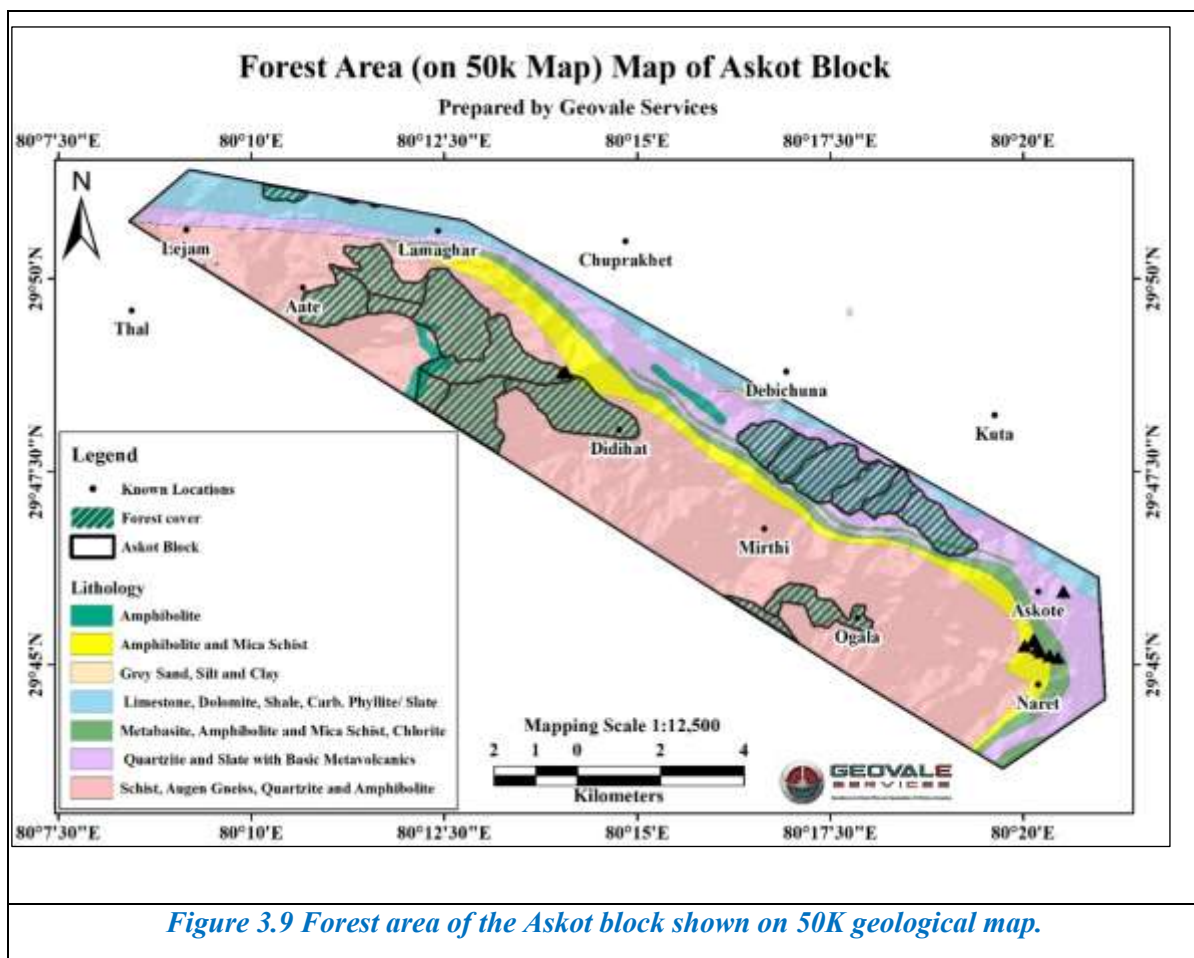
The Askot block is characterized by significant forest cover (approximately 20.3 sq. km. area) is governed by altitude, slope gradient, aspect and climatic conditions, resulting in a heterogeneous pattern of moderately dense to open forest patches scattered with revenue land and agricultural terrace.

As per the latest assessment by the Forest Survey of India, Uttarakhand is one of the most forest-rich states in India (Figure 3.9). The forest cover in and around the Askot block are



classified as Reserved Forest (RF), and wild life Sanctuaries. The block area is characterized by moderately dense forest along mid-slope zones and open forest.

Mineability Significance: The forest cover in the Askot block affects mineability by making access to some areas difficult and increasing the effort required for exploration and infrastructure development. The presence of Reserved Forests and wildlife sanctuary areas also requires environmental and forest clearances before mining activities can be undertaken.



3.6 Satellite Remote Sensing data acquisition and processing:

3.6.1 Elevation Map:

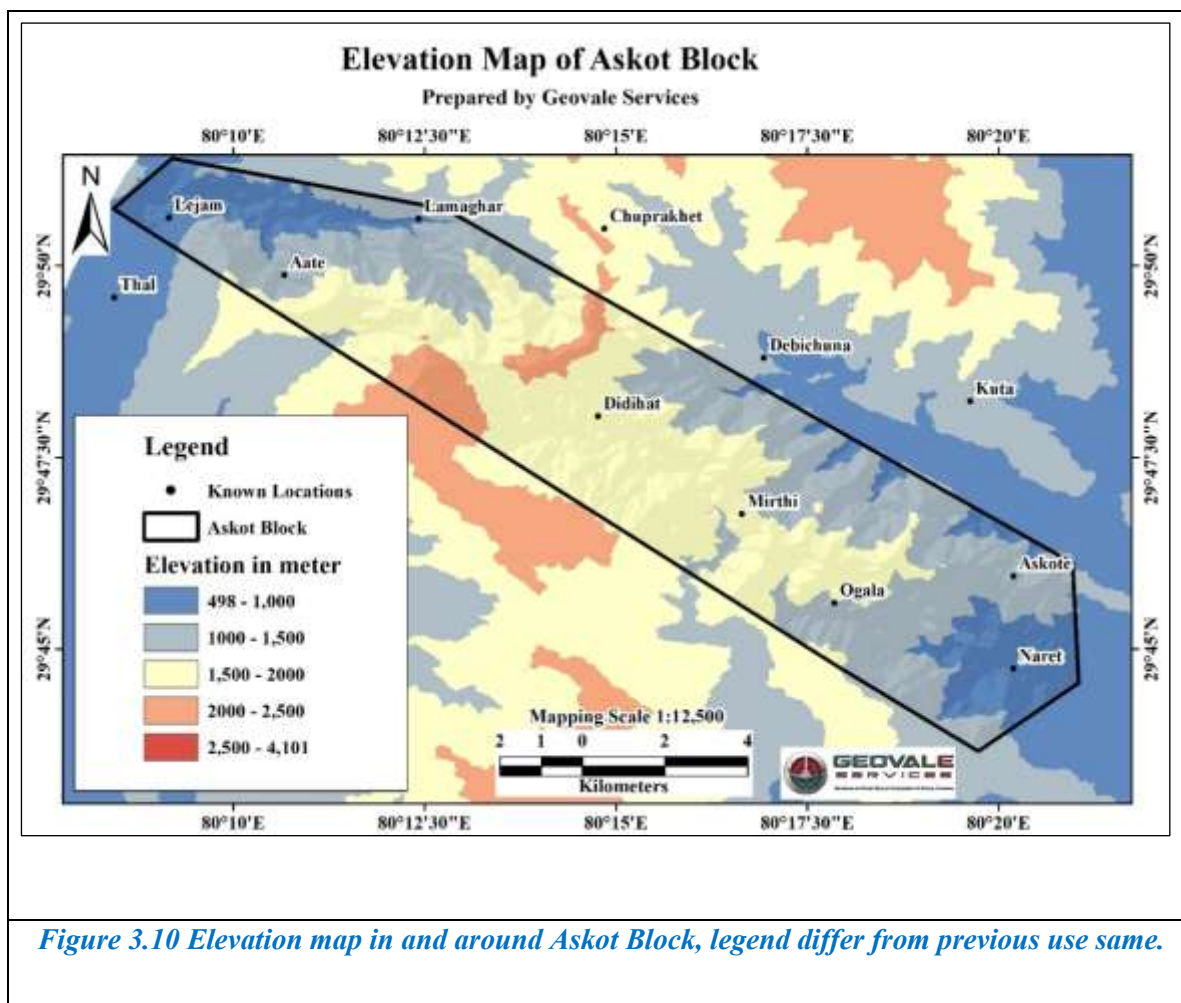
The elevation map and slope map of the Askot block has been made based on the SRTM-DEM database (Figure 3.10). The topography of the area reveals that this has an extensive elevation variation ranging from ~700 m to ~2500 m, depicting rugged and highly dissected mountainous topography of high relief.

On the basis of the elevation distribution, the topographic features of the region can be grouped under two main zones:

- (i) Higher Elevation Zone (1500 m and higher): The high elevation zone lies mostly in the central to southern part of the Askot block.
- (ii) Zone with medium to low elevation (below 1500 m): Elevations of below 1500 m have been found more in abundance in the norther-western and north-eastern part of the block, particularly near Askot, Naret, Lamaghar, Lajem areas.

In general, the elevational distribution is such that while in the southern portions generally have higher elevation and northern portion generally have lower elevation implying tectonic disturbance in the middle significant for mineralization.

Mineability Significance: The higher elevation areas in the southern parts of the Askot block present greater challenges for mine development due to steep terrain, difficult access, and increased infrastructure requirements. In contrast, the northern, north-western, and south-eastern parts of the block, where elevations are generally below 1500 m, are relatively more accessible for exploration and mining activities. The pronounced elevation contrast and tectonically disturbed central part of the block have likely controlled the development of structures that host basemetal mineralization.



3.6.2 Contour map and slope map:

The contour map of the Askot block and nearby areas has been created from SRTM-DEM data using a contour interval of 100 m (Figure 3.11, Figure 3.12). Closely spaced contour lines present on the northern part of the block implying relatively steep slope relative to the southern part of the block. The prominent variation of steep slope in northern and southern part implying tectonic disturbance in the central part which may be significant for mineralization. Considering the slope map, terrain of the area has been grouped into six classes viz. 0-15°, 16-30°, 31-45°, 46-60°, 61-75° and >75°. The gentle slope (between 0° and 15°) is generally present in the southern part of the block around Didihat, Mirthi, Ogala, Naret, Aate, and Lajem. While steep slope in the northern part, around Lamaghar, Debichuna, and Askot area. Both the maps, implying that there is a tectonic disturbance in the central part of the block which produced steep slope in the northern part and relatively gentle slope in the southern part.

Mineability Significance: The gentle slopes in the southern part of the Askot Block provide favourable conditions for exploration, mine development, road construction, and infrastructure

establishment. In contrast, the steep and rugged northern terrain poses challenges for excavation, transportation, and slope stability, increasing mining costs. The central structural zone may have controlled hydrothermal fluid movement and mineralization, making it an important target despite the difficult terrain.

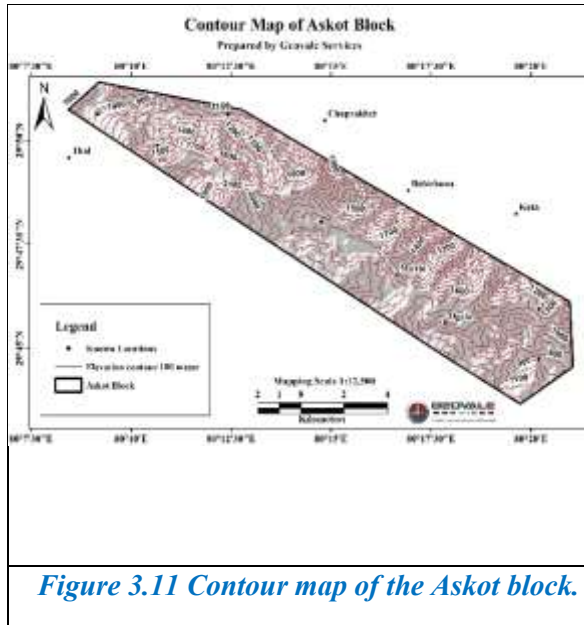


Figure 3.11 Contour map of the Askot block.

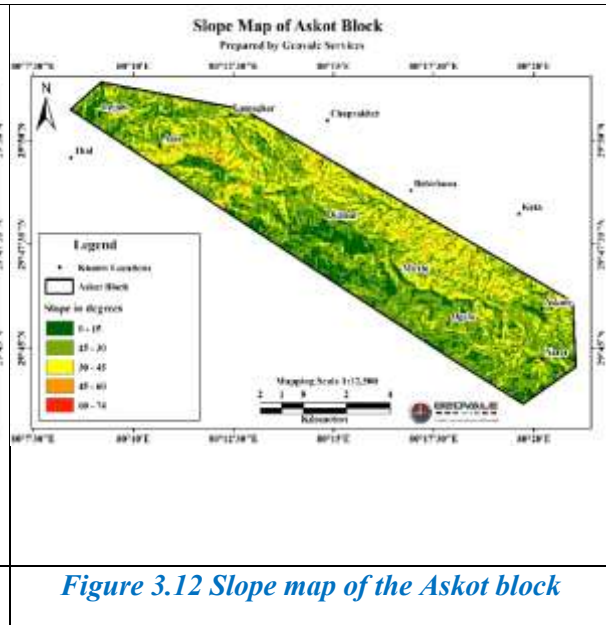


Figure 3.12 Slope map of the Askot block

3.6.3 Hillshade map:

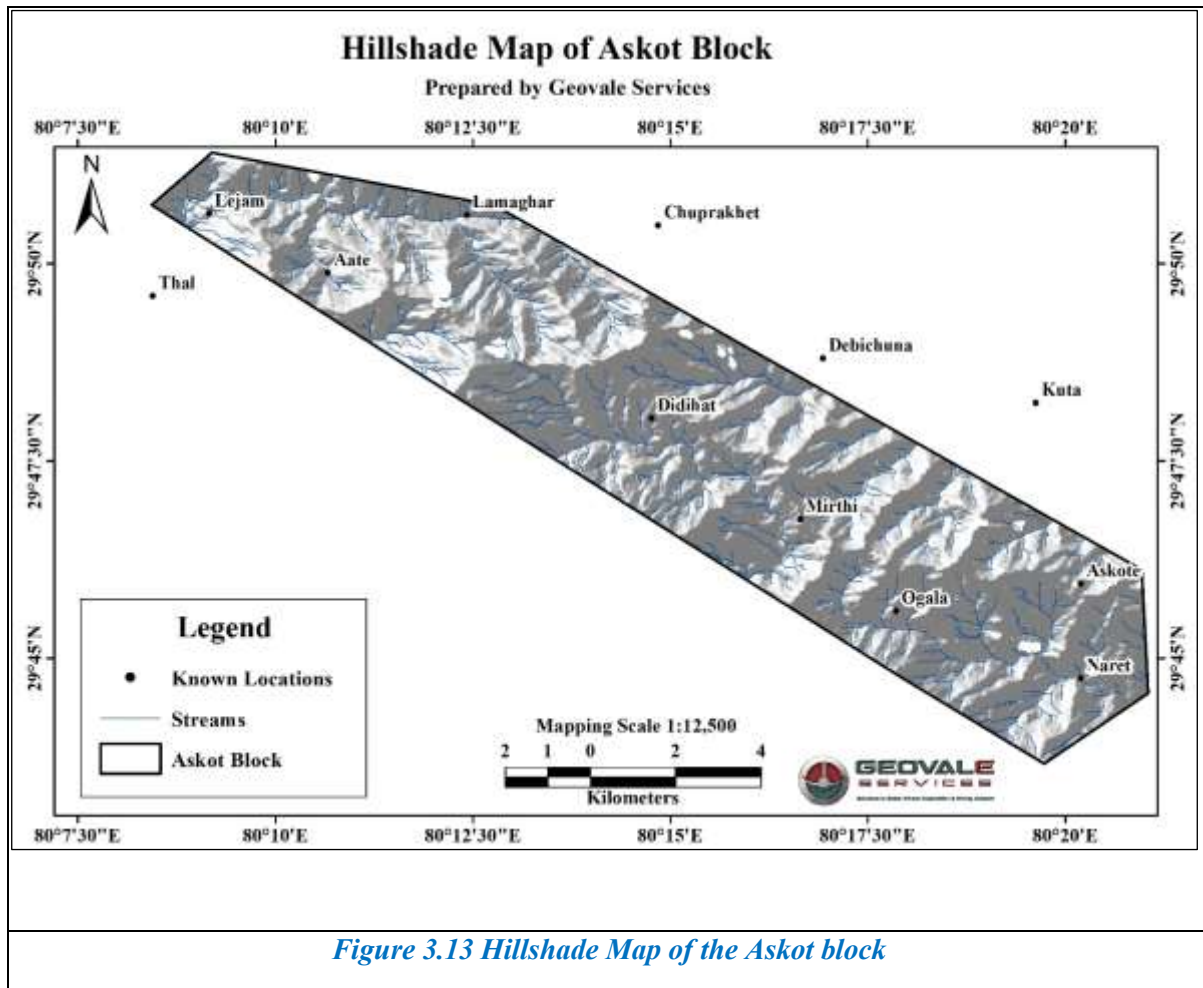
Hillshade is a way to visualize terrain that makes it look more three-dimensional by simulating the effects of light on the surface. The hillshade map of the Askot block (Figure 3.13) which prominently shows how the tone changes from bright highlights to deep shadows. These types of changes are related to differences in slope, aspect, and elevation, which makes it possible to find geomorphic features like ridges, valleys, and dissected terrains.

Based on the hillshade map of the Askot block, the following observations are made:

- The block has a rugged and broken topography, featuring closely spaced ridges and narrow valleys. This setup shows steep slopes and active erosion.
- In the north-western part of the block, especially around Lejam, Lamaghar, and Aate, the terrain contrasts strongly between light and dark areas. This reflects high ridges and deeply carved valleys and generally NW-SE trending.
- The central part of the block, which includes Didihat, Debichuna, and Mirthi, has a dense network of bright and shadowed zones. This indicates a complex and broken landscape.

- In the southeastern area around Ogala, Askot, and Naret, the hillshade pattern becomes more linear (generally NE-SW trending) and noticeable, with well-defined ridges trending from northwest to southeast.
- The northern section, around Chuprakhet and stretching towards Doonakot and Kuta, has relatively high terrain with uneven but closely spaced ridges. The differences in shading indicate a mix of steep slopes and areas where valleys widen.
- The hillshade map shows that the terrain of the Askot block is shaped by its structure.

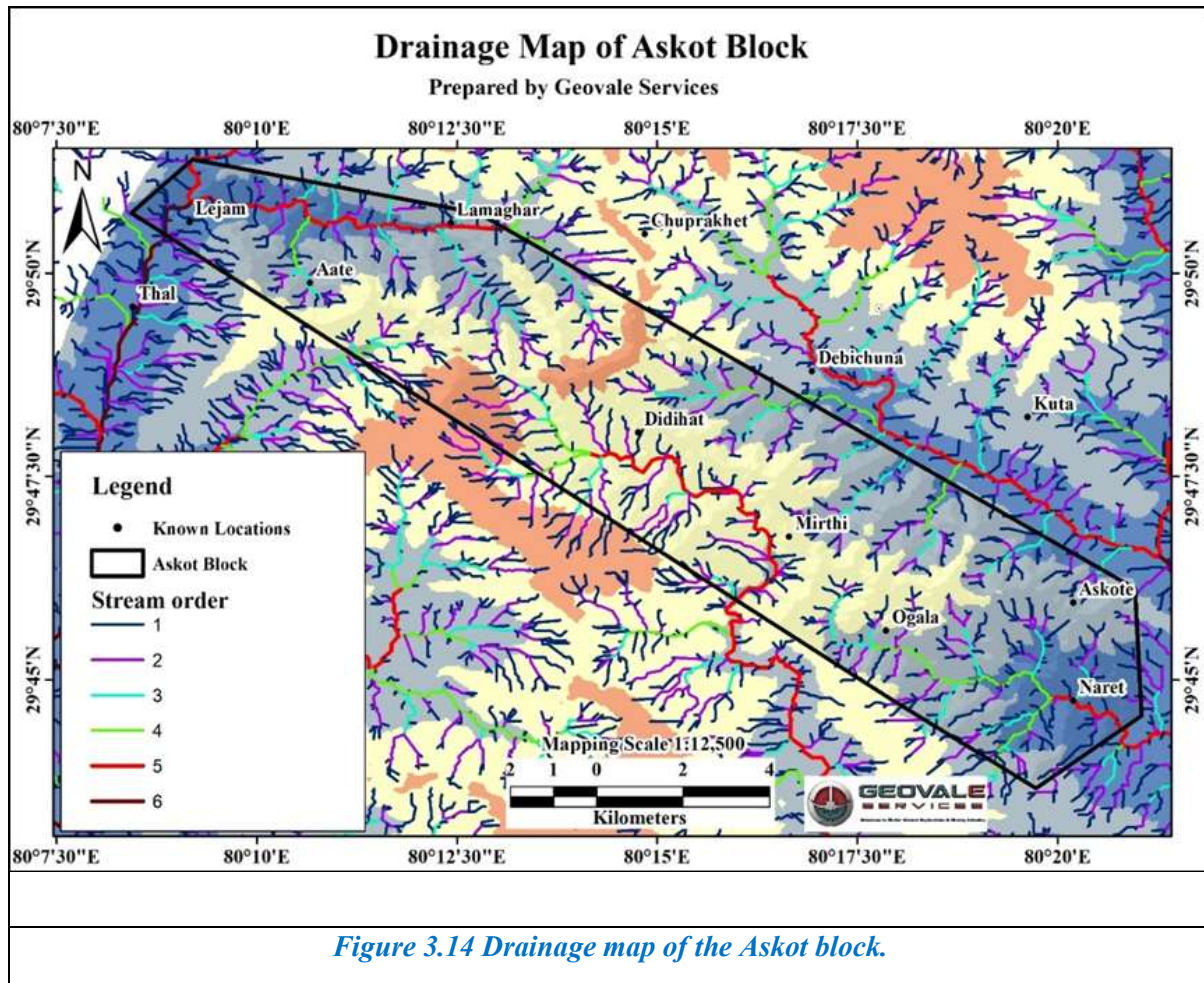
Mineability Significance: The hillshade map indicates that the rugged terrain and NW–SE and NNW-SSE trending ridges of the Askot block are strongly controlled by regional faults, shear zones, and lithological contacts. These structures act as favourable pathways for hydrothermal fluids and are important controls on polymetallic sulphide mineralization. The deeply dissected terrain provides excellent bedrock exposure for geological mapping, structural studies, and geochemical sampling, while linear valleys and escarpments may represent mineralized fault or fracture zones. The hillshade analysis reflects the influence of Himalayan tectonic deformation and, when integrated with geological and geophysical data, helps delineate structurally controlled mineral exploration targets within the Askot block.



3.6.4 Drainage map:

Ramganga is the main river situated in the western part of the block (Figure 3.14). Ramganga River, which is a tributary to the Sarju River, flows in a north-south direction in the western part of the block. The river originates from the southern slope of the Nandakot massif and is fed by the glaciers on that slope. The drainage map of the Askot block is dendritic.

Mineability Significance: The Ramganga River and its tributary network provide excellent natural rock exposures, enhancing geological mapping, structural interpretation, and identification of mineralized zones. The well-developed drainage system also improves accessibility to valley sections and supports water availability for future exploration and mining activities.



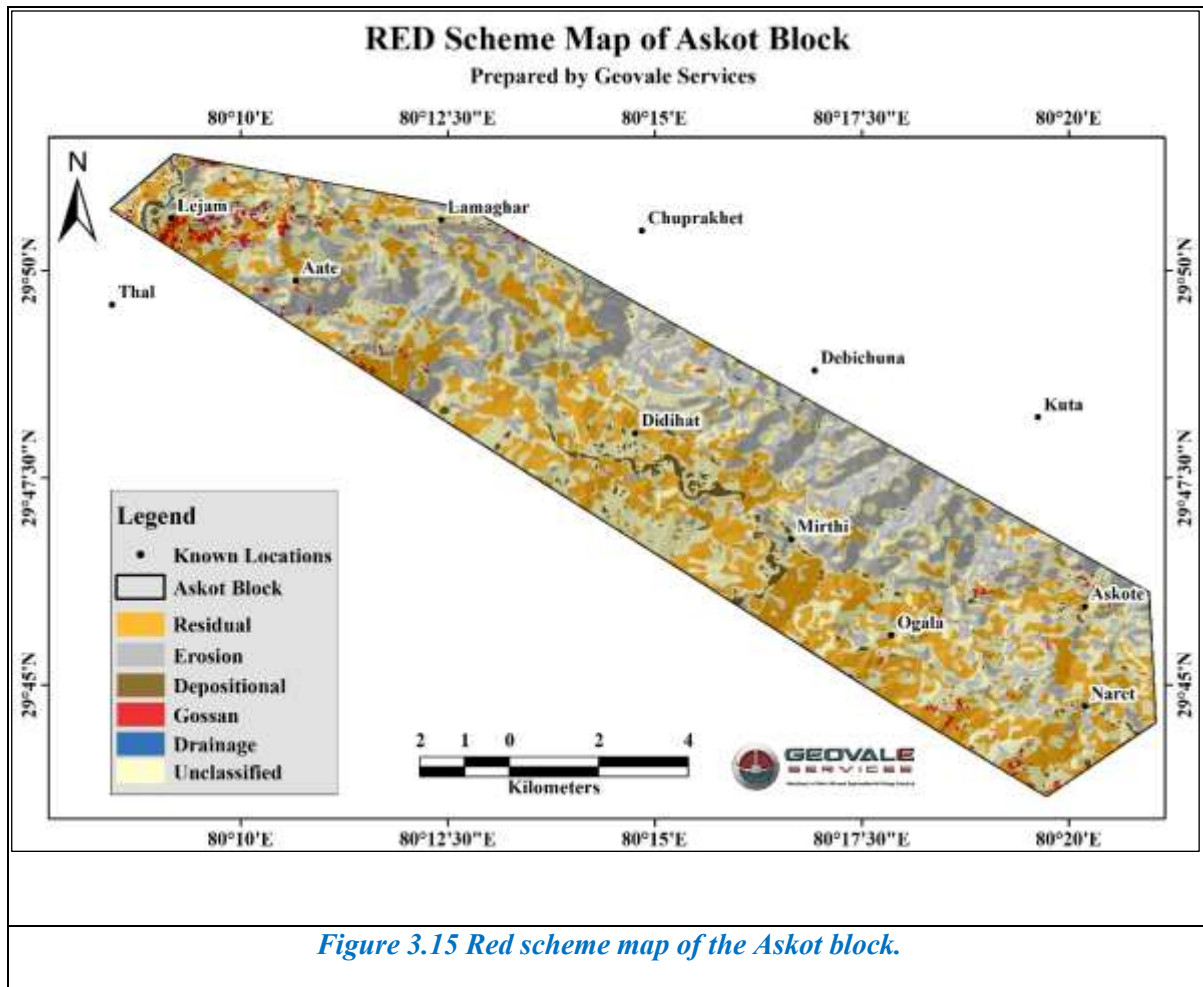
3.6.5 RED Scheme Mapping:

An integrated study on the geospatial data including the Digital Elevation Model (DEM) for the RED Scheme Map along with field geological data has been made for the Askot block (Figure 3.15).

The area has been subdivided into the following main physiographic units based on geomorphic features, drainage patterns, slope behavior, and landform interpretation: i) erosional landform present mainly in northern part, ii) residual landform with weathered materials mostly occupied in the southern part, iii) residual with iron oxide rock patches are present in the eastern and western part of the the block may be the gossan zones. iv) depositional zones are present in the southern part of the block, v) vegetation covers are present throughout the block.

Mineability Significance: The erosional landforms and potential gossan zones provide excellent bedrock exposure, facilitating geological mapping, structural interpretation, and identification of mineralized zones. The depositional valleys and moderate terrain also offer

favourable locations for exploration infrastructure, while the DEM-based geomorphological analysis assists in planning efficient access routes and future mine development.

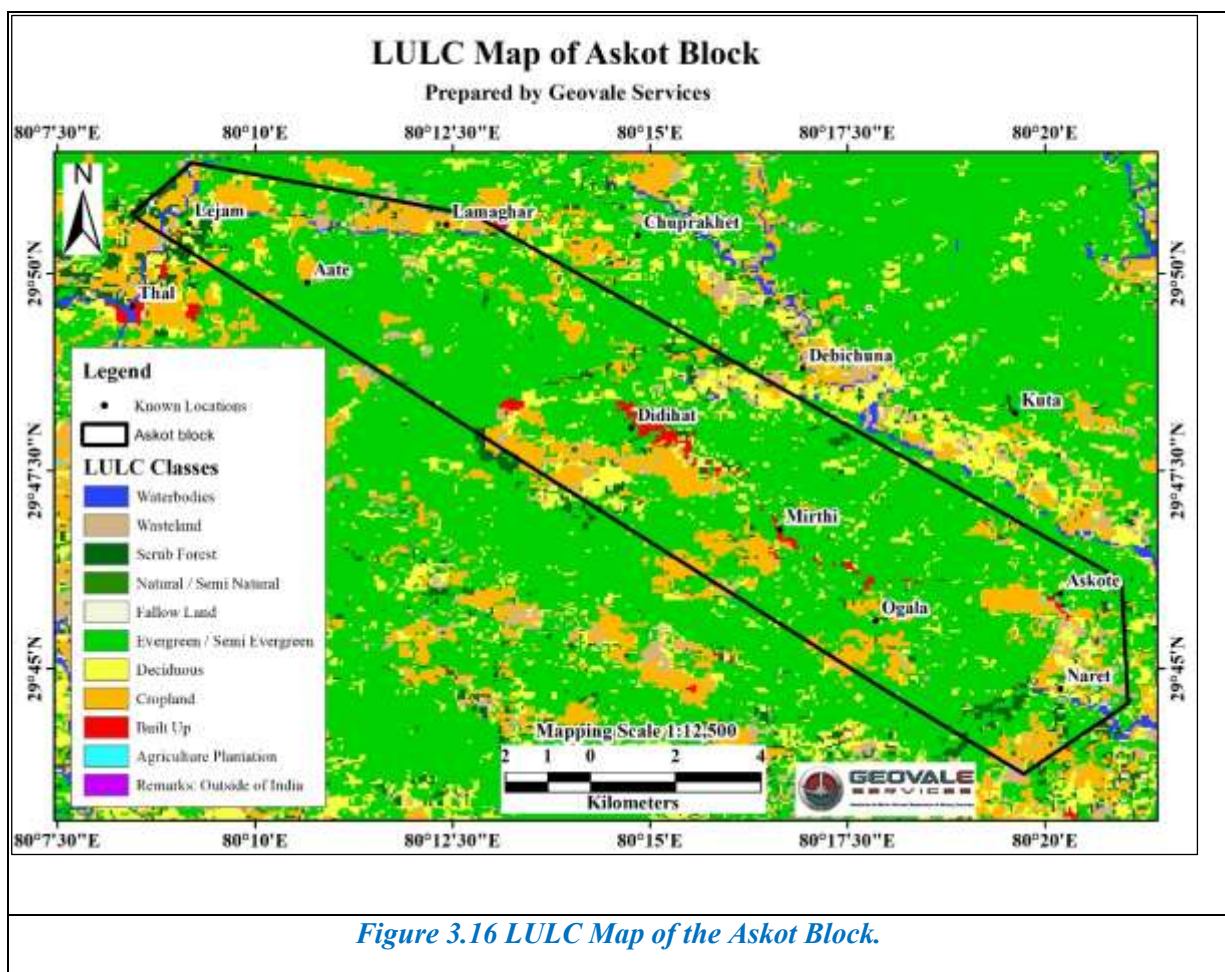


3.6.6 Land Use Land Cover (LULC):

The LULC Map of the Askot Block offers a detailed spatial understanding of the land utilization patterns and ecological diversity of the region. The area is predominantly covered by natural vegetation (green), which signifies dense forest cover and undisturbed ecological zones, particularly in the central and northern parts of the block (Figure 3.16). This reflects the region's forested and mountainous nature, which may impose environmental constraints on large-scale surface disruption but also suggests potential for sustainable resource use and conservation initiatives. Patches of cropland (safron) are visible mostly near habitations such as Didihat, Askot, and Jaurasi, indicating subsistence farming and agro-based livelihood activities. Built-up areas (red) are sparse but notable around major settlements like Didihat, Thal, and Jauljibi, implying moderate human presence and developmental infrastructure. Flooded vegetation and water bodies (blue shades) are aligned along the drainage lines,

reflecting seasonal or permanent hydrological features important for water resource planning and monitoring hydrogeological conditions during exploration. Bare land and range land (grey shades) are scattered, especially on steeper slopes and ridges, indicating areas with minimal soil cover or vegetation—often correlating with rocky outcrops or erosion-prone zones that could be targets for surface geological mapping.

Mineability Significance: The LULC map is essential for identifying zones of ecological sensitivity, prioritizing environmentally sustainable exploration, and developing mitigation plans in case of future land disturbance. It also supports land rehabilitation planning post-mining and highlights areas with potential agricultural or afforestation value.



3.6.7 Alteration Mapping:

Altered zones in the Askot block have been mapped from multispectral images using band ratio techniques (Figure 3.17). The map shows the spatial extent of some important types of alteration, including argillic, phyllic, and propylitic alterations, which indicate zones where mineralization occurs.

Argillic alteration zone (Alunite / Kaolinite):

Argillic alteration zones are common and widely occurring in the study area. Such alteration zones indicate strong chemical weathering and low-temperature hydrothermal alteration, associated with the formation of minerals like kaolinite and alunite. Therefore, their widespread occurrence indicates near-surface alteration zones and zones with mineral enrichment.

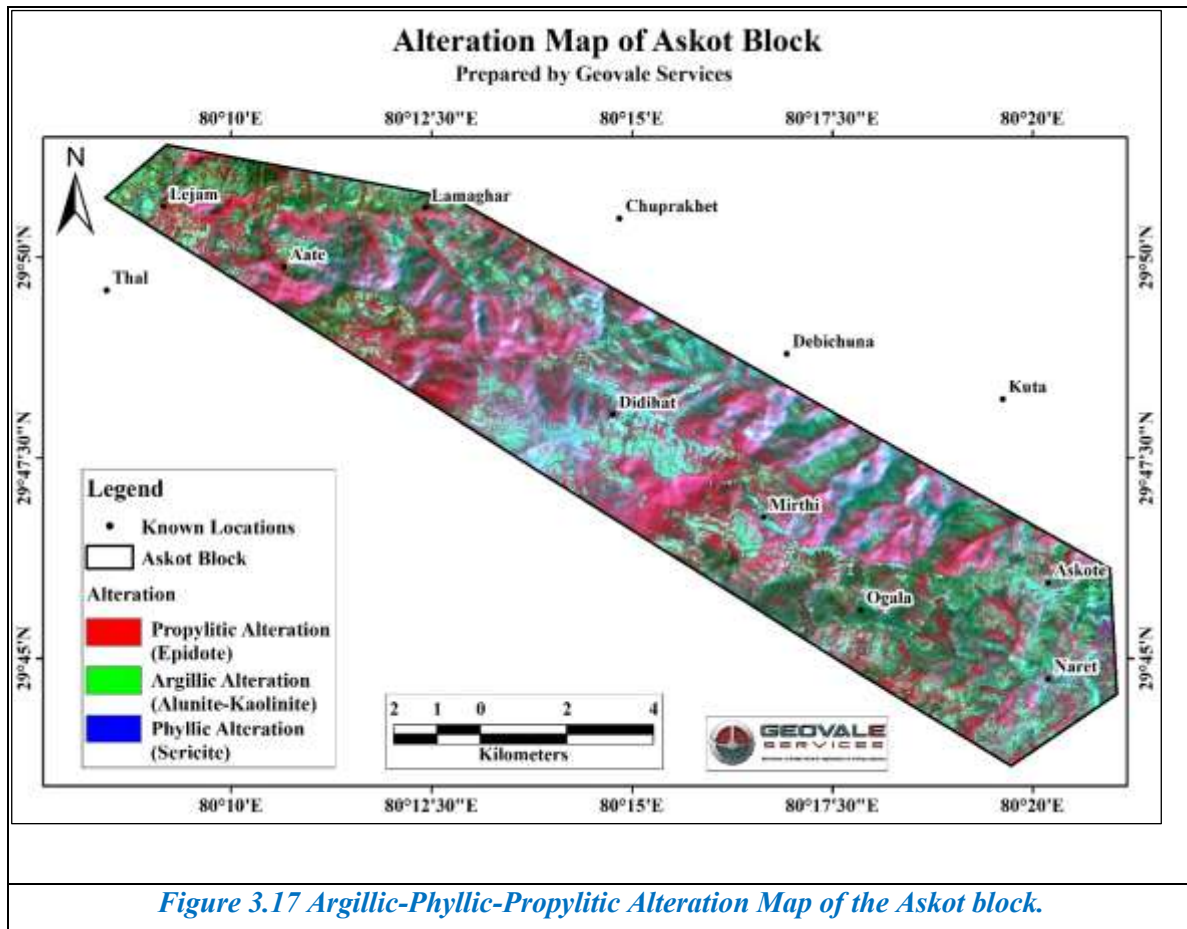
Phyllic alteration zone (Sericite):

The phyllic alteration zones coexist with the argillic alteration zones and are known because of the presence of sericite. The hydrothermal alteration is moderate and usually structurally controlled. The occurrence of these zones within the central portions of the block depicts zones of fluid flow along with mineralized systems.

Propylitic alteration zone (Epidote):

Propylitic alteration is recognized in terms of limited patches in the region. The alteration zones are recognized because of the presence of epidote bearing assemblages, which usually constitute the outer halo of the hydrothermal system. Hence, these zones signify lower part of the hydrothermal alteration.

Mineability Significance: The presence of well-developed argillic, phyllic, and propylitic alteration zones indicates a widespread hydrothermal system favourable for sulphide mineralization and provides important vectors towards potential ore bodies. These alteration halos enhance exploration targeting by delineating prospective mineralized zones, thereby improving the confidence in drill target selection and future mine planning.



Remote sensing analysis of the Askot block delineates iron oxide enrichment zones and alteration zones providing important indicators for mineral exploration.

Mineability Significance: Iron oxide enrichment zones (Figure 3.18) are widely distributed across the block, specially around Lajem-Turgoli areas, and are characterized by hematite- and limonite-rich surfaces, which may represent gossanous expressions of underlying sulfide mineralization. Alteration zones occur as linear to irregular features and are interpreted to be related to hydrothermal alteration along faults, fractures, and other structural discontinuities.

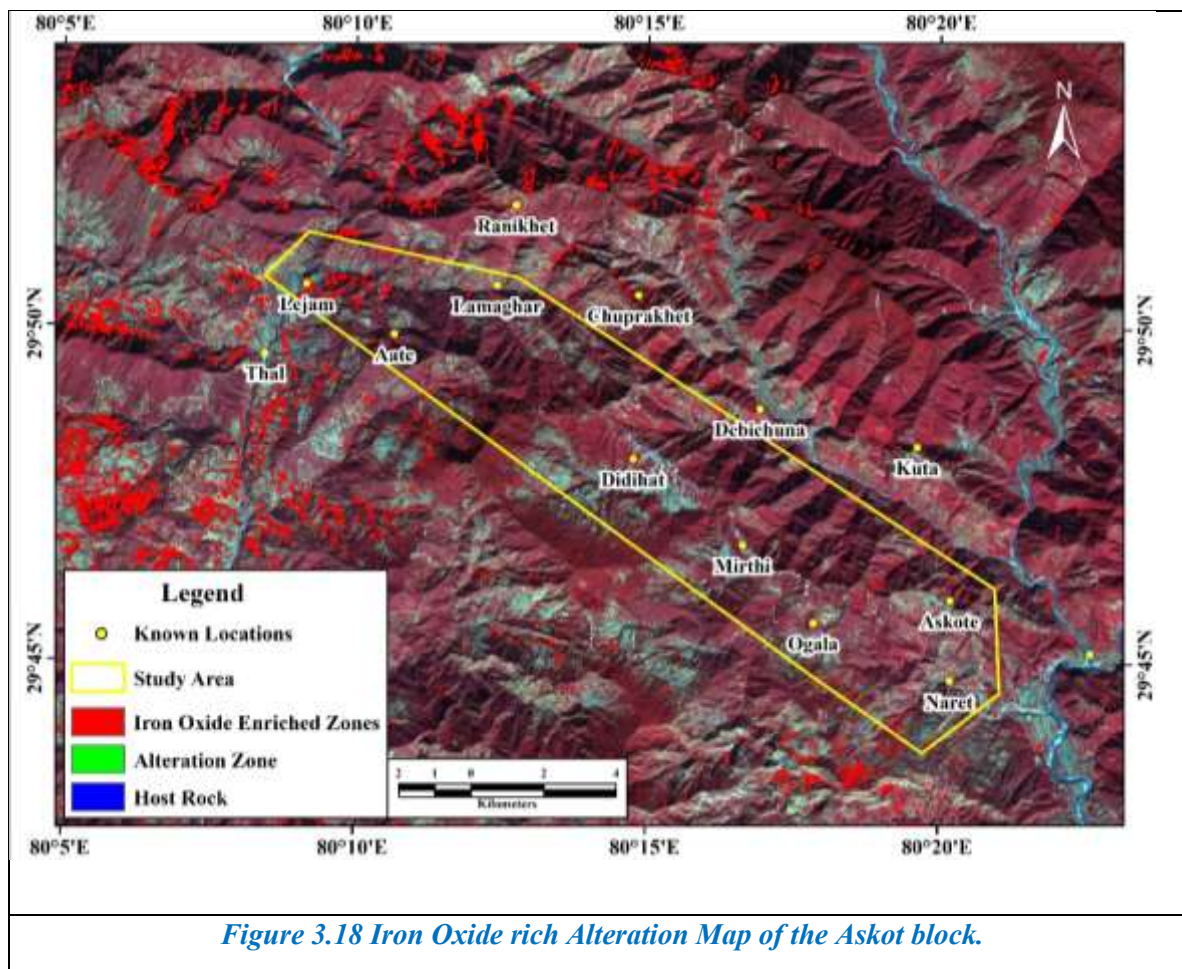
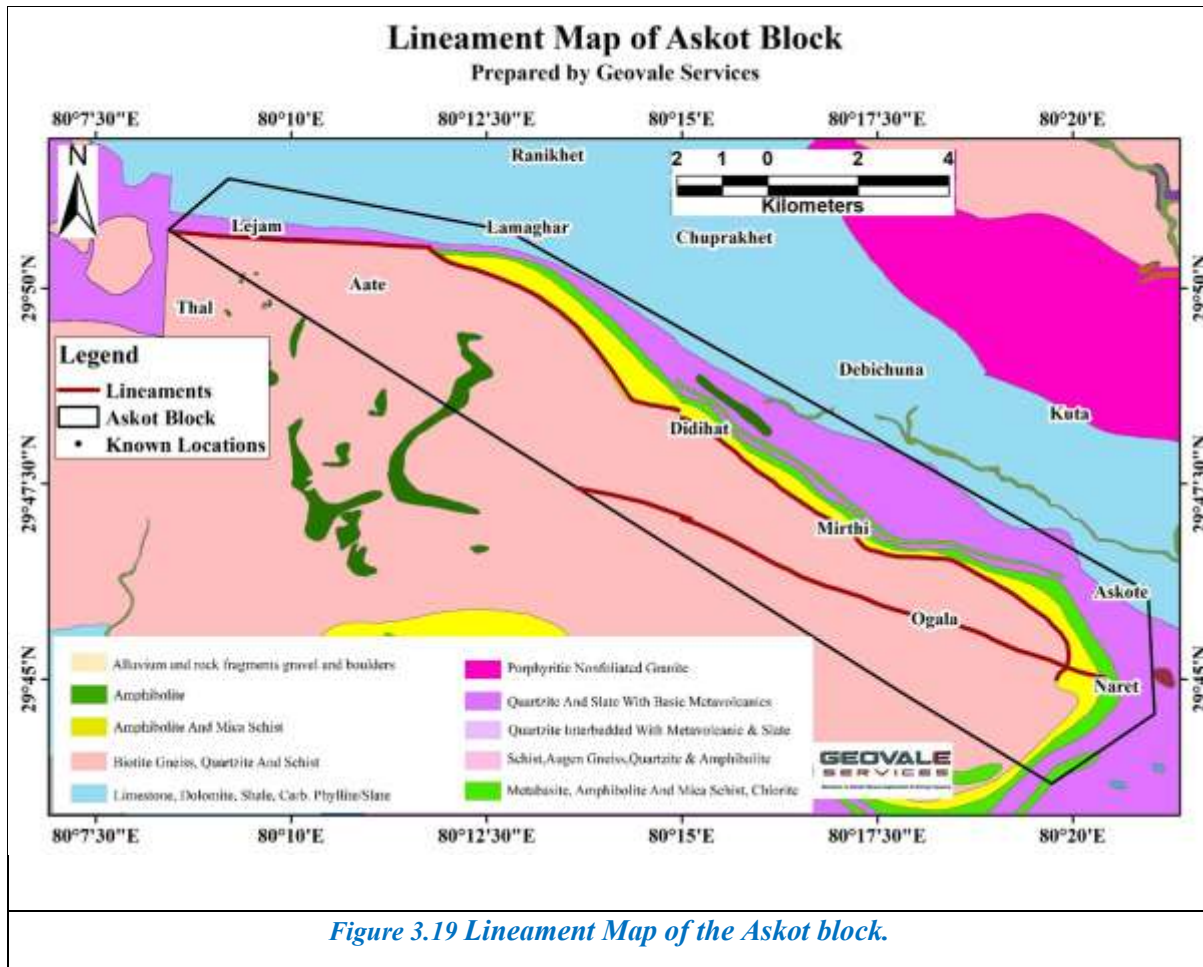


Figure 3.18 Iron Oxide rich Alteration Map of the Askot block.

3.6.8 Lineament Map:

The structural lineament map of the Askot Block indicates two prominent structural trends that exert significant control on the regional geological framework. The upper lineament is interpreted as a major fault, extending from the Lejam–Lamaghar sector towards Didihat, Mirthi, Askote and Naret. The fault largely follows or coincides with the contact between Garhwal Group amphibolite and mica schist and the metamorphic rocks of the Askot Crystalline Complex (ACC), including granite gneiss. The lower lineament is interpreted as a fold axis, trending broadly NW–SE and occurring predominantly within the granite gneiss of the ACC. The fold axis passes through the Thal–Ogala sector and continues towards Naret, where it approaches the structurally complex fault zone. The coincidence of the major fault with lithological contacts and the proximity of the fold axis indicate a strong structural control on lithological distribution, deformation and potential fluid movement. These structures are therefore important targets for detailed geological, structural and mineralisation studies within the Askot Block.



3.6.9 ESG & Mineability Issues Concerning the Block (Askot Block):

The Askot Block is a conditionally positive but highly selective mineability domain, where geological prospectivity must be balanced against environmental, social, and regulatory constraints.

Soil and overburden conditions vary significantly with terrain; thin soils on ridges provide good rock exposure, while thicker valley-fill deposits require careful topsoil management and selective excavation practices.

A dense drainage network, springs, and surface water systems increase erosion susceptibility and necessitate strict protection of hydrologically sensitive areas during exploration and any future mining activities.

Steep slopes, rugged topography, and geo-hazard sensitivity pose challenges for mine development, making slope stability and erosion-control measures critical for operational feasibility.

Extensive forest cover, biodiversity values, agricultural land, and local settlements impose environmental and social constraints, requiring minimal disturbance, stakeholder engagement, and comprehensive rehabilitation measures.

Although the block benefits from reasonable accessibility and favorable geological indicators, future mineability will depend on identifying zones where mineral potential coincides with manageable terrain, environmental compatibility, social acceptance, and statutory clearances.

The favourable geological setting, accessibility, and the presence of previous mining activities have made the Askot block an important target for polymetallic sulphide exploration. Consequently, the area has been investigated by the Geological Survey of India (GSI) and other agencies through geological mapping, geochemical and geophysical surveys, trenching, and drilling, which confirmed the presence of Cu–Pb–Zn sulphide mineralization. A detailed account of the previous investigations and the limitations of earlier studies is presented in the next chapter (Chapter 4).

CHAPTER-4

PREVIOUS WORK

4. Previous Work and Project Generation (Prefield Studies)

4.1 Regional Geology:

The G4-Askot study area is located in the western part (Kumaon region) of the Himalaya Mountain Range (HMR). Longitudinally, the HMR is divided in the 4 sub-division from north to south namely (i) Proterozoic to Eocene Tethyan Himalayan Sequence (THS) or Trans-Himalaya (includes Phanerozoic sedimentary rocks likes limestone, shale, sandstone, and fossiliferous formations), which separated from the Central Crystalline by the Tethyan Fault (Kumar et. al., 1972; Valdiya, 1980; Patel et. al., 2011); (ii) the Proterozoic to Ordovician Greater Himalayan Complex (GHC) (comprises high-grade metamorphic rocks such as gneiss, schist, migmatite, and granite), which thrust over the Lesser Himalaya along the MCT (Heim and Gansser, 1939), (iii) the Proterozoic to Palaeozoic Lesser Himalayan Sequence (LHS); composed predominantly of slate, phyllite, quartzite, limestone, dolomite, and low- to medium-grade metamorphic rocks (Kumar, 1981) and (iv) Sub-Himalaya or the Siwalik Group, consisting of Neogene to Quaternary fluvial sedimentary rock including sandstone, shale, clay, and conglomerate of the Himalayan foreland basin (Auden, 1935; Célérrier et. al., 2009) (Figure 4.1, Table 4.1).

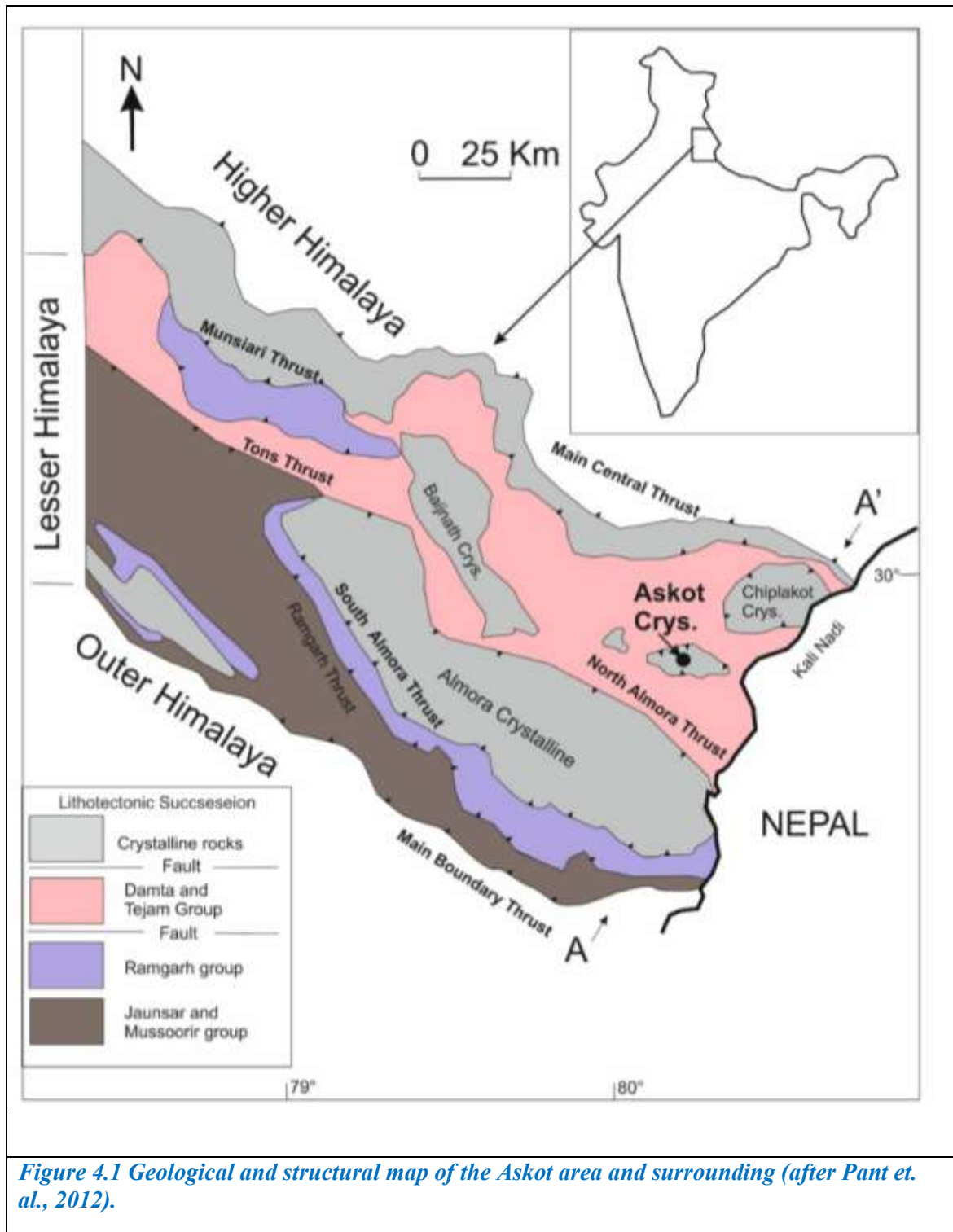


Figure 4.1 Geological and structural map of the Askot area and surrounding (after Pant et. al., 2012).

Table 4.1 Stratigraphy of the Himalaya (after Valdiya, 1980).

North
Tethyan Himalayan Belt: limestone, shale, sandstone, and fossiliferous formations
South Tibetan detachment (STD)

Higher Himalayan Belt: as gneiss, schist, migmatite, and granite
Main Central Thrust (MCT)
Lesser Himalayan Belt: slate, phyllite, quartzite, limestone, dolomite, and low- to medium-grade metamorphic rocks
Main Boundary Thrust (MBT)
Sub -Himalayan Belt: Neogene sedimentary rocks such as sandstone, shale, clay, and conglomerate
Himalayan Frontal Thrust (HFT)
Quaternary sediments: Gangetic Alluvium sediments (Quaternary age)
South

Structurally the Lesser Himalaya is divided into two parts: i) Inner Lesser Himalaya and ii) Outer Lesser Himalaya. The Askot block is a part of the Inner Lesser Himalaya of the Kumaon Province of Uttarakhand and it includes lithounits belonging to the Askot Crystalline Complex (ACC) and the Garhwal Group.

Askot Crystalline Complex (ACC)

The Askot Crystalline Complex (ACC) is exposed as an elliptical, east–west trending body approximately 30 km in length and 10–12 km in width. It is composed dominantly of granite gneiss, with subordinate leuco-gneiss, amphibolite, garnet bearing pelitic schist, quartzite, chlorite schist, and mica schist. Augen gneiss, particularly biotite bearing granite-gneiss, is the most common lithology in the project area. The ACC is well foliated and structurally forms an open, doubly plunging synform.

Thin slivers of garnetiferous mica schist and chlorite schist commonly mark the contact between the ACC and the surrounding Garhwal Group rocks. The ACC has been variously interpreted as an allochthonous or para-autochthonous thrust sheet structurally overlying the Garhwal Group. U–Pb zircon ages from the granite gneiss of the ACC indicate crystallization ages of ~1.86 Ga (Mondal et. al., 2016), suggesting a Paleoproterozoic basement affinity.

Garhwal Group

The Garhwal Group surrounds the ACC and is represented by two major lithostratigraphic units:

- **Berinag Formation:** Comprising alternating sequences of quartzite, low-grade metapelites, metabasalts, and tuffaceous rocks. Zircon U–Pb dating of tuffaceous units

yields ages of ~1.86 Ga (McKenzie et. al., 2011), comparable to the ACC granite gneiss, indicating broadly coeval magmatic and sedimentary processes. Local intrusive relationships between granite gneiss and Berinag quartzites are observed near contact zones.

- **Pithoragarh Formation:** Dominated by limestone and dolomite with subordinate shale. Although direct radiometric ages are unavailable, the formation is generally assigned a Mesoproterozoic age (~1.4 Ga) (McKenzie et. al., 2011). Interlayering between Berinag quartzites and Pithoragarh limestones is locally observed near there contacts.

The rocks of the Garhwal Group are generally weakly foliated compared to the ACC. In the Askot block, lithounits typically strike NW–SE and dip southward. The stratigraphic succession relevant to the prospect block follows established GSI classifications and is summarized below:

- Pithoragarh Formation: Limestone, dolomite, shale (~1400 Ma)
- Berinag Formation: Quartzite, basic and acidic volcanics, tuffaceous rocks (~1857 ± 19 Ma)
- Askot Crystalline Complex: Granite gneiss, leucogranite, amphibolite, schists (maximum depositional age ~1800 Ma).

Table 4.2 Statigraphic table of lithounits of this Prospect Block (after GSI and Mondal et. al., 2016).

Group	Formation	Lithology	Age
Garhwal Group	Pithoragarh Formation	Limestone, dolomite, shale	1400 Ma (Valdiya 1980; Parrish 2006)
	Berinag Formation	Alternating sequence of quartzite, basic and acid volcanics and tuffaceous rock	1857±19 Ma of augen gneiss (Mandal et. al., 2016)
Askot Crystalline Complex	Granite gneiss, leucogranite, amphibolite, chlorite schist, quartzite, garnetiferous mica schist		1800 Ma (maximum depositional age by Mandal et. al., 2016)

Geological mapping of the Askot block was carried out to develop a clear understanding of the lithological variation, deformations, and associated mineralizations. The block is situated within a highly deformed metamorphic terrain, where various lithologies are deformed by folding, thrusting and shearing.

The following sections describe the geological interpretation based on published Geological Survey of India maps (1:50, 000 scale) at regional and large scales, following the Geovale's mapped lithological units, their field characteristics, tectonism and providing the geological basis for interpretation of mineralization within the Askot block.

4.2 Previous Work in the Regional Area

Systematic and Thematic Geological Mapping

The Kumaon sector of the Lesser Himalaya has been well explored under the Systematic Geological Mapping (SGM) programmes of the GSI, along with regional tectonostratigraphic interpretations carried out by several authors (Heim and Gansser, 1939; Gansser, 1980; Valdiya, 1980; Célérier et. al., 2009; Patel et. al., 2011; Mandal et. al., 2016).

Regional Mineral Exploration around the Askot block

Regional-scale exploration for minerals in and around the Askot block has been conducted by various organizations on independent programs for commodities of economic interest. Among these, exploration for basemetals and gold has been the most prominent, and made a significant contribution to the understanding of the characterisation of mineralization in the region.

Copper Mineralization around Patti Barabesi Area (Agar-Dewalthal)

GSI reported sparse disseminated chalcopyrite mineralization in recrystallized magnesite, hosted within dolomite in the Agar–Dewalthal sector; located ~10 km southwest of the Askot Block (Sehgal, 1960) (Fig. 3.4). The area is bounded by latitudes 29°38'45"-29°45'N and longitudes 80°07'30"-80°15'E. Mineralization occurs as disseminations, fracture fillings, and thin veinlets, commonly associated with silicified magnesite and gossans. Soil geochemistry records Cu 50-4000 ppm, Pb 50-500 ppm, and Zn 50-400 ppm, with secondary enrichment attributed to malachite and azurite weathering.

Bora Agar Copper Occurrence

Copper mineralization at Bora Agar represents a zone-controlled disseminated chalcopyrite system, located ~20 km southwest (29.682187°N, 80.130968°E) of the Askot block (Ramji and Agarwal, 1968). Mineralization is confined to a ~500 m strike length and 5-30 m thickness within recrystallized magnesite along calcareous-arenaceous contacts. Groove sampling indicates Cu values of 0.01-1.36% (avg. 0.41%) and 0.09-0.96% (avg. 0.28%), with Pb up to 125 ppm and Zn mostly 50-200 ppm.

Copper -Lead mineralization around Askot Area

GSI conducted geophysical investigations for polymetallic mineralization in the Askot area north from Barigaon village, Pithoragarh district. The surveyed area is centred around 29°45'48"N and 80°29'10"E, located ~ 14 km east to the Askot block (Agarwal and Pathak, 1968). Sulphide mineralization occurs within brecciated chloritic quartzite and chloritic schists associated with amphibolites, with groove samples recording Cu 0.33% and Pb 1.04%. Self-potential surveys delineated two prominent NW–SE trending anomaly zones with peak values of –238 mV and –133 mV, suggesting two subsurface mineralized zones warranting exploratory drilling.

Lead-Zinc mineralization around Kuta-Askot Area, Thalkedar Limestone

Lead–zinc mineralization at Kuta village (29.768° N to 29.896° N~80.139° E to 80.349° E) is dominated by galena and sphalerite with minor chalcopyrite and oxidized equivalents such as cerussite and smithsonite. The studied area is located to the northeast of the Askot block (Govil et. al., 2018; Fig. 3.4). Mineralization occurs as structurally controlled veins and disseminations within dolomitized Thalkedar Limestone near the Askot Crystalline basement. Surface expression includes goethite-rich gossans with iron-oxide staining and clay alteration. ICPMS analyses indicate strong Pb–Zn dominance, with maximum values reaching ~71% Pb and ~45% Zn, along with subordinate Cu, Ag, As, and Sb.

Lead-Zinc and Polymetallic Mineralization around Shishkhani Area (Patti Kharahi).

Lead mineralization in the Shishkhani area is characterized by galena-dominant sulphide mineralization with minor associated basemetals (Ramji, 1969). The area lies between latitudes 29°48'00" and 29°38'30"N and longitude 79°44'50"E, located ~45 km WSW to the Askot block

(Fig. 3.2). Mineralization occurs within silicified dolomite associated with magnesite and talc pockets, forming lenticular bodies extending ~1 km with thickness of 1–30 m. Galena occurs as fine disseminations, stringers, and veinlets, commonly linked with brecciated silicified dolomite. Sampling indicates average Pb content of ~3.3%.

Gold Mineralization (Jamar-Ara-Tikargad Sector), Panar Valley

Gold mineralization associated with authigenic pyrite and minor arsenopyrite occurs within phyllite and interbedded quartzite of the Gumalikhhet Formation (Almora Crystalline Group). The studied area lies between latitudes 29°25'00"–29°32'00" N and longitudes 79°25'00"–80°00'00" E, located ~40 km southwest of the Askot block (Fig. 3.4) (Mishra and Talwar, 2008). Mineralization occurs along calcite–quartz veins and oxidized phyllite zones, with assay values ranging from 25 ppb to 0.27 ppm Au.

Gold mineralization in Almora Crystalline Belt

Gold mineralization of weakly anomalous tenor has been reported from the Dharamghar–Thal–Didihat block (29°45'–29°55' N; 79°57'–80°20' E; partly overlapping with the Askot block) (Kumar and Krishnamurthy, 1985, Figure 4.2) and the Ghat–Lohaghat–Dhunaghat–Champawat block (29°15'–29°31' N; 79°52'–80°10' E; ~30 km south to the Askot block) (Figure 4.2). Mineralization occurs within metasedimentary and crystalline rocks of the Almora Group, including phyllite, quartzite, schist, gneiss, and amphibolite, as sparse and discontinuous quartz-vein hosted and oxidized patch-type occurrences, with geochemical values remaining within weakly anomalous levels.

Gold mineralization in Gomti-Sarju Catchment (Bageshwar Tehsil)

Attre and Mathur, 1981 has been reported trace alluvial gold from headwater streams of the Gomti River within the Baijnath Crystalline terrain. Among the investigated sites, one locality at 29°50'15" N and 79°46'20" E lies approximately 40 km west of the Askot block (Attre and Mathur, 1981; Figure 4.2). The probable source is inferred to be quartz veins within granitic rocks of the Baijnath synform, comprising granite, amphibolite, gneiss, and associated sericite quartzite and schist.

Table 4.3 Regional Mineral Exploration around the Askot block

Period	Study / Agency	Spatial focus	Nature of work	Key relevance to present exploration
1939–2016	GSI and regional tectonostratigraphic studies (Heim and Gansser, Gansser, Valdiya, Célrier et. al., Patel et. al., Mandal et. al.)	Kumaon sector of the Lesser Himalaya including Askot region.	Systematic Geological Mapping (SGM), tectonostratigraphy, lithological and structural interpretation.	Established the regional geological framework, major lithological units, thrust systems, and structural architecture controlling mineralization.
1960	GSI Report: Copper mineralization study at Patti Barabesi (Sehgal, 1960).	Agar–Dewalthal area, ~10 km SW of Askot Block.	Geological mapping, mineral occurrence study, and soil geochemistry.	Identified chalcopyrite mineralization in recrystallized magnesite–dolomite association and demonstrated significant Cu–Pb–Zn geochemical anomalies relevant to carbonate-hosted basemetal exploration.
1968	GSI Report: Boraagar copper occurrence (Ramji and Agarwal, 1968).	Boraagar area, ~20 km SW of Askot Block.	Geological mapping, groove sampling, and ore evaluation.	Confirmed structurally controlled disseminated chalcopyrite mineralization within recrystallized magnesite along lithological contacts, supporting the prospectivity of structurally controlled copper systems.



1968	GSI Report: Copper-lead mineralization, Askot (Agarwal and Pathak, 1968).	Barigaon-Askot area, ~14 km east of Askot Block.	Geophysical surveys (Self Potential), geological investigation, and sampling.	Delineated NW-SE trending subsurface anomaly zones and confirmed Cu-Pb sulphide mineralization in chloritic quartzite and schist, directly supporting the present exploration rationale.
1969	GSI report: Shishkhani lead mineralization (Ramji, 1969).	Shishkhani area, Patti Kharahi, ~45 km WSW of Askot Block.	Geological mapping and lead ore investigation.	Demonstrated galena-dominant mineralization within silicified dolomite associated with magnesite and talc, indicating regional continuity of carbonate-hosted Pb systems.
1981	Alluvial gold investigation (Attre and Mathur, 1981).	Gomti-Sarju catchment, Bageshwar Tehsil, ~40 km west of Askot Block.	Stream sediment and placer gold investigation.	Suggested quartz-vein hosted mineralization within crystalline rocks as a possible source of gold, highlighting broader metallogenic potential of the region.
1985	GSI Report: Gold mineralization in Almora Crystalline Belt (Kumar and Krishnamurthy, 1985).	Dharamghar-Thal-Didihat and Ghat-Lohaghat-Champawat belts.	Regional exploration gold and geochemical investigation.	Reported weakly anomalous gold values in quartz-vein hosted and oxidized zones within Almora Group rocks, indicating widespread hydrothermal activity in the crystalline belt.
2008	GSI Report: Gold mineralization, Panar Valley (Mishra and Talwar, 2008).	Jamar-Ara-Tikargad sector, ~40 km SW of Askot Block.	Geological mapping, vein study, and gold assay analysis.	Identified pyrite-arsenopyrite associated gold mineralization within phyllite and quartzite, emphasizing the role of hydrothermal

				quartz veins in regional mineralization.
2018	Research publication: Lead–zinc mineralization study, Kuta–Askot (Govil et. al., 2018)	Kuta–Askot area, NE of Askot Block.	Geological, geochemical, and ICP-MS based mineralization study.	Confirmed high-grade Pb–Zn mineralization within dolomitized Thalkedar Limestone near the Askot Crystalline contact, strongly reinforcing the basemetal prospectivity of the Askot region.

4.3 Mineral Exploration within the Askot block

Lead-Zinc and Polymetallic Mineralization (Srivastava and Pathak, 1970)

GSI carried out geophysical investigations for polymetallic mineralization in the Askot–Kholiagaon and Didihat areas, extending northwest of Barigaon old workings ($\sim 29^{\circ}45'30''$ N, $80^{\circ}20'$ E) and around Didihat ($\sim 29^{\circ}47'35''$ N, $80^{\circ}15'30''$ E) (Srivastava and Pathak, 1970). Mineralization is associated with amphibolite, schistose quartzite, and shear zones along quartzite–crystalline contacts. Self-potential surveys delineated multiple anomaly zones (-200 to -700 mV) with strike-parallel extensions up to ~ 340 m. Drilling over anomaly zones intersected disseminated and vein-type polymetallic mineralization assaying 2.5–8.4% Cu, 1–3.4% Pb, and 1–3.7% Zn.

Cu–Pb–Zn sulphides mineralization (Narayan et. al., 1972)

GSI carried out induced polarization (I.P.) surveys for polymetallic mineralization in the Barigaon block of the Askot–Didihat belt, centred at $29^{\circ}45'48''$ N and $80^{\circ}20'10''$ E, located within the Askot Block (in the eastern part) (Figure 4.2). Mineralization, hosted within amphibolite, chlorite schist, and brecciated quartzite along quartzite–basic rock contacts, comprises disseminated and locally concentrated Cu–Pb–Zn sulphides (Narayan et. al., 1972). I.P. surveys delineated significant anomaly zones extending ~ 600 m along strike and down to depths of 90–100 m, corroborating earlier S.P. anomalies and drilling intersections of mineralized zones up to ~ 15 m thickness.

Cu–Pb–Zn sulphides mineralization: (Ghose et. al., 1975)

GSI carried out integrated base-metal investigations in the Askot area (29°45'00" N, 80°20'00" E), covering ~180 sq. km through geological, geochemical, geophysical, and drilling exploration. The area of exploration is situated north of the villages of Barigaon and Gadali, which is located in the eastern sector of the Askot Block (Figure 4.2). Polymetallic mineralization is localized within schistose rocks of the Askot Crystalline Complex around the Barigaon–Gadali belt, close to the thrust contact with quartzites and amphibolites. Mineralization comprises sphalerite, galena, chalcopyrite, and arsenopyrite occurring as disseminations, stringers, veins, and lenticular lodes within sheared, brecciated, and silicified schist zones. Drilling established encouraging average grades of Cu 2.32%, Pb 2.64%, and Zn 3.95%, indicating a probable reserve of ~0.77 million tonnes of polymetallic ore.

Cu–Pb–Zn sulphides mineralization: (GSI, 1974)

GSI started drilling in the Askot area in March 1970 and continued till end of 1974. During this period, they had drilled 3893 m in 25 boreholes. Mineralization was encountered only in 12 boreholes. From this exploration GSI concluded that the area comprises of five lenticular shaped ore bodies having an en-echelon disposition.

The total strike length of the main mineralization is about 330 m. The average grade of these five ore lenses was estimated to be 2.32% Cu, 2.64% Pb and 3.953 Zn (8.91% Total Metal Content). The estimation of these five lenses showed about 0.77 million tonnes of Reserve.

Cu–Pb–Zn sulphides mineralization: (UPDGM, 1977-79)

The area has been explored by exploratory drilling by UPDGM, in assistance of UNDP between April, 1977 to May, 1979. A total of nearly 4067.75 m was drilled in 22 boreholes with the objective of filling the gaps of GSI's drilling program and to trace the strike and depth extension of the main ore body. Four boreholes had intersected mineralization at different Reduced Levels (RL) between 1015 to 895 m RL.

Based on the drilling by GSI and UPDGM, the cross sections prepared shows that the ore body is in the form of lenses, with pinch and swell structures. The lowest intersection of the ore body is around 925 m RL (~ 895 m). The ore body appears to be fairly continuous over a strike length of about 130 m. In the upper levels, the dip of the ore body varies from 30° to 50° and with the increase in depth they become vertical to sub-vertical.

Cu–Pb–Zn sulphides mineralization: (MECL, 1980; MECL, 1992)

MECL carried out detailed exploration at the Askot prospect during 1980 and 1992 through drilling and underground development to delineate a structurally controlled Cu–Pb–Zn

polymetallic sulphide system within the Lesser Himalayan crystallines (Figure 4.2). Mineralization is dominated by sphalerite, chalcopyrite, galena, and arsenopyrite with accessory cubanite and minor complex sulphides. The ore is hosted mainly within chlorite–sericite schist and quartz-biotite gneiss of the Askot Crystallines, confined to a NNW–SSE to NW–SE trending schistose zone extending ~500 m along strike. Sulphides occur as massive aggregates, disseminations, veins, and stringers showing pinching–swelling behaviour. Drilling and underground sampling indicate Total Metal Content (TMC) values of 9-23%, with resource estimation of ~0.803 Mt averaging 2.61% Cu, 2.96% Pb, and 4.49% Zn.

Table 4.4 Mineral Exploration within the Askot block

Period	Study / Agency	Spatial Focus	Nature of Work	Key Relevance to Present Exploration
1970	GSI Report: Polymetallic mineralization investigation (Srivastava and Pathak, 1970)	Askot–Kholiagaon and Didihat areas, NW of Barigaon workings	Self-potential geophysical surveys, drilling, and mineralization assessment	Delineated strong S.P. anomalies associated with quartzite–crystalline contacts and shear zones. Drilling confirmed economically significant Cu–Pb–Zn mineralization, establishing the subsurface continuity of polymetallic sulphide zones.
1972	GSI Report: I.P. survey for Cu–Pb–Zn sulphides (Narayan et. al., 1972)	Barigaon Block, Askot–Didihat belt	Induced Polarization (I.P.) surveys integrated with earlier drilling and geophysical data	Identified extensive chargeability anomalies up to ~600 m strike length and 90–100 m depth, validating earlier S.P. anomalies and confirming the potential of concealed polymetallic sulphide bodies within the Askot Block.
1975	GSI Report: Integrated base-metal exploration (Ghose et. al., 1975)	Barigaon–Gadali belt, eastern Askot Block	Geological mapping, geochemical surveys, geophysical investigations, and diamond drilling	Established the Barigaon–Gadali belt as a significant polymetallic prospect. Drilling indicated substantial Cu–Pb–Zn grades and estimated ~0.77 Mt probable ore reserve, demonstrating the economic potential of the Askot Crystalline Complex.

1980 & 1992	MECL Report: Detailed exploration of Askot prospect (MECL, 1980; MECL, 1992)	Askot Prospect, Askot Crystalline Complex	Detailed drilling, underground development, resource estimation, and ore characterization	Confirmed a structurally controlled Cu–Pb–Zn sulphide system hosted in schist and gneiss. Resource estimation of ~0.803 Mt with significant Cu, Pb, and Zn grades represents the most advanced evaluation of mineralization within the Askot Block and provides a direct exploration model for the present study.
-------------	--	---	---	---

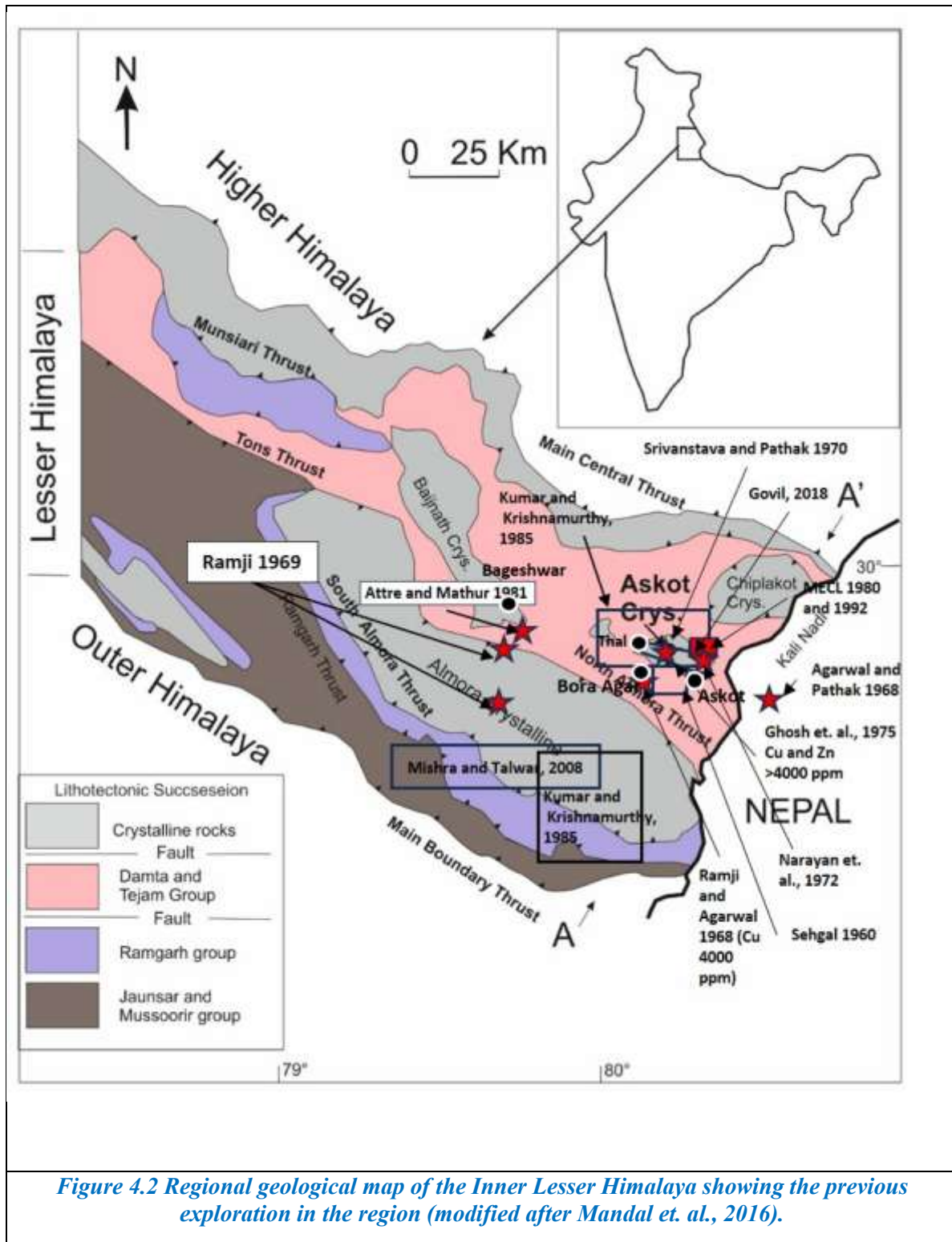
4.4 Observations and Recommendations from Previous Work

Extensive geological mapping and mineral exploration in the Thal-Askot-Didihat belt have been undertaken over several decades by the GSI, MECL, and other agencies. These investigations established the regional geological framework of the Askot Crystalline Complex and associated Lesser Himalayan sequences and confirmed the occurrence of structurally controlled Cu-Pb-Zn sulphide mineralization within the region.

Copper mineralization has been reported from the Agar–Dewalthal and Boraagar areas, mainly occurring as disseminations and veinlets within recrystallized magnesite and carbonate rocks. Lead–zinc and polymetallic sulphide mineralization has been documented from Shishkhani and the Askot–Barigaon belt, where sulphides are hosted within schist, amphibolite, brecciated quartzite, and shear-controlled zones. Geophysical investigations, including self-potential (SP) and induced polarization (IP) surveys, delineated several subsurface anomaly zones, some of which were tested by drilling and yielded encouraging grades of Cu, Pb, and Zn.

Detailed exploration by MECL at Askot confirmed a structurally controlled polymetallic sulphide system extending along NW–SE to NNW–SSE trending schistose zones. Mineralization occurs as disseminations, stringers, veins, and lenticular bodies within chlorite–sericite schist and quartz–biotite gneiss. Resource estimation established the presence of significant Cu-Pb-Zn mineralization in the belt.

Regional stream sediment geochemical data generated under the National Geochemical Mapping (NGCM) programme further indicate anomalous concentrations of Zn, Cu, Pb, and Au aligned along a NW–SE structural corridor coinciding with the regional tectonic grain. Within the present G4 block, elevated values of As, Bi, Sb, Au, Pb, and Zn in stream sediments suggest a favourable metallogenic environment.



Limitations of Previous Exploration and Scope of the Present Study

1. Previous investigations by GSI, UPDGM, MECL, and other agencies have firmly established the presence of Cu–Pb–Zn polymetallic sulphide mineralization (VMS) within the Askot region. As VMS deposits commonly occur in clusters, the known Askot orebody is likely to represent only a part of a more extensive hydrothermal system. Furthermore, the polyphase tectonic history of the region, involving folding, faulting, shearing, and metamorphism, may have displaced, segmented, or concealed additional sulphide lenses beneath cover or along strike. Despite earlier exploration that delineated the principal orebody, the regional extension and continuity of the mineralized system remained inadequately evaluated.

2. Detailed ore mineralogical characterization and genesis, mineral chemistry, alteration mineral assemblages, ore textures, and paragenetic relationships are limited. Likewise, modern petrographic studies integrated with reflected ore microscopy and SEM-EDS investigations are scarce. Consequently, the evolution of the sulphide assemblage, replacement textures, deformation effects, and remobilization history of the mineralization remain poorly constrained. Hence, this project also give attention to Mineral System Analyses (MSA) model to understand the the genesis of mineralization in the Askot block.

The details of conceptual VMS mineral systems models are described in the next chapters.

CHAPTER-5 CONCEPTUAL VMS MINERAL SYSTEMS MODELS

5. Introduction of Mineral System Analyses and its parameters

The evidence of the Mineral System Analyses (MSA) is that mineral deposits will only form and remain preserved where there have been a spatial and temporal coincidence of critical earth processes (geodynamic setting, lithosphere architecture, fluid, ligand and ore component reservoir(s), fluid flow drivers and pathways, depositional mechanisms, post-depositional processes).

A mineral system analyses revolves round four important components

- a. A fertile host rock terrain,**
- b. Fluids to scavenge metals from fertile host rocks,**
- c. Tectonic force and architecture to channelize the metal bearing fluids, and**
- d. Suitable structural or lithological traps.**

Usually, the MSA framework is used for regional mineral targeting so that prospective zones are identified. At regional scale the MSA approach is more a knowledge-driven endeavour and once the prospective zones are identified, prospectivity data using direct ore detection tools are used to complement a knowledge-driven approach to track down the ore fluids and their depositional sites. Thus, as the scale of exploration increases, the MSA framework transcends to Ore System Analysis (OSA). Both the knowledge-driven approach and the data-driven approach depend much on the availability and quality of information that are critically needed for MSA or OSA analyses.

At the regional scale, the exploration strategy focuses on identifying fertile mineral-system domains and prospective corridors within the broader Askot–Didihat–Thal sector. The investigation integrates regional lithological architecture, favourable volcanic and metavolcanic units, metasedimentary sequences, lithological contacts, alteration zones, structural corridors, fold architecture, shear zones, thrust interfaces, and regional geochemical signatures. The objective is to determine whether the critical components of the mineral system coincide in areas beyond the known Askot deposit and whether such areas have the potential to host additional mineralized centres. Regional geochemical and geophysical information is used to complement the knowledge-driven geological model and to prioritize areas for detailed field validation.

Within the regional prospective framework, particular emphasis is placed on the Askot–Naret hinge zone, where structural complexity and fold architecture provide an opportunity to investigate the detailed controls on mineralization and extension of previously reported VMS deposit. Fold hinges, shear zones, faults, fractures, and structural intersections may have acted

as preferential pathways for hydrothermal fluids and may also have facilitated subsequent tectonic remobilization and concentration of pre-existing sulphides. Detailed investigation of this structural domain is therefore intended to establish whether the known mineralization can be traced, and whether additional mineralized lenses may occur as structurally repeated or concealed bodies.

The exploration programme consequently follows a two-stream strategy.

The first stream is a regional mineral-system analysis, designed to identify additional fertile corridors and potential clusters of mineralization within the wider Askot belt.

The second stream is a focused analysis of the Askot-Naret Hinge Zone (ANHZ), integrating detailed geological and structural mapping, alteration studies, multi-element geochemistry, mineralogical investigation, and suitable geophysical methods to identify the most favourable sites for sulphide concentration and its extension.

5.1 Exploration Design and Transition to Field Validation

The Stage 1 desktop study, which included the compilation of existing geological, geochemical, structural, and remote sensing data, identified the Askot sector as a region of geological interest for basemetal mineralization. The occurrence of polymetallic expressions in the Askot Crystalline Complex and the Garhwal Group rocks, along with structurally complex domains, offered a rationale for formulating an exploration hypothesis.

The Stage 2 work is therefore carried out to conceptualize the mineral system framework in a systematic and process-driven approach, ensuring that the subsequent field work is based on sound geological principles and not on isolated features. The key components of Stage 2 are summarized below:

I. Development of a Polymetallic Mineral System Model

A conceptual model for structurally controlled Cu-Pb-Zn ± Au sulphide deposits were formulated, keeping in mind the regional metallogenic attributes and known occurrences in the Askot-Didihat belt. The following aspects were taken into account in formulating this conceptual model:

- Geological evolution of the Askot Crystalline Complex and the associated metasedimentary sequences.

- Opportunity for the formation of primary sulphide deposits and subsequent tectonic remobilization.
- Structural control of mineralizing fluids along fold, shear zones, thrust interfaces, and fractures.

II. Identification of Favourable Host Lithologies

A close examination of the lithostratigraphy helped to identify the rock units that were regarded as prospective for basemetal deposits. These were:

- Amphibolite and metavolcanic units
- Quartzite-Schist contacts
- Carbonaceous and calcareous units
- Silicified, brecciated, and sheared zones. These rock units were regarded as being chemically and structurally favourable for the deposition of sulphides.

III. Recognition of Alteration and Mineralization Indicators

Hydrothermal alteration features such as chloritization, silicification, and sericitization were incorporated as key targeting parameters. The spatial association of alteration zones with structural features was treated as an important indicator of mineralizing processes.

IV. Structural Control Analysis

Regional structural features such as shear zones, fold axes, thrust contacts, and fractures were examined to determine fluid flow and metal deposition. Where major structural features intersected, potential areas of focused mineralization were determined.

Stage 2, therefore, provided a framework for the mineral system that integrated lithology, structure, alteration, and geochemical expression in the Askot block. This organized conceptual model provided the technical guidance for the reconnaissance field testing (Stage 3) to ensure that the mapping, sampling, and target definition were conducted in an organized and informed manner consistent with the overall exploration process.

5.2 Initiating Stage 2: Data Validation Field Program

The exploration program moved into Stage 2, which concentrated on methodical Mineral System Conceptualization, after Project Inception and Block Selection (G4) was finished. This phase was created to convert gathered legacy datasets and local geological knowledge into a

process-based exploration model specific to the Askot block in the Thal–Didihat–Askot sector of the Pithoragarh district of Uttarakhand.

Establishing a mineral system framework that could explain the origin, controls, and possible distribution of polymetallic sulphide mineralization within the Proterozoic sequences of the Lesser Himalaya was the main goal of this stage. The method placed more emphasis on comprehending the larger geological processes in charge of metal sourcing, transport, deposition, and preservation than it did on depending only on isolated mineral occurrences. The execution of Stage 2 involved the following key components:

I. Development of a VMS-Style Polymetallic Mineral System Model

A conceptual model consistent with volcanogenic to structurally remobilized polymetallic sulphide systems were developed based on documented Cu–Pb–Zn occurrences within the Askot–Didihat belt and regional metallogenic analogs. The model took into account:

- The Askot Crystalline Complex and Garhwal Group's Paleoproterozoic magmatic and sedimentary evolution.
- The possibility of syn-depositional sulphide formation followed by tectono-metamorphic remobilization.
- Hydrothermal fluids are structurally focused along lithological boundaries, thrust contacts, and shear zones. This conceptual framework provided the genetic basis for subsequent field validation.

II. Definition of Favourable Host Lithologies

Careful analysis of lithostratigraphic architecture resulted in the selection of potential host units, which are:

- Amphibolites and metavolcanics sequences in the Askot Crystalline Complex,
- Contacts between quartzite and schist, and calcareous horizons in the Garhwal Group,
- Brecciated and silicified zones along structural boundaries.

These units were considered as potential chemical and structural traps that could favour the formation of sulphide deposits.

III. Identification of Hydrothermal Alteration Signatures

Alteration assemblage's characteristic in nature, such as chloritization, silicification, sericitization, and carbonate alteration, were identified as important indicators of mineral systems. Mapping and interpretation of these alteration features were incorporated into the targeting criteria to separate mineralized corridors from background unaltered rocks.

IV. Structural Controls and Fluid Pathways

Regional and local structural analysis focused on NW–SE trending shear zones, fold hinges, fracture systems, and thrust faults as major fluid pathways. These features were considered to have played a role in both primary sulphide deposition and subsequent deformation-driven remobilization events during Himalayan orogenesis.

Stage 2 therefore provided the predictive exploration model for the Askot block by combining lithological fertility, structural framework, alteration footprints, and metallogenic understanding into a cohesive mineral system model. This systematic and conceptual approach served as the basis for reconnaissance field testing.

The exploration strategy for the Askot polymetallic sulphide system was designed using this **Mineral System Analysis (MSA) framework**, integrating knowledge-driven geological interpretation with data-driven prospectivity analysis.

The integrated analysis of elevation, contour, and slope maps indicates that the Askot Block is characterized by rugged Himalayan topography strongly influenced by regional tectonic processes. The pronounced elevation contrast and abrupt changes in slope across the central part of the block are interpreted as the surface expression of major fault and shear zones. These structures likely served as conduits for hydrothermal fluid circulation during the formation of the Proterozoic volcanogenic massive sulphide (VMS) system. The coincidence of structural corridors with favourable volcano-sedimentary host rocks suggests that tectonic deformation played a significant role in localizing polymetallic sulphide mineralization. Subsequent deformation and metamorphism modified the original geometry of the sulphide lenses while preserving their stratabound nature. Areas exhibiting structural complexity, abrupt topographic breaks, and favourable lithological contacts represent priority exploration targets. The integration of geomorphological, structural, geological, petrographic, and geochemical datasets supports a conceptual exploration model in which concealed sulphide bodies are expected along structurally controlled extensions of the known mineralized horizon. These

zones are considered highly prospective for discovering additional Cu–Pb–Zn mineralization beneath shallow overburden and along strike or down-dip continuations of the existing VMS system.

On the other hand, based on bedrock samples, stream sediment samples, lithostratigraphy (including volcanic facies), Geovale team identified a cluster of three promising zones for VMS style polymetal mineralization. NMEDT TCC advised to keep Zones 2 and 3 in abeyance till some data is generated through limited drilling and sample analysis in Zone 1 (Askot–Naret Hinge Zone).

The strategy was implemented through two complementary exploration streams operating at different spatial scales. The **first stream focused on regional-scale exploration of the Askot area** to identify prospective mineral-system corridors and establish the regional architecture controlling mineralization. The **second stream focused on the Askot–Naret Hinge Zone (ANHZ)**, where detailed structural, lithological, alteration, geochemical, and geophysical investigations were undertaken to identify the most favourable sites for sulphide accumulation and to test the possible lateral and down-plunge continuation of the known Askot mineralization.

The two exploration streams were designed to progressively converge from regional mineral-system recognition toward Exploration Target Potential.

The second exploration stream was designed at a much finer scale and focused specifically on the **Askot–Naret Hinge Zone**.

This stream was therefore more strongly data-driven and prospect-scale, with emphasis on detailed structural geology and direct mineralization vectors.

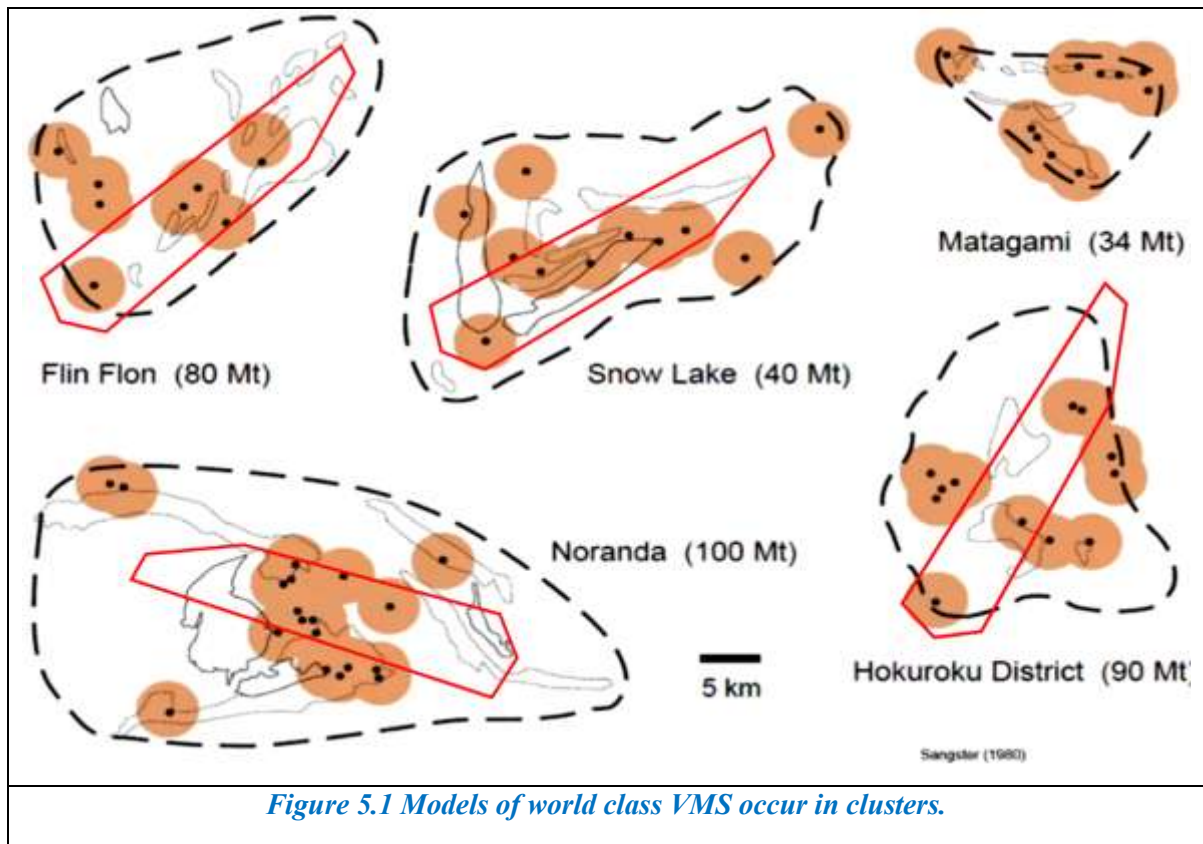
The hinge zone was considered significant because fold hinges and associated structures can act as zones of strain concentration, permeability enhancement, fluid focusing, and sulphide remobilization. Therefore, the exploration strategy focused on determining whether the known Askot mineralization was structurally controlled and whether its continuation and extension could be predicted along the fold geometry.

5.3 Exploration Design for the Zone 1 (Askot–Naret Hinge Zone)

1. The first step was to develop a detailed structural model of the Askot–Naret hinge zone.

The working hypothesis was that the Askot mineralization may not be confined to a single isolated orebody but could represent part of a structurally modified and potentially repeated

mineralized system as world class VMS occur in clusters so there may be chances of other clusters of deposits.



The hinge zone was therefore investigated as a potential fluid focusing and sulphide remobilization corridor.

2. Recognition of Local-Scale Fertility

Detailed geological mapping was undertaken to identify the most favourable parts of the hinge structure.

The objective was to identify locations where structural permeability and chemically reactive lithologies could have acted together to localize mineralization.

3. Integration of Prospect-Scale Data

At the Askot–Naret hinge-zone scale, the exploration strategy relied on a much higher density of information.

At the Askot–Naret Hinge Zone scale, exploration was based on the integration of high-resolution geological, structural, geochemical, mineralogical, and geophysical datasets to develop a predictive prospect-scale mineral system model. The objective was to establish spatial relationships between favourable host lithologies, structural architecture, hydrothermal alteration, sulphide mineralization, geochemical dispersion, and geophysical signatures, thereby identifying potential zones of metal deposition, remobilization, and preservation.

Geology: Detailed geological investigations focused on lithological mapping in 1:12,500 scale, identification of favourable host-rock units and lithological contacts, and delineation of alteration and mineralization zones. Particular emphasis was given to chloritization, silicification, sericitization, carbonate alteration, brecciation, and shearing as potential indicators of hydrothermal activity and mineralizing processes.

Structural Framework: Detailed structural analysis of the block was undertaken to establish the geometry and orientation of folds, fold hinges, hinge–limb transitions, shear zones and their intersections. The structural framework was used to interpret potential fluid pathways, zones of enhanced permeability, and sites favourable for sulphide deposition and subsequent tectonic remobilization.

Geochemistry: Bedrock, rock-chip, and soil geochemical data were integrated to characterize the spatial distribution of Cu–Pb–Zn mineralization and associated pathfinder elements such as As, Sb, Bi, Mo, Sn, and Te. Multi-element anomalism and geochemical zonation were evaluated in relation to lithological contacts, alteration zones, and structural features to identify potential mineralized centres and feeder pathways.

Mineralogy: Mineralogical and petrographic investigations were conducted to characterize the sulphide assemblage, alteration minerals, and ore textures and to establish the relationships between primary mineralization and subsequent deformation and metamorphic modification. Reflected-light microscopy, and EPMA, where required, were used to identify mineral phases, replacement relationships, recrystallization features, and evidence of sulphide remobilization.

Geophysics: Geophysical investigations, including resistivity surveys, and other suitable techniques, were incorporated to detect and delineate concealed sulphide mineralization and constrain subsurface lithological and structural architecture. The geophysical responses were

interpreted in conjunction with geological and geochemical evidence to distinguish prospective anomalies from non-mineralized background responses.

The integrated interpretation of these datasets was used to identify areas where favourable lithology, structural preparation, hydrothermal alteration, multi-element geochemical anomalism, mineralogical evidence, and geophysical responses spatially coincided. Particular attention was given to the Askot–Naret fold hinge and associated structural intersections, considered potential zones of enhanced fluid flow and sulphide concentration. The resulting integrated prospectivity model provided the basis for ranking drill targets and testing the continuity of the known Askot mineralized system, as well as evaluating the Exploration Target Potential for concealed or structurally controlled mineralization within the Zone 1 (Askot-Naret Hinge Zone).

The detailed methodologies are given in the next chapter.

CHAPTER-6

EXPLORATION METHODOLOGY

6. Geoscientific Activities: Methodological Record of the Askot Base-Metal Exploration Programme

6.1 Preamble

The present chapter provides the methodologies of the Askot exploration report. It brings together the integrated sequence of remote sensing, field geology, sampling, excavation, petrographical study, geochemical analyses, geophysical surveying, and drilling that was used to investigate basemetal mineral potential in the Thal-Didihat-Askot block. In the Askot report structure, this chapter is intended to serve as the formal record of geoscientific execution, so that later chapters on geological interpretation, target analysis, drilling results, and G3 block delineation can be read against a clearly documented workflow. The chapter is arranged in the same order in which the exploration programme moved from regional screening toward direct subsurface verification. It begins with remote sensing and GIS-based terrain analysis, proceeds through Large Scale Geological mapping and surface geochemical sampling, then advances to pitting, trenching, petrological study, geochemical data analyses, geophysical surveys, and finally scout drilling. Each activity was designed to either refine the next step or validate conclusions emerging from previous work. Remote sensing helped to organize field traverses and drainage planning, mapping established lithological and structural controls, sampling and trench exposures tested surface expressions, geophysics examined shallow continuity below cover, and drilling provided final physical validation of the most promising targets.

The Askot block required a multi-disciplinary exploration design because the target mineralization occurs within a structurally complex metamorphic terrane of the Askot Group of rock of Inner Lesser Himalaya. Geological observations must be checked against geochemical signatures; basemetal quality must be assessed through petrographic study, geophysical anomalies must be correlated with mapped chlorite schist, amphibolite and pit, trench exposures; and drilling must be justified by the convergence of multiple lines of evidence. The chapter therefore emphasizes integration as much as procedure.

The work completed under the programme gives this chapter both documentary and analytical importance. The approved exploration plan included 92 sq. km. of multispectral and DEM-based analysis and 92 sq. km. of geological mapping, while the achieved field programme also included 101.38 cu. m of combined pitting and trenching, 30.3 line-km of VES

survey, petrological and mineralogical studies, laboratory assay programmes, and 601 m of core drilling.

6.2 Geospatial Analysis (Remote Sensing):

Remote sensing formed the first geoscientific screening layer of the Askot G4 exploration programme. Before detailed field traverses were undertaken, satellite imagery and digital elevation data were compiled and interpreted over the full Thal-Didihat-Askot block so that the terrain, geomorphology, drainage behaviour, structure, and land-use constraints, alteration could be understood in a spatially consistent manner. In a structurally complex Himalayan terrane such as Askot, where basemetal deposition is controlled by steep relief, remote sensing was not treated as a stand-alone exploration method; rather, it was used as a decision-support tool for planning traverses, recognizing structurally favourable zones, organizing stream-sediment catchments, and identifying alteration and terrain sectors requiring direct ground validation.

6.2.1 Process description:

The remote sensing workflow integrated multispectral imagery and terrain data within a GIS environment. As per the project SOP, cloud-free scenes from Landsat, Sentinel, and ASTER, together with DEM data, were acquired and processed to generate geological and geomorphological derivatives relevant to Basemetal reconnaissance. The procedural sequence included image download and screening, DEM preparation, extraction of thrust/fault/lineaments, generation of terrain derivatives, preparation of LULC and drainage, alteration and integration of all output layers into the project GIS with metadata control. This workflow was designed to move from regional terrain understanding toward feature-specific interpretation, and then to field verification.

For the Askot programme, SRTM-DEM formed the principal terrain-analysis base, while Sentinel-2A and other multispectral datasets were used for spectral and land-cover interpretation. The remote sensing outputs were subsequently cross-referenced with legacy geological information, including the 1:50,000 Bhukosh/GSI lithological layer, so that structural, lithological, and terrain elements could be viewed together during target screening. The entire approved quantum of multispectral and DEM-based analysis.



6.2.2 Derivatives prepared and their exploration significance

Thematic outputs generated from the remote sensing and GIS workflow included a lineament map, elevation map, contour map, slope map, hillshade map, drainage map, LULC map, RED (Residual–Erosional–Depositional) scheme map, and alteration maps. These products together converted raw terrain and spectral data into interpretable exploration layers.

The terrain analysis of the Askot Block using SRTM-DEM and Sentinel-2A satellite data provides valuable information for mineral exploration. The elevation and contour maps reveal a rugged mountainous terrain with significant relief variation, controlling slope, drainage, accessibility, and bedrock exposure. Hillshade analysis highlights the structural alignment of ridges and valleys, predominantly in the NW–SE direction, suggesting strong structural control over the landscape. The dendritic drainage network reflects the influence of topography and is useful for planning stream sediment geochemical sampling.

The LULC and RED scheme maps indicate that the area is predominantly covered by vegetation, with erosional landforms dominating the geomorphology and depositional features confined to valley floors. These datasets assist in identifying favourable locations for geological mapping, geochemical sampling, and planning field traverses. Spectral alteration mapping delineates argillic, phyllic, propylitic, and iron oxide alteration zones, which represent potential hydrothermal alteration associated with mineralizing processes. Although these alteration signatures are not direct evidence of mineralization, their spatial association with favourable lithological and structural settings provides important targets for detailed ground verification and follow-up exploration.

6.2.3 SOP adopted:

The remote sensing work was carried out in accordance with the Askot project SOP. The SOP required: (i) acquisition of cloud-free imagery, preferably with less than 10% cloud cover; (ii) use of Landsat, Sentinel, and ASTER datasets together with DEM products; (iii) extraction of lineaments and validation of their azimuth pattern against published regional structural grain; (iv) generation of DEM derivatives such as slope, aspect, hillshade, drainage network, contour maps, and elevation profiles; (v) preparation of LULC outputs and drainage morphometry products; and (vi) integration of all raster and vector outputs into the project GIS with preserved metadata and use it for identifying the basemetal potential zones, mineability, tectonic controls. The SOP therefore emphasized reproducible data acquisition, standardized derivative generation, and GIS-ready integration rather than ad hoc map preparation.

6.2.4 QC protocol adopted

The quality control for remote sensing involved technical as well as field-based assessments. First, the interpretation results of GIS were field verified so that the lineaments, drainage response, terrain discontinuities and land cover designations would be assessed based on actual conditions on the ground. Secondly, the spot height values from DEM were assessed against field observations and GPS control to within an accuracy of around ± 5 m according to the SOP. Thirdly, all the raw data and derived maps/images were stored with their source metadata information so that the processing procedures could be easily traced back. Importantly, the outputs of the remote sensing were regarded as working hypothesis to be verified, improved based on field data collection, which was the proper QC procedure for reconnaissance-level exploration of rugged metamorphic terrains.

The SOP had highlighted various potential risk factors for degrading the quality of interpretation of the satellite images. One such risk factor was that of cloud cover on the date of image collection, which would be addressed using images from various dates and favouring dry season images; vegetation masking was considered a limitation, which would be taken care of using field verification; artefacts due to DEMs in the steep area of Askot would be verified using comparison with other elevation datasets and field GPS readings; and spectral anomalies would not be considered geological facts unless corroborated by ground data.

6.2.5 Data collected and generated

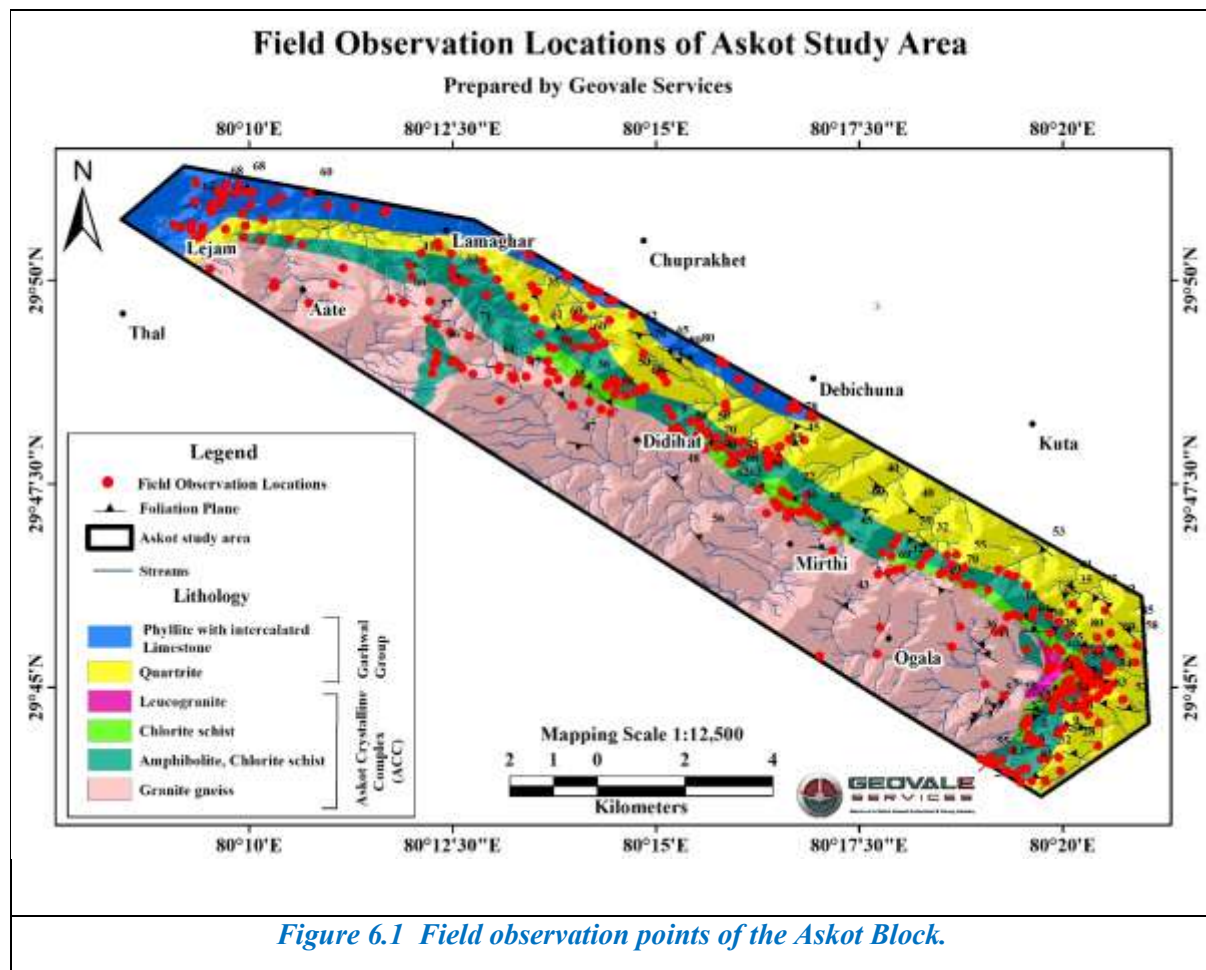
Remote sensing provided a structured geospatial dataset comprised of satellite images, DEMs, processed raster and vector layers, map layouts, and metadata. The key products that could be used as inputs for further steps of the exploration process included: (i) fault interpretation; (ii) elevation, contour, slope, and hillshade layers; (iii) drainage and stream order mapping; (iv) LULC classification; (v) RED landform interpretation; (vi) alteration map and (vii) GIS base maps for traversing and sampling.

All these geospatial data products provided valuable information for future exploratory activities. Drainage analysis helped in designing stream sediment sampling; hillshade and slope helped in planning of traverses and in defining potential exposure zones; lineaments were interpreted for providing a geological structural framework to be verified at the stage of mapping and to understand tectonic control in mineralization; and LULC and geomorphological data allowed integrating logistical and environmental aspects into the

fieldwork. Thus, geospatial dataset served as a basis for spatial correlation of field geology, geochemistry, geophysics, and drilling.

6.3 Geological-Structural Mapping

Ground validation through geological-structural mapping was the major aspect of the Askot G4 project and served as the connecting link between the remote sensing data used for screening and all future activities related to sampling, geophysics, trenches, and drilling. It is challenging to continue the mapping such a rugged Thal-Didihat-Askot block area. Mapping was not just meant for identification of rocks, but rather had to show lithological continuity, structural attitudes, position of basemetals, and tectonic setting of their outcrop and underground geometry.



6.3.1 Process description

Large Scale Geological Mapping (LSM, 1:25,000) was conducted over the total area of 92 sq. km. of the Askot block (Figure 6.1). This was preceded by the compilation of existing geological data, especially GSI 1:50,000 K map and followed by field traversing aimed at testing or reinterpreting those lithological traces from the perspective of the current VMS target model. Traversing was conducted along and across the main lithological belts in order to capture 3D geometry of hinge zones, quartzite bands, granitic intrusion and deformation zones.

During each location, geologists collected data on GPS location, host lithology, description of the outcrop, the presence of visible mineralization, structural elements and photography. When possible, orientation of bedding, foliation and lineation was collected using Brunton/Clinometer/Suunto and entered into the database. In particular, VMS occurrences were described in terms of host lithology, surface manifestation and presence of sulphide, quartz veins, alteration and deformation zones. Mapping was thus a significant process where legacy maps and GIS layers guided field work; field observations helped to confirm or revise the legacy data; and the emerging geological model dictated sampling, trenching and drilling.

The report material shows that mapping in Askot was not confined to a simple block-wide rock classification. It progressively separated the area into chlorite schist, amphibolite, granite-gneiss, limestone etc. Structural mapping simultaneously examined the orientation of regional foliation, local second-order folding, ramp-flat variations in dip, mylonitic fabric development in intrusive rocks, and linear structures such as stretching and intersection lineations to understand the tectonic control on basement mineralization.



*Figure 6.2 Foliation within phyllitic rock
(Turgoli area).*



*Figure 6.3 Foliation within quartzite rock
(Askot area).*



6.3.2 Derivative mapping inputs and their role

The geological-structural mapping did not begin from a blank base. It relied on a set of derivative mapping inputs assembled before and during fieldwork. The first of these was the GSI 1:50,000 lithological map (Figure 7.1) used as the regional framework. At that scale, the Askot block was simplified into two principal map domains: i) limestone-amphibolite-chlorite schist rock in northern part and granite gneiss rock in the southern part. This regional layer was valuable for first-pass terrain subdivision, but it was too generalized for VMS targeting.

of the mapping inputs came from the remote-sensing derivatives prepared in the preceding stage of the programme. Thrust-fault, elevation, contour, slope, hillshade, drainage, LULC, RED geomorphic interpretation, and alteration-anomaly layers provided a terrain and structural context for mapping traverses. In practical terms, hillshade and slope helped identify accessible ridge crests and likely bedrock windows; drainage layers helped position stream crossings and catchment-based traverses; and LULC plus geomorphic information helped distinguish bedrock exposure sectors from vegetated or depositional cover.

The other most important derivative input was the mapping database generated during the field campaign itself. The field observation-point file contains 681 georeferenced point records including structural datasets (509 points) and another 172 locations visit for lithological data collection (Annexure: Field Observation Points). These records preserve the working backbone of the map: latitude and longitude, host lithology. In addition, the structural compilation files (Annexute Structural) contain 509 planar measurements with strike, dip amount, and dip direction. These digital compilations are themselves derivative mapping inputs, because they support later synthesis through map overlays, structural trend analysis, and domain-wise interpretation.

Accordingly, the mapping component should treat ‘derivative mapping inputs’ in two tiers: first, the legacy and remote-sensing layers that guided field observation; and second, the field-derived digital compilations that transformed individual observations into an integrated geological and structural map. The latter include the observation-point GIS layer, lithological contact traces, sulphide trace structural measurement tables, interpretive structural overlays, and the final 1:12,500 geological map used for downstream targeting.

6.3.3 SOP adopted:

The Askot SOP defines geological-structural mapping as a systematic field procedure aimed at establishing the lithological and structural framework required for mineralization

modelling and exploration-target estimation. Its core requirements are: traverse planning both across and along strike; recording of GPS coordinates, rock type; measurement of bedding, foliation, and related structures wherever exposed; specific noting of Basemetal occurrences and their host lithology; photography with scale; end-of-day transfer of all observations into a digital database; and continual updating of lithological boundaries and structural data on the working map.

The SOP further requires that each field day begin with a traverse plan and end with digital compilation, so that the map evolves continuously rather than being drafted after the campaign. This is especially important in a Himalayan terrain such as Askot, where access, exposure quality, and structural repetition can bias interpretation if observations are not plotted and reviewed in near real time. The SOP also makes explicit that the mapping output is not only a coloured lithology map, but an integrated geological package comprising legend, cross-sections, and stratigraphic or lithological relationships fit for later interpretation.

6.3.4 QC protocol adopted

Quality control in geological-structural mapping was designed around repeat observation, interpretive consistency, and lithological verification. The SOP specifies that a senior geologist should independently revisit and re-log about 10% of the observation points, including both random stations and those considered ambiguous.

A second QC layer was the weekly map review session in which the full team reconciled differing lithological descriptions, contact interpretations, and structural readings. Such review is not an administrative formality; it is the principal control on inter-geologist consistency in a multi-person mapping campaign. The SOP also calls for fresh chip collection and hand-lens or simple field-test support where weathering obscures lithological identity, with uncertain cases referred for petrographic checking. In operational terms, the end-of-day digital entry protocol itself functioned as QC because it required immediate cross-checking between field notebook observations, GPS locations, photographs, and the evolving GIS layer.

The mapping write-up should also recognize project-specific interpretive QC derived from the Askot structural setting. This is consistent with the report's interpretation that the block records a large-scale deformation, folds, and structurally repeated VMS horizons. In such a setting, QC means verifying not only the correctness of individual readings, but also the coherence of the final geological architecture.

6.3.5 Data collected and generated

The data generated through geological-structural mapping are substantial and multi-layered. At the broadest level, the field programme completed the approved 92 sq. km. of geological mapping at 1:12,500 scale. The observation-point compilation and the field data sheet together preserve a dense network of georeferenced stations with lithological, structural, descriptive, and photographic attributes. The planar structural compilation preserves 509 readings of strike, dip amount, and dip direction. These are adequate reconnaissance-scale data for defining the dominant structural grain and identifying zones of contrasting structural style. Structurally, the report's field observations record a pervasive foliation across nearly all lithotypes, with a dominant NW–SE trend and spatial variation in dip. Structurally, the Askot area occupies an asymmetric synformal configuration including ductile to brittle deformation. In the context of the report, these measurements support the interpretation of thrust-related flat and ramp geometries within a compressional deformational framework.

The geological products generated from these data include the working and final lithological map, structural overlays, domain-wise observation compilations, cross-section control points, photo-linked outcrop records, and the attribute database used later for sampling, trenching, geophysics, and drill targeting. This mapping dataset is therefore both a primary exploration output in its own right and the essential reference layer for all subsequent method-wise interpretation.

6.3.6 Annexure listing

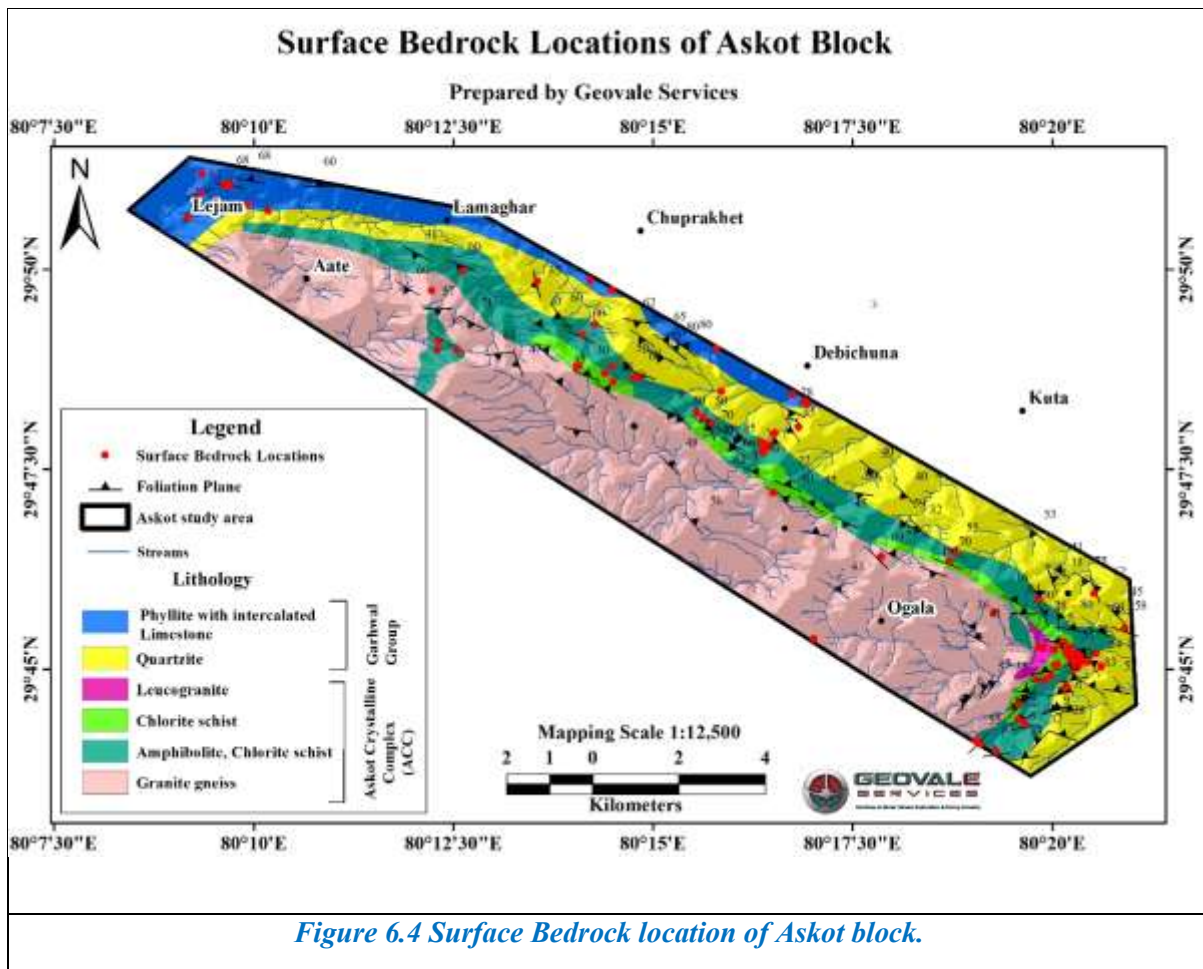
Detailed field observation points including location, latitude, longitude and lithology are given in Annexure_I, whereas detailed structural data including location, latitude, longitude, lithology, and structural data are given in Annexure_II

6.4 Surface Sampling - Grab and Bedrock

Surface grab and bedrock sampling formed the first direct geochemical interface between the mapped geology and the analytical programme of the Askot G4 exploration. This component was designed to convert field recognition of Basemetal and associated lithologies into georeferenced physical samples that could be subjected to laboratory analysis for major oxides, trace elements, sulphur, and selected mineralogical characterization. This subsection documents the field process adopted for surface bedrock sampling, the derivative analytical outputs generated from those samples, the sampling SOP and QA/QC logic followed in the



programme, the nature of the data collected, and the annexures that should support this work stream in the final report.



6.4.1 Process description

Surface sampling in the Askot block was undertaken as an integrated extension of geological-structural mapping over the full approved 92 sq. km. programme area. The exploration workflow already defined the surface geochemical stage as a systematic bedrock, and stream-sediment characterization exercise carried out after remote-sensing screening and field mapping, while the approved work programme confirms that geological mapping and sampling were completed across the full block and that Phase I surface geochemical analysis was executed on large batches of surface samples. In practice, grab and bedrock sampling was focused on natural outcrops, road-cut exposures, ridge sections, and other fresh bedrock windows where lithology, structural attitude, sulphide association, and host-rock relations could be observed directly before sampling.

The principal surface targets were chlorite schist, amphibolite, phyllite, granite gneiss, quartzite together with the adjacent host lithologies required for geological comparison and geochemical

background control. This geological heterogeneity made representative sampling essential. Accordingly, fresh surfaces were exposed using hammer and chisel where necessary, visually weathered rinds were avoided, and the sample point was documented simultaneously with lithology, sulphide association, and field context. Cumulative Samples were used where a representative specimen could be taken from a discrete outcrop exposure, while chip-style sampling was used where a more representative specimen had to be assembled from a limited exposed interval or across a lithologically consistent face in order to reduce bias from visually rich but non-representative sulphide patches.

Once collected, each field specimen entered a documented chain that linked the physical sample with its spatial and geological metadata. The SOP required recording of sample identity, latitude, longitude, and sample description in the field register; preservation of the sample in a labelled zipper bag; completion of sample submission forms showing the analysis requested; and maintenance of photographic evidence for every batch before dispatch. The report indicates that these surface samples were subsequently routed into a staged analytical programme consisting of XRF major oxide analysis ICPMS AND AAS analyses. In this sense, surface grab and bedrock sampling was not an isolated field activity but the feed stage for the wider geochemical interpretation and target-validation workflow of the project.



Figure 6.5 Collection of surface grab bedrock samples



Figure 6.6 Collection of surface grab bedrock samples

6.4.2 Derivative sampling outputs and their role

The immediate output of grab and bedrock sampling was a georeferenced bedrock sample inventory, but the more important products were the derivative datasets generated from each registered field specimen. The first derivative output was spatial: every sample became a



point in the project GIS, linked to mapped lithology, village or locality name, exposure type, and field observations on sulphides, alteration, and structural setting. The second derivative output was descriptive: field sample registers, hand-specimen notes, and photo logs preserved the sampling context required to merge later assay results with lithology and exposure character. The third derivative output was analytical: each sample, or selected subset of samples, produced laboratory data that could be interpreted in relation to fertility, sulphide enrichment, and host-rock chemistry.

For the Askot G4 programme, the approved-versus-achieved work table shows that the Phase I surface-sample analytical stream included 200 samples for major oxide AAS, 20 samples for XRF, 200 samples for ICPMS analyses with 20 corresponding AAS check samples. These analytical derivatives are the principal value-added outputs of surface sampling because they convert field observations into interpretable geochemical datasets. In the context of the Askot Basemetal system, such derivative outputs helped to identify sulphide rich zone.

6.4.3 SOP adopted

The Askot surface-sampling SOP defines grab and bedrock sampling as a controlled procedure for collecting representative rock material from outcrops and exposed bedrock for geochemical analysis and quality assessment. The SOP scope covers all surface rock sampling from natural outcrops, road cuts, and similar exposures within the project boundary. In operational terms, the SOP required that a representative fresh specimen be collected with geological hammer and chisel; that every sample be entered in the sample register with sample ID, latitude, longitude, and sample description; and that a unique sequential numbering system be maintained without reuse of sample numbers under any circumstance.

The SOP also required physical and documentary controls around the sample. The sample had to be stored in a labelled zipped bag, the tools had to be cleaned with a wire brush between successive samples to minimise cross-contamination, and the batch had to be accompanied by a formal sample submission form identifying the sample IDs, project code, analyses requested, and any special instructions. The analyses listed in the SOP are fully aligned with the analytical programme of the report and include AAS, XRF, ICPMS, as required. The SOP further required that every sample batch be photographed before dispatch so that a traceable visual record existed from field collection to laboratory submission. Although the SOP language is framed around samples because the governing principle is representativeness and documented traceability rather than the geometry of the individual hand specimen.

6.4.4 QC protocol adopted

Quality control in surface sampling was built around four linked concerns: representativeness, contamination control, sample identity integrity, and sample-to-lithology reconciliation. The formal SOP QC measures are First; a field duplicate was collected from the same site so that repeatability of surface sampling could later be examined. Second, a senior geologist was reviewed the sample descriptions against the mapped lithology and field logs, ensuring that laboratory batches were correctly attributed to the intended rock type and target horizon. Third, the complete sample information was documented in the project datasheet and uploaded to the project cloud repository so that no analytical batch became detached from its field context.

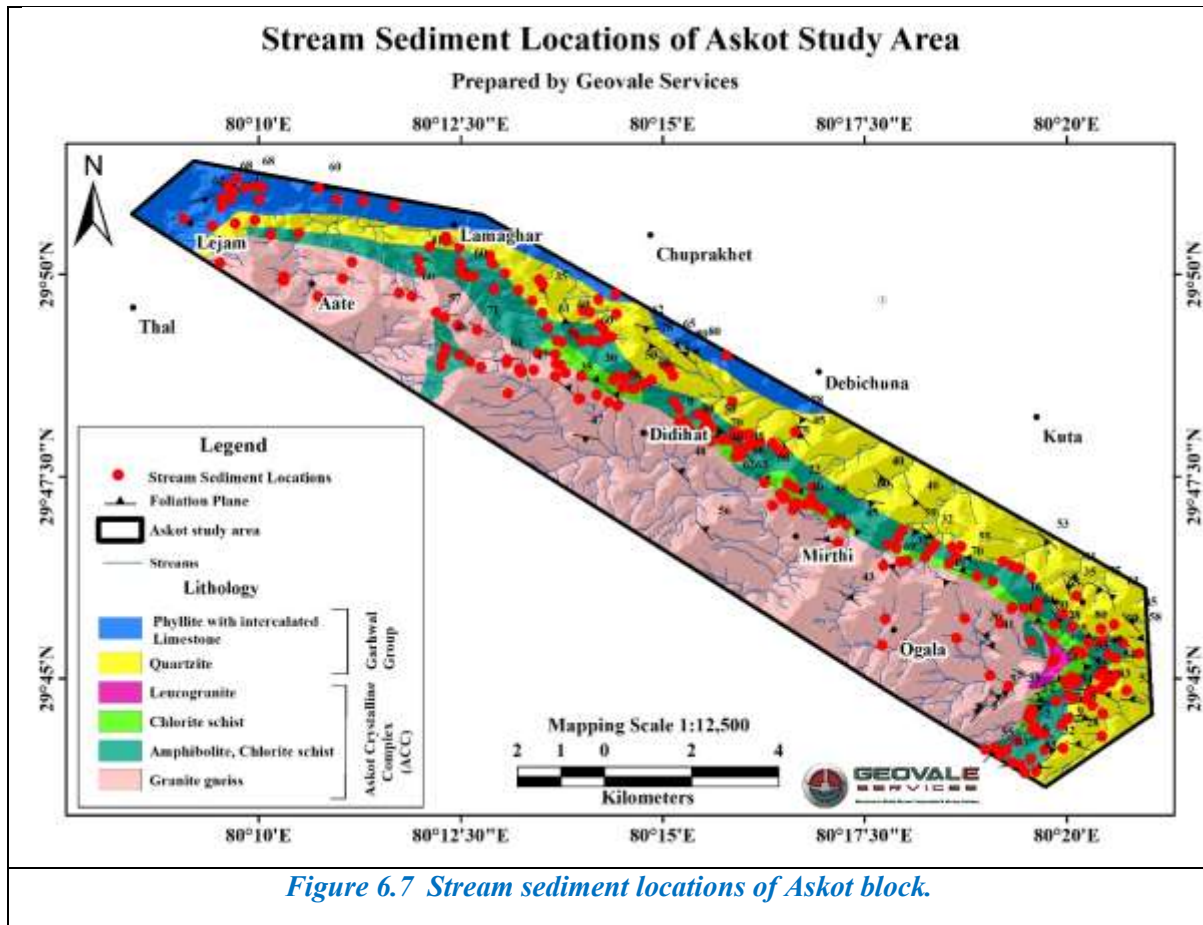
The SOP itself identifies the major field risks: high-grading or selective sampling bias, cross-contamination between samples, sample mix-up or mislabelling, and moisture-related damage during storage or transit. The adopted mitigation was therefore to enforce representative selection under geological supervision, clean all sampling tools between sites, double-check sample IDs through independent field verification, preserve the sample in dry labelled bags, and retain photographic evidence of the sample batch. In analytical terms, the wider project also incorporated laboratory-side checks through external check assays for XRF and ICPMS subsets, thereby extending QC from field sampling through the geochemical pipeline.

6.4.5 Data collected and generated

At the programme scale, the report confirms that geological mapping and associated sampling were completed over the full 92 sq. km. block, meaning that the surface sample set should be read as spatially distributed across the full mapped geological framework rather than as a narrow cluster around a single locality.

6.5 Stream Sediment Sampling

Stream sediment sampling formed the reconnaissance-scale geochemical component of the Askot exploration programme designed to test whether the drainage network draining the basemetal-bearing and associated lithological packages carries a detectable geochemical and mineralogical signal. In the Askot block, where steep terrain, forest cover, patchy exposure and transported cover locally limit direct bedrock observation, stream sediment provides an integrated catchment response and therefore acts as an efficient first-pass screening medium.



6.5.1 Process description

The stream sediment programme was planned as a drainage-controlled survey focused on first-order and second-order catchments within the around the project area. Site selection was guided by the drainage derivatives prepared during the geospatial stage, particularly stream order, drainage hierarchy, catchment geometry, and access considerations. Once a provisional site was selected, the field team walked upstream to identify any obvious contamination source and to confirm that the sampled catchment was meaningfully draining the intended lithological domain. Sampling was then carried out from active stream-bed trap sites showing evidence of recent sediment transport rather than from stagnant, organic-rich or obviously reworked depositional pockets.

At each approved site, organic debris such as leaves, roots and windblown material was removed before sampling. Multiple scoops of fine stream sediment were then collected using a cleaned stainless-steel scoop in order to build a representative composite sample rather than a point grab. The composite was homogenised in the field, excess water was allowed to drain naturally, and each sample was recorded with its sample ID and geographic coordinates

before dispatch. The samples were sieved at 200 mesh (75micron). In practical terms, the uploaded field register shows that the programme generated a georeferenced sample set of 283 primary stream-sediment locations, and the detailed sample sheet further records paired preparation entries for each location, reflecting internal splitting or fraction control during subsequent handling and preparation.



Figure 6.8 Collection and processing of stream sediments



Figure 6.9 Collection and processing of stream sediments

6.5.2 Derivative sampling outputs and their role

The principal derivative outputs of the stream sediment programme were not limited to the physical samples themselves. The programme generated a stream-sediment location layer, a catchment-linked sample register, preparation-level sub-records, and a downstream sample-processing chain that connected field sampling with sulphide and geochemical analysis. These derivative products are important because stream sediment in reconnaissance exploration is interpreted at the scale of upstream catchment response rather than as an isolated sample point. Accordingly, each sediment site also functions as a drainage-based analytical node that can be compared with lithological belts, structural corridors, and areas of bedrock basemetal occurrence mapped elsewhere in the project.

A particularly important derivative of this programme was the creation of a laboratory-ready stream sediment dataset suitable for mineral separation and geochemical follow-up. The approved-versus-achieved work schedule in the Askot report records that 283 stream sediment samples of 200 mesh (75micron) mm size were processed.

6.5.3 SOP adopted

The stream sediment sampling SOP adopted for the Askot project defined a controlled field workflow for collecting representative sediment from active drainages draining

prospective basemetal-bearing units. The SOP required that sample sites be selected from GIS-based drainage analysis, specifically targeting first-order and second-order catchment outlets tied to target lithologies. Before collection, the team was required to walk upstream from the planned point to identify potential contamination sources and to confirm the suitability of the sampling location. The actual sample point had to be chosen from the active stream bed at a natural trap site showing evidence of recent water transport.

Samples are collected from the confluence points of 1st and 2nd order streams. After collection, the sample had to be homogenised within the bag, labelled with the correct sample ID, recorded with GPS coordinates, and accompanied by a Sample Submission Form before dispatch. This workflow is appropriate for Askot because it balances reconnaissance-scale coverage with adequate attention to representativeness, contamination control, and downstream sample integrity.

6.5.4 QC protocol adopted

Quality control for stream sediment sampling was built around four practical checks: representativeness of the sampled medium, contamination awareness, sample homogenisation, and equipment cleanliness. The SOP required field duplicates to be collected for future quality checking, which provides a direct way to assess the repeatability of the sampling process at selected locations. It also required explicit recording of any contamination source observed during the upstream walk and flagging of any potentially compromised site in the sample notes. This is particularly important in the Askot setting, where villages, agricultural land, roads and local disturbance may influence sediment character in small mountainous catchments.

The SOP further acknowledged that poor stream sediment data quality is not usually the result of laboratory problems but is often due to inconsistent field work. For that matter, the SOP made it mandatory that the sediment was first homogenised before being split up into any subsample, and the scoop had to be rinsed under running water at each site to prevent any contamination from the previous site. The risk-mitigation rationale was equally explicit: sampling in the dry season, selecting clay/silt-rich fine sediment fraction rather than coarser gravelly material, and avoiding downstream sites disturbed by humans where possible. Data collected and generated

The data obtained using the stream sediment program is a combination of spatial and descriptive data. In the most fundamental sense, the data set has a geospatially referenced data set for all stream sediment sample points on the block. The 283 primary stream-sediment sites,



while the field register extends these to a bigger tabulated dataset including Sample number, Tag Number, Collectors, Coordinates, Lithology, Sediment size, Stream, Village reference, Contamination field. This shows that the stream sediment program has provided not only physical samples but also a structured field database where each sample can be analyzed within the drainage, lithological, and operation context.

Analytical and preparatory data created by this process have their significance. The field register shows that each primary site is captured in two entries for Sediment-size/Preparation, and the main project work schedule shows that 283 stream sediments were prepared for sulphide identification containing Basemetal. These outputs form the bridge between reconnaissance drainage sampling and the later analytical sections of this chapter. In effect, the stream sediment dataset generated a catchment-scale screening layer for the Askot block: one that can be compared with geological mapping, structural interpretation, bedrock sampling, and subsurface targeting, and that helps distinguish drainages carrying potentially anomalous signatures from those representing local background.

6.6 Pitting and Trenching

Pitting and trenching constituted the principal shallow subsurface exposure techniques used in the Askot G4 programme to verify geological interpretation beneath soil-covered slopes, expose VMS horizons, and obtain fresh channel samples from controlled excavation faces. Within the overall exploration workflow, these works bridged the gap between surface mapping, geophysical targeting and scout drilling by converting reconnaissance-scale anomalies into directly observed lithological, structural and geochemical information. The approved-versus-achieved work statement records a combined excavation of 101.38 cubic metres, comprising 92.23 cubic metres from pitting and 9.16 cubic metres from trenching, which demonstrates that these works were a major component of the ground follow-up programme. Total 20 nos of samples collected and analysed in ICP-MS method.

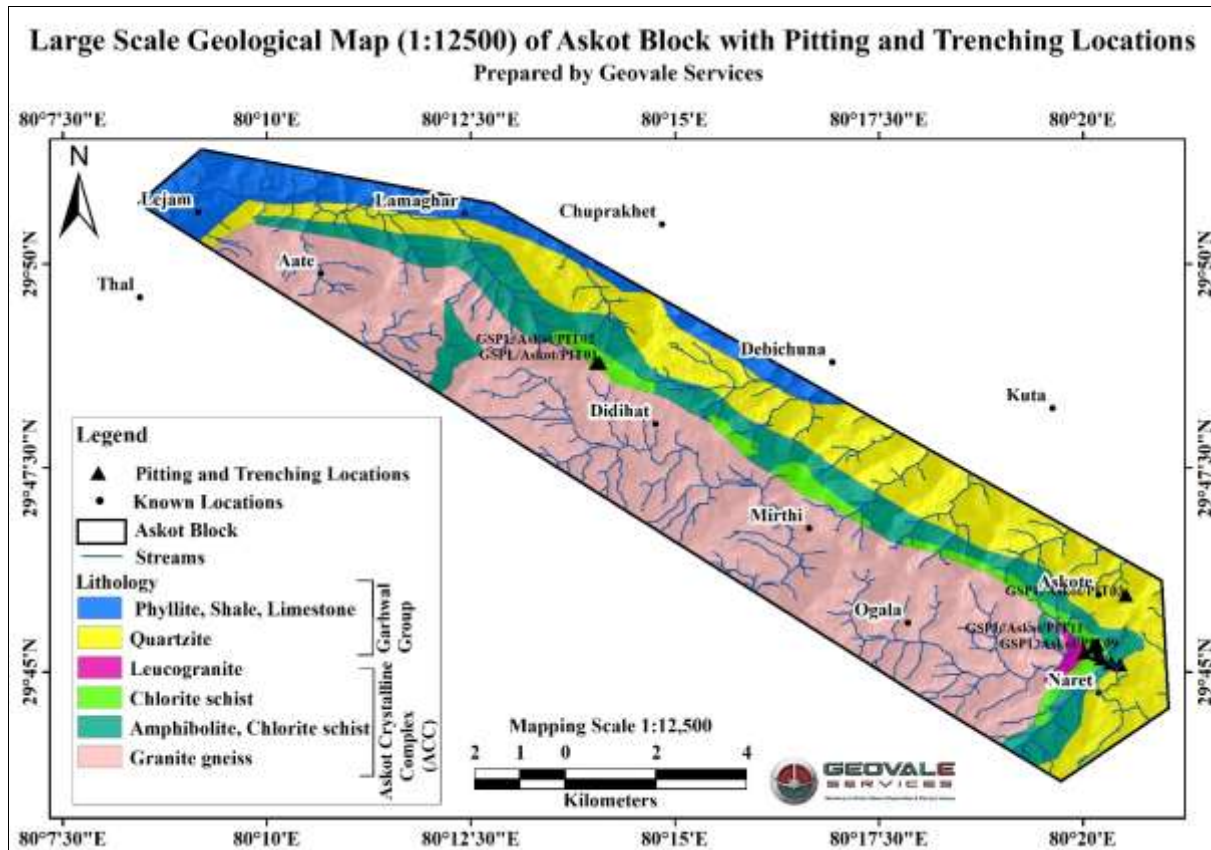


Figure 6.10.a Pitting and Trenching location in the Askot block area.

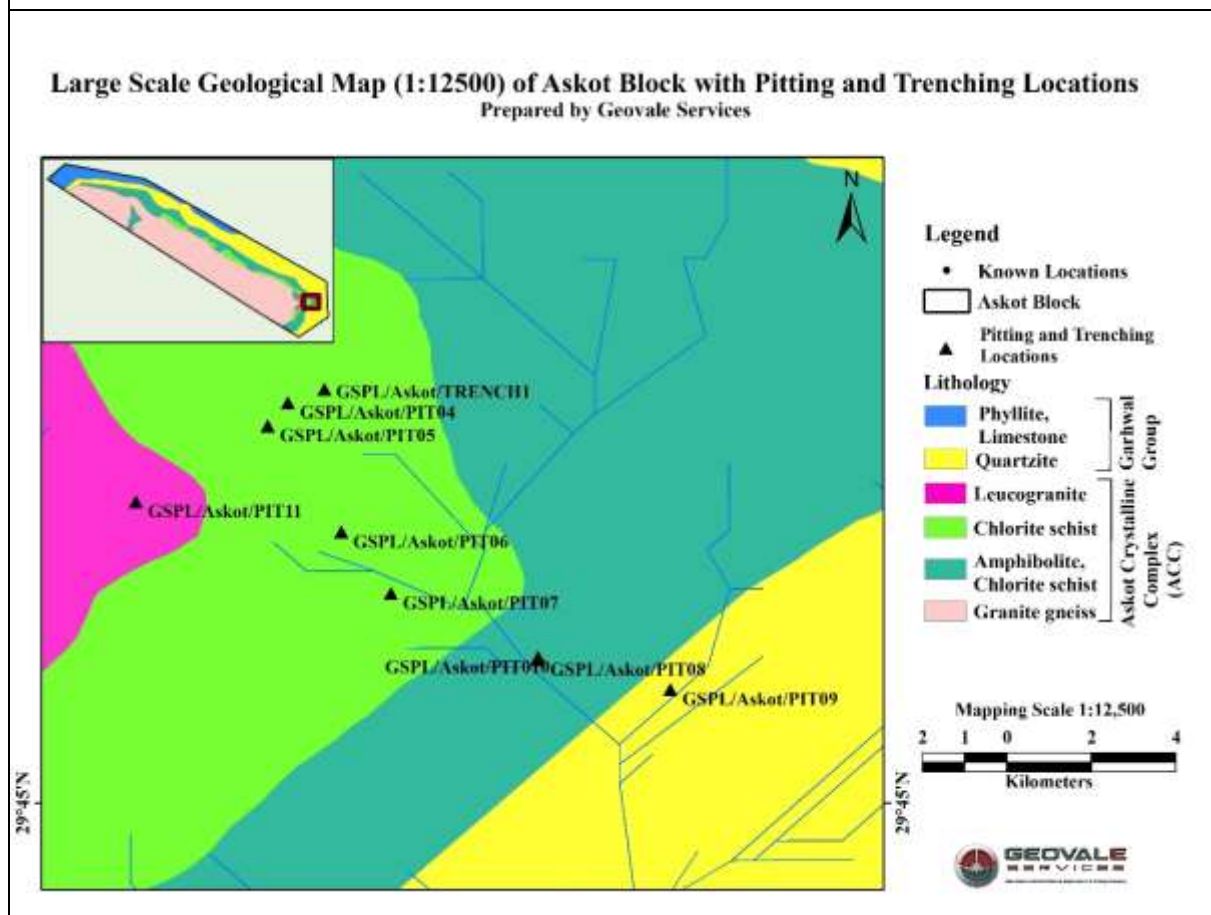




Figure 6.11.b Pitting and Trenching location in the Askot block area.

6.6.1 Pitting

Pitting was undertaken where the objective was to examine shallow vertical continuity, expose fresh bedrock below soil cover, and test the immediate subsurface expression of VMS and sulphidic horizons, lithological contacts and weathered mineralised ground. Site selection was based on the integrated interpretation of geological mapping, surface mineralization and sulphide indications, lithological contacts, and bedrock geochemical analyses, while also taking into account terrain accessibility and exclusion of reserve forest areas. In the report methodology, pits were excavated as vertical to near-vertical openings (manmade due to JCB do not able to reach the side), generally at about 2 m x 2 m plan dimensions and to depths of approximately 2 m, after which the exposed walls were cleaned manually with shovels, hammers and chisels for geological logging.

The operational SOP adopted for pitting and trenching required the excavation footprint to be marked on the ground before work commenced, permissions to be secured prior to disturbance, and at least one face to be preserved clean for mapping and sampling. For pit-based work, the same SOP logic applied in practice: excavation was controlled, geological faces were cleaned, sample intervals were recorded against pit number and lithology, oversized sample lots were homogenised by coning and quartering, and all material was bagged, tagged and documented before transport. The report further states that representative channel samples were collected from the cleaned excavation faces, commonly at 0.5 m to 1.0 m intervals, and that pit samples were labelled with pit number, interval, lithology and associated structural information so that each assay result could be traced back to a specific exposure.





<i>Figure 6.12: Excavation of the Pit (ASK/PT01), west of Sirakot area.</i> 	<i>Figure 6.13 Excavation of the Pit (ASK/PT10), west of Bera area.</i> 
<i>Figure 6.14 Excavation of the Pit (ASK/PT03), east of Gadali area.</i>	<i>Figure 6.15 Excavation of the Pit (ASK/PT08), east of Gadali area.</i>

Quality control in pitting was centred on exposure quality, positional control, sampling representativeness and excavation safety. The SOP required cross-checking excavation-derived geology against the surface map and adjacent workings, and it explicitly required calculation of true mineralised width from measured dip so that exposed sulphide zones were not assessed only on apparent width. In the field, QC also depended on wall cleaning before logging, retention of all channel cuttings and fines, careful interval labelling, and immediate reconciliation of pit descriptions with field notebooks, photographs and sample dispatch records.

Safety controls were equally important in the Askot terrain: walls deeper than about 1.5 m required shoring or battering, site geologists had to inspect stability before entry, excavation was avoided during or immediately after heavy rainfall, and pits were backfilled after completion to restore ground condition and minimise community and environmental risk.

The pitting dataset produced both direct geological exposure records and derivative interpretive products. In Askot block, 11 pits were completed, contributing about 90.43 cubic metres of excavation. The pit table (in the annexure) shows that individual pit lengths ranged from roughly 2.1 m to 2.4 m, widths from about 2 m to 2.5 m, depths from about 1.2 m to 2 m, and per-pit excavation volumes from about 6 cubic metres to 9.5 cubic metres. These pits were distributed across multiple target localities including thereby providing geographically dispersed subsurface control across the block. The main derivatives generated from pitting therefore include pit location and dimension tables, pit-face geological logs, interval-wise

channel sample registers, pit photographs, lithology-width records, and pit-linked analytical outputs used later in geochemical interpretation.

6.6.2 Trenching

Trenching was adopted where the principal exploration requirement was to expose lateral continuity along prospective basemetal-bearing gossan zones and to cut across mapped lithological or geophysical targets. In contrast to pits, which provided a local vertical window, trenches were intended to generate longer horizontal or sub-horizontal exposure faces through soil-covered ground so that the strike continuity, thickness variation and structural disposition of chlorite schist/VMS zones/ sulphide rich zones and associated host rocks could be assessed more reliably.

The report methodology describes trenching as a mechanically excavated operation carried out by manmade excavation, typically with widths of 2.15 m, depth of 0.65 m, and length 2.29 m depending on target geometry. Trenches were aligned, wherever possible, perpendicular to the strike of mineralised structures or anomalies so that the excavation intersected the exposed width of the target zone. After excavation, trench walls were manually dressed and cleaned to expose lithology, foliation, faults, joints, shear zones, weathering profiles and visible mineralisation. Sampling was then carried out as channel sampling along the cleaned faces, usually at 0.65 m interval, with grooves cut perpendicular to strike and every interval labelled against trench number, sample interval, lithology and structural data. The 2samples were collected from a trench, which confirms that trenching acted as a higher-resolution exposure and sampling tool than pitting.

The SOP adopted for trenching emphasised three controls: orientation, face quality and post-excavation rehabilitation. Trench orientation had to be designed from geological strike so that the excavation would maximise exposure across the target, while the excavation footprint had to be marked before digging and kept within the planned line. One wall face was to be preserved clean for mapping and sampling, sample lots above about 5 kg were to be homogenised by coning and quartering, and channel samples were to be collected in labelled cloth bags with full interval records. The same SOP also required that, after photography, logging and verification were complete, trenches be backfilled with excavated material, topsoil replaced on top, and the site left safe for local communities.

QC for trenching was more explicitly geometry-sensitive than for most other field activities. The SOP required the geology observed in each trench to be cross-checked against

adjacent trench and surface mapping data for continuity and consistency, and it specifically required true width correction from measured dip so that trench-derived widths of chlorite schist-bearing sulphide rich zones could be interpreted correctly. Additional QC relied on maintaining a constant channel depth and width during sampling, retaining all cuttings, supervising interval marking, documenting water inflow where present, and avoiding excavation during adverse weather because wall instability and collapse would compromise both safety and data quality.

The trench was completed for excavated volume of about 9.16 cubic metres. These data indicate that trenching was used selectively at priority sites where larger continuous exposures could materially improve understanding of basemetal-zone geometry. The derivative products generated from trenching include trench location tables (in the annexure), trench-dimension and volume summaries, trench-face geological logs, interval channel-sample sheets, photographs of trench walls, true-width calculations for exposed sulphide rich bands, and trench-linked assay datasets used to evaluate grade and associated pathfinder enrichment.

6.6.3 Annexure listing

Detailed pitting and trenching including location and description, rock types and measurements are given in Annexure_III, Total 20 nos of samples collected and analysed in ICP-MS method. Collected Sample numbers are 1. 106983, 2. 106984, 3. 106985, 4. 106986, 5. 106987, 6. 106988, 7. 106989, 8. 106990, 9. 106991, 10. 106992, 11. 106349, 12. 106350, 13. 108701, 14. 110254, 15. 108725, 16. 108705, 17. 108706, 18. 108702, 19. 108709, 20. 108710.

Detailed analyses of pitting, trenching samples are given in Annexure_V.

6.7 Petrology of Surface and Subsurface Samples

Petrological investigation formed the microscopic bridge between field observations, laboratory mineralogical studies and the evolving geological model of the Askot-basemetal exploration programme. In the Askot block, petrology was not undertaken as an isolated descriptive exercise; rather, it was used to verify the true mineral assemblages of the basemetal-bearing and associated host rocks, to establish the textural character of basemetal in both surface and drill-core samples, and to recognise metamorphic and deformational processes that controlled sulphide association.



6.7.1 Process description

The petrological workflow began with the selective collection of representative specimens from the principal lithological units and from the various mineral occurrences mapped during fieldwork. Surface specimens were chosen from fresh outcrop, pit and trench exposures so that weathering effects would not obscure mineralogical interpretation. Subsurface specimens were selected from core intervals that represented sulphide-bearing zones, chlorite schist, amphibolite, granite gneiss and other lithologies considered important for understanding host-rock association, tectonism, metamorphic overprint and associated basemetal mineralization. In keeping with the adopted SOP, each specimen was recorded in the sample register with sample ID, location, rock type and analytical purpose before being advanced for section preparation.

The prepared material consisted of polished thin sections suitable for both transmitted-light and reflected-light microscopy. Examination was carried out under plane-polarized light, cross-polarized light and reflective or refractive light depending on the minerals and textures of interest.

6.7.2 Derivative outputs and their interpretive role

The petrology programme generated a number of derivative products that were more significant than the physical thin sections alone. First, it produced a microscopic lithology-validation dataset that linked field names such as amphibolite, chlorite schist, granite gneiss, limestone, phyllite etc. with actual mineral assemblages and textural criteria. Second, it generated a photomicrograph library in PPL, XPL and reflected light, which documented the principal rock textures and host-rock fabrics, tectonics and basemetal mineralization for later interpretation and reporting.

6.7.3 SOP adopted

The SOP adopted for petrology in the Askot project required representative sample selection from all major mapped lithological units and from each basemetal mineralisation style encountered within the tenement. The purpose was not merely to produce illustrative sections, but to build a robust microscopic dataset that could support mineral identification, tectonism, basemetal characterisation and textural-fabric interpretation. The SOP therefore required that each sample be entered in the register with sample ID, GPS or locality reference, rock type and

the reason for examination, such as modal analysis, Basemetal characterisation or textural study.

After sample registration, the adopted procedure required preparation of polished thin sections and their examination under a polarising microscope in plane-polarized light, cross-polarized light and reflected light. Mineral identifications were to be recorded systematically, followed by a written petrographic description. In the Askot application, this SOP was used for both surface and borehole samples, allowing the same microscopic criteria to be applied across exposed and subsurface material. This ensured that lithological naming and interpretation did not shift arbitrarily between field, trench and drill-core datasets.

6.7.4 QC protocol adopted

Quality control for petrology was based on representativeness, section quality, mineral-identification reliability and interpretive consistency. The petrology SOP explicitly required independent re-examination by a second petrographer.

To prevent poor-quality sections from distorting interpretation, section thickness, polishing quality and grain preservation have checked and substandard sections re-prepared. Orientation marks also had to be preserved during sample preparation, which is important when structural interpretation depends on foliation, lineation or the relation between basemetal alignment and host-rock fabric, if any.

At the project level, an additional QC layer came from cross-comparison between petrographic observations and field geology. Petrographic descriptions of various lithologies, structural observations and the geochemical character of the same samples or intervals. Any mismatch between microscopic interpretation and field logging has re-checking of sample identity, thin-section label, or lithological assignment. This integration-based QC is particularly important in reconnaissance-stage basemetal exploration, where the geological significance of texture is as important as the descriptive mineral list.

6.7.5 Data collected and generated

The data collected through the petrology programme comprise both primary specimen metadata and secondary interpretive outputs. The primary dataset includes sample IDs, source category such as surface outcrop, trench, pit or borehole, rock type, locality or interval information, and the analytical purpose for which the section was prepared. The 25 thin sections for surface material and 25 corresponding microscopic studies, while the borehole

programme added 10 thin sections and 10 microscopic studies from subsurface samples. These figures show that the petrological dataset spans both exposed and drilled parts of the mineral system rather than being confined to surface validation alone.

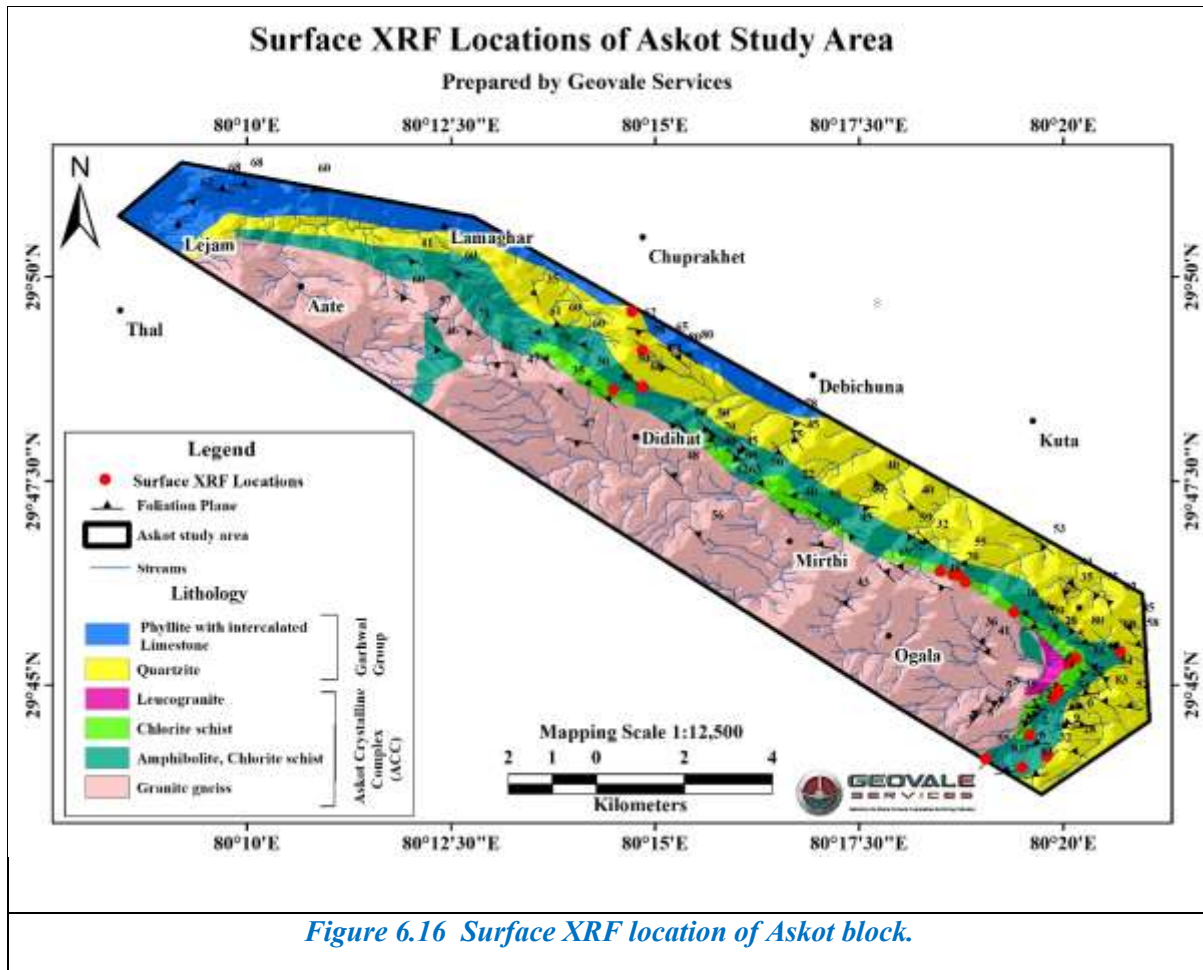
It also includes a photomicrograph archive illustrating basemetal-bearing and non-mineralized lithologies in different optical modes.

6.7.6 Annexure listing

Petrography details including location, rock types and detailed petrography are given in Annexure_X

6.8 Geochemical Assay - XRF (Major Oxide Analysis)

XRF was the principal whole-rock major oxide assay stream for lithological characterization, discrimination of graphitic and non-graphitic host rocks, recognition of iron-rich or sulphide-bearing variants and preliminary appraisal of vanadium-associated carbonaceous horizons. The executed work comprised: Phase I surface programme - 20 major oxide samples. Analyses were executed through Inspectorate Griffith Commodities Division, Bureau Veritas, Gandhidham.



6.8.1 Process and Derivative Outputs

Representative surface, trench and drill-core samples were submitted with unique sample IDs linked to coordinates, lithology and sampling medium. The analytical method was wavelength-dispersive XRF on fused glass beads (lithium-borate fusion) for major oxide determinations; the reporting suite comprises SiO_2 , Al_2O_3 , Fe_2O_3 (total), MgO , CaO , Na_2O , K_2O , TiO_2 , P_2O_5 , MnO , Cr_2O_3 and LOI , with V_2O_5 , SnO_2 and WO_3 for selected early pathfinder screening. The main dataset includes fields for sample number, sample ID, coordinates, lithology, sample type and full oxide suite.

6.8.2 SOP and QA/QC Protocol

The SOP required fused glass bead preparation (lithium-borate fusion) for major oxide determinations; pressed pellets accepted only for trace-element work. Every sample moved through a disciplined submission chain maintaining sample identity, analytical request and geological context from field to laboratory. The laboratory side preserved method references,

units and quantification limits; the external-check sheet preserved paired results between primary and check laboratories.

Two QC layers were applied: (i) internal chemical consistency - major oxide totals must fall between 95–100.5%; all outliers investigated matrix effects minimised through fused-bead preparation; and (iii) geological reconciliation - high-SiO₂ quartzites must correspond to quartz-rich mapped lithologies; amphibolite, chlorite schists must show chemistry compatible with high MgO, MnO and CaO and locally sulphidic horizons; iron-rich materials must show corresponding Fe enrichment in both field description and assay. This filters out chemically improbable results before targeting decisions.

6.8.3 Annexure listing

XRF analysis details are given in Annexure_IV

6.9 Geochemical Assay - ICP-MS (Trace Element and REE Analysis)

ICPMS was adopted as the principal trace-element and rare-earth-element assay stream for evaluating sulphide enrichment, associated base and critical metals and the broader elemental character of chlorite schist, amphibolite, phyllite host lithologies. Two executed ICPMS streams were completed: 50 Phase I surface samples with 150 Phase II surface samples and 20 borehole samples. Analyses were executed through Inspectorate Griffith Commodities Division, Bureau Veritas, Gandhidham, and at Shiva Analytical, Bengaluru.

6.9.1 Process and Derivative Outputs

The analytical route specified is 4-acid digestion (HF-HNO₃-HClO₄-HCl) for near-total dissolution, with an explicit caution that resistant phases (chromite, zircon, cassiterite, some Ti oxides) may not dissolve completely; lithium-borate fusion followed by ICP-MS is required where those minerals are material to interpretation. The minimum reporting suite includes V, Cr, Ni, Cu, Zn, Rb, Sr, Y, Zr, Nb, Mo, Sn, Ba, full REE group (La to Lu), Hf, Ta, W, Pb, Th, U and sulphur, with vanadium at low detection limit.

6.9.2 SOP Protocol

This SOP mandates that the digestion procedure, detection limits, analytical precision, and units of reporting be stated for each batch. This methodology involves a selective sampling process as opposed to a blanket analysis. The ICP-MS is presented as the analytical stream that

identifies basemetal enrichment and metallogenic signatures and REE patterns in sulphide-hosted and non-sulphide-hosted environments.

6.9.3 Annexure listing

ICP-MS, AAS, AAS check samples, Gold analysis by fire assay technique, Mercury analysis details are given in Annexure_V to Annexure_IX

6.10 X-Ray Diffraction (XRD) for Surface and Subsurface Samples

6.10.1 Process description

X-ray diffraction (XRD) formed part of the advanced mineralogical characterisation programme adopted in the Askot G4 basemetal exploration project. The method was used to identify the crystalline mineral phases present in basemetal-bearing rocks and associated host lithologies, and thereby to distinguish basemetal-rich chlorite schist. In practical exploration terms, XRD complements petrography by converting visual mineralogical observations into an objective phase-identification dataset that can be compared across samples, horizons and target zones.

The analytical workflow begins with selection of representative Basemetal-bearing material from drill-core intervals. The selected material is dried, powdered and mounted for X-ray powder diffraction analysis. Diffractograms are generated over the prescribed 2-theta scan range and matched against reference mineral databases so that major and minor crystalline phases can be identified. For the Askot project, XRD was undertaken through the project's advanced mineralogical study chain carried out at the Geological Survey of India, Faridabad. The work programme allowed XRD to function as a mineral phase confirmation tool, particularly for various basemetal sulphides, sericite, quartz, mica and other gangue phases that directly influence beneficiation behaviour and the interpretation of basemetal-bearing rock types.

6.10.2 Derivative outputs and interpretive role

The primary derivative from XRD is the diffractogram itself, which records the position and relative intensity of diffraction peaks for the minerals present in a sample. From this raw output, the mineral phase list is generated, followed by semi-quantitative estimates of relative mineral abundance where refinement or peak-based comparison is possible.

6.10.3 SOP adopted

The SOP adopted for XRD mineral phase identification in the Askot programme required representative sulphide-bearing and host-rock samples to be prepared as random powder mounts using back-loading so as to minimise preferred orientation effects, which are particularly important in platy minerals such as chlorite and mica. The prescribed analytical scan range is 2 to 70 degrees 2-theta, with a step size of 0.02 degrees and a count time of not less than two seconds per step, using Cu K-alpha radiation as the standard X-ray source. The analytical request is not limited to simple mineral naming; it also calls for qualitative phase identification, semi-quantitative phase abundance estimation.

6.10.4 QC protocol adopted

The QC approach adopted for XRD in the Askot SOP is based on internal consistency and instrument verification rather than on grade-control style QAQC alone. First, XRD mineralogy is checked against XRF chemistry so that mineralogical results remain chemically plausible; for example, quartz-rich interpretations should correspond to elevated silica, while muscovite-rich samples should be compatible with alumina and potash-bearing compositions. Second, the SOP requires periodic analysis of certified mineralogical reference standards to confirm that the diffractometer remains correctly calibrated and that phase identification remains stable through time.

6.10.5 Data collected and generated

The data collected under the XRD programme comprise both primary sample metadata and secondary analytical outputs. The primary dataset includes sample number, sample type, lithological identity and analytical method. XRD consists of ten representative borehole samples.

The generated XRD dataset includes mineral phase proportions and sample-level.

6.10.6 Annexure listing

Borehole XRD data are given in Annexure_XV

6.11 Geophysics - Vertical Electrical Sounding (VES)

6.11.1 Process description

Vertical Electrical Sounding (VES) was the principal active geophysical method used in the Askot G4 programme to investigate vertical variations in subsurface resistivity and to identify conductive basemetal-bearing horizons beneath areas of poor or discontinuous exposure. The method therefore provided an indirect but effective way to trace concealed sulphide bands, estimate their depth disposition, and support the selection of drilling locations, while still requiring subsequent validation through geology, drilling, petrography, and geochemistry.

The field programme was executed using Schlumberger array soundings with an Aquameter CRM 500 resistivity meter. The report records that 190 vertical soundings, amounting to 30.3 line-km of coverage, were completed across the block. Because the terrain is highly undulating, sounding sites were preferentially selected along contours so that current flow into the subsurface remained as uniform as practicable and the effect of sharp topographic breaks was reduced.

At each sounding location, two current electrodes and two potential electrodes were deployed in a straight line in Schlumberger configuration. Current was injected into the ground through the outer electrodes, the resulting potential difference was measured through the inner electrodes, and the instrument calculated resistance for each expansion step. By progressively increasing the current-electrode spacing, the survey sampled progressively deeper parts of the subsurface. The measured resistance values were then converted to apparent resistivity using the geometric factor for the chosen array, and the resulting sounding curve was plotted as apparent resistivity versus electrode spacing. These curves formed the basis for later modelling and geological interpretation.

In the Askot workflow, VES was not treated as a stand-alone discovery tool but as part of an integrated targeting sequence. The sounding curves and their 1D inversion models were interpreted together with the mapped chlorite schist, amphibolite bands, structural grain, and surface sampling evidence. Low-resistivity intervals were treated as candidate conductive horizons, and their exploration significance increased where they spatially coincided with known sulphide rich lithologies. In this way, the VES programme served as a bridge between surface geology and subsurface target generation.

6.11.2 Derivative outputs and interpretive role

The first derivative output of the VES programme is the field sounding curve itself. Once resistance readings are converted to apparent resistivity, each sounding yields a depth-sensitive resistivity response that can be examined for conductive and resistive trends with increasing AB/2 spacing. In practical exploration terms, these curves are the primary diagnostic product because they indicate whether the section becomes more conductive or more resistive with depth, and whether a discrete low-resistivity horizon is likely to be present beneath the sounding point.

The second derivative is the 1D resistivity inversion model generated from the sounding curves. These models convert the apparent-resistivity response into a simplified layered-earth interpretation showing relative thickness and resistivity of subsurface units.

A third derivative is the spatial VES layout layer, in which all sounding locations are plotted on the large-scale geological base. This derivative is not merely cartographic; it allows each sounding result to be tied back to mapped lithology, topographic position, structural orientation, and accessibility.

6.11.3 SOP adopted

The SOP adopted for the Askot VES programme was based on Schlumberger-array acquisition designed specifically for reconnaissance-scale graphite targeting in steep Himalayan terrain. The stated objective of the SOP was to determine overburden thickness, map resistivity contrasts associated with sulphide bearing zones, and provide subsurface information for drill-hole planning and depth estimation. The scope covered sounding points positioned along key transects across target zones so that the results could complement geological mapping rather than operate independently.

Operationally, the SOP required the use of Schlumberger geometry throughout, with the current-electrode half-spacing always maintained at a minimum of five times the potential-electrode half-spacing at each expansion stage. Each sounding was to be centred on a preselected point whose GPS coordinates were recorded accurately, and the array was to be aligned, wherever possible, perpendicular to the geological strike. The inner potential electrodes were placed symmetrically about the centre point, and the outer current electrodes were progressively expanded while maintaining linearity through the entire array.

Field execution under the SOP further required good electrode-ground contact, especially in rocky or dry ground. Electrodes were to be inserted to at least eighty percent of

their length, water was to be poured at contact points where needed, cables and crocodile clips were to be checked systematically before every reading, and the instrument was to be operated at the maximum available current initially, with current reduced only when contact-resistance errors appeared. For each electrode configuration, at least three readings were required, their mean value was to be recorded, and apparent resistivity was then to be calculated using the Schlumberger geometric factor.

A critical part of the SOP was immediate field plotting and review. Apparent resistivity values were to be plotted against $AB/2$ on log-log paper or digitally soon after completion of each sounding so that anomalous points, discontinuities, or suspect readings could be identified while the team was still on site. The SOP also required each sounding record to preserve the sounding ID, GPS coordinates, date, operator name, $AB/2$ spacing, $MN/2$ spacing, and resistance readings.

6.11.4 QC protocol adopted

The QC protocol for VES in Askot was designed to control both measurement error and interpretive uncertainty. At the field-data level, the SOP required a minimum of three readings for each electrode configuration and use of the mean value for calculation of apparent resistivity. This reduced the influence of short-term contact instability or operator error. The SOP also required immediate inspection of the sounding curve so that erratic points could be recognized and, where necessary, remeasured before leaving the station.

At the survey scale, the SOP prescribed repeat acquisition of the full sounding at five percent of locations, preferably on a different day, to test reproducibility. It also required independent processing of ten percent of soundings by a second geophysicist so that the resulting layer models could be compared. This is an important QC step for VES because multiple layered-earth solutions can sometimes fit the same apparent-resistivity curve. The SOP explicitly recognizes this non-uniqueness and therefore requires geological constraints and equivalence analysis wherever ambiguity is present.

Instrument and field-condition control formed the third QC layer. Battery condition, cable integrity, and contact resistance had to be checked systematically; damaged or leaking cables were to be replaced immediately; and poor ground contact in dry or rocky terrain was to be improved by wetting the electrode sites. The SOP also notes that laterally heterogeneous ground can violate the one-dimensional assumption of VES, so interpretations near sharp geological contacts or faults were to be flagged and cross-checked against mapping. The

project report strengthens this logic by noting that, because of topographic complexity, soundings were preferentially sited along contours in order to improve data quality and current distribution.

Taken together, the VES QC regime in Askot may be summarized as four linked controls: repeatability of readings, instrument and contact validation, independent re-processing of selected soundings, and geological cross-validation of final layer models. This combination is appropriate for reconnaissance-stage resistivity work where the purpose is not only to collect stable measurements, but also to ensure that the inferred conductive layers are credible exploration targets rather than artefacts of terrain, poor contact, groundwater, or inversion non-uniqueness.

6.11.5 Data collected and generated

The primary data collected in the VES programme comprise sounding-level metadata and expansion-step measurements. For each sounding, the raw sheets preserve date, sounding number, latitude, longitude, area name, elevation, and survey direction. For each expansion step, the sheets record current-electrode spacing ($AB/2$), potential-electrode spacing (MN), measured resistance, the geometric factor K , and derived apparent resistivity.

The generated dataset is correspondingly richer than a simple tabulation of resistivity values. The report indicates that representative field photographs of the Aquameter set-up below.

	
<i>Figure 6.17 VES data collection in Gadali area.</i>	<i>Figure 6.18 VES data collection in Baragaon area.</i>

At the project scale, the report states that 190 VES soundings covering 30.3 line-km were completed.



6.11.6 Annexure listing

Resistivity Survey (VES) raw data and 2D models are given in Annexure XI and XII respectively

6.12 Scout Drilling

6.12.1 Process description

Scout drilling represented the first direct sub-surface validation stage of the Askot programme and was undertaken only after lithological, structural, geochemical, pitting-trenching, and geophysical evidence had been integrated into a ranked target set. The drilling states that the programme was conceived as a scout campaign to test the integrated geological-geophysical model, confirm the depth persistence of sulphide-bearing horizons, recover continuous core for logging and laboratory characterization, and examine whether the surface sulphide rich bands mapped in different sectors of the block continue below cover in a coherent stratigraphic and structural framework.

The operational drilling method adopted was diamond core drilling using standard wireline practice. The available drilling note records that HQ and NQ core was used in upper sections and reduced to NQ where required by ground conditions or depth, with water circulation used for bit cooling and cuttings removal. Where formation disintegration reduced core recovery, sludge was collected as a supplementary geological record so that lithological and mineralization interpretation did not break across poorly consolidated or highly weathered intervals. The scout nature of the programme is further reflected by the fact that holes were kept vertical and no downhole geophysical logging or formal deviation survey was carried out in this phase.

The current drilling compilation states that three scout borehole locations were planned. Their placement was not random: collar selection was guided by mapped hinge zone, favourable surface anomalous multi-element geochemistry, and supportive VES responses indicating conductive subsurface horizons. The note also states that the holes are spatially spread across the central, southern and northern sectors of the Askot-Naret Hinge Zone, nearly 1 km apart, so that the scout campaign tested multiple target corridors rather than a single localized zone.



Figure 6.19 Borehole 01 drilling site at ~200 m east of Baragaon area.



Figure 6.20 Borehole 02 drilling site at ~200 m east of Baragaon area.



Figure 6.21 Borehole 03 drilling site ~900 m northeast of Baragaon area.



Figure 6.22 Borehole 04 drilling site at ~100 m north of Mouchora area.

6.12.2 Derivative outputs and interpretive role

The direct output of scout drilling was a continuous sub-surface geological record in the form of recovered core, sludge from poor-recovery intervals, collar data, box-wise depth control, lithological logs, sampling intervals, core photographs, and linked laboratory submissions for geochemistry, mineralogy and petrology. These primary records were then converted into derivative interpretive products: borehole lithological logs, mineralized interval summaries, depthwise sulphide-zone interpretation, core-photo plates, drillhole-to-surface correlation, and hole-wise analytical compilations.



The hole-wise logs documented in the drilling note already provide important derivative geological conclusions. Boreholes record significant sulphide -bearing intervals or VMS zones below shallow weathered caps.

The interpretive role of these derivative products is therefore substantial. First, drilling confirms that the Askot basemetal occurrences are not superficial weathering features but persist below surface in stratabound to intercalated chloritic schist horizons. Second, the logs demonstrate that sulphide rich tenor and continuity vary markedly from hole to hole, with some sectors carrying thick VMS packages. Third, the core records reveal that sulphide enrichment is commonly associated with foliation, shearing, quartz veining, sulphidation, thereby strengthening the structural and lithological model developed from surface work. In practical terms, drilling generated the first defensible basis for deciding which corridors should advance to closer-spaced G3 drilling and which should remain lower-priority reconnaissance targets.

6.12.3 SOP adopted

The drilling work was undertaken in accordance with the Askot drilling SOP, which defines diamond core drilling as the standard method for obtaining continuous geological and grade information from sulphide-bearing zones. The SOP required that every hole begin with an approved drill plan documenting collar position, intended orientation, planned end-of-hole depth, geological rationale, and relationship to the interpreted target. Actual collar coordinates and RL were to be surveyed after rig setup, and core diameter recorded in the drill register, with HQ stated as the preferred diameter for basemetal exploration and NQ used only where required by depth or ground conditions. The SOP also required use of triple-tube barrels in broken or weathered ground to maximize recovery, while allowing standard double-tube barrels in competent rock.

On retrieval, the SOP required strict run-by-run core handling. Each run had to be marked for orientation, measured against the drilled interval, and checked for core recovery; top and bottom of each run were to be depth-marked immediately, and steel tags inserted at run boundaries and core-loss intervals. Core recovery and RQD were to be calculated for every run. The whole core had to be logged within 24 hours, photographed before cutting, and described in terms of rock type, mineral assemblage, mineralization, and geotechnical condition.

The adopted sampling SOP for drill core required longitudinal cutting of the core, retention of three-quarters of the core in the box for future reference, and dispatch of quarter-core material for laboratory analysis. Sample intervals were to be set at about 1 m through mineralized zones or to geological contact boundaries, and each sample was to carry a documented linkage to Hole ID, from-to depth, sample length and lithology. The project drilling note is broadly consistent with this SOP framework: it records wireline diamond drilling, HQ to NQ reduction where required, 3 m recovery runs, orderly core boxing with depth marks, quarter-core sampling, hole-wise photography, and selective analytical submission for ICPMS, gold, XRD, and petrographic or mineralogical follow-up.

6.12.4 QC protocol adopted

The QC protocol adopted for scout drilling followed the Askot drilling SOP and focused on positional accuracy, recovery quality, sample integrity, and interpretive reproducibility. The most important first-order control was recovery monitoring. The SOP required recovery percentage and RQD to be calculated run by run, with special attention to any mineralized interval where recovery fell below the target threshold. The currently available drilling note reports that overall recovery was generally good at about 90 percent, while local reductions were linked to sludge zones, brecciated intervals, and strongly fractured ground. This is an important project-specific QC observation because such zones can bias apparent grade and thickness unless they are logged carefully and supported by sludge records.

A second QC layer concerned logging and sampling reproducibility. The SOP required complete geological logging within 24 hours of drilling, daily reconciliation of measured core length against driller's depth, immediate depth marking on core retrieval, and formal re-logging of 10 percent of the core by a senior geologist. Sample integrity was controlled through pre-printed sample tags, insertion of metal identifiers in the bags, and blind quarter-core duplicates at a rate of 1 in 20 samples. Laboratory-side QC was extended through umpire assays at an independent accredited laboratory on 10 percent of the analysed samples, while the drilling note also records that principal assays were routed through Bureau Veritas with check work at Shiva Analytics for analytical validation.

A third QC element, particularly relevant in a scout campaign without deviation surveys or downhole geophysics, was reliance on accurate collar control and depth discipline. Because the available note states that formal deviation logging was not sanctioned, the

boreholes were interpreted as vertical scout holes and therefore the quality of collar survey, RL capture, run-wise depth reconciliation, core photography, and box control became even more important than usual. In report-writing terms, the drilling subsection should therefore present QC not as a generic checklist but as a chain comprising collar survey, recovery monitoring, logging discipline, depth reconciliation, duplicate and umpire assay insertion, and long-term preservation of reference core.

6.12.5 Data collected and generated

The scout drilling programme generated a multi-layered subsurface dataset comprising collar details, hole depths, village-wise distribution, lithological logs, mineralization intervals, recovery observations, core boxes, photographic records, quarter-core analytical samples, sludge observations, and petrographic follow-up on selected core intervals. The drilling note presently tabulates four holes with documented collar data: BH01 to BH04.

The data generated from these holes are not limited to collar tables. Hole-wise logs document the depth of onset of Basemetal mineralization, the recurrence of sulphide-bearing zones, the presence of quartz veining, and the degree of weathering or sludge development in shallow intervals. In addition, selected drill-core intervals were submitted for ICPMS, gold analysis, XRD, and petrography-mineralogy, thereby creating a linked drill-core analytical dataset that can be compared with surface sampling and trench results.

The drilling data provide the earliest three-dimensional control on thickness, continuity, lithological association, sulphide relationship, and depth behaviour of the Askot Basemetal system. In the report, the drillhole database should therefore include collar register, run-wise recovery and RQD sheets, box photo catalogue, logged lithological intervals, analytical sample register, assay tables, and hole sections or fence diagrams.

6.12.6 Annexure listing

Drillhole data of AAS, ICP-MS analysis are given in Annexure XIII and XV respectively.

The detailed of the surface geoscientific analyses are given in the next chapter.

CHAPTER-7

SURFACE GEOSCIENTIFIC ACTIVITIES AND TARGET GENERATION

7. Surface Geoscience and Target Generation

In this chapter, detailed surface geoscientific analyses were discussed in details for two segments: i. **Regional-scale exploration of the Askot area**, and ii. **Askot-Naret Hinge Zone**.

Regional-scale exploration of the Askot block

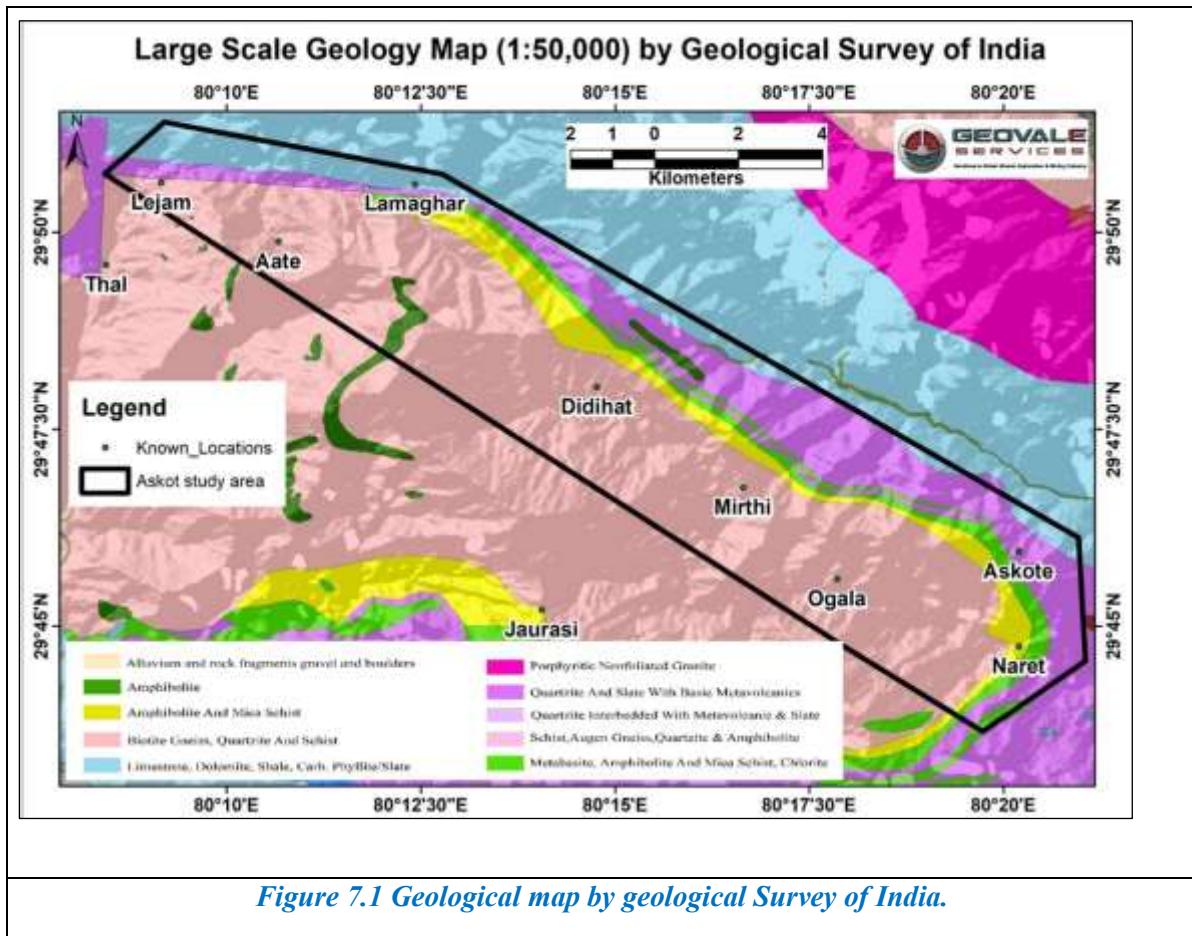
7.1 Regional Geology:

The Askot block is a part of the Inner Lesser Himalaya of the Kumaon Province of Uttarakhand and it includes lithounits belonging to the Askot Crystalline Complex (ACC) and the Garhwal Group (detailed of the geology in given in the Chapter 4).

The following sections describe the geological interpretation based on published Geological Survey of India maps (1:50, 000 scale) at regional and large scales, following the Geovale's mapped lithological units, their field characteristics, tectonism and providing the geological basis for interpretation of mineralization within the Askot block.

7.2 Geological Map by GSI

The geological map of the Askot area at 1:50,000 scale was prepared by GSI (Figure 7.1). In this map, six litho-units are identified within the Askot block namely (a) biotite gneiss, quartzite and schist; (b) amphibolite; (c) quartzite and slate with basic metavolcanics; (d) amphibolite and mica schist; (e) metabasite, amphibolite and mica-schist, chlorite and (f) limestone, dolomite, shale, carb-phyllite/slate. Biotite gneiss, quartzite and schist are the dominant rock types, occupying approximately 60% area of the Askot block and present in the southern part of the block. In the south-eastern part of the block, quartzite and chlorite schist rock present and exhibiting folded nature. In the north-western part, limestone, dolomite, shale, carb-phyllite/slate bodies are present.



7.3 Geological mapping (Scale: 1:12,500) of the Askot regional block:

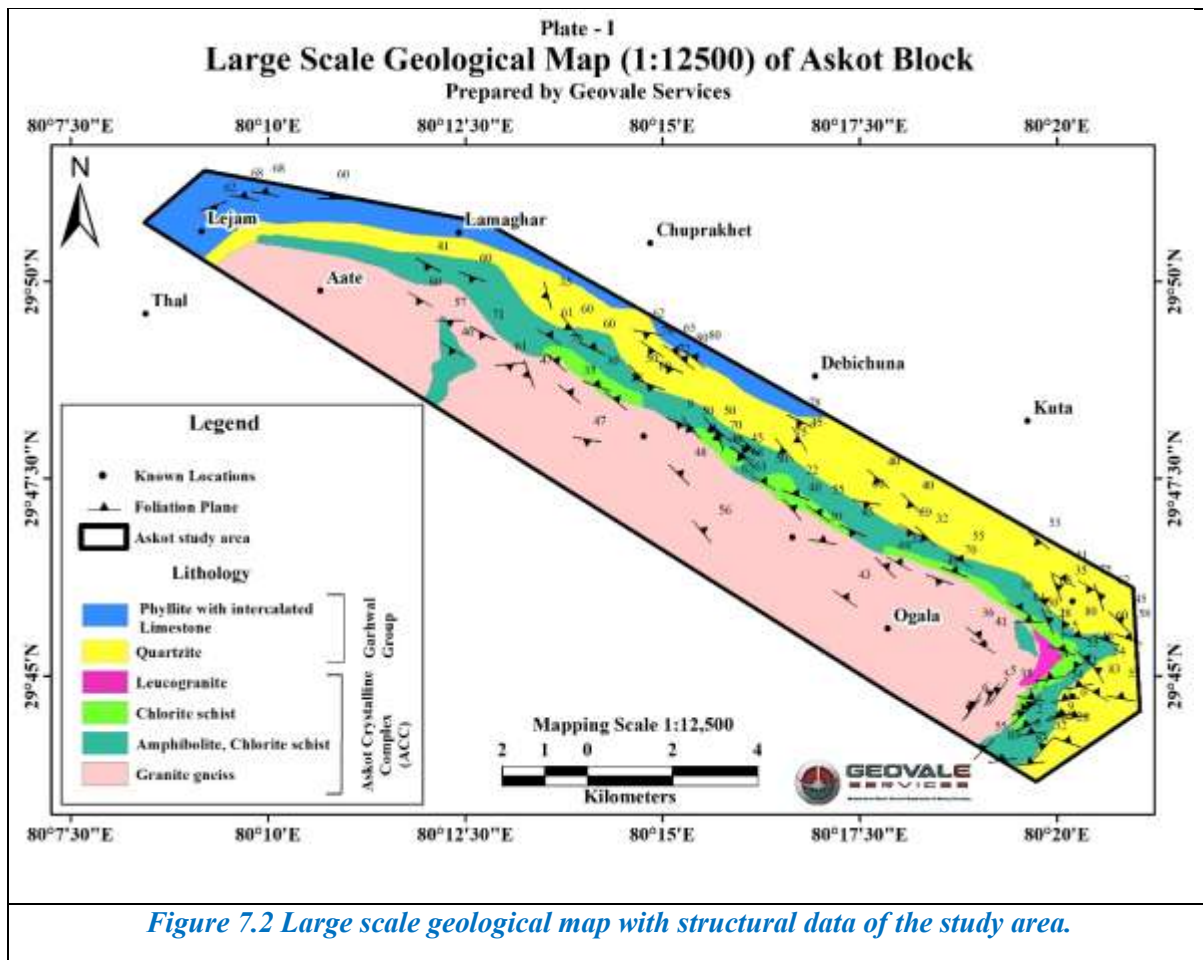
The survey involved detailed geological mapping at 1:12,500 scale (over 92 sq. km. area) in the Askot–Pasma–Naret–Mirthi–Didihat–Thal region. Since this area is located in the steep and rough terrain of the Himalayas, using the regular strike mapping method was not practical. Therefore, a combination of two mapping methods was used one along the direction of the rock layers (strike-parallel) and the other across them (cross-strike) to gather as much geological information as possible.

Travers covers western, northern and eastern part of the Didihat (up to the Thal, Didihat, Askot and follows the Turgoli, Ranikhet, Debichuna, Ghorpatta, Ogla, Naret, Pasma, villages). Later, several detailed surveys were done along the rock layers where it was possible to reach. Some additional spot checks were also done, especially in the eastern and southeastern parts of the area. The final geological map created from this survey, at a scale of 1: 12,500, is shown in Figure 7.2.

The main rock types of the block are augen gneiss, amphibolite, chlorite schist, quartz mica schist, phyllite, and limestone. Around Thal, Turgoli, Patet villages carbonaceous phyllite,



grey phyllite, limestone has been observed. Leucogranite exposure is identified around 1 km south west from Askot area.



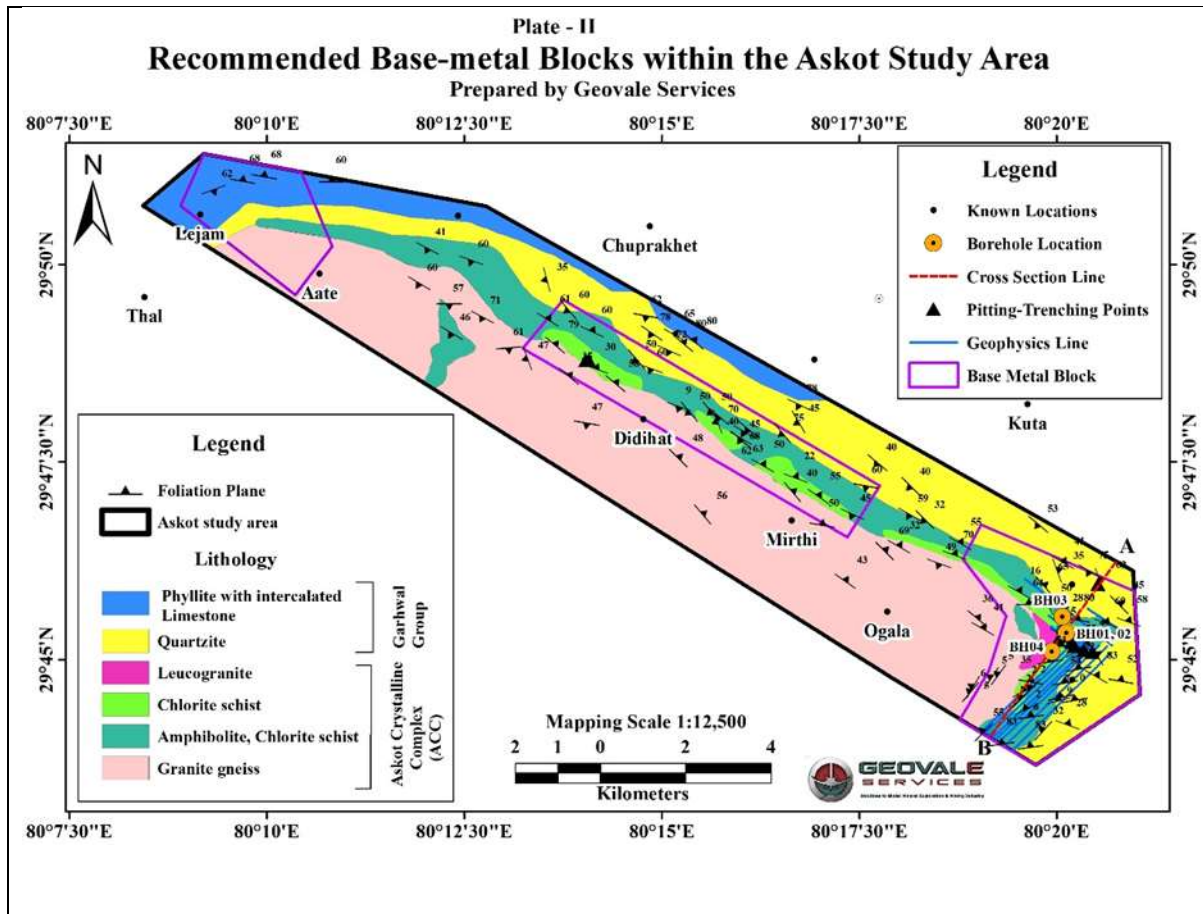


Figure 7.3 Large scale geological map with structural data of the study area.

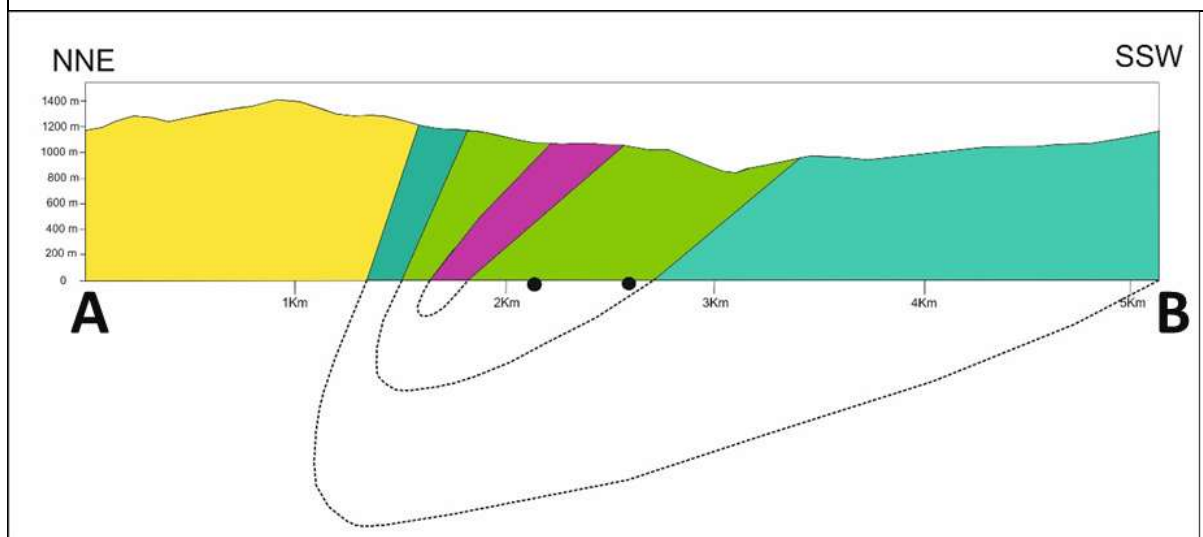


Figure 7.4 cross section (1:12500) of Askot area (Prepare by Geovale services).

The geological cross-section indicates that the Askot area is characterized by a broad, asymmetric synform, with the structural geometry suggesting an NNE–SSW-trending fold system. The exposed lithological units define a folded succession in which the limbs converge

toward the deeper part of the section, indicating a synformal structural configuration. The NNE side represents the comparatively steeper limb, whereas the SSW side is relatively gentler and more broadly developed, giving the structure an asymmetric geometry. The subsurface projection further suggests that the fold structure continues to considerable depth, indicating that the Askot synform represents a major first-order structural feature rather than a shallow surface fold.

The cross-section shows a succession of contrasting lithological units occupying the core and limbs of the synform. The contacts between these units are steeply inclined near the central part of the section and progressively change geometry at depth, reflecting the effects of folding and structural deformation. The presence of multiple lithological contacts within the synformal architecture is significant because such interfaces may have acted as zones of contrasting competency and permeability during deformation. These contacts may therefore have influenced both the original localization of mineralization and its subsequent tectonic modification.

7.4 Description of rock types of the Askot regional block

The lithological units identified within the Askot block were studied through detailed field observations supported by petrographic analysis, with the objective of understanding their composition, texture, deformation, metamorphism, mode of origin, and relationship with basemetal mineralization.

The following sub-sections present detailed descriptions of the individual rock types, including their field characteristics and petrographical study. A total of 25 samples for different rock types has been studied under microscope (Annexure X).

7.4.1 Granite Gneiss:

Field Observation:

The Granite gneiss rocks are well exposed in and around Ogla and Didihat areas, specially along the road cut section of the Ogla-Didihat road, Ogla-Askot road and Didihat-Thal road. On weathering, these rocks become incoherent, but on fresh surface the rocks are hard and compact. In hand specimen, the rock is coarse-grained, foliated, composed of quartz, augen shaped feldspar, muscovite and biotite (Figure 7.5, Figure 7.6, Figure 7.7, Figure 7.8). The foliation is marked by the parallel alignment of the mafic minerals like muscovite and biotite



and also by felsic quartzo-feldspathic rocks. Feldspar porphyroclasts are mostly augen to delta shaped wrapping by the muscovite-biotite flaky minerals. At places, the presence of tourmaline in the granite gneiss rocks are also observed (Figure 7.8). It becomes fine-grained near to the contact with the schists. Within this body occurrence of amphibolite rock is also found.



Figure 7.5 Outcrop Section of unweathered granite Gneiss in the Santikunj area, Askot



Figure 7.6 Road cut section of weathered granite gneiss, Askot



Figure 7.7 Granite gneiss shows the presence of delta shaped feldspar porphyroclasts, near Ghorpatta area, Askot



Figure 7.8 Hand specimen of the tourmaline bearing granite gneiss, Narayannagar.

Petrological Study of Granite gneiss: 2 samples of granite gneiss are studied (Sample Id: 114633 and 114635). Petrographically, the granite gneisses are medium to coarse grained, equigranular, consists of quartz, plagioclase, K-feldspar, muscovite and biotite present in varying proportions in different samples (Figure 7.9). The foliation in the rock is well-defined by elongation of quartz grains and parallel alignments of the micaceous minerals (Figure 7.10). Plagioclase is mostly anhedral to subhedral (Figure 7.11) and majority grains are found to be altered to sericite (Figure 7.10). Thin section study reveals that most of the large augen are either of K-feldspar (Figure 7.12) or quartz. Perthite in feldspar and mortar textures are common (Figure 7.11, Figure 7.12). Some sample also contains tourmaline grains (Figure 7.13). No such sulphide mineralization associated with granite gneiss.

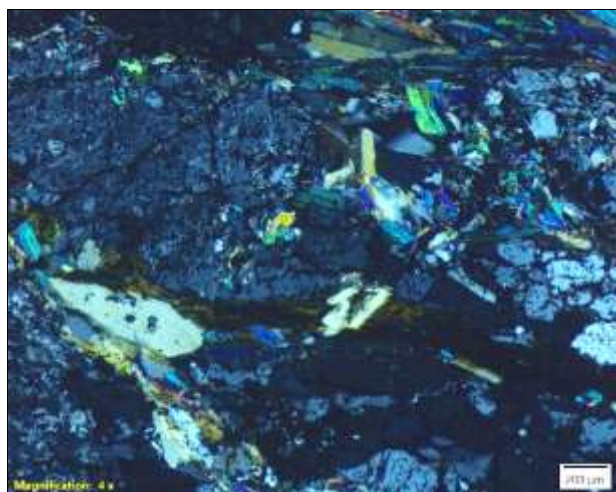


Figure 7.9 Photomicrograph of granite gneiss with feldspar augen warped by the sericite mica and biotite (sample Id. 114633), Gadali

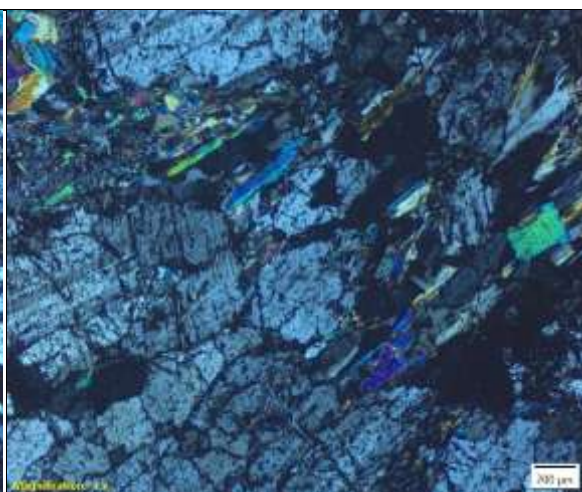


Figure 7.10 Photomicrograph of granite gneiss sample showing small grains of sericite mica in feldspar (sample Id. 114635), Narayanagar, Askot

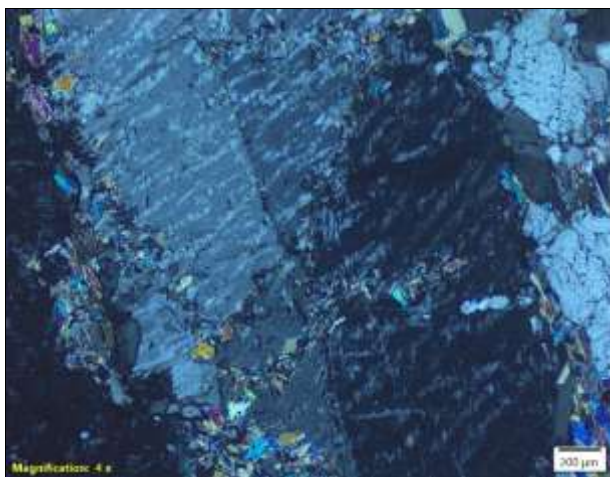


Figure 7.11 Photomicrograph of granite gneiss sample showing perthitic intergrowth (sample Id. 114635), Narayannagar.

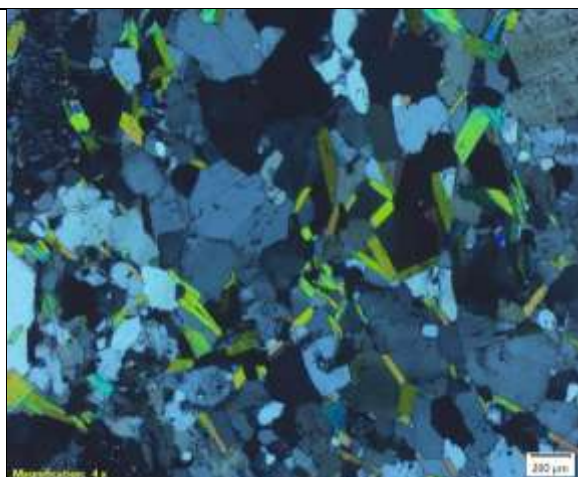


Figure 7.12 Photomicrograph of granite gneiss sample showing mortar texture (sample Id. 114633), Gadali

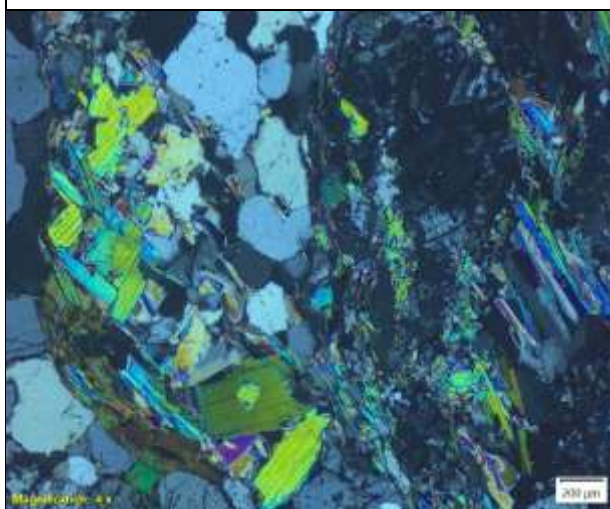


Figure 7.13 Photomicrograph of granite gneiss sample showing large tourmaline crystals (sample Id. 114635), Narayannagar

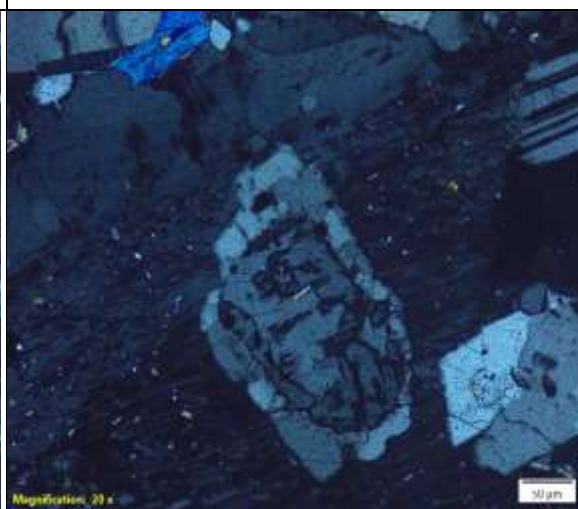


Figure 7.14 Photomicrograph of granite gneiss sample showing perthitic intergrowth (sample Id. 114633), Gadali

7.4.2. Quartzite:

Field Observation: The northern and eastern part of the Askot block, near Pampsiyari, Askot, Sirakot villages quartzite is mainly observed. The quartzite is mainly composed of quartz with some micaceous minerals or other ferruginous oxides. Thin bands of quartz muscovite schist are also associated with the thick quartzite. The muscovite content varies significantly within the quartzite. The grain size of quartzite varies from fine to medium grain. The rock is generally massive composed of recrystallized quartz, however, at places schistosity also developed due to presence of flaky minerals (Figure 7.15). Schistose quartzite consists mainly of elongated angular interlocking quartz grains with frequent parallel flakes of sericite with some opaque minerals. The quartz grains are flat and elongate and there is a preferred orientation parallel to the schistosity.



Figure 7.15 Quartzite outcrop, Pantgaon area.



Figure 7.16 Field outcrop of quartzite with prominent foliation, Patet area.



Figure 7.17 Quartzite outcrop Sirakot area.



*Figure 7.18 Field outcrop of quartzite
Dhunga area.*

Petrological Study of Quartzite: Two quartzite samples were studied (Sample Id: 114627 and 114647). Microscopically, the quartzite rock is mainly composed of quartz, with minor muscovite and opaque (Figure 7.19). The quartzite rock is fine-medium grained, composed of recrystallized quartz of various sized (Figure 7.21). Quartz occasionally shows annealing and undulose extinction (Figure 7.22). In some samples, the muscovite lying along the quartz grain boundaries imparting foliated to the schistose quartzite. The opaque minerals are euhedral crystals and probably of magnetite. The mineralogical composition show variation from purely quartz bearing to quartz-muscovite bearing. No such mineralization is associated with quartzite.

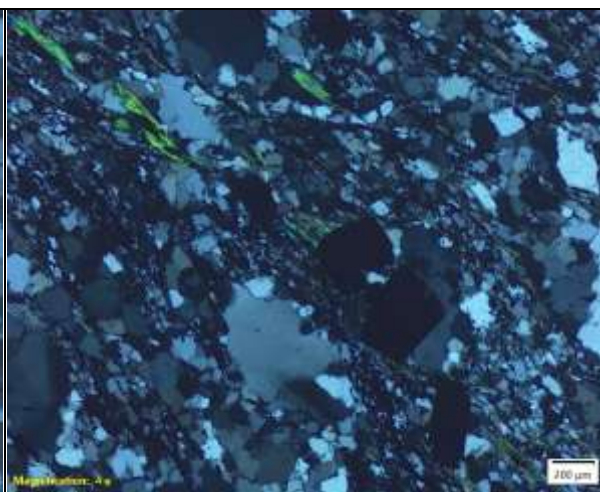
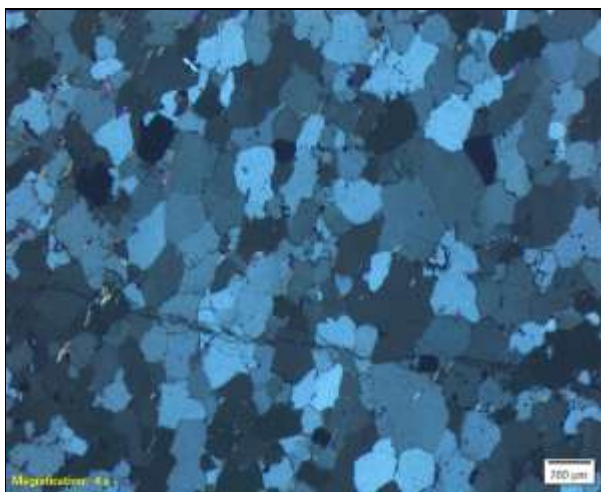




Figure 7.19 Quartzite rock composed of the recrystallized quartz grains and a few mica and tourmaline (Sample Id: 114627).

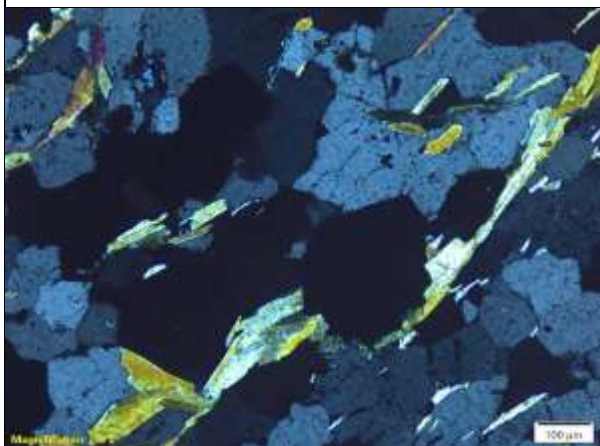


Figure 7.20 Sericitic mica developed along the foliation plane (Sample Id: 114627)

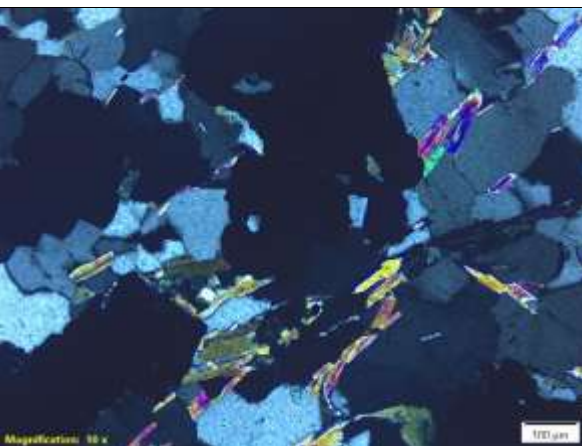


Figure 7.21 Quartz grains shows annealing and Sub parallel alignment of micaceous layer (Sample Id: 114647).

Figure 7.22 Quartz grains with undulose extinctions and sericitic mica developed along the foliation plane (Sample Id: 114647).

7.4.3. Amphibolite:

Field Observation: Amphibolite rocks are well- exposed near Naret, Baragaon, Askot, Unchakot, Pasma, Didihat, lamaghar areas in Askot block. In outcrop, the rock is coarse to medium grained, massive to deformed, green, brown, composed mainly amphibole (hornblende/ ribekite), plagioclase along with some chlorite. Other minerals include quartz, epidote-group of minerals and biotite observed at places. The amphibole rocks often contain malachite, chalcopryrite, and pyrite. Quartz veins often cross cut the amphibolite rock (Figure 7.24).



Figure 7.23 Field outcrop of Amphibolite shows deformation, west of Naret area.



Figure 7.24 Quartz vein in Amphibolite, north of Sitoli area

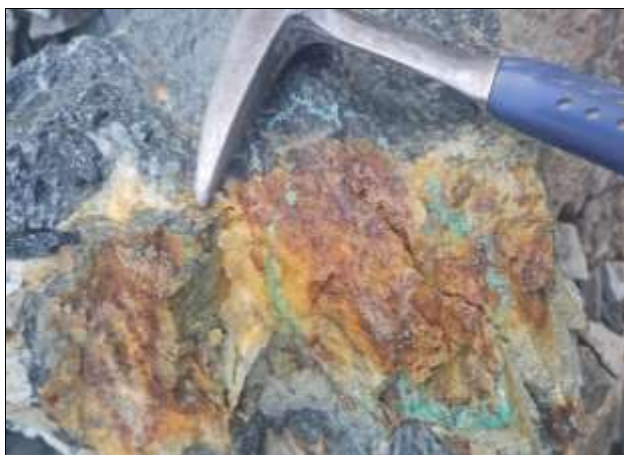


Figure 7.25 Mineralization in amphibolite, north of Didihat area.



Figure 7.26 Field outcrop of Ductile amphibole, west from Pasma area.



Figure 7.27 Mineralization in brecciated qtz veins in amphibolite, south west of Mouchora area.

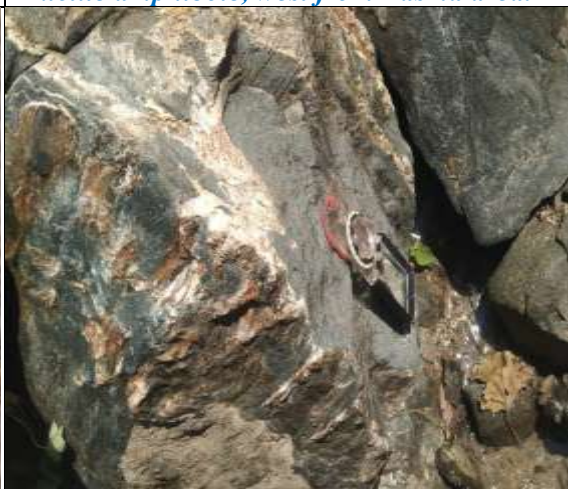


Figure 7.28 Mineralization in brecciated qtz veins in amphibolite, west of Sitoli area.

Petrological Study of Amphibolite: Nine amphibolite samples were studied (Sample Id: 114626, 114636, 114637, 114639-114644). Under the microscope, it is medium to coarse grained, equigranular rock and mainly composed of hornblende (~85% by volume), plagioclase (~10% by volume), quartz and biotite. Amphibole are subhedral to rhombus in shape, mostly unaltered. However, at places, amphibole altered to biotite specially at margin of hornblende. Plagioclase are subhedral to lath shaped and often shows saussuritization. Amphibole generally show two sets of foliations at a very low angle. Some amphibole grains are showing ductile feature indicating that the deformation temperature goes upto 850°C to 900°C. Intersertal texture (Figure 7.29) observed in amphibolite confirms that the origin is metabasalts for this type of amphibolite.



Amphibolite also contains disseminated to locally concentrated sulphide minerals, including chalcopyrite, pyrite, and galena. In several thin sections, sulphide grains are aligned parallel to the F1 foliation (Figure 7.31), indicating that sulphide mineralization was emplaced prior to or contemporaneously with the development of the earliest penetrative deformation fabric and was subsequently deformed during metamorphism. Sulphide mineral associated with this rock (Figure 3.37 and 7.38).

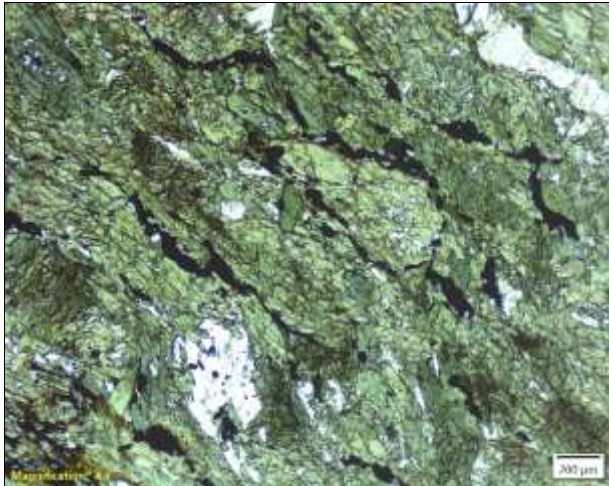


Figure 7.29 Amphibolite with prominent F1 foliation, near Pantgaon area (Sample Id: 114626).

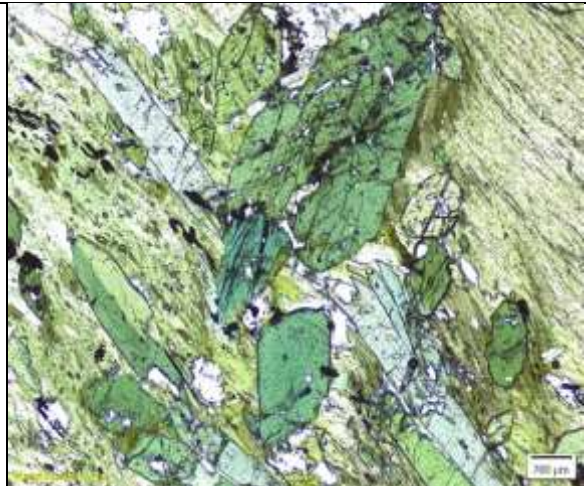


Figure 7.30 Amphibolite with prominent F1 foliation, near Narayangar area 9A470, 114636).

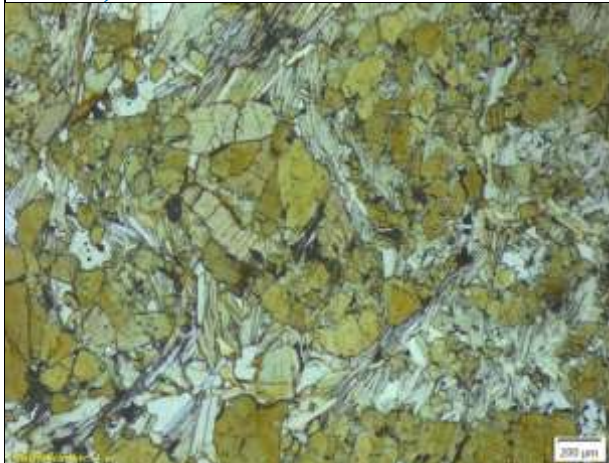


Figure 7.31 Amphibole and mica in parallel orientation with prominent F1 foliation, near Askot area (Sample Id: 114637)

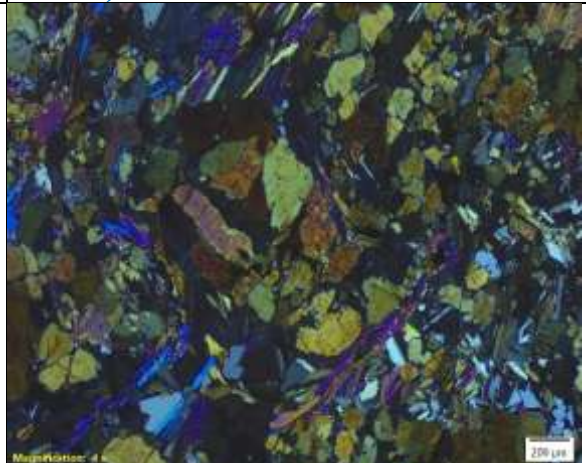


Figure 7.32 Amphibole and mica in parallel orientation with prominent F1 foliation, near Askot area (Sample Id: 114637).

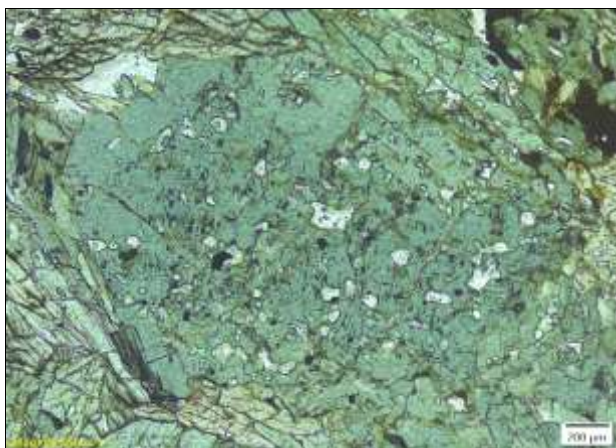


Figure 7.33 Large amphibole grain show sieve texture and mica wrapping shows foliation, near Narett area (Sample Id: 114639).

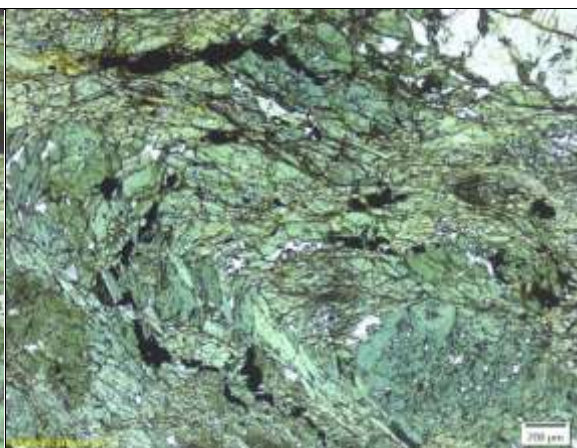


Figure 7.34 Amphibole and mica grains show F1 and F2 foliation, near Naret area (Sample Id: 114640).

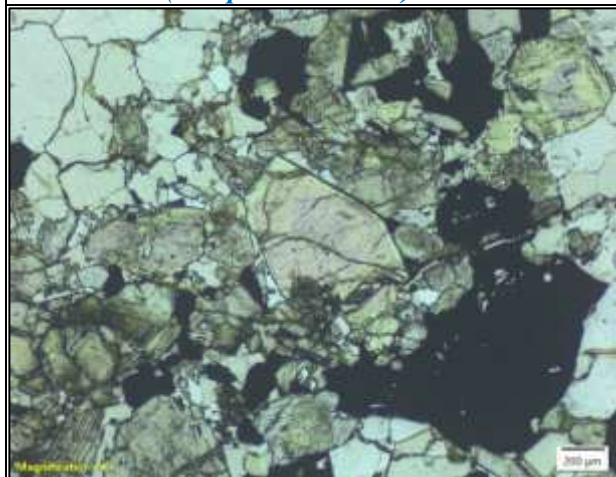


Figure 7.35 Epidote grains align along ore mineralization in amphibolite near Didihat area (Sample Id: 114642).

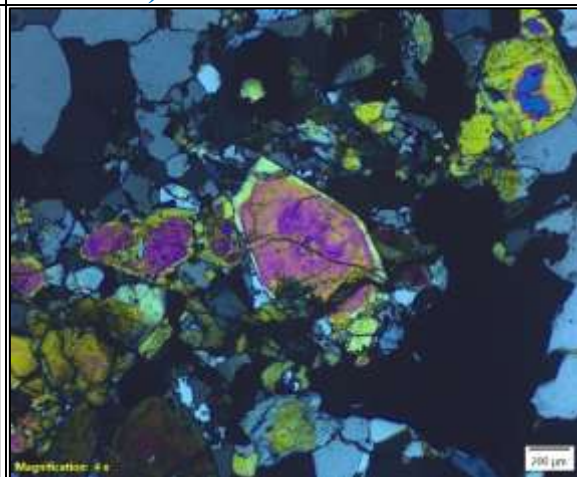


Figure 7.36 Epidote grains align along ore mineralization in amphibolite near Didihat area (Sample Id: 114642).

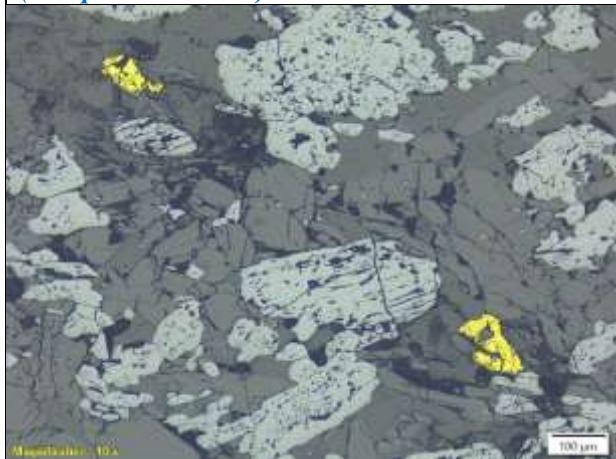


Figure 7.37 Amphibolite with traces of chalcopyrite and galena (Sample Id. 114643).



Figure 7.38 Amphibolite with traces of chalcopyrite and galena ((Sample Id. 114643).



7.4.4. Chlorite schist:

Field Observation: Chlorite Schist is mainly observed from the, Naret, Sirakot, Pasma in and around Askot mine, north of Didihat and Narayanagar areas, Askot block. In outcrop while observed in hand specimen, the rock is fine grained with porphyroblasts of garnet in few places. Pucker, augen quartz shaped veins, malachite staining also observed in this rock (Figure 7.39, Figure 7.40 Figure 7.41, Figure 7.42).



Figure 7.39 Crenulation cleavage in chlorite schist, west of Askot area.



Figure 7.40 Well developed schistosity over chlorite schist, east of Didihat area



Figure 7.41 Malachite stream flowing over chlorite schist, east of Gadali area



Figure 7.42 Pucker in chlorite schist, east of Gadali area



Figure 7.43 Well developed schistosity over chlorite schist, west of Didihat area



Figure 7.44 Thin chlorite flakes at chlorite schist outcrop, west of Pasma area



Figure 7.45 Mineralization along with quartz vein in chlorite schist, south of Sirakot area



Figure 7.46 Augen shaped quartz vein in chlorite schist, at Sirakot area

Petrological Study of Chlorite schist:

Total five samples are studied (Sample Id: 114630, 114631, 114645, 114649, 114650). Microscopically, the chlorite schist rock is medium grained, foliated, mainly composed of quartz, chlorite, with a few muscovite, and biotite, and sometimes garnet. Chlorite schist is characterized by a well-developed schistose texture formed by the preferred orientation of abundant chlorite flakes. In some thin sections, chlorite also shows folding of foliation. Quartz occurs as anhedral to subhedral grains, commonly displaying recrystallized polygonal aggregates. Minor muscovite, biotite, epidote, and opaque minerals may also be present depending on the metamorphic grade and protolith composition. The alignment of chlorite and other platy minerals defines the foliation, while quartz grains commonly occupy the spaces between the chlorite-rich layers, giving the rock a distinct lepidoblastic to granolepidoblastic texture.



The chlorite schist constitutes the principal host rock for the VMS-style polymetallic sulphide mineralization in askot area. Sulphides, comprising pyrite, chalcopyrite, sphalerite, and galena, occur as disseminations, stringers, and locally massive lenses conformable with the schistosity or F1 foliation (Figure 7.47 to Figure 7.56). The pervasive chlorite alteration is indicative of hydrothermal fluid–rock interaction and represents a characteristic footwall alteration assemblage associated with VMS systems (details of mineralization including texture are given later).

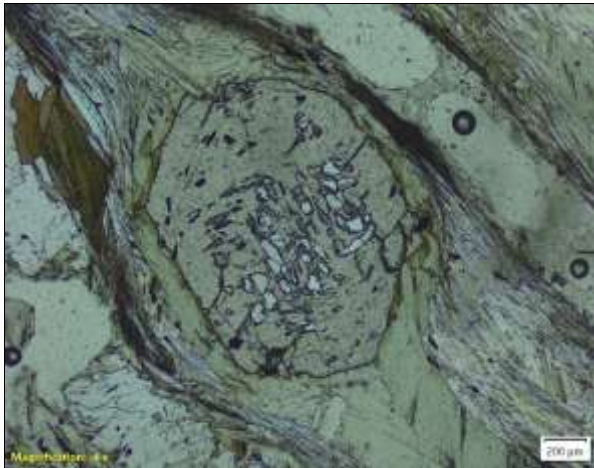


Figure 7.47 Swerving of micaceous layer around garnet porphyroblast in chlorite schist (Sample Id: 114630)

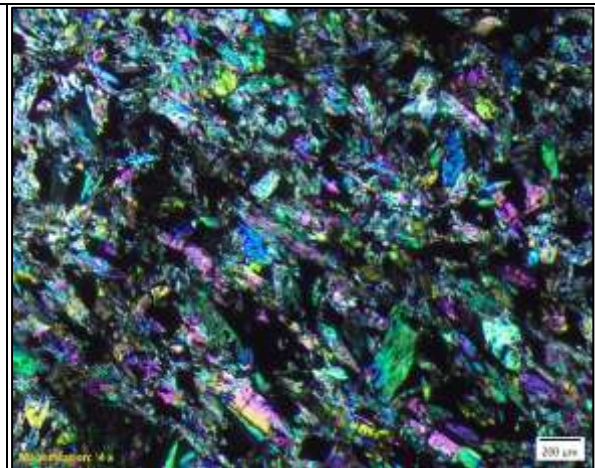


Figure 7.48 Sub parallel alignment of micaceous layer (Sample Id: 114649)

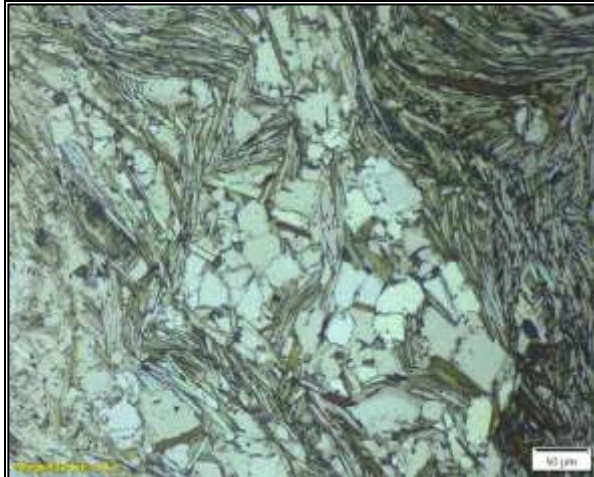


Figure 7.49 Alternate felsic and mafic layer segregation in Chlorite schist (Sample Id: 114650)

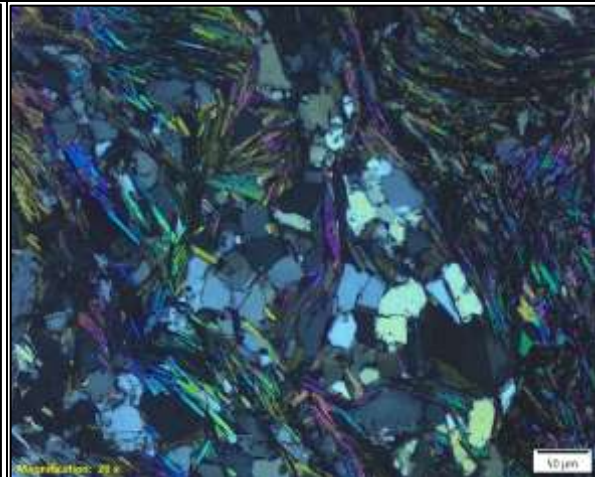


Figure 7.50 Alternate felsic and mafic layer segregation in Chlorite schist (Sample Id: 114650)

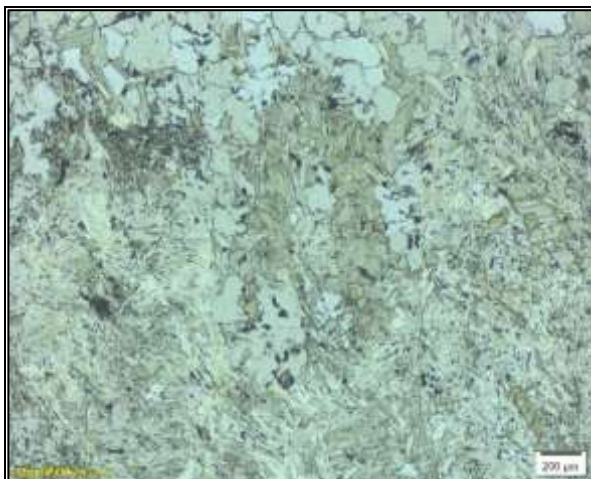


Figure 7.51 Sericitic mica developed along the foliation plane (Sample Id: 114645)

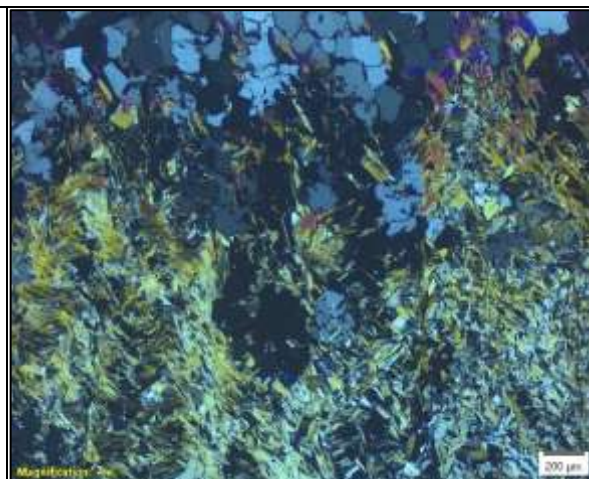


Figure 7.52 Sericitic mica developed along the foliation plane (Sample Id: 114645)

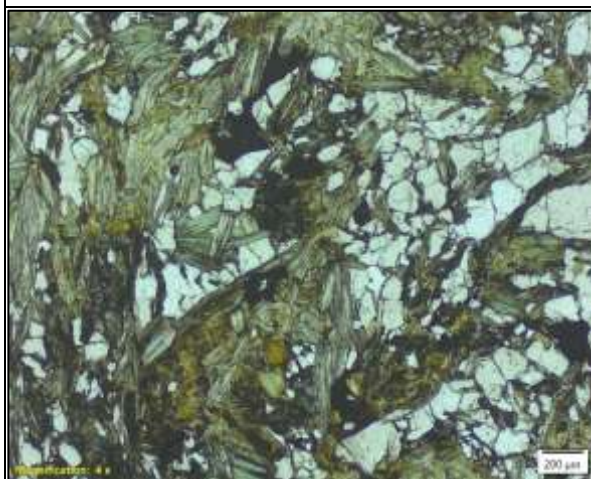


Figure 7.53 Quartz grains with undulose extinctions (Sample Id: 114649)

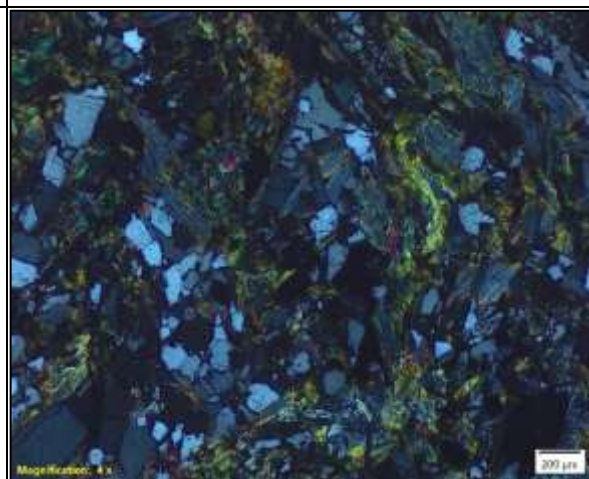


Figure 7.54 Quartz grains with undulose extinctions (Sample Id: 114649)

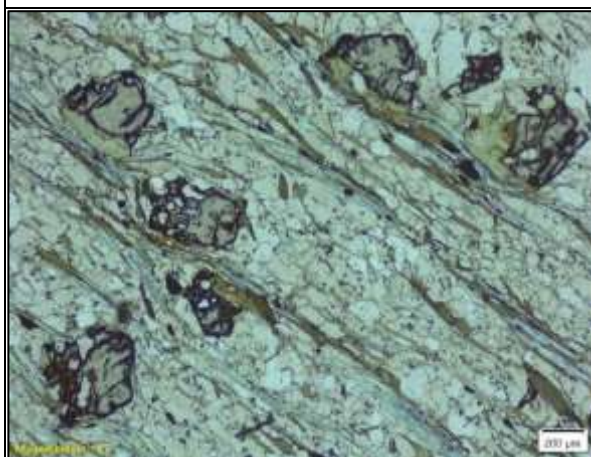


Figure 7.55 Swerving of micaceous layer around garnet porphyroblast in chlorite schist

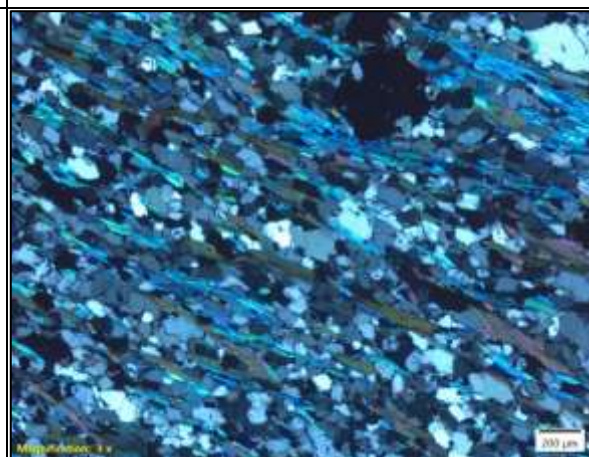


Figure 7.56 Sub parallel alignment of micaceous layer.

7.4.5. Leuco Granite:

Field Observation: The leuco granite is restricted south-east of Askot mine and present within the granite gneisses. In outcrop, the rock is leucocratic, coarse-grained massive rock and mainly composed of quartz, feldspar, muscovite with a few tourmalines (Figure 7.57 to Figure 7.60)



Figure 7.57 Leucogranite with prominent F1 foliation, at Baragaon area.



Figure 7.58 Leucogranite with small tourmaline grains, northwest of Gadali area.

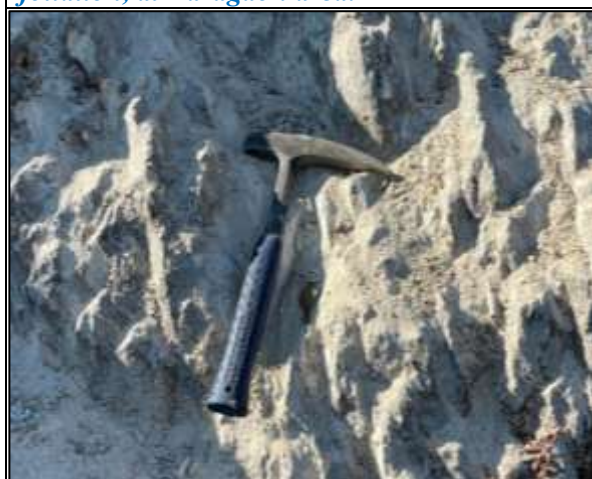


Figure 7.59 Leucogranite near southeast of Mouchora area.



Figure 7.60 Leucogranite with mica along foliation plane southeast of Mouchora area.

Petrological Study of Leuco Granite:

Two leucogranite samples is studied (Sample Id: 114628, 114646). The leucogranite shows a hypidiomorphic granular to equigranular texture made up mainly of quartz, K-feldspar (microcline and orthoclase), and plagioclase, with accessory muscovite and tourmaline. Quartz appears as anhedral with undulose extinction and recrystallized polygonal aggregates. K-feldspar is seen as cross-hatched twins in microcline, while plagioclase is found with polysynthetic twins and various stages of sericite replacement (Figure 7.61 to 7.66). Muscovite



is found in fine to coarse flakes. Other accessory minerals include tourmaline, and opaque minerals. No sulphide mineralization is observed

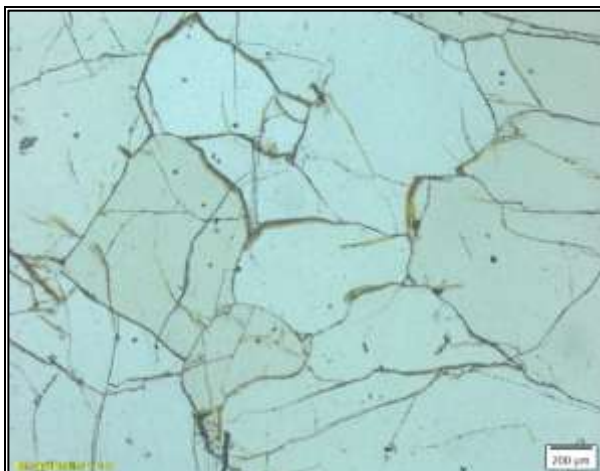


Figure 7.61 Leucogrite shows annealing texture Baragaon area ((Sample Id: 114628)

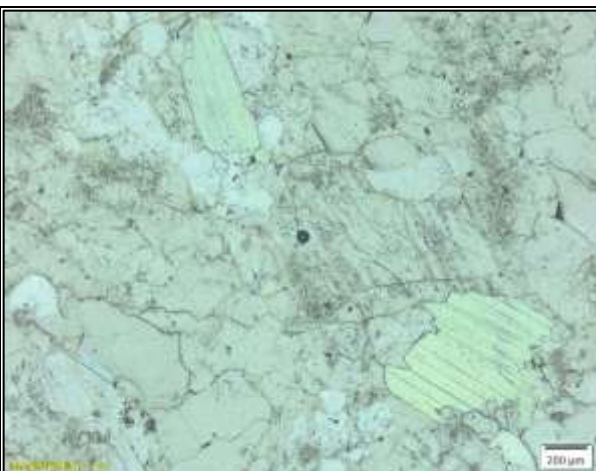


Figure 7.62 Tourmaline in leucogranite near Gadali area (Sample Id: 114646)

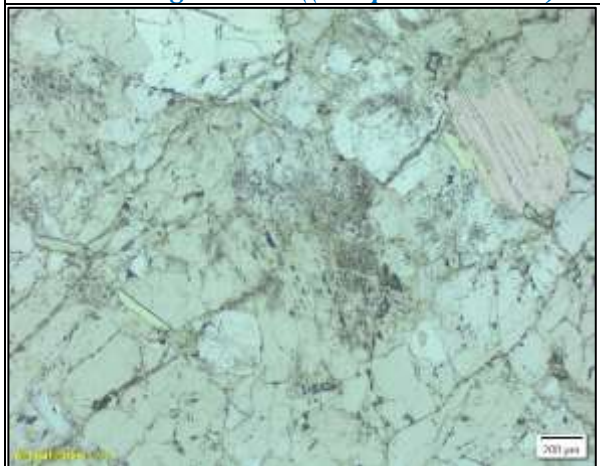


Figure 7.63 Tourmaline in leucogranite near Gadali area (Sample Id:114646)

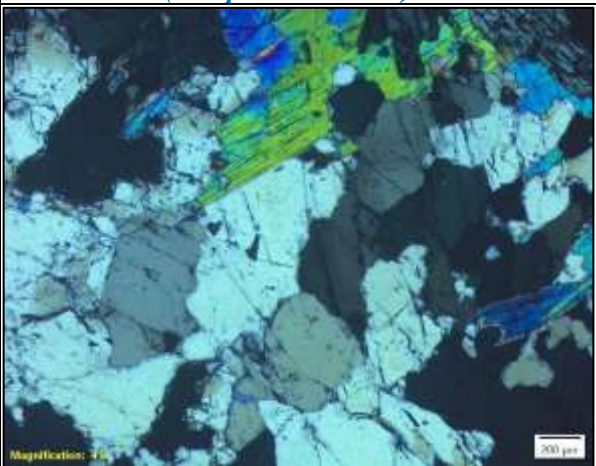


Figure 7.64 Tourmaline with undulose quartz grains in leucogranite near Gadali area (Sample Id: 114646)

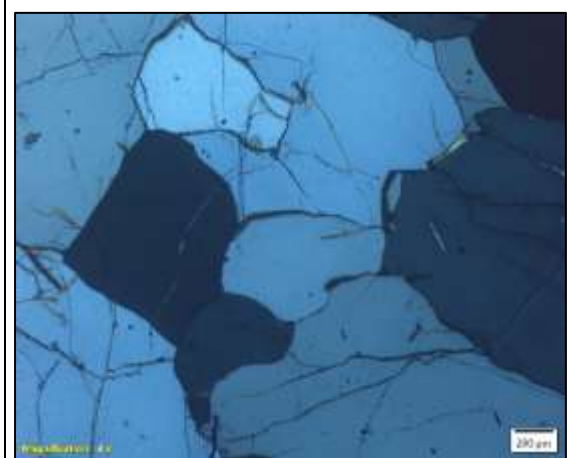


Figure 7.65 Tourmaline with undulose quartz grains in leucogranite near Mouchora area (Sample Id: 114628)

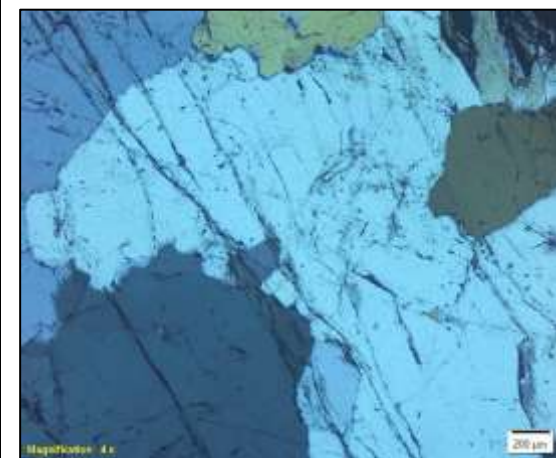


Figure 7.66 feldspar grains in leucogranite near Mouchora area (Sample Id: 114628)

7.4.6. Phyllite:

Field Observation: The phyllite rock is well exposed in Turgoli, Lamaghar, Patet, Nimathi areas in Askot block. In outcrop, Phyllite is fine-grained and foliated, and usually occurs in gray, greenish gray, reddish gray colour due to the presence of gossan mainly in Turgoli area. (Figure 7.67, Figure 7.68). It is characterized by well-defined phyllitic cleavage which gives a silky luster to the surface of the rock because of the preferred orientation of fine-grained micas. The rock is soft to moderately hard and splits easily into thin sheets parallel to the foliation (Figure 7.69, Figure 7.70). It usually shows veinlets of quartz which intersect the foliation. Weathered surfaces are brownish as a result of the oxidation of the iron minerals.



Figure 7.67 Gossan in phyllite with prominent foliation, west of Turgoli area.



Figure 7.68 Carb phyllite with prominent foliation, north of Nimathi area.



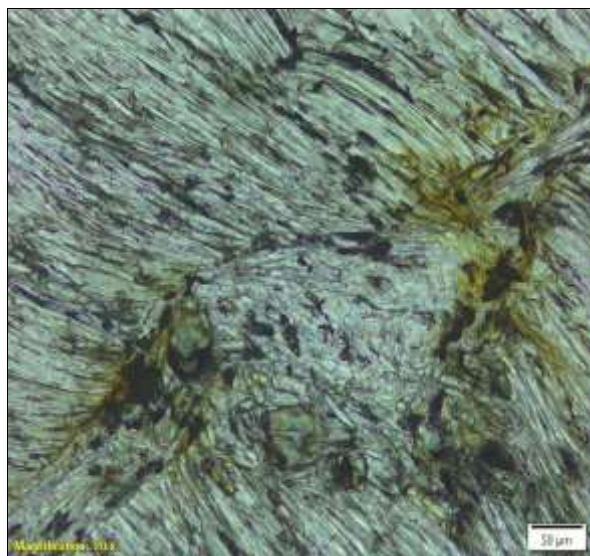
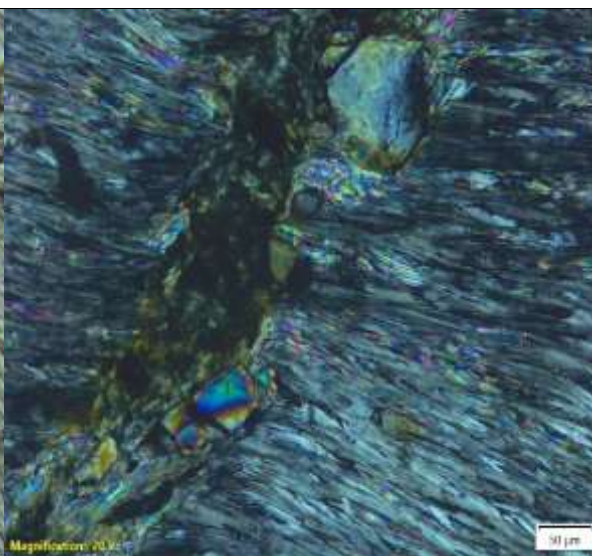
Figure 7.69 Phyllite with prominent F1 foliation, south of Adichoura area.



Figure 7.70 Crenulation cleavage in phyllite with prominent F1 foliation, at Patet area.

Petrological Study of Phyllite: Three samples of phyllite was studied (Sample Id: 114634, 114632, 114638). Under the microscope, phyllite exhibits a well-developed lepidoblastic to granolepidoblastic texture defined by the preferred orientation of fine-grained muscovite, sericite, chlorite, and locally biotite, which together produce the characteristic phyllitic foliation (Figure 7.71). Quartz occurs as medium to fine-grained recrystallized grains commonly displays undulose extinction. Plagioclase, where present, is generally fine grained and locally altered to sericite. Accessory minerals such as opaque minerals, epidote, apatite, zircon, and tourmaline occur in minor amounts (Figure 7.72). Microfolding, crenulation cleavage, pressure shadows, and dynamic recrystallization of quartz are common deformation features, reflecting low- to medium-grade regional metamorphism. Local hydrothermal alteration may be represented by chloritization, sericitization, and the development of secondary quartz veinlets. No such sulphide mineralization is associated with phyllite.



	
<i>Figure 7.71 Phyllite shows phyllitic foliation (Sample Id: 114634).</i>	<i>Figure 7.72 Phyllite shows strong foliation and the presence of epidote (Sample Id: 114634).</i>

7.4.7. Limestone:

Field Observation: Limestone is well exposed near Patet, Lamaghar Ranikhet areas in Askot block. Limestone is light grey, bluish-grey, cream, or white in colour, although at places, weathered surfaces appear as buff to brown colour. It is generally fine- to medium-grained, compact, and massive to thickly bedded, with well-defined bedding planes. In some exposures, thin laminations, stylolites, calcite veins also observed. Fresh surfaces are hard and dense, whereas weathered surfaces are rough due to differential dissolution. The rock is composed predominantly of calcite and reacts vigorously with dilute hydrochloric acid. Fractures and joints are common and are frequently filled with secondary calcite (Figure 7. 73 to 7.76).



Figure 7.73 Field photograph of grey massive limestone west of Ranikhet



Figure 7.74 Field photograph of banded limestone north of Pampsiyari.



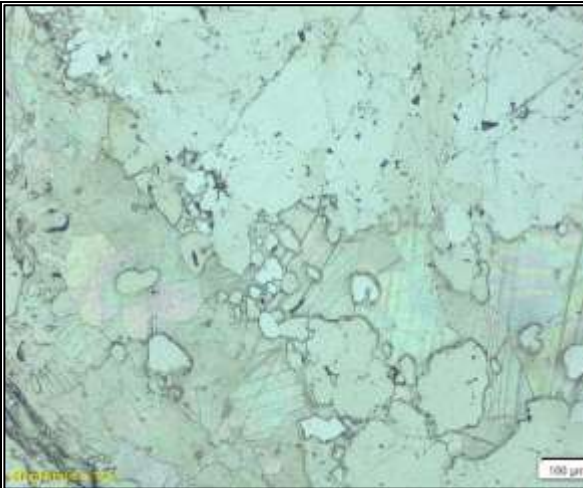
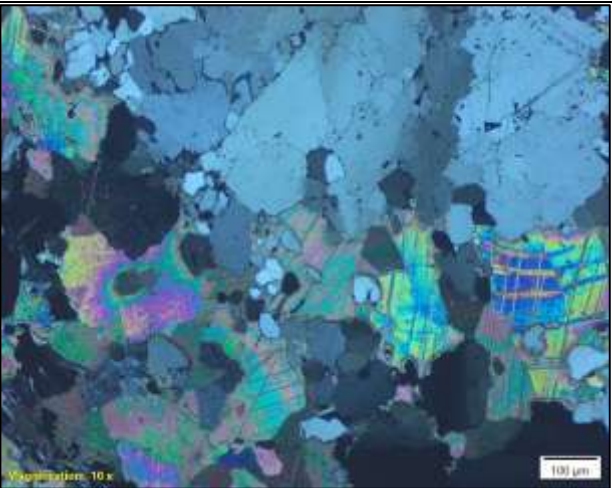
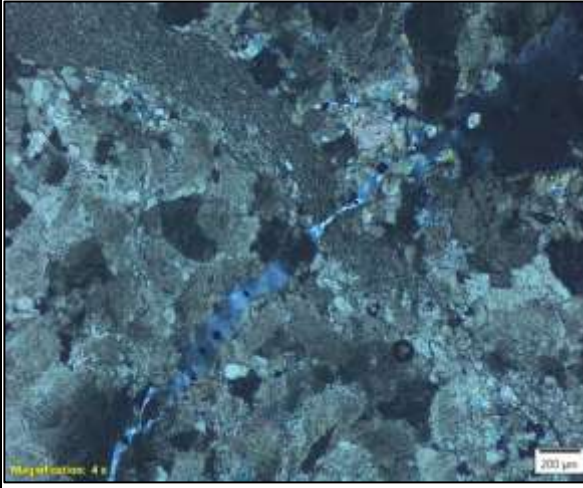
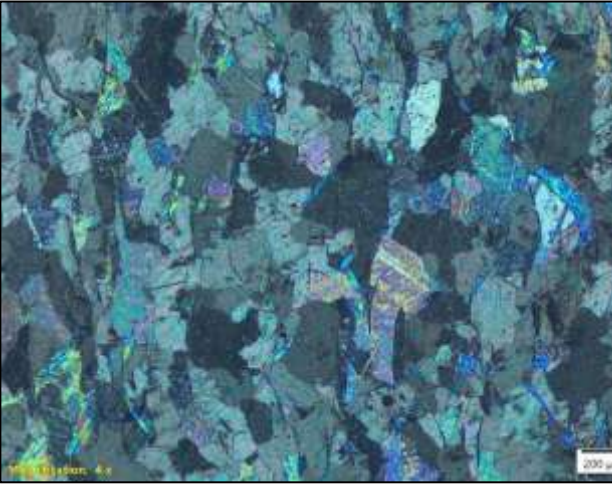
Figure 7.75 Field photograph of dissolution in Limestone south of Pampsiyari.



Figure 7.76 Field photograph of limestone bed north of Ranikhet.

Petrological Study of Limestone: Two samples of limestone were studied (Sample Id: 114629 and 114648). Under the microscope, limestone is composed predominantly of calcite, occurring as fine- to coarse-grained minerals. Quartz, dolomite, clay minerals, and opaque minerals may occur as minor constituents. Recrystallization commonly results in the development of an interlocking mosaic of calcite crystals, while fractures are frequently filled with secondary calcite. Pressure solution features, and local dolomitization or silicification may also be observed, reflecting diagenetic and metamorphic modifications. The overall petrographic characteristics indicate a carbonate-rich rock with varying degrees of recrystallization and secondary mineralization. No such sulphide mineralization is associated with limestone (Figure 7.77 to 7.80).



	
<i>Figure 7.77: Limestone with large calcite grains, near Ranikhet area (Sample Id: 114629)</i>	<i>Figure 7.78: Limestone with large calcite grains with quartz veins, near Ranikhet area (Sample Id: 114629).</i>
	
<i>Figure 7.79: Limestone with calcite grains and quartz veins, near pampsiyari area (Sample Id: 114648)</i>	<i>Figure 7.80: Limestone with calcite grains near pampsiyari area.(Sample Id: 114648)</i>

7.5 Structure of the Askot regional block:

A detailed structural study was done for the block as structure has great significance in the mineralization. In Askot block, the structures present in the rocks can be classified under two categories i.e. primary or non-diastrophic structures and diastrophic structures. The primary or non-diastrophic structures are useful tools to infer depositional environment of sedimentary rocks. Whereas, the diastrophic structures are used to uncover history of deformations and associated mineralization suffered by the rocks. The major non-diastrophic and diastrophic structures present in the area are discussed below:



A. Non-diastrophic Structures: These structures are features of rocks that form at the time of formation or just after the deposition of the rock itself. In the study area primary sedimentary structures have been identified in the rocks of Berinag Formation. which are as follows:

a. Bedding: The quartzite of Berinag Formation preserves primary bedding structure. The bedding in quartzite could also be identified based on the presence of compositional layers rich in heavy minerals specifically magnetite (Figure 7.81) and grain size variation. The thickness of individual strata varies from few millimeters to several centimeters. The nature of quartzite beds varies from thinly bedded to very thick beds. The prominent bedding is also observed in the limestone (Figure 7.82). However, bedding has no significant role for basemetal mineralization.



Figure 7.81: Bedding in quartzite of Berinag Formation west of Pampsiyari area.



Latitude: 29.833506
Longitude: 80.245425
Elevation: 1864.81±7.75 m
Accuracy: 9.071 m
Time: 10-07-2025 10:33
Note: C503 Alternating layers of Limestone and phyllite

Powered by Sonalix

Figure 7.82: Bedding in Limestone Phyllite alternate bands west of Dhunga area.

b. Cross Bedding: Cross-bedding in the Berinag Formation (Lesser Himalaya, Uttarakhand) serves as a primary sedimentary archive of a Paleoproterozoic to Mesoproterozoic shallow marine basin. Hosted within thick, high-energy sericitic quartzites which reflects high-energy shallow-marine to intertidal conditions, driven by migrating sand dunes and tide-modulated currents (Figure 7.83).



Figure 7.83: Cross Bedding in quartzite of Berinag Formation south of Debichuna area.

C. Stromatolites: Stromatolites were observed in the carbonates of Pithoragarh Formation (Figure 7.84 to 7.87). The Stromatolitic dolomites are dark grey in colour. Due to recrystallization and deformation, cellular structures were destroyed in Stromatolites.



Figure 7.84: Field photograph of stromatolite in limestone, east of Turgoli area.



Figure 7.85: Field photograph of stromatolite in limestone, east of Turgoli area.



Figure 7.86: Field photograph of stromatolite in limestone, east of Turgoli area.



Figure 7.87: Field photograph of stromatolite in limestone, east of Turgoli area.

B. Diastrophic Structures:

At the regional scale, the structural framework is defined by a combination of **major thrusts, shear zones, folds, and fracture systems**. These structures have controlled the distribution and geometry of the Paleoproterozoic lithological succession and subsequently influenced the deformation and remobilization of sulphide mineralization during Himalayan tectonism. The structural complexity is reflected in variations in foliation orientation, fold geometry, axial-planar fabrics, and localized zones of intense shearing and fracturing. Such structural discontinuities are considered important because they may have provided zones of enhanced permeability and acted as pathways for hydrothermal fluids or later tectonic remobilization of pre-existing sulphides.

Competency contrasts between quartzite, gneiss, amphibolite, and schistose units may have further localized deformation and created favourable sites for fluid–rock interaction. In addition, the intersection of different structural elements may have produced localized zones of dilation and permeability, providing potential sites for sulphide deposition or subsequent remobilization and concentration.

Flat-Ramp-Duplex Structural Architecture and mineralization significance:

The structural setting of the Askot area can be interpreted in the framework of a thrust-dominated Himalayan deformation regime, characterized by the development of flat-ramp geometries (Figure 7.88) and associated duplex structures, prominent in chlorite schist and amphibolite rocks. The field exposure shown in the photograph, interpreted as a duplex within chlorite schist, displays strongly foliated and closely spaced schistose layers with apparent

tectonic stacking and imbrication. Such geometry is indicative of intense shortening and deformation, where thrust displacement along low-angle flats is linked by steeper ramps, resulting in the repetition and stacking of lithological units.



Figure 7.88: Flat-Ramp-Duplex Structure in Askot area.

The development of a flat-ramp-duplex system is particularly significant for mineral exploration because thrusting and imbrication can structurally repeat favourable lithological horizons and potentially conceal mineralized zones at depth. In the Askot region, pre-existing VMS-style sulphide mineralization may have been displaced, repeated, or remobilized during subsequent tectonic deformation. The intersection of thrust ramps, lithological contacts, shear zones, and fold-related structures may have provided favourable pathways for fluid movement and sites for sulphide remobilization and concentration.

Foliation and mineralization significance:

Under microscope, the metasedimentary and metavolcanic rocks of the area, including phyllite, chlorite schist, quartz–mica schist (Figure 7.89), amphibolite (Figure 7.91), and quartzite, exhibit two prominent generations of foliation. Petrographic investigations reveal



that the earlier foliation (S1) is preserved within the microlithons (micro-litho-domains) enclosed by the spaced cleavage of the later S2 foliation. This relationship indicates that the S2 foliation overprinted the earlier S1 fabric during a subsequent phase of deformation. The preservation of the S1 foliation is consistently observed in thin sections prepared parallel to the strike of the S2 foliation, where the microlithons are clearly bounded by the S2 cleavage domains. Representative photomicrographs (Figure 7.90) illustrate the preserved S1 foliation within the microlitho-domains and the later S2 cleavage fabric. The measured angle between the S1 and S2 foliations is approximately 30–35°, indicating a distinct phase of progressive deformation and refolding in the study area. Beside the presence of the folded amphibole in amphibolite implying the temperature reaches upto 650°C and ore mineral also follow the folding (Figure 7.91).

The mineral assemblage comprises chalcopyrite, pyrite, sphalerite, and galena, occurring as disseminated grains, sulphide stringers, and locally semi-massive sulphide bands parallel to the primary schistosity (S1/F1 foliation). The foliation-parallel distribution of sulphides indicates that the original stratabound hydrothermal mineralization was subsequently modified by tectonic deformation and metamorphism. During regional deformation, the sulphide minerals were recrystallized, elongated, and locally remobilized along the developing S1/F1 fabric, resulting in their present alignment with the schistosity. The association of Cu–Pb–Zn sulphides with chlorite-rich schist and hydrothermal alteration zones is consistent with a metamorphosed VMS-style mineralization system.

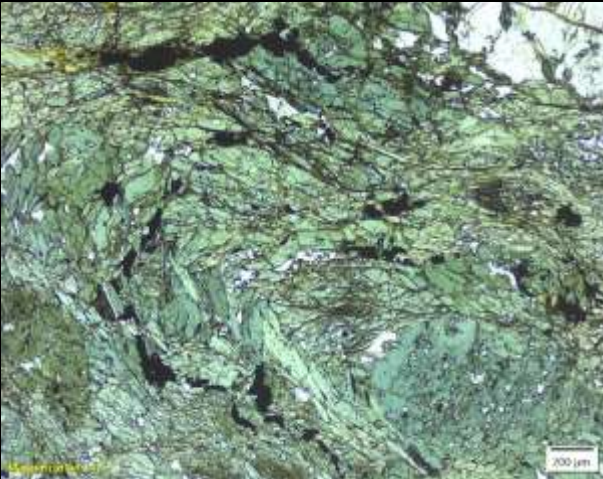
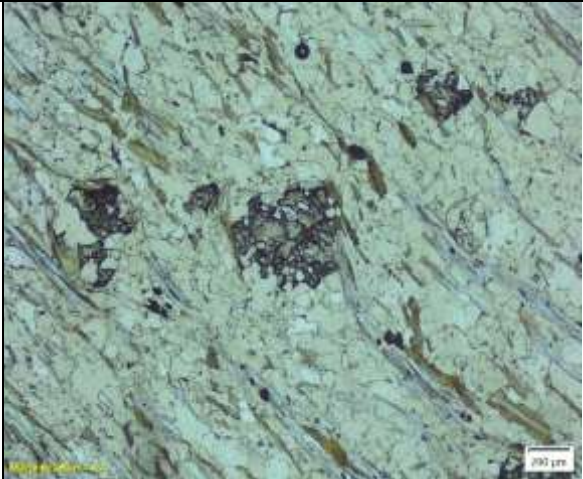


Figure 7.89 Development of S2-foliation by metamorphic differentiation and reorientation



Figure 7.90 Development of S2-foliation by metamorphic differentiation and reorientation



<i>of micaceous minerals along S1-foliation in the chlorite schist (Sample Id.106335)</i>	<i>of micaceous minerals along S1-foliation in the chlorite schist (Sample Id.106335)</i>
	
<i>Figure 7.91 Folded amphibole in amphibolite with sulphide also folded (Sample Id. 114640).</i>	<i>Figure 7.92 Development of S1-foliation by parallel alignment of the biotite muscovite around the garnet (Sample Id. 114630)</i>

7.6 Metamorphism of the Askot regional block:

The Askot area records a complex metamorphic history associated with the Paleoproterozoic geological evolution and subsequent Himalayan tectono-metamorphic reworking. The exposed crystalline and volcano-sedimentary rocks have undergone varying degrees of metamorphism, resulting in the development of gneissic, schistose, amphibolitic, and quartzitic lithologies and the modification of their original mineralogical and textural characteristics. Metamorphic overprinting is expressed by the development of strong foliation, recrystallization, mineral alignment, and local transposition of earlier fabrics, particularly within structurally deformed zones.

The metamorphic assemblages indicate that the original volcanic and sedimentary protoliths were progressively transformed during burial, deformation, and tectonic activity. Chlorite- schists, amphibolite, quartzites, and granite gneisses represent important products of this metamorphic evolution. The development of pervasive schistosity and gneissic banding, together with localized shearing and folding, indicates that metamorphism was closely coupled with deformation. In the mineralized domain, this metamorphic overprint is particularly

important because the original VMS-style sulphide assemblages may have been recrystallized, deformed, remobilized, or redistributed during subsequent tectono-metamorphic events.

From an exploration perspective, metamorphism has therefore played a dual role in the Askot mineral system. While it may have modified or partially obscured the primary depositional characteristics of the sulphide bodies, metamorphic deformation could also have promoted sulphide remobilization along foliation planes, shear zones, lithological contacts, and fold-related structures. Consequently, the present distribution and geometry of mineralization may represent a combination of the original VMS depositional architecture and later metamorphic-structural modification. Understanding this relationship is essential for predicting concealed or structurally displaced mineralization and for distinguishing primary mineralization from later remobilized sulphide concentrations within the Askot-Naret Hinge Zone.

The grade of metamorphism of the rocks of the study area has been deciphered based on mineral assemblage in different rock types. Below table gives an over all glimpse of mineral assemblage of different rock types and identified metamorphic grade.

Table 7.1 The grade of metamorphism of the rocks from Askot study area.

Group	Rock Type	Minerals Present	Grade of metamorphism
Askot crystallines	Augen gneiss	Quartz, Plagioclase, K-feldspar, muscovite, biotite, epidote	Upper amphibolite to near granulite
	Garnetiferous mica schist	Quartz, biotite, chlorite, muscovite, garnet	Greenschist
	Quartz mica schist	Quartz, muscovite, biotite and opaques	Greenschist
Garhwal Group, Berinag Formation	Quartz mica schist	Quartz, muscovite, biotite	Greenschist
	Amphibolite with associated schist	Quartz, Plagioclase, hornblende, biotite, chlorite	Upper amphibolite to near granulite
	Quartzite	Quartz, muscovite and opaques	Greenschist

7.7 Ore mineralogy in the Askot regional block

In the Askot regional block, surface indications of polymetallic mineralization have been identified at three principal localities: **Askot**, **Thal–Turgoli**, and **Didihat**. These occurrences collectively indicate that base-metal mineralization is not restricted to the Askot deposit but is distributed across a broader regional geological corridor.

The **Thal–Turgoli** area is characterized by well-developed gossan zones associated with phyllitic rocks. The presence of gossan (Figure 7.93), formed through the oxidation of sulphide-bearing rocks, suggests that primary sulphide minerals were originally present and have subsequently undergone weathering and leaching. These gossans therefore represent important surface indicators of concealed sulphide mineralization. In addition, sedimentary exhalative (SEDEX)-type mineralized horizons have been recognized within the area, indicating that the region has the potential to host stratiform sulphide mineralization. Petrographic and field observations further reveal disseminated pyrite and chalcopyrite within the phyllite, providing direct evidence of sulphide mineralization (Figure 7.94 to 7.96). The coexistence of gossans, disseminated sulphides, and SEDEX-style mineralization highlights the favourable metallogenic potential of the Thal–Turgoli sector and warrants detailed geological, geochemical, and geophysical investigations.



Figure 7.93 Gossan associated with phyllite, west of Turgoli area.



Figure 7.94 Chalcopyrite, pyrite associated with phyllite, north of Thal area.

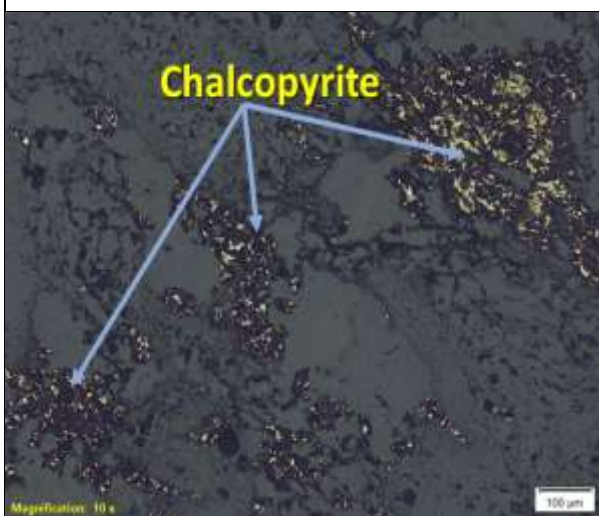


Figure 7.95 Disseminated chalcopyrite associated with phyllite

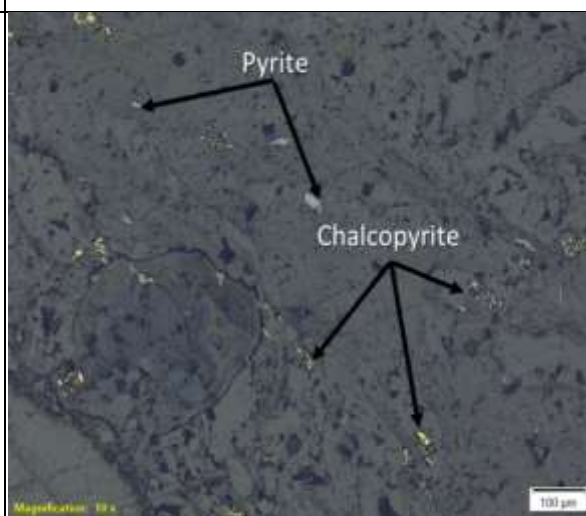


Figure 7.96 Disseminated chalcopyrite associated with phyllite

The Didihat area also exhibits significant surface evidence of polymetallic mineralization. Amphibolite exposed in this region contains visible malachite staining and chalcopyrite mineralization, indicating the presence of copper-bearing sulphides and their secondary



oxidation products (Figure 7.97 to 7.100). Microscopic observations further reveal disseminated pyrite and chalcopyrite occurring within the amphibolite. The occurrence of malachite, together with primary sulphide minerals, indicates near-surface oxidation of copper sulphides and highlights the potential for concealed base-metal mineralization at depth. These observations demonstrate that the Didihat area possesses favourable geological characteristics for polymetallic mineralization and merits detailed geological mapping, geochemical sampling, and geophysical investigations to evaluate its economic potential.



Figure 7.97 Malachite and Chalcopyrite associated with amphibolite, north of Didihat area.



Figure 7.98 Amphibolite with quartz veins, north of Sitoli area.

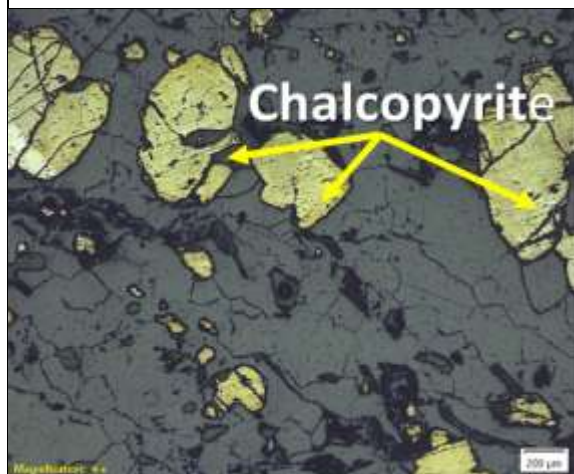


Figure 7.99 Chalcopyrite associated with amphibolite

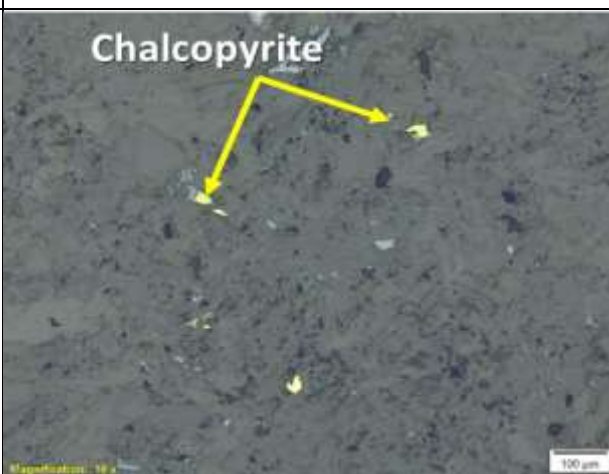


Figure 7.100 Chalcopyrite associated with amphibolite

In the **Askot** area, apart from the known Askot polymetallic mine, surface evidence of base-metal mineralization has also been identified in the extension of the mineralized belt near the **Naret** area. The mineralization is hosted primarily within chlorite schist, where malachite staining is commonly observed along the outcrops, indicating the oxidation of primary copper sulphides. Field observations further record the occurrence of chalcopyrite, bornite, azurite, and volcanogenic massive sulphide (VMS)-type mineralized rocks within the chloritic schist (Figure 7.101 to 7.106). The association of primary sulphide minerals with secondary copper minerals suggests that the Naret area represents a continuation of the regional mineralized system beyond the existing Askot mine. These surface manifestations indicate favourable conditions for concealed polymetallic sulphide mineralization and support the need for detailed geological mapping, geochemical sampling, and geophysical investigations to delineate the extent and continuity of the mineralized zone (detailed for the Askot Nater Hinge zone is given below).

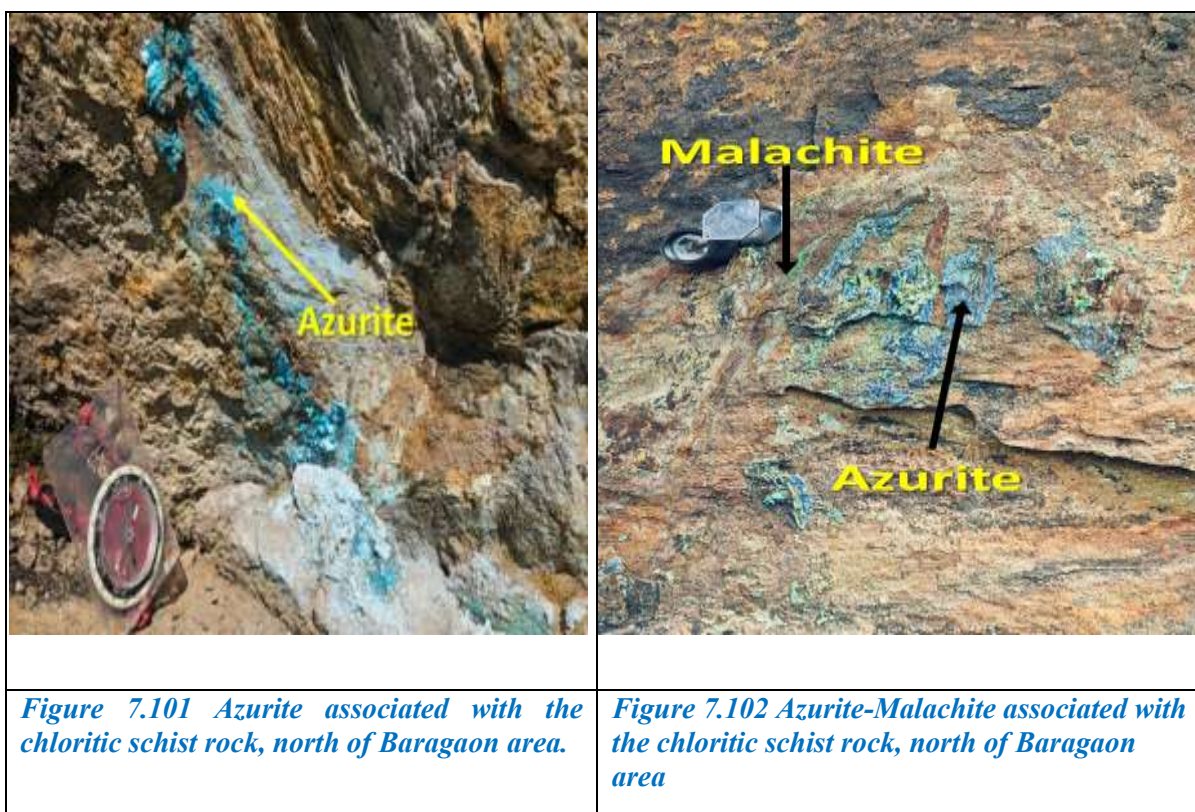




Figure 7.103 Malachite flow east of Gadali area.



Figure 7.104 Malachite-Azuroite, south of Gadali area.

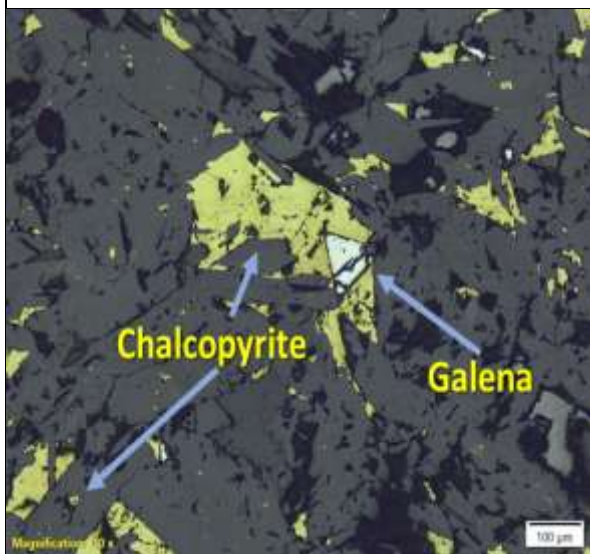


Figure 7.105 The presence of chalcopyrite in VMS

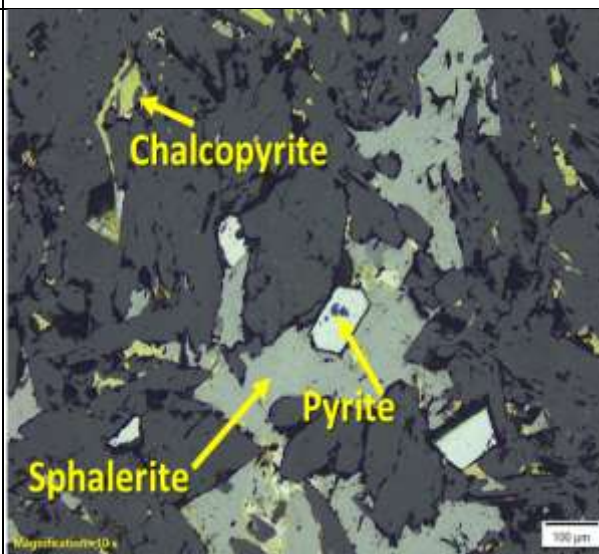


Figure 7.106 The presence of chalcopyrite, pyrite, and Sphalerite in VMS

7.8 Geochemical Analysis for surface sampling of the Askot regional block:

Based on field investigations and petrographical study, three principal mineralized zones were identified in the Askot, Thal–Turgoli, and Didihat areas. Consequently, a significant proportion of the bedrock and stream sediment samples were collected from and around these localities to

evaluate the geochemical signatures associated with the observed polymetallic mineralization to identify target zones. The integrated field observations and geochemical sampling programme provide a robust dataset for delineating prospective zones and assessing the regional distribution of base-metal mineralization within the Askot block.

A total of 283 stream sediment samples and 137 bedrock samples were collected and analyzed across the Askot regional block as part of the reconnaissance exploration programme. Sampling was designed to provide comprehensive geochemical coverage of the study area, and delineate the target mineralized zones.

7.9 Element-wise Surface Bedrock Geochemical Anomaly for Askot regional block:

7.9.1 Copper (Cu) anomaly map

A total of 137 bedrock samples were analyzed for copper (Cu) within the Askot regional block. Copper concentrations vary widely, ranging from 5 ppm to 21,324 ppm, indicating significant geochemical variability across the study area. The average crustal abundance of copper is 56 ppm, which has been used as the reference value to assess the degree of geochemical enrichment.

The distribution of copper values indicates that 59 samples contain Cu concentrations greater than 2 times the crustal abundance (>112 ppm), suggesting widespread anomalous copper mineralization. Of these, 32 samples exceed 5 times the crustal abundance (>280 ppm), representing moderately to strongly enriched zones. Furthermore, 19 samples record Cu concentrations greater than 10 times the crustal abundance (>560 ppm), highlighting highly anomalous copper-bearing zones with strong exploration significance (Figure 7.107).

Table 7.2 Summary of Copper (Cu) Geochemistry in Bedrock Samples

Parameter	Value
Total bedrock samples analyzed	137
Minimum Cu concentration	5 ppm
Maximum Cu concentration	21,324 ppm
Samples >2 times crustal abundance (>112 ppm)	59
Samples >5 times crustal abundance (>280 ppm)	32



Samples >10 times crustal abundance (>560 ppm)

19

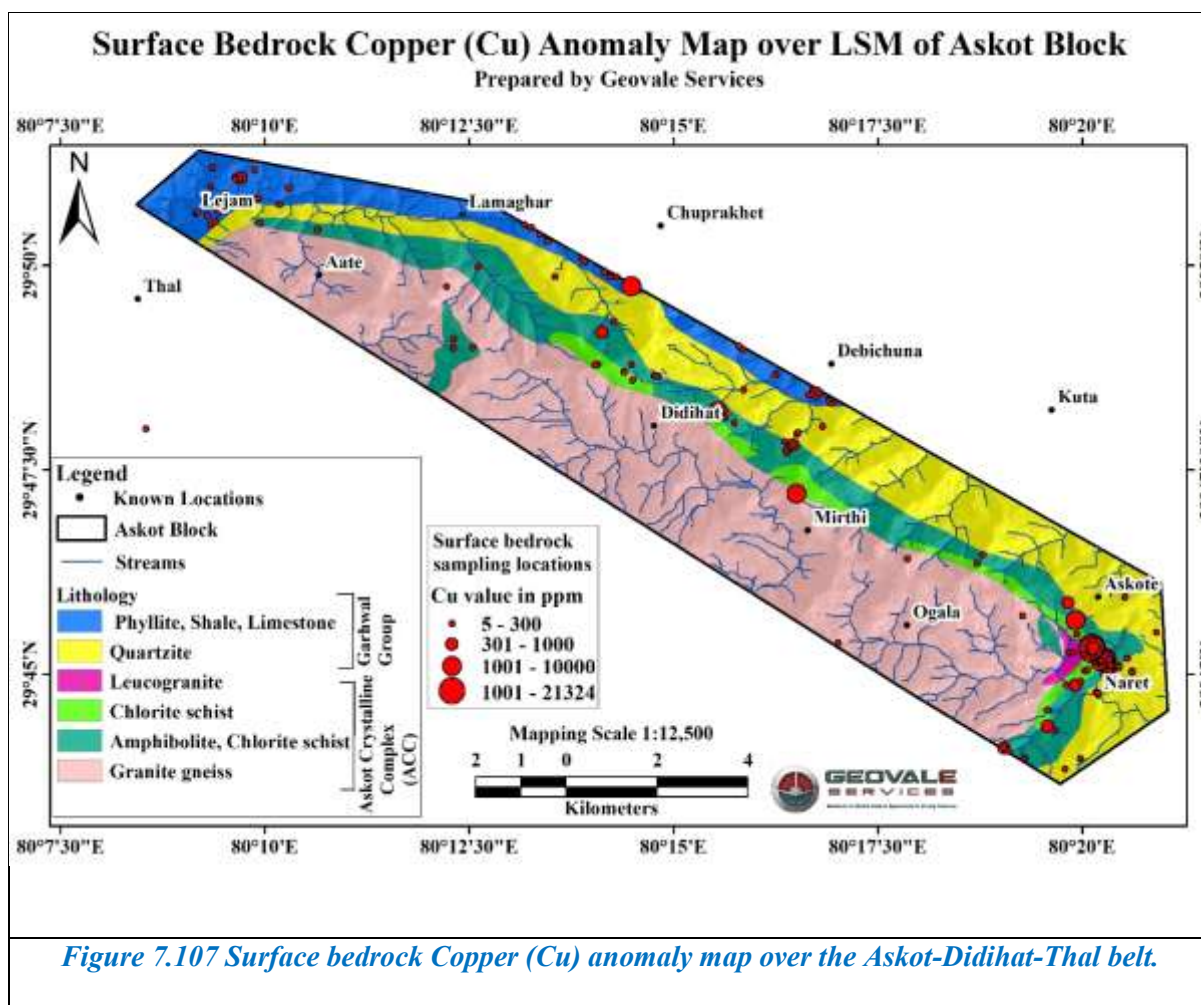


Table 7.3 Shows the a few higher copper anomalies (details in Annexure):

Latitude	Longitude	Cu (ppm)	Enrichment over crust (56 ppm)	Field/Lithological Description
29.7556	80.3354	21,324	380.8×	Altered chlorite schist (gossan zone) with quartz vein; bornite observed; malachite and sulphide stringers present
29.7551	80.3354	13,780	246.1×	Altered chlorite schist associated with reddish quartz vein (gossan zone)
29.7527	80.3373	8,873	158.4×	Altered chlorite schist with azurite, chalcopyrite and arsenopyrite

29.7545	80.3307	7,609	135.9×	Malachite-bearing chlorite schist
29.7555	80.3359	4,891	87.3×	Sulphide-bearing chlorite schist
29.7531	80.3379	3,426	61.2×	Altered garnetiferous chlorite schist with chalcopyrite, sphalerite and pyrite
29.7868	80.2751	2,818	50.3×	Sulphide-bearing chlorite schist
29.7539	80.3371	2,355	42.1×	Garnetiferous chlorite schist
29.7533	80.3383	2,217	39.6×	Altered garnet-bearing chlorite schist with chalcopyrite, sphalerite and sulphosalts
29.7531	80.3379	1,509	26.9×	Brecciated chlorite schist with sphalerite, arsenopyrite and sulphide stringers
29.7528	80.3371	1,338	23.9×	Altered brecciated chlorite schist with azurite and chalcocite
29.8036	80.2591	1,199	21.4×	Amphibolite
29.8285	80.2462	1,182	21.1×	Sulphide bearing rock
29.7536	80.3363	690	12.3×	Weathered brecciated chlorite schist with bornite, chalcopyrite, sphalerite and galena
29.7351	80.3174	668	11.9×	Amphibolite with epidote alteration
29.7395	80.3263	654	11.7×	Amphibolite with limonite alteration
29.7503	80.3386	616	11.0×	Altered garnet-bearing chlorite schist with reddish quartz vein and pyrite
29.7554	80.3357	594	10.6×	Altered chlorite schist associated with quartz vein

The Cu maximum of 21,324 ppm is more than 800 times the crustal reference value and occurs with visible copper sulphides, making this a high-priority proximal sulphide target. Secondary

Cu highs around the Turgoli gossan-black shale corridor and Didihat amphibolite/chlorite-schist zone indicate additional sulphide-bearing structures or stratigraphic horizons that may represent discharge-related mineralised conduits.

7.9.2 Lead (Pb) anomaly map

A total of 137 bedrock samples were analyzed for lead (Pb). Lead concentrations range from 5 ppm to 61,541 ppm, indicating very strong geochemical variability across the sampled area.

The distribution of Pb values indicates that 59 samples contain concentrations at or above 2 times of crustal abundance (≥ 28 ppm). Of these, 29 samples reach or exceed 5 times of crustal abundance (≥ 70 ppm), while 20 samples reach or exceed 10 times of crustal abundance (≥ 140 ppm) (Figure 7.108).

Table 7.4 Summary of Lead (Pb) Geochemistry in Bedrock Samples

Parameter	Value
Total samples analyzed	137
Minimum Pb concentration	5 ppm
Maximum Pb concentration	61,541 ppm
Samples $\geq 2\times$ crustal abundance (≥ 28 ppm)	59
Samples $\geq 5\times$ crustal abundance (≥ 70 ppm)	29
Samples $\geq 10\times$ crustal abundance (≥ 140 ppm)	20

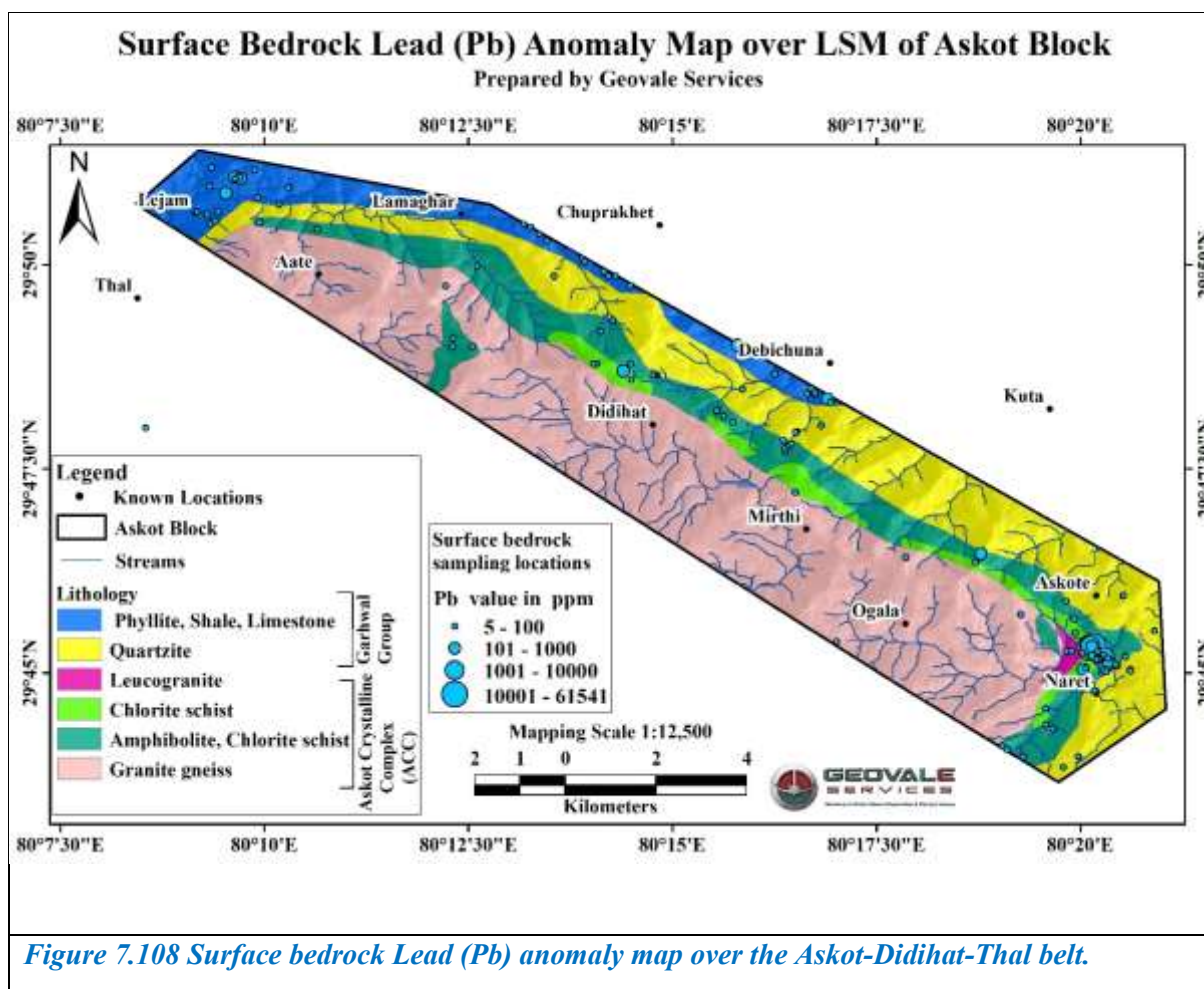


Figure 7.108 Surface bedrock Lead (Pb) anomaly map over the Askot-Didihat-Thal belt.

Table 7.5 Table shows some high anomalous Lead data (details in annexure)

Sample ID	Latitude	Longitude	Pb (ppm)	Enrichment over crust	Field/Lithological Description
106985	29.75508	80.33545	61,541	4884.2×	Sulphide rich Chlorite schist
110254	29.755571	80.336212	26,932	2137.5×	Amphibolite
108705	29.75575	80.3356212	9,839	780.9×	Altererd chlorite schist (gossan zone) associated with quartz vein, bornite is observed.
108728	29.7532	80.3381	9,493	753.4×	Alteration in garnet bearing chlorite schist, with dogtooth qtz vein
108729	29.7533	80.3383	5,823	462.1×	Alteration in garnet bearing chlorite schist, with sulphosalts, chalcopyrite, sphalerite.

Sample ID	Latitude	Longitude	Pb (ppm)	Enrichment over crust	Field/Lithological Description
106987	29.7536	80.3364	665	52.8×	Altered brecciated chlorite schist, chalcocite, bornite, chalcopyrite present.
110261	29.774358	80.313082	627	49.8×	Sulphide rich rock
108722	29.7508	80.3339	552	43.8×	Gossan in amphibolite chlorite schist
108712	29.7531	80.3379	501	39.8×	Altered garnetiferous chlorite schist with chalcopyrite, sphalerite and pyrite
106317	29.84796	80.15879	411	32.6×	Sulfides (Chalcopyrite, Pyrite, Bornite along the fissible plane of Black Shale) in phyllite
106986	29.7536	80.3364	411	32.6×	Altered brecciated chlorite schist, chalcocite, bornite, chalcopyrite present.
108710	29.752824	80.33711	400	31.7×	Azurite along altered chlorite schist, chalcopyrite and arsenopyrite present and augen shaped quartz present
108727	29.7531	80.3379	209	16.6×	Sphalerite and arsenopyrite in brecciated amphibolite chlorite schist. Sulphide stringers garnetiferous chlorite schist gossan like
110259	29.811693	80.239958	183	14.5×	Sulphide rich rock
106309	29.85125	80.16057	179	14.2×	mercury hosted quartz vein
110253	29.747852	80.331929	171	13.6×	Sulphide rich rock
108706	29.75365	80.33644	163	12.9×	Garnet bearing weathered brecciated chlorite schist with dogtooth quartz vein; bornite, chalcopyrite, sphalerite and galena observed
106316	29.80595	80.28162	161	12.8×	Gossan like
108702	29.751963	80.339094	158	12.5×	Brecciated chlorite schist with quartz veins
106984	29.75539	80.33572	133	10.6×	Chlorite schist

Lead enrichment is strongly focused in the main Askot gossan zone. The highest Pb sample reaches 61,541 ppm and is spatially associated with altered chlorite schist, gossanous quartz veins and polymetallic sulphides. The presence of Pb together with Cu, Zn, Sb, Bi and Sn is significant because it suggests a polymetallic sulphide assemblage rather than an isolated copper occurrence. In VMS exploration terms, Pb highs may mark galena-rich massive sulphide, semi-massive sulphide or distal sulphide lenses along the same hydrothermal discharge horizon.

7.9.3 Zinc (Zn) anomaly map

A total of 137 bedrock samples were analyzed for zinc (Zn). Zinc concentrations range from 5 ppm to 4,091 ppm, indicating a comparatively restricted concentration range across the sampled area.

The distribution of Zn values indicates that 31 samples contain concentrations at or above 2 times crustal abundance (≥ 140 ppm). Of these, 14 samples reach or exceed 5 times crustal abundance (≥ 350 ppm), while 10 samples reach or exceed 10 times crustal abundance (≥ 700 ppm) (Figure 7.109).

Table 7.6 Summary of Zinc (Zn) Geochemistry in Bedrock Samples

Parameter	Value
Total samples analyzed	137
Minimum Zn concentration	0 ppm
Maximum Zn concentration	4,091 ppm
Samples $\geq 2\times$ crustal abundance (≥ 150 ppm)	31
Samples $\geq 5\times$ crustal abundance (≥ 375 ppm)	14
Samples $\geq 10\times$ crustal abundance (≥ 750 ppm)	10

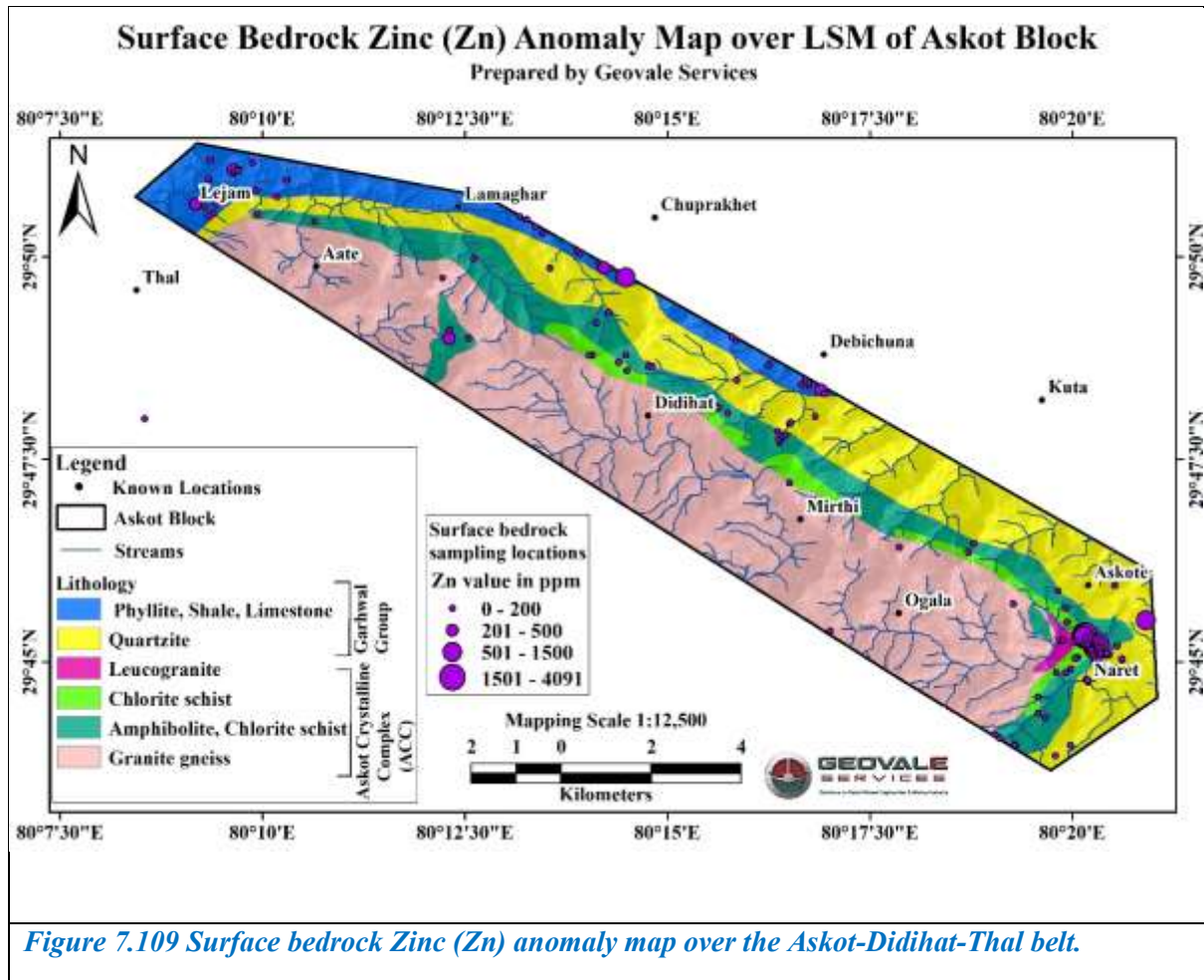


Table 7.7 Table shows high anomalous Zinc data (details in annexure)

Sample ID	Latitude	Longitude	Zn (ppm)	Enrichment over crust	Field/Lithological Description
110254	29.755487	80.335925	4,091	54.5×	Amphibolite
108729	29.7533	80.3383	2,168	28.9×	Alteration in garnet bearing chlorite schist, with sulphosalts, chalcopyrite, sphalerite.
106339	29.852822	80.164643	1,429	19.1×	Sulphide bearing Schist/phyllite (Gossan like sample)(Pyrite and Sulpho salts present))(high sulfur smell)
110265	29.829105	80.241407	1,413	18.8×	Bed Rock
108705	29.75575	80.3356212	1,347	18.0×	Altered chlorite schist associated with quartz vein, bornite is observed.

Sample ID	Latitude	Longitude	Zn (ppm)	Enrichment over crust	Field/Lithological Description
106985	29.75508	80.33545	1,286	17.1×	Chlorite schist, schist is altered associated with reddish colored released quartz vein
106984	29.75539	80.33572	875	11.7×	Chlorite schist
108726	29.7539	80.3371	763	10.2×	Garnetiferous chlorite schist

Zinc anomalies are more dispersed than Cu and Pb but become highly meaningful where they coincide with sphalerite-bearing sample descriptions. The maximum Zn value of 4,091 ppm occurs in bedrock from the Askot polymetallic zone, while additional highs occur in graphite-sulphur rocks and altered garnet-bearing chlorite schist containing sulphosalts, chalcopryrite and sphalerite. Zn should be treated as a key companion vector to Cu-Pb because Zn enrichment can extend away from the hottest feeder part of a VMS system and may outline a broader sulphide-bearing exhalative horizon.

7.9.4 Cobalt (Co) anomaly map

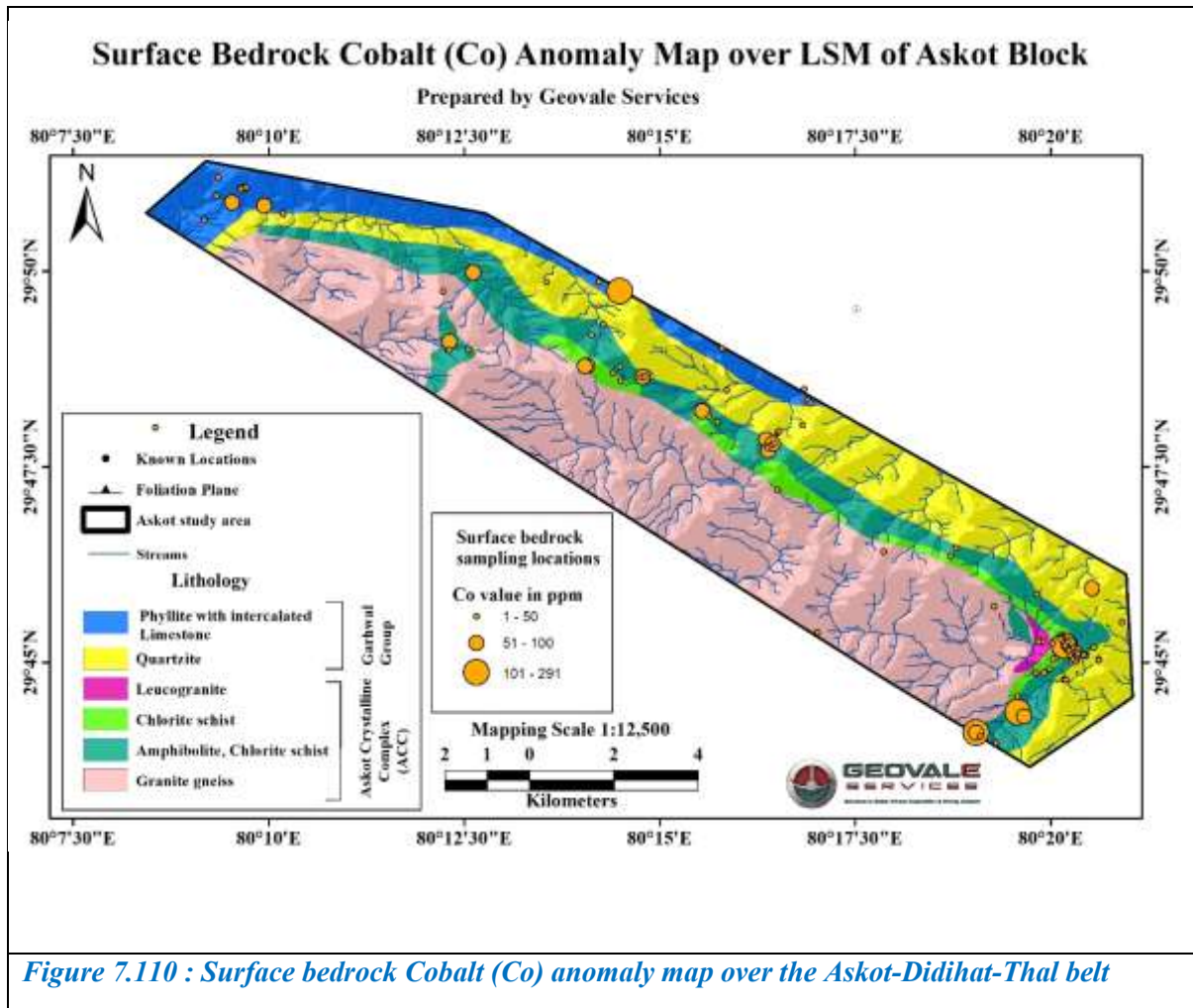
The distribution of Co values indicates that 14 samples contain concentrations at or above 2 times crustal abundance (≥ 50 ppm) (Figure 7.110).

Table 7.8 Table shows high anomalous Cobalt data (details in annexure)

Sample ID	Latitude	Longitude	Co (ppm)	Enrichment over crust	Field/lithological description
106321	29.73510	80.31742	291	24.2x	Brecciated amphibolite
108706	29.75365	80.33644	150	12.5x	Garnet bearing weathered brecciated chlorite schist with dogtooth quartz vein; bornite, chalcopryrite, sphalerite and galena observed.
110265	29.829105	80.241407	135.75	11.3x	Chlorite schist



106333	29.73950	80.32627	116	9.7x	Coarse to medium grain amphibolite with Limonite alteration (sulfur smell)
--------	----------	----------	-----	------	--



Cobalt is enriched in mafic, amphibolitic and sulphur-bearing lithologies. The highest Co value of 291 ppm is recorded south-west of Askot, with additional highs in garnet-bearing chlorite schist, graphite with sulphur and amphibolite. Co enrichment supports a mafic volcanic or mafic hydrothermal component, which is important for recognising footwall alteration and feeder-zone environments in VMS systems. Co should be integrated with Cu, Zn, Tl and Fe-S indicators rather than interpreted as a stand-alone ore vector.

7.9.5 Molybdenum (Mo) anomaly map

A total of 137 bedrock samples were analyzed for molybdenum (Mo) within the Askot regional area. Molybdenum concentrations range from 0.5 ppm to 39.51 ppm, indicating marked geochemical variability across the sampled area.

The distribution of Mo values indicates that 63 samples contain concentrations at or above 2 times crustal abundance (≥ 2.4 ppm). Of these, 17 samples reach or exceed 5 times crustal abundance (≥ 6 ppm), while 11 samples reach or exceed 10 times crustal abundance (≥ 12 ppm) (Figure 7.111).

Table 7.9 Molybdenum (Mo) Geochemistry in Bedrock Samples

Parameter	Value
Total samples analyzed	137
Minimum Mo concentration	0.5 ppm
Maximum Mo concentration	39.51 ppm
Samples $\geq 2\times$ crustal abundance (≥ 2.4 ppm)	63
Samples $\geq 5\times$ crustal abundance (≥ 6 ppm)	17
Samples $\geq 10\times$ crustal abundance (≥ 12 ppm)	11

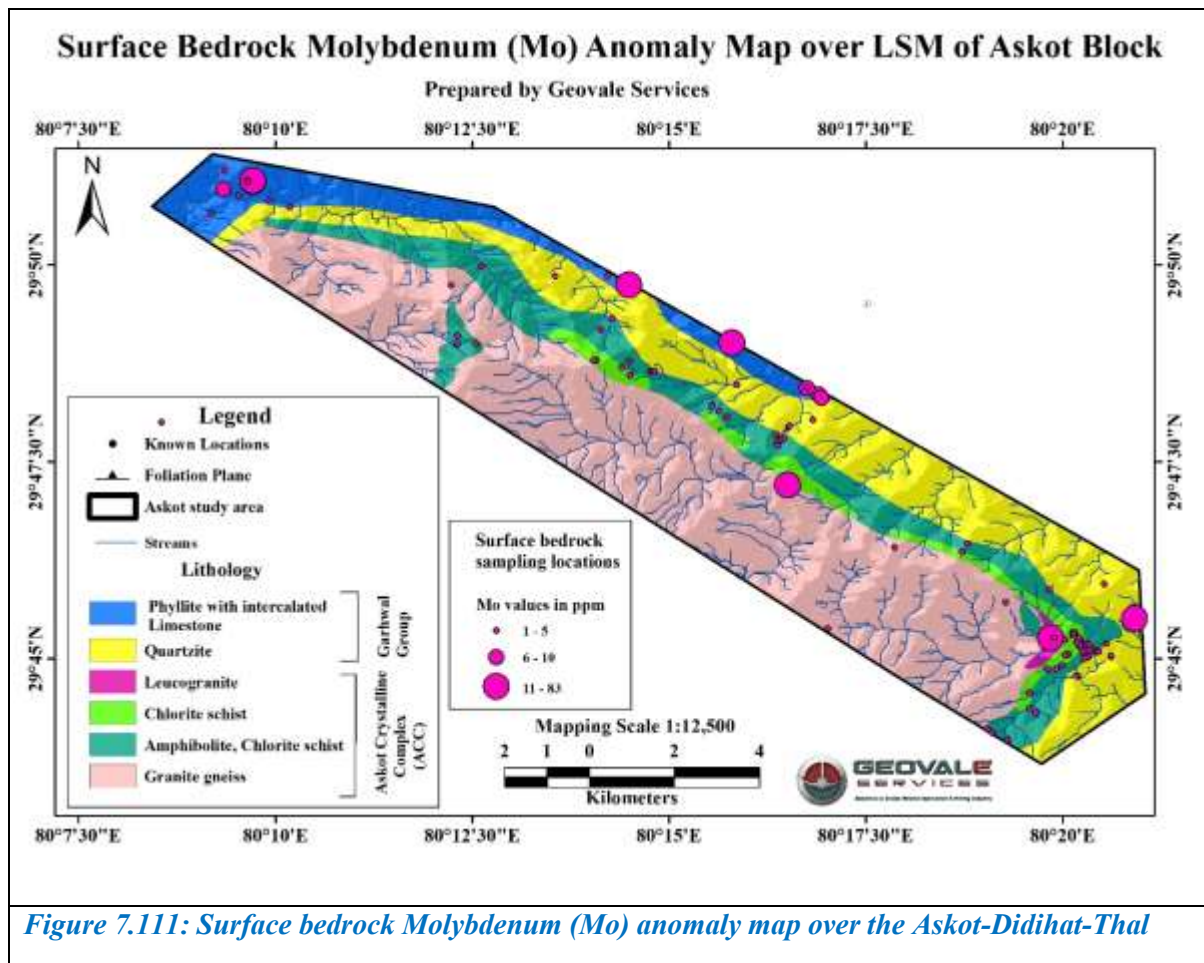


Figure 7.111: Surface bedrock Molybdenum (Mo) anomaly map over the Askot-Didihat-Thal

Table 7.10 Table shows a few high anomalous Molybdenite data (details in annexure)

Sample ID	Latitude	Longitude	Mo (ppm)	Enrichment over crust	Field/Lithological Description
110265	29.829105	80.241407	39.51	39.5×	Bed Rock
106307	29.85106	80.16179	22	22.0×	Blackish red goassan
108748	29.758586	80.348523	21.27	21.3×	Bed Rock
106311	29.84426	80.15725	21	21.0×	Sulphide rich mafic
106339	29.852822	80.164643	21	21.0×	Sulphide bearing Schist/phyllite (Gossan like sample) (Pyrite and Sulpho salts present)) (high sulfur smell)
106340	29.849158	80.171564	19	19.0×	Sulphide bearing Schist/phyllite, reddish coloured (Gossan like sample) (Pyrite and Sulpho



Sample ID	Latitude	Longitude	Mo (ppm)	Enrichment over crust	Field/Lithological Description
					salts present) (high sulfur smell)
106342	29.85123	80.16178	18	18.0×	Turgoli Gossan (with covellite and other sulphide minerals)
108731	29.7545	80.3307	12	12.0×	Malachite in chl schist
108746	29.81694	80.26327	10.97	11.0×	Gossan in black shale
110262	29.786828	80.275083	10.39	10.4×	Bed Rock

Molybdenum shows strong enrichment in graphite with sulphur, sulphide-rich mafic rocks, blackish-red gossan and selected bedrock sites. Mo highs in reduced carbonaceous and sulphidic rocks may indicate hydrothermal input into a reducing depositional environment. For VMS discharge-zone targeting, Mo is most useful where it coincides with black shale, graphite, gossan, Cu-Pb-Zn enrichment, Te-Sb-Bi pathfinders and sulphide stringers.

7.9.6 Tin (Sn) anomaly map

A total of 137 bedrock samples were analyzed for tin (Sn) within the Askot regional area. Tin concentrations range from 0.5 ppm to 275 ppm, indicating very strong geochemical variability across the sampled area.

The distribution of Sn values indicates that 52 samples contain concentrations at or above 2 times crustal abundance (≥ 4.6 ppm). Of these, 34 samples reach or exceed 5 times crustal abundance (≥ 11.5 ppm), while 17 samples reach or exceed 10 times crustal abundance (≥ 23 ppm). The 10× population defines a focused group of strongly anomalous samples requiring follow-up (Figure 7.112).

Table 7.11 Summary of Tin (Sn) Geochemistry in Bedrock Samples

Parameter	Value
Total samples analyzed	137
Minimum Sn concentration	0.5 ppm
Maximum Sn concentration	275 ppm
Samples $\geq 2\times$ crustal abundance (≥ 4.6 ppm)	52
Samples $\geq 5\times$ crustal abundance (≥ 11.5 ppm)	34



Parameter	Value
Samples $\geq 10\times$ crustal abundance (≥ 23 ppm)	17

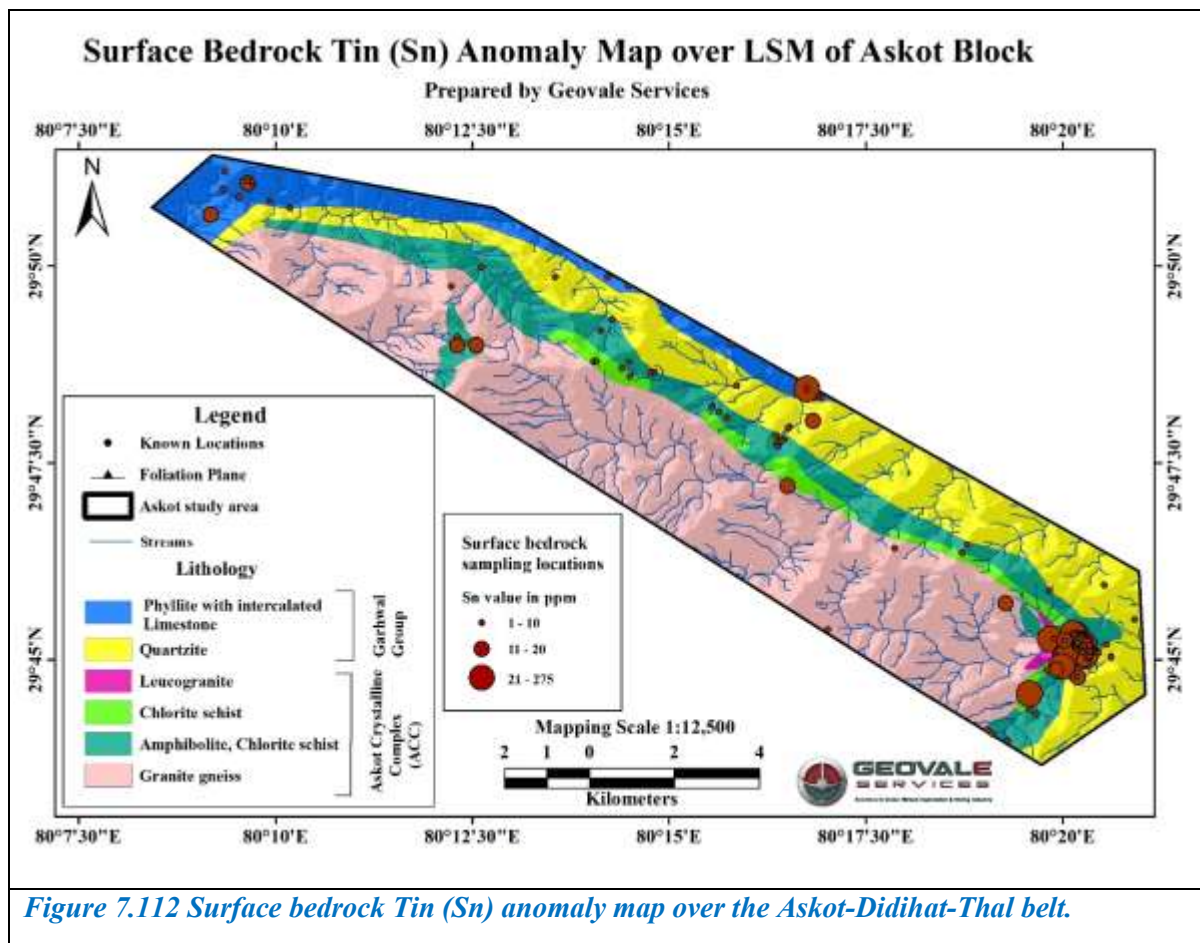


Table 7.12 Table shows top 20 strongly anomalous sn samples ($\geq 10\times$ crustal abundance)

Sample ID	Latitude	Longitude	Sn (ppm)	Enrichment over crust	Field/Lithological Description
106985	29.75508	80.33545	275	164.7 $\times$	Chlorite schist
108731	29.7545	80.3307	127	76.0 $\times$	Malachite in chlorite schist
110254	29.755487	80.335925	124	74.7 $\times$	Amphibolite
108720	29.7508	80.338	60	35.9 $\times$	Brecciated garnet bearing chlorite schist with high sulphides.
108705	29.75575	80.3356212	57	34.1 $\times$	Altererd chlorite schist



Sample ID	Latitude	Longitude	Sn (ppm)	Enrichment over crust	Field/Lithological Description
108718	29.7528	80.3367	54	32.3×	Brecciated amphibolite chlorite schist associated with quartz vein
106987	29.7536	80.3364	47	28.1×	Altered brecciated chlorite schist, chalcocite, bornite, chalcopyrite present
108727	29.7531	80.3379	43	25.7×	Sphalerite and arsenopyrite in brecciated amphibolite chlorite schist. Sulphide stringers garnetiferous chlorite schist
108732	29.7428	80.3263	41	24.6×	Tourmaline in granite
108707	29.7531	80.3368	36	21.6×	Brecciated amphibolite chlorite schist with quartz vein.
108722	29.7508	80.3339	36	21.6×	Gossan in amphibolite chlorite schist.
108709	29.752824	80.33711	28	16.8×	Brecciated amphibolite chlorite schist, chalcopyrite, bornite and arsenopyrite present
106337	29.807009	80.277509	27	16.2×	Chalcopyrite in Amphibolitic boulder associated with weathered quartz vein (sulfur smell).
108721	29.751	80.3345	27	16.2×	Brecciated dogtooth quartz vein in amphibolite
108723	29.7486	80.3331	27	16.2×	Brecciated amphibolite associated with altered dogtooth quartz vein.
106306	29.80056	80.28045	20	12.0×	Pyrite bearing limestone.
108708	29.753	80.337	20	12.0×	Brecciated amphibolite chlorite schist with dogtooth quartz vein, arsenopyrite and sphalerite present, augen shaped quartz vein present.
110253	29.747852	80.331929	19.72	11.8×	Amphibolite



Sample ID	Latitude	Longitude	Sn (ppm)	Enrichment over crust	Field/Lithological Description
108726	29.7539	80.3371	18	10.8×	Garnetiferous chlorite schist gossan like.
106302	29.85089	80.16073	17	10.2×	Gossan in Carb Phyllite

Tin enrichment is strongest in the Askot gossan/chlorite-schist domain, particularly in samples with altered chlorite schist, gossan, malachite and polymetallic sulphides. Although Sn can have a granitic or evolved hydrothermal association, its coincidence with Cu-Pb-Sb-Bi-Zn in the main sulphide cluster strengthens the interpretation of a high-temperature hydrothermal component. Tin should be considered a supporting pathfinder for the hotter and more structurally focused part of the system.

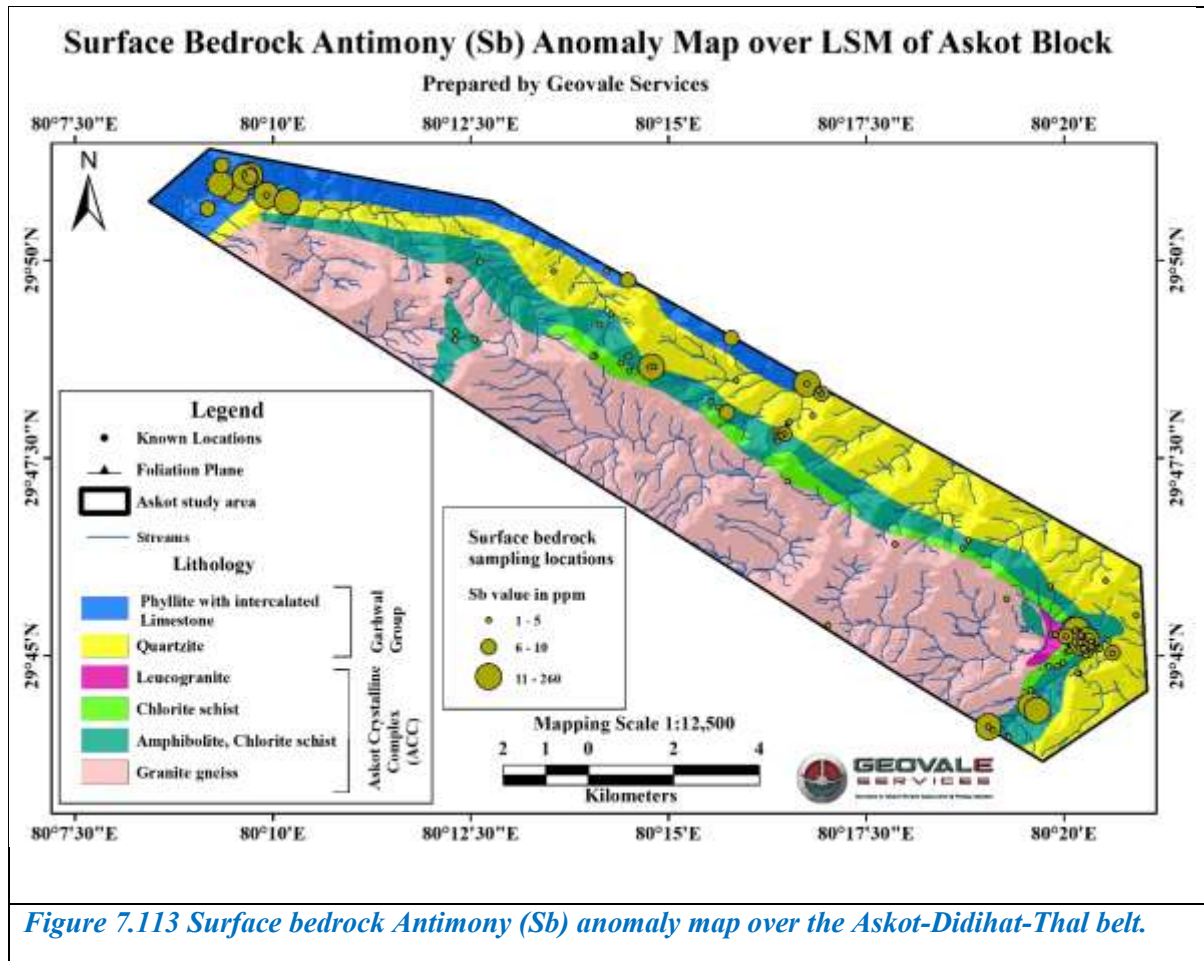
7.9.7 Antimony (Sb) anomaly map

A total of 137 bedrock samples were analyzed for antimony (Sb) within the Askot regional area. Antimony concentrations range from 0.5 ppm to 260 ppm, indicating very strong geochemical variability across the sampled area.

The distribution of Sb values indicates that 136 samples contain concentrations at or above 2 times crustal abundance (≥ 0.4 ppm). Of these, 84 samples reach or exceed 5 times crustal abundance (≥ 1 ppm), while 76 samples reach or exceed 10 times crustal abundance (≥ 2 ppm). This indicates widespread and strong enrichment with high exploration significance (Figure 7.113).

Table 7.13 Summary of Antimony (Sb) Geochemistry in Bedrock Samples

Parameter	Value
Total samples analyzed	137
Minimum Sb concentration	0.5 ppm
Maximum Sb concentration	260 ppm
Samples $\geq 2\times$ crustal abundance (≥ 0.4 ppm)	136
Samples $\geq 5\times$ crustal abundance (≥ 1 ppm)	84
Samples $\geq 10\times$ crustal abundance (≥ 2 ppm)	76



The Antimony map shows bedrock values ranging from 0.5 ppm to 260 ppm, compared with a reference crustal abundance of about 0.2 ppm. In the dataset, 124 samples exceed the crustal reference value, 124 samples exceed two times the crustal value, and 69 samples exceed ten times the crustal value. This indicates that Antimony is not only locally enriched but also spatially organised into hydrothermal and lithological anomaly domains.

Table 7.14 Table shows high anomalous Antimony data (details in annexure)

Sample ID	Latitude	Longitude	Sb (ppm)	Enrichment over crust	Field/lithological description
106985	29.75510	80.33540	260	1300.0x	Chlorite schist is altered associated with reddish colored quartz vein
108706	29.75365	80.33644	155	775.0x	Garnet bearing weathered brecciated chlorite schist with dogtooth quartz vein; bornite,

					chalcopryrite, sphalerite and galena observed
108712	29.75310	80.33790	89	445.0x	Altered garnetiferous chlorite schist with chalcopryrite, sphalerite and pyrite
108705	29.75575	80.3356212	58	290.0x	Altererd chlorite schist associated with quartz vein, bornite is observed.
106342	29.85123	80.16178	52	260.0x	Turgoli Gossan (with covellite and other sulphide minerals)

Antimony values are above the crustal reference because the analytical reporting floor is higher than the very low natural crustal abundance. The most meaningful Sb anomalies are therefore the high-amplitude and spatially clustered values. The strongest Sb values occur in the Askot altered chlorite-schist/gossan zone and the Turgoli gossan-black shale corridor. Sb is important because it commonly accompanies sulphosalts, galena-bearing polymetallic mineralisation and late hydrothermal sulphide activity. Its association with Cu-Pb-Zn-Bi-Te makes it a useful VMS pathfinder.

7.9.8 Bismuth (Bi) anomaly map

A total of 137 bedrock samples were analyzed for bismuth (Bi) within the Askot regional area. Bismuth concentrations range from 0.5 ppm to 981 ppm, indicating very strong geochemical variability across the sampled area. The supplied crustal abundance of 0.027 ppm was used as the reference value for assessing enrichment.

The distribution of Bi values indicates that 137 samples contain concentrations at or above 2 times crustal abundance (≥ 0.017 ppm). Of these, 137 samples reach or exceed 5 times crustal abundance (≥ 0.0425 ppm), while 137 samples reach or exceed 10 times crustal abundance (≥ 0.085 ppm). This indicates widespread and strong enrichment with high exploration significance (Figure 7.114).

Table 7.15 Summary of Bismuth (Bi) Geochemistry in Bedrock Samples

Parameter	Value
Total samples analyzed	137
Minimum Bi concentration	0.5 ppm
Maximum Bi concentration	981 ppm
Samples $\geq 2\times$ crustal abundance (≥ 0.054 ppm)	137
Samples $\geq 5\times$ crustal abundance (≥ 0.135 ppm)	137
Samples $\geq 10\times$ crustal abundance (≥ 0.27 ppm)	137

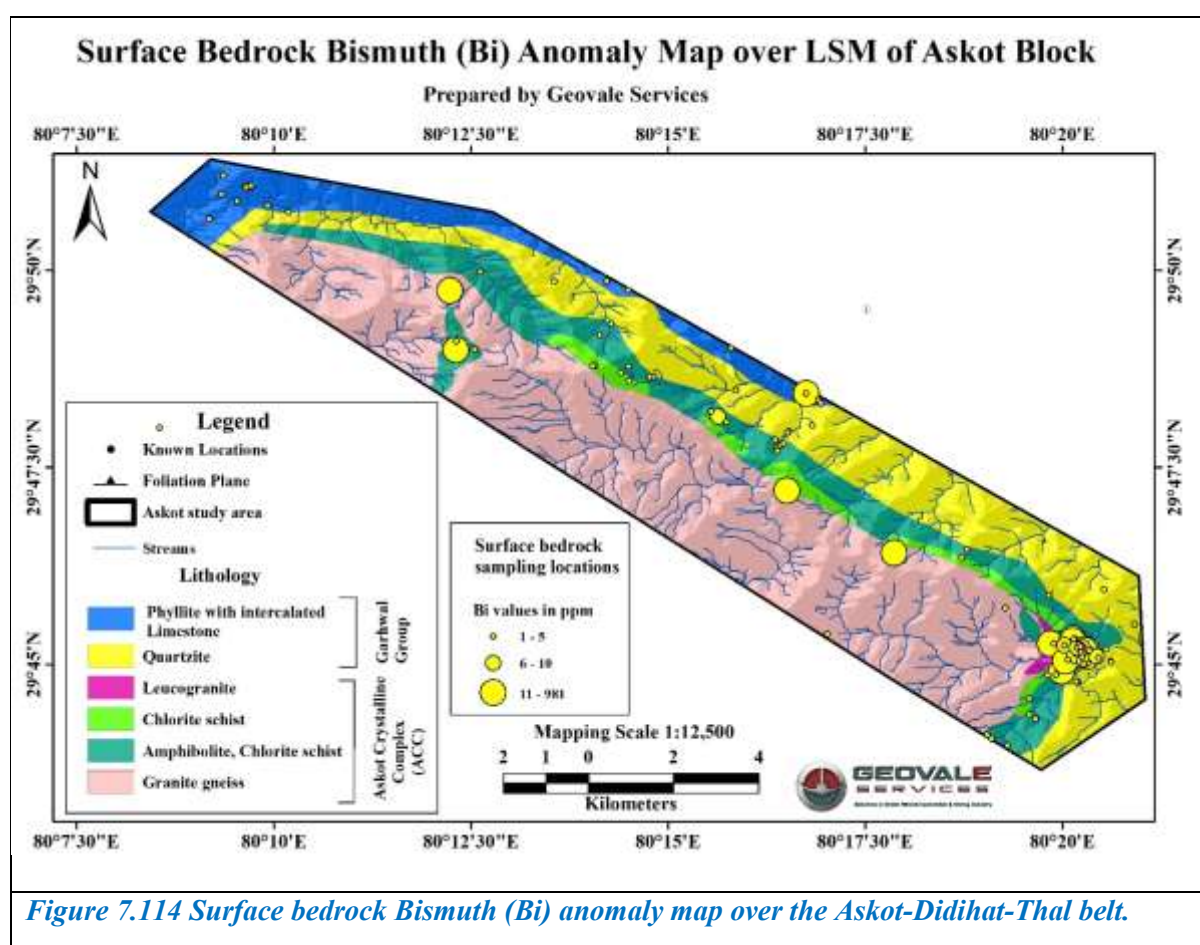


Table 7.16 Table shows high anomalous Antimony data (details in annexure)

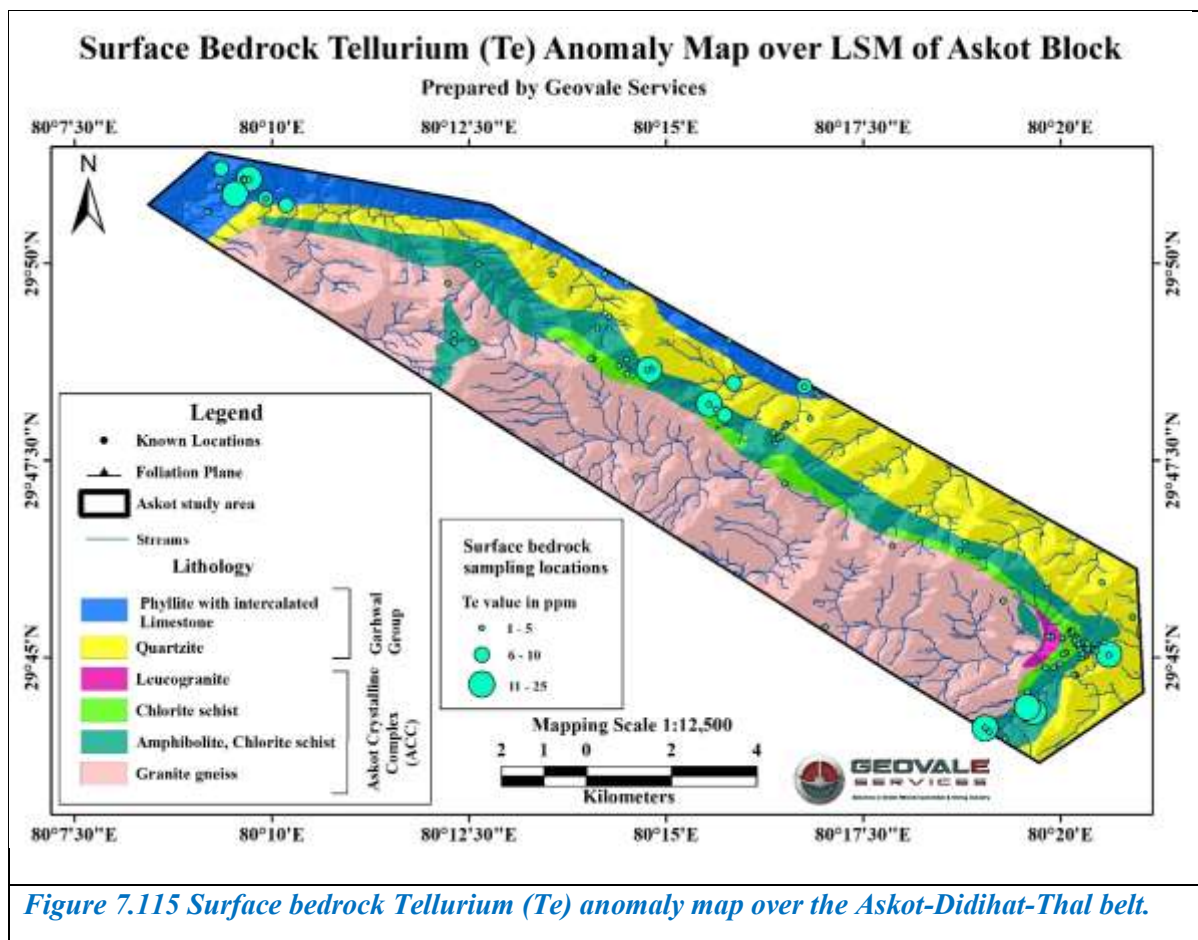
Sample ID	Latitude	Longitude	Bi (ppm)	Enrichment over crust	Field/lithological description
-----------	----------	-----------	----------	-----------------------	--------------------------------

108728	29.75320	80.33810	981	6131.2x	Alteration in garnet bearing chlorite schist, with dogtooth qtz vein
108731	29.75450	80.33070	240	1500.0x	Malachite in chl schist
106337	29.807009	80.277509	160	1000.0x	Chalcopyrite in Amphibolite associated with weathered quartz vein
108729	29.75330	80.33830	135	843.8x	Alteration in garnet bearing chlorite schist, with sulphosalts, chalcopyrite, sphalerite.
108705	29.75575	80.3356212	123	768.8x	Altered chlorite schist associated with quartz vein, bornite is observed.

Bismuth shows very high enrichment relative to crustal abundance, but interpretation must account for analytical detection limits. The most significant Bi highs occur in altered garnet-bearing chlorite schist, malachite-bearing chlorite schist, chalcopyrite-bearing amphibolitic boulder and polymetallic sulphide samples. Bi enrichment together with Cu, Pb, Sb, Sn and Te suggest high-temperature sulphide/sulphosalt input and helps prioritise the Askot gossan zone as a proximal hydrothermal target.



7.9.9 Tellurium (Te) anomaly map



The Tellurium map shows bedrock values ranging from 0.5 ppm to 25 ppm, compared with a reference crustal abundance of about 0.001 ppm. In the dataset, 124 samples exceed the crustal reference value, 124 samples exceed two times the crustal value, and 124 samples exceed ten times the crustal value. This indicates that Tellurium is not only locally enriched but also spatially organised into hydrothermal and lithological anomaly domains (Figure 7.115).

Table 7.17 Table show high anomalous Antimony data (details in annexure)

Sample ID	Latitude	Longitude	Te (ppm)	Enrichment over crust	Field/lithological description
106342	29.85123	80.16178	25	25000.0x	Turgoli Gossan (with covellite and other sulphide minerals)
106317	29.84796	80.15879	24	24000.0x	Sulfides along the fissible plane of carb phyllite

106347	29.75069	80.34352	22	22000.0x	Amphibolite with Anthophyllite/gedrite types (Mg rich amphiboles)
106332	29.73857	80.32767	19	19000.0x	Coarse to medium grain amphibolite associated with yellowish brown colored weathered quartz vein with Limonite alteration (sulfur smell)

Tellurium has an extremely low crustal abundance, so all reported values require cautious interpretation with respect to detection limits. The strongest and most geologically meaningful Te values occur in the Turgoli gossan, graphite with sulphur, black shale sulphide stringers and amphibolite/quartz-vein samples. Te is useful where it overlaps with Cu, Sb, Bi, Pb and gossanous sulphides, and it reinforces the importance of the Turgoli black shale-gossan corridor and selected amphibolite-hosted sulphide occurrences.

7.9.10 Thallium (Tl) anomaly map

The Thallium map shows bedrock values ranging from 0.5 ppm to 123 ppm, compared with a reference crustal abundance of about 0.55 ppm. In the dataset, 95 samples exceed the crustal reference value, 52 samples exceed two times the crustal value, and 26 samples exceed ten times the crustal value. This indicates that Thallium is not only locally enriched but also spatially organised into hydrothermal and lithological anomaly domains (Figure 7.116).

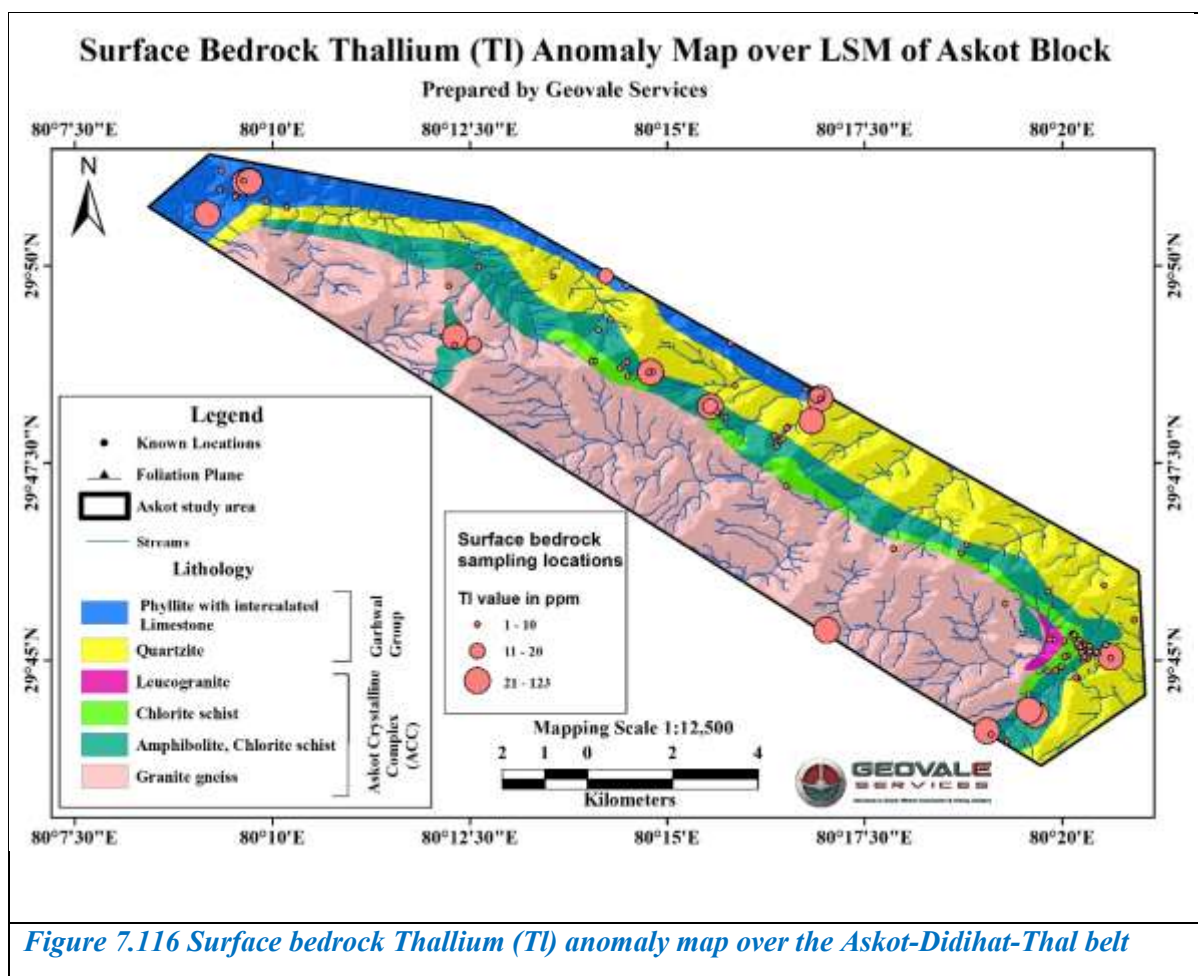


Table 7.18 Table shows high anomalous Antimony data (details in annexure)

Sample ID	Latitude	Longitude	Tl (ppm)	Enrichment over crust	Field/lithological description
106326	29.75641	80.28360	123	223.6x	Sulfur rich Amphibolite
106321	29.73510	80.31742	100	181.8x	Brecciated amphibolite
106327	29.81836	80.20519	99	180.0x	Coarse grain amphibolite with Sulfur
106330	29.73510	80.31742	69	125.5x	Coarse grain amphibolite
106302	29.85089	80.16073	52	94.5x	Carb phyllite

Thallium enrichment is concentrated in sulphur-rich amphibolite rocks, black shale and samples south-west of Askot. Tl commonly behaves as a pathfinder in reduced sedimentary and hydrothermal systems, and its association with sulphur-bearing amphibolite and black shale is relevant to VMS discharge-zone targeting. Tl highs should be used to identify reduced

or altered stratigraphic levels that may lie along the exhalative horizon or near mafic volcanic footwall rocks.

7.9.11 Tungsten (W) anomaly map

A total of 137 bedrock samples were analyzed for tungsten (W) within the Askot regional dataset. Tungsten concentrations range from 0.5 ppm to 589 ppm, indicating very strong geochemical variability across the sampled area.

The distribution of W values indicates that 76 samples contain concentrations at or above 2 times crustal abundance (≥ 2.5 ppm). Of these, 46 samples reach or exceed 5 times crustal abundance (≥ 6.25 ppm), while 33 samples reach or exceed 10 $\times$ crustal abundance (≥ 12.5 ppm). The 10 times population defines a focused group of strongly anomalous samples requiring follow-up (Figure 7.117).

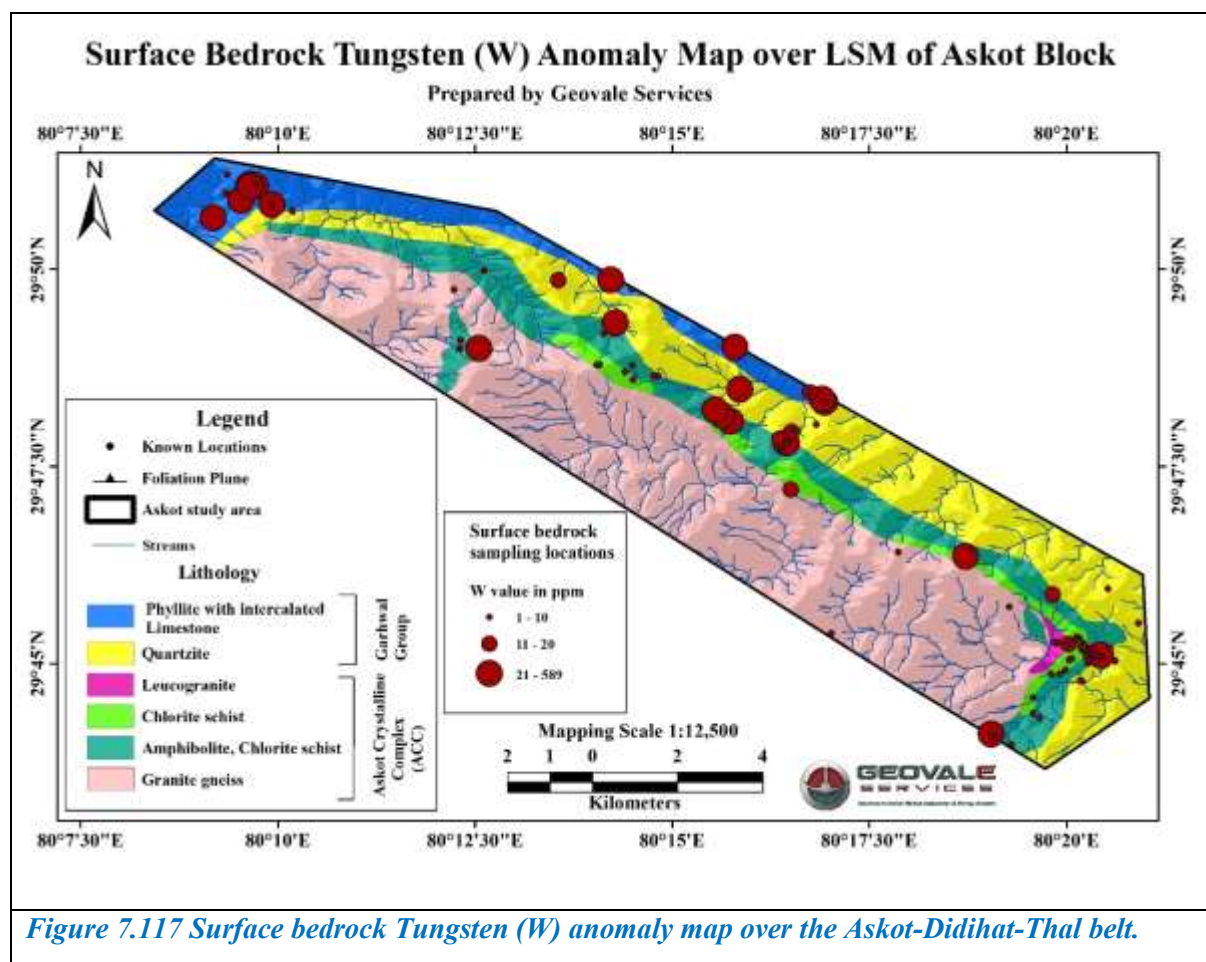


Figure 7.117 Surface bedrock Tungsten (W) anomaly map over the Askot-Didihat-Thal belt.

The Tungsten map shows bedrock values ranging from 0.5 ppm to 589 ppm, compared with a reference crustal abundance of about 1.9 ppm. In the dataset, 74 samples exceed the crustal reference value, 64 samples exceed two times the crustal value, and 26 samples exceed ten

times the crustal value. This indicates that Tungsten is not only locally enriched but also spatially organised into hydrothermal and lithological anomaly domains.

Table 7.19 Table shows high anomalous Tungsten data (details in annexure)

Sample ID	Latitude	Longitude	W (ppm)	Enrichment over crust	Field/lithological description
106318	29.847029	80.165324	589	310.0x	sulphide rich quartz vein and sulphide stringers in Carb phyllite
106321	29.73510	80.31742	288	151.6x	Brecciated amphibolite
106309	29.85125	80.16057	284	149.5x	Murcury hosted quartz vein in phyllite
106315	29.80527	80.28225	277	145.8x	Carb phyllite associated with highly weathered quartz vein and Sulfide stringers
106329	29.82200	80.23790	236	124.2x	Weathered reddish brown quartz vein in chl schist

Tungsten anomalies are widespread and strongest in sulphide-rich quartz veins, mercury-hosted quartz vein, black shale with sulphide stringers and altered chlorite schist. W is not a primary VMS commodity, but in this setting, it may reflect hydrothermal quartz-vein overprint, evolved fluid input or structurally focused fluid flow. W should therefore be used as a supporting pathfinder, especially where it coincides with Mo, Sn, Bi, Sb, Te and sulphide-bearing quartz veins.

7.10 Statistical analysis of surface geochemical data and Interpretation of anomalous zones

The histogram-based statistical evaluation of stream-sediment geochemical data from the Askot regional block reveals that most ore-related and hydrothermal pathfinder elements display strong positive skewness, characterized by a dominant background population and a distinct anomalous high-value tail. This distribution pattern indicates that elemental concentrations are mainly controlled by regional lithological background, while a smaller population of samples represents localized enrichment associated with mineralized zones, hydrothermal alteration, and sulphide-bearing source areas.



The stream-sediment geochemical dataset from the Askot block is dominated by **strongly positively skewed distributions**, indicating that most elements occur at background concentrations with a limited number of highly anomalous samples representing discrete mineralized catchments. The most significant anomalies are observed in the **Cu–Pb–Zn association**, which forms the strongest geochemical signature of polymetallic sulphide mineralization and is consistent with the known VMS-style mineralization of the area. Pathfinder elements such as **Bi, Mo, Sb, Sn, Te, Tl, and W** exhibit localized enrichment, indicating hydrothermal fluid activity and, in some locations, evolved or intrusive-related mineralizing processes. **Ba** anomalies may represent exhalative barite halos commonly associated with VMS systems, while **Cd** supports Zn-rich sulphide mineralization through its close association with sphalerite (Figure 7.118 to 7.153).

Lithology-sensitive elements including **Co, Ni, Cr, V, Ti, Zr, Al, Ca, and Sr** primarily reflect variations in source-rock composition, heavy-mineral concentration, and sediment provenance, although **Fe** also serves as an important indicator of sulphide mineralization and hydrothermal alteration when spatially associated with Cu, Pb, and Zn. Overall, the multi-element geochemical patterns distinguish hydrothermal mineralization from lithological background effects and highlight several priority catchments for detailed follow-up exploration targeting polymetallic sulphide mineralization within the Askot block.

The following histograms and statistical plots are presented separately from the analytical interpretation. Two figures are arranged side by side for compact comparison.

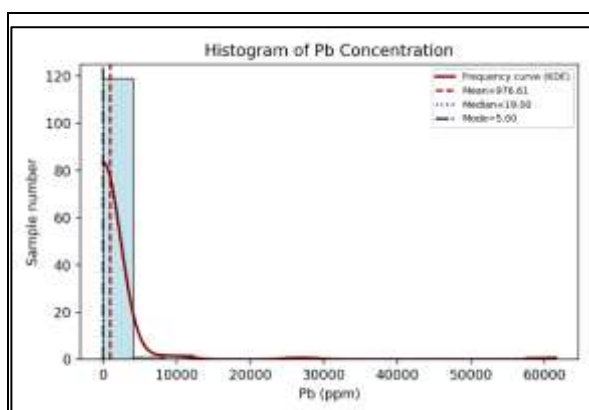


Figure 7.118 Histogram of Pb concentration with frequency curve. Mean=976.61, Median=19.00, Mode=5.00, Skewness=8.66, Kurtosis=81.25. The distribution is positively skewed, indicating

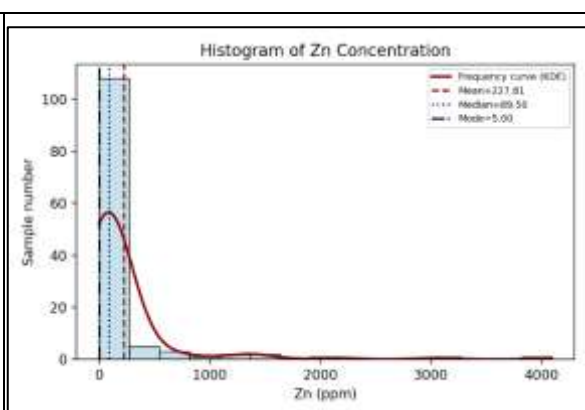


Figure 7.119 Histogram of Zn concentration with frequency curve. Mean=227.81, Median=89.50, Mode=5.00, Skewness=4.97, Kurtosis=28.36. The distribution is positively



geochemical variability and potential anomalous populations relevant to VMS mineralization.

skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

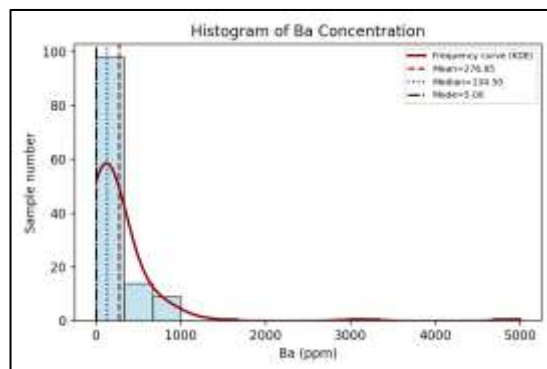
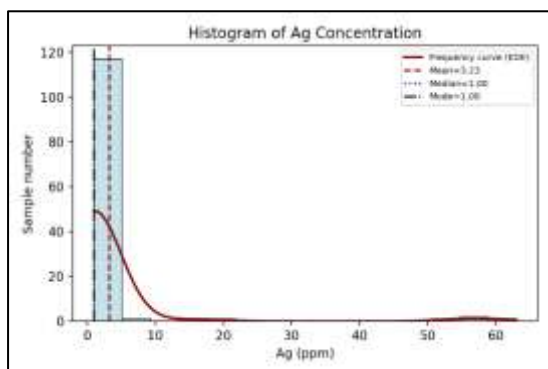


Figure 7.120 Histogram of Ag concentration with frequency curve. Mean=3.23, Median=1.00, Mode=1.00, Skewness=5.07, Kurtosis=25.01. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

Figure 7.121 Histogram of Ba concentration with frequency curve. Mean=276.85, Median=134.50, Mode=5.00, Skewness=6.20, Kurtosis=46.66. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

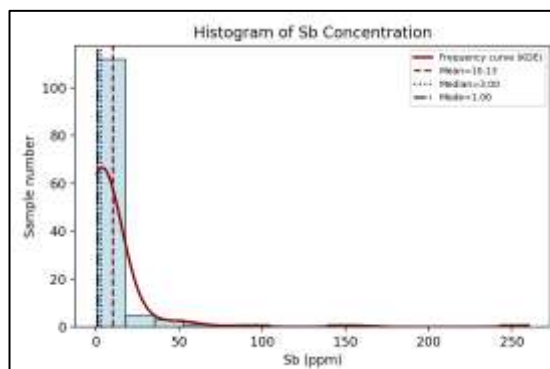
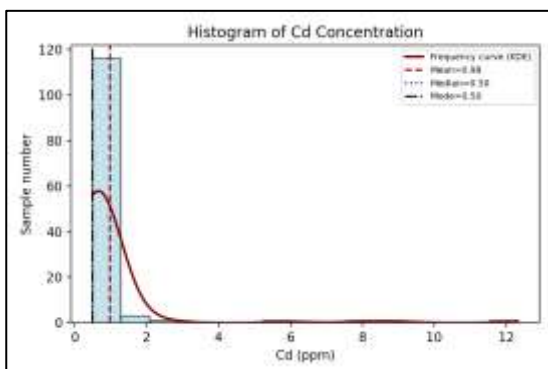


Figure 7.122 Histogram of Cd concentration with frequency curve. Mean=0.98, Median=0.50, Mode=0.50, Skewness=5.59, Kurtosis=33.45. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization.

Figure 7.123 Figure: Histogram of Sb concentration with frequency curve. Mean=10.13, Median=3.00, Mode=1.00, Skewness=6.55, Kurtosis=49.72. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization.

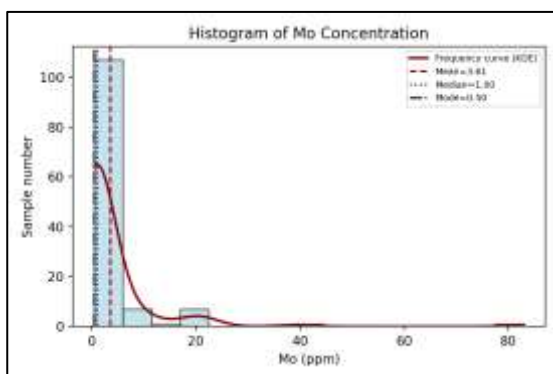


Figure 7.124 Histogram of Mo concentration with frequency curve. Mean=3.61, Median=1.00, Mode=0.50, Skewness=5.96, Kurtosis=44.94. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization.

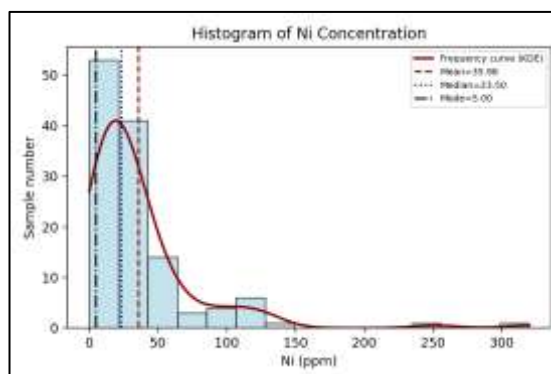


Figure 7.125 Histogram of Ni concentration with frequency curve. Mean=35.98, Median=23.50, Mode=5.00, Skewness=3.61, Kurtosis=17.71. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

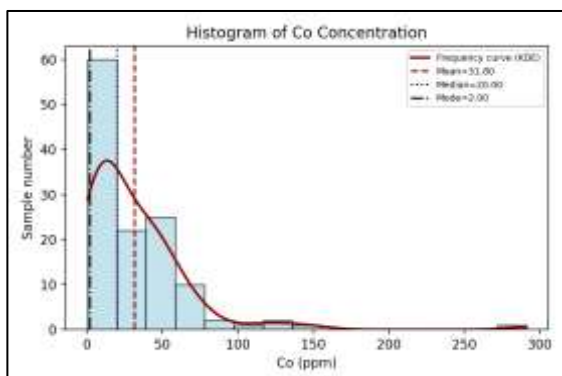


Figure 7.126 Histogram of Co concentration with frequency curve. Mean=31.80, Median=20.00, Mode=2.00, Skewness=3.62, Kurtosis=20.74. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

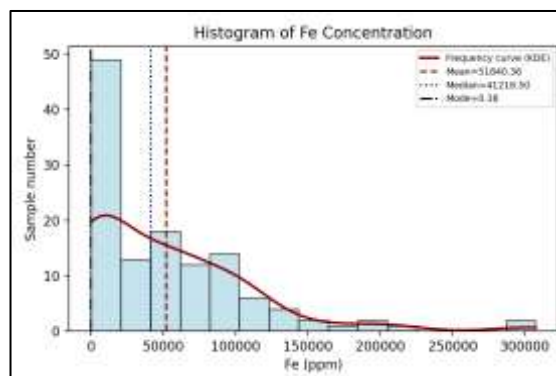


Figure 7.127 Histogram of Fe concentration with frequency curve. Mean=51840.36, Median=41218.50, Mode=0.38, Skewness=1.76, Kurtosis=4.34. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

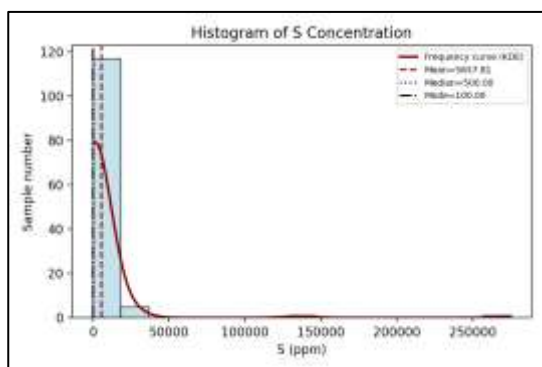


Figure 7.128 Histogram of S concentration with frequency curve. Mean=5657.81, Median=500.00, Mode=100.00, Skewness=8.51, Kurtosis=78.15. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

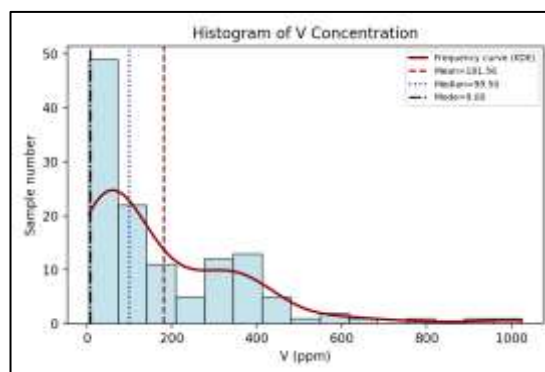


Figure 7.129 Histogram of V concentration with frequency curve. Mean=181.56, Median=99.50, Mode=9.00, Skewness=1.79, Kurtosis=4.12. The distribution is positively skewed, indicating geochemical variability and potential anomalous populations relevant to VMS mineralization

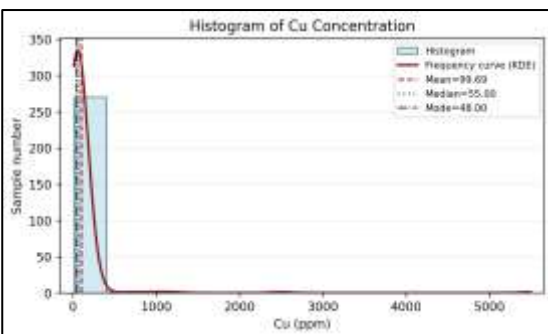


Figure 7.130 Histogram of Cu concentration with frequency curve. Mean=99.69, Median=55.00, Mode=48.00, Skewness=12.34, Kurtosis=168.59.

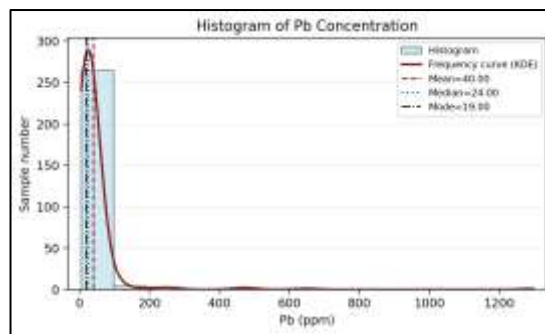


Figure 7.131 Histogram of Pb concentration with frequency curve. Mean=40.00, Median=24.00, Mode=19.00, Skewness=9.78, Kurtosis=113.02.

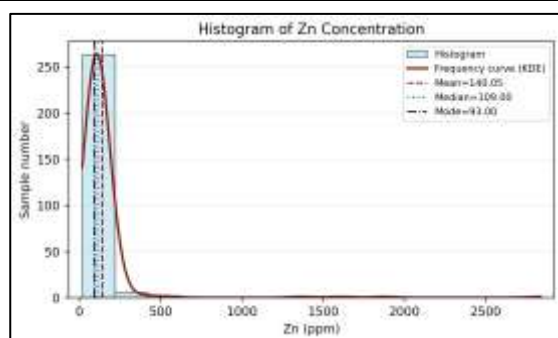


Figure 7.132 Histogram of Zn concentration with frequency curve. Mean=140.05, Median=109.00, Mode=93.00, Skewness=8.79, Kurtosis=85.40.

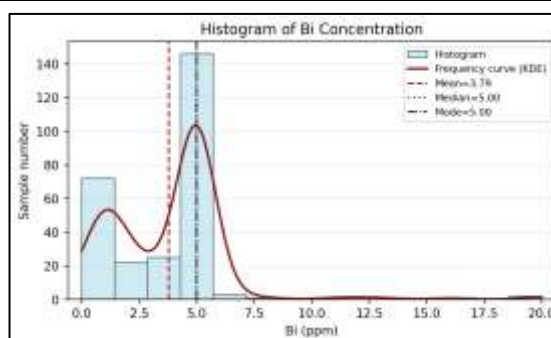


Figure 7.133 Histogram of Bi concentration with frequency curve. Mean=3.79, Median=5.00, Mode=5.00, Skewness=2.19, Kurtosis=11.89.

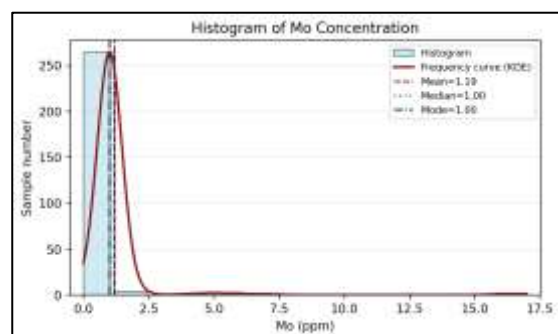


Figure 7.134 Histogram of Mo concentration with frequency curve. Mean=1.19, Median=1.00, Mode=1.00, Skewness=9.04, Kurtosis=89.82.

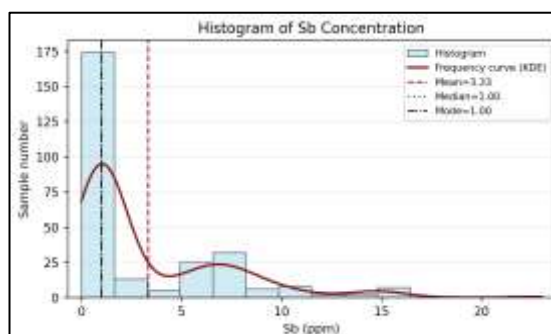


Figure 7.135 Histogram of Sb concentration with frequency curve. Mean=3.33, Median=1.00, Mode=1.00, Skewness=1.77, Kurtosis=3.31.

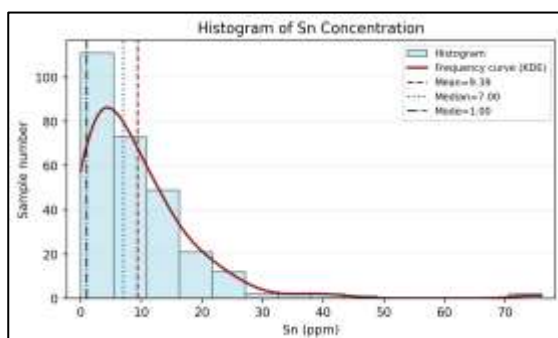


Figure 7.136 Histogram of Sn concentration with frequency curve. Mean=9.39, Median=7.00, Mode=1.00, Skewness=3.01, Kurtosis=15.53.

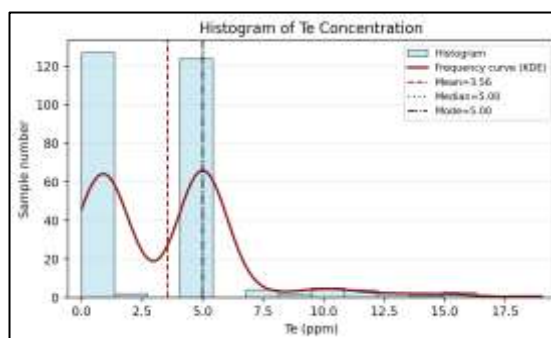


Figure 7.137 Histogram of Te concentration with frequency curve. Mean=3.56, Median=5.00, Mode=5.00, Skewness=1.51, Kurtosis=3.67.

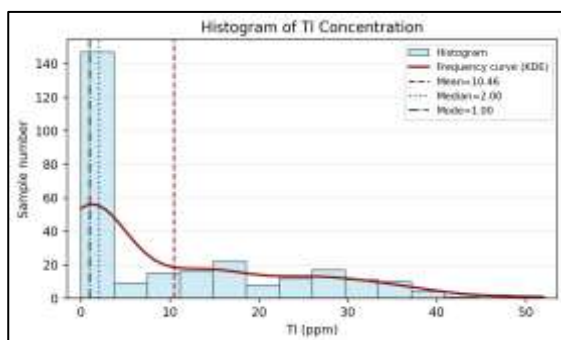


Figure 7.138 Histogram of Tl concentration with frequency curve. Mean=10.46, Median=2.00, Mode=1.00, Skewness=1.08, Kurtosis=0.09.

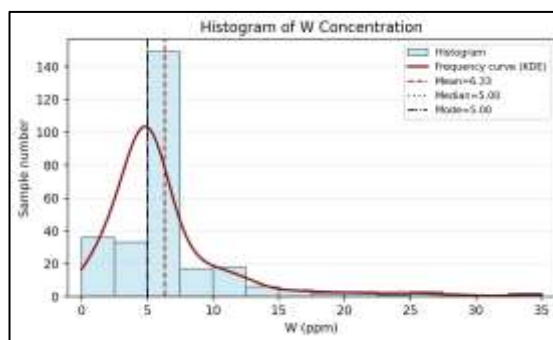


Figure 7.139 Histogram of W concentration with frequency curve. Mean=6.33, Median=5.00, Mode=5.00, Skewness=2.86, Kurtosis=10.35.

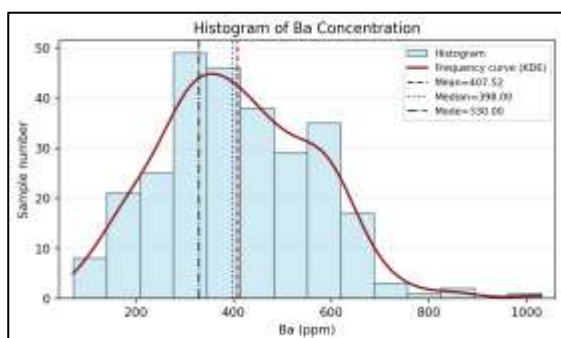


Figure 7.140 Histogram of Ba concentration with frequency curve. Mean=407.52, Median=398.00, Mode=330.00, Skewness=0.35, Kurtosis=0.22.

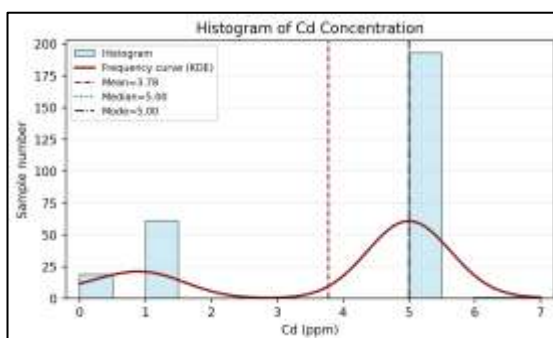


Figure 7.141 Histogram of Cd concentration with frequency curve. Mean=3.78, Median=5.00, Mode=5.00, Skewness=-0.96, Kurtosis=-0.97.

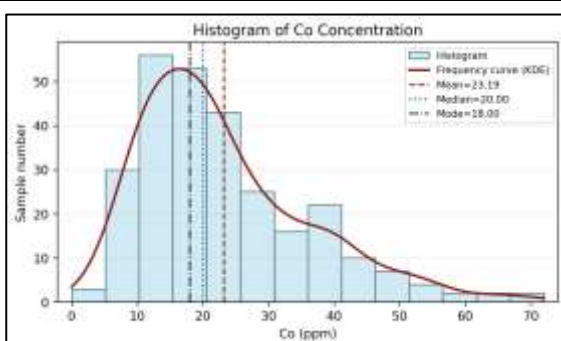


Figure 7.142 Histogram of Co concentration with frequency curve. Mean=23.19, Median=20.00, Mode=18.00, Skewness=2.81, Kurtosis=17.51.

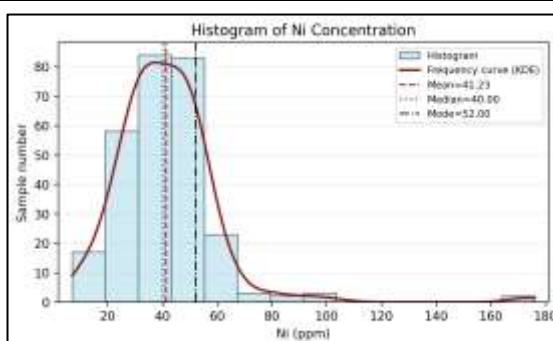


Figure 7.143 Histogram of Ni concentration with frequency curve. Mean=41.23, Median=40.00, Mode=52.00, Skewness=2.81, Kurtosis=17.51.



**Median=20.00, Mode=18.00, Skewness=1.13,
Kurtosis=1.08.**

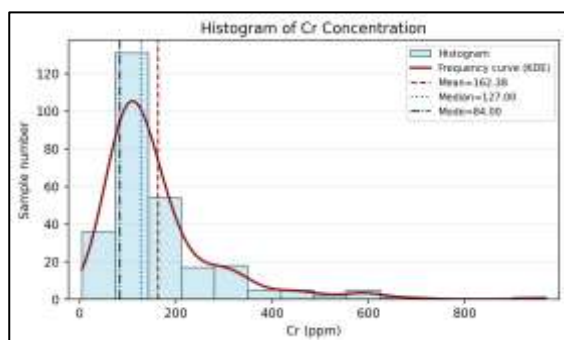


Figure 7.144 Histogram of Cr concentration with frequency curve. Mean=162.38, Median=127.00, Mode=84.00, Skewness=2.63, Kurtosis=9.74.

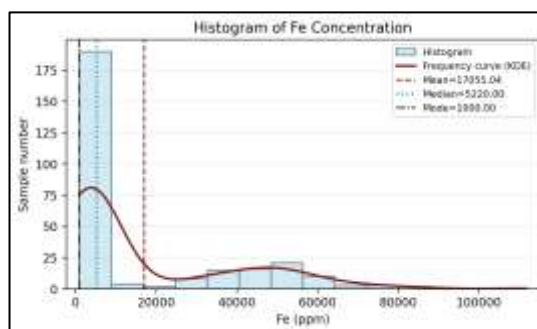


Figure 7.145 Histogram of Fe concentration with frequency curve. Mean=17055.04, Median=5220.00, Mode=1000.00, Skewness=1.42, Kurtosis=1.09.

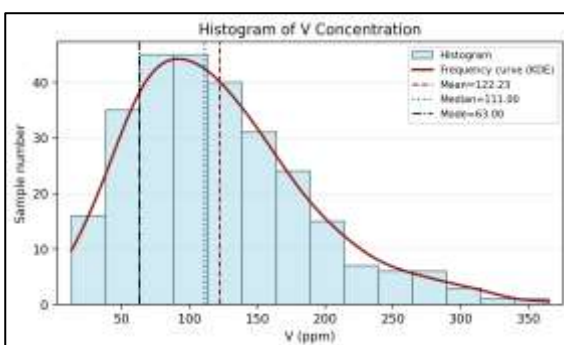


Figure 7.146 Histogram of V concentration with frequency curve. Mean=122.23, Median=111.00, Mode=63.00, Skewness=0.88, Kurtosis=0.73.

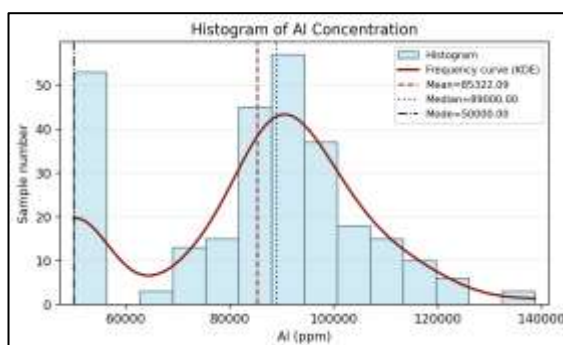


Figure 7.147 Histogram of Al concentration with frequency curve. Mean=85322.09, Median=89000.00, Mode=50000.00, Skewness=-0.34, Kurtosis=-0.35.

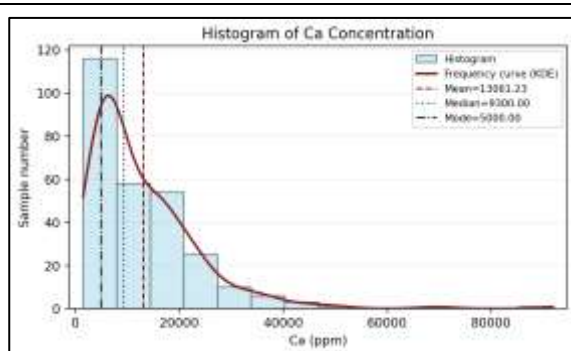


Figure 7.148 Histogram of Ca concentration with frequency curve. Mean=13061.23, Median=9300.00, Mode=5000.00, Skewness=2.69, Kurtosis=12.86.

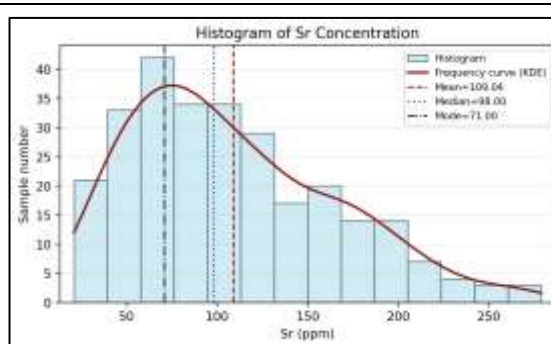


Figure 7.149 Histogram of Sr concentration with frequency curve. Mean=109.04, Median=98.00, Mode=71.00, Skewness=0.70, Kurtosis=-0.13.

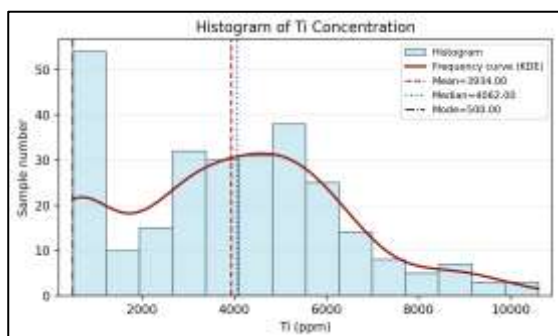


Figure 7.150 Histogram of Ti concentration with frequency curve. Mean=3934.00, Median=4062.00, Mode=500.00, Skewness=0.26, Kurtosis=-0.41.

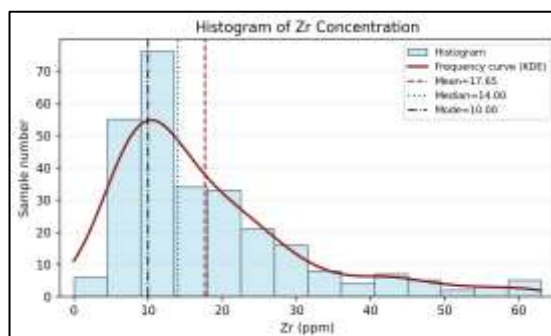


Figure 7.151 Histogram of Zr concentration with frequency curve. Mean=17.65, Median=14.00, Mode=10.00, Skewness=1.48, Kurtosis=2.06.

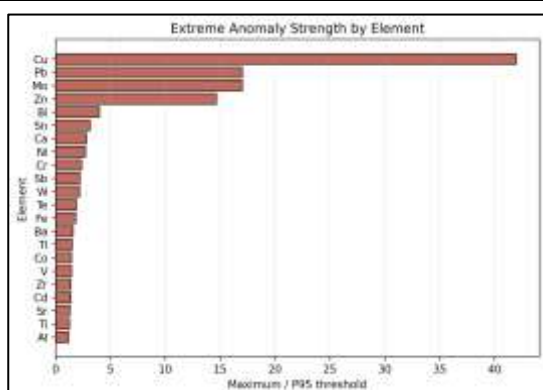


Figure 7.152 Maximum-to-P95 anomaly strength diagram. Elements with high Max/P95

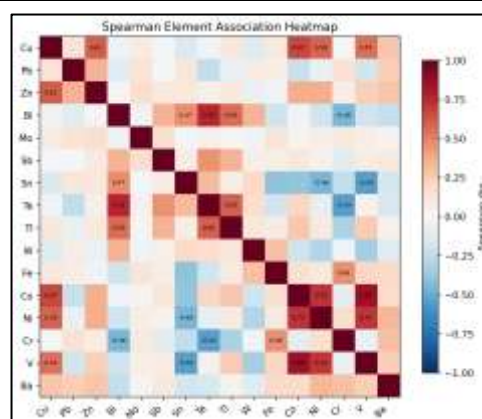


Figure 7.153 Spearman correlation heatmap for selected base-metal, pathfinder and lithological



ratios contain extreme outliers and therefore indicate distinct anomalous populations above the regional stream-sediment background.

elements. Positive associations help identify geochemical suites and distinguish polymetallic anomalies from lithological background effects.

7.11 Element-wise Stream Sediment Geochemical Anomaly

7.11.1 Cu stream-sediment anomaly

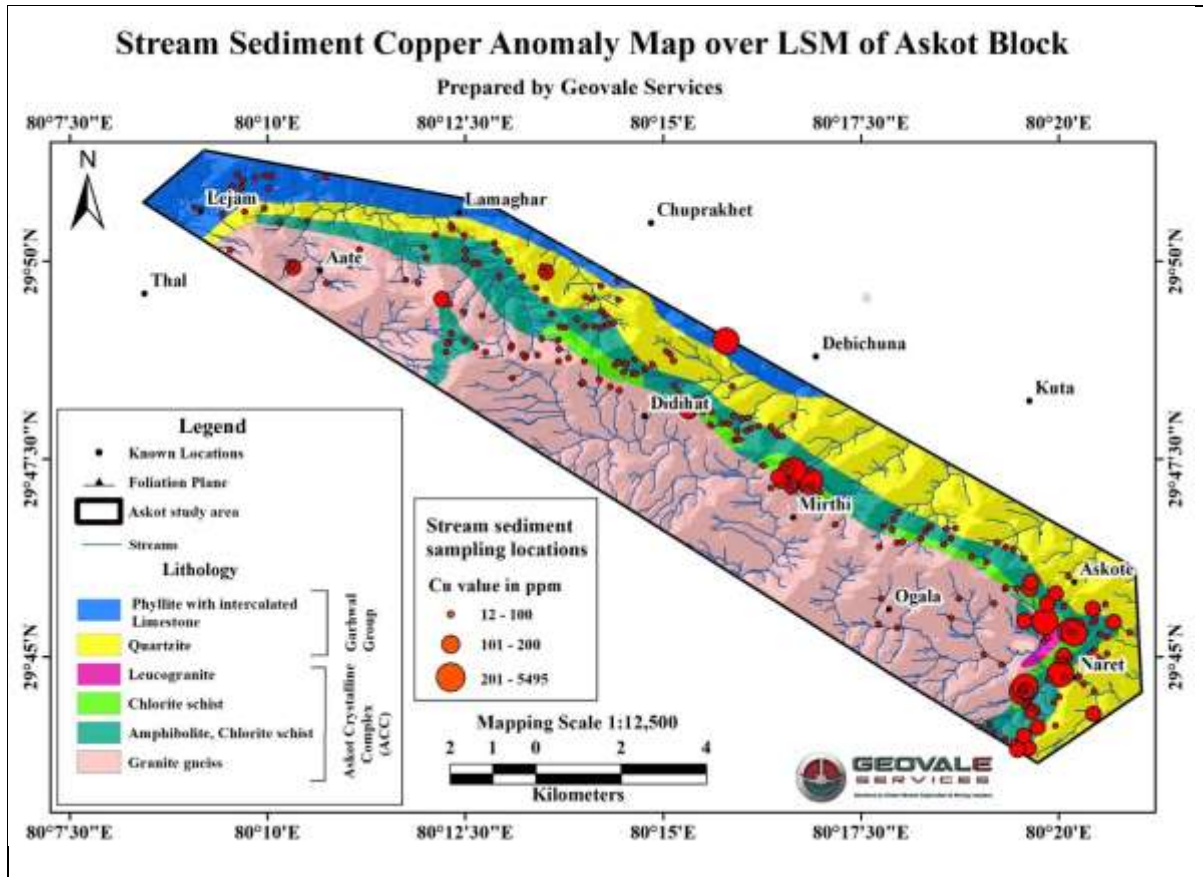


Figure 7.154 Stream-sediment Cu anomaly map over the Askot block.

Copper is the principal base-metal vector for volcanogenic massive sulphide systems. In stream sediments, strong Cu dispersion commonly reflects erosion from sulphide-bearing horizons, chalcopyrite-rich stringer zones, or proximal discharge-related mineralisation.

The Cu dataset has a median of 55 ppm against a reference crustal abundance of 28 ppm. The 90th and 95th percentile thresholds are 111.4 ppm and 131.0 ppm respectively, while the maximum value is 5,495 ppm. 230 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala

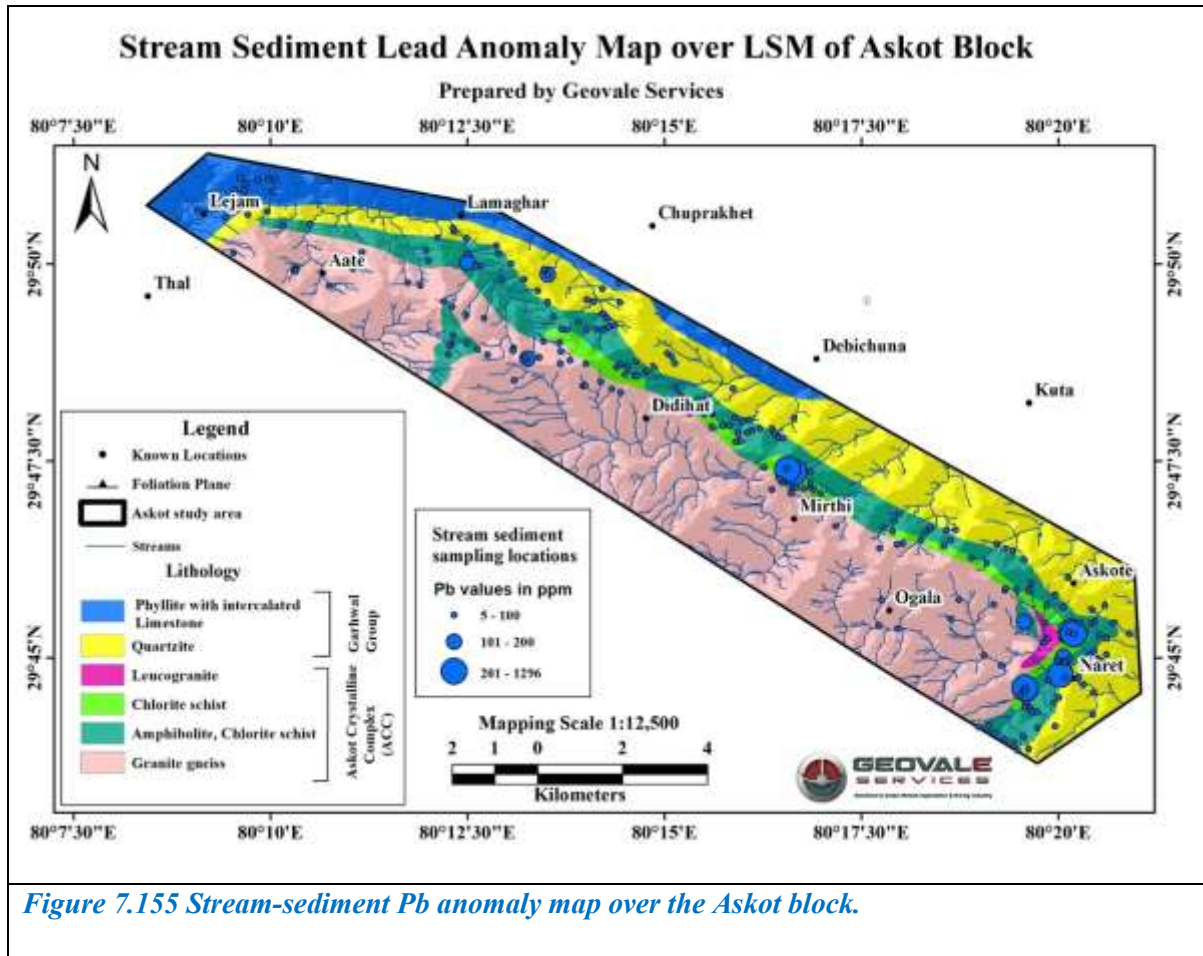
southeastern discharge corridor, Mirthi-Didihat central corridor, Lamaghar-Turgoli north-western corridor.

The southeastern Askot-Naret-Ogala drainage cluster contains very high Cu values, including 5,495 ppm and 2,490 ppm, with associated Zn and Pb enrichment. This association is consistent with erosion from sulphide-rich source material and should be followed upstream along the mapped drainage network. The Mirthi-Didihat central corridor and a north-western Lamaghar-Turgoli response provide secondary Cu vectors (Figure 7.154).

Table 7.20 Highest Cu stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Cu (ppm)	Interpretive zone
106355	29.755487	80.335925	5,495	Askot-Naret-Ogala southeastern discharge corridor
106359	29.746547	80.333686	2,490	Askot-Naret-Ogala southeastern discharge corridor
110156	29.816553	80.263203	1,197	Lamaghar-Turgoli north-western corridor
106356	29.755050	80.336569	980	Askot-Naret-Ogala southeastern discharge corridor
106803	29.757493	80.330407	687	Askot-Naret-Ogala southeastern discharge corridor
106445	29.742800	80.325677	301	Askot-Naret-Ogala southeastern discharge corridor

7.11.2 Pb stream-sediment anomaly map



Lead enrichment is relevant to VMS targeting where it occurs with Zn-Cu and pathfinder elements. Pb-rich stream sediment signatures may reflect galena-bearing sulphide lenses or distal hydrothermal discharge products.

The Pb dataset has a median of 24 ppm against a reference crustal abundance of 17 ppm. The 90th and 95th percentile thresholds are 47.7 ppm and 76.4 ppm respectively, while the maximum value is 1,296 ppm. 211 of 283 sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, intermediate drainage sector, Mirthi-Didihat central corridor.

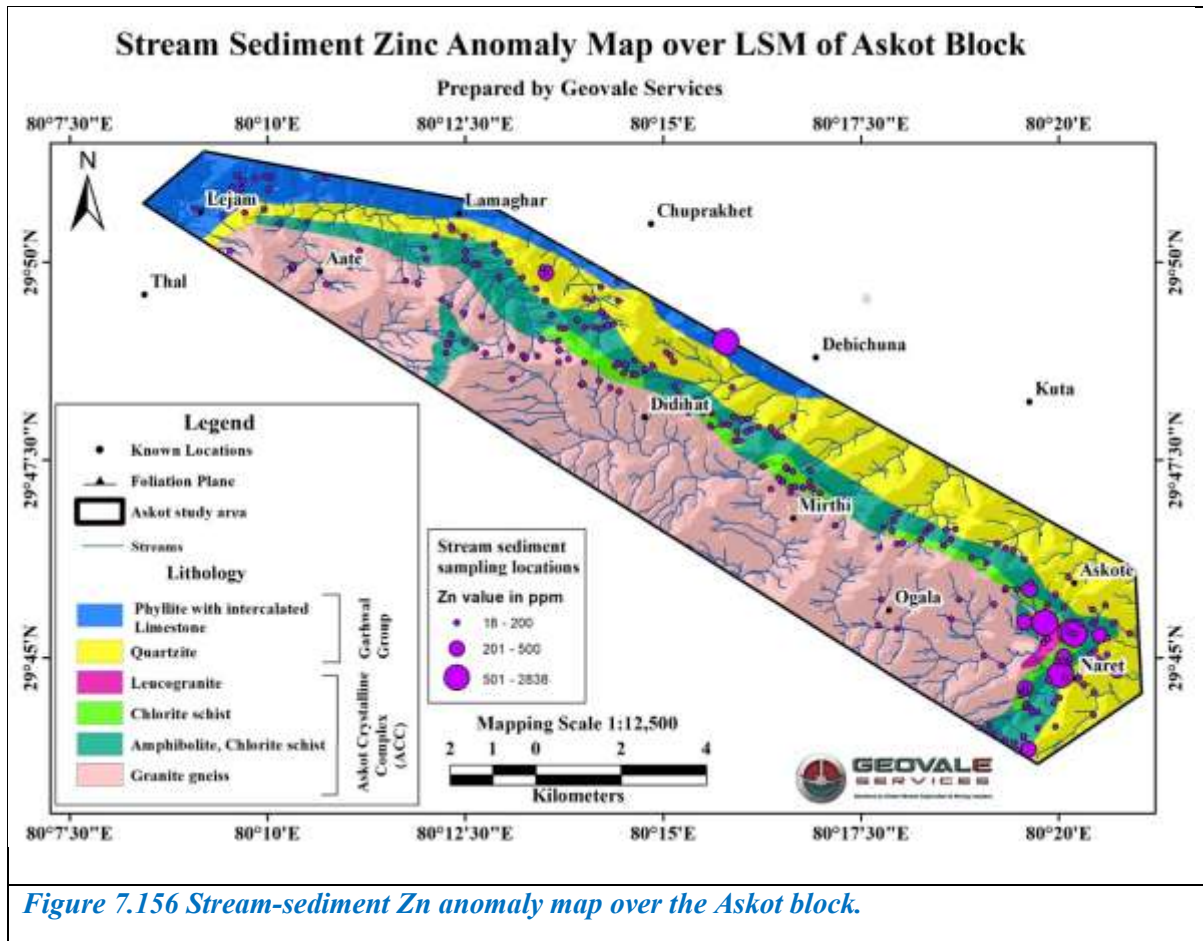
Lead enrichment is highly focused in the southeastern Askot-Naret-Ogala sector, where it overlaps with the strongest Cu and Zn values. The maximum Pb value of 1,296 ppm and additional values above 400 ppm indicate a strong sulphide-related dispersion signal. The Mirthi-Didihat corridor also contains significant Pb enrichment and should be treated as a secondary sulphide-vector zone (Figure 7.155).



Table 7.21 Highest Pb stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Pb (ppm)	Interpretive zone
106359	29.746547	80.333686	1,296	Askot-Naret-Ogala southeastern discharge corridor
106397	29.789271	80.277377	649	Mirathi-Didihat central corridor
106355	29.755487	80.335925	477	Askot-Naret-Ogala southeastern discharge corridor
106356	29.755050	80.336569	463	Askot-Naret-Ogala southeastern discharge corridor
106395	29.789937	80.276074	267	Mirathi-Didihat central corridor
106946	29.743675	80.326238	244	Askot-Naret-Ogala southeastern discharge corridor

7.11.3 Zn stream-sediment anomaly map



Zinc is a key VMS marker because sphalerite is a dominant component of many VMS ore lenses and distal sulphide halos. Zn enrichment, especially when coincident with Cu and Pb, is a high-value discharge-zone vector.

The Zn dataset has a median of 109 ppm against a reference crustal abundance of 67 ppm. The 90th and 95th percentile thresholds are 152 ppm and 194.0 ppm respectively, while the maximum value is 2,838 ppm. 255 of 283 samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, intermediate drainage sector, Lamaghar-Turgoli north-western corridor.

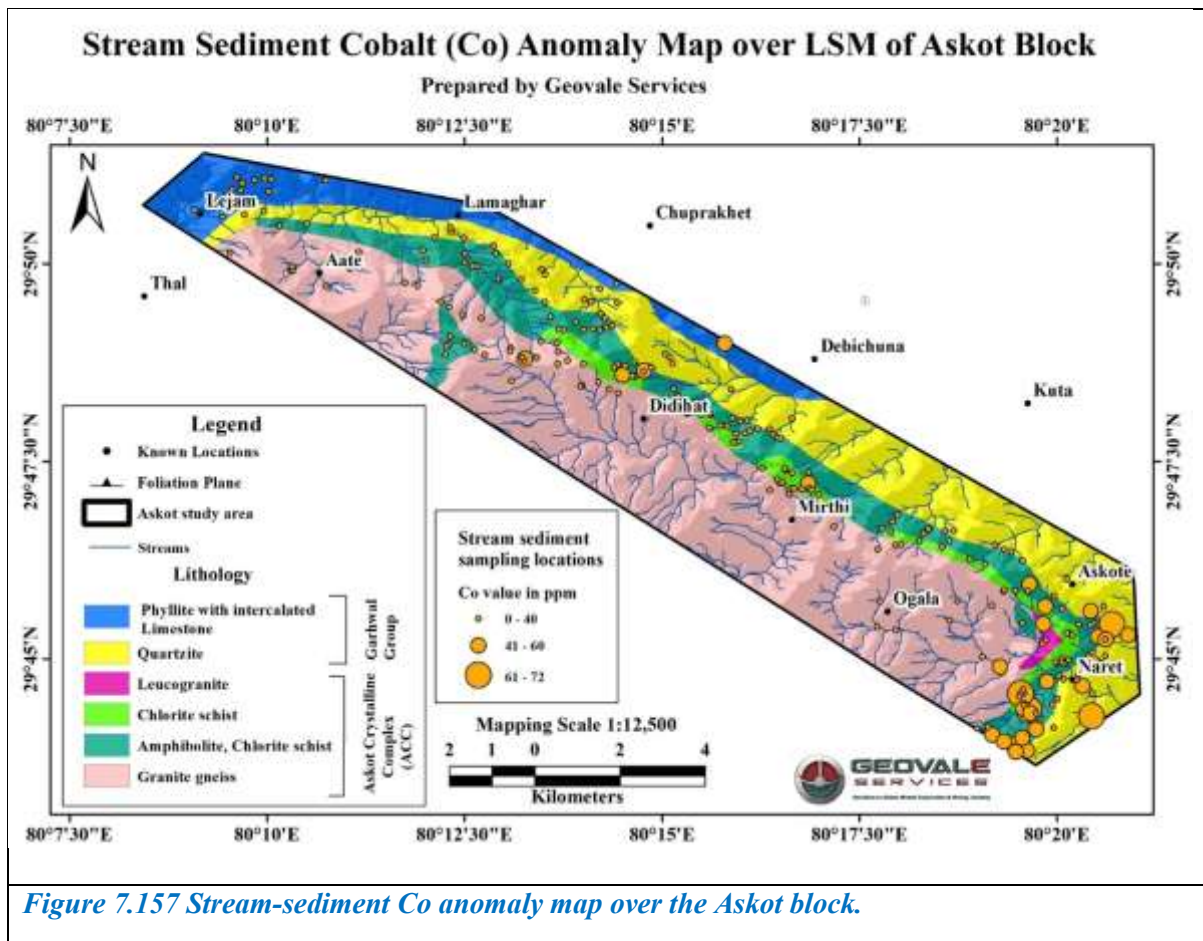
The zinc anomaly reinforces the copper pattern. The maximum Zn value of 2,838 ppm occurs in the southeastern corridor, while another very strong Zn response of 1,873 ppm is present in the Lamaghar-Turgoli north-western sector. The coincidence of Zn with Cu and Pb is a key criterion for VMS discharge-zone prioritisation, particularly where the anomaly is developed close to chlorite schist, amphibolite-chlorite schist horizons (Figure 7.155).



Table 7.22 Highest Zn stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Zn (ppm)	Interpretive zone
106803	29.757493	80.330407	2,838	Askot-Naret-Ogala southeastern discharge corridor
110156	29.816553	80.263203	1,873	Lamaghar-Turgoli north-western corridor
106359	29.746547	80.333686	1,608	Askot-Naret-Ogala southeastern discharge corridor
106355	29.755487	80.335925	1,367	Askot-Naret-Ogala southeastern discharge corridor
106356	29.755050	80.336569	547	Askot-Naret-Ogala southeastern discharge corridor
106832	29.757638	80.326071	437	Askot-Naret-Ogala southeastern discharge corridor

7.11.4 Co stream-sediment anomaly map



Cobalt can mark mafic volcanic, chloritic, sulphidic or hydrothermally altered source rocks. In the Askot setting it is useful as a supporting vector when coupled with Cu-Zn-Pb and chlorite schist/amphibolite lithologies.

The Co dataset has a median of 20 ppm against a reference crustal abundance of 17.3 ppm. The 90th and 95th percentile thresholds are 41 ppm and 49.3 ppm respectively, while the maximum value is 72 ppm. 168 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, Lamaghar-Turgoli north-western corridor, eastern Askot ridge to central transition zone.

Cobalt anomalies are concentrated mainly in the southeastern part of the belt, spatially overlapping the base-metal anomaly field. This pattern supports the possibility of mafic or chloritic hydrothermal influence in the source catchments. Co by itself is not diagnostic, but the Co-Cu-Zn overlap improves confidence in the southeastern target corridor (Figure 7.157).

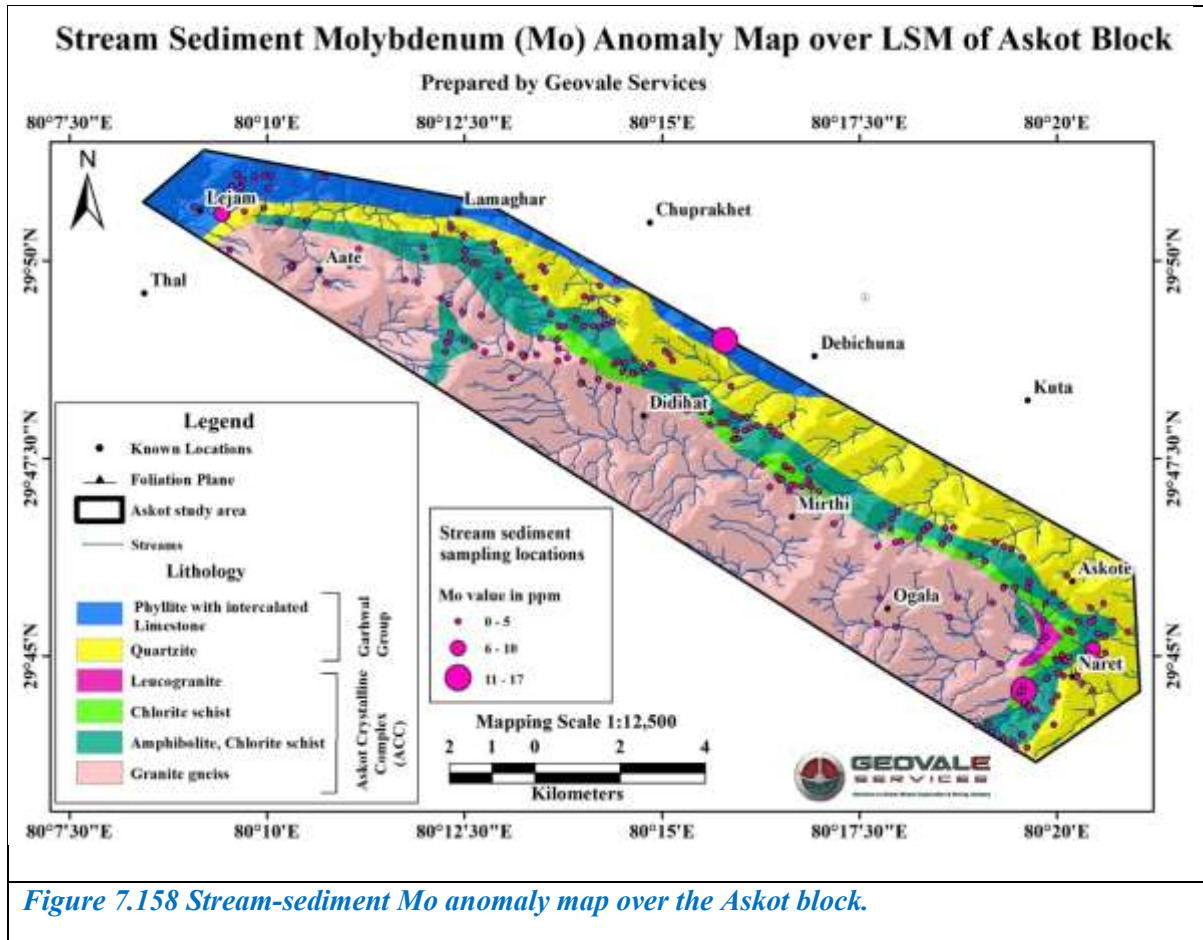


Table 7.23 Co stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Co (ppm)	Interpretive zone
106375	29.739365	80.327449	72	Askot-Naret-Ogala southeastern discharge corridor
106836	29.738051	80.340626	67	Askot-Naret-Ogala southeastern discharge corridor
106825	29.757362	80.344895	64	Askot-Naret-Ogala southeastern discharge corridor
106445	29.742800	80.325677	64	Askot-Naret-Ogala southeastern discharge corridor
106841	29.730777	80.327027	57	Askot-Naret-Ogala southeastern discharge corridor
106802	29.739570	80.326287	57	Askot-Naret-Ogala southeastern discharge corridor



7.11.5 Mo stream-sediment anomaly map



Molybdenum is not a primary VMS ore metal, but elevated Mo can occur in reducing sulphidic environments, felsic volcanic-hydrothermal systems and structurally focused hydrothermal zones. It is treated as a supporting vector rather than a stand-alone target criterion.

The Mo dataset has a median of 1 ppm against a reference crustal abundance of 1.1 ppm. The 90th and 95th percentile thresholds are 1 ppm and 1 ppm respectively, while the maximum value is 17 ppm. 11 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Lamaghar-Turgoli north-western corridor, Askot-Naret-Ogala south-eastern discharge corridor, Lejam-Lamaghar northwestern corridor.

Molybdenum shows a limited but important anomaly pattern. Most samples remain close to the analytical background, while isolated highs occur in the Lamaghar-Turgoli north-western corridor and the southeastern Askot-Naret sector. The 17ppm Mo value at sample 110156,

together with high Cu and Zn, is noteworthy and should be examined for sulphidic or structurally focused hydrothermal sources (Figure 7.158).

Table 7.24 Mo stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Mo (ppm)	Interpretive zone
110156	29.816553	80.263203	17	Lamaghar-Turgoli north-western corridor
106447	29.742838	80.326348	16	Askot-Naret-Ogala southeastern discharge corridor
106428	29.751530	80.340871	7	Askot-Naret-Ogala southeastern discharge corridor
110161	29.843308	80.157155	6	Lejam-Lamaghar northwestern corridor
110168	29.851094	80.163970	5	Lejam-Lamaghar northwestern corridor
106406	29.812167	80.240598	5	Lamaghar-Turgoli north-western corridor

7.11.6 Bi stream-sediment anomaly map

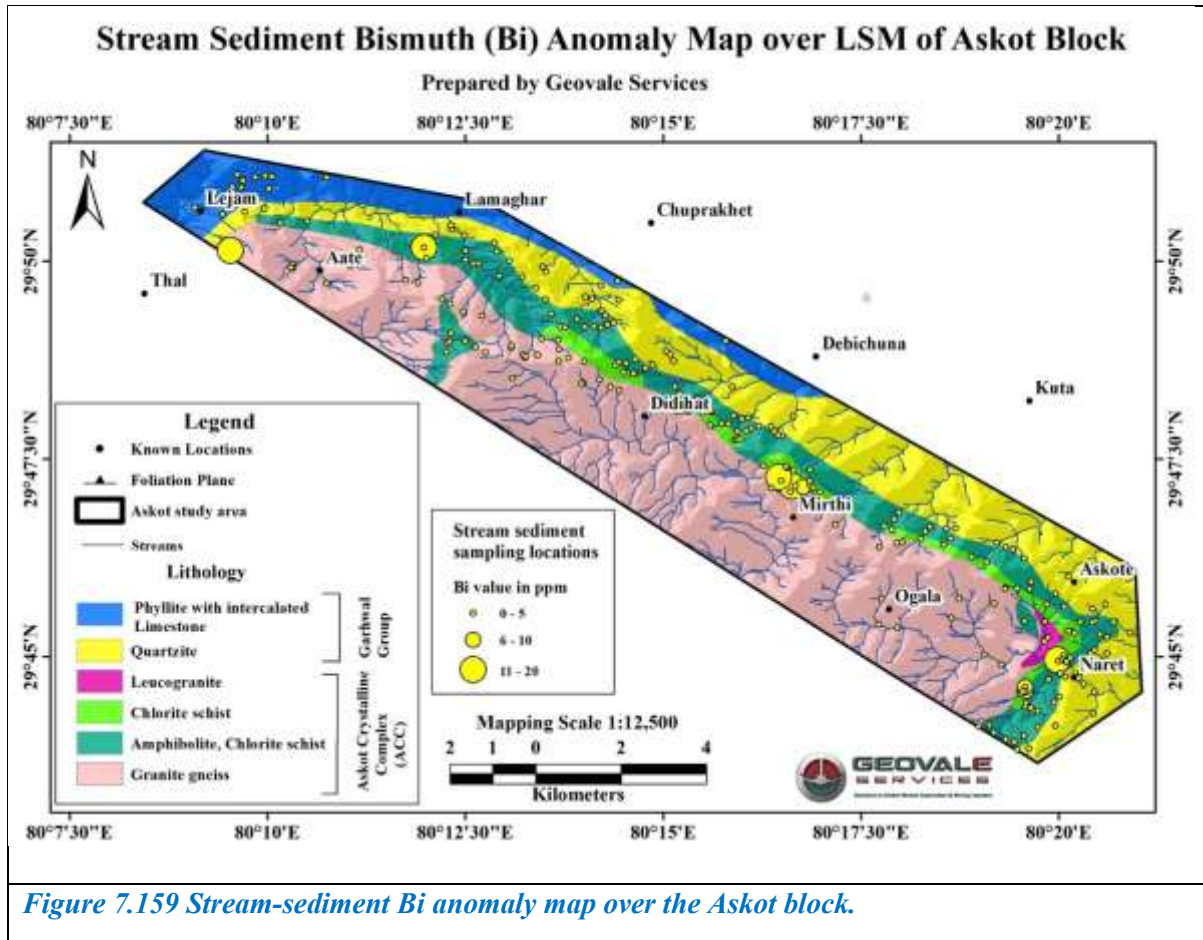


Figure 7.159 Stream-sediment Bi anomaly map over the Askot block.

Bismuth is a sensitive hydrothermal pathfinder. Because the stream-sediment dataset contains a broad analytical floor for Bi, the interpretation emphasises only the highest values and their spatial relationship with Cu-Zn-Pb-Sb-Sn-W anomalies.

The Bi dataset has a median of 5 ppm against a reference crustal abundance of 0.16 ppm. The 90th and 95th percentile thresholds are 5 ppm and 5 ppm respectively, while the maximum value is 20 ppm. 263 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Mirthi-Didihat central corridor, Lejam-Lamaghar northwestern corridor, Askot-Naret-Ogala southeastern discharge corridor (Figure 7.155).

Bismuth values require cautious interpretation because many samples sit at a common analytical level. The meaningful highs occur mainly in the Mirthi-Didihat central corridor and the southeastern Askot-Naret sector. Where Bi overlaps with Cu-Pb-Zn or Sn-W, it may indicate a higher-temperature hydrothermal component or sulphide-bearing source rocks.

Table 7.25 Bi stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Bi (ppm)	Interpretive zone
106385	29.786021	80.277098	20	Mirithi-Didihat central corridor
106383	29.787313	80.275282	20	Mirithi-Didihat central corridor
106416	29.749441	80.332966	16	Askot-Naret-Ogala southeastern discharge corridor
110170	29.835646	80.158774	13	Lejam-Lamaghar northwestern corridor
106384	29.787941	80.274339	12	Mirithi-Didihat central corridor
106953	29.836262	80.199612	11	Lejam-Lamaghar northwestern corridor

7.11.7 Sb stream-sediment anomaly map

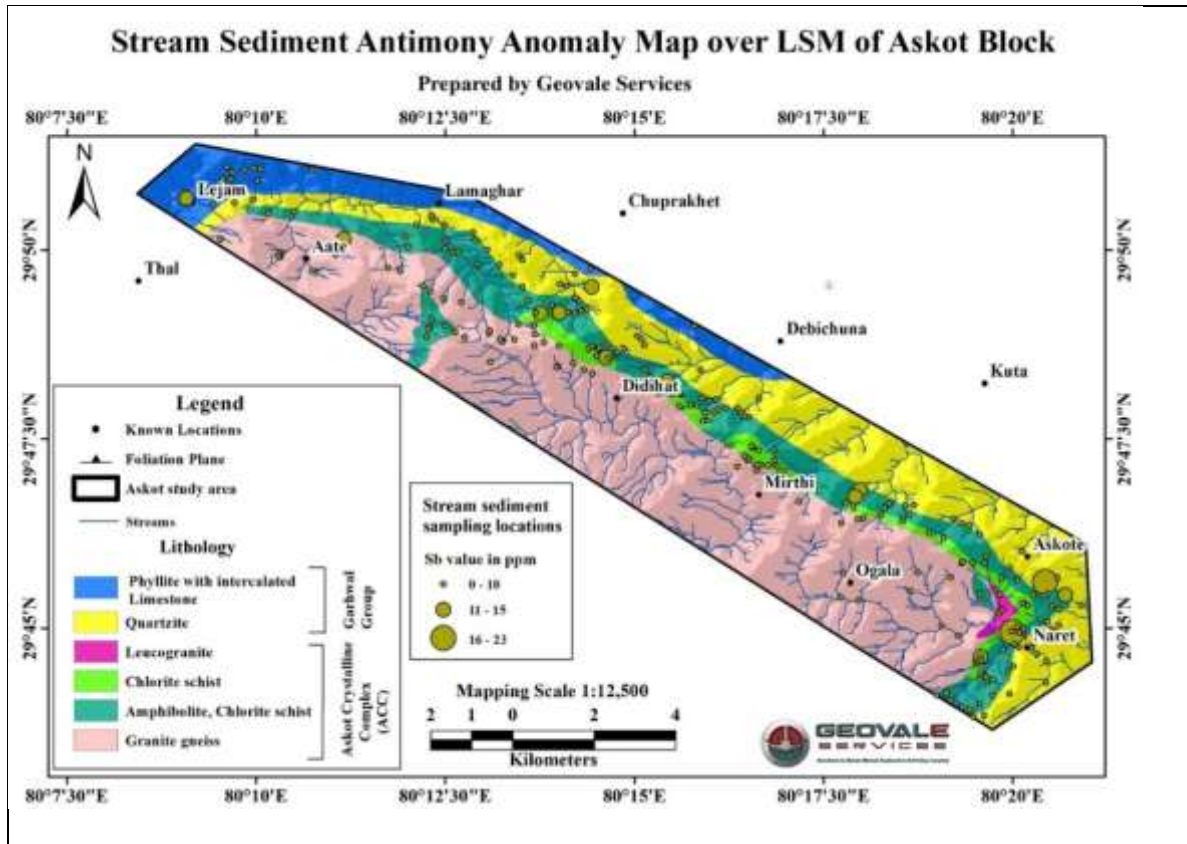


Figure 7.160 Stream-sediment Sb anomaly map over the Askot block.

Antimony is a useful pathfinder in hydrothermal systems and may define distal or structurally controlled sulphidic discharge zones. Sb becomes more significant where it overlaps Cu, Pb, Zn, Te or Tl anomalies.

The Sb dataset has a median of 1 ppm against a reference crustal abundance of 0.2 ppm. The 90th and 95th percentile thresholds are 8 ppm and 10.3 ppm respectively, while the maximum value is 23 ppm. 268 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, intermediate drainage sector, Mirthi-Didihat central corridor (Figure 7.160).

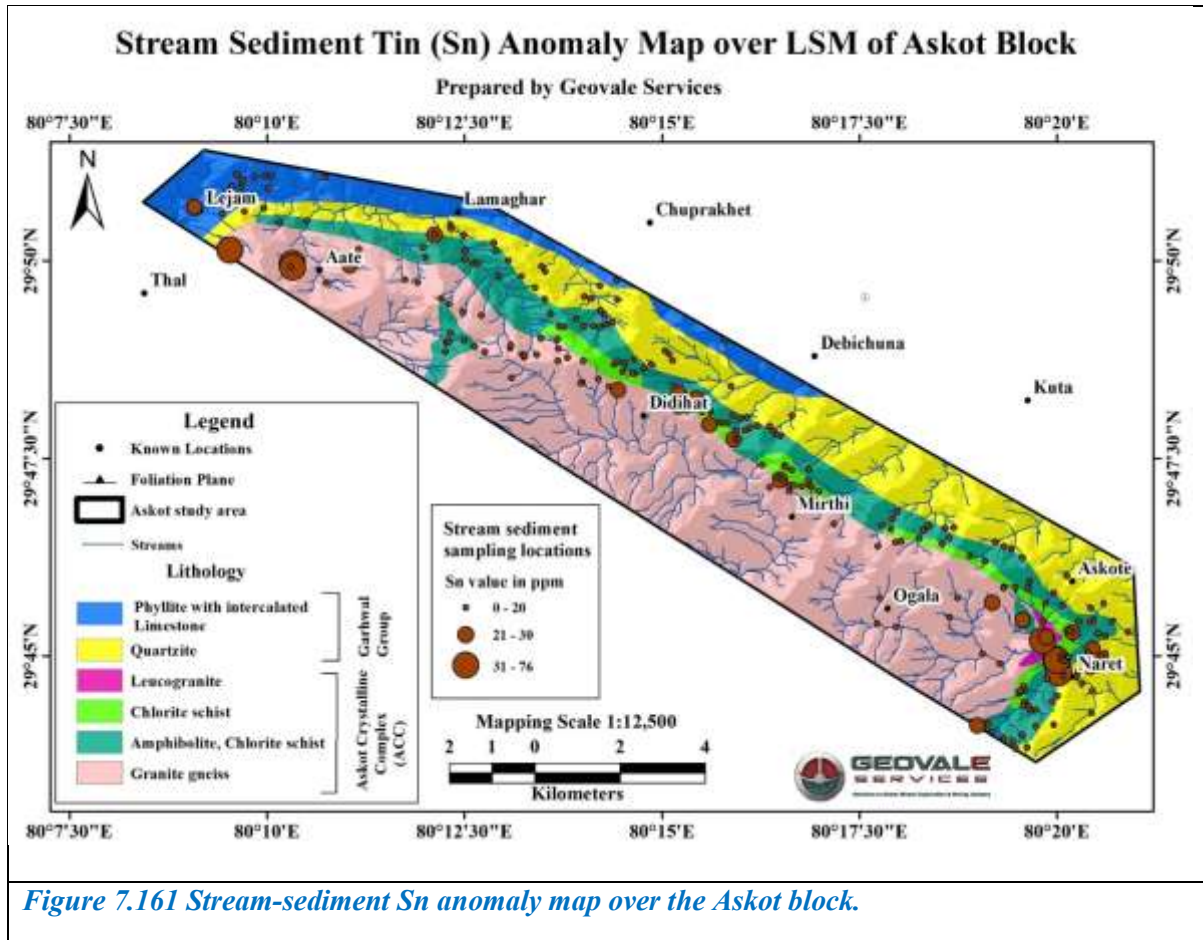
Antimony anomalies are most important in the southeastern Askot-Naret-Ogala corridor, with additional scattered highs in the central and northwestern parts of the belt. The Sb pattern is significant because it coincides locally with Te, Tl and base-metal enrichment, a combination that can mark sulphidic discharge or distal hydrothermal dispersion.



Table 7.26 Sb stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Sb (ppm)	Interpretive zone
106417	29.749146	80.333232	23	Askot-Naret-Ogala southeastern discharge corridor
106814	29.760196	80.340487	16	Askot-Naret-Ogala southeastern discharge corridor
106946	29.743675	80.326238	15	Askot-Naret-Ogala southeastern discharge corridor
106885	29.780488	80.299620	15	Mirithi-Didihat central corridor
106886	29.779073	80.298661	15	Mirithi-Didihat central corridor
106852	29.819545	80.233436	15	intermediate drainage sector

7.11.8 Sn stream-sediment anomaly map



Tin is commonly linked to felsic/granitic or high-temperature hydrothermal input, but in a VMS search it is useful where Sn accompanies Bi-W-Sb and base-metal anomalies along the same drainage corridor.

The Sn dataset has a median of 7 ppm against a reference crustal abundance of 5.5 ppm. The 90th and 95th percentile thresholds are 20 ppm and 24.3 ppm respectively, while the maximum value is 76 ppm. 163 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, Lejam-Lamaghar northwestern corridor, intermediate drainage sector (Figure 7.161).

Tin shows two styles of anomaly: a southeastern cluster associated with base-metal enrichment and a northwestern Lejam-Lamaghar response associated with W-Bi signatures. The southeastern Sn-Cu-Pb-Zn association is more relevant to the VMS discharge-zone search,



whereas the northwestern Sn-W-Bi response may reflect granitic or vein-related hydrothermal influence.

Table 7.27 Sn stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Sn (ppm)	Interpretive zone
106863	29.832854	80.171914	76	Lejam-Lamaghar northwestern corridor
106416	29.749441	80.332966	74	Askot-Naret-Ogala southeastern discharge corridor
106359	29.746547	80.333686	44	Askot-Naret-Ogala southeastern discharge corridor
110170	29.835646	80.158774	40	Lejam-Lamaghar northwestern corridor
106417	29.749146	80.333232	39	Askot-Naret-Ogala southeastern discharge corridor
106864	29.832065	80.172035	36	Lejam-Lamaghar northwestern corridor



7.11.9 Te stream-sediment anomaly map

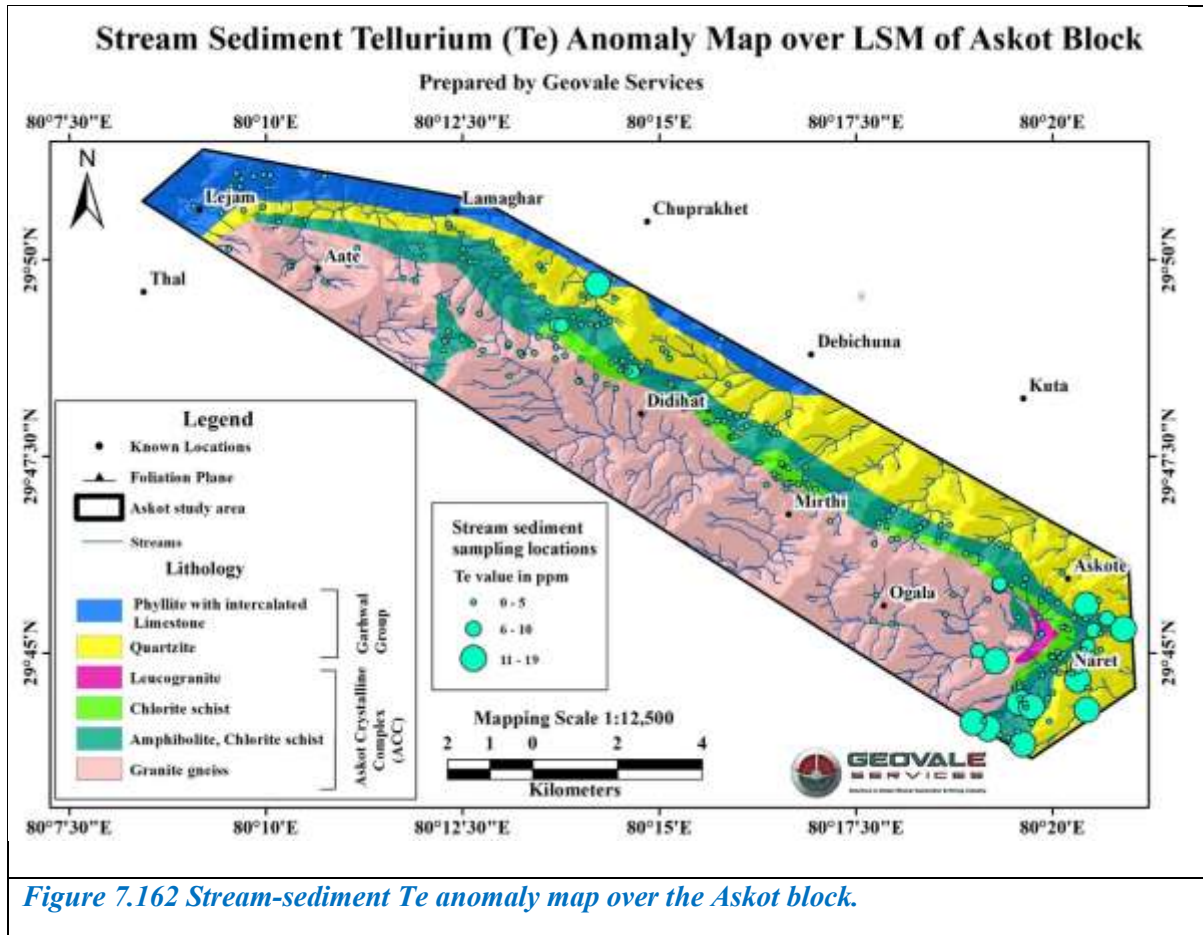


Figure 7.162 Stream-sediment Te anomaly map over the Askot block.

Tellurium is very low in average crustal rocks and therefore even small enrichments may indicate sulphide-related hydrothermal processes. The analytical distribution needs careful laboratory review, but spatially coherent Te anomalies are useful pathfinders where they coincide with base metals.

The Te dataset has a median of 5 ppm against a reference crustal abundance of 0.001 ppm. The 90th and 95th percentile thresholds are 5 ppm and 10 ppm respectively, while the maximum value is 19 ppm. 254 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, Lamaghar-Turgoli north-western corridor, intermediate drainage sector (Figure 7.162).

Tellurium enrichment is spatially concentrated in the southeastern drainage cluster, where it overlaps with Co, Sb, Tl and base metals. Because the reference crustal abundance of Te is extremely low, the numerical enrichment is very high; therefore, the main exploration value

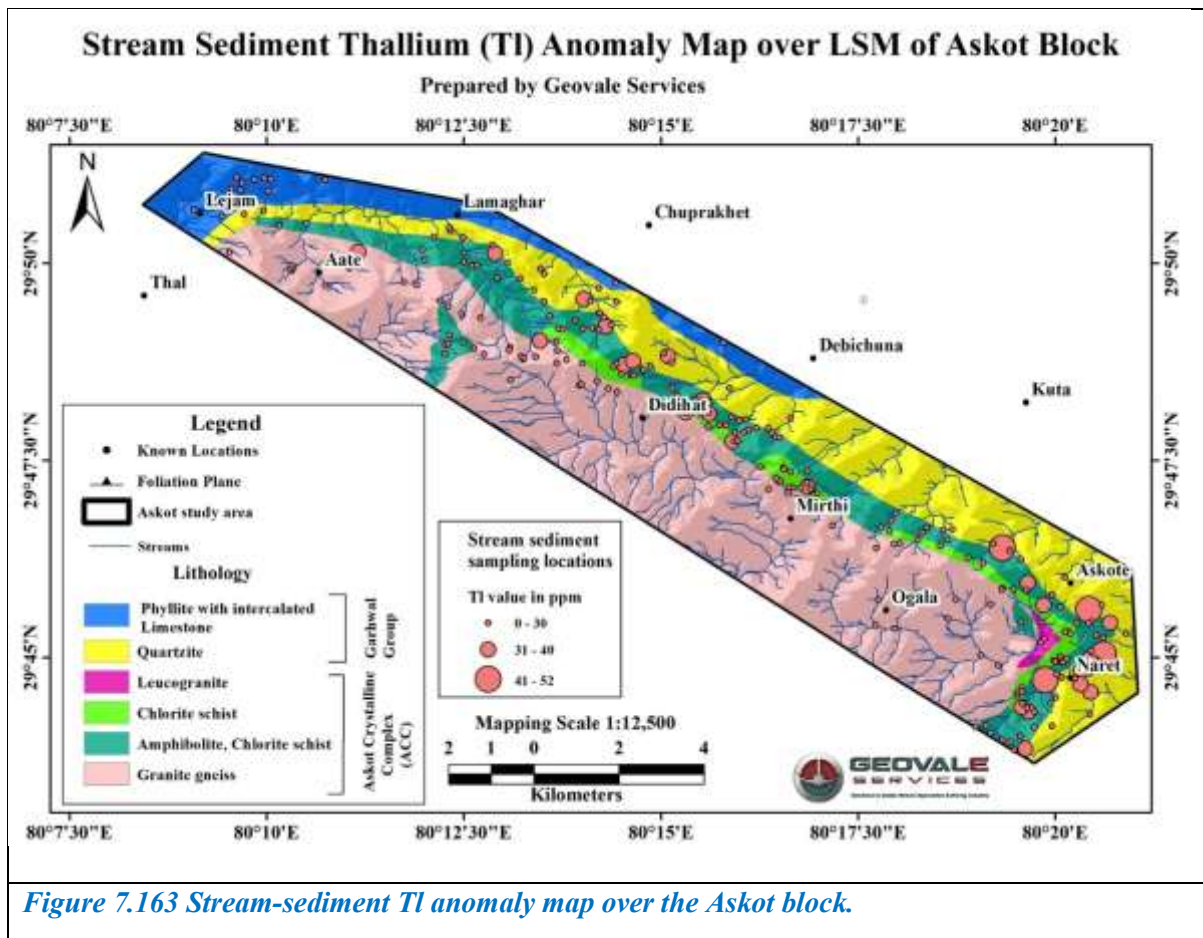
lies in the spatial coherence of Te with other sulphide-related elements rather than in the absolute ratio alone.

Table 7.28 t Te stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Te (ppm)	Interpretive zone
106841	29.730777	80.327027	19	Askot-Naret-Ogala southeastern discharge corridor
106836	29.738051	80.340626	16	Askot-Naret-Ogala southeastern discharge corridor
106839	29.734147	80.31672	15	Askot-Naret-Ogala southeastern discharge corridor
106818	29.744383	80.338633	15	Askot-Naret-Ogala southeastern discharge corridor
106814	29.760196	80.340487	14	Askot-Naret-Ogala southeastern discharge corridor
106811	29.828104	80.236835	13	Lamaghar-Turgoli north- western corridor



7.11.10 Tl stream-sediment anomaly map



Thallium is commonly enriched in sulphide-bearing and sericitic hydrothermal systems and may mark distal alteration or pyrite-rich discharge products. It is a strong pathfinder when clustered with Sb, Te and base metals.

The Tl dataset has a median of 2 ppm against a reference crustal abundance of 0.75 ppm. The 90th and 95th percentile thresholds are 30.7 ppm and 34.3 ppm respectively, while the maximum value is 52 ppm. 253 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, intermediate drainage sector, eastern Askot ridge to central transition zone (Figure 7.163).

Thallium forms a strong southeastern anomaly field, with a maximum value of 52 ppm in the eastern-to-central transition zone and multiple high values around Askot-Naret. Tl enrichment, particularly with Sb and Te, can be an important vector toward sulphide-rich hydrothermal discharge products and sericitic alteration envelopes.

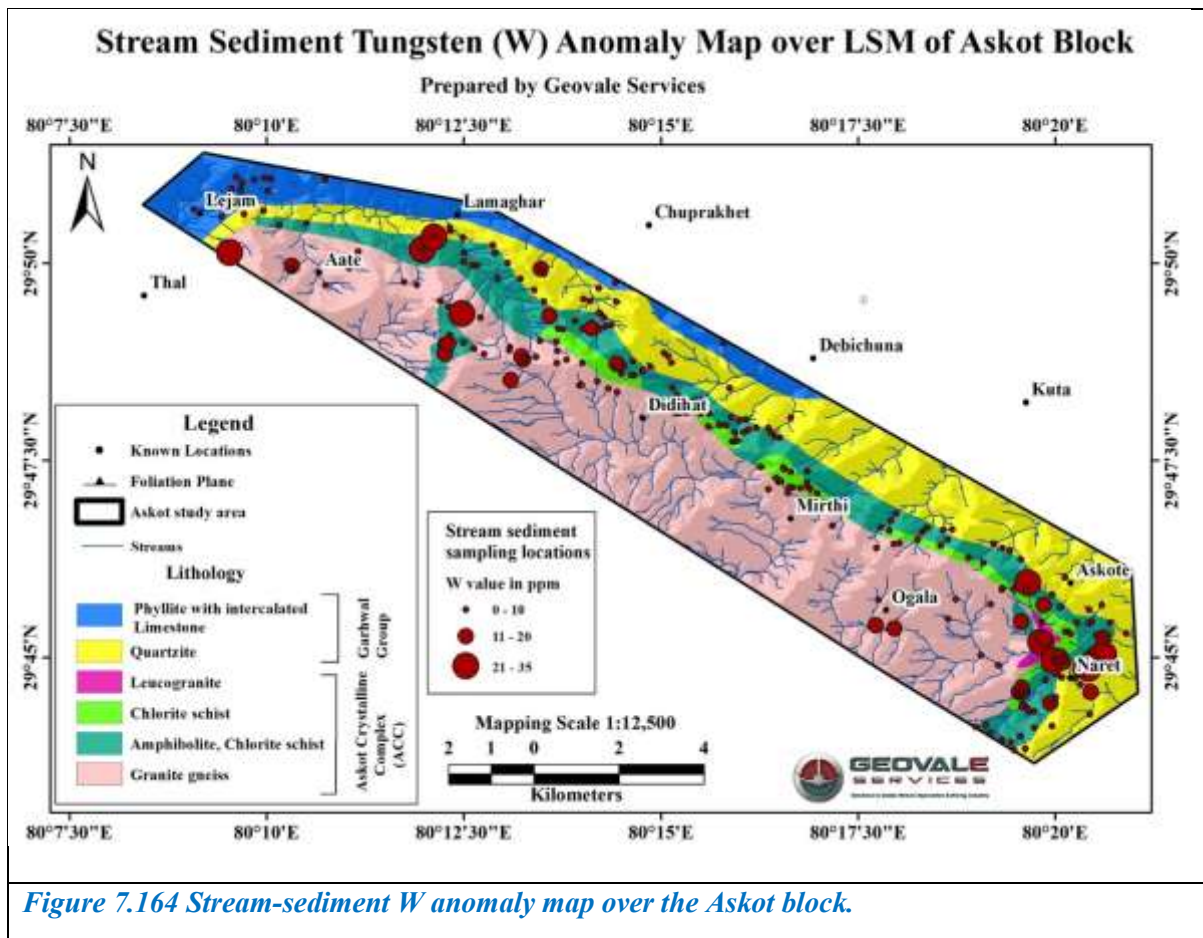


Table 7.29 Tl stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	Tl (ppm)	Interpretive zone
106884	29.773240	80.322117	52	eastern Askot ridge to central transition zone
106822	29.745365	80.331232	48	Askot-Naret-Ogala southeastern discharge corridor
106850	29.750693	80.343520	46	Askot-Naret-Ogala southeastern discharge corridor
106814	29.760196	80.340487	42	Askot-Naret-Ogala southeastern discharge corridor
106931	29.817020	80.224342	40	intermediate drainage sector
106816	29.747796	80.340375	40	Askot-Naret-Ogala southeastern discharge corridor



7.11.11 W stream-sediment anomaly map



Tungsten is generally a felsic/granitic or high-temperature hydrothermal pathfinder. In this VMS-oriented assessment it is considered supportive where W occurs with Bi-Sn-Sb and base-metal anomalies, but less diagnostic when isolated.

The W dataset has a median of 5 ppm against a reference crustal abundance of 1.9 ppm. The 90th and 95th percentile thresholds are 11 ppm and 16 ppm respectively, while the maximum value is 35 ppm. 261 of 283 stream sediment samples exceed the reference crustal abundance. The principal anomalous expression is concentrated in Askot-Naret-Ogala southeastern discharge corridor, intermediate drainage sector, Lejam-Lamaghar northwestern corridor (Figure 7.164).

Tungsten anomalies occur in the southeastern, central and northwestern sectors. The southeastern W values are more relevant to VMS targeting because they coincide with Cu-Zn-Pb-Sb-Tl-Te enrichment. The northwestern W-Sn-Bi response should be treated as a separate hydrothermal or granitic influence until bedrock sources are confirmed.

Table 7.30 W stream-sediment values and interpreted anomaly zones.

Sample ID	Latitude	Longitude	W (ppm)	Interpretive zone
106941	29.753330	80.330278	35	Askot-Naret-Ogala southeastern discharge corridor
106432	29.822701	80.207888	34	intermediate drainage sector
106850	29.750693	80.343520	29	Askot-Naret-Ogala southeastern discharge corridor
110170	29.835646	80.158774	27	Lejam-Lamaghar northwestern corridor
106815	29.765851	80.327494	25	eastern Askot ridge to central transition zone
106416	29.749441	80.332966	25	Askot-Naret-Ogala southeastern discharge corridor

7.12 XRF data analyses and interpretation:

The analysed samples comprise 20 XRF rock-chip results from the Askot study area. The sample suite represents amphibolite, quartz mica schist, chlorite schist, carbonaceous phyllite, granite gneiss, leucogranite, garnet-bearing chlorite schist and a strongly oxidised gossanous horizon. The XRF dataset is dominated by major oxides and sulphur, with SiO₂ ranging from 27.30% to 94.61%, Al₂O₃ from 2.66% to 23.85%, Fe₂O₃ from 1.07% to 46.30%, MgO from 0.12% to 7.51%, CaO from 0.14% to 15.16%, LOI from 0.56% to 16.25% and S from 0.061% to 1.867%. These values indicate a mixed assemblage of mafic, felsic, aluminous, carbonaceous and hydrothermally altered rocks, with the strongest mineralisation indicators concentrated in amphibolite-chlorite schist contact zones and altered chlorite schist/gossan samples.

Amphibolite forms the most consistently represented mafic lithology in the field-XRF dataset. Samples 106962, 106967, 106968, 106970 and 106971 show a restricted SiO₂ range of 47.06% to 52.07%, Al₂O₃ between 13.79% and 21.49%, Fe₂O₃ between 12.46% and 20.14%, CaO between 6.44% and 8.97%, MgO between 4.24% and 7.51% and Na₂O between 1.89% and 3.74%. These compositions are typical of mafic metamorphic rocks derived from basaltic to basic protoliths. The relatively high Fe₂O₃, MgO and CaO values confirm the ferromagnesian character of the amphibolite, while the field observations of bornite, limonite, hematite, sulphides and quartz veins indicate that parts of the amphibolite package have acted as favourable reactive host rocks for sulphide-bearing hydrothermal fluids.

Among the amphibolite samples, sample 106971 is particularly significant because it contains 0.895% S and occurs where quartz veins cut across foliation in amphibolite. This is the highest sulphur value within the amphibolite group and indicates sulphide concentration along vein/fracture systems. Sample 106967, where bornite, limonite and hematite were recorded in weathered amphibolite, contains 20.14% Fe₂O₃ and 0.107% S, suggesting strong oxidation of iron-bearing and possibly copper-bearing sulphide phases. The association of bornite, chalcopyrite indications, quartz veining and iron oxide alteration makes the amphibolite belt a favourable target for follow-up base-metal exploration.

Quartz mica schist and mixed quartz mica schist-chlorite schist units show comparatively felsic to aluminous signatures. Sample 106963 from the quartz mica schist-chlorite schist contact contains 69.37% SiO₂, 15.53% Al₂O₃, 3.30% K₂O and 0.123% S, consistent with mica-rich quartzose metasedimentary rocks affected by weak sulphidation. Sample 106964, described as quartz mica schist with pitch-black hexagonal minerals, contains very high SiO₂ of 94.61% and low Al₂O₃ of 2.66%, indicating a highly quartz-rich composition, possibly dominated by quartz segregation or quartz-rich schistose material. The presence of tourmaline-like or black ore minerals along schistosity suggests structurally guided mineral growth along the S1 fabric.

Mixed quartz mica schist-amphibolite contacts are also geochemically variable. Sample 106965 contains 49.85% SiO₂, 17.56% Fe₂O₃ and 9.76% LOI, whereas sample 106969 contains 86.13% SiO₂ and field-recorded chalcopyrite and bornite. This variation reflects strong lithological mixing, quartz veining and local alteration at contact zones. These contacts are important because contrasts between mafic amphibolite and quartz-mica schist can localise deformation, fluid flow and sulphide deposition, especially where foliation-parallel structures or quartz veins are present.

Carbonaceous phyllite is represented by sample 106966, collected from black carbonaceous phyllite with puckers and pyrite stringers. This sample contains 48.73% SiO₂, 6.96% Al₂O₃, 15.16% CaO, 7.19% MgO and very high LOI of 16.25%. The high LOI reflects carbonaceous and/or carbonate-rich volatile-bearing material, while the pyrite stringers indicate sulphide development in a reducing host environment. Although sulphur in the XRF result is only 0.064%, the field evidence of pyrite and the carbonaceous nature of the rock make this lithology important as a redox-sensitive horizon and as a possible chemical trap for base-metal-bearing fluids.

Chlorite schist and chlorite-rich contact rocks show the strongest sulphur anomalies in the dataset. Sample 106972, collected from quartz vein in chlorite schist with ex-situ amphibolite containing bornite, contains 49.45% SiO₂, 13.40% Al₂O₃, 19.55% Fe₂O₃ and 1.043% S. This is one of the most significant sulphide-proxy samples in the dataset and indicates that chlorite schist close to amphibolite/quartz-vein systems is highly favourable for sulphide mineralisation. The combination of high Fe₂O₃ and high S suggests iron sulphide oxidation with possible associated copper mineralisation, consistent with the field observation of bornite. Sample 106976 is the most significant sulphur-rich sample. It was collected from amphibolite and chlorite schist with released quartz veins, Mg-rich amphiboles, malachite and limonitic alteration. The XRF result shows 50.05% SiO₂, 18.08% Al₂O₃, 8.12% Fe₂O₃, 4.07% K₂O, 7.33% LOI and 1.867% S. The presence of malachite, limonite and high sulphur strongly supports the interpretation of oxidised copper sulphide mineralisation. This sample represents a high-priority surface target because it combines field evidence of copper carbonate staining with the strongest analytical sulphur anomaly.

The gossan sample 106977 represents the most strongly oxidised mineralised horizon. It was described in the field as highly altered chlorite schist converted to limonite and goethite, with covellite also observed. Geochemically, it contains very high Fe₂O₃ of 46.30%, low SiO₂ of 27.30%, 11.39% LOI and 0.321% S. This signature is consistent with intense ferruginisation and oxidation of sulphide-bearing rock. The covellite observation is particularly important because covellite is a copper sulphide mineral and may indicate supergene enrichment or oxidation of primary copper sulphides. The sample should therefore be treated as a direct surface expression of a sulphide-bearing system rather than as a simple iron-rich weathering product.

Analytical results for sample 106975 with SiO₂ around 60.91% to 60.94%, Al₂O₃ around 18.71% to 18.76%, Fe₂O₃ around 7.30% to 7.36%, K₂O around 5.21% to 5.26%, LOI of 3.68%

and S of 0.077%. These values indicate an aluminous, potassic and moderately altered schistose rock.

Granitic and leucogranitic rocks show a felsic and alkali-rich geochemical character. Sample 106974, described as granite gneiss with tourmaline, contains 74.78% SiO₂, 15.73% Al₂O₃, 3.17% K₂O and only 1.78% Fe₂O₃. Sample 106978, taken from the chlorite schist-leucogranite contact, contains 75.19% SiO₂, 14.04% Al₂O₃, 4.47% K₂O, 2.93% Na₂O and low Fe₂O₃ of 1.46%. These compositions are consistent with felsic intrusive or orthogneissic rocks. Their low sulphur and low iron contents indicate that they are not the primary sulphide-bearing host; however, their contacts with schist and amphibolite may have provided brittle-ductile pathways for hydrothermal fluids.

Sample 106979, at a granite and chlorite schist contact with chalcopyrite indications, shows a more mafic signature than the felsic granitic samples, with 46.09% SiO₂, 17.99% Al₂O₃, 15.62% Fe₂O₃, 8.04% CaO, 6.07% MgO and 3.07% Na₂O. The field observation of chalcopyrite, combined with high Fe₂O₃, MgO and CaO, supports the importance of granite-chlorite schist contact zones as structurally prepared and chemically reactive sites for sulphide mineralisation.

Sample 106982 contains 20.46% Fe₂O₃ and 0.386% S, while sample 106981 contains 17.33% Fe₂O₃ and 0.294% S. These values suggest mafic to iron-rich and weakly sulphide-bearing material.

From a geochemical perspective, sulphur is the most important direct proxy for sulphide mineralisation in this XRF dataset because Cu, Pb, Zn, Au and Ag values are not reported in the analytical sheet. The highest sulphur values occur in sample 106976 (1.867% S), sample 106972 (1.043% S) and sample 106971 (0.895% S). These samples are spatially and geologically linked to chlorite schist, amphibolite, quartz veins and copper-bearing field indicators such as malachite and bornite.

The Fe₂O₃ distribution provides an additional oxidation and gossanisation indicator. The highest Fe₂O₃ value occurs in sample 106977 (46.30%), followed by 106982 (20.46%), 106967 (20.14%), 106972 (19.55%) and 106965 (17.56%). In the mineralised samples, high Fe₂O₃ corresponds to limonite, goethite, hematite, gossanous alteration and sulphide-related weathering. This pattern indicates that iron oxide anomalies should be interpreted as oxidation halos over sulphide-bearing rocks, particularly where they coincide with chlorite schist, amphibolite, quartz veining or observed copper minerals.

Loss on ignition values further separate carbonaceous, carbonate-bearing and oxidised zones from relatively fresh lithologies. The highest LOI occurs in carbonaceous phyllite sample 106966 (16.25%), gossan sample 106977 (11.39%), mixed quartz mica schist-amphibolite sample 106965 (9.76%) and mineralised amphibolite-chlorite schist sample 106976 (7.33%). High LOI in carbonaceous phyllite reflects volatile/carbonaceous material and possible carbonate content, while high LOI in gossan and mineralised chlorite schist reflects hydration, oxidation and alteration minerals such as limonite and goethite. These values support a model involving both reducing sedimentary horizons and oxidised hydrothermal sulphide zones.

From a genetic and geological standpoint, the data indicate a structurally controlled, mafic-schist-hosted sulphide system developed within the Askot Crystalline Complex and associated metasedimentary units. The favourable components include mafic amphibolite, chlorite schist, quartz veins, lithological contacts, foliation-parallel structures, gossanous alteration and redox-sensitive carbonaceous phyllite. The occurrence of bornite, chalcopyrite, malachite and covellite in the field indicates copper-bearing mineralisation, while the XRF sulphur and iron oxide anomalies confirm the presence of sulphide-related geochemical responses.

In terms of structural and exploration significance, the most favourable zones are the amphibolite-chlorite schist contacts, chlorite schist hosting quartz veins, and strongly altered gossanous chlorite schist. The S1 schistosity and bedding-parallel structures recorded in the field provide potential fluid pathways, while quartz veins and contact zones acted as sites for sulphide deposition and later oxidation.

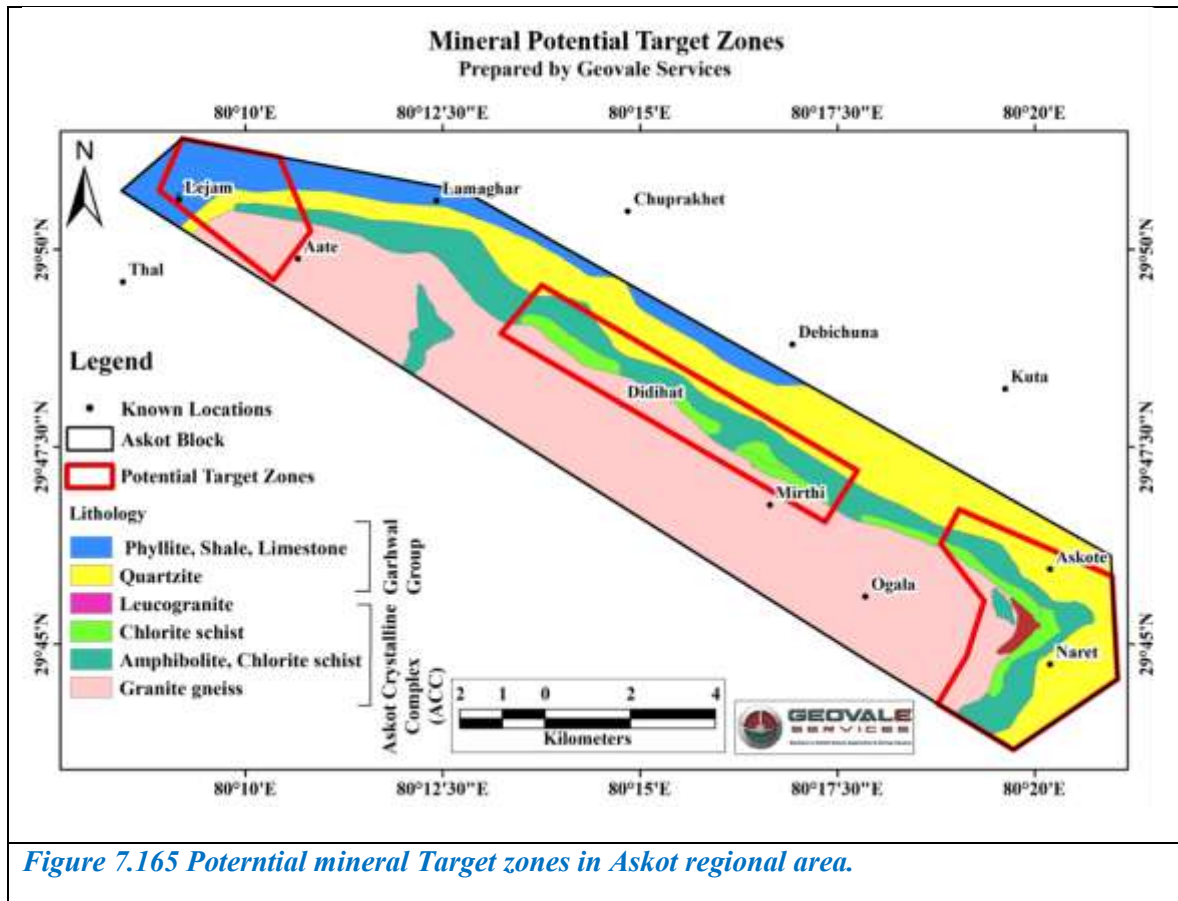
The recommended follow-up work should include detailed channel sampling across the A36-A39-A100-A104 target zone, repeat sampling of the gossan and malachite-bearing quartz-vein zones, petrography and ore microscopy of sulphide-bearing samples, multi-element ICP-MS or ICP-OES analysis, and ground geophysical surveys such as induced polarisation and resistivity across the amphibolite-chlorite schist contact belt. Priority should be given to confirming the continuity of sulphide mineralisation below the oxidised surface and testing whether the gossan represents a weathered cap over primary copper sulphides.

Overall, the XRF and field evidence collectively indicate that the Askot-Naret samples record a mixed lithological assemblage with strong localised sulphide and copper-mineralisation signatures. The best geochemical targets are defined by the overlap of elevated sulphur, high Fe_2O_3 , high LOI due to alteration, quartz veining, chlorite schist/amphibolite host rocks and field-observed copper minerals. On the basis of the current dataset, samples 106976, 106977,



106972, 106971, 106967 and 106979 represent the most important follow-up targets for detailed copper-base metal exploration.

Based on the all geological, outcrop polymetal formation, petrographical study, geochemical analyses three exploration target potential are identified: **1. Askot-Naret Hinge Zone, 2. Didihat zone and 3. Turgoli-Lejam zone.** Among three zone Askot-Naret Hinge Zone is studied in details and given below (Figure 7.165).



However, study is mainly focussed on the Askot-Naret Hinge Zone. On NMEDT's advice, Zones 2 and 3 were kept in abeyance pending results from limited drilling in Zone 1 (Askot-Naret Hinge Zone).

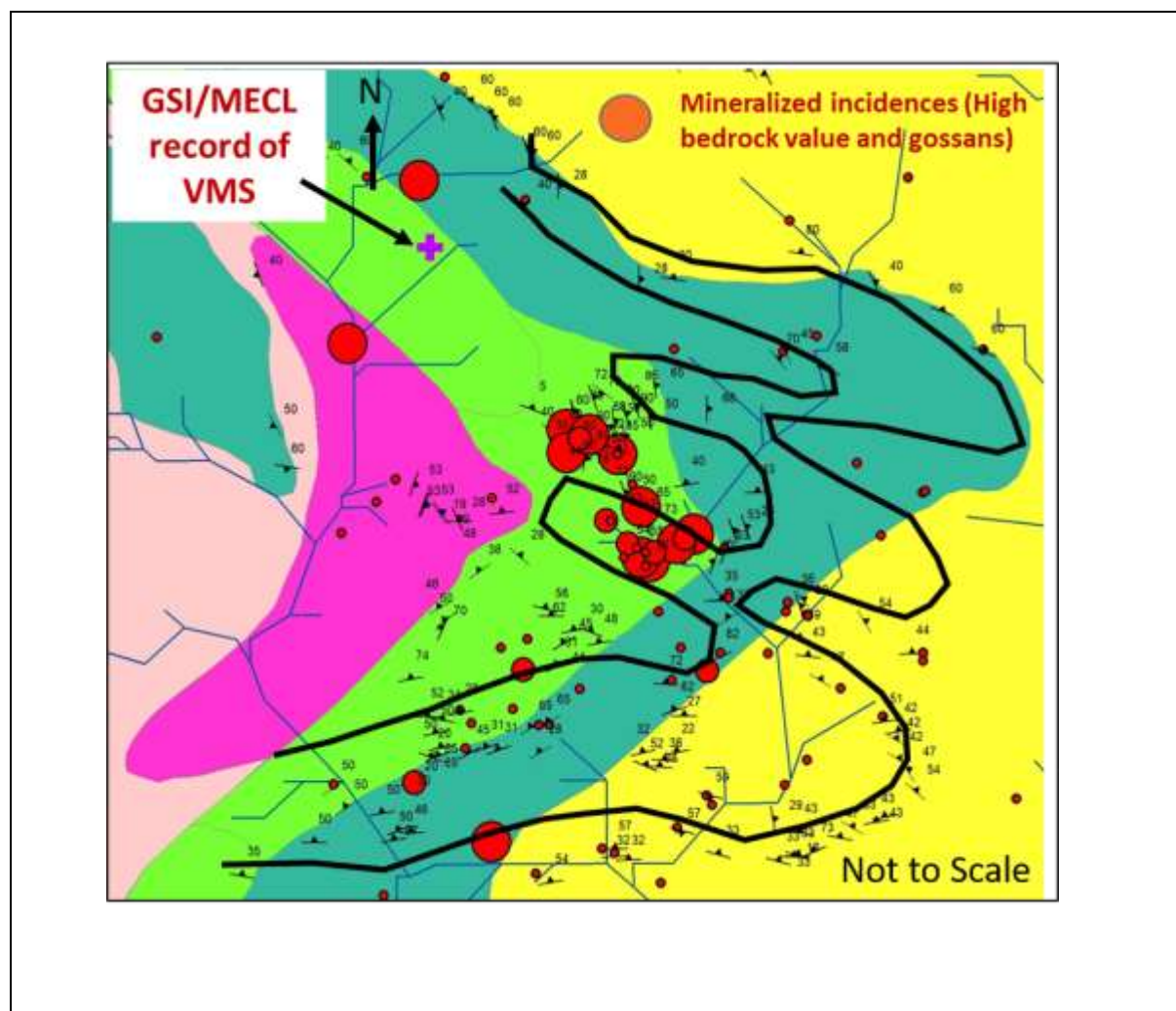
Surface Geoscience in Askot-Naret Hinge Zone (Zone 1)

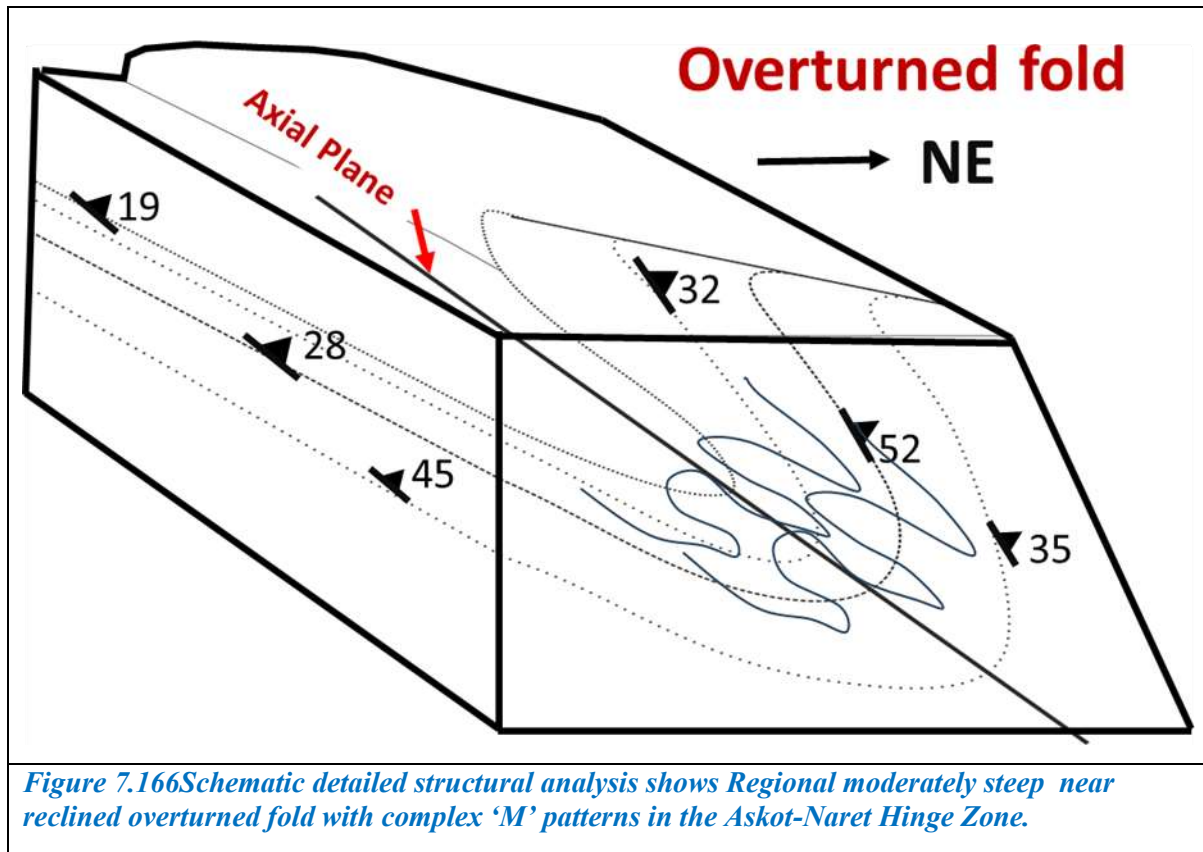
7.13 Structural mapping at Askot-Naret Hinge Zone

The Askot-Naret hinge zone is considered particularly significant for prospect-scale exploration. The geometry and plunge of the fold structure, together with associated shear zones, fractures, and lithological contacts, may control the continuity and distribution of

mineralization beyond the currently known ore zone. Detailed structural analysis of the hinge zone is required to determine whether the known mineralized horizon continues along strike or down-plunge, whether it has been structurally repeated, and whether additional concealed sulphide lenses occur at favourable structural intersections. The identification of structural repetition is particularly important in a deformed VMS system, where originally separate mineralized horizons may be brought into proximity or the same horizon may be repeated through folding and thrusting.

The Askot synform provides an important structural framework for understanding the distribution of polymetallic sulphide mineralization. Fold hinges and hinge–limb transition zones can represent sites of enhanced strain, fracturing, and permeability, while the intersection of fold-related structures with lithological contacts may create favourable sites for hydrothermal fluid focusing and sulphide accumulation. Furthermore, the later Himalayan deformation could have resulted in the remobilization, redistribution, thickening, attenuation, or structural repetition of pre-existing sulphide bodies along favourable structural domains.





Detailed structural analysis indicated a regional moderately steep near reclined overturned fold with complex 'M' patterns in the hinge area. As the mineralization is of VMS style (Stratabound) the mineralized zones are also expected to follow this complex fold pattern

7.14 Mineralogy of ore zone and ore textures

Ore Mineralogy and Textural Characteristics of the Askot Regional Block including Askot Naret VMS Zone)

The sulphide mineralization of the Askot Naret VMS Zone is characterized by a polymetallic assemblage typical of metamorphosed volcanogenic massive sulphide (VMS) deposits. Chalcopyrite, pyrite, sphalerite, and galena occur as interstitial phases, vein fillings, and disseminations within the massive sulphide lenses and associated alteration zones. Minor arsenopyrite is locally present and indicates enrichment of arsenic during the hydrothermal evolution of the system. The principal ore minerals identified in the Askot Regional Block are summarized below.



Table 7.31 Ore Mineralogy and Textural Characteristics of the Askot Regional Block including Askot Naret VMS Zone)

Mineral	Mode of Occurrence	Economic Significance
Chalcopyrite (CuFeS₂)	Interstitial to pyrite, fracture fillings and quartz veinlets	Principal copper-bearing mineral
Sphalerite (ZnS)	Massive, disseminated and interstitial grains	Principal zinc-bearing mineral
Galena (PbS)	Massive and interstitial within sulphide aggregates	Principal lead-bearing mineral
Arsenopyrite (FeAsS)	Minor accessory mineral	Indicates arsenic enrichment during hydrothermal activity
Pyrite (FeS₂)	Dominant sulphide occurring as coarse- to fine-grained massive aggregates	Earliest and most abundant sulphide phase

The ore assemblage is hosted within chlorite-sericite schist, quartz-mica schist, and associated metavolcanic rocks. Although the deposit has undergone regional metamorphism and multiple phases of Himalayan deformation, several primary hydrothermal textures are locally preserved, while others have been modified through recrystallization and structural remobilization.

Ore Textures

Detailed petrographic examination of polished sections from the Askot-Naret Hinge Zone VMS Zone reveals a variety of primary depositional, hydrothermal, metamorphic, and deformational textures. These textures collectively record the evolution of the deposit from submarine hydrothermal sulphide deposition to regional metamorphism and tectonic deformation

Massive Texture

Massive sulphide ore constitutes the dominant ore type within the central sulphide lenses. It consists predominantly of pyrite forming nearly monomineralic aggregates, while chalcopyrite, sphalerite, and galena occupy the interstitial spaces between pyrite grains. This texture represents the primary accumulation of sulphides within the massive ore body (Figure 7.167 to 7.170).

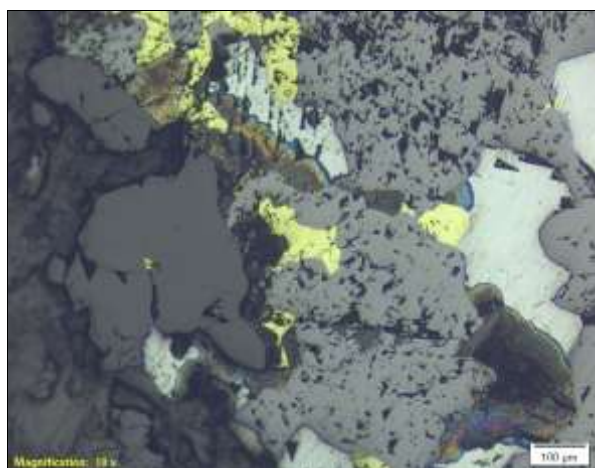


Figure 7.167 Chalcopyrite, galena and bornite in VMS, Naret area

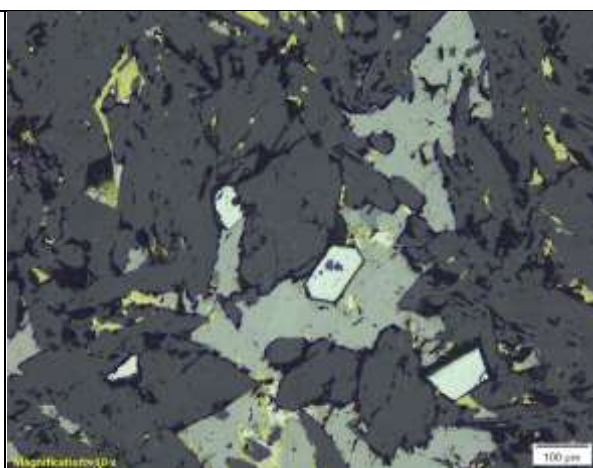


Figure 7.168 Chalcopyrite, galena and bornite in VMS, Naret area

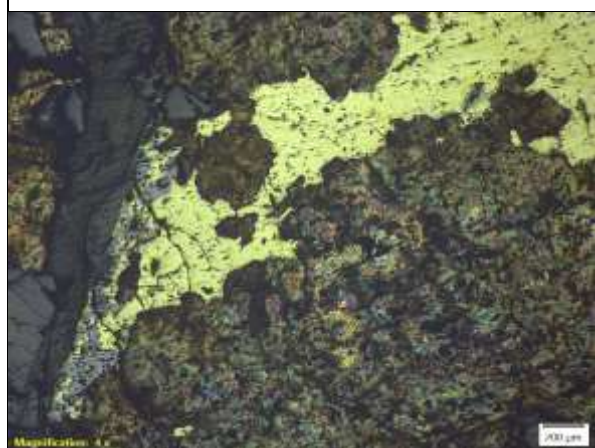


Figure 7.169 Chalcopyrite and bornite in VMS, Naret area

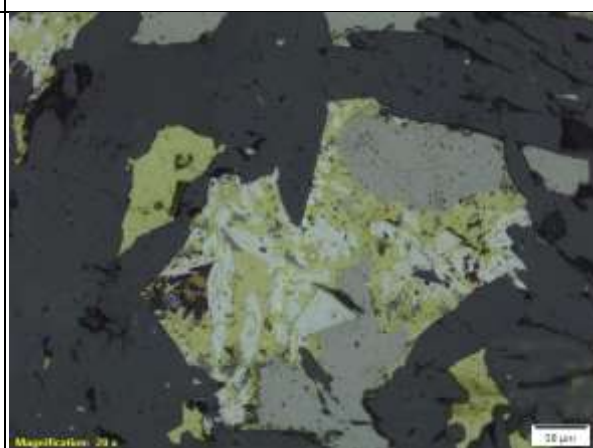
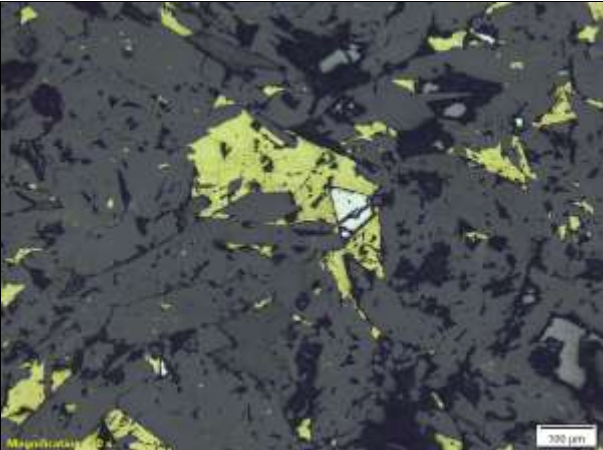
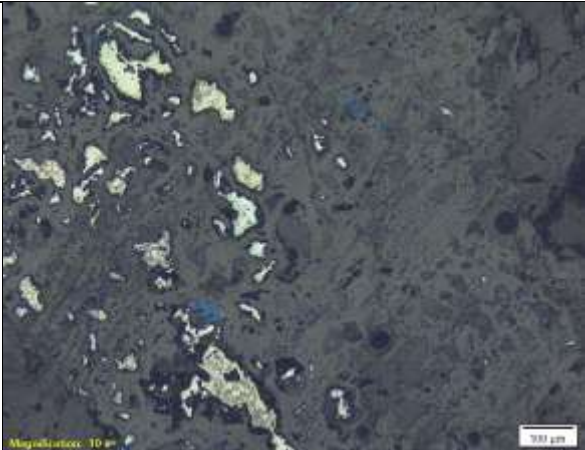
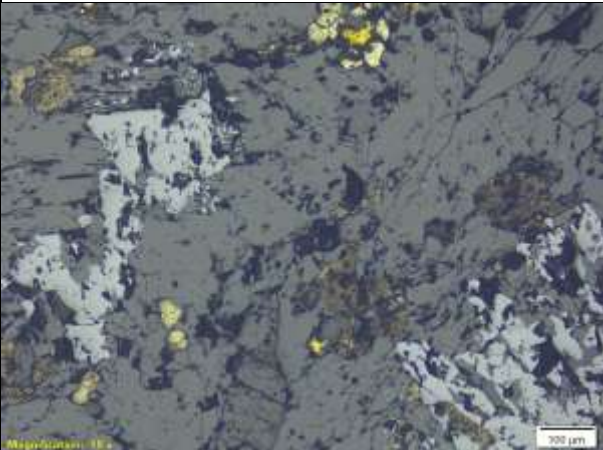
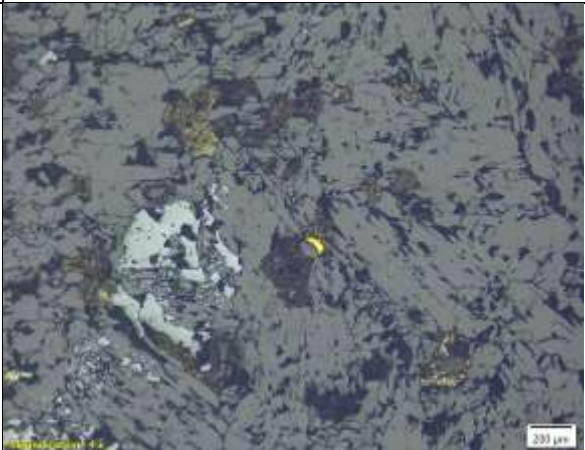


Figure 7.170 Chalcopyrite, galena and bornite in VMS, Naret area

Disseminated Texture

Disseminated sulphides occur as fine-grained pyrite, chalcopyrite, sphalerite, and galena scattered throughout chlorite-sericite schist and other altered host rocks (Figure 7.171-7.174). This texture is most common within the hanging-wall and footwall hydrothermal alteration zones and represents sulphide precipitation peripheral to the massive ore lenses.



	
<i>Figure 7.171 Disseminated chalcopyrite with chlorite schist.</i>	<i>Figure 7.172 Disseminated pyrite with chlorite schist.</i>
	
<i>Figure 7.173 Disseminated pyrite, chalcopyrite, galena with chlorite schist.</i>	<i>Figure 7.174 Disseminated chalcopyrite, pyrite with chlorite schist.</i>

Stringer (Stockwork) Texture

The feeder zone beneath the massive sulphide lenses is represented by quartz-sulphide stringers and stockwork veinlets dominated by chalcopyrite with subordinate pyrite (Figure 7.175 to 7.178). These mineralized vein networks record focused hydrothermal fluid flow responsible for transporting metals to the seafloor during ore formation.

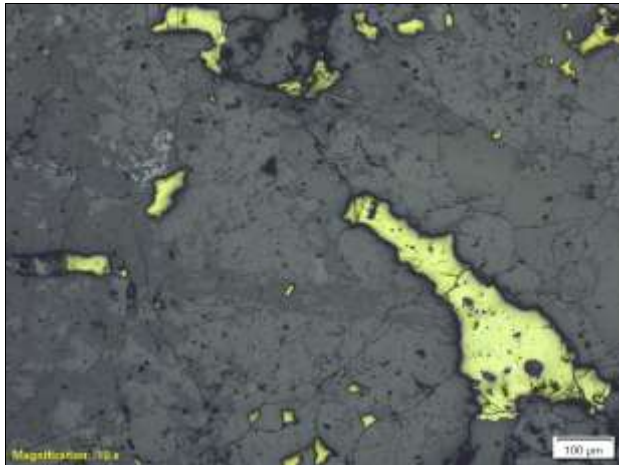


Figure 7.175 Stringer chalcopyrite with chlorite schist

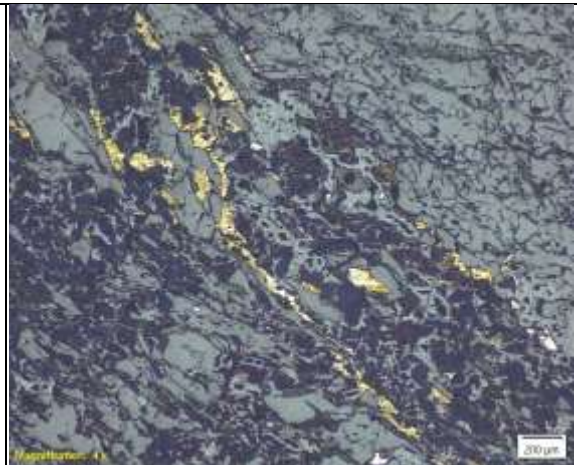


Figure 7.176 Stringer chalcopyrite with chlorite schist.

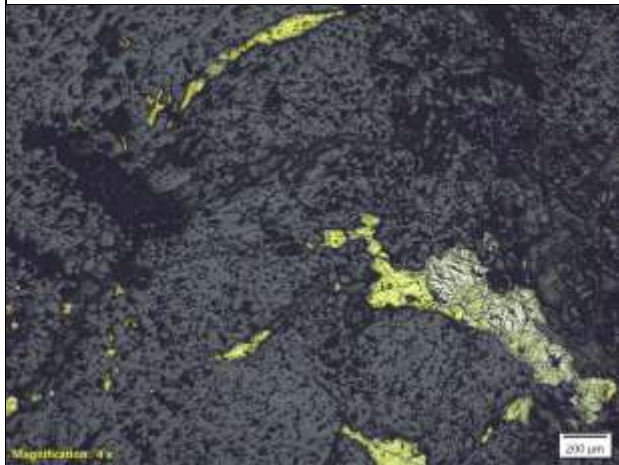


Figure 7.177 A362 Stringer chalcopyrite with chlorite schist.

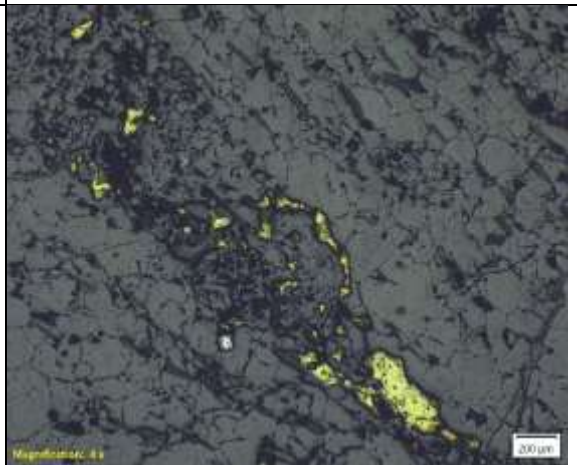


Figure 7.178 Stringer chalcopyrite with chlorite schist.

Banded and Laminated Texture

Alternating sulphide-rich and silicate-rich layers are locally preserved within the ore despite subsequent deformation (Figure 7.179 to 7.180). These banded and laminated textures are interpreted as remnants of original submarine exhalative sulphide deposition and sedimentation on the ancient seafloor.

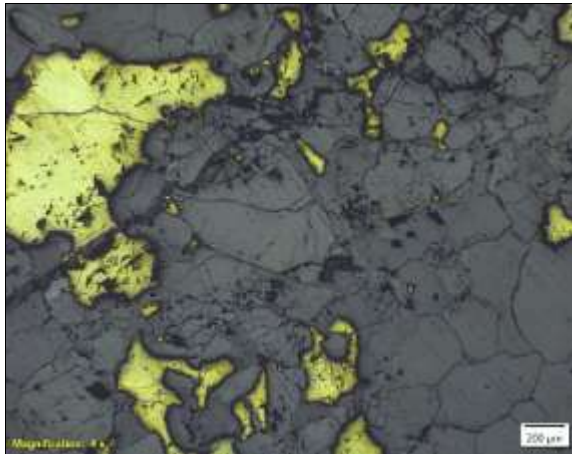


Figure 7.179 Banded Chalcopyrite in chlorite schist

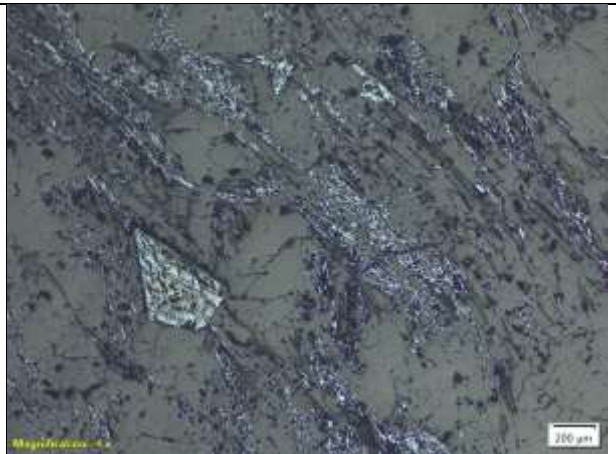


Figure 7.180 Banded pyrite in chlorite schist.

Brecciated Texture

Brecciated ore comprises angular fragments of sulphide minerals enclosed within a matrix of later sulphide minerals and quartz (Figure 1.181 to 184). This texture records hydrothermal brecciation during mineralization followed by tectonic fragmentation associated with regional deformation.

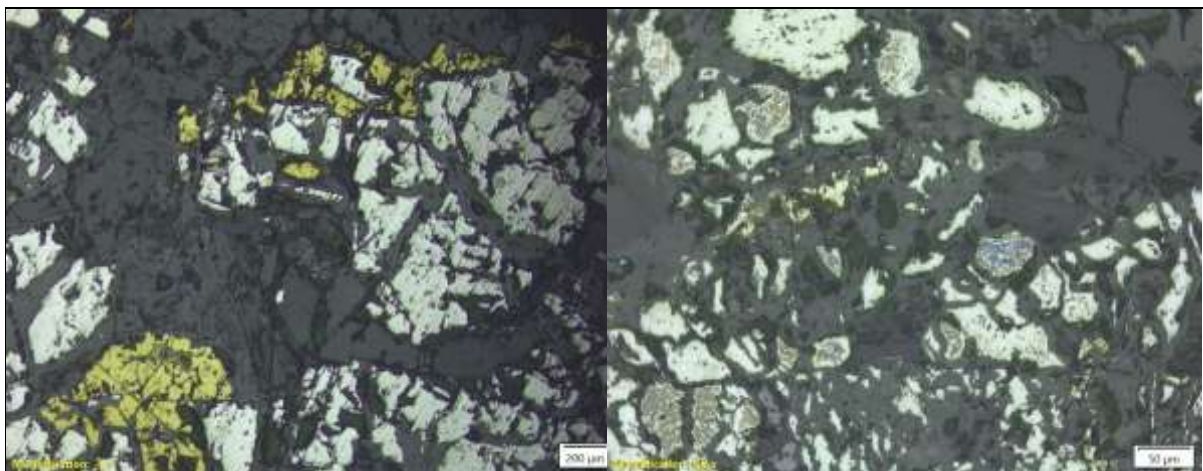


Figure 7.181 Brecciated chalcopyrite and galena with chlorite schist.

Figure 7.182 Brecciated chalcopyrite, bornite and galena with chlorite schist.

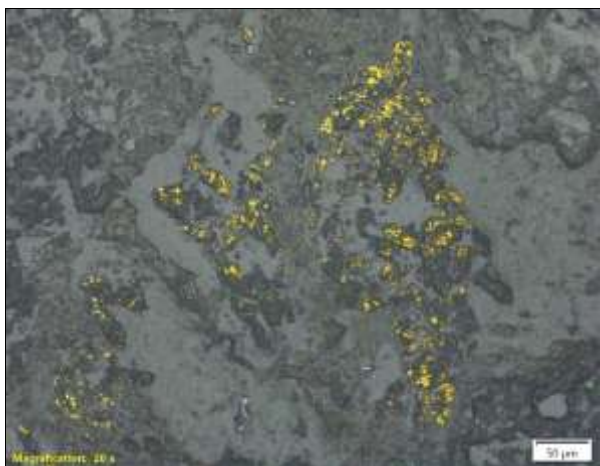


Figure 7.183 Brecciated chalcopyrite with chlorite schist.

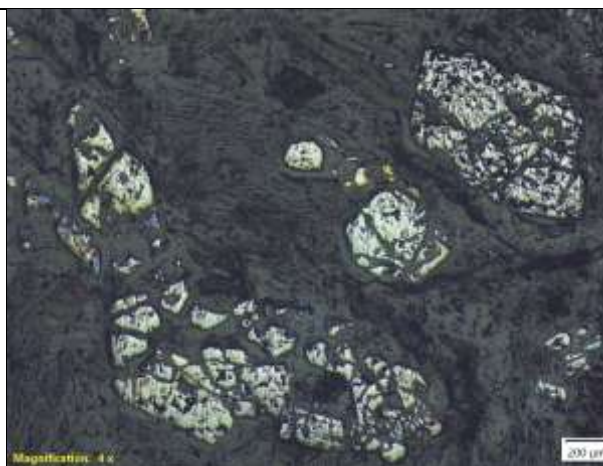


Figure 7.184 Brecciated chalcopyrite and bornite with chlorite schist.

Replacement Texture

Replacement textures are commonly observed where chalcopyrite partially replaces earlier pyrite grains along grain boundaries and fractures (Figure 7.185 to 7.188). These relationships indicate successive stages of hydrothermal mineralization accompanied by later metamorphic remobilization of copper-bearing fluids.

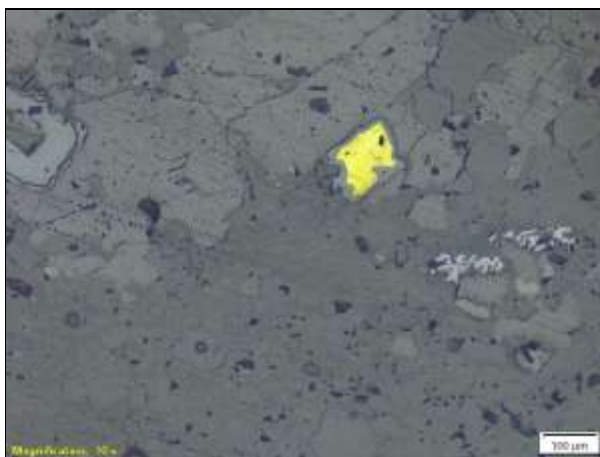


Figure 7.185 Replacement chalcopyrite with chalcocite with chlorite schist.



Figure 7.186 Replacement chalcopyrite with pyrite with chlorite schist.



Figure 7.187 Replacement chalcopyrite with chalcocite with chlorite schist.

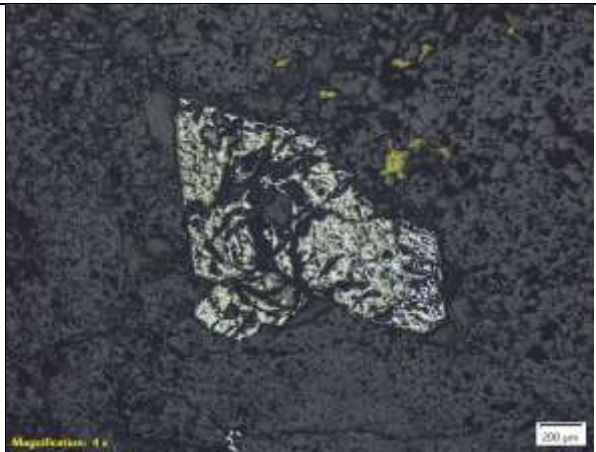


Figure 7.188 Replacement pyrite with chalcocite with chlorite schist.

Fracture-Filling Texture

Numerous fractures developed within pyrite are filled by chalcopyrite and quartz, indicating post-crystallization remobilization of sulphides during regional metamorphism (Figure 7.189 to 7.192).. These fracture-fillings demonstrate localized redistribution of metals under deformational conditions.



Figure 7.189 Fracture fill chalcopyrite with chlorite schist.

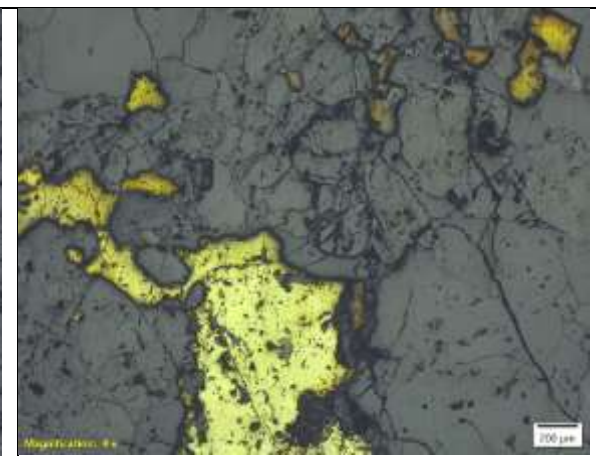


Figure 7.190 Fracture fill chalcopyrite with chlorite schist.

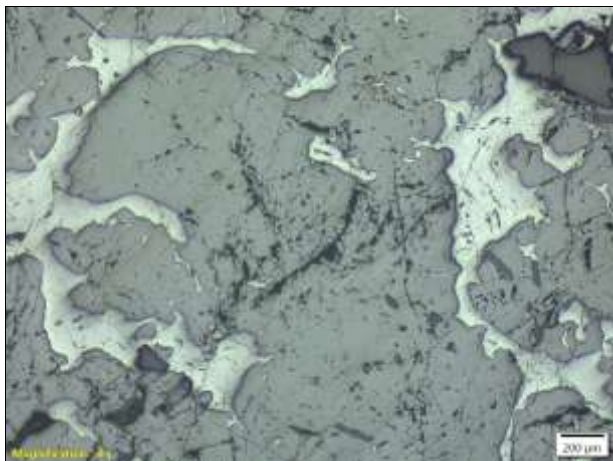


Figure 7.191 Galena and Sphalerite with amphibolite.

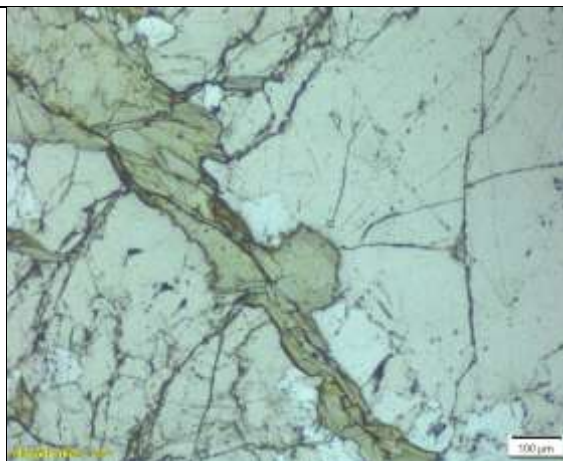


Figure 7.192 sphalerite with amphibolite and chlorite schist

Pressure-Shadow and Cataclastic Texture

Many sulphide grains exhibit elongation, brittle fracturing, grain-size reduction, and pressure-shadow development around competent mineral grains. Cataclastic deformation and dynamic recrystallization reflect intense compressional stresses imposed during Himalayan tectonism (Figure 7.193 to 7.196).



Figure 7.193 Arsenoyrite shows pressure shadow

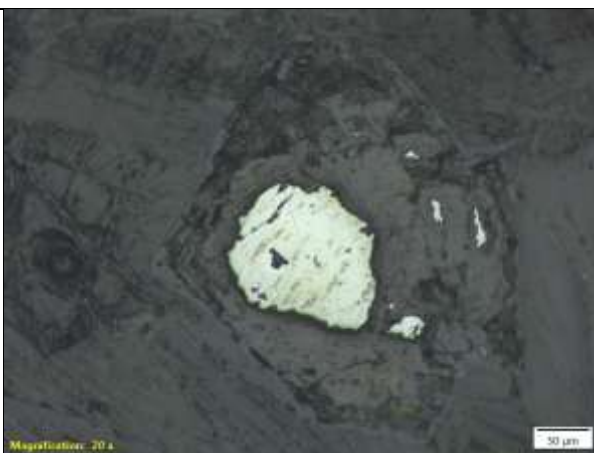


Figure 7.194 pyrite shows pressure shadow

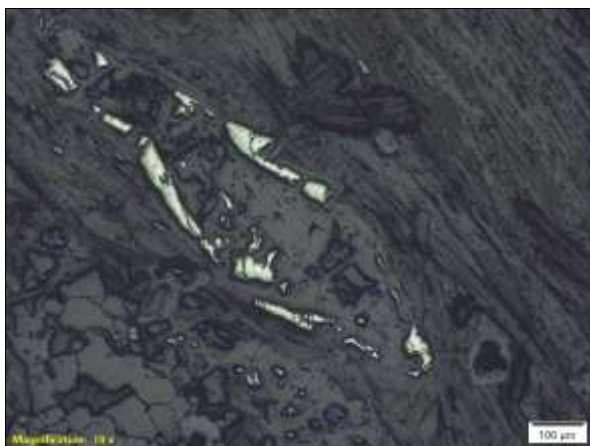


Figure 7.195 Pyrite and bornite in pressure shadow.

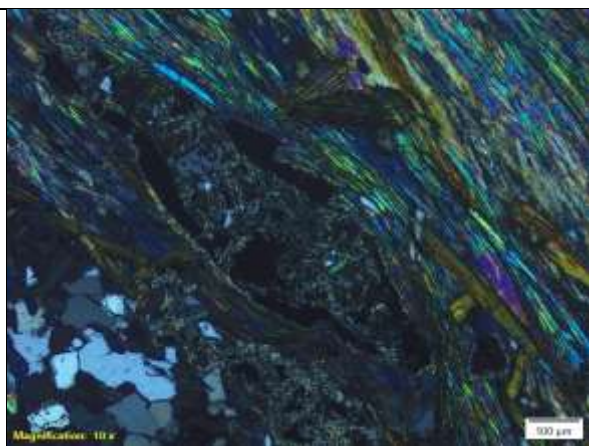


Figure 7.196 Pyrite bornite in pressure shadow.

Granoblastic (Recrystallized) Texture

Metamorphic recrystallization has produced equigranular mosaics of sulphide minerals, particularly pyrite and sphalerite ((Figure 7.197 to 7.200). In many samples, original colloform, framboidal, and other primary hydrothermal textures have been largely obliterated by greenschist- to amphibolite-facies metamorphism.

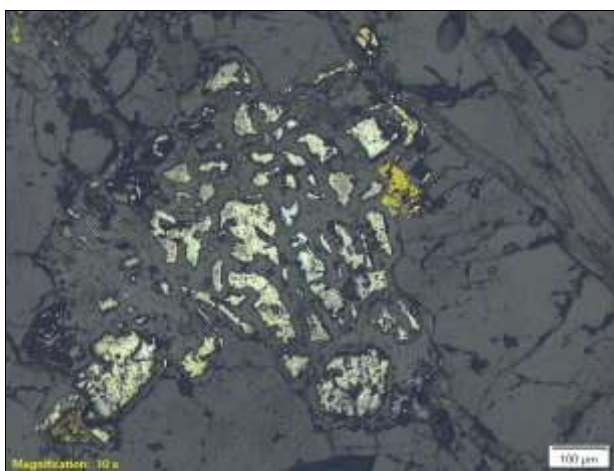


Figure 7.197 Recrystallized pyrite and chalcopyrite.

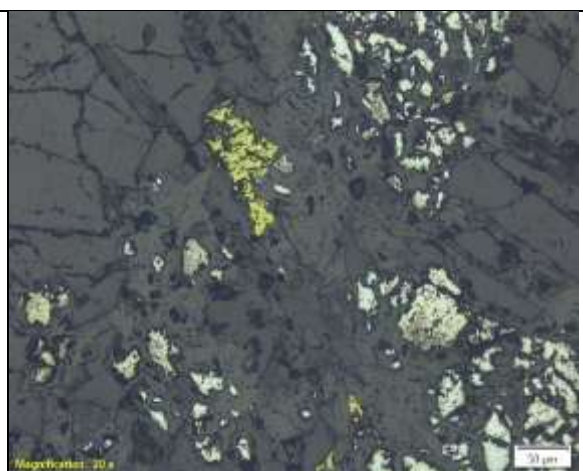
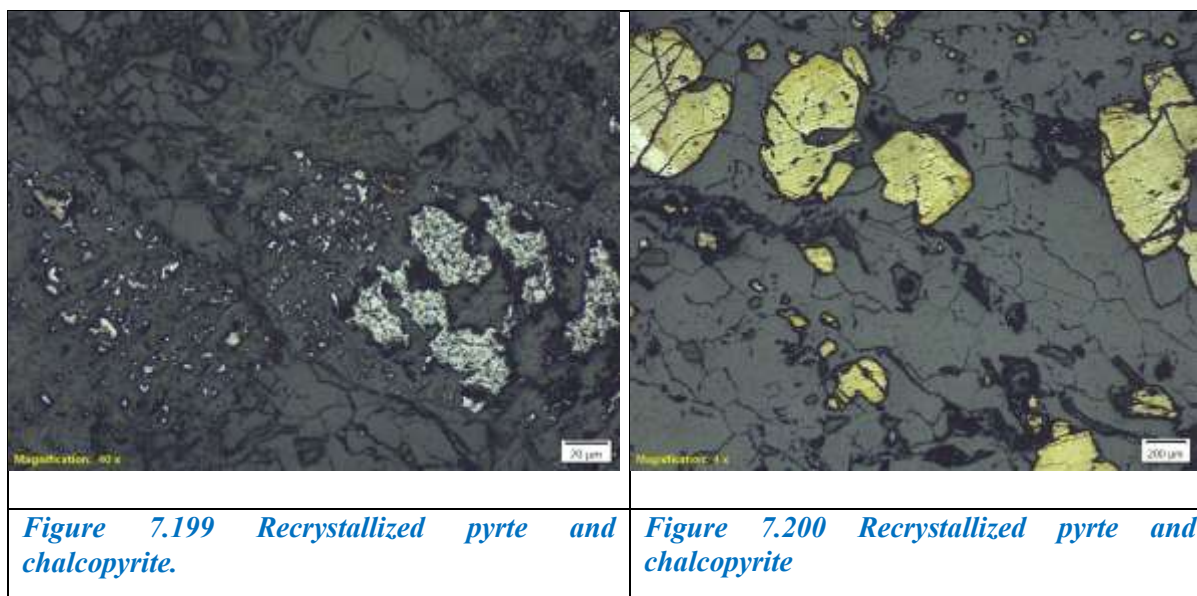


Figure 7.198 Recrystallized pyrite and chalcopyrite



Genetic Interpretation

The mineralogical assemblage and ore textures of the Askot Naret VMS Zone provide compelling evidence for a metamorphosed Proterozoic volcanogenic massive sulphide (VMS) system. The occurrence of massive sulphide lenses associated with disseminated mineralization and an underlying quartz-chalcopyrite stockwork zone is characteristic of submarine hydrothermal deposits formed on or immediately beneath the palaeoseafloor.

Subsequent regional metamorphism under greenschist- to amphibolite-facies conditions, together with intense Himalayan deformation, resulted in extensive recrystallization, sulphide remobilization, pressure-shadow development, cataclasis, and localized replacement textures. Nevertheless, relic primary depositional textures such as banding, lamination, and stockwork mineralization remain preserved in several parts of the deposit.

The Askot Regional Block preserves a Cu–Zn–Pb ± Ag ± Au polymetallic sulphide assemblage with minor arsenopyrite and localized antimony enrichment. The combined mineralogical, petrographic, and textural characteristics strongly support interpretation of the Askot Naret mineralization as a structurally modified and metamorphosed Proterozoic volcanogenic massive sulphide (VMS) deposit that has undergone significant tectono-metamorphic overprinting during Himalayan orogenesis.

7.15 Surface Geochemical Analysis of the Askot-Naret Hinge Zone

The strongest and most coherent exploration signal is a polymetallic base-metal anomaly in the central Askot-Naret hinge corridor, especially around the Naret side of the block. This corridor shows coincidence of Cu, Pb, Zn, Bi, Sb and Sn anomalies, with additional W and Mo support

in selected sites. The high anomaly ranges in Cu, Pb and Zn indicate that the area should be treated as a priority polymetallic volcanogenic massive sulphide target rather than as a single-element anomaly.

A second anomaly domain occurs in the southern to southwestern part of the block, where Sb, Sn, Te, Tl and W form a pathfinder association. This domain may represent either the southern continuation of the same hydrothermal system, a peripheral halo, or a later mineralised vein trend.

The anomaly pattern is interpreted as a structurally focused polymetallic hydrothermal system developed along a fold-hinge/contact corridor. The strongest central anomaly cluster occurs where the schist-amphibolite package, chlorite schist and leucogranite/quartzite contacts converge. This geometry is favourable for fluid focusing because the competency contrast between quartzite, leucogranite and schistose mafic/intermediate units can generate permeability contrasts, fracture development and dilation during deformation.

7.15.1 Surface Bedrock Copper (Cu) Anomaly

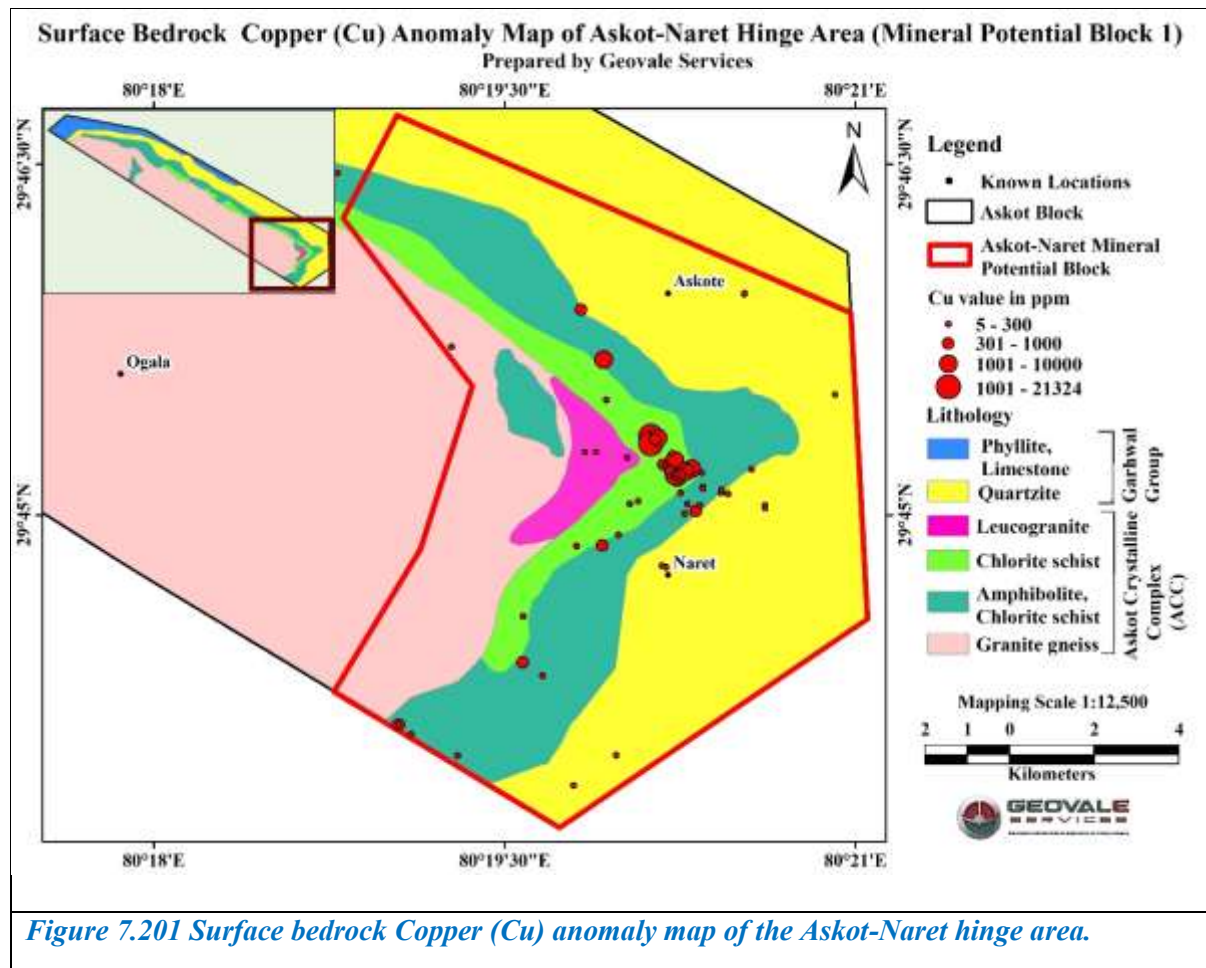


Figure 7.201 Surface bedrock Copper (Cu) anomaly map of the Askot-Naret hinge area.

Spatial distribution

Copper anomalies are concentrated mainly in the central Askot-Naret hinge corridor, particularly around the Naret side of the block. The highest-class points occur as a tight cluster at or near the transition between amphibolite/chlorite schist, chlorite schist, quartzite and leucogranite. Scattered moderate to high points extend along the same north-south to NNW-SSE litho-structural corridor, with additional isolated points toward the southern limb and northeastern quartzite margin.

Geological interpretation

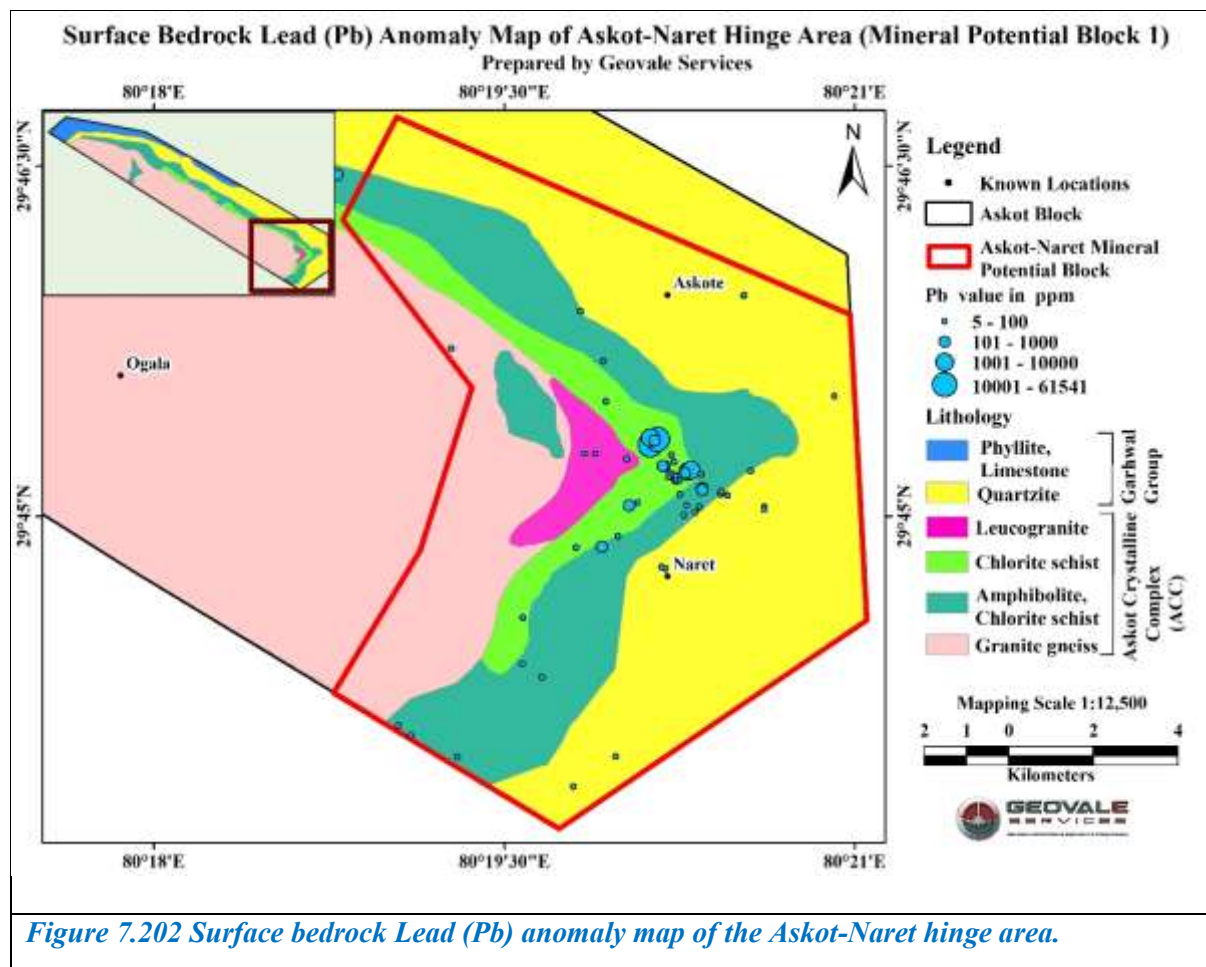
The Cu pattern is the clearest expression of the mineralised system. The clustering suggests a structurally controlled sulphide-bearing zone rather than random background dispersion. Its spatial coincidence with amphibolite/chlorite schist and the leucogranite-contact corridor implies that mineralisation may be controlled by hinge-related dilation, lithological competency contrast, and fluid focusing along schistose/contact zones.



Exploration significance

Very high priority. The maximum value of 21,324 ppm Cu (total 58 bedrock samples are analysed, 33 samples have 2 time than crustal abundance, 21 sample have 5 time than crustal abundance, 15 samples have 10 times than crustal abundance), indicates strong bedrock copper enrichment support massive sulphide cluster (Figure 7.201).

7.15.2 Surface Bedrock Lead (Pb) Anomaly



Spatial distribution

Lead shows a strong anomaly cluster in the central part of the block, close to the Cu-rich Naret-hinge zone. Several smaller anomalous zone around the central amphibolite-chlorite schist and quartzite contact zone.

Geological interpretation

The Pb anomaly is spatially coincident with the main Cu-Zn-Bi-Sb cluster and is interpreted as part of a polymetallic massive sulphide assemblage. The very high upper class suggests the

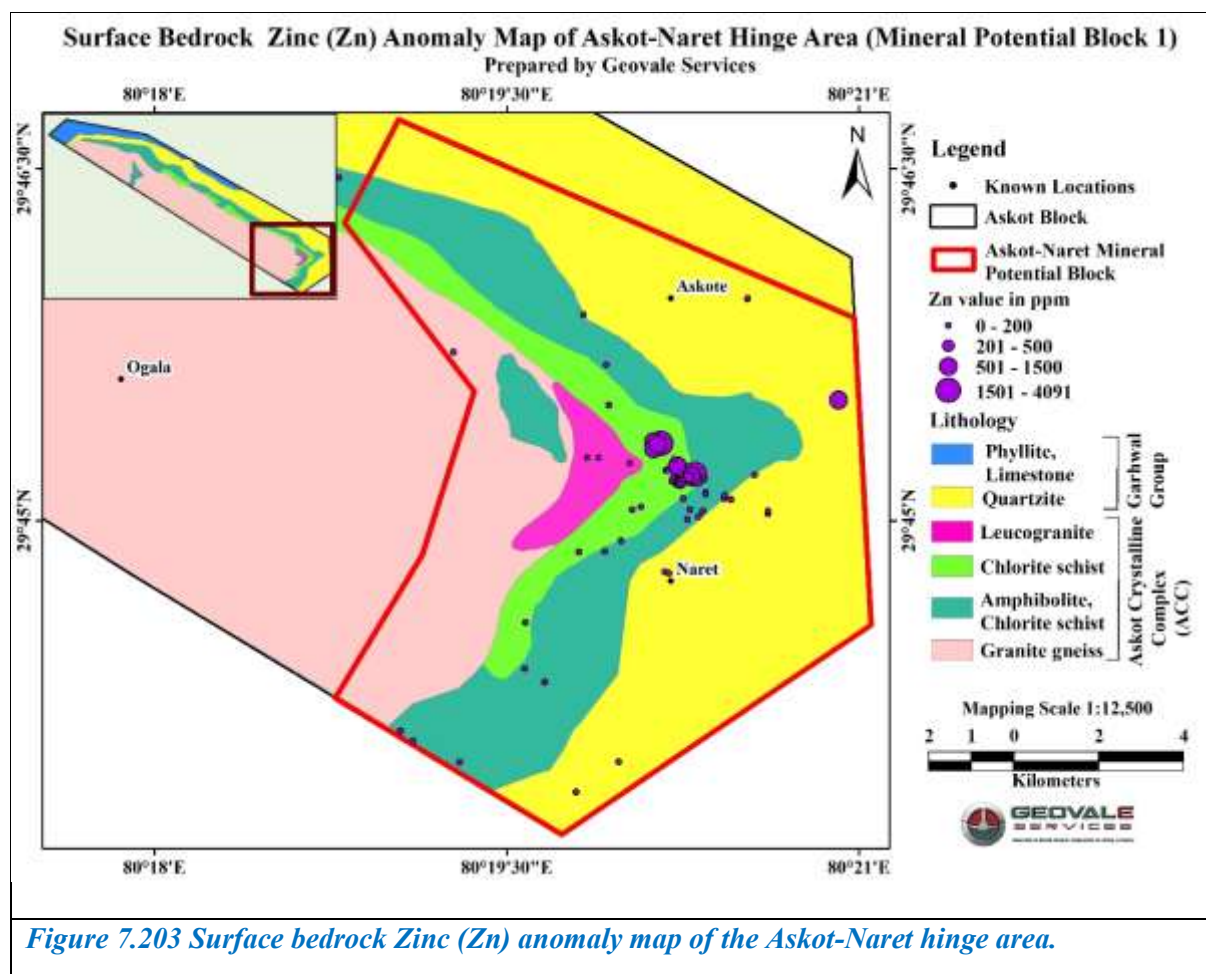


possible presence of galena-rich pockets or veins. The coincidence with the hinge/contact zone indicates a structurally focused polymetallic system, with Pb possibly more concentrated in vein, breccia or replacement sites.

Exploration significance

Very high priority. The maximum value of 61,541 ppm Pb is the highest absolute anomaly range and marks the area as a significant Pb-bearing polymetallic sulphide cluster targets (Figure 7.202).

7.15.3 Surface Bedrock Zinc (Zn) Anomaly



Spatial distribution

Zinc anomalies are developed chiefly in the central mineralised zone around the central hinge zone. High-Zn points overlap with the main Cu-Pb cluster and occur around the amphibolite/chlorite schist and chlorite schist units. A strong isolated Zn point is also seen toward the eastern part of the potential block within or near the quartzite domain.



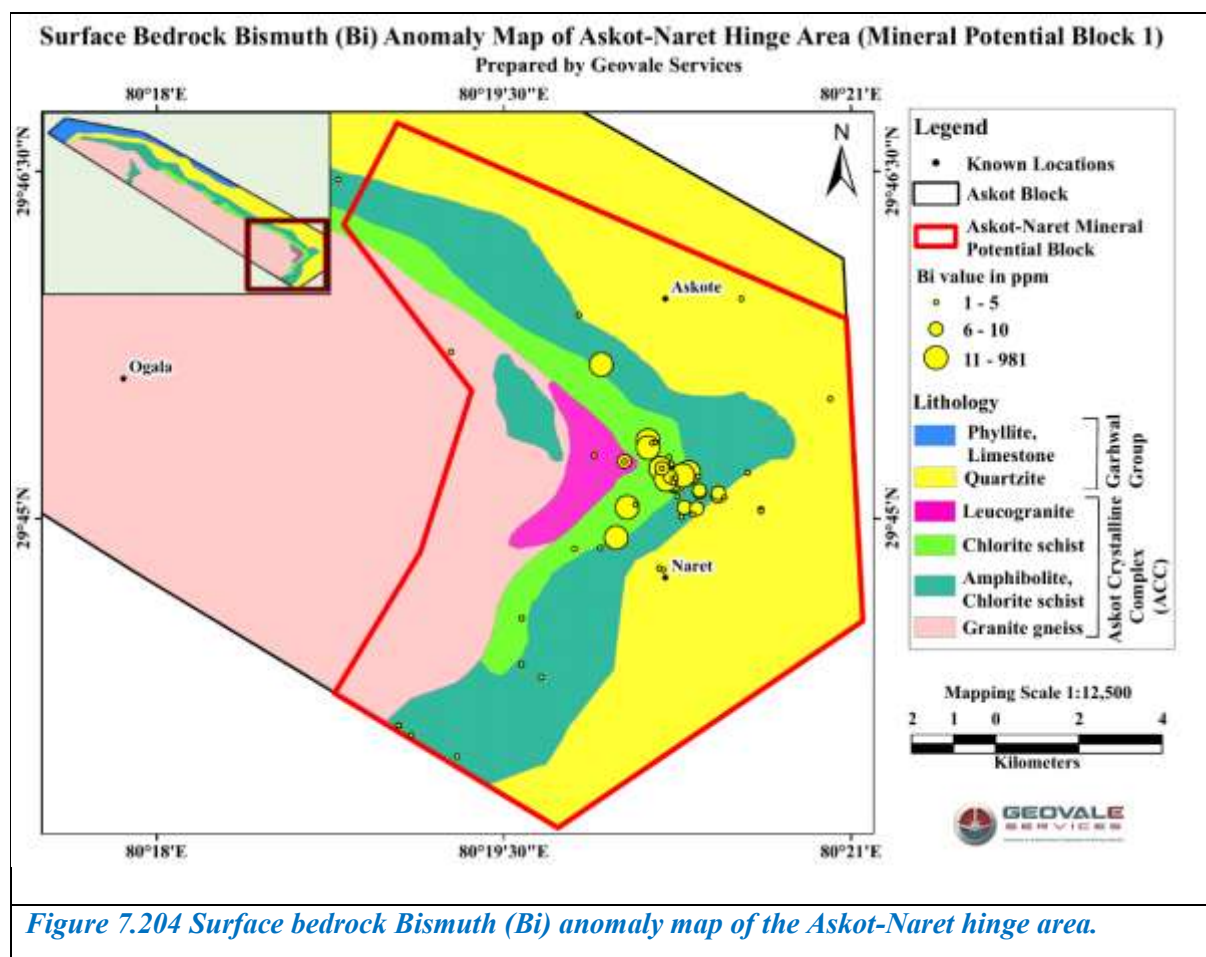
Geological interpretation

The Zn pattern supports a polymetallic sulphide signature. Its close overlap with Cu and Pb indicates that the system is not a single-element copper occurrence, but a broader Cu-Pb-Zn mineralised corridor. Zinc enrichment along the schist-amphibolite belt may reflect sulphide concentration along foliation, contact zones or fold-hinge structures.

Exploration significance

High priority. Zn values up to 4,091 ppm strengthen the base-metal target in a polymetallic massive sulphide system (Figure 7.203). Total 58 bedrock samples are analysed, 14 samples have 2 time than crustal abundance, 9 sample have 5 time than crustal abundance, 6 samples have 10 times than crustal abundance,

7.15.4 Surface Bedrock Bismuth (Bi) Anomaly



Spatial distribution

Bismuth anomalies are concentrated around the central hinge corridor, overlapping the main Cu-Pb-Zn cluster. Several high Bi points lie close to the chlorite schist, amphibolite/chlorite



schist and leucogranite-contact domain. The pattern forms a compact geochemical footprint rather than a broad uniform background.

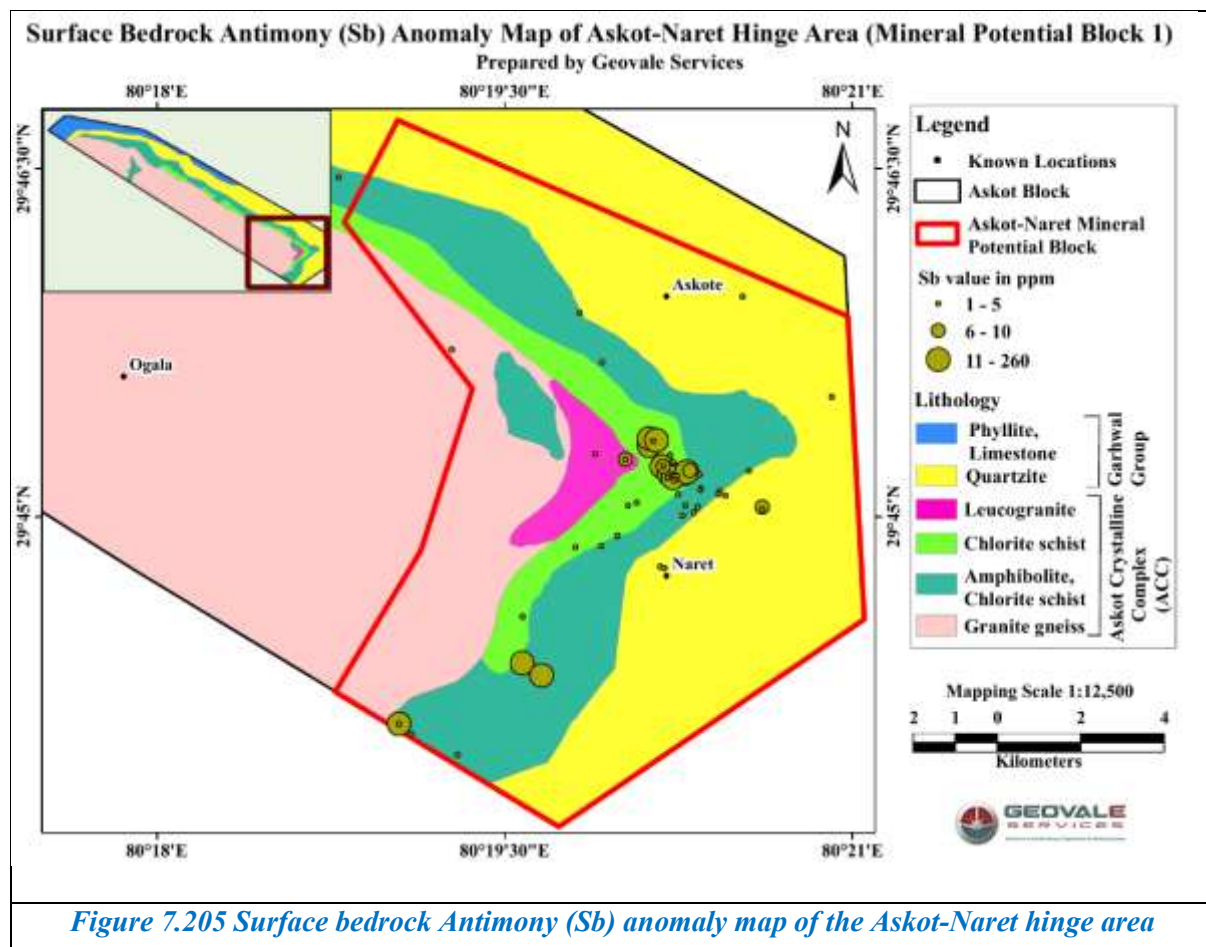
Geological interpretation

Bi enrichment supports a high-temperature hydrothermal component and suggests that the polymetallic system may have been influenced by intrusive or metamorphic-hydrothermal fluids. Its coincidence with Cu-Pb-Zn increases confidence in a real mineralised zone and helps distinguish the central corridor from lower-priority isolated anomalies.

Exploration significance

High priority as a pathfinder. The maximum legend value of 981 ppm is substantial for Bi and indicates a focused hydrothermal anomaly (Figure 7.204). Total 58 bedrock samples are analysed, 58 samples have 10 times than crustal abundance.

7.15.5 Surface Bedrock Antimony (Sb) Anomaly



Spatial distribution

Antimony anomalies occur in two main domains: a central cluster coincident with the Cu-Pb-Zn-Bi zone, and a southern to southwestern trend along the amphibolite/chlorite schist and chlorite schist belt. A smaller anomaly also appears toward the eastern quartzite margin.

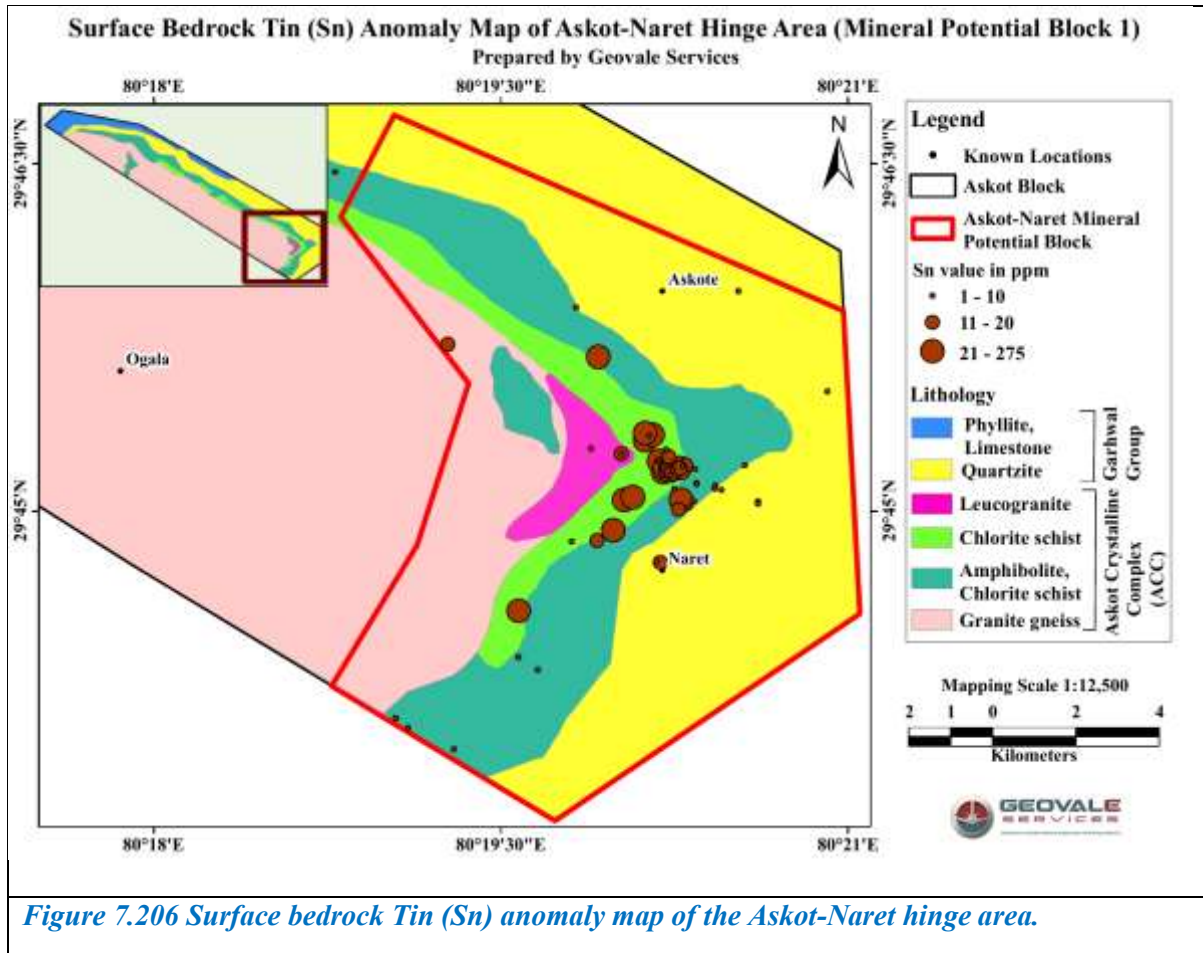
Geological interpretation

The Sb pattern suggests a broader hydrothermal halo around the main base-metal system. Its southern expression may mark either a continuation of the mineralised structure or a more distal/peripheral part of the same hydrothermal event. The central Sb overlap with Pb and Bi suggests possible sulphosalt association.

Exploration significance

Moderate to high priority as a vector. Sb is particularly useful for defining the outer halo and possible structural extensions of the main mineralised corridor (Figure 7.205). Total 58 bedrock samples are analysed, 58 samples have 2 times than crustal abundance, 53 samples have 5 times than crustal abundance, 31 samples have 10 times than crustal abundance,

7.15.6 Surface Bedrock Tin (Sn) Anomaly



Spatial distribution

Tin has one of the broader anomaly footprints. Moderate and high Sn values are distributed along the central to southern part of the block, with a pronounced concentration around the leucogranite, chlorite schist and amphibolite/chlorite schist contact corridor. Additional high-class Sn points occur near the central Cu-Pb-Zn cluster and farther south along the same lithological belt.

Geological interpretation

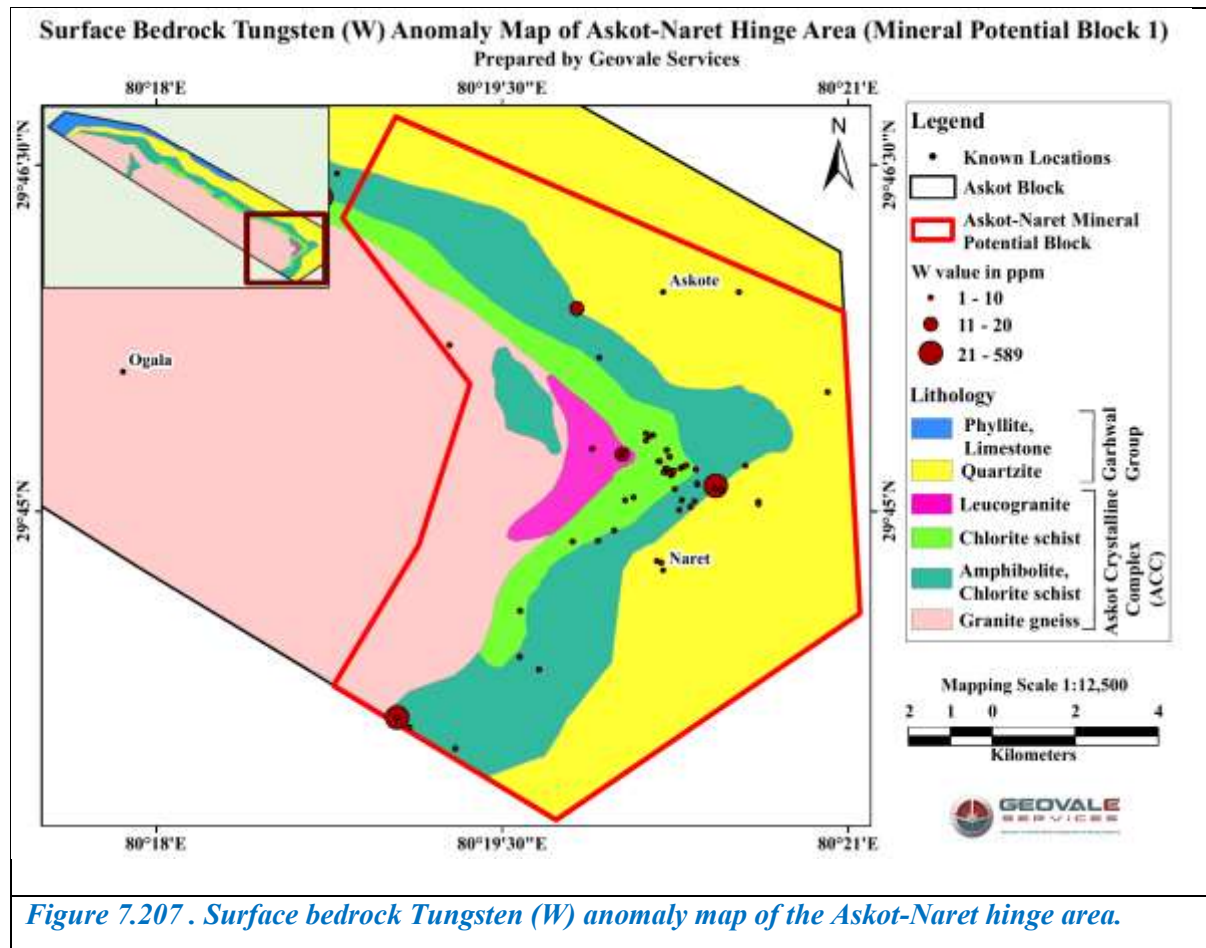
The Sn pattern implies an intrusion-related or granite-influenced hydrothermal component. Its spatial relationship with leucogranite and the schist-amphibolite corridor suggests that Sn may mark late-stage fluids, veinlets, greisen-like alteration, or structurally focused mineralisation near intrusive contacts.

Exploration significance

High priority for defining intrusion-related vectors. Although Sn is not the principal commodity target here, it is important because it links the polymetallic anomaly system to the

leucogranite/contact environment (Figure 7.206). Total 58 bedrock samples are analysed, 33 samples have 2 times than crustal abundance, 25 samples have 5 times than crustal abundance, 19 samples have 10 times than crustal abundance,

7.15.7 Surface Bedrock Tungsten (W) Anomaly



Spatial distribution

Tungsten anomalies are more discrete than Sn. High-class W points occur near the central-eastern part of the mineralised corridor and in the southwestern/southern portion of the block. Scattered lower values are present across the central cluster and along the schist-amphibolite belt.

Geological interpretation

The W distribution supports a localised intrusion-related component, especially where it overlaps with Sn, Bi and Mo. The central-eastern W anomaly near the quartzite/contact domain may represent a specific vein or contact-controlled enrichment site. The southern W anomaly

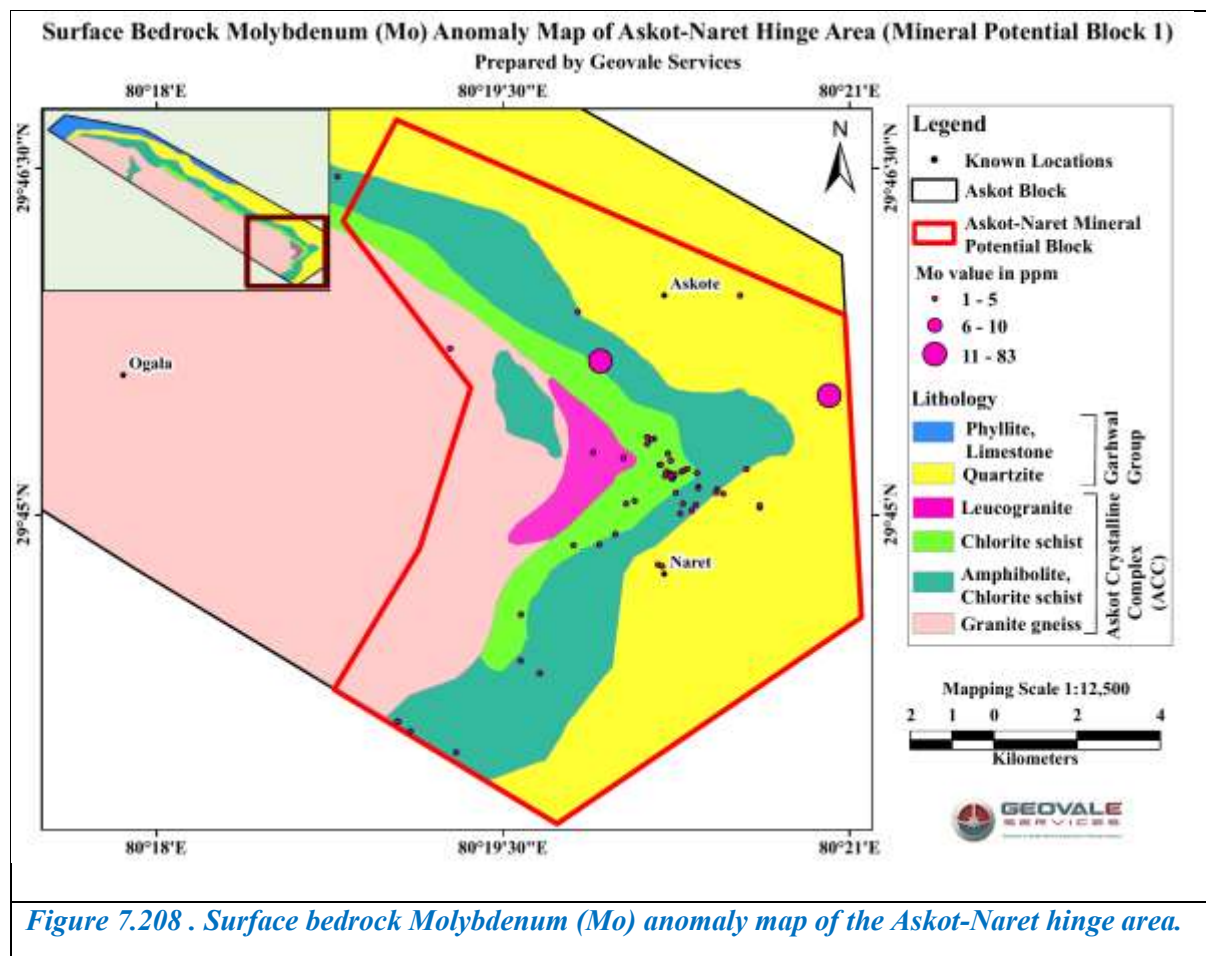


indicates that the intrusive-hydrothermal footprint may extend beyond the main Cu-Pb-Zn cluster.

Exploration significance

Moderate to high priority as an intrusion-related vector (Figure 7.207). Total 58 bedrock samples are analysed, 21 samples have 2 times than crustal abundance, 12 samples have 5 times than crustal abundance, 4 samples have 10 times than crustal abundance,

7.15.8 Surface Bedrock Molybdenum (Mo) Anomaly



Spatial distribution

Molybdenum anomalies are relatively sparse and localised. Most points are low to moderate, but a few high-class points occur in the northern-central part of the corridor and toward the eastern side of the potential block. The central Cu-Pb-Zn cluster itself is not uniformly Mo-rich.



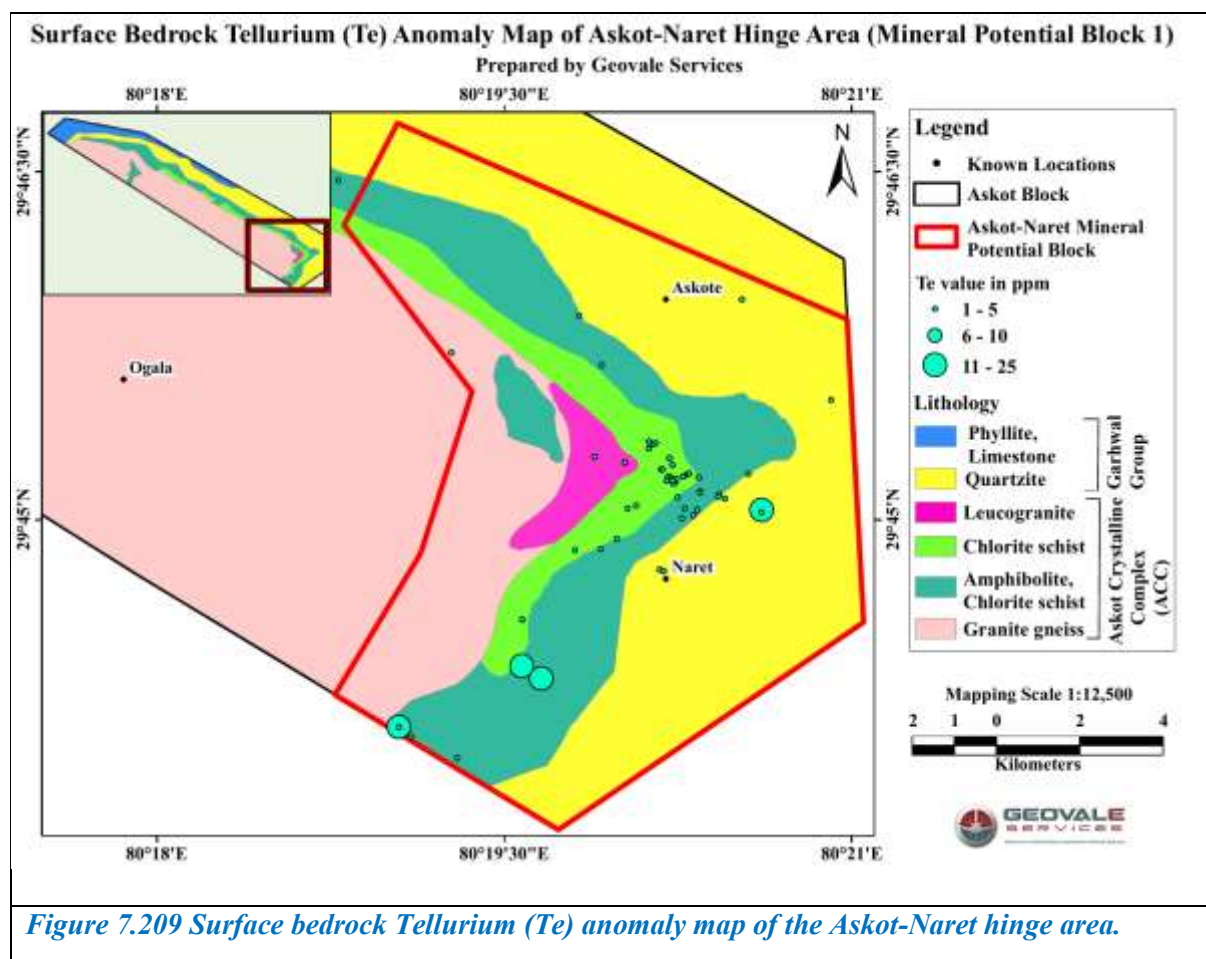
Geological interpretation

Mo appears to be a secondary vector rather than a dominant commodity signal. Its local enrichment suggests discrete intrusive-hydrothermal pulses or structurally focused sites. The limited coincidence with the main base-metal cluster may indicate zoning, with Mo representing a higher-temperature or more proximal intrusive signature.

Exploration significance

Moderate priority as a genetic indicator. The maximum of 83 ppm is meaningful as a pathfinder but lower in exploration priority than Cu, Pb, Zn, Bi, Sn and W (Figure 7.208). Total 58 bedrock samples are analysed, 11 samples have 2 time than crustal abundance, 5 sample have 5 time than crustal abundance, 2 samples have 10 times than crustal abundance,

7.15.9 Surface Bedrock Tellurium (Te) Anomaly



Spatial distribution

Tellurium shows a limited but significant anomaly distribution. High Te points are mainly in the southern to southwestern part of the block, with another high point east of the central cluster near the quartzite margin. Many central points remain low to moderate.

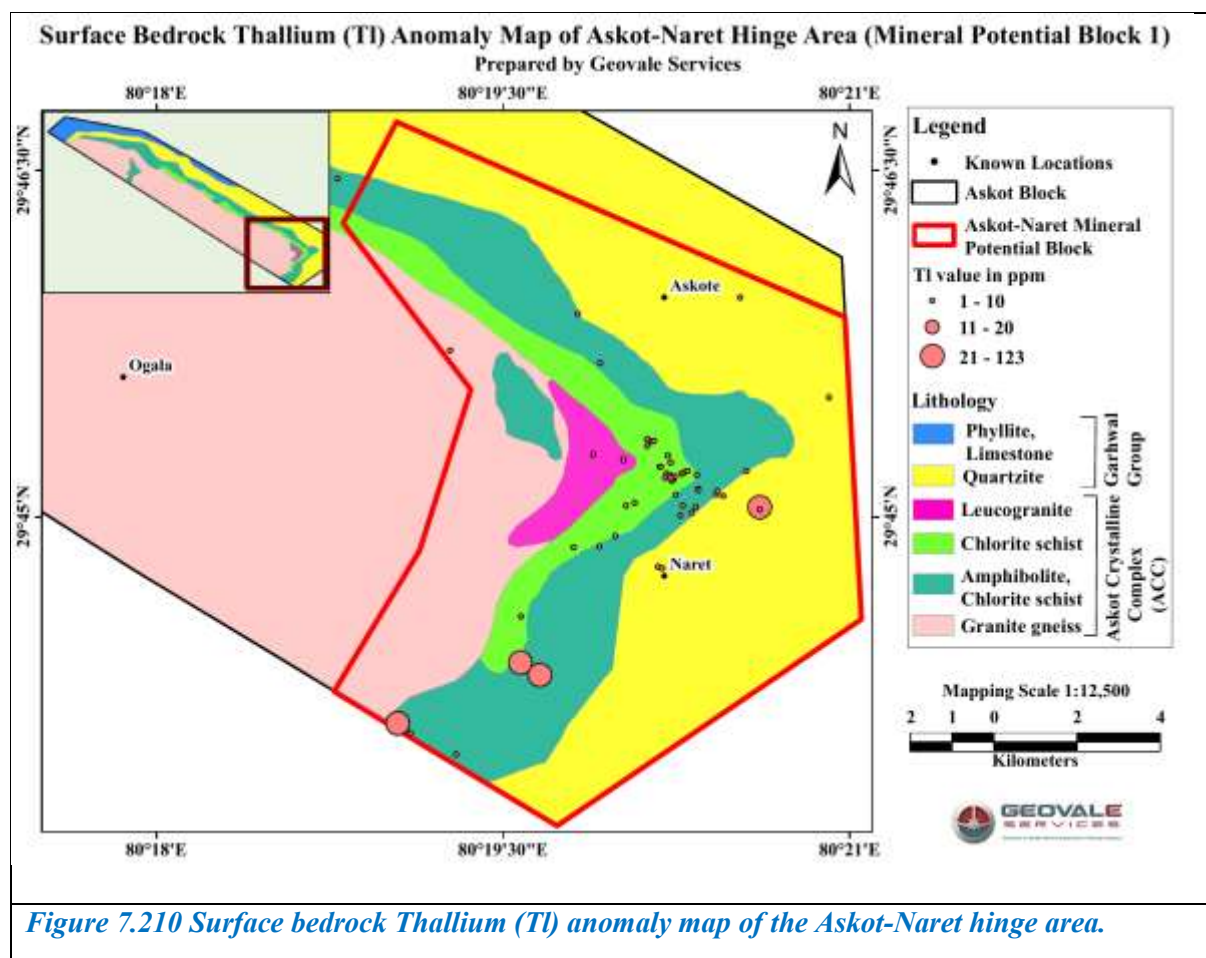
Geological interpretation

Te is interpreted as a distal or specialised hydrothermal pathfinder rather than the main base-metal vector. The southern Te-Tl-Sb association may represent a peripheral halo, a structurally separate vein trend, or a later hydrothermal phase. Its eastern anomaly could mark a discrete vein/contact site on the quartzite margin.

Exploration significance

Moderate priority. Te is useful for assessing precious-metal affinity like gold and silver (Figure 7.209).

7.15.10 Surface Bedrock Thallium (Tl) Anomaly



Spatial distribution

Thallium anomalies are concentrated mostly in the southern to southwestern part of the block, with an additional high-class point toward the eastern side of the central corridor. The distribution broadly resembles parts of the Te and Sb footprint rather than the tight central Cu-Pb-Zn cluster.

Geological interpretation

Tl likely represents a hydrothermal halo or alteration-related dispersion pattern around the principal base-metal system. Its association with southern Sb-Te-W anomalies suggests possible peripheral alteration or a separate late-stage mineralised structure.

Exploration significance

Moderate priority as a pathfinder. Tl is useful for vectoring alteration zones (Figure 7.210).

Element-wise Anomaly Classes

Table 7.32 Element-wise Anomaly Classes

Element	commodity role	Values in ppm	Highest value
Copper (Cu)	Primary base-metal commodity; direct indicator of copper mineralisation helps to identify discharge zones in VMS system	5-300 ppm; 301-1,000 ppm; 1,001-21,324 ppm	21,324 ppm
Lead (Pb)	Primary base-metal element; likely galena-bearing association where support VMS.	5-100 ppm; 101-200 ppm; 201-61,541 ppm	61,541 ppm
Zinc (Zn)	Primary base-metal commodity; supports sphalerite-bearing polymetallic massive sulphide potential.	0-200 ppm; 201-500 ppm; 501-4,091 ppm	4,091 ppm
Bismuth (Bi)	High-temperature hydrothermal/pathfinder element; commonly useful in polymetallic and intrusion-related systems.	1-5 ppm; 6-10 ppm; 11-981 ppm	981 ppm
Antimony (Sb)	Pathfinder element; commonly associated with sulphosalt-bearing and structurally controlled polymetallic systems.	1-5 ppm; 6-10 ppm; 11-260 ppm	260 ppm

Tin (Sn)	Granite/intrusion-related pathfinder; may indicate cassiterite or Sn-bearing hydrothermal phases.	1-10 ppm; 11-20 ppm; 21-275 ppm	275 ppm
Tungsten (W)	Intrusion-related pathfinder; commonly linked to W-Sn-Mo systems and skarn/vein/contact environments.	1-10 ppm; 11-20 ppm; 21-589 ppm	589 ppm
Molybdenum (Mo)	Intrusion-related pathfinder; useful for detecting porphyry-like, granite-related or high-temperature hydrothermal influence.	1-5 ppm; 6-10 ppm; 11-83 ppm	83 ppm
Tellurium (Te)	Precious-metal and hydrothermal pathfinder; useful where Au-Ag-telluride or sulphide systems are suspected.	1-5 ppm; 6-10 ppm; 11-25 ppm	25 ppm
Thallium (Tl)	Hydrothermal alteration/pathfinder element; may be associated with pyritic, or sulphosalt-rich systems.	1-10 ppm; 11-20 ppm; 21-123 ppm	123 ppm

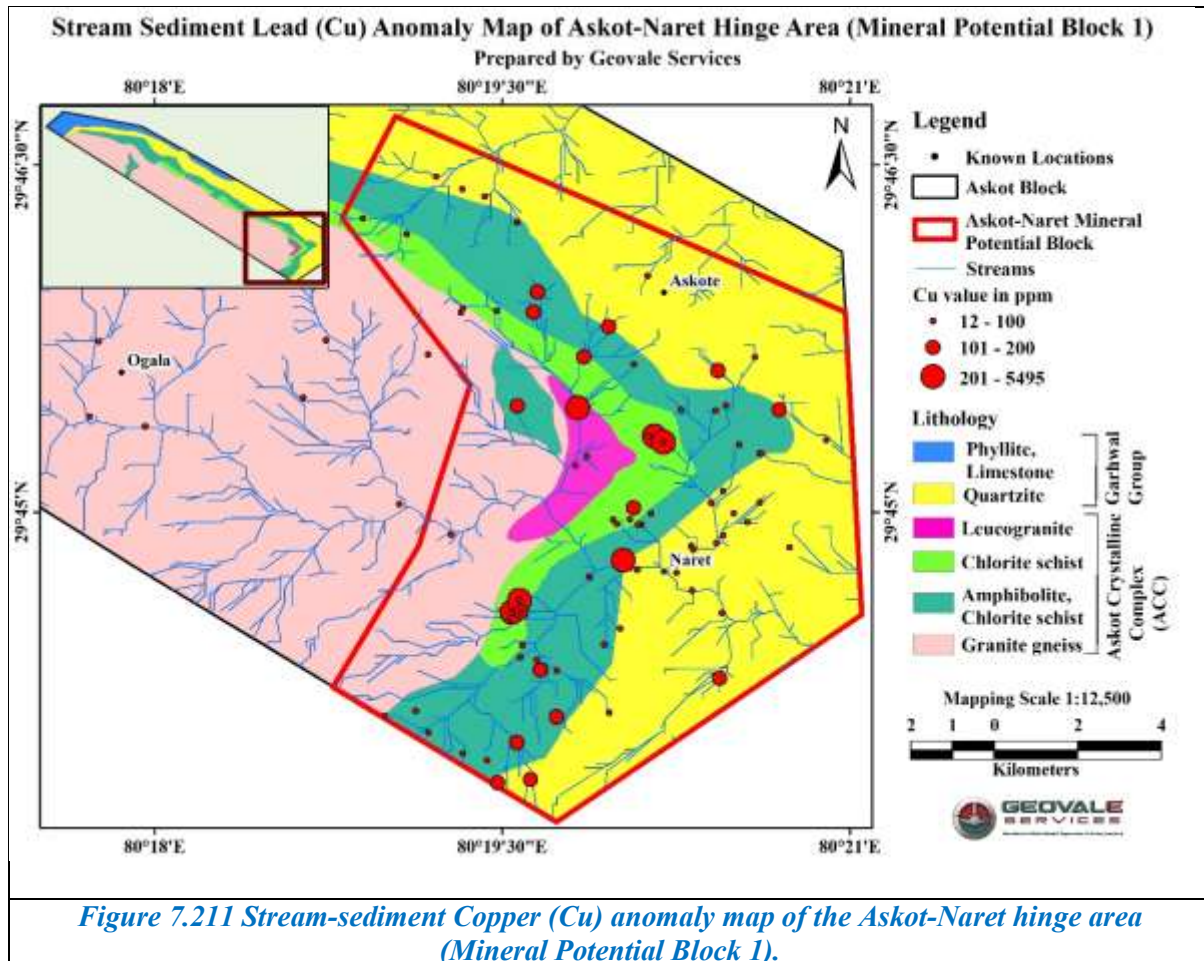
- The central Askot-Naret Hinge Zone is the primary exploration target because it shows the strongest multi-element coincidence, especially Cu-Pb-Zn-Bi-Sb-Sn.
- The Cu and Pb value indicate the strongest direct base-metal signal, while Zn confirms the polymetallic character of the system.
- Bi, Sn, W and Mo indicate a possible high-temperature or intrusion-related component, especially near the leucogranite and schist-amphibolite contacts.
- Sb, Te and Tl help outline the broader hydrothermal halo and possible southern/eastern extensions.

7.15.11 Stream sediment Copper (Cu) Anomaly

The distribution indicates that 19 samples reach or exceed 2 times crustal abundance (≥ 112 ppm); 5 samples reach or exceed 5 times crustal abundance (≥ 280 ppm); and 4 samples reach or exceed 10 times crustal abundance (≥ 560 ppm).

Table 7.33 Summary of Copper (Cu) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Cu concentration	12 ppm
Maximum Cu concentration	5,495 ppm
Samples ≥ 2 times crustal abundance (≥ 112 ppm)	19
Samples ≥ 5 times crustal abundance (≥ 280 ppm)	5
Samples ≥ 10 times crustal abundance (≥ 560 ppm)	4



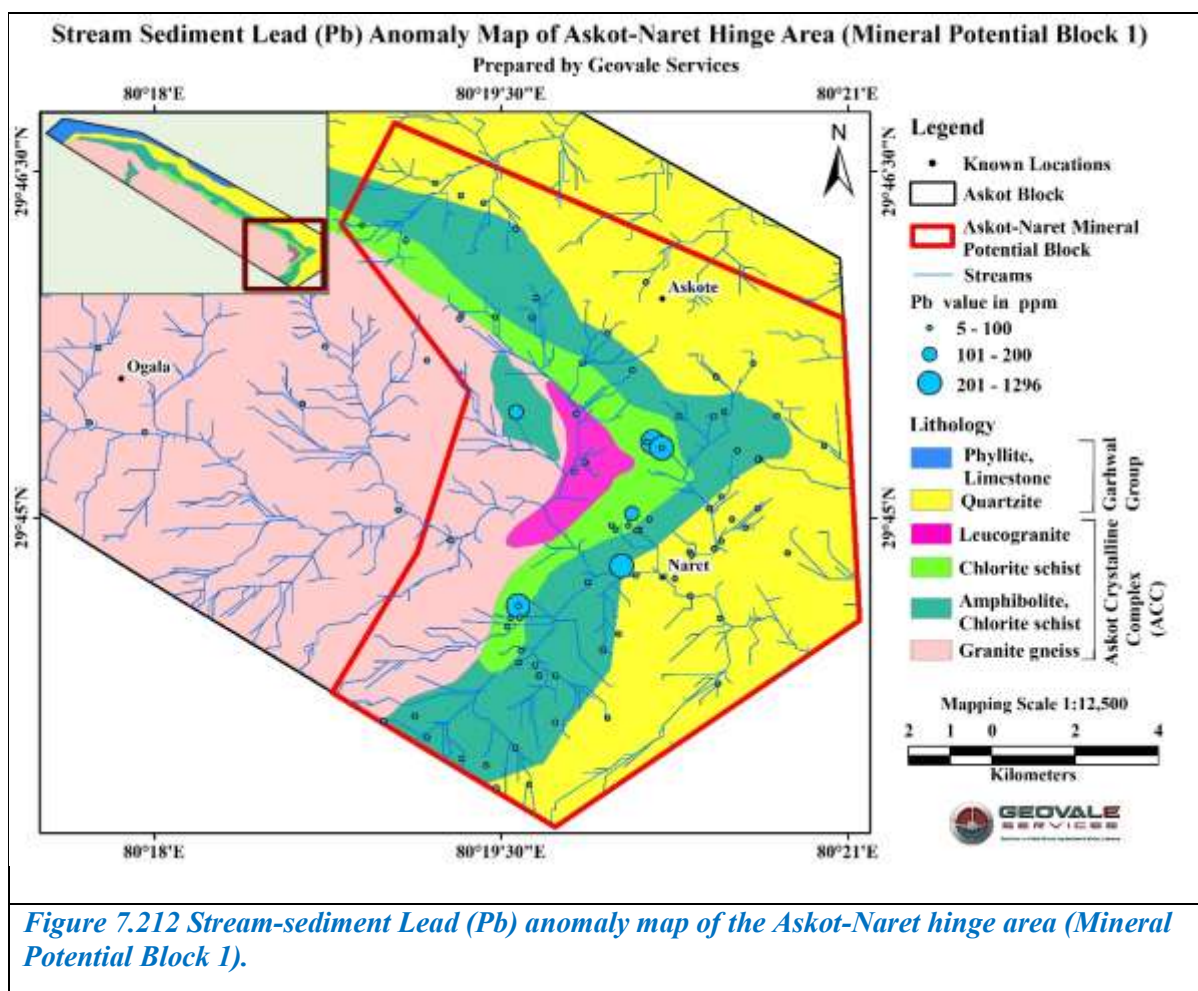
The copper anomaly map shows the strongest and most spatially focused base-metal response within the Askot-Naret mineral-potential block. The largest symbols are concentrated along the central amphibolite-chlorite schist and chlorite-schist corridor, particularly near Askot and Naret and around the leucogranite contact. The maximum Cu value of 5,495 ppm is approximately 98.1 times the crustal reference value. Coincidence with Pb and Zn anomalies strengthens the interpretation of polymetallic sulphide mineralisation, while the concentration of anomalies along lithological contacts and drainage lines indicates likely structurally controlled source zones (Figure 7.211).

7.15.12 Stream sediment Lead (Pb) Anomaly

The distribution indicates that 43 samples reach or exceed 2 times crustal abundance (≥ 25.2 ppm); 8 samples reach or exceed 5 times crustal abundance (≥ 63 ppm); and 4 samples reach or exceed 10 times crustal abundance (≥ 126 ppm).

Table 7.34 Summary of Lead (Pb) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Pb concentration	6 ppm
Maximum Pb concentration	1,296 ppm
Samples ≥ 2 times crustal abundance (≥ 25.2 ppm)	43
Samples ≥ 5 times crustal abundance (≥ 63 ppm)	8
Samples ≥ 10 times crustal abundance (≥ 126 ppm)	4



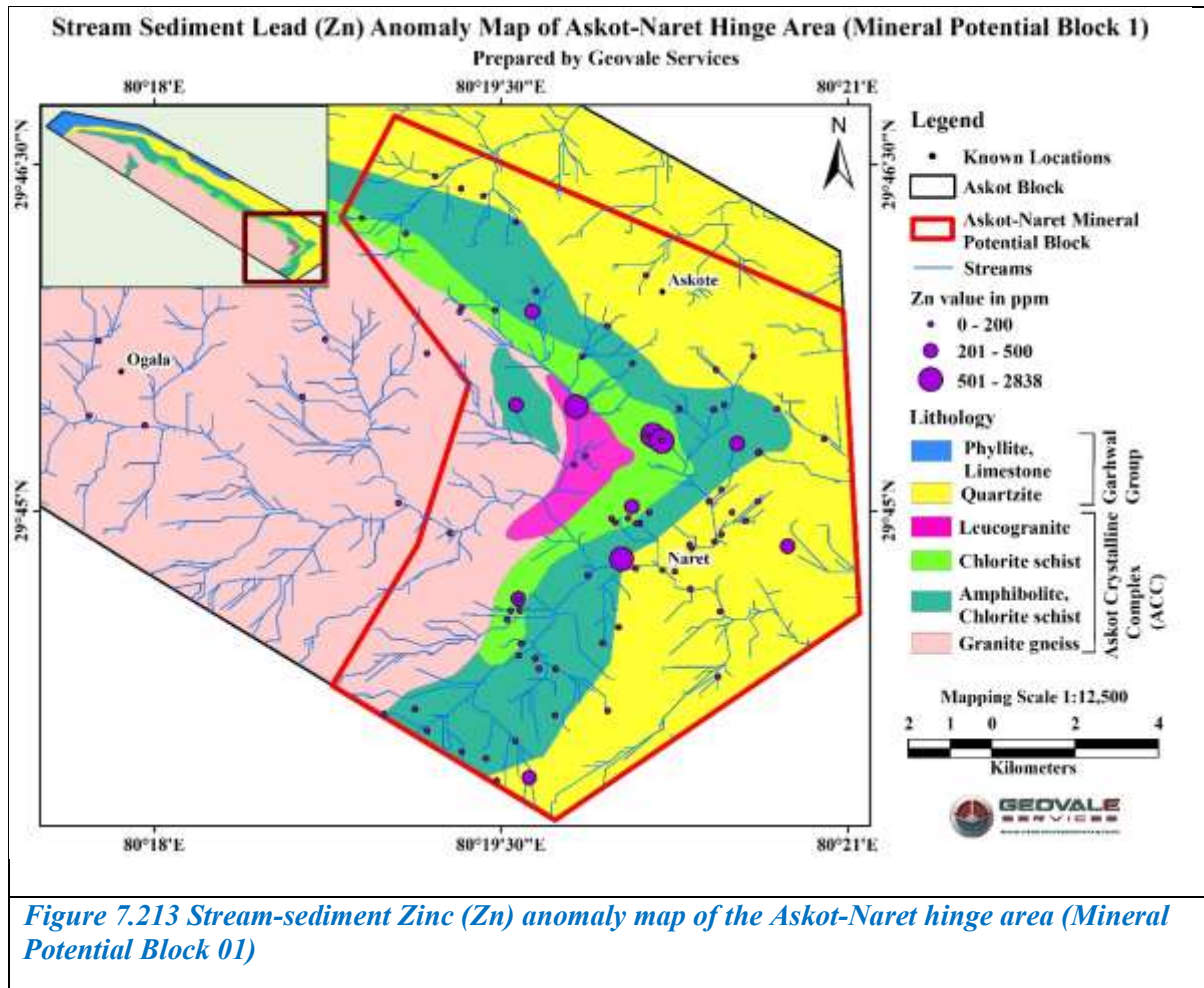
Lead anomalies are concentrated in the central and southeastern parts of the block, with notable clustering near the amphibolite-chlorite schist belt, leucogranite contacts and the Askot-Naret corridor. The maximum Pb value of 1,296 ppm is approximately 102.9 times crustal abundance. The overlap of high Pb with Cu and Zn supports a polymetallic sulphide source, potentially involving galena-bearing veins, disseminations or stratabound mineralised horizons. Upstream tracing of the strongest anomalous catchments is recommended (Figure 7.211).

7.15.13 Stream sediment Zinc (Zn) Anomaly

The distribution indicates that 17 samples reach or exceed 2 times crustal abundance (≥ 150 ppm); 5 samples reach or exceed 5 times crustal abundance (≥ 375 ppm); and 3 samples reach or exceed 10 times crustal abundance (≥ 750 ppm).

Table 7.35 Summary of Zinc (Zn) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Zn concentration	45 ppm
Maximum Zn concentration	2,838 ppm
Samples ≥ 2 times crustal abundance (≥ 150 ppm)	17
Samples ≥ 5 times crustal abundance (≥ 375 ppm)	5
Samples ≥ 10 times crustal abundance (≥ 750 ppm)	3



Zinc displays several strong anomalies in the central to southeastern sector of the Askot-Naret block. The highest value, 2,838 ppm, is approximately 37.8 times the crustal reference. High Zn values coincide spatially with Cu and Pb anomalies near the amphibolite-chlorite schist and chlorite-schist units, indicating possible sphalerite-bearing polymetallic sulphide mineralisation. These coincident Cu-Pb-Zn catchments represent priority follow-up targets (Figure 7.213).

7.15.14 Stream sediment Bismuth (Bi) Anomaly

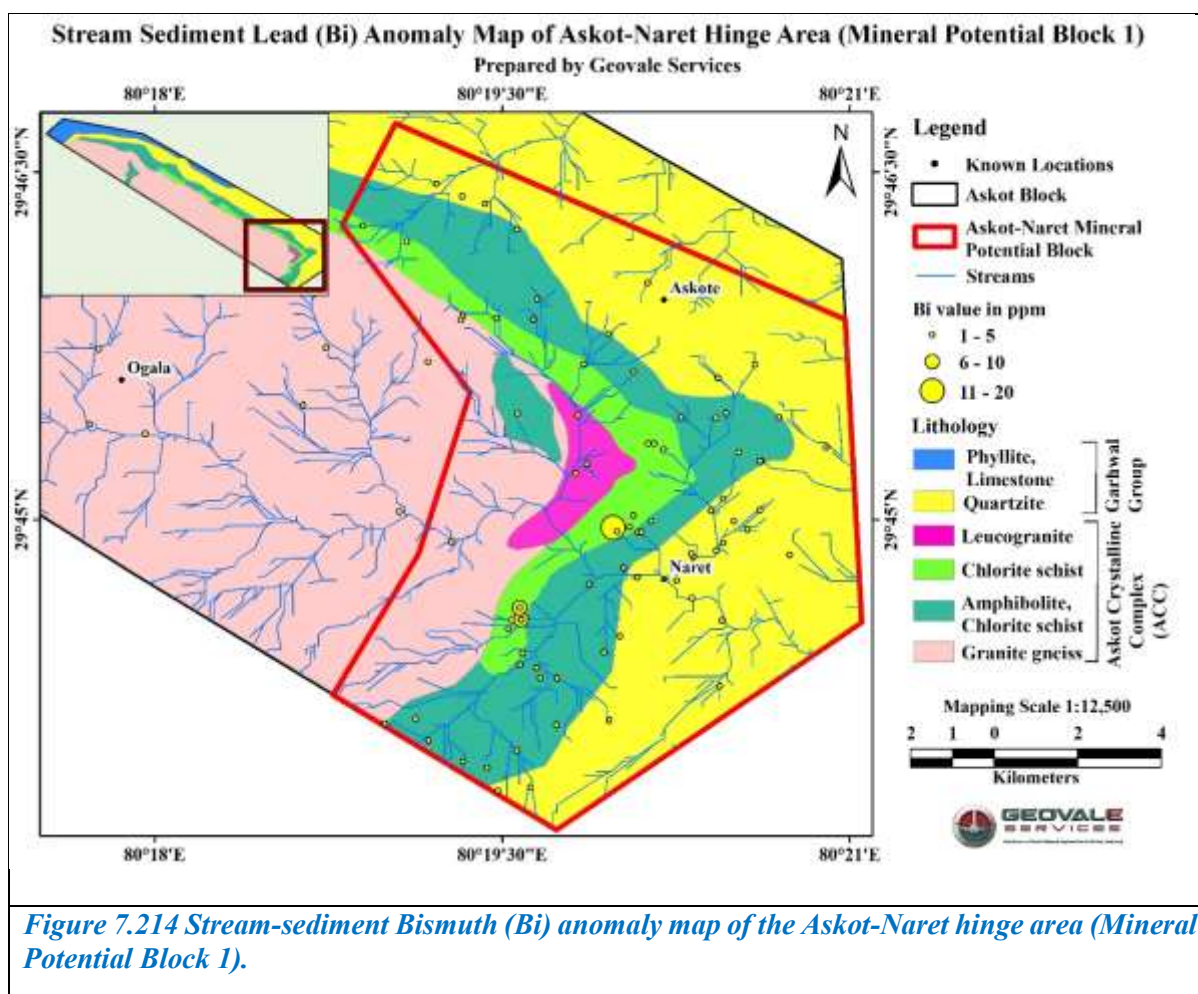
The distribution indicates that 86 samples reach or exceed 2 times crustal abundance (≥ 0.054 ppm); 86 samples reach or exceed 5 times crustal abundance (≥ 0.135 ppm); and 86 samples reach or exceed 10 times crustal abundance (≥ 0.27 ppm) (Figure 7.214).

Table 7.36 Summary of Bismuth (Bi) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88



Minimum Bi concentration	0 ppm
Maximum Bi concentration	16 ppm
Samples ≥ 2 times crustal abundance (≥ 0.054 ppm)	86
Samples ≥ 5 times crustal abundance (≥ 0.135 ppm)	86
Samples ≥ 10 times crustal abundance (≥ 0.27 ppm)	86



Bismuth is widely elevated across the mapped catchments, with a maximum of 16 ppm, equivalent to approximately 592.6 times the adopted crustal value. The strongest Bi responses occur in the central contact zone and should be interpreted with Cu, Mo, Sn and W. This association may reflect a higher-temperature hydrothermal or intrusive-related component. Because the analytical reporting limit is high relative to the calculated thresholds, the very large exceedance counts should be treated cautiously and verified by lower-detection-limit analysis.

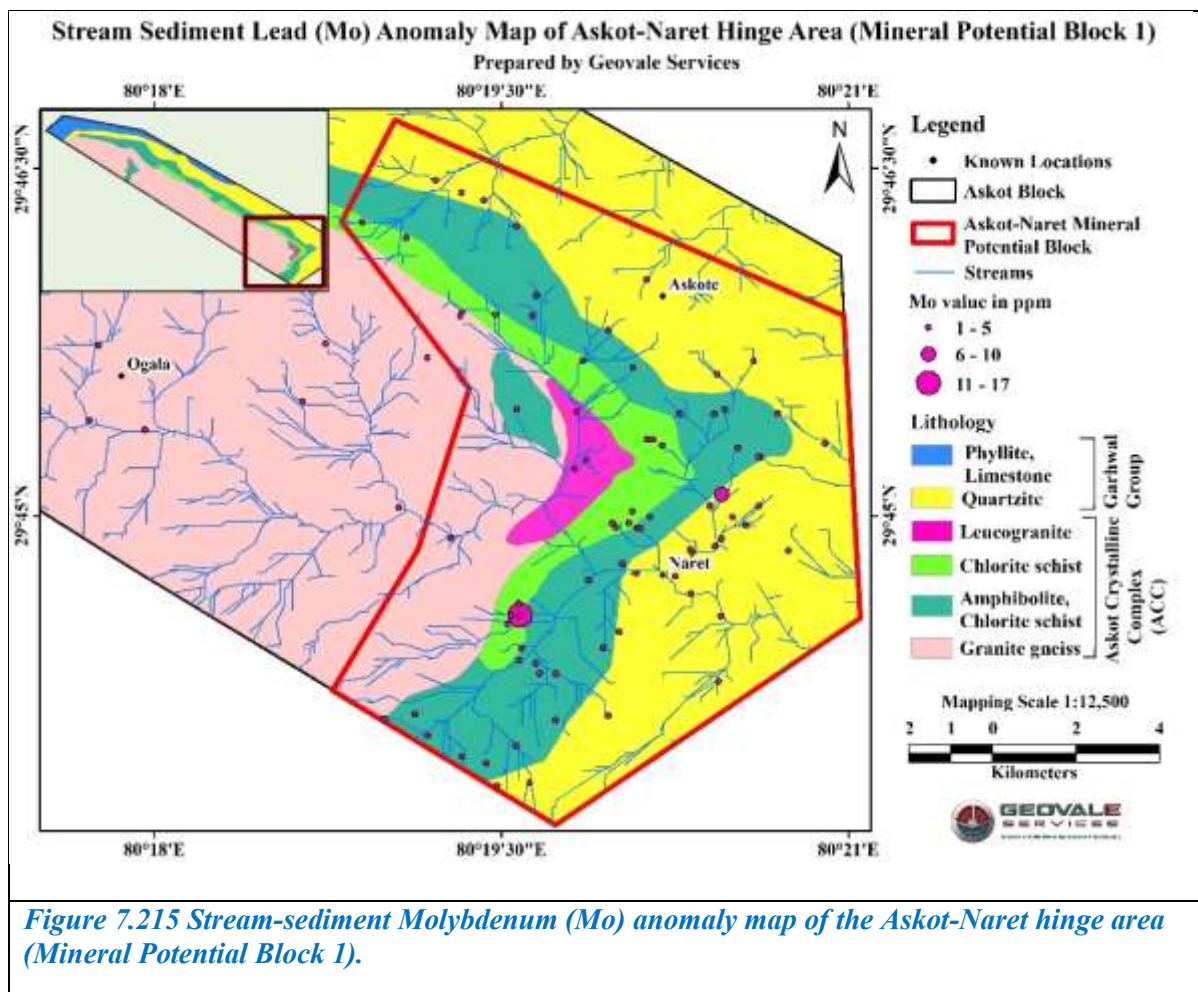
7.15.15 Stream sediment Molybdenum (Mo) Anomaly

A total of 88 stream-sediment samples were analysed for molybdenum (Mo) within the Askot target zone. Molybdenum concentrations range from 0 ppm to 16 ppm. The adopted crustal abundance is 1 ppm, which was used to assess geochemical enrichment.

The distribution indicates that 3 samples reach or exceed 2 times crustal abundance (≥ 2 ppm); 2 samples reach or exceed 5 times crustal abundance (≥ 5 ppm); and 1 sample reach or exceed 10 times crustal abundance (≥ 10 ppm) (Figure 7.215).

Table 7.37 Summary of Molybdenum (Mo) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Mo concentration	0 ppm
Maximum Mo concentration	16 ppm
Samples ≥ 2 times crustal abundance (≥ 2 ppm)	3
Samples ≥ 5 times crustal abundance (≥ 5 ppm)	2
Samples ≥ 10 times crustal abundance (≥ 10 ppm)	1



Molybdenum anomalies are sparse but locally strong. The maximum value of 16 ppm is 16 times crustal abundance and defines a focused high-temperature hydrothermal response. The strongest Mo anomaly should be assessed together with Bi, Sn, W and Cu, particularly near leucogranite contacts, quartz-vein zones and structural intersections. Its restricted distribution is more consistent with a localised source than with broad lithological background.

7.15.16 Stream sediment Antimony (Sb) Anomaly

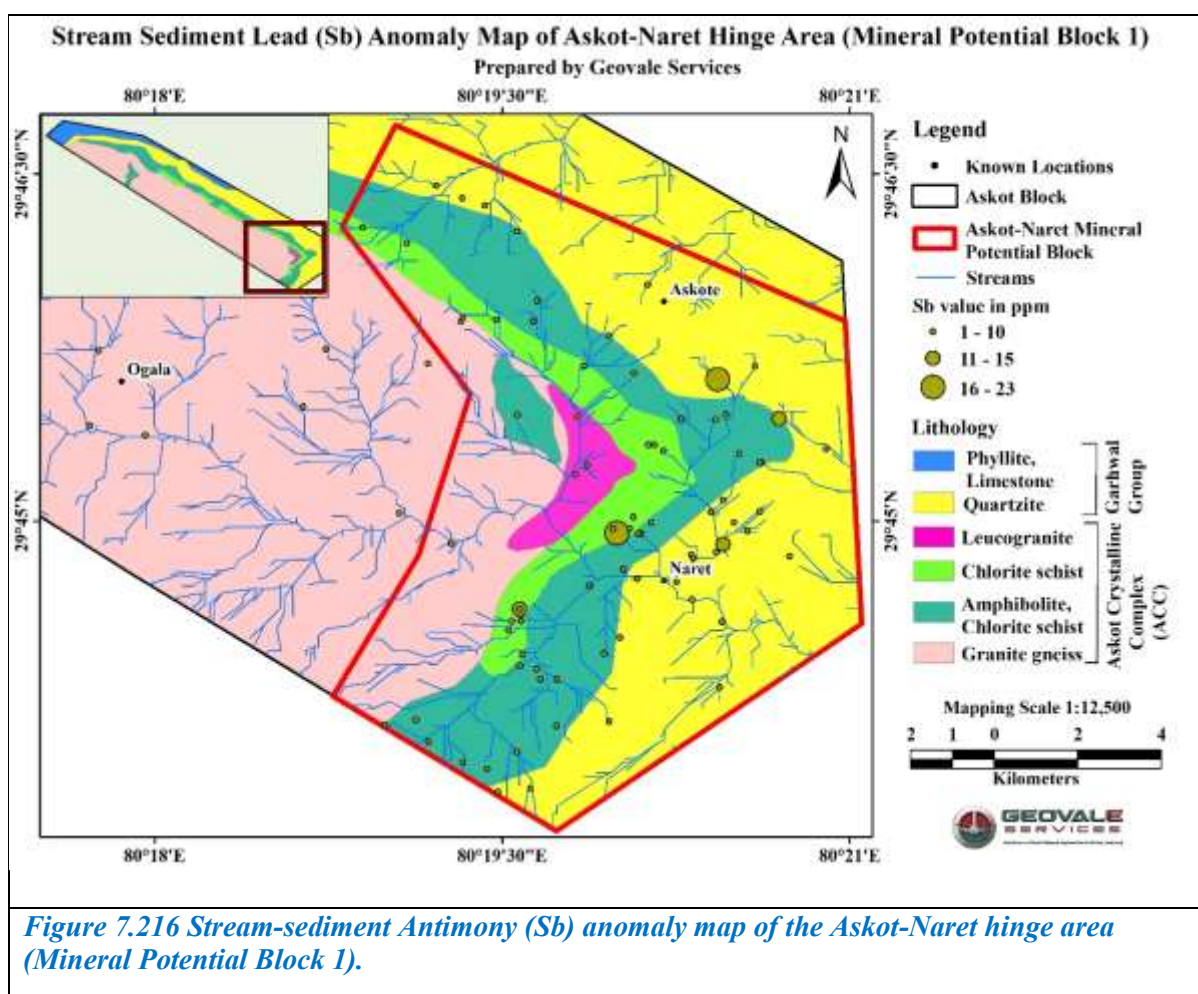
The distribution indicates that 88 samples reach or exceed 2 times crustal abundance (≥ 0.4 ppm); 88 samples reach or exceed 5 times crustal abundance (≥ 1 ppm); and 26 samples reach or exceed 10 times crustal abundance (≥ 2 ppm) (Figure 7.216).

Table 7.38 Summary of Antimony (Sb) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88



Minimum Sb concentration	1 ppm
Maximum Sb concentration	23 ppm
Samples ≥ 2 times crustal abundance (≥ 0.4 ppm)	88
Samples ≥ 5 times crustal abundance (≥ 1 ppm)	88
Samples ≥ 10 times crustal abundance (≥ 2 ppm)	26



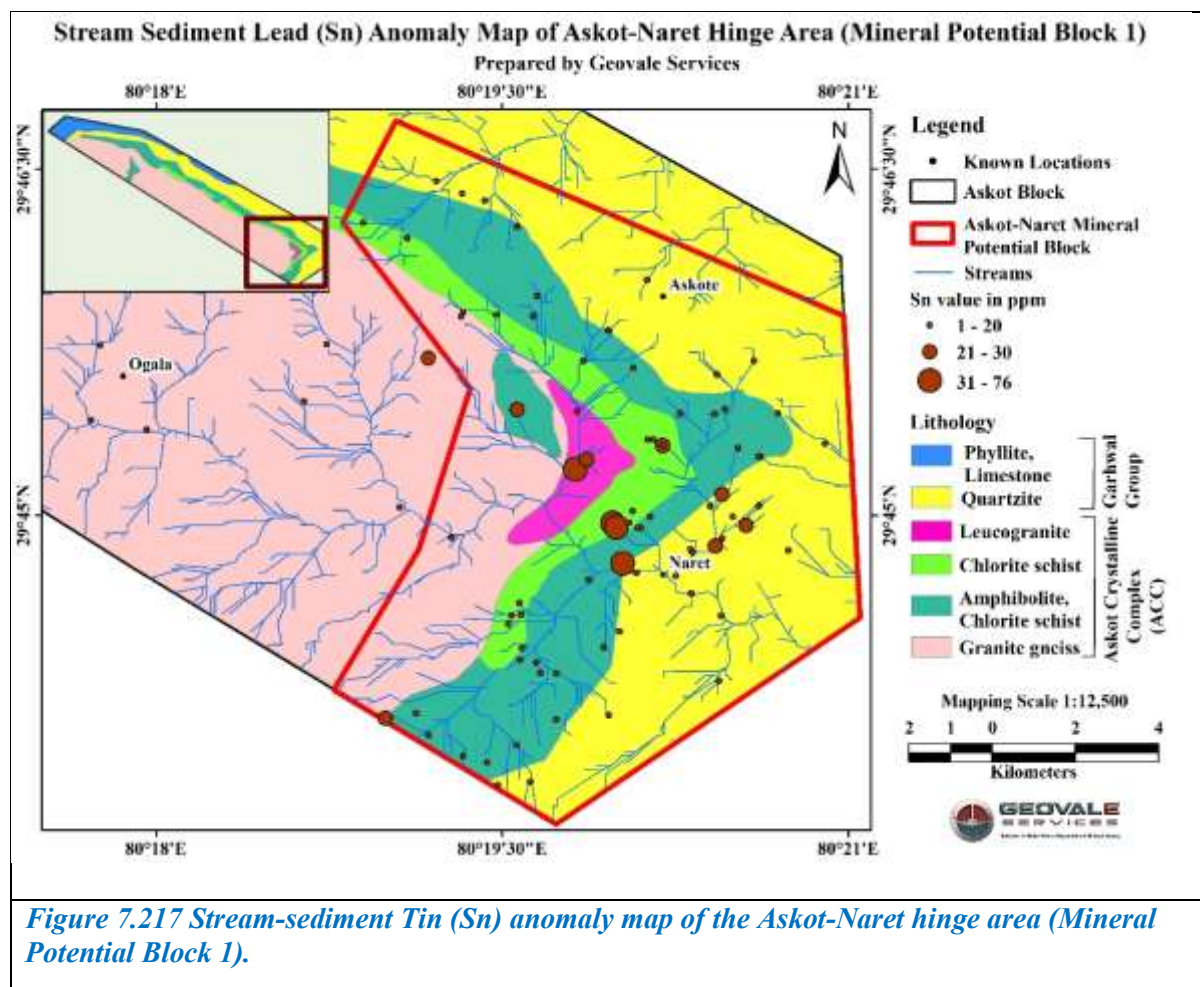
Antimony shows widespread enrichment, with 26 samples exceeding ten times crustal abundance and a maximum of 23 ppm, equivalent to 115 times the crustal value. The strongest anomalies occur in the central and southeastern drainage network. Sb is an important hydrothermal pathfinder and may define peripheral or structurally controlled halos around polymetallic sulphide mineralisation. Coincidence with Pb, Cu, Bi and Zn should be prioritised during field verification. Reporting-limit effects should also be considered for the lower-order counts.

7.15.17 Stream sediment Tin (Sn) Anomaly

The distribution indicates that 61 samples reach or exceed 2 times crustal abundance (≥ 3.34 ppm); 30 samples reach or exceed 5 times crustal abundance (≥ 8.35 ppm); and 16 samples reach or exceed 10 times crustal abundance (≥ 16.7 ppm) (Figure 7.217).

Table 7.39 Summary of Tin (Sn) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Sn concentration	0 ppm
Maximum Sn concentration	74 ppm
Samples ≥ 2 times crustal abundance (≥ 3.34 ppm)	61
Samples ≥ 5 times crustal abundance (≥ 8.35 ppm)	30
Samples ≥ 10 times crustal abundance (≥ 16.7 ppm)	16



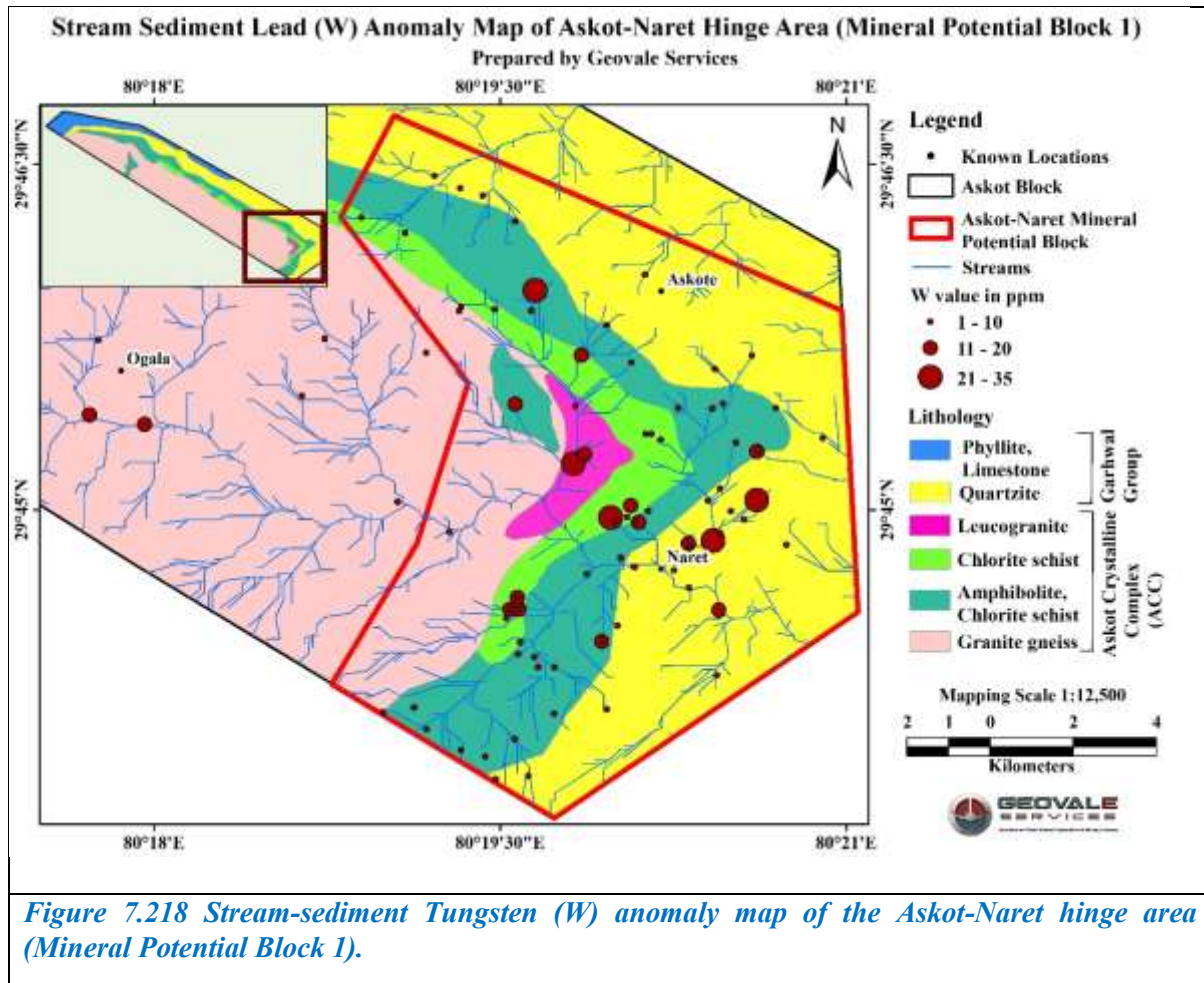
Tin forms a significant anomalous population, with 16 samples at or above ten times crustal abundance and a maximum of 74 ppm, approximately 44.3 times the crustal reference. The strongest Sn values are concentrated near the leucogranite and adjacent chlorite-schist/amphibolite-chlorite schist contacts. Association with W, Bi and Mo suggests an evolved felsic intrusive or hydrothermal contribution, including possible quartz-vein, greisen-like or structurally channelled mineralisation.

7.15.18 Stream sediment Tungsten (W) Anomaly Map

The distribution indicates that 74 samples reach or exceed 2 times crustal abundance (≥ 2.34 ppm); 31 samples reach or exceed 5 times crustal abundance (≥ 5.85 ppm); and 14 samples reach or exceed 10 times crustal abundance (≥ 11.7 ppm) (Figure 7.218).

Table 7.40 Summary of Tungsten (W) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum W concentration	1 ppm
Maximum W concentration	35 ppm
Samples ≥ 2 times crustal abundance (≥ 2.34 ppm)	74
Samples ≥ 5 times crustal abundance (≥ 5.85 ppm)	31
Samples ≥ 10 times crustal abundance (≥ 11.7 ppm)	14



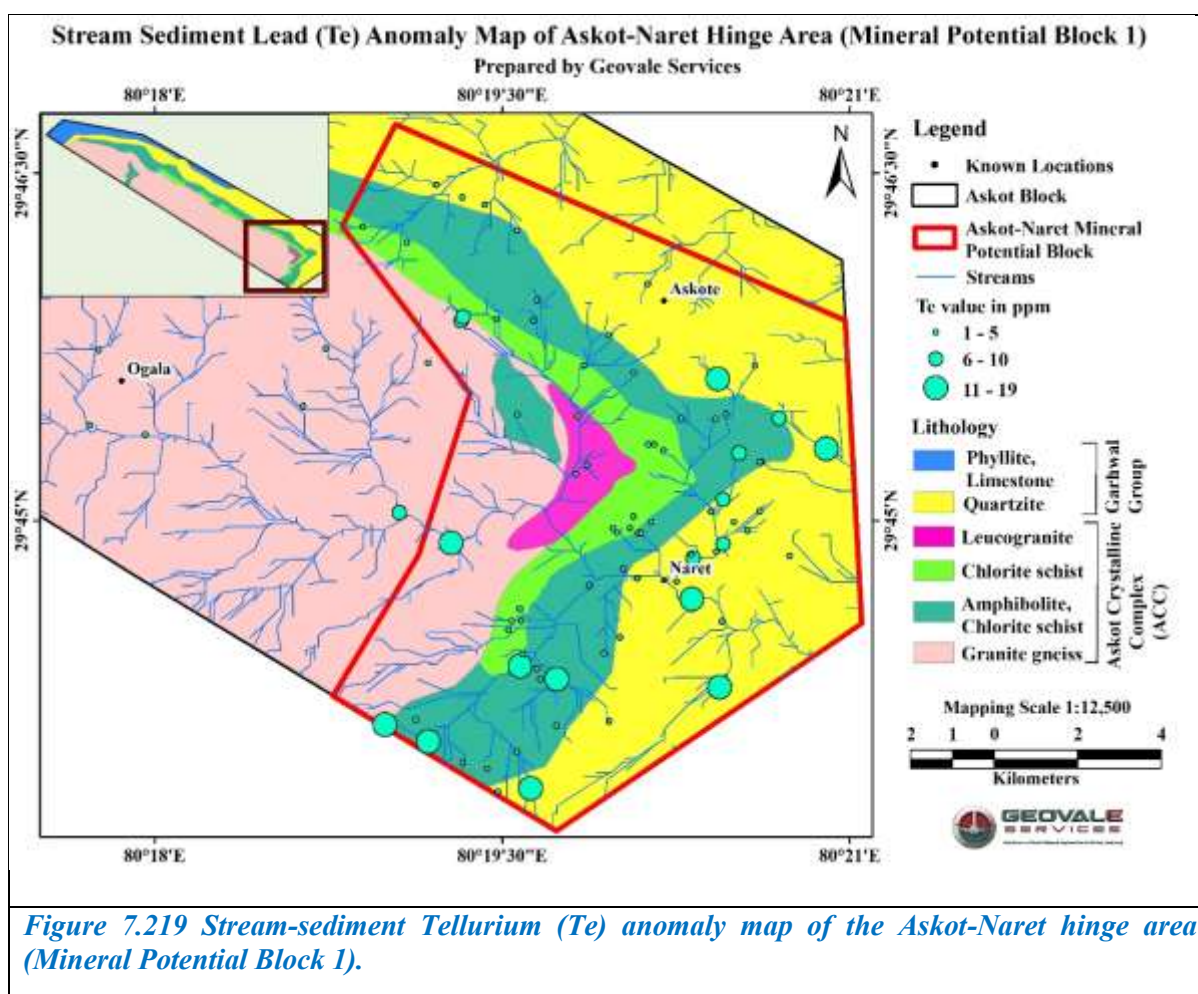
Tungsten is strongly and widely enriched in the Askot target zone. Fourteen samples exceed ten times crustal abundance and the maximum value of 35 ppm is approximately 29.9 times the crustal reference. The anomalies are concentrated along the central lithological corridor and around leucogranite contacts. Their association with Sn, Bi and Mo is consistent with a high-temperature intrusive-related hydrothermal system. Follow-up should include heavy-mineral concentrate sampling and mineralogical checks for scheelite or wolframite.

7.15.19 Stream sediment Tellurium (Te) Anomaly

A total of 88 stream-sediment samples were analysed for tellurium (Te) within the Askot target zone. Tellurium concentrations range from 0 ppm to 19 ppm. No directly comparable crustal-abundance value was supplied; therefore, 2 times, 5 times and 10 times threshold counts are not calculable (Figure 7.219).

Table 7.41 Summary of Tellurium (Te) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Te concentration	0 ppm
Maximum Te concentration	19 ppm
Supplied crustal abundance	NR
2 times, 5 times and 10 times counts	Not calculable



Tellurium ranges up to 19 ppm and forms several coherent anomalies in the southern and southeastern drainage catchments, with additional responses in the central corridor. Te is a sensitive pathfinder for hydrothermal sulphide and locally precious-metal systems. Its significance is greatest where it overlaps with Cu, Pb, Bi, Sb or Zn anomalies. Because no



directly comparable crustal benchmark was supplied, the map should be interpreted using spatial continuity and multi-element association rather than threshold counts.

7.15.20 Stream sediment Thallium (Tl) Anomaly

A total of 88 stream-sediment samples were analysed for thallium (Tl) within the Askot target zone. Thallium concentrations range from 0 ppm to 52 ppm. No directly comparable crustal-abundance value was supplied; therefore, 2 times, 5 times and 10 times threshold counts are not calculable (Figure 7.220).

Table 7.42 Summary of Thallium (Tl) Geochemistry in Askot Stream-Sediment Samples

Parameter	Value
Total stream-sediment samples analysed	88
Minimum Tl concentration	0 ppm
Maximum Tl concentration	52 ppm
Supplied crustal abundance	NR
2 times, 5 times and 10 times counts	Not calculable

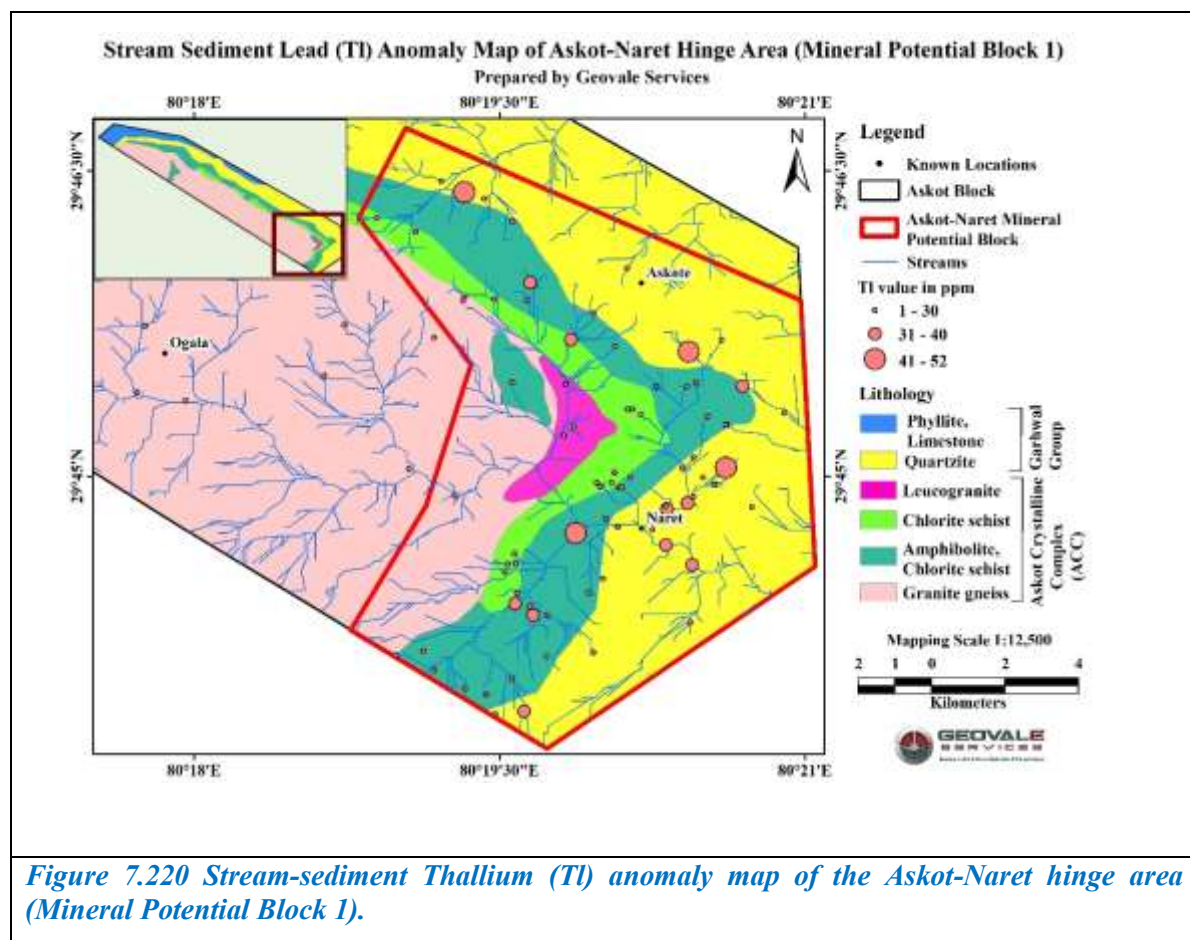


Figure 7.220 Stream-sediment Thallium (Tl) anomaly map of the Askot-Naret hinge area (Mineral Potential Block 1).

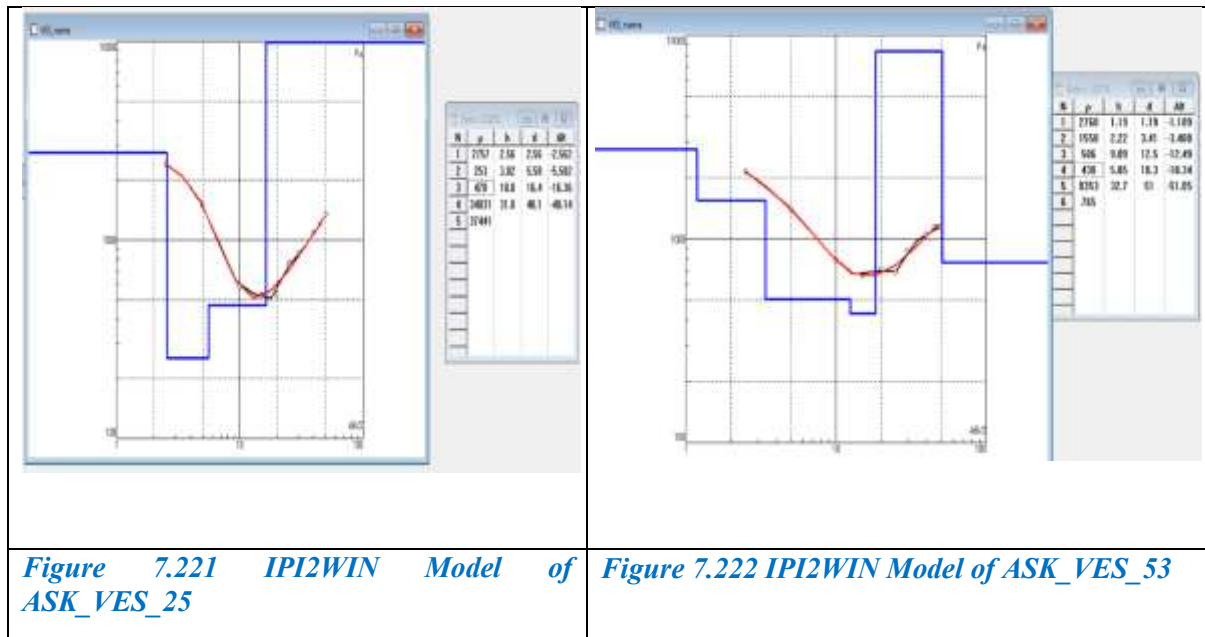
Thallium reaches a maximum of 52 ppm and is distributed as localised anomalies across the central and southern parts of the target area. Tl commonly responds to sulphidic, fine-grained sedimentary and hydrothermally altered environments and may outline alteration halos or fluid pathways. The highest-value catchments should be compared with Sb, Pb, Zn, Bi and structural data. In the absence of a supplied crustal benchmark, interpretation relies on relative spatial highs and their geological context.

7.16 VES Geophysical Survey and Interpretation of the Askot-Naret Hinge Zone

Vertical Electrical Sounding (VES) surveys were carried out in the Askot area to investigate the subsurface electrical resistivity distribution and to identify lithological contacts, fractured and altered zones, conductive sulphide-bearing horizons, and possible concealed extensions of mineralization. The interpretation was integrated with surface geological mapping, structural information, and known mineralization to develop a subsurface exploration model. The VES results indicate significant resistivity contrasts between the relatively resistive chlorite schist and amphibolite units and localized conductive zones, which may represent zones of enhanced fracturing, alteration, fluid circulation, or sulphide mineralization.

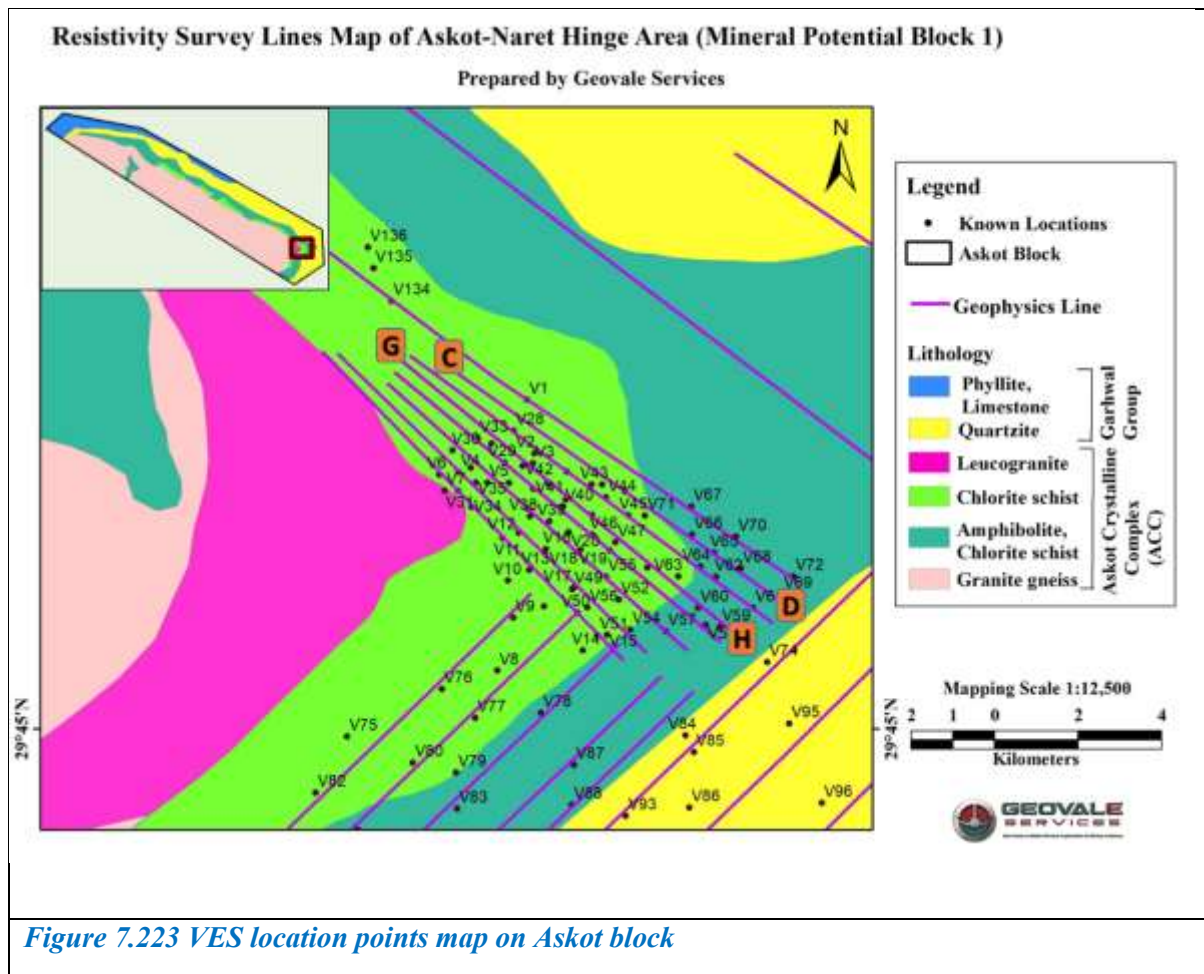
7.16.1 Processing and Inversion

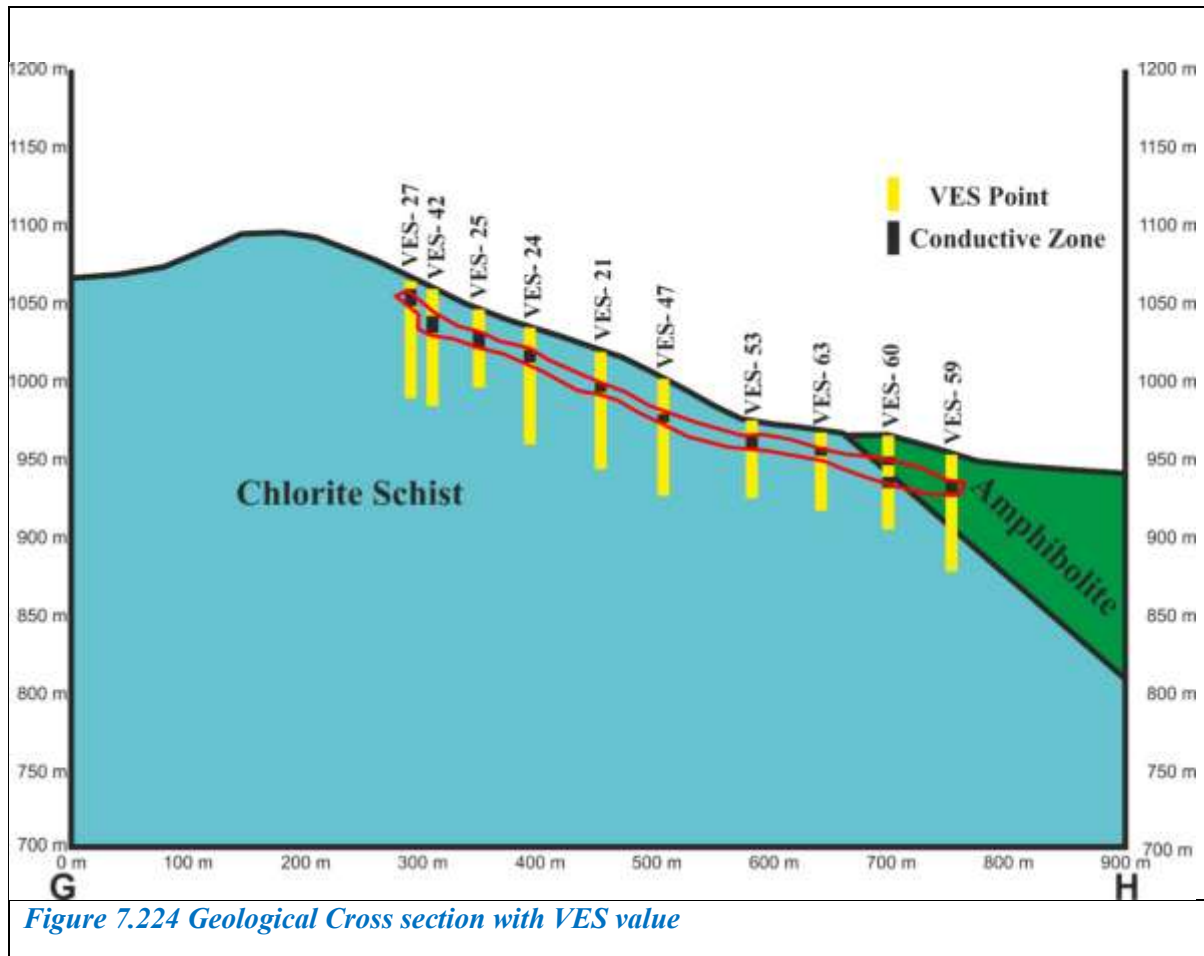
Field apparent-resistivity data (ρ_a) were inverted using IPI2Win to obtain layered geo-electric models constrained by known weathering profiles and local hydrostratigraphy. The inversion workflow comprised: (i) spike removal and curve smoothing, (ii) forward modelling with progressive fit improvement, (iii) selection of the lowest misfit models with geologically plausible layering, and (iv) correlation with depth-to-bedrock, weathered thickness, and mapped sulphide corridors. The final models for each VES site are compiled in Annexure VII – VES Models and are referenced herein for interpretation at the target-domain scale (Figure 7.221 to 7.222).



Across Askot-Naret Hinge Zone, inverted models consistently resolve a 3–5-layer sequence (Figure 7.223 to 7.225):

1. Layer-1: Topsoil/Colluvium (low–moderate ρ , thin) – typically a few metres thick; higher moisture/clay content near streams.
2. Layer-2: Weathered Bedrock/gossan zone (low–moderate ρ ; variable thickness) – clay-rich, locally conductive where sulphide alteration with supergene enrichment is present.
3. Layer-3: Sulphide zone/Gossan/Fractured/Fissile Bedrock (very low ρ with local lows) – transitional horizon; disseminated and massive sulphide zone cause resistivity drops.
4. Layer-4(+): Hard Bedrock (high ρ , locally heterogeneous) – Amphibolite, Chlorite schist or massive quartz veins; locally shows resistive spikes corresponding to quartz vein margins.





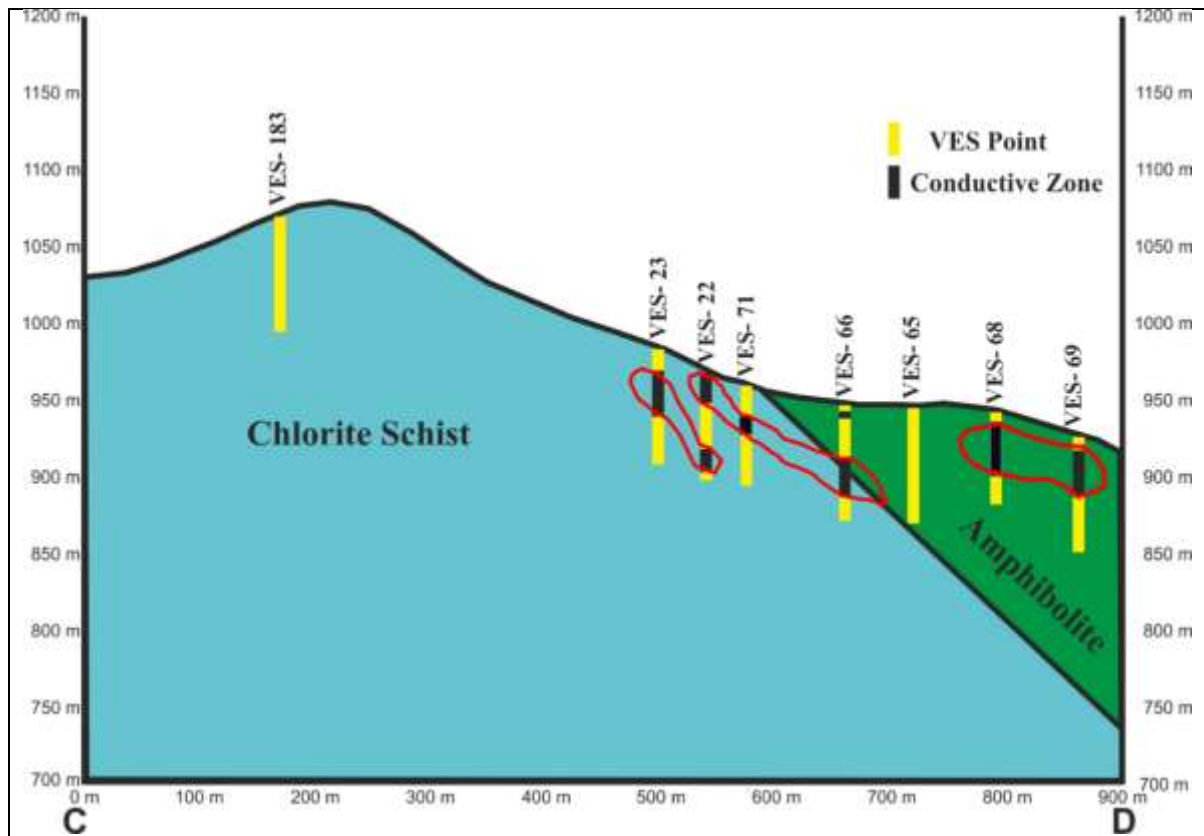


Figure 7.225 Geological Cross section with VES value

The interpreted VES sections show that the chlorite schist forms the dominant subsurface lithological unit, characterized generally by moderate to relatively high resistivity. Localized low-resistivity or conductive zones occur within or near the schist, suggesting increased conductivity associated with fractured, altered, moisture-rich, or sulphide-bearing horizons. At the eastern part of the interpreted section, the transition from chlorite schist to amphibolite is marked by a distinct resistivity contrast, indicating a significant lithological boundary. The conductive zones identified around this boundary and within the schist are considered important for further investigation, particularly where they coincide with structural discontinuities or geochemical anomalies.

The VES data were interpreted primarily on the basis of resistivity contrasts and conductive anomalies, rather than treating every conductive response as direct evidence of sulphide mineralization. Conductivity may result from several factors, including clay-rich alteration, gossan zone, groundwater saturation, intense fracturing, or disseminated and massive sulphides. Therefore, the significance of individual conductive zones was evaluated in conjunction with geological and structural information. Areas where conductive responses

coincide with favourable host lithologies, structural contacts, and known or anomalous Cu–Pb–Zn mineralization were considered higher-priority exploration targets.

The interpreted VES profile also indicates that the subsurface geological architecture is structurally complex, with the resistivity boundaries suggesting changes in lithology and possible structural displacement at depth. The progressive geometry of the conductive zones may reflect folding, shearing, or structurally controlled alteration, consistent with the complex deformation history of the Askot region. In particular, conductive responses associated with lithological boundaries and structurally prepared zones may represent potential pathways for hydrothermal fluids or zones where sulphides were subsequently remobilized during tectonic deformation.

From a mineral-system perspective, the VES results provide an important indirect vector toward concealed mineralization. The most prospective anomalies are expected where conductive zones are spatially associated with favourable lithologies such as chlorite schist and amphibolite, structural intersections, shear zones, and alteration corridors. The VES results therefore complement the surface geological and geochemical datasets by extending the exploration model below the level of surface exposure.

7.16.2 Synthesis: What VES Confirms About the Mineral System

Supergene enrichment and concealed sulphide mineralization

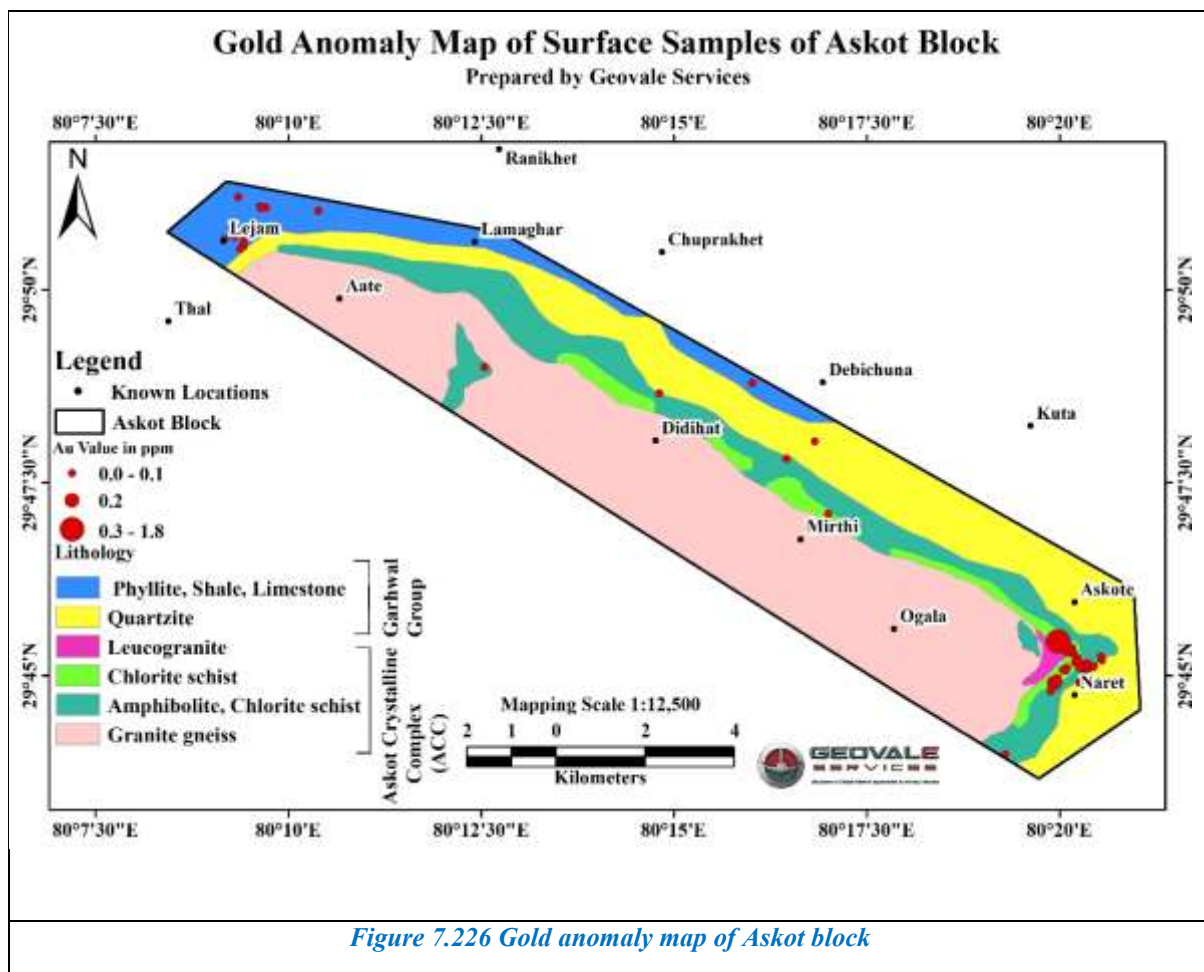
VES consistently detects conductive concealed sulphide horizons with gossan zone beneath resistive basement in the Askot-Naret Hinge corridor, corroborating massive and disseminated sulphide inferred from structural and geochemical mapping.

Conductive layers above resistive basement in Askot-Naret Hinge Zone confirm high-sulphidation lithocap settings and concealed mineralization signatures. Together, the VES results provide a geo-electric framework that is coherent with the geological/structural/geophysical model and directly actionable for target ranking.

7.17 Gold data analyses by fire assay technique and interpretation:

A total of 50 bedrock samples collected from the Askot–Didihat (mostly from Askot Naret area, except one from Didihat) area was analysed for gold (Au). The analytical results indicate that Au concentrations range from <0.01 ppm to 1.85 ppm. 10 samples show comparatively elevated Au values of 0.03–1.85 ppm, while significant anomalous values of 0.12 and 0.19

ppm were recorded. The high Au concentrations of 0.19 ppm occurs in samples 110215 and 110220, with another significant value of 0.12 ppm in sample 110221. The highest Au concentration of 1.85 ppm is recorded in bedrock sample 106308, located at 29.75734° N and 80.33311° E within the Askot sector. These anomalous samples are concentrated within the Askot area, particularly around 29.748–29.756° N and 80.332–80.340° E, suggesting localized Au enrichment. The spatial association of these anomalies are associated with chlorite schist with quartz veins.



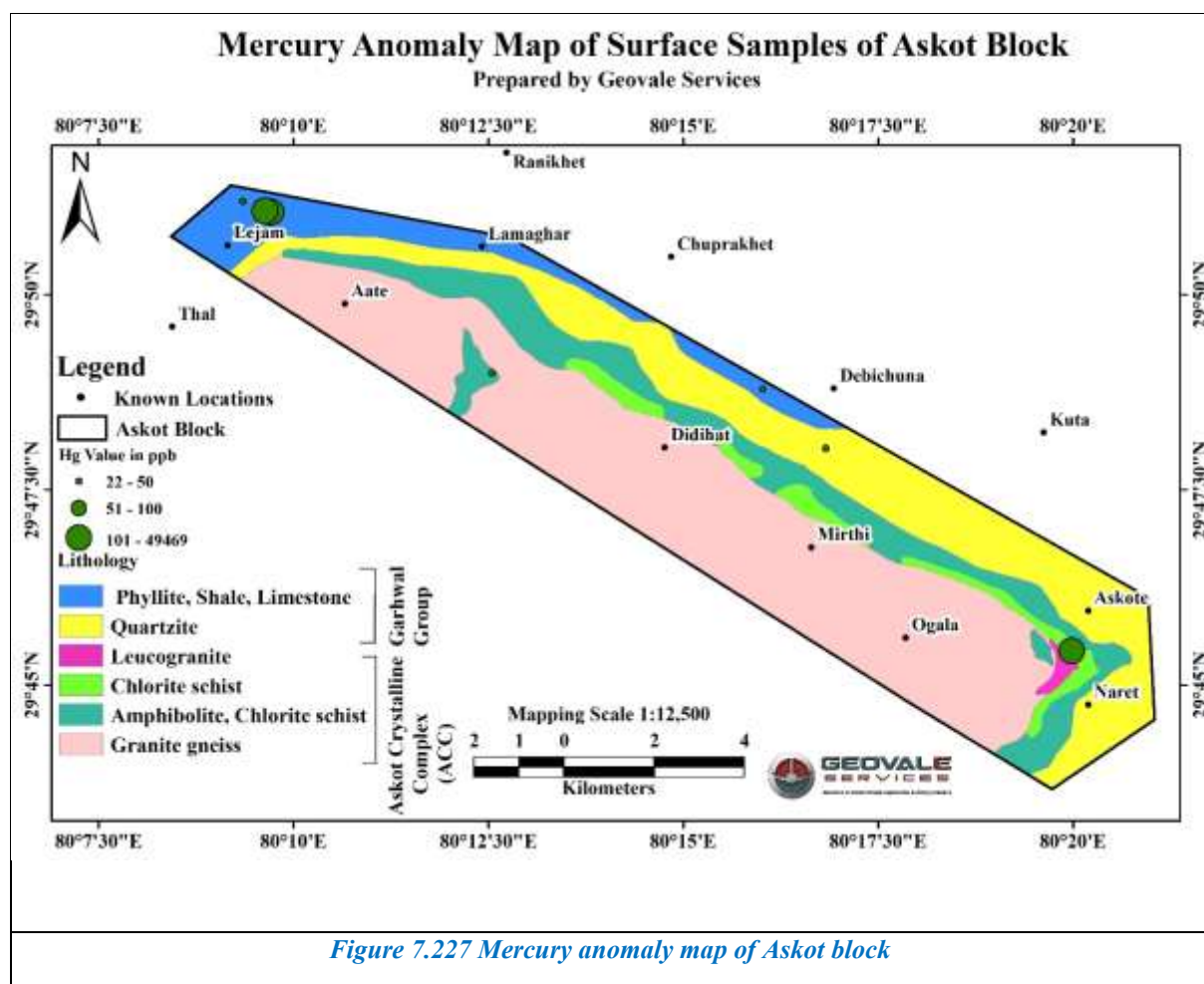
7.18 Mercury data analyses by fire assay technique and interpretation:

A total of seven bedrock samples were analysed for mercury (Hg) from the Askot–Didihat–Thal areas. The Hg concentrations range from 22 ppm to 49,469 ppm, showing a highly variable distribution and a pronounced localized anomaly. The highest Hg concentration of 49,469 ppm was recorded in sample 106308 from the Askot area (29.757335°N, 80.333114°E), representing an exceptionally strong mercury anomaly compared with the remaining samples. Other elevated Hg values were recorded at Thal, including 313 ppm in sample 106307 and 143



ppm in sample 106309, while sample 106303 also records 40 ppm. The Didihat sample 106306 contains 36 ppm Hg, whereas the sample located south of Askot records 25 ppm.

The extremely high Hg concentration at Askot, together with elevated Hg values around Thal, indicates localized mercury enrichment that may be related to hydrothermal activity and structurally controlled fluid pathways. Mercury can act as a useful pathfinder element for hydrothermal mineralisation, particularly where volatile-rich fluids have interacted with fractures, shear zones, quartz veins and altered host rocks. The strong Hg anomaly at Askot implying the presence of the Au, As, Sb, Cu-Pb-Zn sulphide mineralisation, alteration and structural features.



Based on the above study the subsurface mineralization verification is only restricted to Askot-Naret Hinge Zone which described in details in next chapter.

CHAPTER-8

TARGET TESTING OF ASKOT MINERALIZATION (DRILL VERIFICATION OF CONCEALED MINERALIZATION)

8. Exploration by Scout Drilling Target Testing

Drillhole sites in the Askot Base-metal Block for scout drilling were determined based on a comprehensive study of geological mapping, geochemical anomaly, remote sensing, and geophysical inputs, to evaluate the sub-surface continuity of the zones. Lithologies and including the structures from geological mapping, along with zones of alteration, constructed the basic foundation for target delineation. Structural studies, especially with regard to fold, fracture, and lineament systems, proved vital in locating favorable zones for sub-surface exploration.

The occurrence of favorable lithology, geochemical anomaly, structure, and alteration assemblages constituted areas of priority that would receive by scout drilling. Because of difficult topography, slope restrictions, forestation, and some inaccessible areas of the block, the density and spacing of holes were optimized based on practical considerations. Drilling could not be undertaken in the most mineralized zone as steep slope there and would have required appropriate track about 600 meter that is much time and cost intensive. Other alternative way is to use man portable drilling which we could not arrange.

The scout drilling program would thus be undertaken with the following goals in mind:

- For assessing the continuity and thickness of mineralized bodies as detected during subsurface exploration studies.
- For studying the association between mineralization and geological controls like foliation, fold, faults, etc.
- For obtaining preliminary subsurface information for additional exploration.

This systematic method guarantees that the site for drilling is both scientifically sound and compatible with the terrain conditions of the Askot Block.

8.1 Objectives and Rationale for Scout Drilling

Based on the integrated interpretation of geological, geochemical, geophysical, and geospatial investigations presented in the preceding chapters, the reconnaissance-stage (G4) exploration establishes that the Askot Base-metal Prospect Block, located in the Thal–Didihat–Askot region of Pithoragarh district, Uttarakhand, is prospective for polymetallic sulphide mineralisation of VMS affinity, analogous to the known Askot polymetallic deposit. Scout drilling was planned with two clear objectives:

Objectives of the Present Investigation

1. To examine the geological, stratigraphic, and structural controls governing VMS-type and structurally controlled polymetallic sulphide mineralisation within the Askot Base-metal Prospect Block, with particular emphasis on lithological associations and tectonic settings comparable to the established Askot polymetallic deposit.
2. To evaluate the mineral prospectivity and fertility of the Askot Block through an integrated analysis of geological mapping, geochemical sampling, geophysical surveys, and geospatial datasets, and to delineate reconnaissance-level (G4) priority zones to guide subsequent further stage (G3-stage) of detailed exploration, notwithstanding the limited extent of subsurface investigation undertaken during the present phase.

Accordingly, selected priority locations in Askot-Naret Hinge Zone within the Askot Base-metal Prospect Block were identified and evaluated through a reconnaissance-level drilling programme comprising three principal structural sectors (Figure 8.1):

1. Central Hinge Core Zone – characterized by the prominent ‘M’-shaped fold geometry. tested by two scout boreholes (GSPL/ASK/BH01, GSPL/ASK/BH02).
2. Northern Limb – representing the northern structural limb of the overturned fold tested by one scout borehole (GSPL/ASK/BH03).
3. Southern Limb – representing the southern structural limb (overturned) of the complex fold system tested by one scout borehole (GSPL/ASK/BH04).

Collectively, these boreholes were designed to provide preliminary subsurface information on lithological continuity and sulphide mineralisation within representative geological domains identified from surface geological mapping, geochemical anomalies, and geophysical signatures, thereby linking the drilling programme to the integrated exploration framework developed in Chapters 4–7.

8.2 Drilling and Sampling Methodologies

The diamond core drilling technique became the preferred method for sub-surface exploration in the Askot block. It involved the use of rotary drilling with a diamond core bit

that is able to drill through hard rock formations and collect cylindrical core samples through triple tube barrel that would be analyzed lithologically, structurally and mineralogically.

In areas with very poor (i. e. core recovery below 25%) core recovery due to heavily weathered, highly fractured, or sheared zones, sludge sampling was also conducted. This offered additional data to fill up any gaps in the study due to the discontinuity caused by weathering and fractures in these zones.

All holes were drilled using standard wireline diamond core drilling technique. The HQ core size (63.5 mm diameter) was used in the upper levels with downscaling to the NQ size (47.6 mm diameter) with increased depth based on the geology of the site. The drill hole was continuously flushed with water for effective cooling of the drill bit and flushing of drill cuts.

8.3 Overview of the Drilling Programme

Detailed structural analysis of the Askot–Naret hinge zone indicates a regional, moderately steep to near-reclined overturned fold system, characterized by a complex ‘M’-shaped fold pattern. Considering the structural geometry and the distribution of mineralization, the Askot–Naret hinge zone has been classified into three principal structural sectors:

1. Central Hinge Core Zone – characterized by the prominent ‘M’-shaped fold geometry. tested by two scout boreholes (GSPL/ASK/BH01, GSPL/ASK/BH02).
2. Northern Limb – representing the northern structural limb of the overturned fold tested by one scout borehole (GSPL/ASK/BH03).
3. Southern Limb – representing the southern structural limb (overturned) of the complex fold system tested by one scout borehole (GSPL/ASK/BH04).

The drilling programme has been designed to systematically test these three structural sectors and to establish the subsurface continuity, geometry, thickness, depth and strike extension of the mineralized body. Since the mineralization is interpreted as VMS-style, stratabound mineralization, the mineralized horizons are expected to conform broadly to the mapped fold geometry. Accordingly, the borehole locations have been positioned to test the mineralized stratigraphic horizons within the different structural domains.

The selection of borehole locations is based not only on the structural framework established through detailed geological mapping but also on the integrated assessment of (a) direct field observations, (b) bedrock and stream-sediment geochemical anomalies, (c)

petrographical evidence, and (d) geophysical investigations. Thus, the proposed drilling represents an integrated geological, geochemical and geophysical approach for evaluating the subsurface mineral potential of the Askot–Naret hinge zone. Detailed justification for each borehole location is presented in the respective sub-chapters in 8.7.

Borehole GSPL/ASK/BH 01 and GSPL/ASK/BH 02 – Central Hinge Core Zone

GSPL/ASK/BH 01 was initially planned within the Central Hinge Core Zone, targeting the ‘M’-shaped fold structure and the associated favourable mineralized stratigraphic horizon. During drilling, the borehole encountered a loose, gossan-rich and structurally weak zone at approximately 86 m depth, resulting in borehole collapse. The occurrence of this gossan-rich zone itself provides an important indication of the favourable mineralized environment within the hinge-core sector.

Considering the geological significance of the target and the need to obtain continuous subsurface information, GSPL/ASK/BH 02 was strategically planned in close proximity to BH-01. The second borehole is therefore not merely a replacement borehole but represents an important follow-up test of the same high-priority structural and mineralized zone.

BH-02 has been designed to provide a more complete intersection through the entire favourable stratigraphic horizon, with a planned depth of approximately 196 m, and to establish the subsurface continuity, thickness and geometry of the VMS-style mineralization. The close-spaced drilling in this sector will also facilitate better correlation of the mineralized horizon and provide confidence in its continuity within the complex hinge structure.

The results from BH-01 and the subsequent positioning of BH-02 are expected to significantly improve the understanding of the subsurface architecture of the Central Hinge Core Zone and provide a strong basis for evaluating the continuity of the mineralized horizon along strike and down dip.

Borehole GSPL/ASK/BH 03 – Northern Limb

GSPL/ASK/BH 03 has been planned on the Northern Limb of the moderately steep to near-reclined overturned fold, adjacent to the previously explored GSI/MECL area. This location provides an opportunity to investigate the continuation of the favourable stratigraphic sequence into the northern limb of the fold.

Although direct subsurface information on VMS-style, stratabound mineralization in this particular sector is presently limited, the borehole has been strategically positioned to test the mineral potential of the northern limb and establish the presence, depth and geometry of

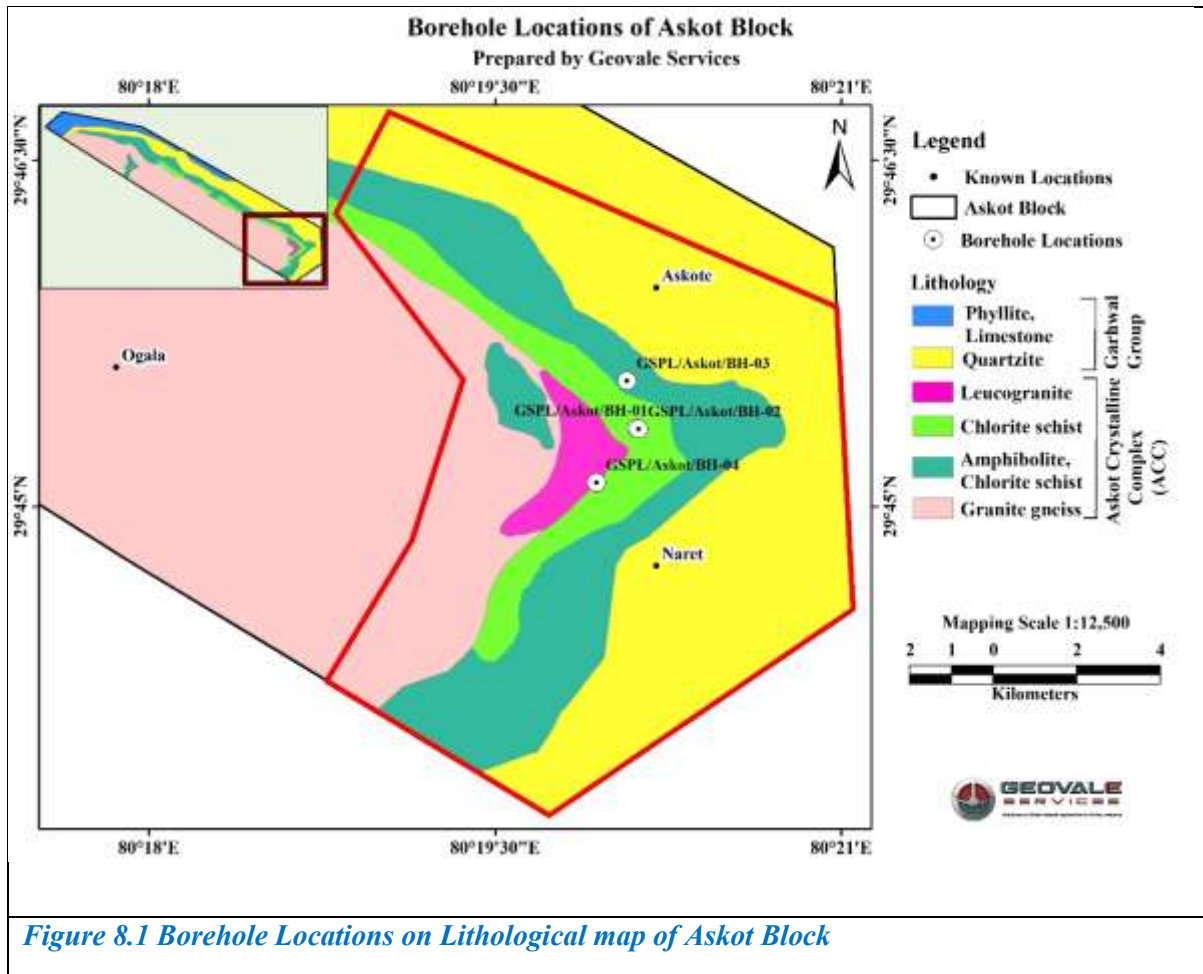
mineralization at depth. The results will provide valuable structural and stratigraphic information and will help determine whether the mineralized horizon identified in the hinge area continues into the northern limb.

Thus, BH-03 serves as an important exploratory test of the northern structural domain and will contribute to defining the overall strike and structural continuity of the mineralized system.

Borehole GSPL/ASK/BH 04 – Southern Limb

GSPL/ASK/BH 04 has been planned on the Southern Limb of the complex fold system to investigate the possible extension of the VMS-style stratabound mineralization away from the central hinge zone.

The borehole is intended to test the favourable stratigraphic horizon at depth and establish whether the mineralized body continues along the southern limb of the fold. Successful intersection of mineralization in BH-04 would provide important evidence for the structural continuity and fold-controlled extension of the mineralized horizon, thereby strengthening the interpretation of the Askot–Naret zone as a structurally controlled VMS-style mineralized system.



As part of the G4 investigation, four scout boreholes totalling 601 m were drilled in three principal structural sectors:

1. Central Hinge Core Zone – characterized by the prominent ‘M’-shaped fold geometry. tested by two scout boreholes (GSPL/ASK/BH01, GSPL/ASK/BH02).
2. Northern Limb – representing the northern structural limb of the overturned fold tested by one scout borehole (GSPL/ASK/BH03).
3. Southern Limb – representing the southern structural limb (overturned) of the complex fold system tested by one scout borehole (GSPL/ASK/BH04).

three in the northern limb of large synformal fold of the Askot Block, BH-01, and 02 (~200 m east of Baragaon area), BH-03 (~900 m northeast of Baragaon area), and one in southern limb of large synformal fold of the Askot Block (~100 m north of Mouchora area BH-04).

The borehole locations relative to lithology along with mineral potential anomaly targets are shown on the **lithological map of the Askot Block** (Figure 8.1).

Detailed borehole coordinates, collar RL and depths are summarised in Table 8.1.

Table 8.1 Borehole Location and Depth

SN No	Borehole No	Latitude	Longitude	Collar Height (in m)	Type	Azimuth	Drill Depth (in m)
1	GSPL/ASK/BH01	29.755647	80.335198	1082.63	Inclined	50°→ 225°	86
2	GSPL/ASK/BH02	29.755596	80.335353	1082.63	Vertical	NA	196
3	GSPL/ASK/BH03	29.759064	80.334520	1164	Vertical	NA	160
4	GSPL/ASK/BH04	29.751716	80.332324	1037	Inclined	60°→ 160°	159
Total = 601 m							

8.4 Core Handling and Sampling Methodology

Systematic core logging, recovery measurement, structural recording, and sampling were undertaken during drilling operations to generate reliable geological, mineralogical, structural and analytical datasets. Particular emphasis was placed on identifying mineralized horizons, Volcanogenic Massive Sulphide (VMS) mineralisation, weathering characteristics, and lithological contacts controlling ore distribution within the Askot-Naret hinge area.

Cores were recovered in 0.5-3 m runs, stored in depth-marked core boxes in a box-shaped pattern. Core recovery was monitored routinely and was generally good at approximately 90%; local reductions correlate with brecciated and strongly fractured zones, supplemented by sludge samples.

Cores were quarter-cut longitudinally:

- Half-core preserved as reference in the core boxes.
- One quarter retained for petrographic and mineralogical thin-section study.
- One quarter used for geochemical sampling at nominal 1–1.5 m intervals, with shorter intervals over visually mineralised zones.
- Select intervals were chosen for ICPMS (Annexure XIV), AAS (Annexure XIII), XRD (Annexure XV), EPMA and petrographic studies to characterise sulphides and metal associations.



No downhole geophysical logging or formal deviation surveys were carried out in this phase as it was not sanctioned, reflecting the scout nature of the programme. Boreholes were designed to be vertical or modestly inclined, and collar positions and orientations are accurate enough for G4-level geological interpretation.

8.5 Drillhole Planning

Detailed structural analysis of the Askot–Naret hinge zone indicates a regional, moderately steep to near-reclined overturned fold system, characterized by a complex ‘M’-shaped fold pattern. Considering the structural geometry and the distribution of mineralization, the Askot–Naret hinge zone has been classified into three principal structural sectors:

4. Central Hinge Core Zone – characterized by the prominent ‘M’-shaped fold geometry. tested by two scout boreholes (GSPL/ASK/BH01, GSPL/ASK/BH02).
5. Northern Limb – representing the northern structural limb of the overturned fold tested by one scout borehole (GSPL/ASK/BH03).
6. Southern Limb – representing the southern structural limb (overturned) of the complex fold system tested by one scout borehole (GSPL/ASK/BH04).

As the drilling programme was designed mainly for target testing and geological verification, a regular grid drilling pattern was not followed.

Borehole collar locations were mainly selected within the most suitable and accessible topographic zones considering steep terrain, ridge morphology, slope stability, equipment mobility, and operational feasibility. Most boreholes were positioned along moderate slope sectors and accessible ridge flanks.

The boreholes were initially designed to a target depth maximum of up to 200 m to evaluate the vertical continuity of iron mineralization. However, drilling depths were adjusted based on geological and drilling conditions encountered during drilling.

8.6 Askot-Naret Hinge Zone–VMS Target

The south-eastern part of the Askot Base-metal Prospect Block, including the Hinge Zone of the Askot Synformal fold, was identified as a priority area based on favourable geological, geochemical, and geophysical characteristics observed during surface investigations (Chapters



8 and 9). This area is characterised by suitable lithological associations and structural controls related to plunging synformal fold, and is supported by coincident geochemical anomalies and responses from VES surveys.

The target concept, developed from integrated interpretation presented in Chapters 8–9, was to assess the subsurface continuity and sulphide mineralisation potential of recognised anomaly zones through reconnaissance-level drilling. Specifically, the drilling aimed to evaluate:

Whether altered surface gossan exposures observed in pits and trench sections show downward continuity into less-weathered lithological domains with sulphide mineralization (VMS).

Evaluate whether sulphide-altered zones developed over chlorite schist and associated lithologies within the Hinze Zone extend to depth and host significant sulphide mineralisation (VMS).

8.7 Details of Borehole

8.7.1 GSPL/ASK/BH01 and GSPL/ASK/BH02

GSPL/ASK/BH01 and GSPL/ASK/BH02 was collared over the malachite leaching stream and small-scale gossan cap and drilled inclined (50° → 225°) to 86 and vertical 196 m respectively.

The logged succession and sulphide mineralization (VMS) is given in Figure 8.6, Figure 8.27 **Surface Selection Criteria** (Figure 8.2 to 8.5)- The GSPL/ASK/BH01 and GSPL/ASK/BH02 location was selected at ~200 m east of Baragaon village within a prominent NW–SE trending chlorite schist band and an overall dip towards the NE. Surface selection was primarily guided by the presence of malachite leaching stream and gossan cap zone.

Surface bedrock samples of chlorite schist collected near the borehole 01 and 02 site showed promising chemical analysis with a wide range of anomalous values, including Cu up to 21324 ppm, Pb up to 61541 ppm, Sn up to 275 ppm, Sb up to 260 ppm, Ag up to 63 ppm, Zn up to 4091 ppm, W up to 3.56 ppm, and Mo up to 5 ppm.

These geochemical anomalies, along with favorable geological characteristics, supported the selection of this site for drilling to test the sulphide mineralisation at depth.

Geophysical Signature- VES profiling also shows lowering the resistivity between 10 m to 45 m (value drop from 802 ohm-m to 493 ohm-m to 674 ohm-m), indicating a conducting layer (probably Sulphide bearing horizon).



Figure 8.2 Malachite Stream, around 200 m east of Baragaon village



Figure 8.3 Hematite, limonite and secondary copper Staining, east of Baragaon village at BH 01 and 02

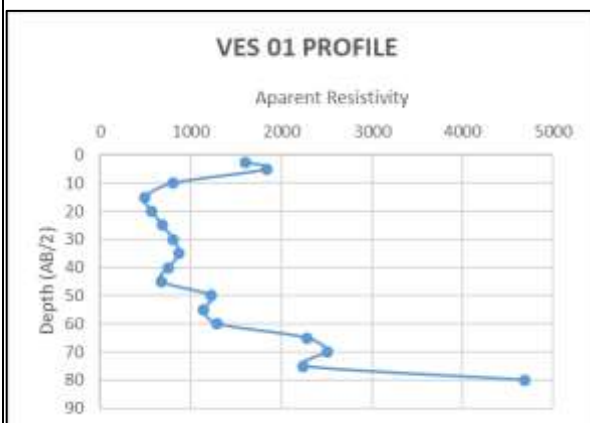


Figure 8.4 VES-01 profiling in Askot over BH 01 and 02



Figure 8.5 Malachite in brecciated qtz-chlorite schist adjacent to BH01 and BH 02, east of Baragaon village

BH-01 – Lithologging and Mineralization:

The first borehole (GSPL/ASK/BH01) is located within the mapped quartz sericite chlorite schist zone of the Askot area with a total of 86 m depth.

The upper 0-3.4 m consists of topsoil and completely weathered brownish yellow clayey silt with traces of quartz sericite chlorite schist. This is underlain by quartz sericite chlorite schist



with variable extents of weathering at different depths. Gossan zones have been encountered at 6.63 to 9.37 m and 17.75 to 19.65 m depth intervals so far. Intermittent mineralized zones have been recorded at different depths: chalcopryite, malachite, pyrite, tenorite, covellite noted at 22.53 to 45 m depth interval; chalcopryite, chalcocite, galena, malachite, tenorite, pyrite noted at 48.45-53.35 m depth interval and chalcopryite, pyrite noted associated with quartz veins within the depth intervals of 55-55.21 m, 55.87-56 m, 56.2-56.45 m, 56.55-56.65 m, 72.00-72.15 m (Figure 8.6 to 8.12).

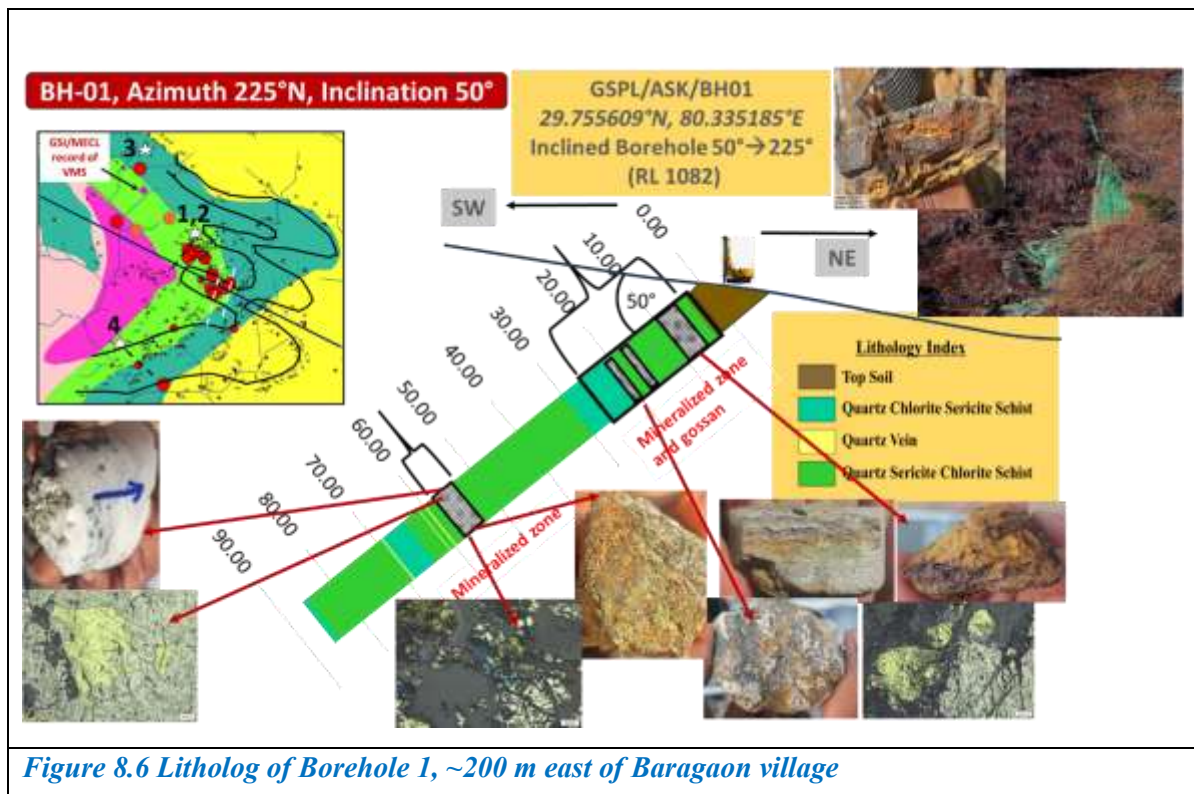




Figure 8.7 Borehole Sample shows chalcopyrite and sphalerite



Figure 8.8 Borehole Sample shows Malachite



Figure 8.9 Gossan in Borehole sample



Figure 8.10 Borehole Sample shows shearing in Chlorite-sericite schist



Figure 8.11 Borehole Sample shows chalcopyrite and pyrite



Figure 8.12 Borehole Sample shows chalcocite

Assay highlights include sulphide anomalies suggest Volcanogenic Massive Sulphide (VMS) mineralization: (Annexure- XIII, XIV)

Based on the geochemical assay results, the borehole has intersected **polymetallic mineralized zone** (Figure 8.13 to 8.16) in various depth extending from **3.0 m to 57.0 m depth**. Within the main mineralized interval, a **localized Au–Ag-enriched sub-zone** is present between **54.0 m and 55.0 m depth**.

Zone I: Main Polymetallic Sulphide Zone (3.0-4.0, 6.0-10.0, 16.0-17.0, 54.0–57.0 m)

This zone is characterized by strong and persistent enrichment of base metals, including **Cu (477–27,415 ppm)**, **Pb (78–4,007 ppm)**, and **Zn (541–7,649 ppm)**, indicating a robust polymetallic sulphide system dominated by chalcopyrite, galena, and sphalerite. The interval also contains elevated concentrations of hydrothermal pathfinder and accessory elements, namely **As (35–4,751 ppm)**, **W (6–65 ppm)**, **Tl (8–34 ppm)**, **Sb (5–101 ppm)**, and **Sn (6–462 ppm)**, reflecting a well-developed hydrothermal mineralizing event. The continuity of elevated metal values throughout the interval suggests a thick, persistent mineralized body.

Zone II: Au–Ag-Enriched Sub-zone (54.0–55.0 m)

A narrow but significant precious-metal-rich interval occurs near the base of the main sulphide zone. This sub-zone returned **0.360 ppm Au** and **18 ppm Ag**, coinciding with elevated base-metal concentrations. The close association of gold and silver with the polymetallic sulphide assemblage indicates localized precious-metal enrichment within the hydrothermal system and enhances the economic significance of the mineralized interval.

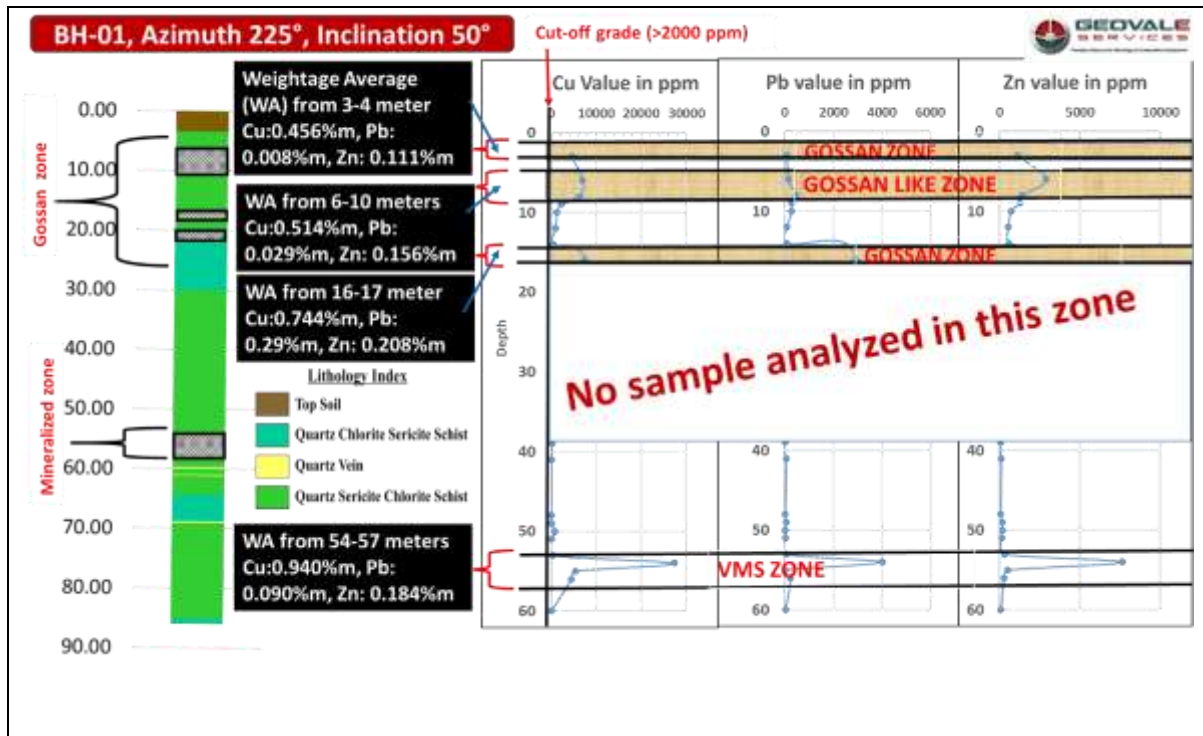


Figure 8.13 Weightage average of mineralized zone after geochemical analysis of Borehole 1, ~200 m east of Baragaon village

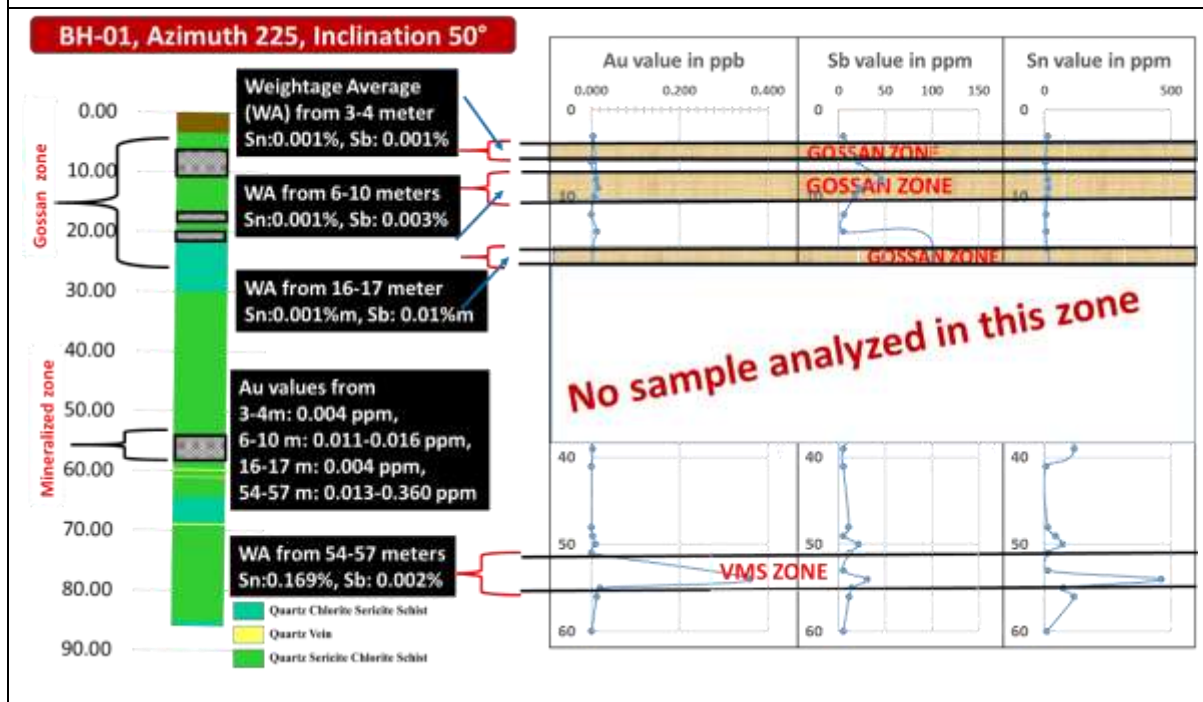


Figure 8.14 Weightage average of mineralized zone after geochemical analysis of Borehole 1, ~200 m east of Baragaon village

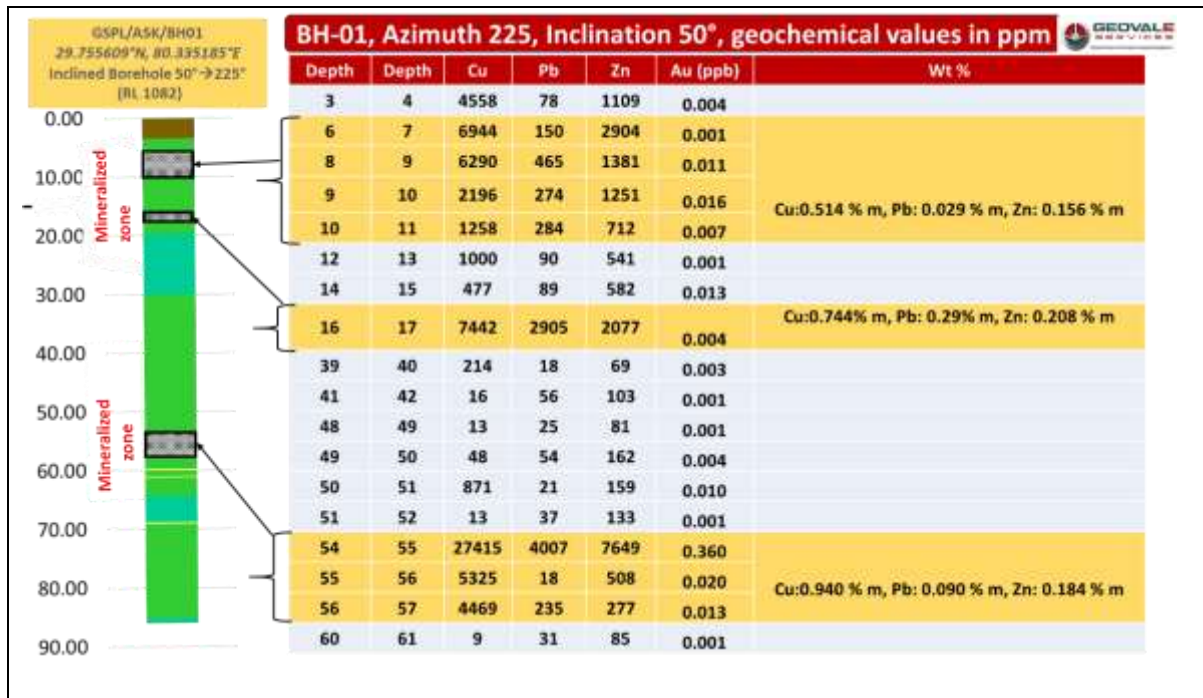


Figure 8.15 Weightage average of mineralized zone after geochemical analysis of Borehole 1, ~200 m east of Baragaon village

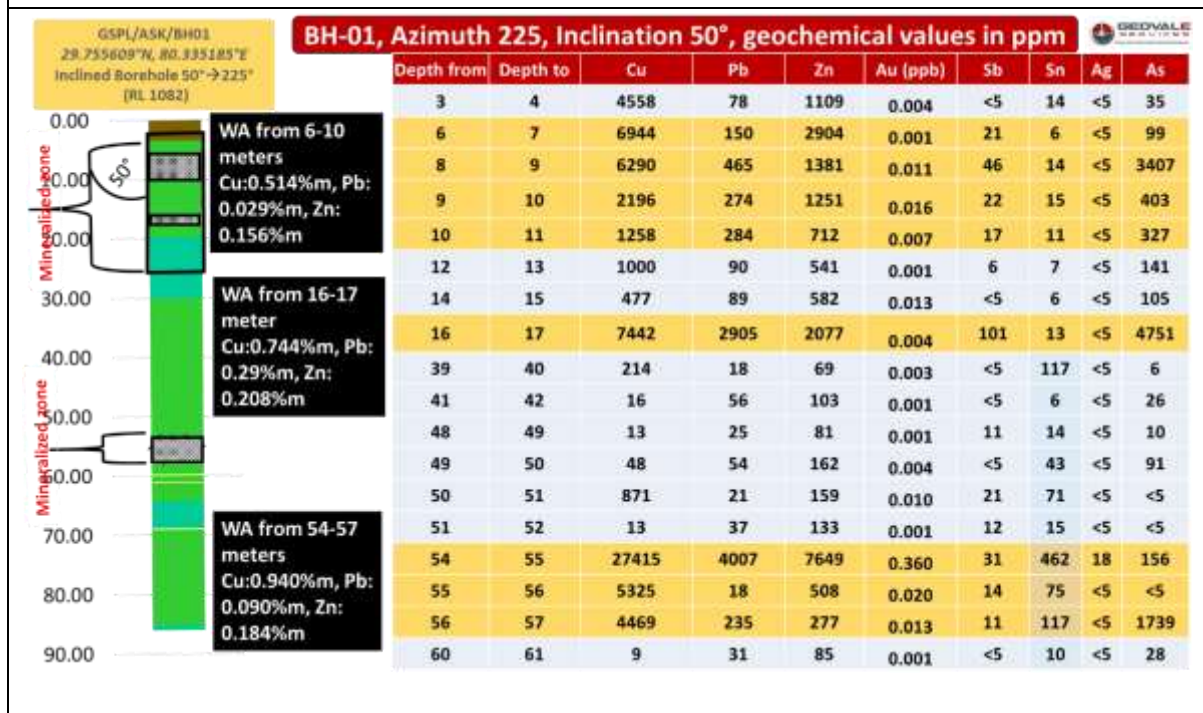


Figure 8.16 Geochemical analysis of Borehole 1, ~200 m east of Baragaon village

Geochemical results

The shallow mineralized section contains repeated Cu values above the 2,000 ppm cut-off. Cu reaches 6,944 ppm at 6-7 m, 6,290 ppm at 8-9 m and 7,442 ppm at 16-17 m. Pb is generally

lower but increases sharply to 2,905 ppm at 16-17 m. Zn reaches 2,904 ppm at 6-7 m and 2,077 ppm at 16-17 m. The strongest individual assay occurs at 54-55 m, where Cu is 27,415 ppm, Pb is 4,007 ppm and Zn is 7,649 ppm. This interval also carries 0.360 Au (as labelled in the presentation), 31 ppm Sb, 462 ppm Sn, 18 ppm Ag and 156 ppm As. Tin remains elevated through 55-57 m, while As also increases at 56-57 m.

Table 8.2 Geochemical results

Interval (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Other notable results
3-4	4,558	78	1,109	Au 0.004; Sn 14 ppm
6-7	6,944	150	2,904	Sb 21 ppm
8-9	6,290	465	1,381	As 3,407 ppm
16-17	7,442	2,905	2,077	Sb 101 ppm; As 4,751 ppm
54-55	27,415	4,007	7,649	Au 0.360; Sn 462 ppm; Ag 18 ppm
55-57	5,325-4,469	18-235	508-277	Sn 75-117 ppm

Weighted-average interpretation

The reported weighted averages confirm four discrete Cu-bearing intersections. The 3-4 m interval averages 0.456% Cu, 0.008% Pb and 0.111% Zn. The broader 6-10 m interval averages 0.514% Cu, 0.029% Pb and 0.156% Zn, indicating a persistent shallow Cu-rich gossanous zone. The 16-17 m interval averages 0.744% Cu, 0.29% Pb and 0.208% Zn and is the most Pb-enriched shallow intercept. The deeper 54-57 m interval averages 0.940% Cu, 0.090% Pb and 0.184% Zn; it also contains the strongest Sn response, with a reported weighted average of 0.169% Sn. This deeper interval is the most important VMS-style target in BH-01 because of its high Cu grade, polymetallic association and elevated Sn-Ag-Au values.

Petrography Details (Figure 8.17 to 8.26)

Sample ID- 111771 (GSPL/ASK/BH01) Depth- 4 m

Quartz sericite chlorite schist composed predominantly of sericite, chlorite, biotite, and quartz. The rock exhibits a well-developed schistose fabric defined by the preferred orientation of chlorite, sericite and biotite flakes, indicating significant deformation during metamorphism. Petrographic observations suggest greenschist facies metamorphism accompanied by extensive hydrothermal alteration through sericitization and biotitization. Quartz grains show undulose extinction and recrystallization features, reflecting tectonic stress and dynamic deformation. The alteration assemblage and presence of a few opaque minerals indicate potential association with hydrothermal sulphide mineralization.

Sample ID- 111776 (GSPL/ASK/BH01) Depth- 28.7 m

Deformed quartz sericite chlorite schist composed predominantly of quartz, chlorite, sericite, and biotite with minor accessory minerals. The rock exhibits a well-developed schistosity characterized by alternating quartz-rich and mica-rich bands, reflecting intense deformation and metamorphic recrystallization. Quartz grains commonly display undulose extinction, subgrain development, and dynamic recrystallization. The mineral fabric indicates that rock has undergone ductile deformation under medium grade metamorphic conditions. These deformation features provide evidence of significant tectonic activity and crustal reworking within the study area.

Sample ID- 111779 (GSPL/ASK/BH01) Depth- 40.7 m

Quartz biotite sericite chlorite schist composed predominantly of chlorite, sericite, biotite, quartz, and with minor accessory minerals. The rock exhibits a well-developed schistosity defined by the preferred orientation of mica flakes, imparting a strong foliated texture. Quartz grains commonly show undulose extinction and recrystallization, while feldspars may display deformation features and partial alteration. The mineral assemblage and fabric suggest formation under medium-grade metamorphic conditions, typically within the amphibolite to upper greenschist facies. The pronounced foliation and deformation textures indicate that the rock has experienced significant tectonic stress during regional metamorphism.

Sample ID- 111784 (GSPL/ASK/BH01) Depth- 51.6 m

Strongly foliated quartz biotite chlorite schist, characterized by abundant aligned mica flakes defining a prominent schistosity. The brown pleochroic minerals are interpreted as biotite, while the colourless elongate grains are likely quartz. The mineral alignment and local bending of mica-rich layers indicate deformation under directed stress conditions.

Sample ID- 111785 (GSPL/ASK/BH01) Depth- 54.2 m

The thin section study indicates that the sample represents a volcanogenic massive sulphide (VMS) mineralized rock characterized by sulphide-rich assemblages hosted within a hydrothermally altered matrix. The rock commonly contains pyrite, chalcopyrite, bornite, sphalerite, and other opaque sulphide minerals occurring in massive, semi-massive, or disseminated forms. Associated alteration minerals such as chlorite, sericite, and quartz suggest intense hydrothermal fluid activity related to ore-forming processes. Textural relationships among sulphides and gangue minerals indicate multiple stages of mineralization and



deformation. The mineral assemblage and alteration characteristics are typical of VMS systems and highlight the economic potential of the host rock for base-metal mineralization.

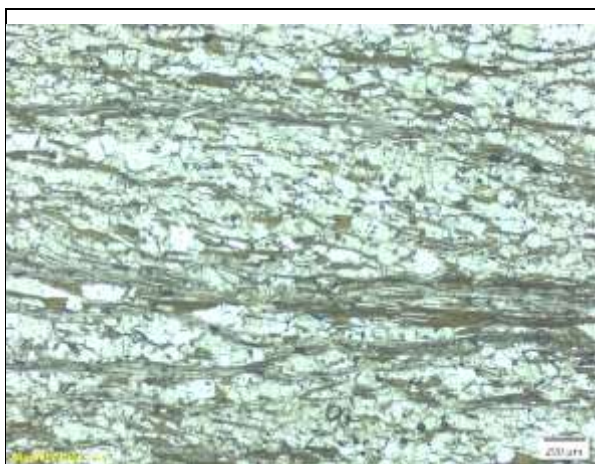


Figure 8.17 (111771) Sericite-Chlorite schist shows well-developed schistosity

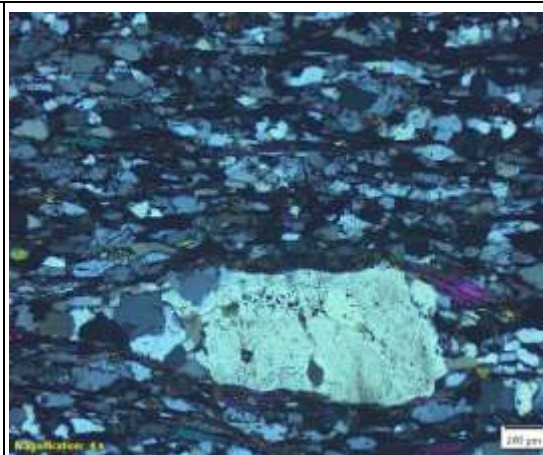


Figure 8.18 (111776) Chlorite sericite schist with phenocrysts of quartz wrapping by chlorite, sericite and biotite.



Figure 8.19 (111784) Brecciated quartz in Sericite-Chlorite schist shows well-developed schistosity in plane polarized light



Figure 8.20 111784 Brecciated quartz in Sericite-Chlorite schist shows well-developed schistosity in cross polarized light

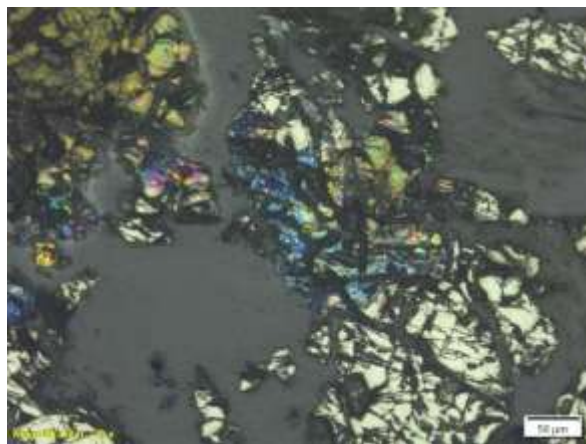


Figure 8.21 111785 Bornite covelite and sphalerite sulphide association in VMS



Figure 8.22 111785 Chalcopyrite, and sphalerite in Volcanogenic Massive Sulphides

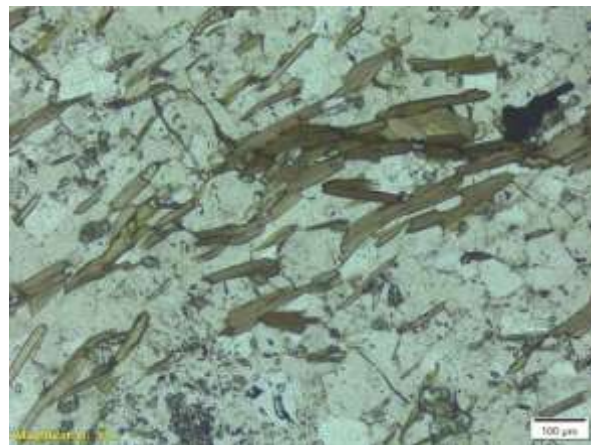


Figure 8.23 111779: Biotite-sericite-chlorite schist shows preferred flakey mineral orientation

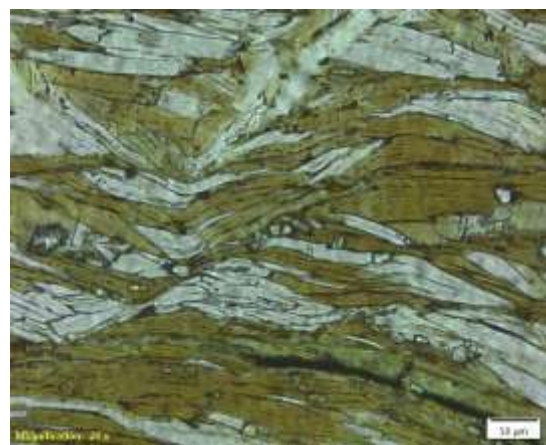


Figure 8.24 111784: Biotite-sericite-chlorite schist shows preferred flakey mineral orientation.

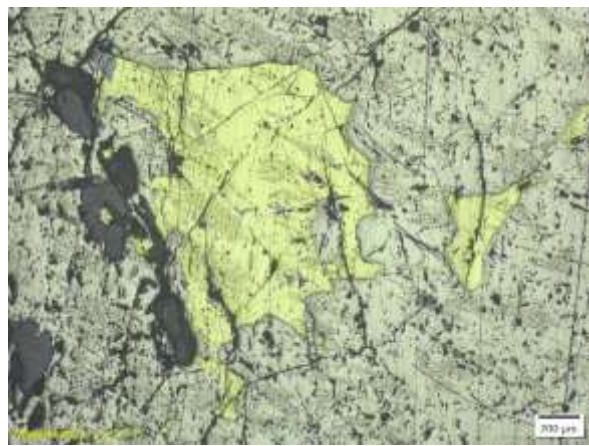


Figure 8.25 111785 Chlcopyrite and sphalerite in VMS.

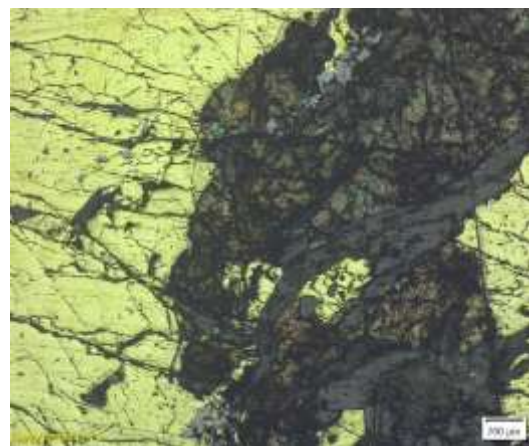


Figure 8.26 111785: Chalcopyrite and bornite in VMS.

Collectively, GSPL/ASK/BH01 intersects two well-developed, strongly sulphide mineralised ore zone.

However, it confirmed:

- A thick leached copper oxide (supergene enrich) gossan zone present from 3 m to 18 meter on sericite chlorite schist hostrock.
- The presence of primary sulphides (chalcopyrite, bornite, pyrite, covellite, sphalerite, galena) thoroughly present with at depth of 6-10, 16-17, 54-57m within the sericite chlorite schist host suggest a Volcanogenic Massive Sulphide system.
- A vector from the leach cap (supergene) toward a deeper Cu-Pb-Zn enriched zone, establish from GSPL/ASK/BH01.

BH-02 – Lithologging and Mineralization

The second borehole (GSPL/ASK/BH02) is located within the mapped quartz sericite chlorite schist zone of the Askot area with a total of 196 m depth (Figure 8.27).

Alteration and mineralization are encountered immediately below the overburden, with quartz–sericite–chlorite schist recorded at 6.00-6.69 m. Biotite-bearing quartz–sericite–chlorite schist at 27.48-28.28 m and a massive sulphide-bearing interval at 29.13-29.82 m. Additional weathered, sulphide-bearing schist occurs at 16.32-19.00 m, 20.19-21.00 m and 34.00-36.00 m.

The borehole continues to intersect quartz-sericite-chlorite schist as the dominant lithology, with varying degrees of weathering, alteration and sulphide mineralization.



From ~65 m onward, quartz-sericite-chlorite schist becomes prominent. Between the interval ~68.90 and ~82.20 m, multiple thin mineralized bands are observed within garnet-bearing schist, suggesting sulphide dissemination and structural control on mineralization at depth. Intermittent mineralized quartz-sericite-chlorite schist is also recorded around 80.40-82.20 m. Mineralization in these horizons are mostly associated with quartz veins.

Below ~82 m and down to the final depth of 196 m, the lithology is dominated by relatively fresh quartz-sericite-chlorite schist and quartz-chlorite-sericite schist, with sporadic mineralized intervals.

Overall, the extended drilling confirms the persistence of the quartz-sericite-chlorite schist host unit to at least 196 m depth, with mineralization primarily concentrated in the upper oxidized zone and in massive sulphide-bearing bands within schistose rock at intermediate depths.

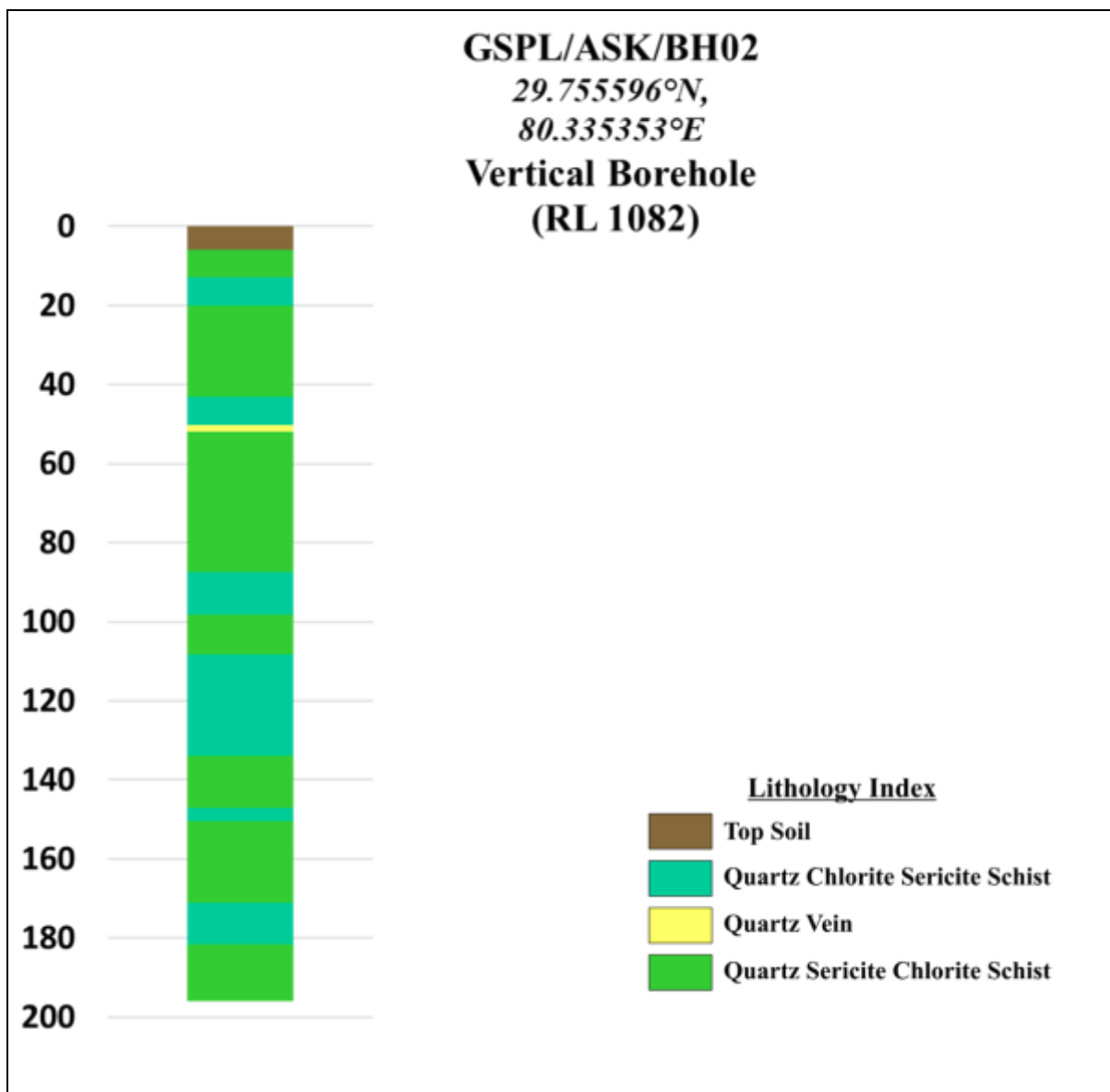




Figure 8.27 Litholog of Borehole 2, ~200 m east of Baragaon village



Figure 8.28 Borehole sample shows galena and sphalerite in massive sulphides

Figure 8.29 Borehole Sample shows Bornite



Figure 8.30 Borehole Sample shows dessiminations of chalcopryite veins in sericite chlorite schist host

Figure 8.31 Borehole Sample shows massive sulphides (chalcopryite) in sericite chlorite schist host



Figure 8.32 Borehole Sample shows galena in sericite chlorite schist host



Figure 8.33 Borehole Sample shows malachite staining

Geochemical analyses:

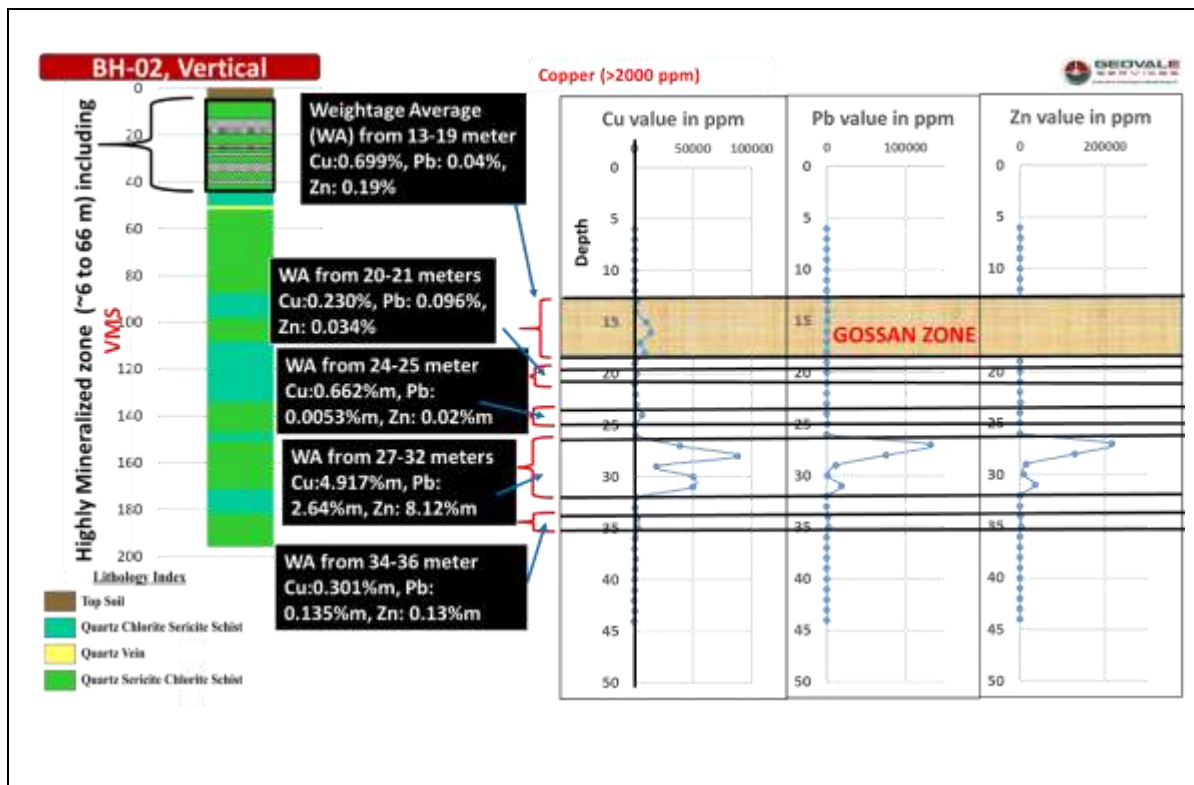
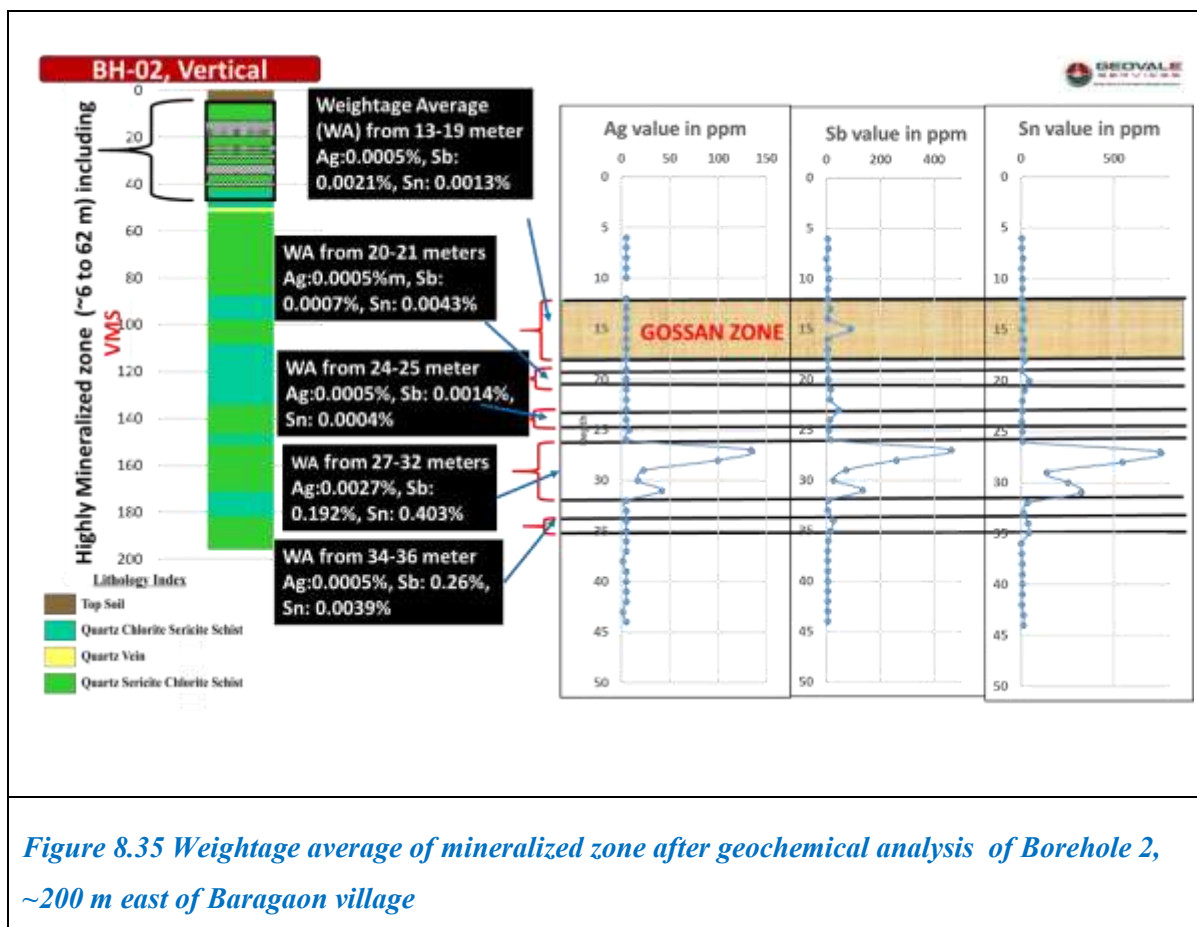


Figure 8.34 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village



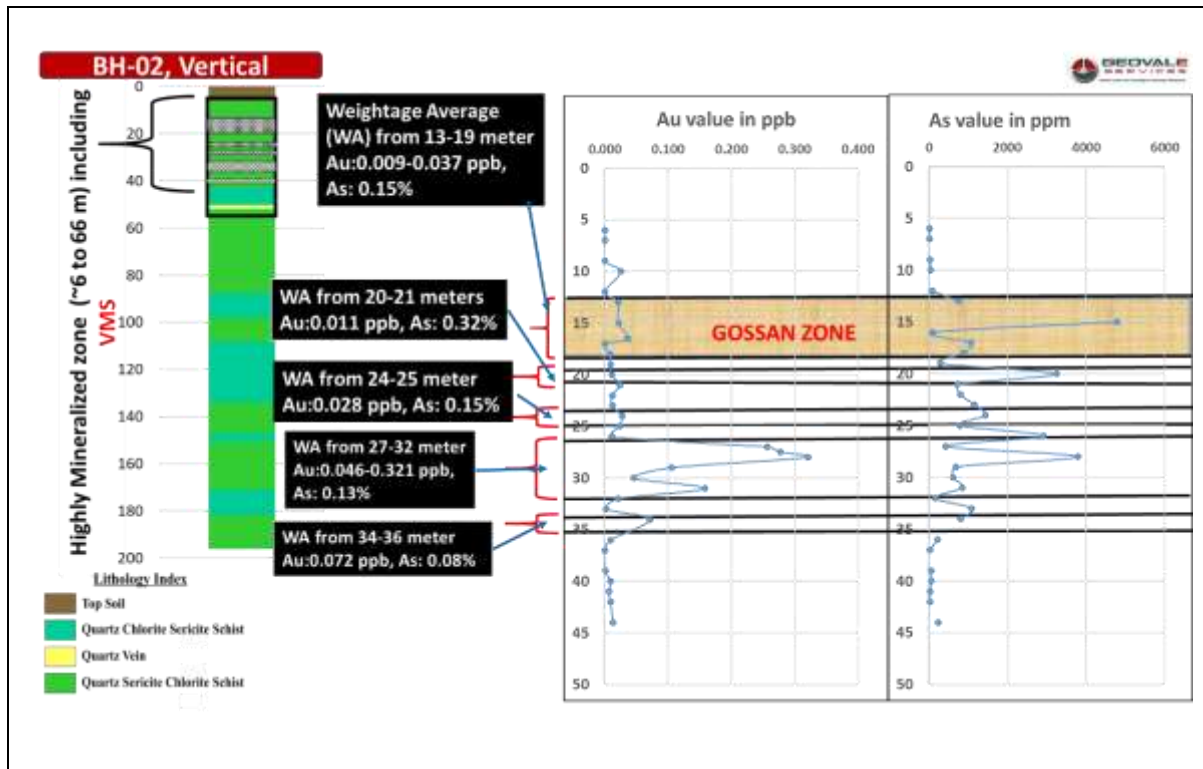


Figure 8.36 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village

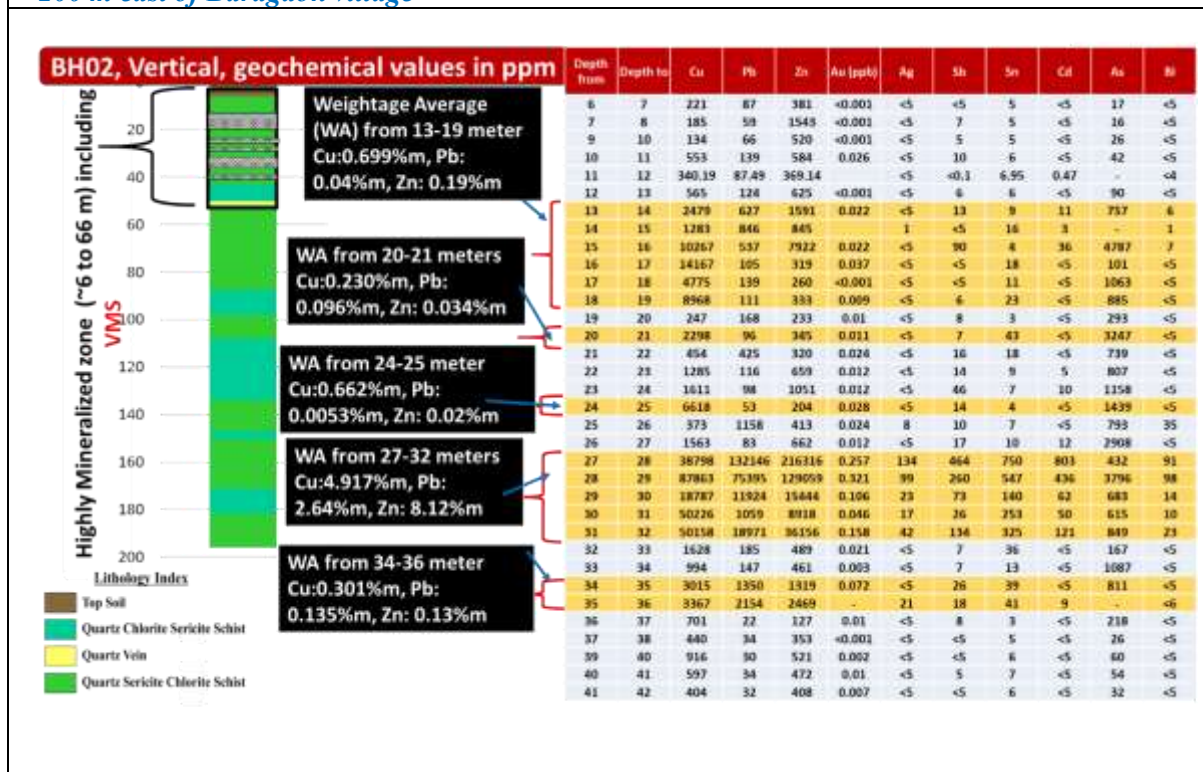


Figure 8.37 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village

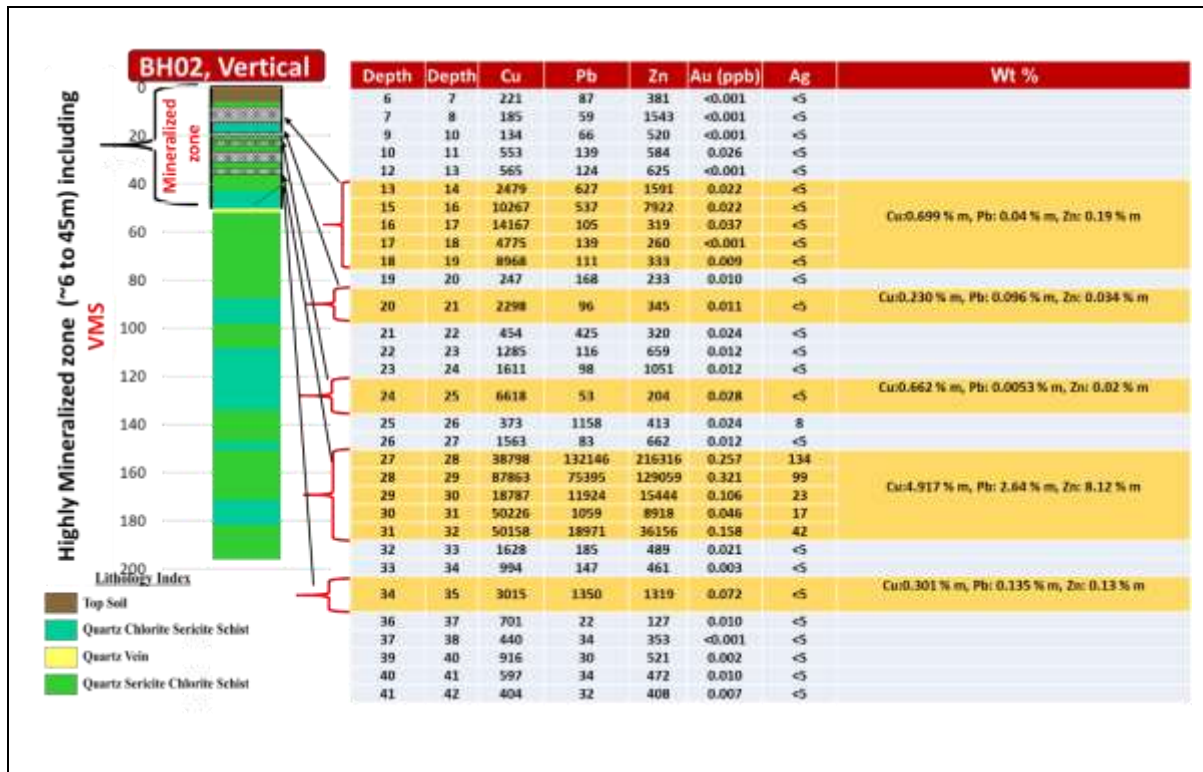


Figure 8.38 Weightage average of mineralized zone after geochemical analysis of Borehole 2, ~200 m east of Baragaon village

Geochemical results

Moderate to strong Cu enrichment begins at 13 m and becomes pronounced between 15 and 19 m. The dominant VMS intersection occurs from 27 to 32 m. Individual 1 m samples contain 38,798-87,863 ppm Cu, 1,059-132,146 ppm Pb and 8,918-216,316 ppm Zn. The peak Zn value of 216,316 ppm and peak Pb value of 132,146 ppm occur at 27-28 m, while the peak Cu value of 87,863 ppm occurs at 28-29 m. This interval also contains strongly elevated Ag, Sb, Sn, Cd, As and Bi. Gold values rise to 0.257-0.321 (as labelled) at 27-29 m and remain anomalous through 31-32 m. A later interval at 34-36 m retains moderate Cu-Pb-Zn enrichment (Figure 8.34 to 8.38).

Table 8.3 Geochemical results

Interval (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Pathfinder/precious-metal association
13-19	1,283-14,167	105-846	260-7,922	As up to 4,787 ppm; Sb up to 90 ppm
20-21	2,298	96	345	As 3,247 ppm; Sn 43 ppm
24-25	6,618	53	204	Au 0.028; As 1,439 ppm
27-28	38,798	132,146	216,316	Ag 134; Sb 464; Sn 750; Cd 803 ppm
28-29	87,863	75,395	129,059	Au 0.321; Ag 99; Bi 98 ppm



29-32	18,787- 50,226	1,059- 18,971	8,918- 36,156	Sn 140-325 ppm; Sb 26-134 ppm
34-36	3,015- 3,367	1,350- 2,154	1,319- 2,469	Ag to 21 ppm; Sn about 39-41 ppm

Weighted-average interpretation

The 13-19 m interval averages 0.699% Cu, 0.04% Pb and 0.19% Zn, defining a broad Cu-dominant gossanous zone. The 20-21 m interval averages 0.230% Cu, 0.096% Pb and 0.034% Zn. The 24-25 m interval averages 0.662% Cu, 0.0053% Pb and 0.02% Zn. The critical 27-32 m interval averages 4.917% Cu, 2.64% Pb and 8.12% Zn, with 0.0027% Ag, 0.192% Sb and 0.403% Sn. This represents a high-grade, polymetallic VMS intersection and is the most exploration-significant result in the presentation. The 34-36 m interval averages 0.301% Cu, 0.135% Pb and 0.13% Zn, with reported 0.26% Sb, showing that mineralization continues below the main ore zone (Figure 8.37).

Petrography Details (Figure 8.39 to 8.52)

Sample ID- 111761 (GSPL/ASK/BH02) Depth- 27.7 m

Chalcopyrite mineralization hosted within a chlorite-rich schist, consistent with hydrothermal sulphide mineralization. The bright yellow-white reflective grains are likely chalcopyrite observed in reflected light, while the surrounding darker matrix is composed predominantly of chlorite and altered silicate minerals.

Sample ID- 111762 (GSPL/ASK/BH02) Depth- 27.25 m

The thin section and ore microscopic study indicate a volcanogenic massive sulphide (VMS)-related mineralized zone characterized by abundant copper sulphide mineralization within a hydrothermally altered host rock. Chalcopyrite occurs as the dominant sulphide phase and is closely associated with bornite, which exhibits characteristic iridescent blue-purple tarnish colours under reflected light. Bornite occurs as radiating and irregular replacement patches within chalcopyrite, suggesting secondary copper enrichment through hydrothermal remobilization and sulphide replacement processes. The intimate intergrowth of bornite and chalcopyrite, together with associated chloritic alteration, is typical of copper-rich VMS systems and reflects a complex paragenetic history involving multiple stages of sulphide deposition and recrystallization. The observed mineral assemblage and textures indicate a

favourable environment for base-metal mineralization and suggest proximity to a high-grade copper-bearing portion of the VMS deposit.

Sample ID- 111763 (GSPL/ASK/BH02) Depth- 29.75 m

The thin section study reveals a schistose host rock containing disseminated to locally concentrated arsenopyrite mineralization within a strongly foliated metamorphic matrix. Arsenopyrite occurs as subhedral to euhedral grains aligned parallel to the schistosity or concentrated along foliation planes and micro-fractures, indicating structural control on mineral emplacement. The host schist is composed predominantly of quartz, sericite, chlorite, and mica minerals, reflecting hydrothermal alteration and regional metamorphism. Textural relationships suggest that arsenopyrite crystallized during hydrothermal activity and may be associated with sulphide-bearing fluid pathways. The occurrence of arsenopyrite within the schist is significant as it commonly serves as an indicator of hydrothermal mineralization and may be associated with gold and base-metal enrichment in metamorphosed volcanic-sedimentary terranes.

Sample ID-111764 (GSPL/ASK/BH02) Depth- 155.7 m

The thin section study reveals a biotite schist containing disseminated pyrite mineralization within a strongly foliated metamorphic matrix. Biotite occurs as abundant brown pleochroic flakes aligned parallel to the schistosity, while quartz and minor feldspar form granoblastic domains between the mica-rich layers. Pyrite is present as euhedral to subhedral cubic grains disseminated along foliation planes and within quartz-rich bands, indicating its formation during or after metamorphism.

Sample ID-111766 (GSPL/ASK/BH02) Depth- 173.4 m

The thin section study reveals a biotite schist containing disseminated pyrite and magnetite within a well-developed foliated metamorphic framework. Biotite occurs as brown pleochroic flakes aligned parallel to the schistosity, while quartz and feldspar form intergranular granoblastic domains. Pyrite is present as euhedral to subhedral sulphide grains distributed along foliation planes and within quartz-rich bands, whereas magnetite occurs as opaque granular to irregular crystals associated with the mica-rich matrix. The mineral assemblage and textural relationships indicate metamorphism accompanied by hydrothermal fluid activity, resulting in sulphide and oxide mineralization. The coexistence of pyrite and magnetite within



the biotite schist suggests a mineralized metamorphic environment and may represent an alteration zone associated with hydrothermal base-metal or sulphide-bearing systems.

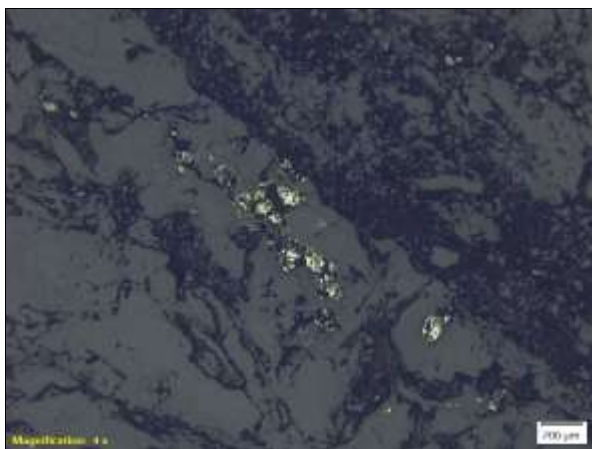


Figure 8.39 111761 Chalcopyrite in chlorite schist

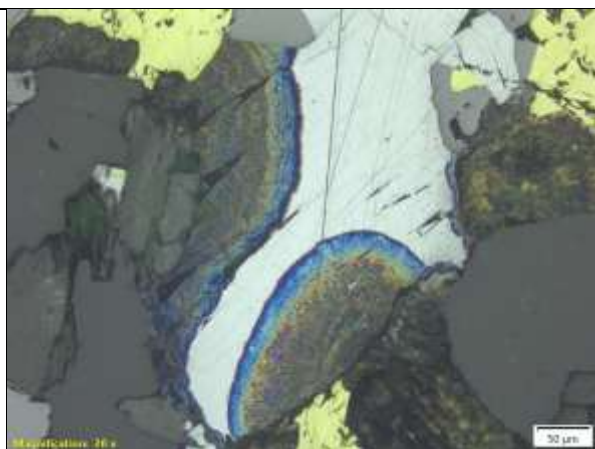


Figure 8.40 : 111762 chalcopyrite bornite in VMS

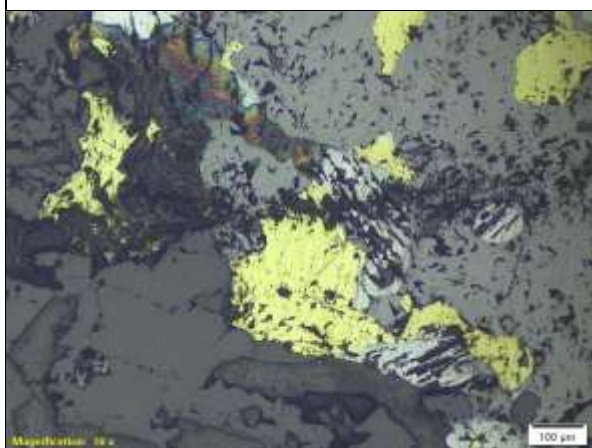


Figure 8.41 111762 Chalcopyrite, galena, sphalerite and bornite in VMS.

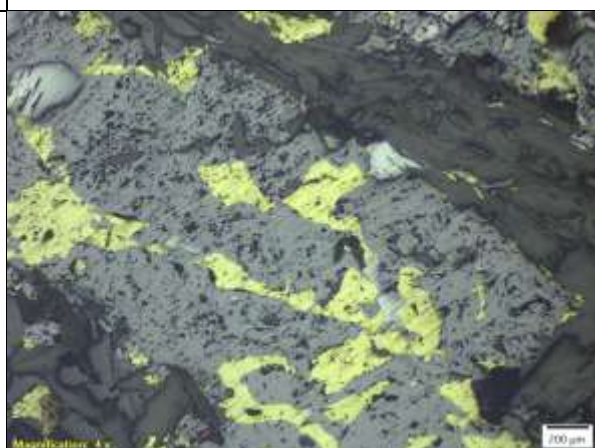


Figure 8.42 111762 Chalcopyrite, galena, and sphalerite in VMS.

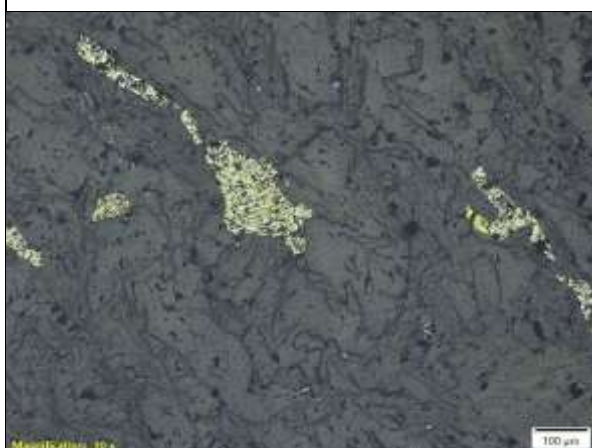


Figure 8.43 111763 Chalcopyrite and arsenopyrite in chlorite schist host.

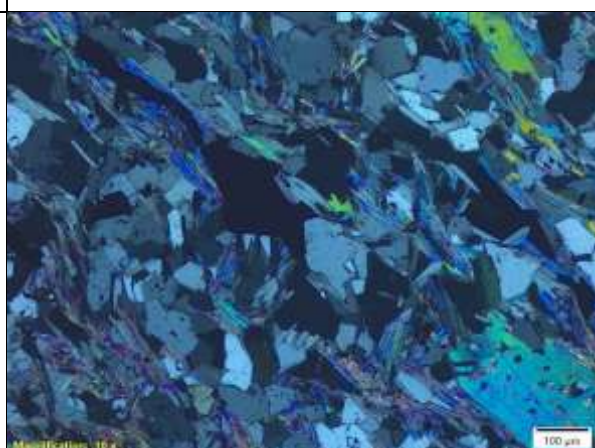
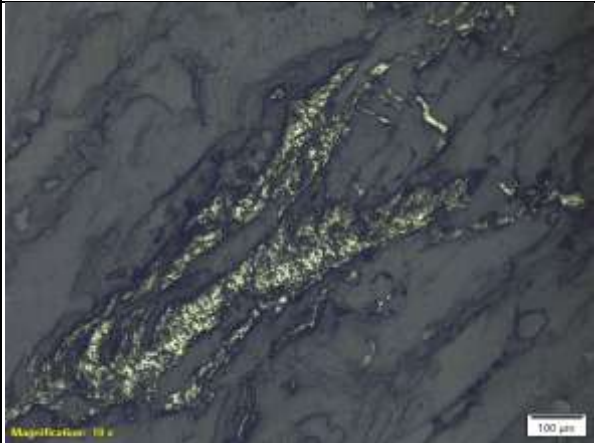
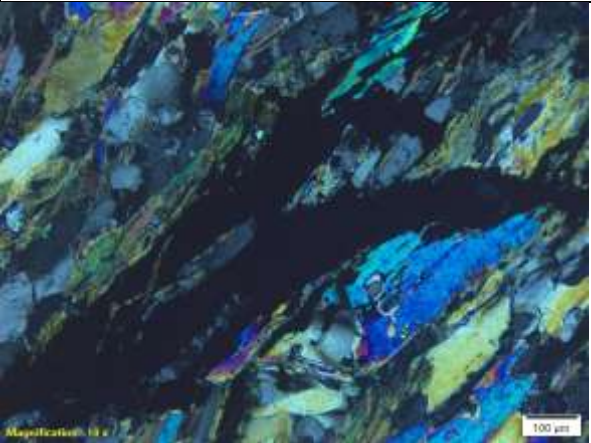
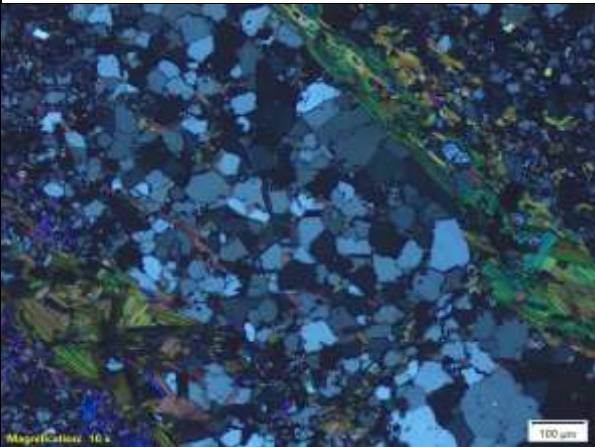
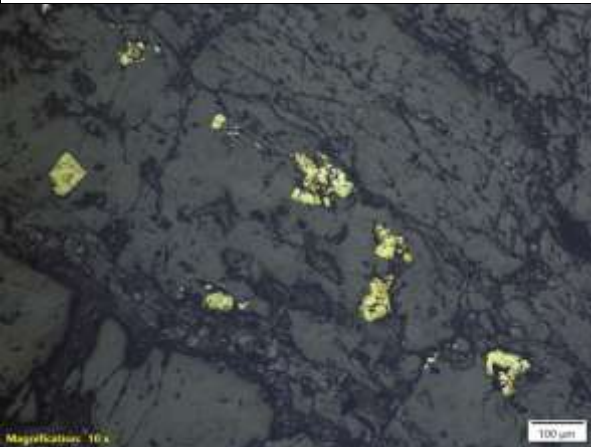
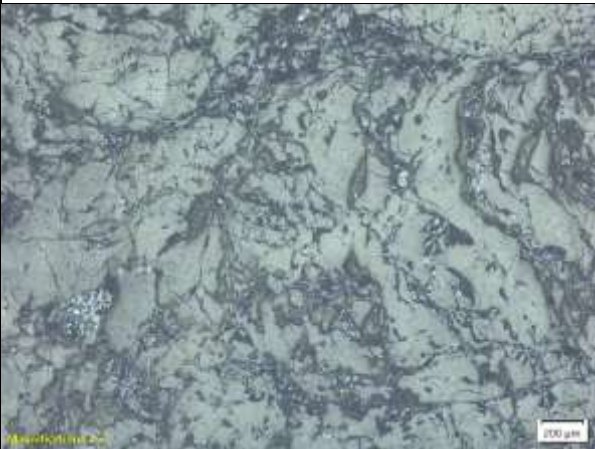
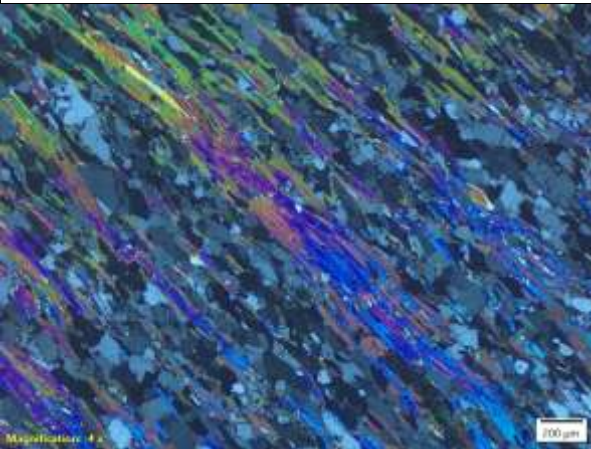


Figure 8.44 111763 chlorite and sericite grains are parallel to foliation, quartz grains shows undulose extinction



 <i>Figure 8.45 111764 Ductile chalcopyrite in chlorite schist host</i>	 <i>Figure 8.46 111764 Ductile chalcopyrite in chlorite schist host chlorite grains are parallel to foliation</i>
 <i>Figure 8.47 111774 chlorite and sericite grains are parallel to foliation, quartz grains show undulows extinction.</i>	 <i>Figure 8.48 111766 Pyrite, chalcopyrite and magnetite in sericite chlorite schist.</i>
 <i>Figure 8.49 111766 Pyrite and magnetite in schist.</i>	 <i>Figure 8.50 111770 Chlorite, biotite parallel to foliation, in sericite chlorite schist</i>

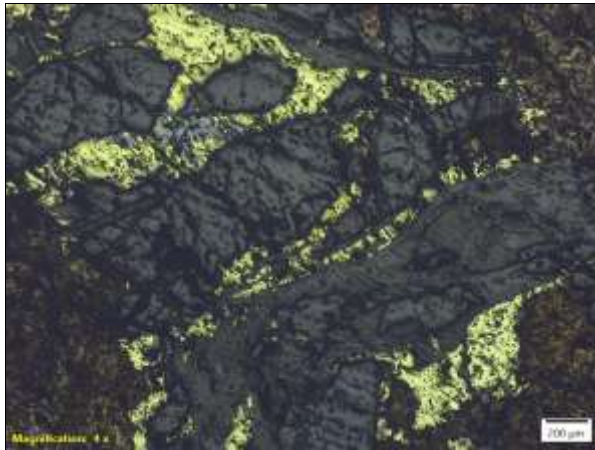


Figure 8.51 111764 Ductile chalcopyrite in sericite chlorite schist host

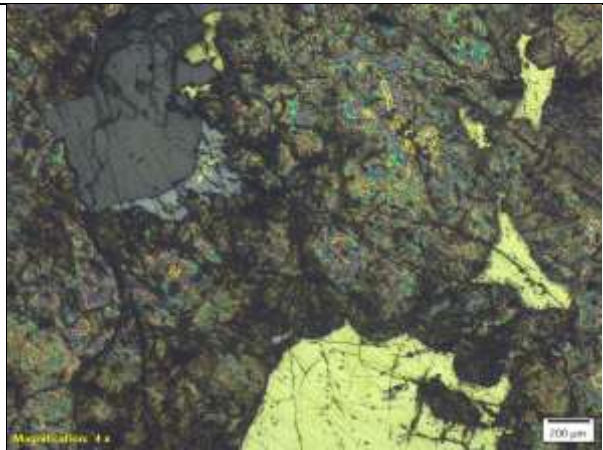


Figure 8.52 111764 Ductile chalcopyrite and bornite in sericite chlorite schist host

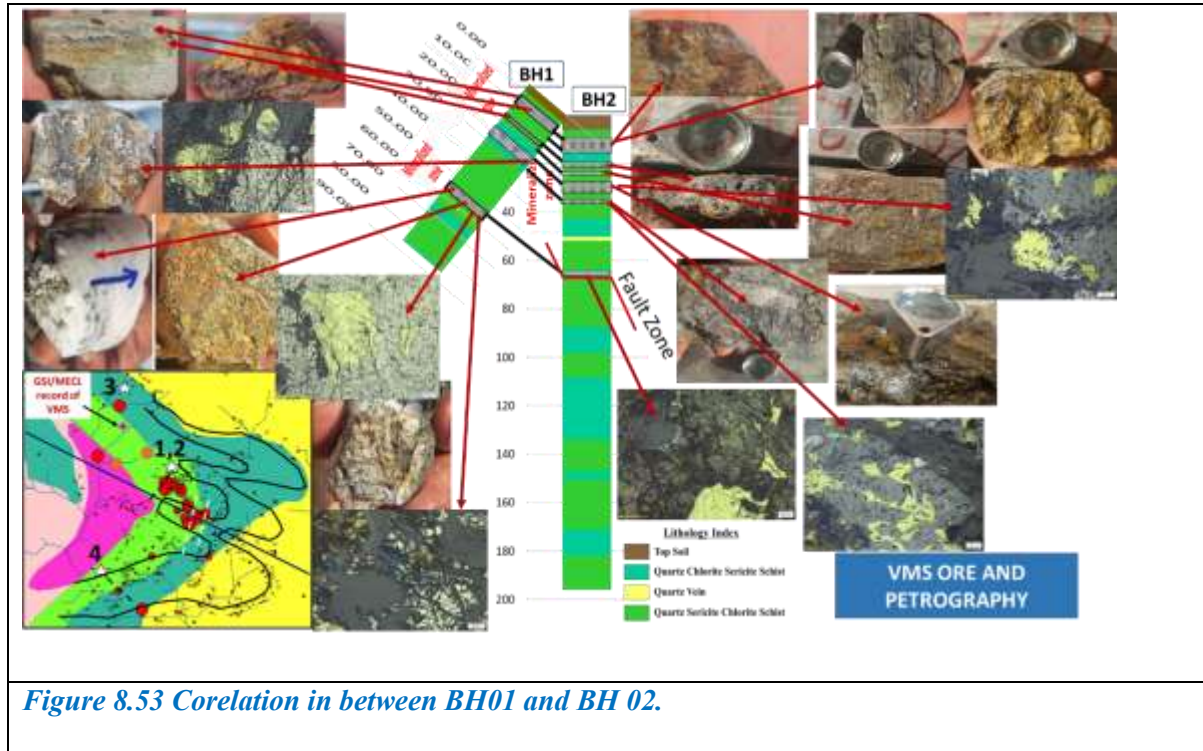
Visible Bornite, chalcopyrite, galena, malachite and sphalerite are recorded in hand specimen and petrography (Figure 8.39 to Figure 8.52). BH-02 thus confirms that the Askot-Naret felsic VMS system carries massive sulphide mineralisation at depth (3-45m), with Cu-Pb-Zn-Ag-Au with Sn-Sb-Mo-W-V enrichment.

Integrated Interpretation for BH-01 and BH-02

Collectively, GSPL/ASK/BH01 and GSPL/ASK/BH02 intersects well-developed (Figure 8.53), strongly sulphide mineralised ore zone.

It confirmed:

- A thick leached copper oxide (supergene enrich) gossan zone present from 3 m to 18 meter on sericite chlorite schist host rock.
- The presence of primary sulphides (chalcopyrite, bornite, pyrite, covellite, sphalerite, galena) at depth of 19-55m within the sericite chlorite schist host suggest a Volcanogenic Massive Sulphide system.
- A vector from the leach cap (supergene) toward a deeper Cu-Pb-Zn enriched zone, establish from GSPL/ASK/BH01 and GSPL/ASK/BH02.
- This highly mineralized zone from 3 to 55m, grading up to 8.8% Cu, 13.2 % Pb, 25.2% Zn, upto 750 ppm Sn, 466 ppm Sb, 65 ppm Mo, 178 ppm Ag, 0.321 ppm Au with elevated V, W and Te.



These results, when integrated with Chapter 7 structural mapping, geochemical results, confirm that the central hinge part of Askot-Naret block is a high-priority massive sulphide target within the Cu-Pb-Zn rich VMS system, meriting further step-out and depth-extension drilling.

8.7.2 GSPL/ASK/BH03

GSPL/ASK/BH03 was collared over the Askot mine location and secondary copper alteration cap and drilled vertical upto 160 m. The logged succession is given in Figure 8.58.

Surface Selection Criteria- The GSPL/ASK/BH03 was selected at (~900 m northeast of Baragaon area) within a prominent NNW–SSE trending chlorite schist band and an overall dip towards the ENE. Surface selection was primarily guided by the presence of secondary copper alteration cap and Askot mine location.

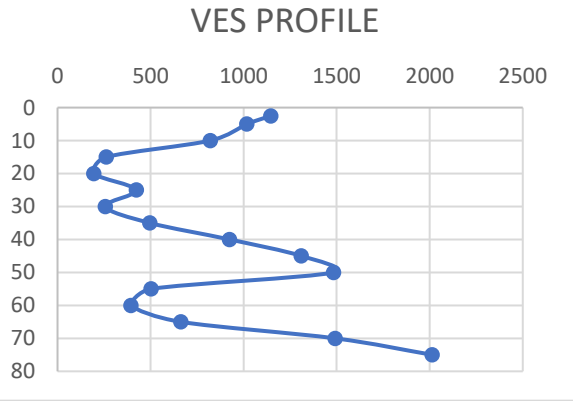
Surface bedrock samples of chlorite schist collected around the borehole 03 site showed promising chemical analysis with a wide range of anomalous values, including Cu up to 7609 ppm, Pb up to 46 ppm, Sn up to 127 ppm, Sb up to 4 ppm, Ag up to 57 ppm, Zn up to 173 ppm, W up to 18.94 ppm, V up to 514 ppm and Mo up to 12 ppm.

Stream sediment samples collected from nearby streams of the borehole 03 site showed promising chemical analysis with a wide range of anomalous values, including Cu up to 687

ppm, Pb up to 92 ppm, Sn up to 8 ppm, Te up to 5 ppm, Sb up to 5 ppm, Tl up to 28 ppm, Zn up to 2838 ppm, W up to 5 ppm, V up to 185 ppm and Co up to 41 ppm.

These geochemical anomalies, along with favorable geological characteristics, supported the selection of this site for drilling to test the sulphide mineralisation at depth.

Geophysical Signature- VES profiling also shows lowering the resistivity between 15 m to 40 m (value drop from 821 ohm-m to 262 ohm-m to 925 ohm-m), indicating a conducting layer (probably Sulphide bearing horizon).

	
<i>Figure 8.54 : Malachite, azurite staining west of Borehole 03</i>	<i>Figure 8.55 Azurite staining west of Borehole 03</i>
	
<i>Figure 8.56 : VES profiling in Askot around BH 03</i>	<i>Figure 8.57 Massive sulphide and Malachite in brecciated qtz-chlorite schist adjacent to Askot mine dump area.</i>

BH-03 – Lithologging and Mineralization:

The third borehole (GSPL/ASK/BH03) is located within the mapped quartz sericite chlorite schist zone of the Askot area with a total of 160 m depth (Figure 8.58).

Borehole-3 (GSPL/ASK/BH03: 29.759064°N, 80.334520°E) continues to intersect quartz-biotite- chlorite-sericite schist as the dominant lithology, with varying degrees of weathering, alteration and sulphide mineralization.

From 6.2 m onward, quartz-chlorite-sericite schist becomes prominent. From 7 to 35 m multiple thin mineralized bands are observed within this schist, suggesting sulphide dissemination and structural control on mineralization at depth. Mineralized zone in quartz-sericite-chlorite schist is also recorded around 52-79 m depth (Figure 8.59 to 8.62). Mineralization in these horizons are mostly associated with quartz veins.

Below ~57 m and down to the final depth of 160 m, the lithology is dominated by relatively fresh quartz-sericite-chlorite schist and quartz-sericite-chlorite schist, with very thin bands of sporadic quartz veins.

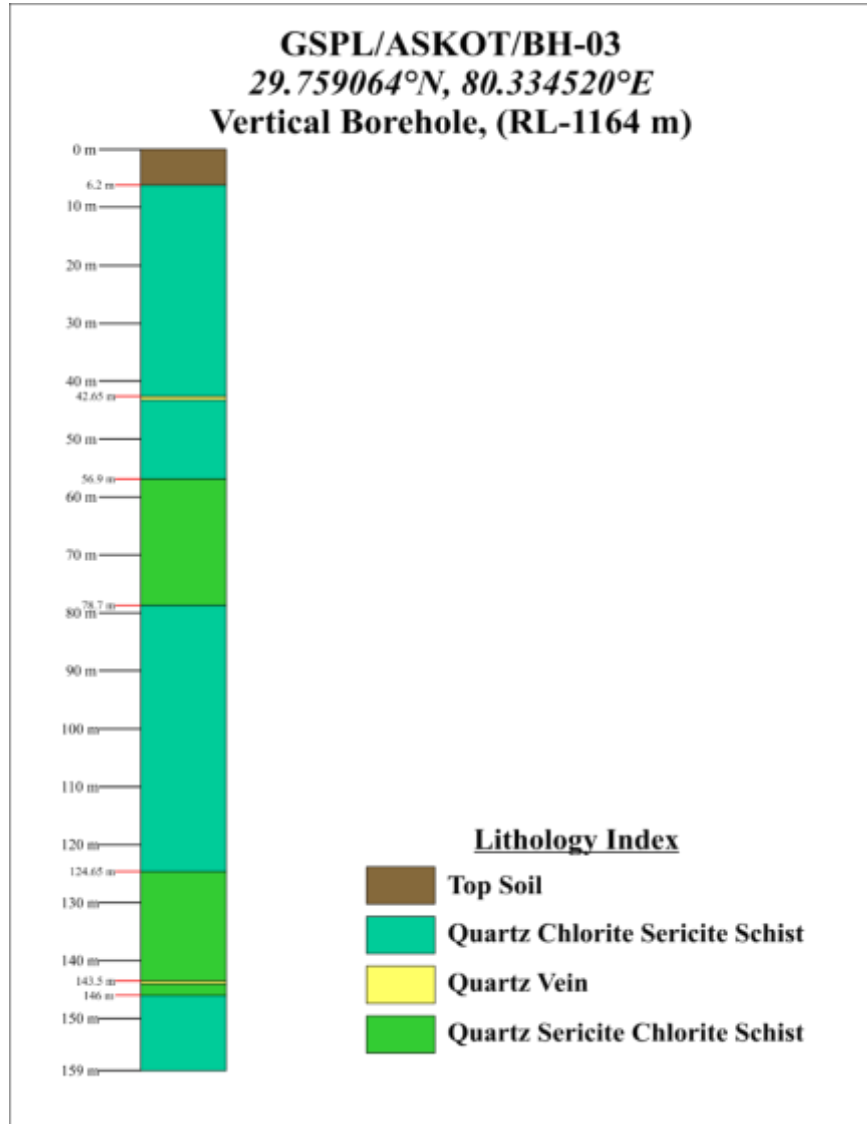


Figure 8.58 Litholog of Borehole 3, ~900 m northeast of Baragaon village

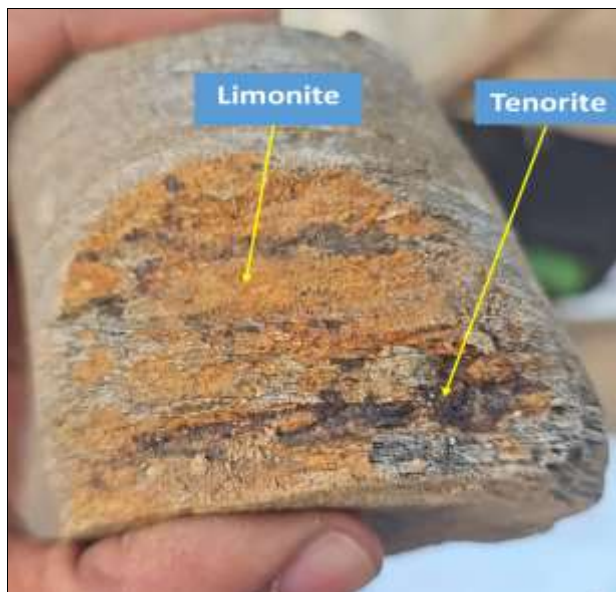


Figure 8.59 Borehole Sample shows limonite and tenorite

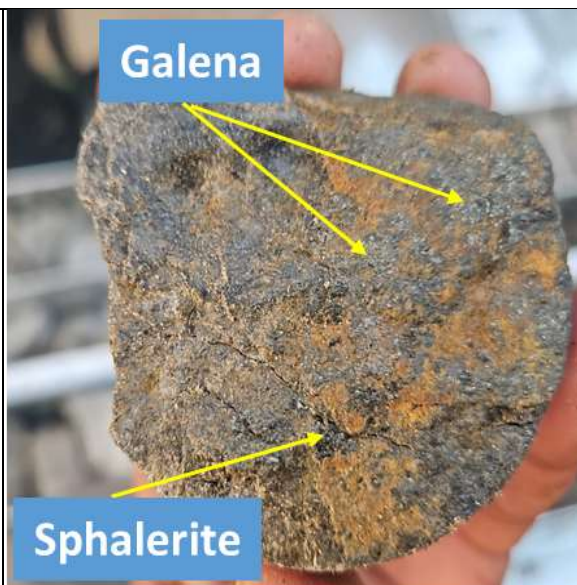


Figure 8.60 Borehole Sample shows Galena and sphalerite



Figure 8.61 Iron oxides in Borehole sample



Figure 8.62 Borehole Sample shows chalcocite along brecciated qtz vein in Chlorite-sericite schist

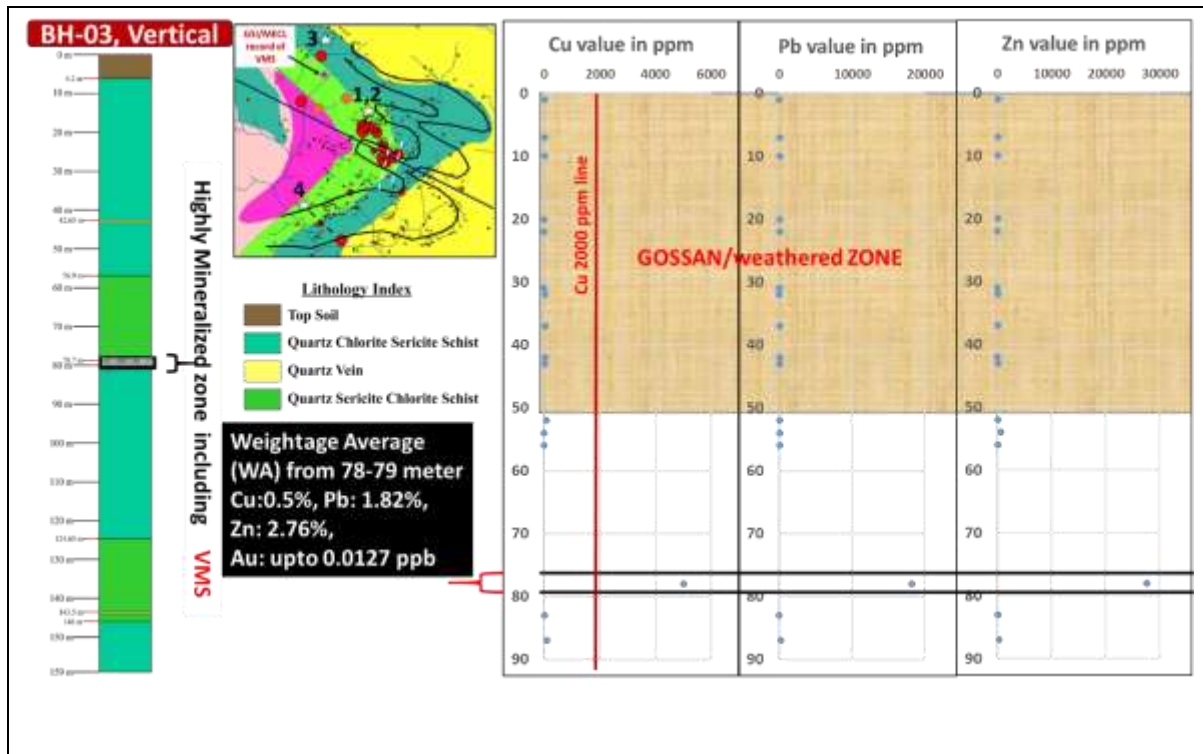


Figure 8.63 Weightage average of mineralized zone after geochemical analysis of Borehole 3, ~900 m northeast of Baragaon village

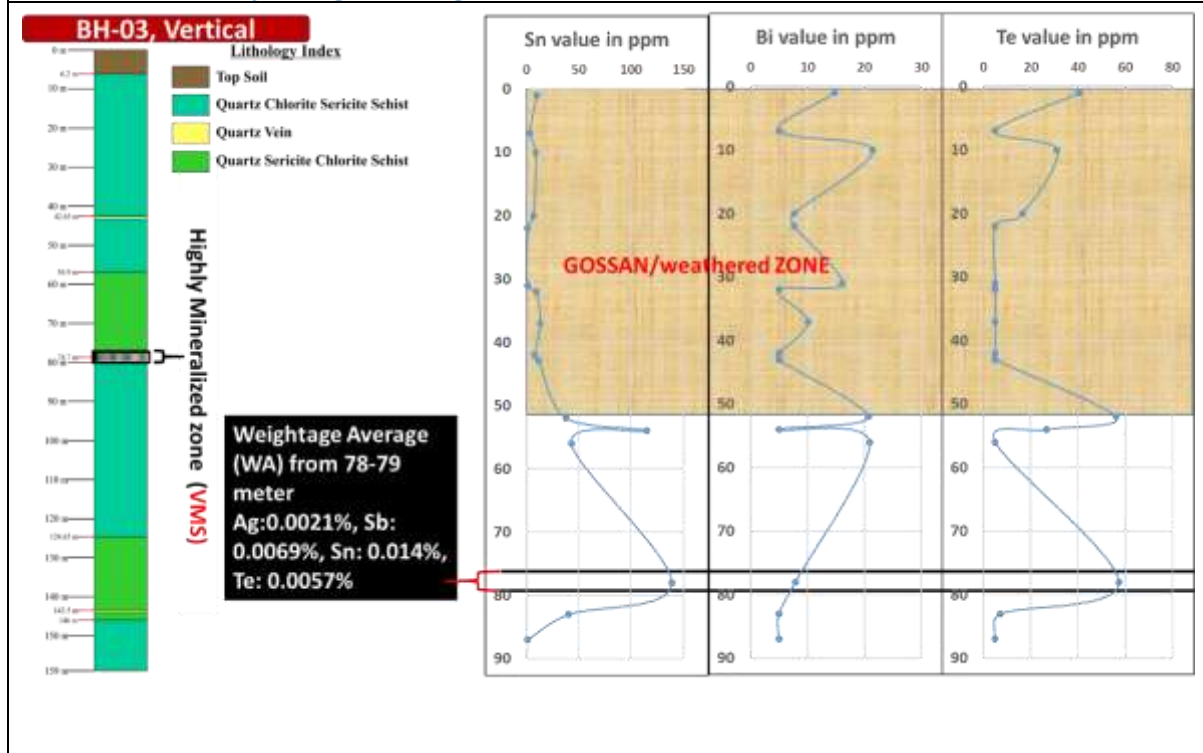
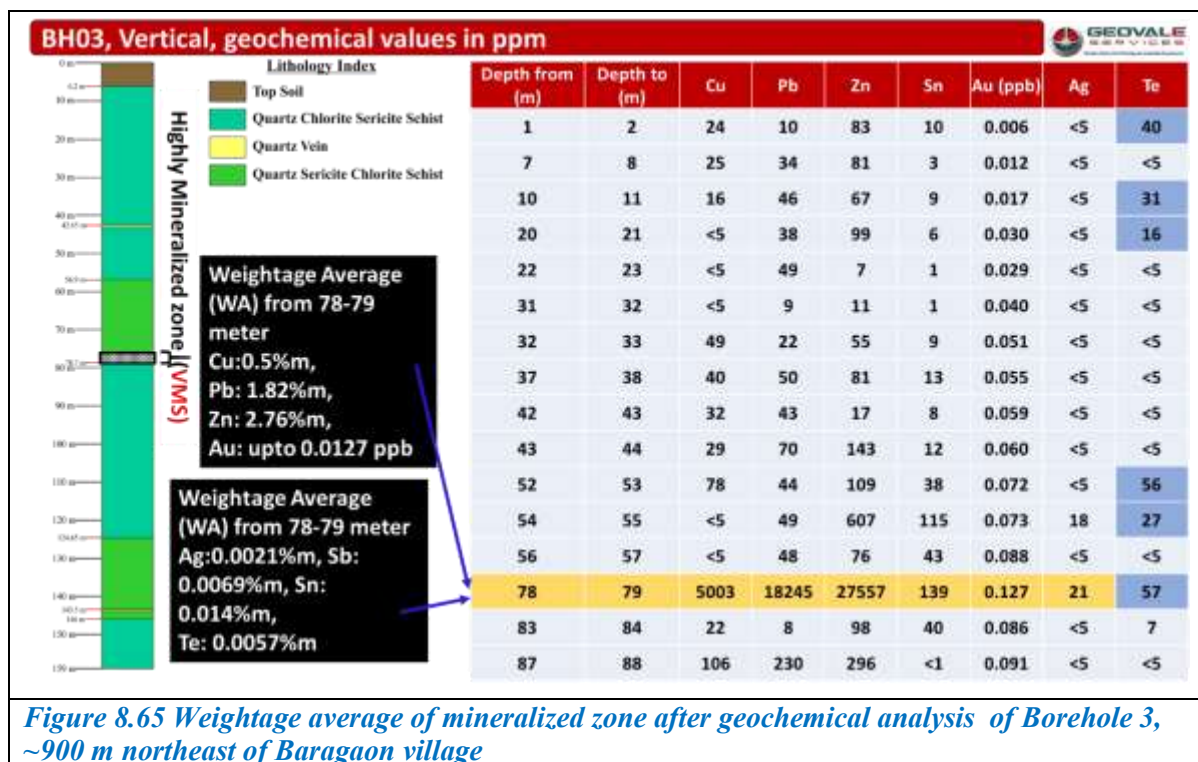


Figure 8.64 Weightage average of mineralized zone after geochemical analysis of Borehole 3, ~900 m northeast of Baragaon village



Assay highlights include sulphide anomalies suggest Volcanogenic Massive Sulphide (VMS) mineralization with high values of: (Annexure- XIII, XIV)

Geochemical results

Most analyzed samples above 78 m contain low Cu, Pb and Zn. The 78-79 m interval is sharply anomalous, with 5,003 ppm Cu, 18,245 ppm Pb and 27,557 ppm Zn. It also contains 139 ppm Sn, 21 ppm Ag and 57 ppm Te, with Au reported at 0.127 (as labelled). This is a narrow but coherent polymetallic sulphide response dominated by Pb and Zn. Secondary geochemical features include elevated Sn at 54-55 m (115 ppm), Te at 52-53 m (56 ppm), and moderate Pb-Zn at 87-88 m (Figure 8.63-8.65).

Table 8.4 Geochemical results BH03

Interval (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Other notable results
52-53	78	44	109	Sn 38 ppm; Te 56 ppm
54-55	<5	49	607	Sn 115 ppm; Ag 18 ppm; Te 27 ppm
78-79	5,003	18,245	27,557	Sn 139 ppm; Ag 21 ppm; Te 57 ppm; Au 0.127
87-88	106	230	296	Au 0.091

Weighted-average interpretation

For 78-79 m, the reported weighted average is 0.5% Cu, 1.82% Pb and 2.76% Zn. Supporting weighted averages are 0.0021% Ag, 0.0069% Sb, 0.014% Sn and 0.0057% Te. The interval is therefore a narrow, high-value polymetallic lens with a Pb-Zn-dominant character and meaningful Sn-Ag-Te credits. Its depth, sharp grade contrast and position at a lithological/vein contact make it a priority for down-dip and along-strike continuity testing.

Together, BH-03 demonstrates:

- Presence of very high anomalous Sn, Sb, Te with Cu–Pb–Zn–Au–Ag and chalcocite, Sphalerite, Galena beneath the lithocap, consistent with a mineralised VMS-style system at depth.

8.7.3 GSPL/ASK/BH04

GSPL/ASK/BH04 was collared over the southern limb of Askot large fold and secondary copper alteration zone and drilled inclined (60° → 160°) upto 159 m. The logged succession is given in Figure 8.74

Surface Selection Criteria (Figure 8.66 to 8.69)- The GSPL/ASK/BH04 was selected at Mouchoura Village within a prominent ENE–WSW trending chlorite schist band and an overall dip towards the ESE. Surface selection was primarily guided by the presence of secondary copper alteration cap and brecciated qtz chlorite schist zone.

Surface bedrock samples of chlorite schist collected near the borehole 04 site showed promising chemical analysis with a wide range of anomalous values, including Cu up to 8873 ppm, Pb up to 411 ppm, Sn up to 17 ppm, Sb up to 23 ppm, Ag up to 16 ppm, Zn up to 229 ppm.

Stream sediment samples collected from nearby streams of the borehole 04 site showed promising chemical analysis with a wide range of anomalous values, including Cu up to 196 ppm, Pb up to 112 ppm, Sn up to 17 ppm, Zn up to 244 ppm, W up to 12 ppm, V up to 85 ppm and Co up to 21 ppm.

These geochemical anomalies, along with favorable geological characteristics, supported the selection of this site for drilling to test the sulphide mineralisation at depth.

Geophysical Signature- VES profiling also shows lowering the resistivity between 10 m to 50 m (value drop from 850 ohm-m to 422 ohm-m to 448 ohm-m), indicating a conducting layer (probably Sulphide bearing horizon).



Figure 8.66 Azurite staining, southeast of Borehole 04



Figure 8.67 Gossan in chlorite schist southeast of Borehole 04

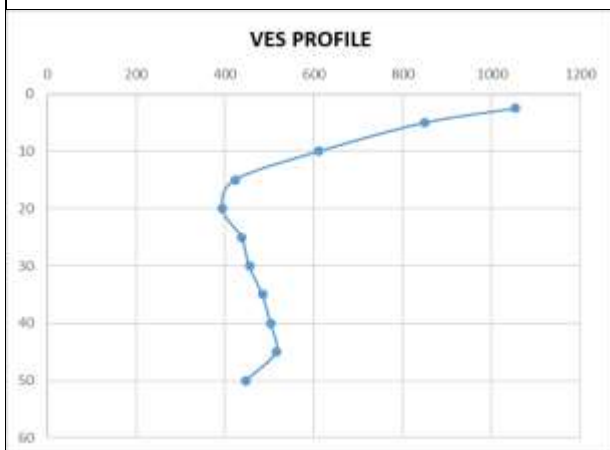


Figure 8.68 : VES profiling at Mouchora near BH 04



Figure 8.69 Brecciated qtz-chlorite schist west to BH 04 area.

The first borehole (GSPL/ASK/BH04) is located within the mapped quartz sericite chlorite schist zone of the Askot area with a total of 159 m depth (Figure 8.70-8.74).

Borehole-4 (GSPL/ASK/BH04: 29.751716°N, 80.332324°E) continues to intersect quartz-biotite- chlorite-sericite schist as the dominant lithology, with varying degrees of weathering, alteration and sulphide mineralization.

From ~2 m onward, quartz-sericite-chlorite schist becomes prominent. From 19 to 74 m multiple thin mineralized bands are observed within this schist, suggesting sulphide dissemination and structural control on mineralization at depth. Mineralized zone in quartz-



sericite-chlorite schist is recorded around 19-29, 32-44, 54-74 m depth. Mineralization in these horizons are mostly chalcopyrite associated with thin multiple band of quartz veins.

Below ~97 m and down to the depth of 128 m, the lithology is dominated by relatively fresh quartz-chlorite-sericite schist with massive sulphide at 107-108 m depth.

Below ~128 m and down to the final depth of 159 m, lithology is dominated by relatively fresh quartz- sericite-chlorite-schist with Iso with sporadic mineralized intervals.



Figure 8.70 Borehole Sample shows chalcopyrite under lens.



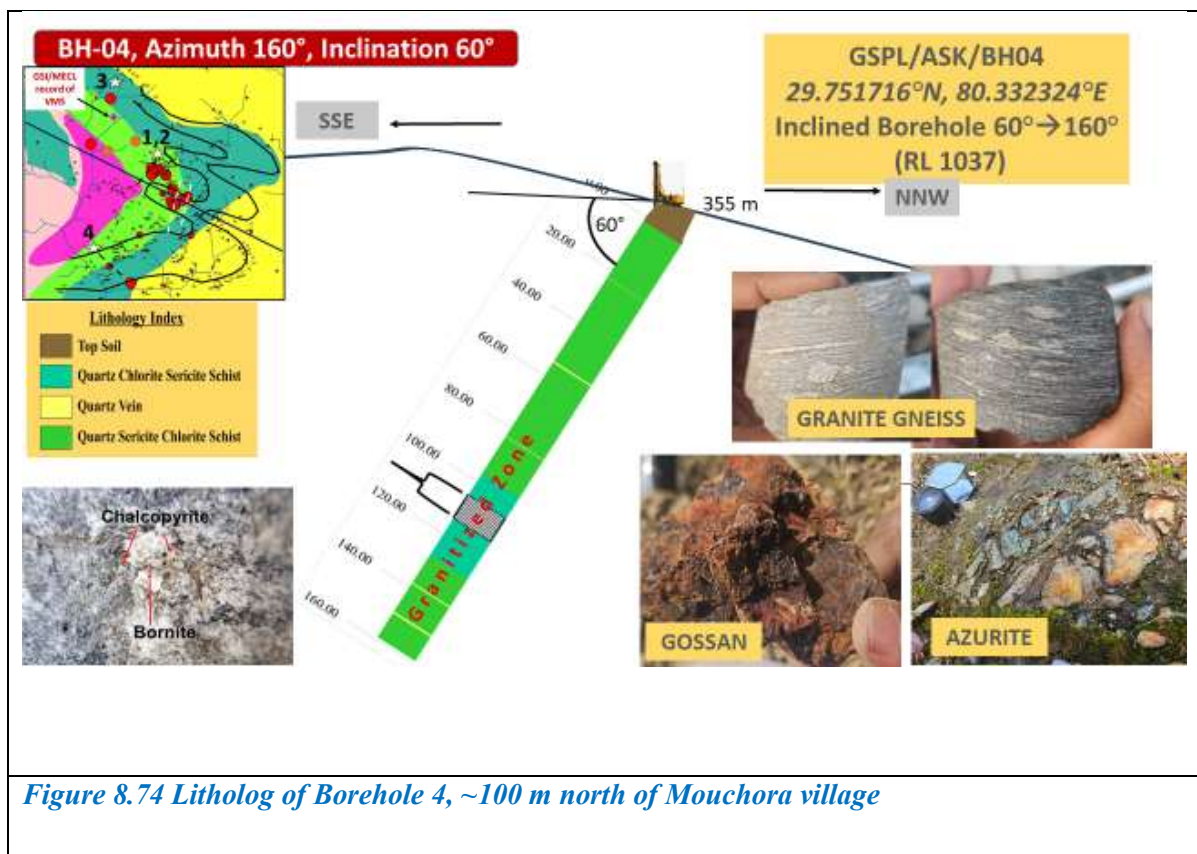
Figure 8.71 Borehole Sample shows Galena and sphalerite



Figure 8.72 Borehole Sample shows chalcopyrite and bornite under lens



Figure 8.73 Drillcore Sample shows mineralized veins along qtz-sericite- chlorite schist



Assay highlights include sulphide anomalies suggest Volcanogenic Massive Sulphide (VMS) mineralization with high values of: (Annexure- XIII, XIV)

Geochemical results

Cu values are generally low to moderate, with a shallow maximum of 1,889 ppm at 42-43 m. The strongest polymetallic response occurs at 107-108 m, where Cu is 1,579 ppm, Pb is 3,493 ppm and Zn is 4,468 ppm. The same interval contains 26 ppm Sb and 51 ppm Sn. Other pathfinder anomalies are distributed through the hole: Mo reaches 59 ppm at 42-43 m and 50 ppm at 139-140 m; Bi reaches 70 ppm at 54-55 m; Sn reaches 81 ppm at 73-74 m; and Au increases progressively to 0.054 at 149-150 m (as labelled).

Table 8.5 Geochemical results BH04

Interval (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Other notable results
42-43	1,889	24	100	Mo 59 ppm; Bi 40 ppm
54-55	89	33	93	Bi 70 ppm
73-74	106	15	83	Sn 81 ppm
107-108	1,579	3,493	4,468	Sb 26 ppm; Sn 51 ppm
139-140	<5	21	12	Mo 50 ppm; Bi 23 ppm
149-150	67	17	76	Au 0.054; Mo 48 ppm; Sn 38 ppm

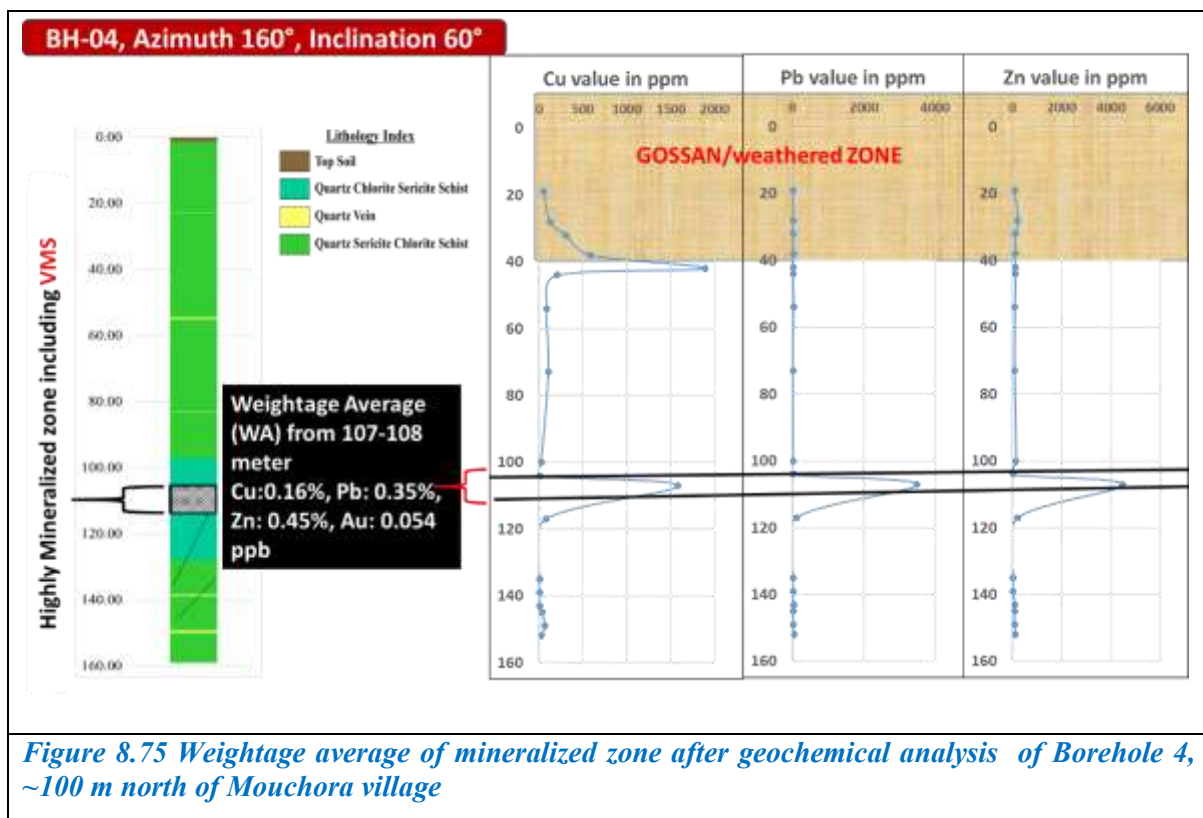


Weighted-average interpretation

The 107-108 m interval averages 0.16% Cu, 0.35% Pb and 0.45% Zn, with Au reported at 0.054 (Figure 8.75). Supporting weighted averages are 0.002% Bi, 0.003% Sb and 0.005% Sn (Figure 8.76). Although the grades are lower than the main BH-02 VMS intersection, the coincident Pb-Zn-Cu response and associated Sb-Sn-Bi support a genuine polymetallic sulphide zone (Figure 8.77). The interval is important for defining the lateral or down-dip continuation of the mineralized system.

Together, BH-04 demonstrates:

- Presence of very high anomalous Sn, Sb, Mo, Te with Cu–Pb–Zn and chalcopyrite, Pyrite, Bornite beneath the lithocap, consistent with a mineralised VMS-style system at depth.



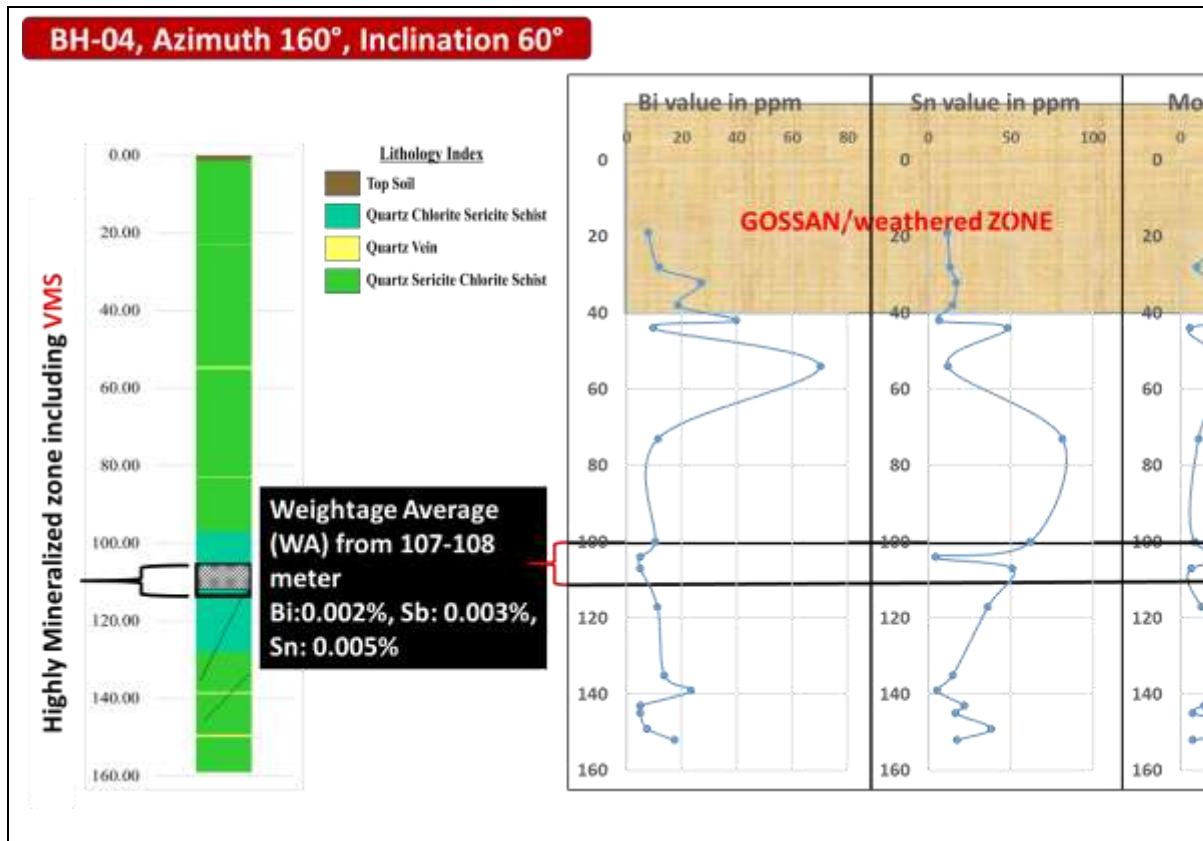


Figure 8.76 Weightage average of mineralized zone after geochemical analysis of Borehole 4, ~100 m north of Mouchora village

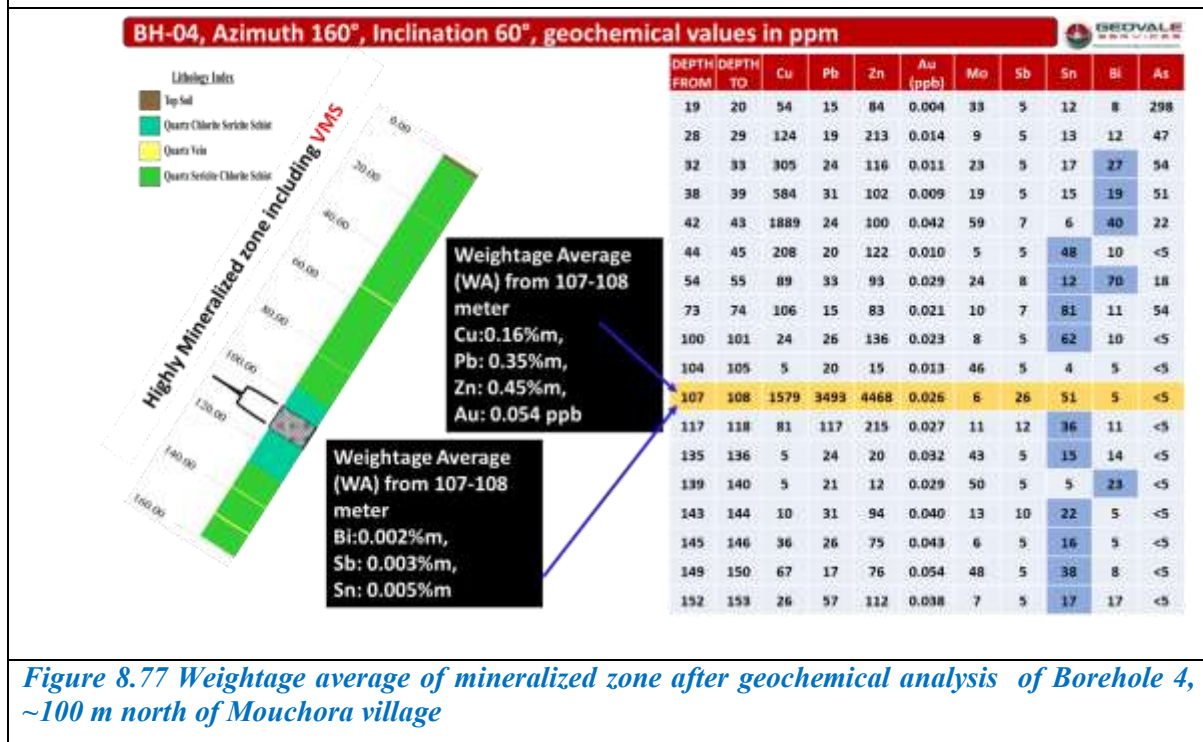
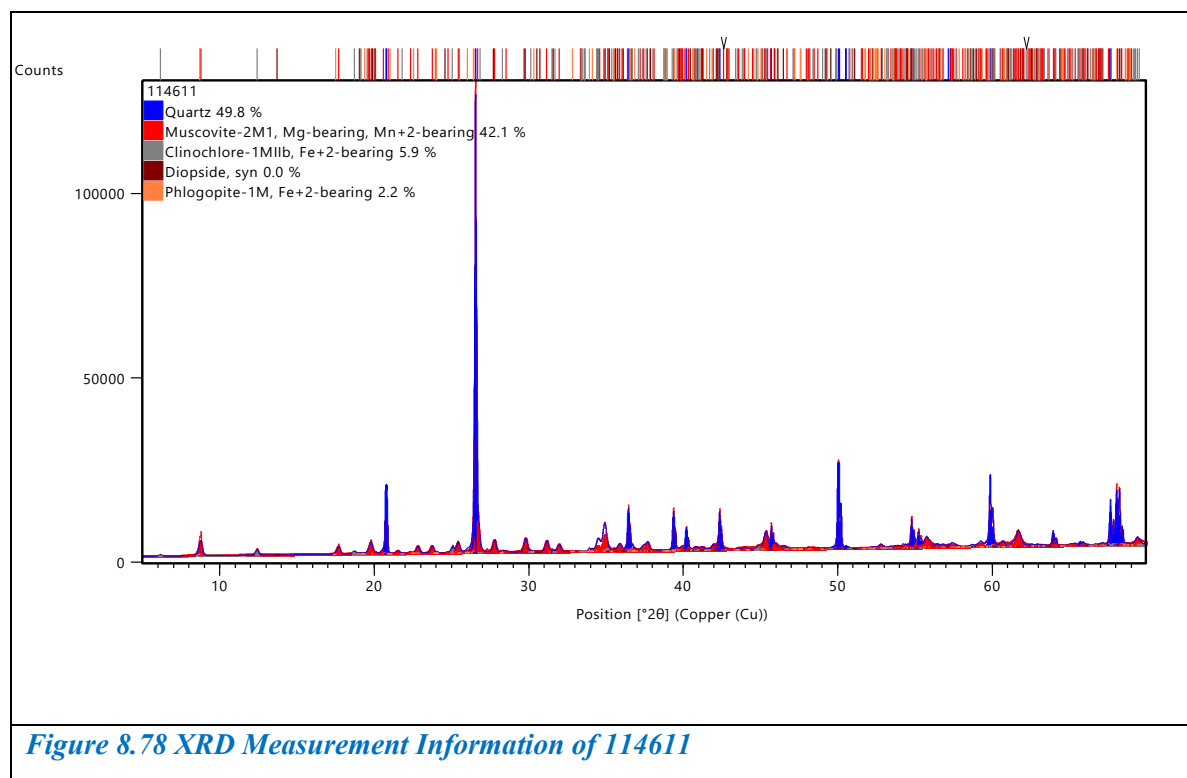


Figure 8.77 Weightage average of mineralized zone after geochemical analysis of Borehole 4, ~100 m north of Mouchora village

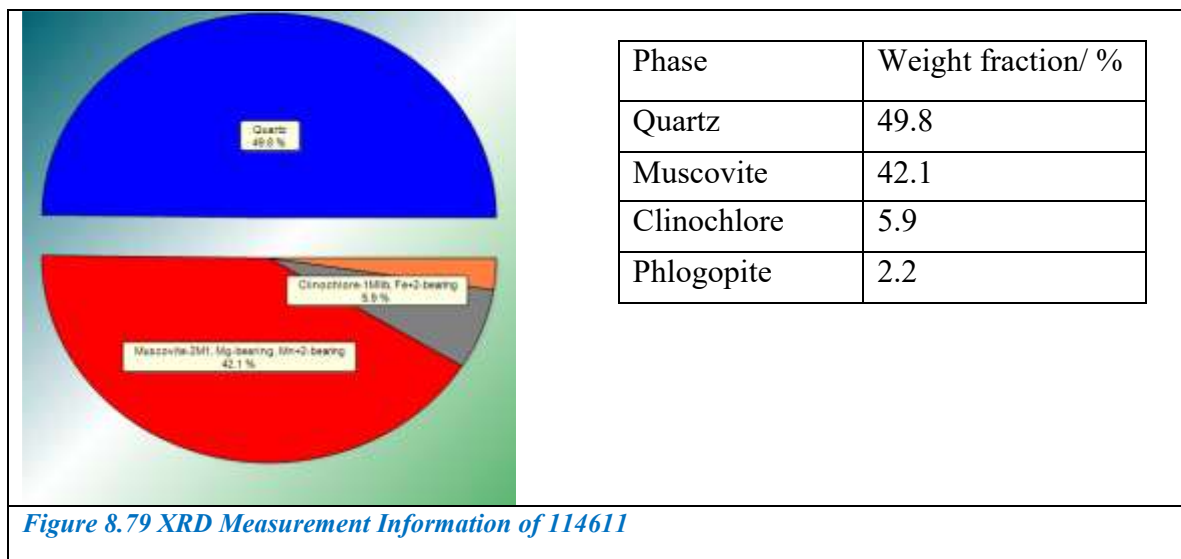
8.7.4 XRD data analyses and interpretation:

XRD has been carried out for 10 drill-core/borehole samples from GSPL/ASK/BH02 (Annexure XV) of the Askot-Naret mineral potential area. The XRD results show a mixed metamorphic and hydrothermal mineral assemblage dominated by quartz, muscovite, chlorite-group minerals, amphiboles, mica-group minerals, calc-silicate minerals and sulphide phases. The sample set is important because it records both the regional metamorphic host-rock assemblage and localized base-metal sulphide mineralisation, especially in the sphalerite-galena-bearing interval.

Sample 114611: The X-ray diffraction (XRD) analysis of borehole sample 114611 indicates a quartz-muscovite-rich mineral assemblage. Quartz is the dominant mineral phase and constitutes approximately 49.8% of the sample, while muscovite forms a major secondary phase at about 42.1%. Minor clinocllore (5.9%) and phlogopite (2.2%) are also present (Figure 8.78-8.79). The dominance of quartz and muscovite, together with subordinate chlorite and phlogopite, suggests a siliceous mica-schist or quartz-mica schist composition. The sharp and well-defined reflections indicate good crystallinity, while the clinocllore content points to weak chloritic alteration or low- to medium-grade metamorphic overprint. Overall, the sample represents a relatively clean quartz-muscovite schistic host rock with minor Fe-Mg phyllosilicate development.



XRD Measurement Information:



Sample 114612: The XRD analysis of sample 114612 reveals a multi-phase silicate assemblage dominated by quartz (47.3%) and muscovite (31.1%). Phlogopite is present in significant quantity at 15.7%, with albite forming a subordinate feldspathic component of 5.9% and a very minor anorthite contribution of 0.1% (Figure 8. 80-8.81). The assemblage of quartz, muscovite, phlogopite and albite indicates a feldspathic quartz-mica schist or psammitic schist with a felsic component. The presence of albite suggests sodium-rich feldspar input, either inherited from the protolith or introduced during metamorphic/hydrothermal alteration. The relatively high phlogopite content indicates a Mg-bearing mica component and may reflect mafic input, metasomatism or mineralogical variation within the metamorphic sequence.

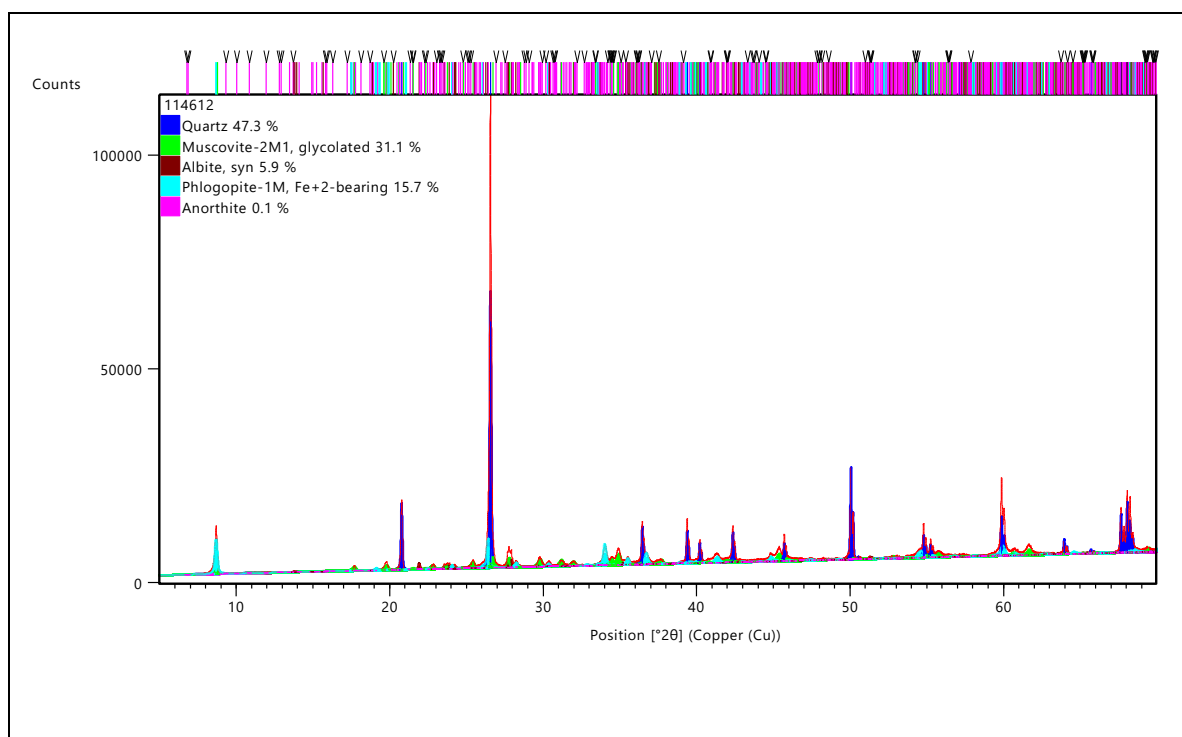
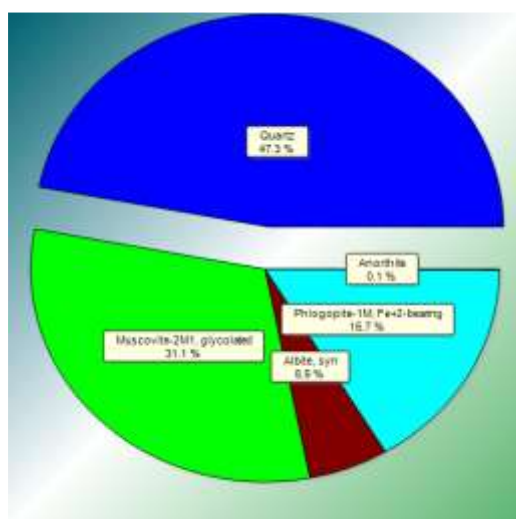


Figure 8.80 XRD Measurement Information of 114612



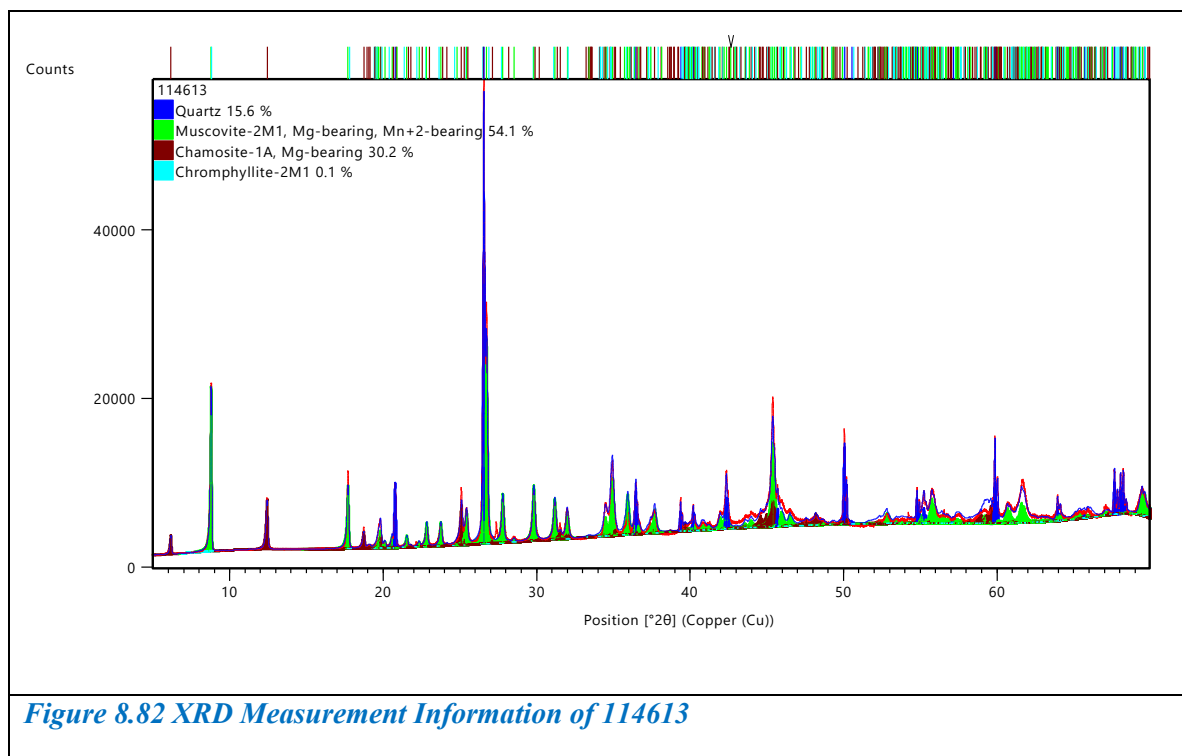
Phase	Weight fraction/ %
Quartz	47.3
Muscovite	31.1
Albite	5.9
Phlogopite	15.7
Anorthite	0.1

Figure 8.81 XRD Measurement Information of 114612

XRD Measurement Information:

Sample 114613: The XRD analysis of sample 114613 indicates that muscovite is the dominant mineral phase, accounting for approximately 54.1% of the sample. Chamosite is the second major phase at about 30.2%, while quartz is present at 15.6% (Figure 8. 82-8.83). A very minor chromphyllite phase (0.1%) is also recorded. This assemblage is markedly different from the quartz-dominant samples and indicates a muscovite-chamosite-rich altered rock. Chamosite is

an Fe-rich chlorite-group mineral and its high proportion suggests Fe-Mg alteration, chloritisation or a chemically reactive horizon within the schistose sequence. The low quartz content relative to muscovite and chamosite implies a more pelitic or altered interval, possibly representing a chlorite-muscovite schist developed along a shear or hydrothermal alteration zone.



XRD Measurement Information:

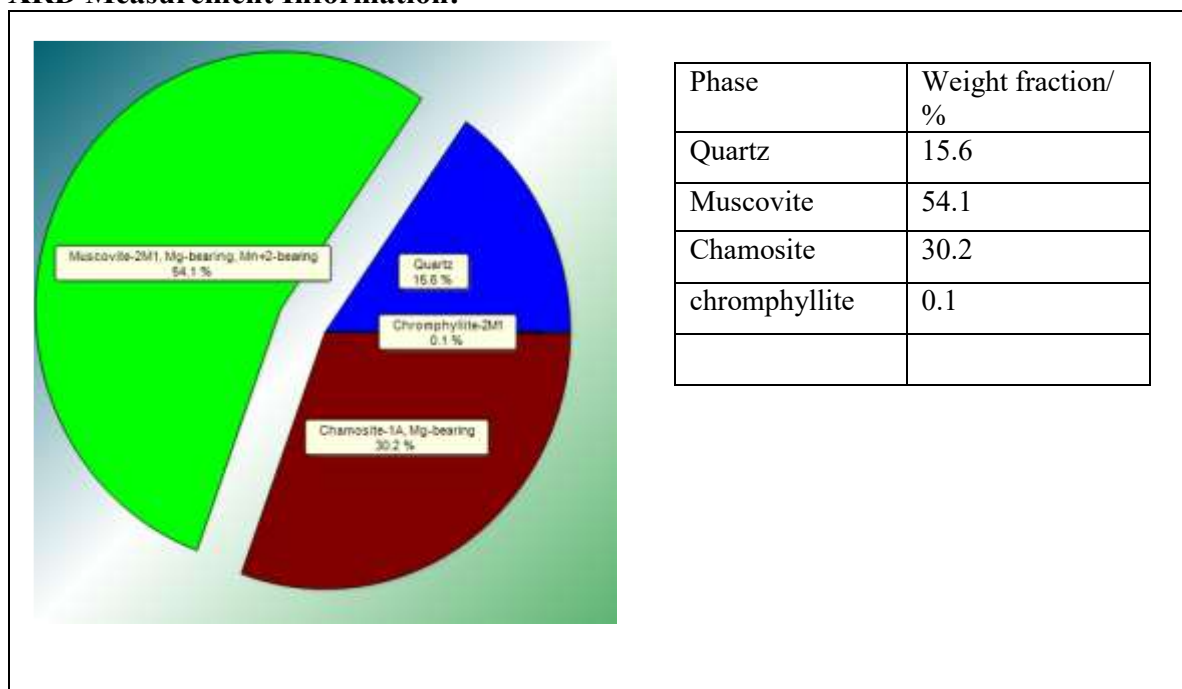
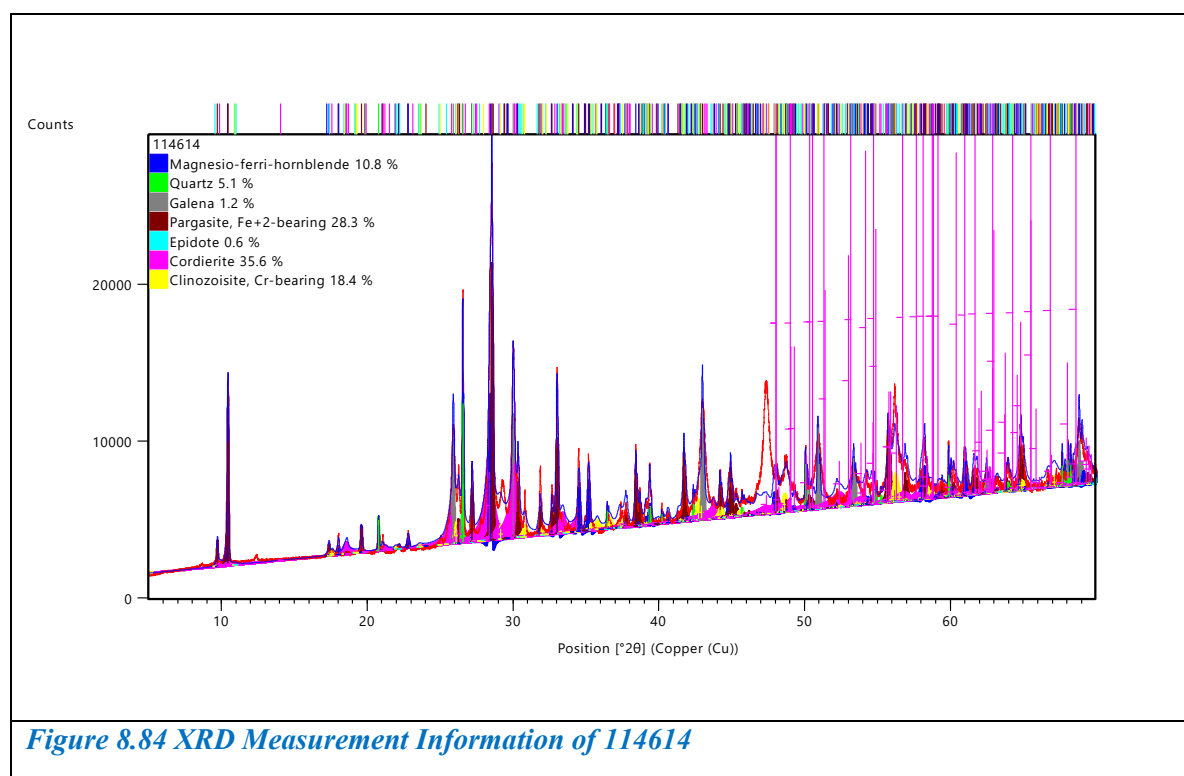


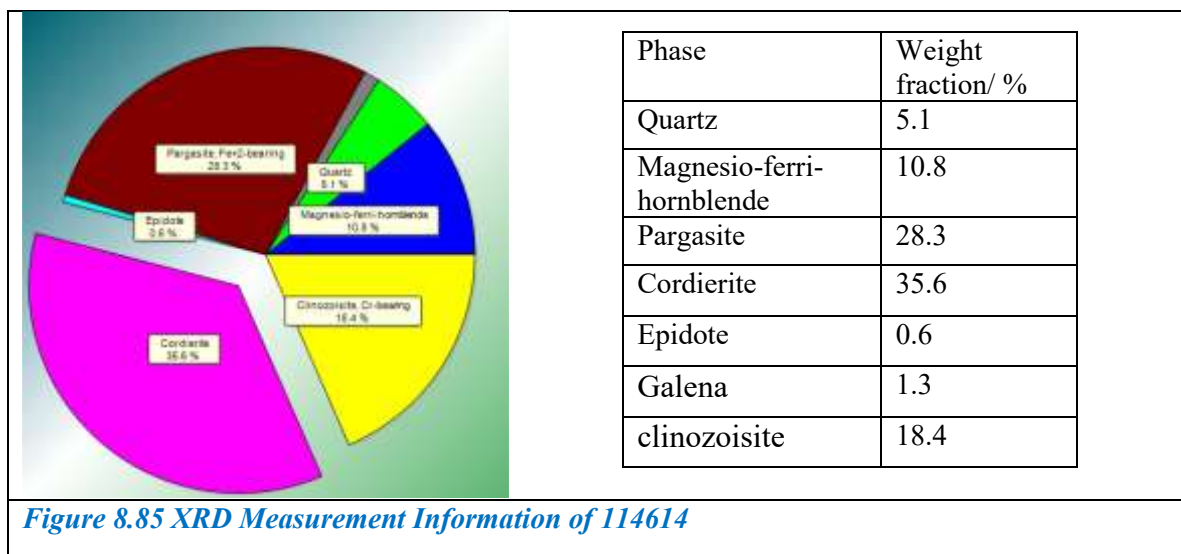


Figure 8.83 XRD Measurement Information of 114613

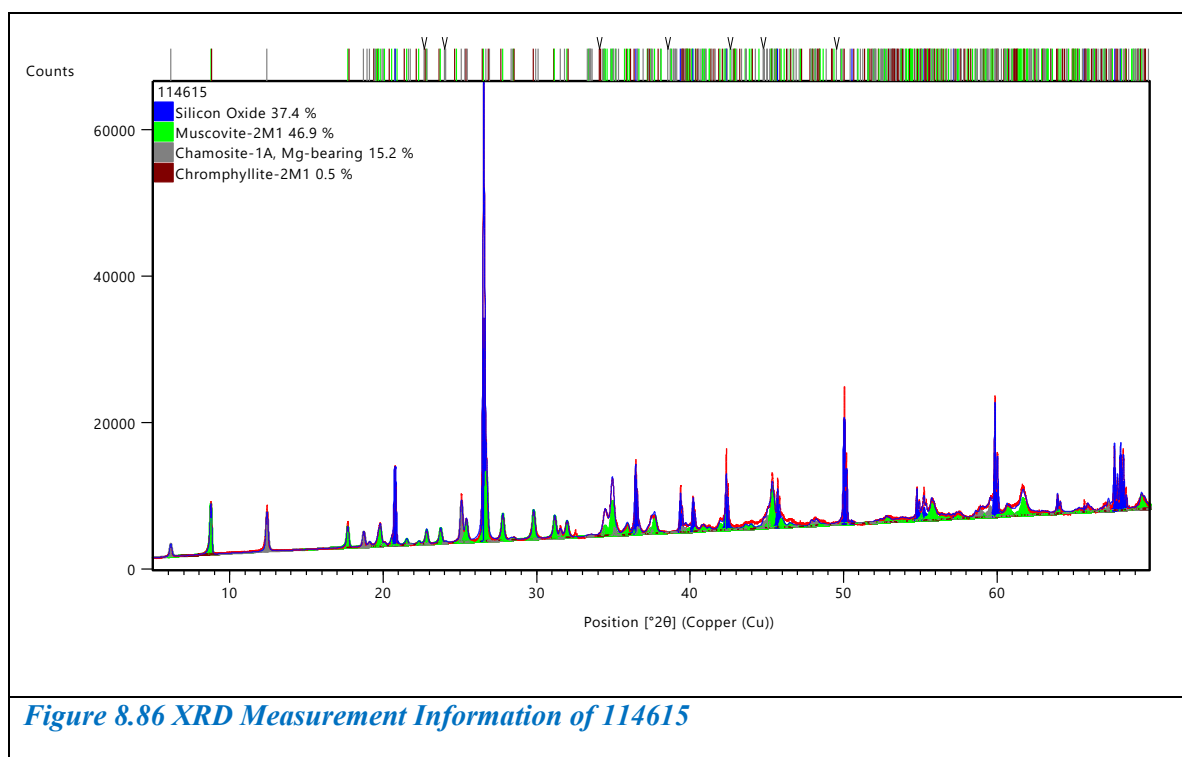
Sample 114614: The XRD analysis of sample 114614 shows a mineralogically distinctive assemblage dominated by cordierite (35.6%) and pargasite (28.3%), with clinozoisite (18.4%) and magnesio-ferri-hornblende (10.8%) as important associated phases. Quartz is present only in minor quantity (5.1%), while epidote is very minor (0.6%). Importantly, galena is detected at approximately 1.3% (Figure 8. 84-8.85). The presence of amphibole phases, clinozoisite and epidote indicates a calc-silicate or amphibole-rich metamorphic/hydrothermal assemblage. Cordierite may indicate relatively high-temperature metamorphic conditions or chemically specialized aluminous rocks. The detection of galena, even in minor quantity, is significant because it provides direct mineralogical evidence of Pb-bearing sulphide mineralisation. This sample is therefore interpreted as a reactive amphibole-calc-silicate altered interval with minor lead sulphide mineralisation.



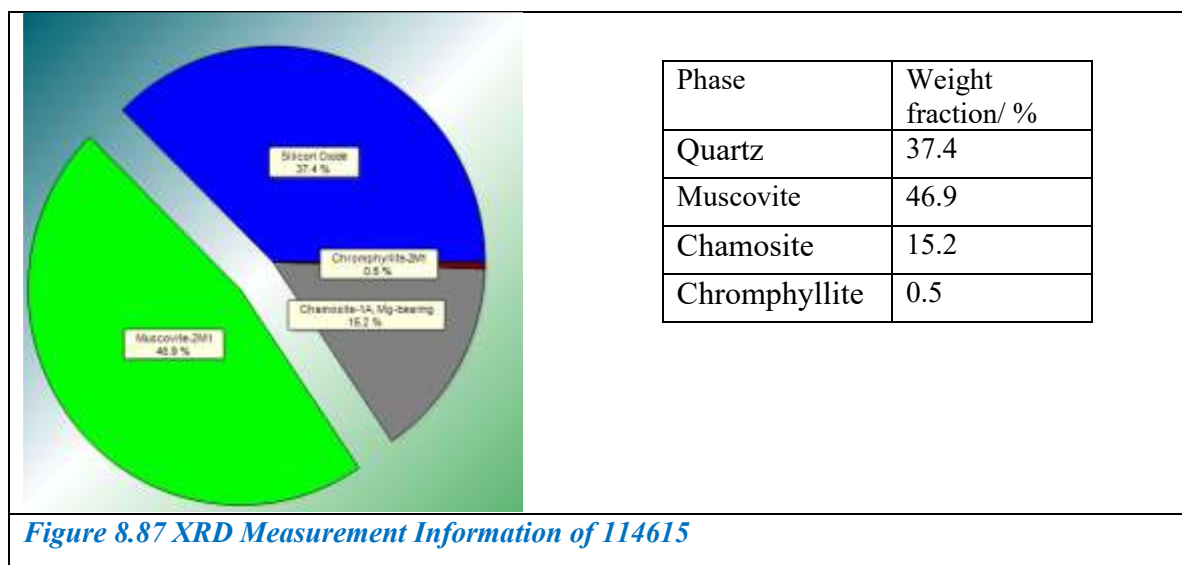
XRD Measurement Information:



Sample 114615: The XRD analysis of sample 114615 indicates a muscovite-dominant assemblage with muscovite forming approximately 46.9% of the sample. Quartz or silicon oxide constitutes about 37.4%, while chamosite occurs as a significant Fe-Mg chlorite-group phase at 15.2%. A minor chromphyllite component of 0.5% is also present (Figure 8. 86-8.87). The mineralogy indicates a muscovite-quartz schist with appreciable chloritic alteration. Compared with the quartz-rich samples, this sample contains a higher proportion of alteration-related Fe-Mg phyllosilicates. The chamosite content suggests fluid-rock interaction, chloritisation and possible proximity to a structurally controlled altered zone. Overall, sample 114615 may represent an alteration envelope around more sulphide-bearing or chemically reactive intervals.



XRD Measurement Information:



Sample 114616: The XRD analysis of sample 114616 shows a quartz-muscovite-rich assemblage, with quartz at 47.3% and muscovite at 42.4%. Clinocllore forms a minor but significant component at 7.8%, while phlogopite occurs at 2.1%. A trace amount of oxy-schorl (0.3%) is also recorded (Figure 8. 88-8.89).. The dominance of quartz and muscovite suggests a quartz-mica schistic host, whereas clinocllore and phlogopite indicate a Mg-Fe phyllosilicate component. The presence of trace oxy-schorl, a tourmaline-group mineral, may point to minor boron-bearing fluid activity, although its low abundance requires confirmation through



petrography or SEM-EDS. The sample is therefore interpreted as a quartz-muscovite schist with weak chloritic and possible tourmaline-bearing hydrothermal influence.

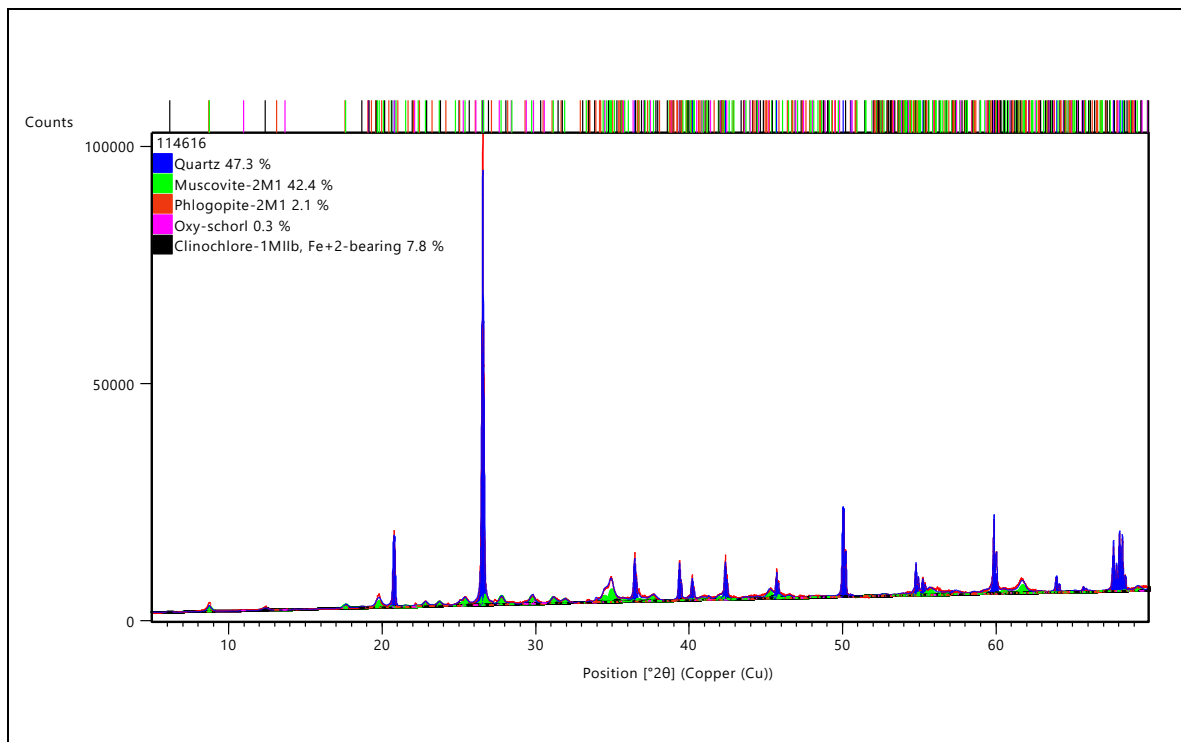
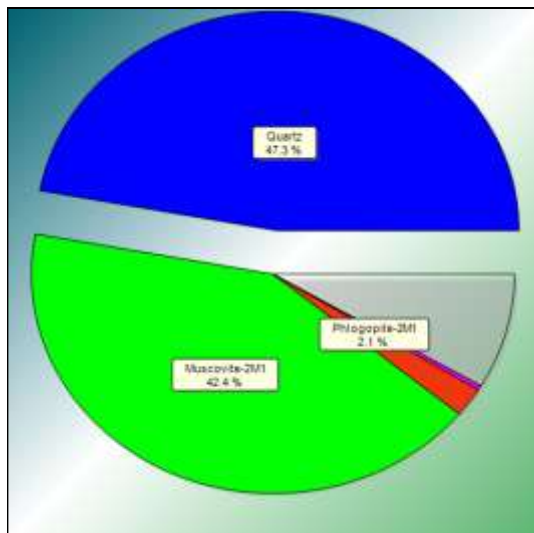


Figure 8.88 XRD Measurement Information of 114616

XRD Measurement Information:



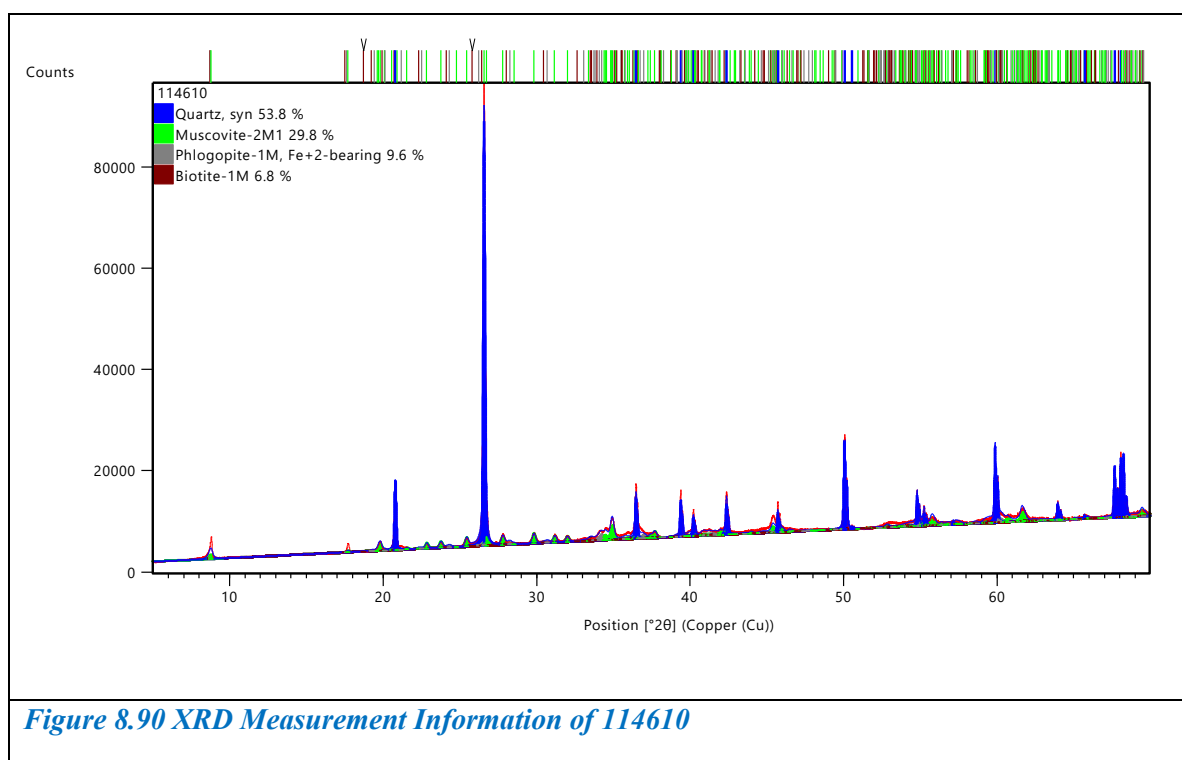
Phase	Weight fraction/ %
Quartz	47.3
Muscovite	42.4
Phlogopite	2.1
Oxy-schorl	0.3
Clinocllore	7.8

Figure 8.89 XRD Measurement Information of 114616

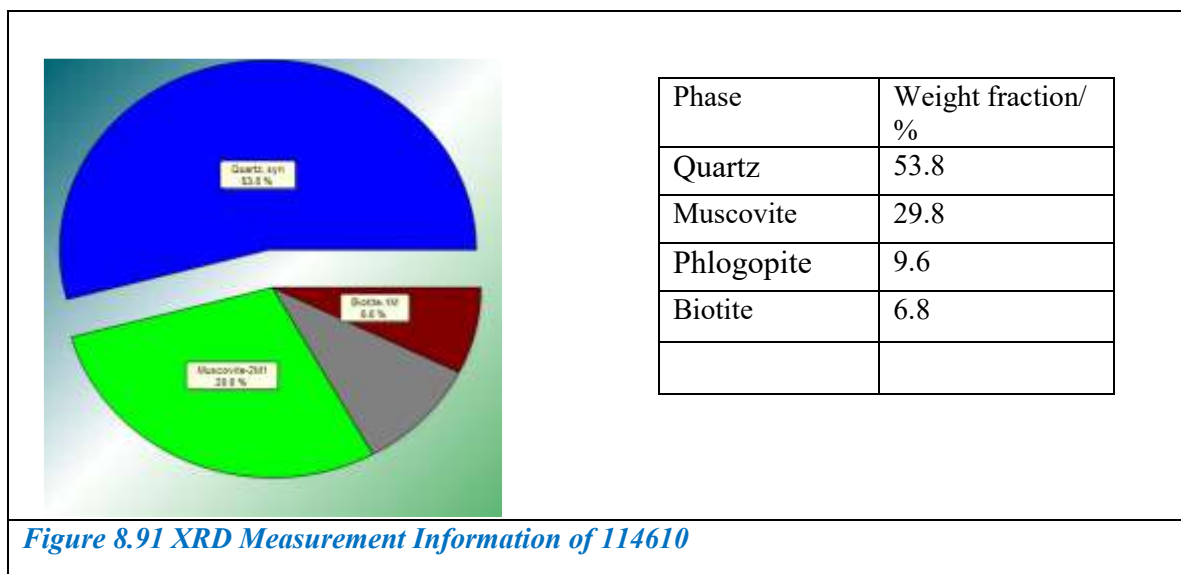
Sample 114610: The XRD analysis of sample 114610 reveals quartz as the major mineral phase, constituting approximately 53.8% of the sample. Muscovite is present at 29.8%, while



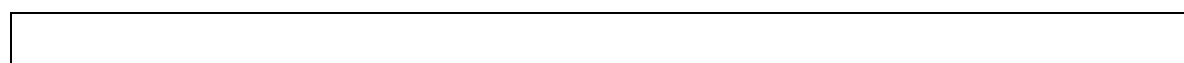
phlogopite and biotite occur at 9.6% and 6.8%, respectively (Figure 8. 90-8.91).. This mineral assemblage represents a quartz-rich mica schist or quartz-biotite-muscovite schist. The combined presence of muscovite, phlogopite and biotite indicates a mica-rich metamorphic rock with both K-rich and Mg-Fe mica components. The relatively high quartz content suggests a psammitic or siliceous protolith, whereas the mica assemblage reflects regional metamorphism and compositional layering. No sulphide phase is identified in this sample, making it more representative of the background metamorphic host rock.

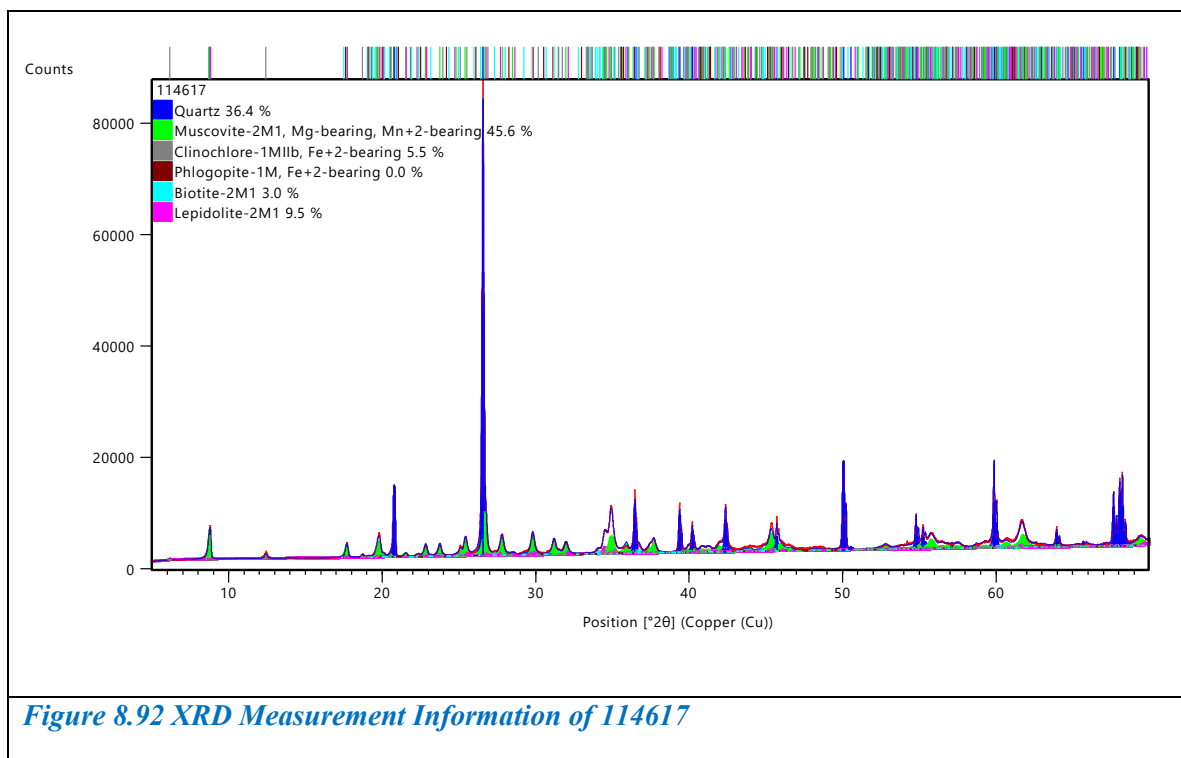


XRD Measurement Information:

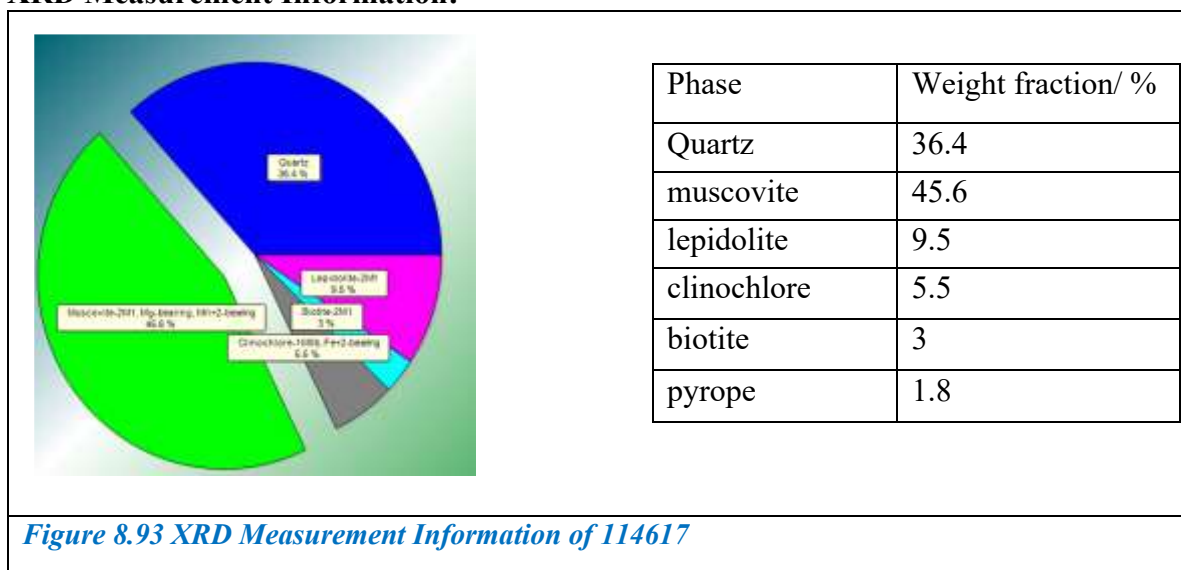


Sample 114617: The XRD analysis of sample 114617 indicates that muscovite is the dominant mineral phase at approximately 45.6%, followed by quartz at 36.4%. Lepidolite is present in notable quantity at 9.5%, while clinocllore and biotite occur at 5.5% and 3.0%, respectively (Figure 8. 92-8.93).. The occurrence of lepidolite is significant because it is a lithium-bearing mica and may indicate a chemically evolved granitic, pegmatitic or hydrothermal influence, although this interpretation must be confirmed by geochemical assays for Li, Rb, Cs, Sn, W, Ta and Nb. The assemblage of muscovite, quartz, lepidolite and chlorite suggests a mica-rich schist affected by specialized fluid activity. From an exploration perspective, this sample should be treated as a check sample for rare-metal pathfinder elements in addition to the main base-metal investigation.





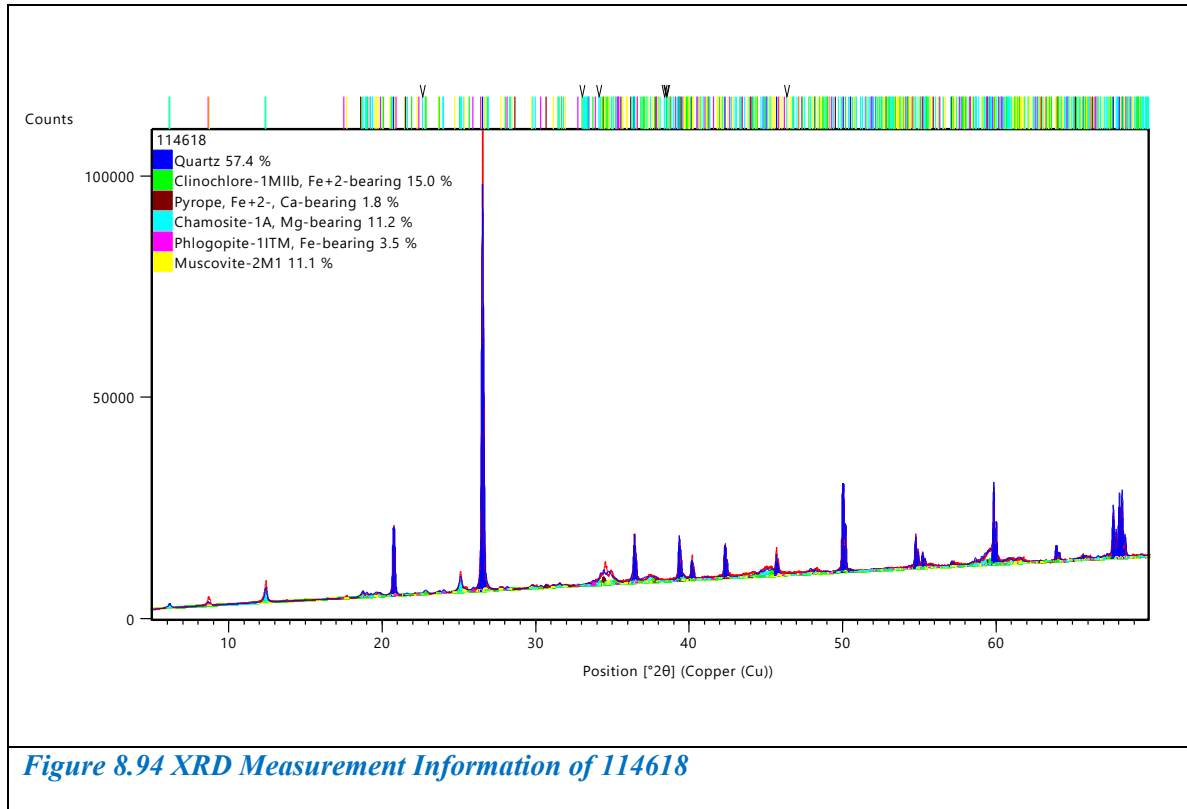
XRD Measurement Information:



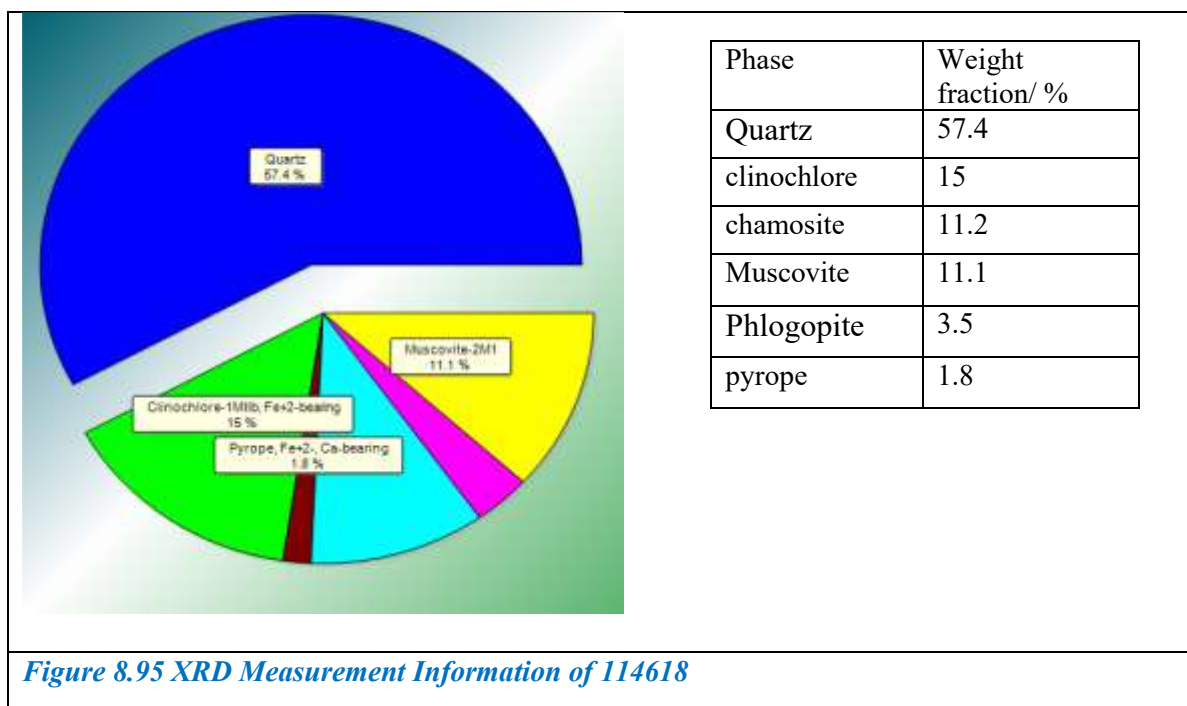
Sample 114618: The XRD analysis of sample 114618 shows quartz as the dominant phase, accounting for approximately 57.4% of the sample. Chlorite-group minerals are well represented by clinocllore (15.0%) and chamosite (11.2%), while muscovite forms 11.1%. Phlogopite is present at 3.5% and pyrope occurs as a minor garnet phase at 1.8% (Figure 8. 94-8.95). This assemblage indicates a quartz-rich chlorite-muscovite schist with an Fe-Mg alteration signature and minor garnetiferous character. The presence of both clinocllore and chamosite suggests chloritisation and Fe-Mg enrichment, while pyrope indicates metamorphic



recrystallisation under suitable pressure-temperature conditions. The sample is interpreted as a quartz-chlorite altered metamorphic rock that may represent an alteration halo or structurally modified interval adjacent to more strongly mineralised zones.

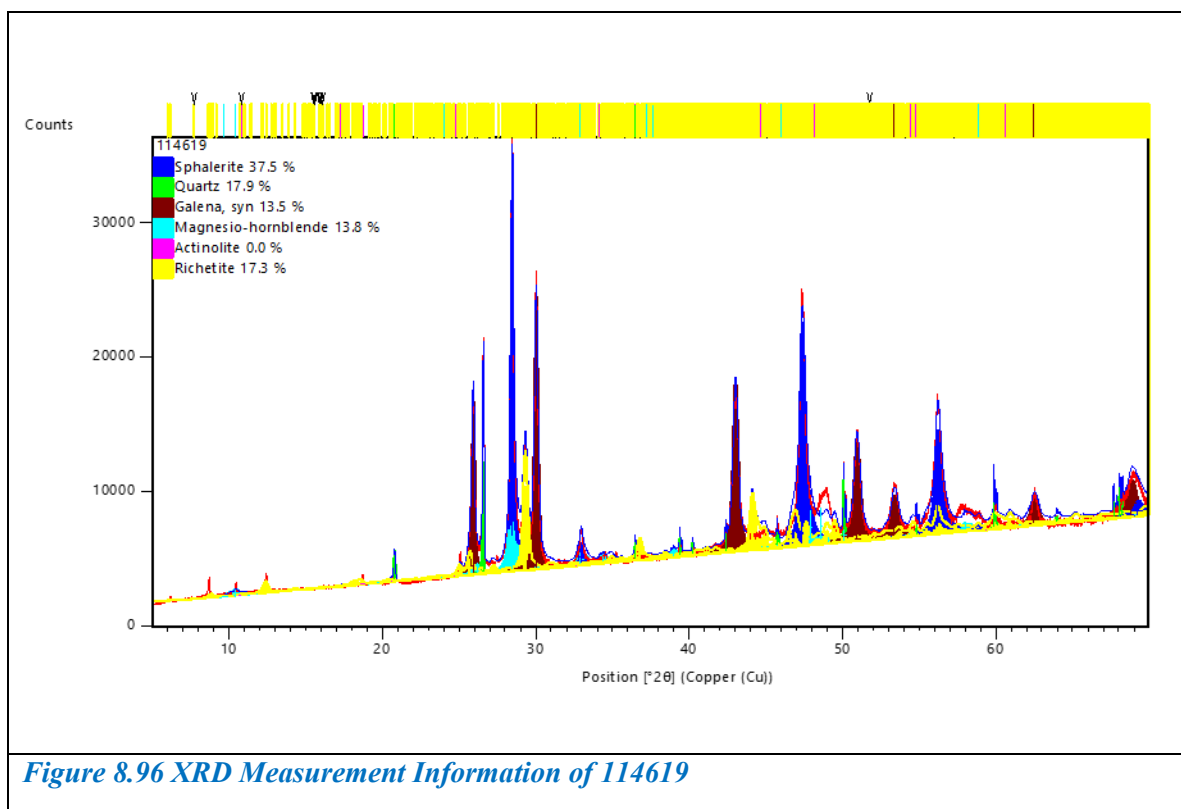


XRD Measurement Information:



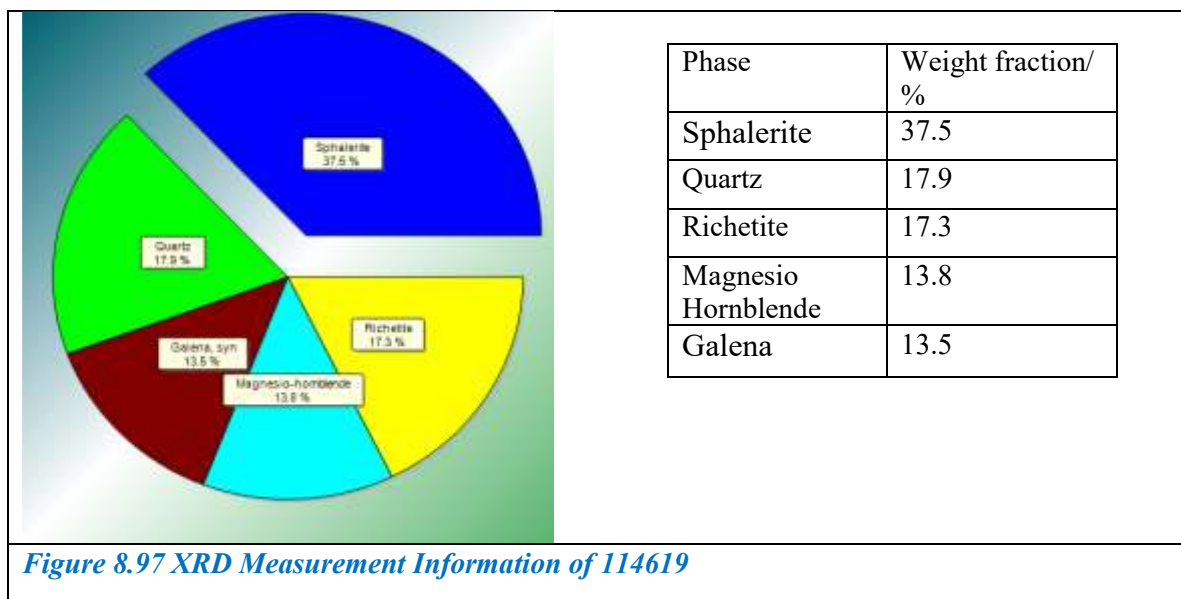


Sample 114619: The XRD analysis of sample 114619 is the most significant result in the borehole dataset. The sample contains sphalerite as the dominant phase at approximately 37.5%, together with galena at 13.5%. Quartz is present at 17.9%, while richetite and magnesio-hornblende occur at 17.3% and 13.8%, respectively (Figure 8. 96-8.97).. The high sphalerite content, together with appreciable galena, provides direct mineralogical confirmation of Zn-Pb sulphide mineralisation. The association of sulphides with amphibole-bearing minerals suggests that mineralisation may be hosted within or adjacent to a reactive amphibole-rich/metasomatic interval.



XRD Measurement Information:

--



Significance of XRD:

The XRD interpretations collectively indicate that the Askot borehole samples are dominated by quartz-mica schistose lithologies, with variable development of chlorite-group minerals, amphiboles, mica-group minerals and localized sulphide phases. Quartz and mica form the principal background mineral assemblage and represent the main siliceous-micaceous metamorphic host rock. This assemblage is typical of regionally metamorphosed pelitic to psammitic rocks and suggests a stable metamorphic framework overprinted locally by hydrothermal alteration.

The repeated occurrence of clinochlore, chamosite and phlogopite is significant because these Fe-Mg phyllosilicates commonly develop during chloritisation, mafic-fluid interaction, retrograde metamorphism or hydrothermal alteration. Samples 114613, 114615 and 114618 are particularly important as alteration-vector samples because they contain appreciable chamosite and/or clinochlore. Such chlorite-rich intervals may represent alteration envelopes, shear-controlled fluid pathways or chemically reactive zones associated with sulphide-bearing horizons.

Sample 114614 is mineralogically distinctive due to the presence of cordierite, pargasite, clinozoisite, hornblende and minor galena. This assemblage indicates an amphibole-calc-silicate or metasomatically altered zone and suggests that part of the borehole intersects a more reactive lithological package. The presence of galena in this sample is an important indication of Pb-bearing sulphide introduction prior to the strongly mineralised interval represented by sample 114619.



The most important economic implication of the XRD dataset is the detection of sphalerite and galena in sample 114619. The presence of 37.5% sphalerite and 13.5% galena confirms a Zn-Pb sulphide mineralised interval and provides direct mineralogical support for base-metal prospectivity in the Askot-Naret area. The association of sphalerite-galena with quartz and amphibole-bearing phases may indicate structurally controlled hydrothermal mineralisation or metamorphosed sulphide mineralisation hosted in a reactive lithological horizon support volcanogenic massive sulphide system.

Sample 114617 contains notable lepidolite, which is geologically significant because lepidolite is a lithium-bearing mica.

Overall, the XRD results show that the borehole intersects a quartz-mica schist dominated metamorphic sequence with localized chloritic alteration, amphibole-calc-silicate development and confirmed Zn-Pb sulphide mineralisation of volcanogenic massive sulphide system.

8.7.5 EPMA results and significance

Sample No. 362

Mineralogical Description

Sample 362 is characterized by an assemblage dominated by **chalcopyrite** and **pyrrhotite**. BSE observations indicate intimate intergrowth between these two sulphide minerals, suggesting coeval crystallization during the principal mineralizing event. Chalcopyrite occurs as irregular to subhedral grains enclosed within or associated with pyrrhotite, without evidence of significant secondary alteration. The sulphides appear coarse enough to provide homogeneous analytical domains for EPMA.

Significance of Mineralization

The chalcopyrite–pyrrhotite association is typical of **high-temperature hydrothermal sulphide mineralization** and is commonly encountered in volcanogenic massive sulphide (VMS), magmatic sulphide, and skarn-related deposits. Pyrrhotite indicates sulphur-deficient and relatively reducing physicochemical conditions, whereas chalcopyrite represents the principal copper-bearing sulphide. Their intimate intergrowth suggests precipitation from the same hydrothermal fluid during the main ore-forming stage. Sample 362 therefore represents an important **Cu–Fe sulphide mineralization zone** with potential economic significance.

Sample No. 482

Mineralogical Description



Sample 482 is dominated by **arsenopyrite** with subordinate **galena** occurring as inclusions or discrete grains. Minor oxidation along grain margins has been noted, indicating limited post-mineralization alteration. The arsenopyrite grains are well developed and were selected for EPMA analysis to determine compositional variation and trace-element distribution.

Significance of Mineralization

Arsenopyrite is an important indicator of **mesothermal to high-temperature hydrothermal systems** and commonly hosts invisible gold and critical trace elements such as Co and Ni. The occurrence of galena enclosed within arsenopyrite suggests sequential deposition of lead sulphides during a later stage of mineralization. This assemblage indicates evolution of the hydrothermal fluid from Cu–Fe-rich conditions towards Pb-bearing sulphide deposition. Such mineral associations are favourable indicators of **polymetallic sulphide mineralization** and may represent productive ore shoots.

Sample No. 651

Mineralogical Description

Sample 651 is characterized predominantly by **pyrite**, displaying well-developed core–rim textures together with locally altered grains. BSE observations reveal compositional homogeneity in the grain interiors, while some marginal zones exhibit evidence of later modification. No significant bornite was observed in the analysed field.

Significance of Mineralization

Pyrite is the most abundant sulphide in many hydrothermal ore systems and commonly forms during several stages of mineralization. The observed core–rim texture indicates **multiple episodes of sulphide growth or recrystallization**, possibly associated with changing fluid chemistry during deformation or metamorphism. Although pyrite itself is not an economic ore mineral for copper or lead, it is an important geochemical indicator of hydrothermal activity and frequently hosts trace concentrations of Au, Co, Ni, and As. The textural evidence suggests prolonged hydrothermal evolution of the mineralizing system.

Sample No. 766

Mineralogical Description

Sample 766 exhibits the most complex sulphide assemblage, comprising **arsenopyrite, löllingite, pyrite, chalcopyrite, and galena**. Multiple BSE images document intergrowths among these minerals, with arsenopyrite closely associated with löllingite and pyrite, while chalcopyrite and galena occur as later sulphides occupying fractures and grain boundaries.

Several grains show sharp contacts, whereas others exhibit replacement textures indicative of successive mineralizing events.

Significance of Mineralization

The coexistence of arsenopyrite and löllingite indicates crystallization under **high-temperature, reduced hydrothermal conditions**. Subsequent deposition of chalcopyrite and galena reflects progressive enrichment of Cu and Pb as the hydrothermal system evolved. Such complex sulphide paragenesis is characteristic of **polymetallic hydrothermal deposits**, including volcanogenic massive sulphide (VMS), intrusion-related, and orogenic mineral systems. Arsenopyrite may also host invisible gold, while chalcopyrite and galena constitute the principal carriers of copper and lead, respectively. Consequently, Sample 766 represents the **highest mineralogical prospectivity** among the analysed samples and warrants detailed EPMA geochemistry and trace-element investigations.

Overall Interpretation

The EPMA observations indicate that the sulphide mineralization is dominated by **chalcopyrite, pyrrhotite, pyrite, arsenopyrite, galena, and löllingite**, representing a multi-stage hydrothermal mineralizing system. Early deposition of Fe-rich sulphides (pyrrhotite and pyrite) was followed by Cu-bearing chalcopyrite and subsequently by As- and Pb-bearing sulphides. The occurrence of core-rim textures, inclusion relationships, and replacement features suggest repeated hydrothermal pulses and post-mineralization recrystallization. The mineral assemblage and textural relationships are consistent with a **polymetallic Cu-Pb-As sulphide system**, with favourable conditions for associated precious metals and trace-element enrichment. Among the analysed specimens, **Sample 766** exhibits the most evolved sulphide paragenesis and therefore represents the most prospective target for further detailed mineralogical and geochemical characterization.

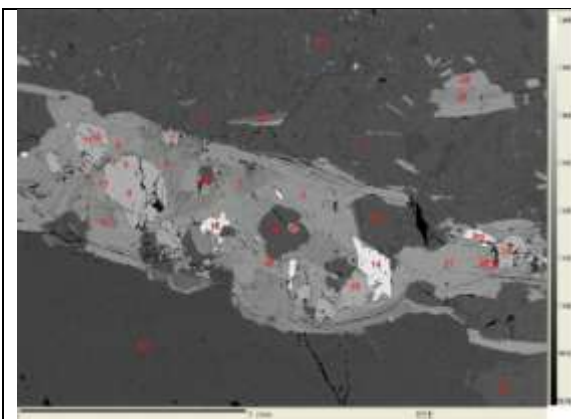


Figure 8.98 Backscatter image of the 11780 shows the presence of quartz and apatite.

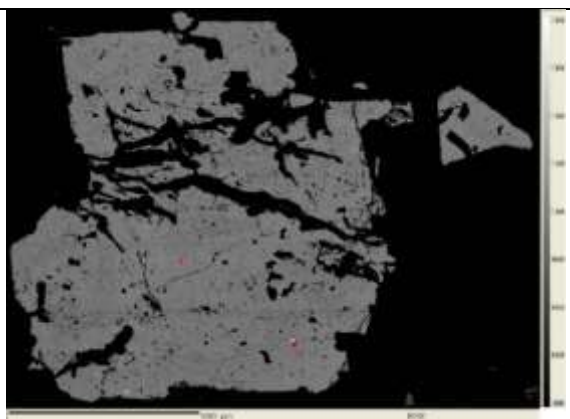


Figure 8.99 Backscatter image of the 362 shows the presence of arsenopyrite

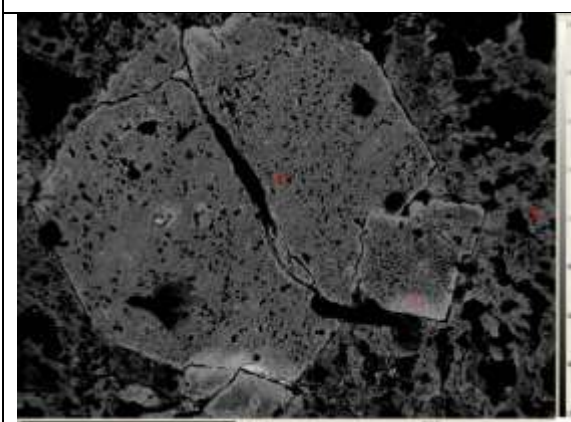


Figure 8.100 Backscatter image of the 482 shows the presence of pyrite

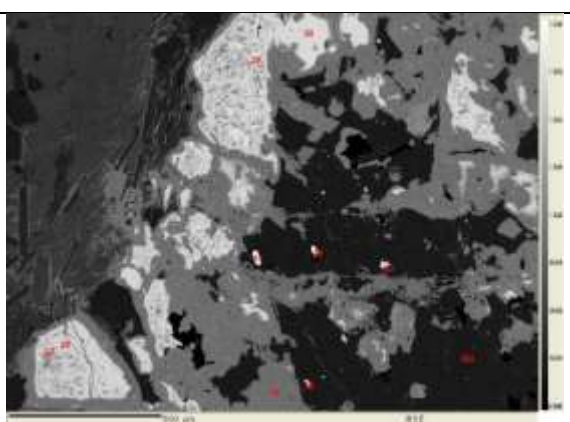


Figure 8.101 Backscatter image of the 651 shows the presence of arsenopyrite,

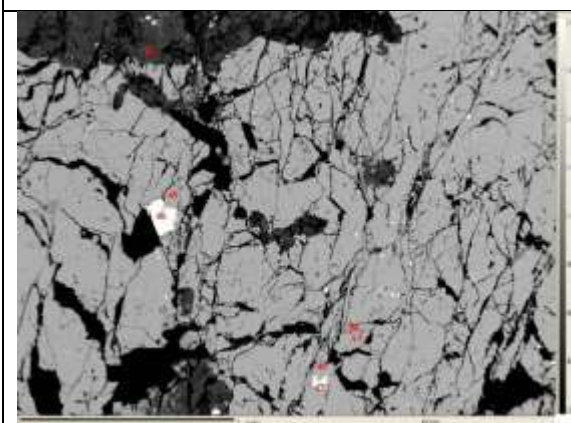


Figure 8.102 Backscatter image of the 111766 shows the presence of chalcopyrite.

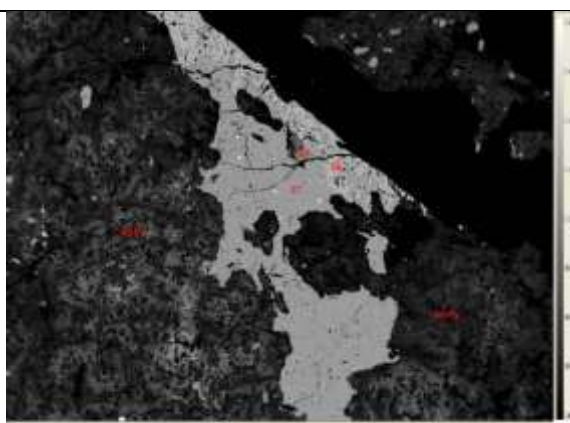


Figure 8.103 Backscatter image of the 111766 shows the presence of chalcopyrite and sphalerite

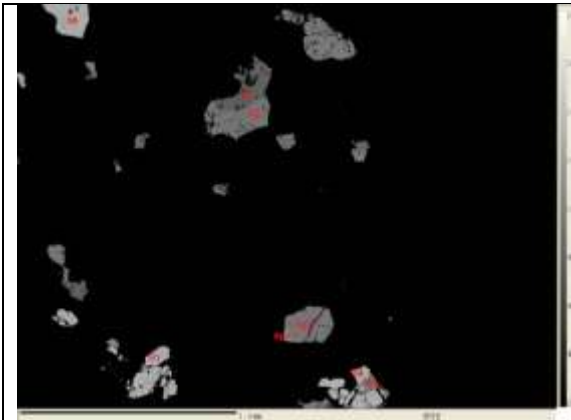


Figure 8.104 Backscatter image of the 111766 shows the presence of chalcopyrite.

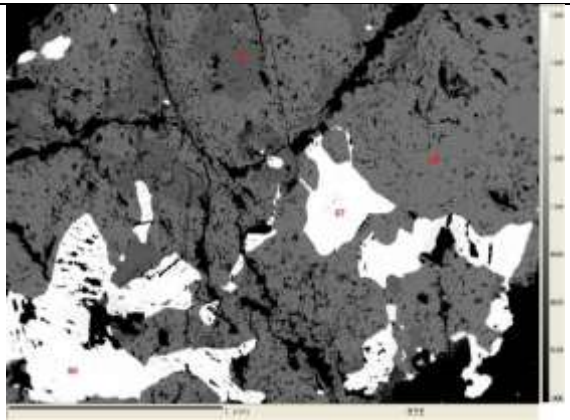


Figure 8.105 Backscatter image of the 111762 shows the presence of galena and sphalerite.

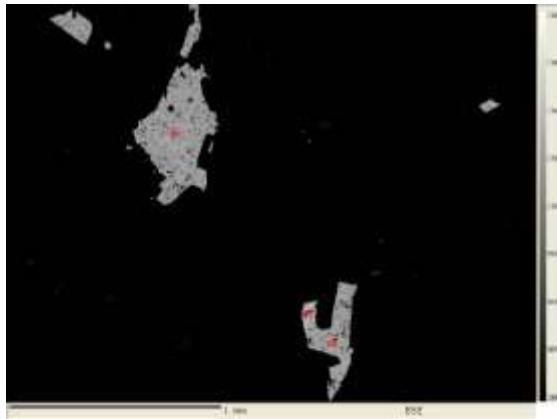


Figure 8.106 Backscatter image of the A363 shows the presence of chalcopyrite and arsenopyrite.

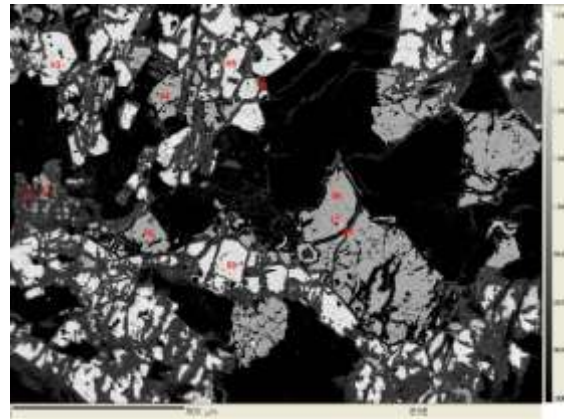


Figure 8.107 Backscatter image of the A363 shows the presence of arsenopyrite.

One conceptual target (VMS), representing distinct mineralisation styles in the Askot volcanogenic massive sulphide system, were tested by four scout boreholes in this G4 phase. The work was designed to prove system fertility rather than to fully delineate ore bodies, and its implications must be read together with Chapters 8, 9 and 10.

8.7.6 Implications for the Volcanogenic Massive Sulphide (VMS) System and block Fertility

When viewed together with the surface data (Chapter. 7) and the integration (Chapter. 8), the drilling outcomes support the following key conclusions:

- i. BH-01 and BH-02, ~200 m east of Baragaon village, central part of the Askot-Naret Hinge Zone intersects high-grade Cu-Pb-Zn-Ag-Au-Sn-Sb-Mo-W mineralisation in quartz sericite-



chlorite schist, with a volcanogenic massive sulphide mineralization like chalcopyrite-bornite–pyrite-galena-sphalerite ±covellite/chalcocite.

ii. BH-03 also confirms the presence of massive sulphides from geochemical assay adjacent of the Askot mine area.

iii. BH-04 near southern limb of the Askot-Naret Hinge Zone also strongly suggest volcanogenic massive sulphide with high grade Cu-Pb-Zn-Ag-Au-Sn-Sb-Mo-W mineralisation in quartz sericite-chlorite schist.

8.7.7 Recommendations for Future Drilling

In light of India's emerging emphasis on drilling within its mineral policy framework, the Askot results strongly support a Phase-II programme with:

- Directional holes from BH-01 and BH-02 location to highly mineralized zone (from surface bedrock and stream sediment anomaly), over Askot-Naret Hinge Zone, eastern part of the Block on quartz sericite chlorite schist to intersect the massive sulphide body indicated by the current vectors.
- In southern limb of the hinge zone from BH04 to the southern part of the chlorite sericite alteration zone to confirm continuity, thickness and structural controls of the high-grade Cu-Pb-Zn-Ag-Au zones intersected in BH-04.
- Follow-up testing of the BH-03, ~900 m northeast of Baragaon village, northern part of the Askot-Naret Hinge Zone and adjacent area where surface and near-surface data suggest additional volcanogenic massive sulphide clusters associated with quartz-sericite-chlorite-altered felsic volcanics.

8.7.8 Summary of the Boreholes

This G4 scout drilling programme has achieved its main objectives:

- It has tested conceptual targets representing massive sulphide mineralisation styles in the Askot VMS system (varies from 19 to 108m).
- It has demonstrated the fertility of the Askot Block, confirming a working VMS (Cu-Pb-Zn-Au-Ag) system.
- It has generated strong vectors for deeper drilling in the Eastern, Southern and South-eastern part of the Askot-Naret Hinge Zone which extending 1 km towards eastern to

about 3.5 km towards southern part of this hinge zone from previously explored Askot mine area. The next logical step, fully aligned with the discussion in Chapters 9 and 10, is a deep-seated, phased drilling strategy that systematically follows these vectors into the core of the system while expanding along the most promising VMS clusters.

- Our work (also previous work by GSI, MECL) establishes the mineralization to be VMS type which by its very nature are stratabound. Our detailed structural study convincingly establishes the geometry of the disposition of volcano-sedimentary strata (and so the stratabound mineralization in it) to be an overturned near reclined fold with axis and axial plunging moderately towards NE. So, we may logically expect well exposed VMS mineralization horizon in the northern limb to continue in the southern limb but at a greater depth (Since the southern limb is overturned). Whether or not a mineralized zone is exposed at a place depends on several factors like the topography, soil cover, vegetation, and most importantly the geometry of the overall mineralized horizon. The structural geometry worked out by us indicates that the mineralization in the southern limb would be at a greater depth than the once exposed in the northern limb (normal limb). Deeper Bore Hole (i.e. BH 4) in the southern limb (overturned limb) would likely intersect the mineralized horizon. Our drilling data indicate presence of mineralization in the southern limb too (1m VMS horizon). Deeper BH in the southern limb would likely reveal continuation of all the mineralized horizon in the northern limb to the southern limb.

CHAPTER-9

EXTENSION OF THE ASKOT MINERALIZATION, EVALUATION OF REGIONAL EXPLORATION TARGETS AND EXPLORATION TARGET POTENTIAL

9. Extension of the Askot Mineralization, Evaluation of Regional Exploration Targets and Exploration Target Potential

Based on the above geoscientific study 3 exploration target potential (1, 2 and 3) have been identified. These are 1. Askot-Naret Mineral Potential Block 1, ii) Didihat Mineral Potential Block 2, iii) Turgoli-Lejam Mineral Potential Block 3.

9.1 Exploration target potentials (Zone 1, 2, and 3)

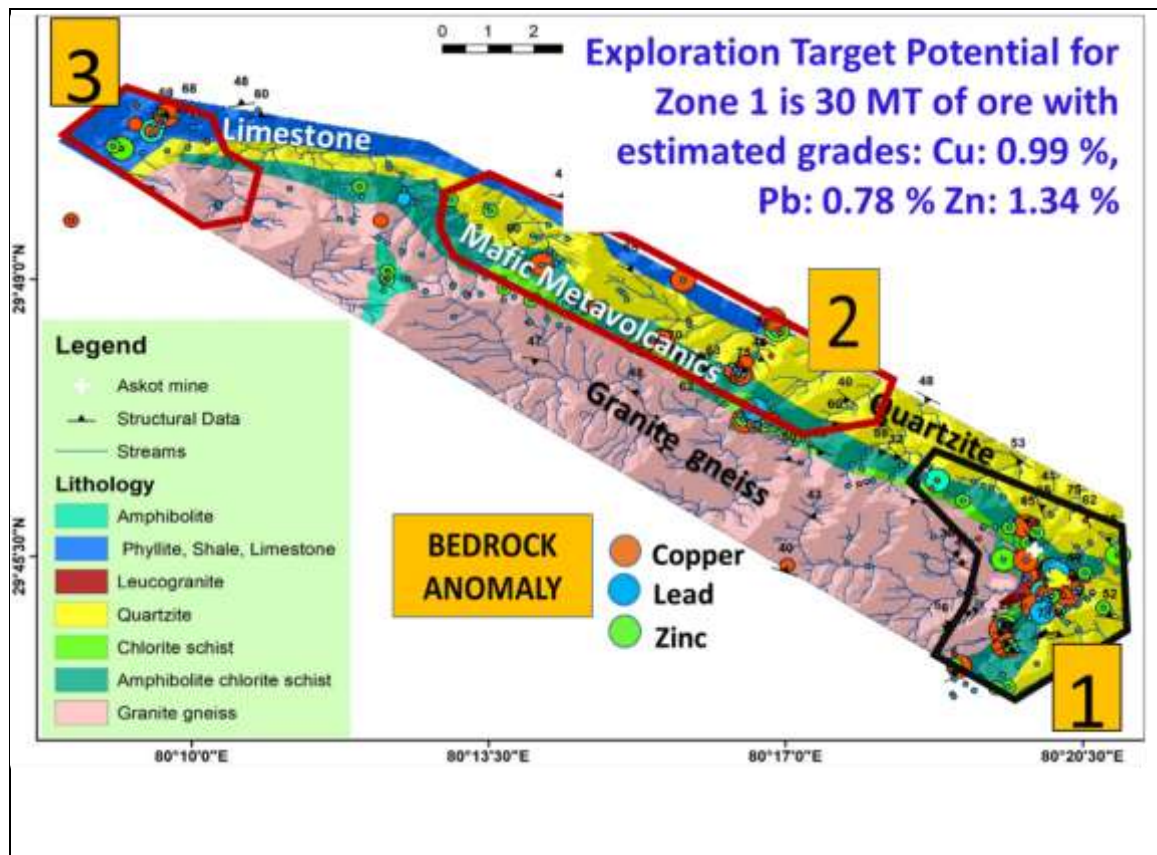


Figure 9.1 Potential Exploration Target zones based on bedrock chemical analyses.

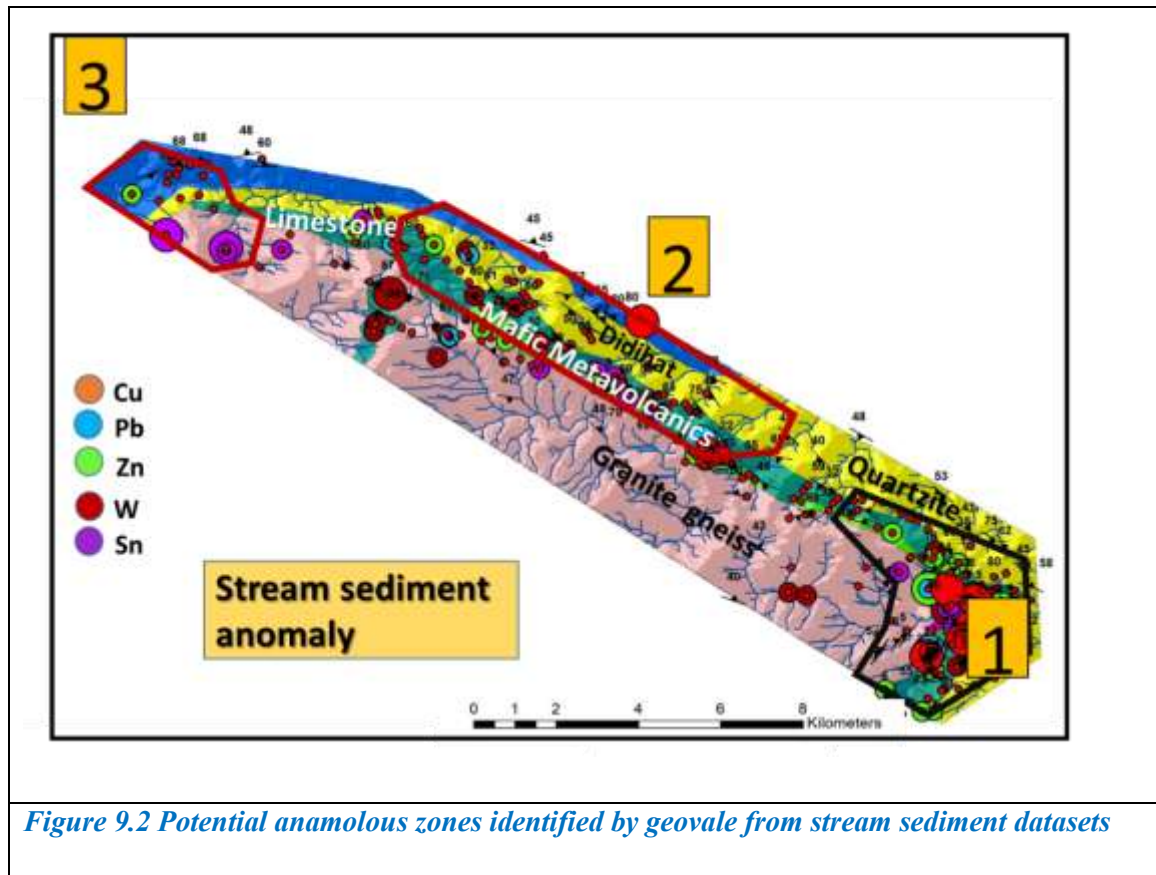
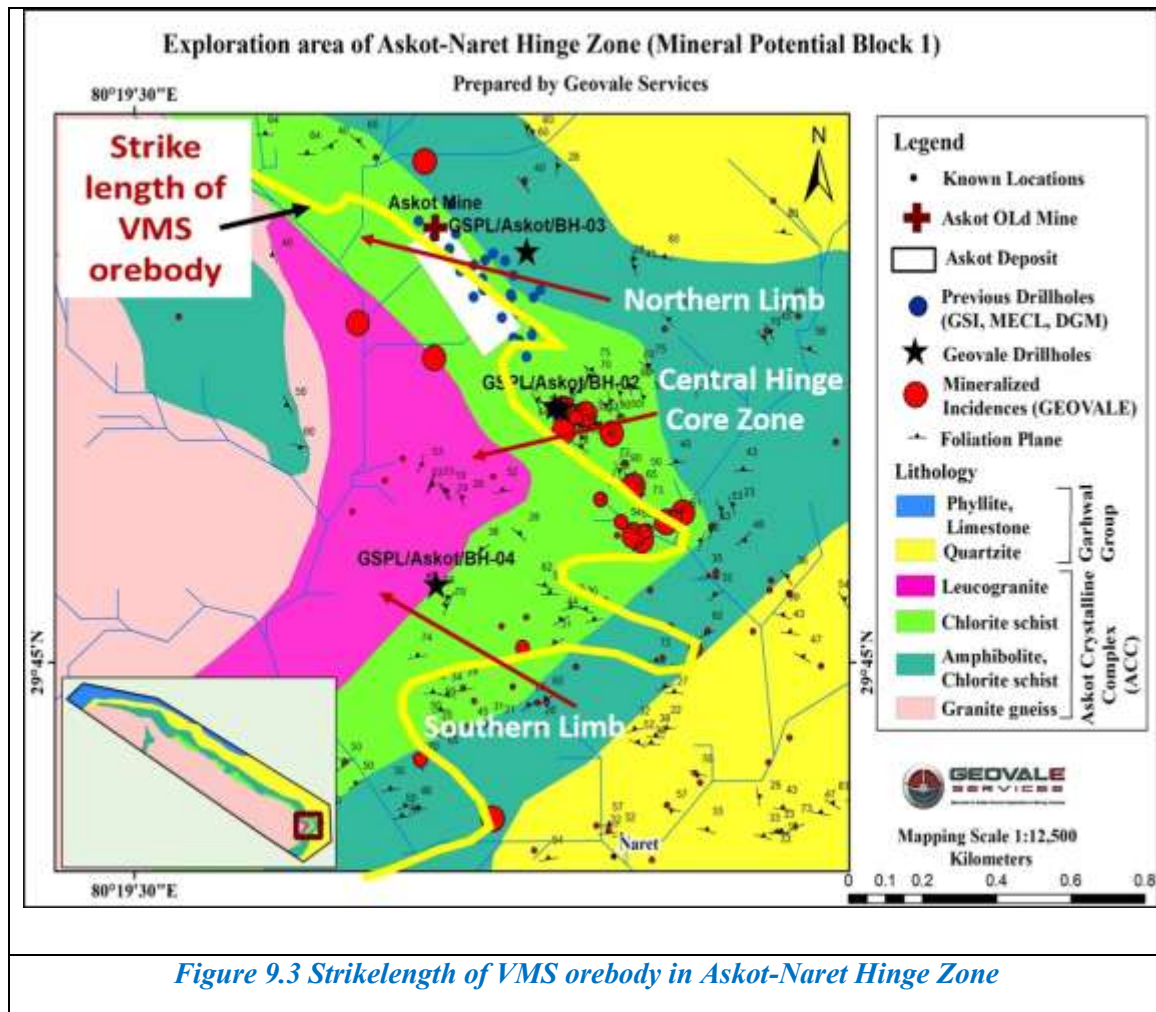


Figure 9.2 Potential anomalous zones identified by geovale from stream sediment datasets



i) Exploration target potential in Zone 1



Askot-Naret Mineral Potential Block 1

- The VMS horizon likely mimics the ‘M’ shaped geometry of hinge zone of regional overturned fold of the extensional part of the Askot towards the Naret area. Thus, within this block the length of the ore bearing VMS horizon is expected to be >3km.
- Field observation and Petrographical study reveal the presence of the VMS zone (occurrences of galena, sphalerite, chalcopyrite, bornite) in the Naret area.
- Bedrock analyses, stream sediments, geochemical analyses also imply the presence of basemetal in the extensional part of the Askot area.
- Taking the BH02 (with least gossan intersected) the ore bearing horizon likely to be 23 m thick with an overall weightage average of Cu: 0.99%, Pb: 0.78% and Zn: 1.34%.

- So, for ~100m downdip of the ore body the Exploration Target Potential = Orebody Length (3200m) *downdip extension (100m) *width (23m) *specific gravity (4000kg/m³) =~30MT (30 MT is maximum, considering at least 30%= ~10 MT)
- Even if ~10% of this Target is converted to resource, Zone 1 itself is a huge deposit.
- Besides, very high content of Au, Ag, Sn, Sb, Bi, Mo, Te in the ore would add up substantially to the resource.

Table 9.1 Askot-Naret Mineral Potential Block

Previous Estimates (GSI+MECL)		GEOVALE (Present work)	
Orebody length	330 m	Orebody length	3200m
Average Grade	2.32 % Cu, 2.64 % Pb and 3.95 % Zn	Average Grade	Cu: 0.99 %, Pb: 0.78 % Zn: 1.34 %
MECL Resource 0.80 million Ton		Geovale Exploration Target Potential ~10 to 30 MT	
MECL carried out assay of pristine samples from underground drilling in adits		Most of Geovale's samples are from shallow drilling with samples either gossanized or subjected to leaching	

Didihat Mineral Potential Block 2

- Amphibolite-chlorite schist hosted polymetallic mineralization with visible **chalcopyrite, pyrite, and malachite.**
- Mineralization controlled by **F1 foliation, folding, and shear zones.**
- Petrography shows **disseminated sulphides parallel to S1/F1 foliation**, indicating stratabound sulphide mineralization subsequently modified by metamorphism.

- EPMA confirms **chalcopyrite and pyrite** as the dominant sulphide minerals.
- Strong bedrock geochemical anomalies with **Cu up to 1,199 ppm**, accompanied by Pb, Zn, and Co enrichment.
- Quartz veins and hydrothermal alteration indicate an active mineralizing system.
- Good road accessibility and favourable terrain for follow-up exploration.

Turgoli-Lajem Mineral Potential Block 3

- Extensive **gossan zones** developed within carbonaceous phyllite and black shale.
- Surface occurrences of **pyrite and chalcopyrite**, indicating concealed sulphide mineralization.
- Presence of **Gossan and SEDEX-style stratiform sulphide horizons** enhances exploration potential.
- Structurally controlled by **folds, faults, and shear zones**.
- Geochemically characterized by **Zn up to 1,429 ppm** and **Mo up to 22 ppm**, with significant Pb, Sb, and Te pathfinder anomalies.
- Oxidation and weathering are widespread, while primary sulphide exposures are comparatively limited.
- Moderate accessibility; requires additional geological and geophysical investigation.

Table 9.2 Table shows the rank wise mineral potential zones and associated properties for G3.

Rank	Target Block	Area (km ²)	Accessibility	Field Observation	Structural Control	Petrography (Base Metal)	EPMA /XRD	Geochemical Signature (Cu–Zn–Mo)
1	Askot–Naret Hinge Zone	12.15	Excellent	VMS outcrops, gossan, malachite, azurite, bornite, chalcopyrite, sulphide stringers	Hinge zone, duplex structures, F1 foliation, shear zones	Chlorite schist and amphibolite hosting massive to disseminated Cu–Pb–Zn sulphides	EPMA confirms chalcopyrite–pyrite–sphalerite–galena; XRD indicates chlorite–sericite alteration	Cu: up to 21,324 ppm ; Zn: up to 4,091 ppm ; Mo: up to 39.5 ppm . Strong Cu–Pb–Zn–Sb–Bi–Sn–Te association with coincident stream and bedrock anomalies.
2	Didihat	10.12	Very Good	Malachite, chalcopyrite, pyrite in amphibolite, quartz veins	Folded amphibolite, F1 foliation, shear-controlled	Amphibolite with disseminated chalcopyrite and pyrite	EPMA confirms chalcopyrite–pyrite; XRD supports amphibole – plagioclase assemblage	Cu: up to 1,199 ppm ; Zn: moderate anomalies (locally >150 ppm); Mo: up to 11 ppm . Cu-rich bedrock with associated Co and Pb anomalies.



3	Turgoli-Lejam	15.18	Moderate	Gossans, disseminated pyrite and chalcopyrite in phyllite, SEDEX horizon	Folded phyllite, faults and shear zones	Carbonaceous phyllite and black shale with disseminated sulphides	Limited EPMA; XRD confirms phyllite-carbonate assemblages	Cu: generally low–moderate; Zn: locally up to 1,429 ppm ; Mo: up to 22 ppm (locally 18–22 ppm in gossan and sulphide-bearing phyllite). Strong Pb–Sb–Te–Mo pathfinder association.
---	----------------------	--------------	----------	--	---	---	---	---

CHAPTER-10

CONCLUSION AND RECOMMENDATION

10. Conclusion and Recommendations

The G4-stage reconnaissance exploration for basemetals in the Thal–Didihat–Askot sector, Pithoragarh District, Uttarakhand, was designed around three linked objectives: to establish the geological, structural, tectonic and mineral-systems framework applicable to the geotectonic domain; to carry out regional exploration across the 92 sq. km block to identify additional Volcanogenic Massive Sulphide (VMS)-style targets beyond the known Askot deposit; and to test, through reconnaissance drilling, whether the known Askot mineralisation extends along strike and at depth once its structural and deformational setting is properly understood. The multi-disciplinary programme of remote sensing, 1:12,500-scale geological and structural mapping, surface and stream-sediment geochemistry, petrography, XRD and EPMA studies, vertical electrical sounding (VES) and scout drilling has addressed all three objectives, and the results are drawn together below.

10.1 Conclusions

Regional Geological, Structural and Mineral-Systems Framework

The Askot Crystalline Complex and its enclosing Lesser Himalayan sequence have been mapped and interpreted within a formal Mineral System Analysis (MSA) framework, evaluating fertile host-rock terrain, metal-scavenging fluids, tectonic architecture for fluid channelisation, and structural or lithological traps as an integrated set. The regional structural picture is that of a thrust-dominated, flat-ramp-duplex architecture, expressed in chlorite schist and amphibolite as tectonically stacked and imbricated schistose horizons, and by a two-generation foliation history (an early S1 fabric overprinted by a later S2 cleavage at 30–35°), consistent with a protracted, polyphase Himalayan deformation history. This structural repetition and stacking is significant for exploration because it is capable of repeating favourable lithological horizons and concealing mineralised zones at depth.

Petrographic evidence confirms that the Cu–Pb–Zn sulphide assemblage (chalcopyrite, pyrite, sphalerite, galena, with bornite and covellite/chalcocite locally) occurs as disseminations, stringers and locally semi-massive bands aligned parallel to the dominant schistosity, indicating that an originally stratabound, exhalative sulphide accumulation has since been recrystallised, elongated and locally remobilised during regional deformation and metamorphism (metamorphic grade locally reaching c. 650°C, based on folded amphibole in amphibolite). This is textbook behaviour for a metamorphosed VMS system and confirms that



the Askot mineralisation is not a simple, undisturbed orebody but one whose true extent has been structurally modified, and therefore needs to be traced through structural understanding rather than assumed from surface exposure alone.

Regional Exploration and Generation of New VMS Targets

Systematic multi-element geochemical sampling (bedrock and stream sediment), statistical analysis of the resulting populations, and geological-structural mapping across the 92 sq. km block have shown that the Cu–Pb–Zn association, accompanied by a broad pathfinder suite (Au, Ag, Sn, Sb, Bi, Mo, Te, W, Ba, Cd), defines coherent, spatially discrete anomalous catchments rather than a single, isolated signature. Interpreted together with lithological contacts, alteration patterns and fold-related structures, this data set has resolved three broad clusters of VMS-style mineralisation within the block.

Of these, the Askot–Naret Hinge Zone (Zone 1) hosts the known Askot deposit and has been the subject of the detailed, integrated prospect-scale work and drilling described below. Two further clusters (Zone 2 and Zone 3), identified from coincident bedrock and stream-sediment anomalism, remain at a conceptual, surface-supported stage; on the advice of the NMEDT Technical Coordination Committee, these were kept in abeyance pending results from the limited drilling undertaken in Zone 1. Their delineation nonetheless satisfies the regional objective of the project: the Askot discovery is shown not to be an isolated occurrence but part of a wider, recurring VMS-fertile system, exactly as predicted by cluster-style VMS models. A further observation of exploration significance is that the granite gneiss occupying a large part of the block is intrusive into the volcano-sedimentary sequence, raising the possibility of additional VMS occurrences within, and at the margins of, the gneiss body.

Extension of the Known Askot VMS Deposit

Within the Askot–Naret Hinge Zone, detailed structural mapping, alteration studies, multi-element geochemistry, mineralogy and VES geophysics were integrated to rank drill targets, and four reconnaissance boreholes (GSPL/ASK/BH01 to BH-04) were completed to test the resulting model. BH-01 and BH-02, collared ~200 m east of Baragaon village in the central part of the hinge zone, intersected high-grade, polymetallic Cu-Pb-Zn-Ag-Au-Sn-Sb-Mo-W mineralisation in quartz-sericite-chlorite schist, with a VMS-type sulphide assemblage of chalcopyrite-bornite-pyrite-galena-sphalerite ($\pm$ covellite/chalcocite); the deepest tested



interval in BH-01 (54–57 m) returned a weighted average of 0.94% Cu with an elevated Sn credit, and BH-02 intersected a Zn-Pb-Cu-rich interval peaking at 27–29 m depth. BH-03, drilled northeast of the Askot mine area, confirmed massive sulphides at depth with a high-grade Pb-Zn lens (78–79 m: 0.5% Cu, 1.82% Pb, 2.76% Zn, with Sn-Ag-Te credits) beneath a lithocap. BH-04, on the southern limb of the hinge zone ~100 m north of Mouchora village, similarly intersected a polymetallic Cu-Pb-Zn zone with associated Sb-Sn-Bi at 107–108 m.

Taken together, the four boreholes demonstrate that the Askot mineralisation is not confined to the previously known orebody but continues both along strike and at depth, verified across a corridor extending roughly 1 km to the east and about 3.5 km to the south of the historically explored Askot mine area. VES surveys independently detected conductive, concealed sulphide horizons beneath a resistive basement across this corridor, corroborating the drilling and surface geochemical evidence. On the basis of this integrated evidence, the VMS horizon is now interpreted to mimic the 'M'-shaped geometry of the regional overturned fold hinge, giving an ore-bearing strike length in excess of 3 km against the 330 m orebody length previously recognised by GSI and MECL. Using BH-02 (the least gossan-affected intersection) as representative - an ore-bearing horizon approximately 23 m thick, with weighted-average grades of Cu 0.99%, Pb 0.78% and Zn 1.34% - and projecting this over the revised strike length to a conservative 100 m down-dip extent gives an Exploration Target Potential of the order of ~10 to 30 million tonnes, against a previous MECL resource estimate of 0.80 million tonnes at higher reported grades from underground adit sampling. This figure should be read as an exploration target, not a resource estimate, and its scale reflects the greater strike length and depth extent now demonstrated rather than a claim of comparable confidence to the earlier, more limited estimate. Even a modest conversion of this target to resource would represent a substantially larger deposit than previously recognised, and the accompanying enrichment in Au, Ag, Sn, Sb, Bi, Mo and Te adds further value beyond the base-metal grades alone.

Conclusion

The G4 exploration programme has met its stated objectives. The geological, structural and mineral-systems framework of the Askot–Didihat–Thal sector has been established and shown to be favourable for VMS-style mineralisation; regional exploration has identified three broad clusters of such mineralisation across the block, of which two (Zone 2 and Zone 3) constitute new, previously untested targets; and reconnaissance drilling has demonstrated, for the first



time, that the known Askot deposit extends well beyond its historically defined limits, both along strike and at depth, as a structurally repeated and locally remobilised but continuous VMS system. The Askot Block is confirmed as a fertile, polymetallic VMS province of a scale materially larger than previously understood, and the results justify advancing the project to the next stage of exploration.

10.2 Recommendations

From the G4 stage investigation in Thal-Didihat-askot area (92 sq. km.) it emerges following two recommendations describing three (03) proposed G3-Stage Exploration Blocks (Zone 1, Zone 2 and zone 3). The G4-Stage Reconnaissance Drilling in Zone 1 proved the mineral fertility and this zone to be upgraded for resource drilling. While in absence of any resource drilling Zone 2 and Zone 3 are recommended for target testing followed by resource drilling.

Recommendation 1 – G3-Exploration of the Extended and Established Askot Mineralisation (Zone 1)

Zone 1, the Askot–Naret Hinge Zone, should be taken up for the next (G3/G2) level of exploration. Specific elements of this programme should include:

- Directional/deep-seated drilling from the BH-01–BH-02 area toward the strongly mineralised zone identified by surface bedrock and stream-sediment anomalies over the eastern part of the hinge zone, to intersect the massive sulphide body indicated by the current vectors.
- Drilling on the southern limb of the hinge zone, extending from the BH-04 intersection into the southern part of the chlorite-sericite alteration zone, to establish the continuity, thickness and structural controls of the high-grade Cu-Pb-Zn-Ag-Au zone already intersected.
- Follow-up testing around BH-03, in the northern part of the hinge zone, where surface and near-surface data indicate the possible presence of additional VMS clusters associated with quartz-sericite-chlorite-altered felsic volcanics.
- A phased, deep-seated drilling strategy that systematically follows the vectors established in this programme into the core of the system, in place of further shallow, reconnaissance-style holes.

Recommendation 2 – G3 stage Exploration for Target Definition and Testing of the two VMS-Style Mineralisation zone (Zone 2 and Zone 3)

Zones 2 and 3 should be taken up for intensive structural mapping, geochemical sampling and exploratory drilling, of the same character as applied in Zone 1, to convert the current conceptual anomalies into drill-ready G3-level or short G4-level targets. In parallel, two further lines of work are recommended to fully test the block's potential:

- A focused exploration programme along the contact between the volcano-sedimentary sequence and the intrusive granite gneiss, in view of the strong, coincident stream-sediment anomalism in W, Sn, Bi and Sb noted along this contact.
- A detailed magnetotelluric (MT) survey across the block to test for concealed VMS mineralisation within the granite gneiss body itself, given its confirmed intrusive relationship with the mineralised volcano-sedimentary sequence.

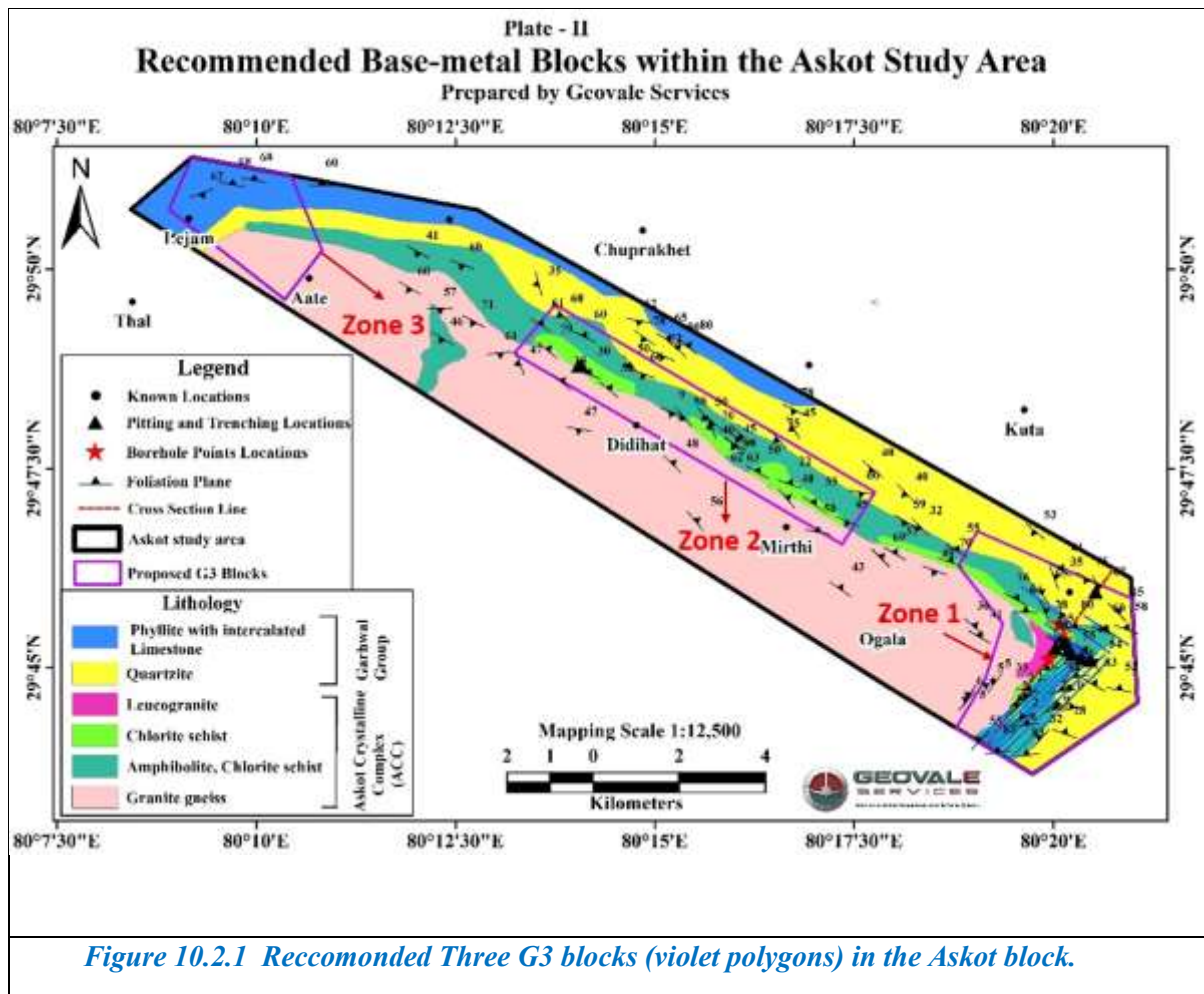
Implementation of these two recommendations - deep-seated, targeted drilling to define the resource within the now-extended Askot mineralisation, and systematic follow-up of the remaining VMS-style anomalies across the block - represents the logical and technically justified next stage of exploration for the Thal–Didihat–Askot project area.

Proposed Future G3 Exploration Strategy

Based on the integrated geological, structural, petrographic, geochemical assessment, the Askot–Naret Hinge Zone, Didihat and Turgoli–Lejam have been identified as priority mineral-potential zones. In the Askot-Naret Hinge Zone (Rank 1 for G3), the mineralized body and its extension have been established by Geovale Services in this G4 Askot exploration project; therefore, the proposed future G3 programme will primarily focus on resource estimation/calculation, verification of the established mineralized zone, and assessment of its possible lateral and down-dip extensions. In the Didihat (rank 2 for G3) and Turgoli–Lejam (rank 3 for G3) sectors, detailed geological mapping, systematic geochemical sampling, ground geophysical investigations and targeted scout drilling are proposed to delineate additional mineralized zones and establish their subsurface continuity and geometry.


Table 3: Recommended three G3 blocks

Rank	Target Block	Area (Sq km)	Accessibility	Key Field Observations	Structural Control	EPMA / XRD Evidence	Geochemical Signature (Cu–Zn–Mo)	G3 Priority
1	Askot–Naret Hinge Zone (Zone 1)	12.15	Excellent	VMS outcrops, gossan, malachite, azurite, bornite, chalcopyrite and sulphide stringers	Major hinge zone, duplex structures, F1 foliation and shear zones providing favourable controls for sulphide mineralization	EPMA confirms chalcopyrite–pyrite–sphalerite–galena; XRD indicates chlorite–sericite alteration	Cu up to 21,324 ppm; Zn up to 4,091 ppm; Mo up to 39.5 ppm; strong Cu–Pb–Zn–Sb–Bi–Sn–Te association with coincident stream and bedrock anomalies	Highest priority due to strong surface mineralization, favourable structural setting, diagnostic VMS assemblage, alteration signature and strong multi-element geochemical anomalies. Immediate detailed exploration and scout drilling recommended.
2	Didihat (Zone 2)	10.12	Very Good	Malachite, chalcopyrite and pyrite associated with amphibolite and quartz veins	Folded amphibolite, F1 foliation and shear-controlled mineralization	EPMA confirms chalcopyrite–pyrite; XRD supports amphibole–plagioclase assemblage	Cu up to 1,199 ppm; Zn locally >150 ppm; Mo up to 11 ppm; Cu-rich bedrock with associated Co and Pb anomalies	High priority owing to Cu-bearing sulphides, structural control and supporting Cu–Co–Pb geochemical anomalies. Detailed follow-up mapping, geochemistry and geophysical investigation recommended.
3	Turgoli–Lejam (Zone 3)	15.18	Good	Gossans, disseminated pyrite and chalcopyrite in phyllite; SEDEX-style mineralized horizon	Folded phyllite, faults and shear zones	Limited EPMA; XRD confirms phyllite–carbonate assemblages	Zn up to 1,429 ppm; Mo up to 22 ppm; Cu generally low–moderate; strong Pb–Sb–Te–Mo pathfinder association	Moderate–high priority because of gossanous zones, sulphide-bearing carbonaceous horizons and favourable structural/pathfinder-element association. Follow-up detailed geological and geochemical investigation recommended before drilling.



CHAPTER-11

REFERENCES

11. Reference

Agarwal, R.N. and Pathak, C.S., 1968. Report on the geophysical investigation for polymetallic mineralization in Askot area, District Pithoragarh, Uttar Pradesh. Unpublished Geological Survey of India Report, Field Season 1967–68.

Gansser, A., 1980. The significance of the Himalayan suture zone. *Tectonophysics*, 62(1–2), pp.37–52.

Geological Survey of India, 2019. *Geology and Mineral Resources of the States of India: Uttarakhand*. Miscellaneous Publication No. 30, Part XIII-A. Kolkata: Geological Survey of India.

Ghose, A., 1970. Report on the investigation of polymetallic mineralisation around Askot in Pithoragarh District, Uttar Pradesh. Unpublished Geological Survey of India Report, Field Season 1969–70.

Ghose, A., De, B. and Rao, R.B.S., 1975. Final report on the base metal investigation around Askot, District Pithoragarh, Uttar Pradesh. Unpublished Geological Survey of India Report, Field Season 1974–75.

Heim, A. and Gansser, A., 1939. Central Himalaya. *Denkschriften der Schweizerischen Naturforschenden Gesellschaft*, 73.

Kothiyal, D.L. and Srivastava, R., 1987. Final report on the regional geochemical survey for base metal investigation in Askot–Berinag area, District Pithoragarh, Uttar Pradesh. Unpublished Geological Survey of India Report, Field Seasons 1982–86.

Medlicott, H.B., 1864. On the geological structure and relations of the southern portion of the Himalayan ranges between the rivers Ganges and Ravi. *Memoirs of the Geological Survey of India*, 3(2), 122 pp.

Mondal, S., Robinson, D.M., Kohn, M.J., Khanal, S., Das, O. and Bose, S., 2016. Zircon U–Pb ages and Hf isotopes of the Askot Klippe, Kumaun, northwest India: Implications for Paleoproterozoic tectonics, basin evolution and associated metallogeny of the northern Indian cratonic margin. *Tectonics*, 35(4), pp.965–982.

Nautiyal, S.P., 1953. *Records of the Geological Survey of India*, 79(1).

Roy, S.C., 1971. A report on the base metal investigations at Askot, District Pithoragarh, Uttar Pradesh. Unpublished Geological Survey of India Report, Field Season 1970–71.

Singh, Y. and Banerjee, S., 2020. Reconnaissance survey for base metal mineralization in Ajera–Pasma area, Pithoragarh District, Uttarakhand (Stage G4). Geological Survey of India, Field Season 2019–20.

Srivastava, N. and Pathak, C.S., 1970. Report on the geophysical investigations for polymetallic mineralisation in Askot–Kholiagaon and Didihat areas, Pithoragarh District, Uttar Pradesh. Unpublished Geological Survey of India Report, Field Seasons 1968–70.

Valdiya, K.S., 1962. An outline of the stratigraphy and structure of the southern part of Pithoragarh District, Uttar Pradesh. *Journal of the Geological Society of India*, 3, pp.27–48.

Valdiya, K.S., 1980. *Geology of Kumaun Lesser Himalaya*. Dehradun: Wadia Institute of Himalayan Geology.

CHAPTER-12

LOCALITY INDEX

12. Locality index

Sl.No.	Name	Latitude	Longitude
1	Askot	29.765321	80.336606
2	Baira	29.754577	80.341640
3	Barsayat	29.848930	80.180512
4	Bhar Gaon	29.813078	80.200051
5	Bhumiyathal	29.792113	80.263988
6	Dharmoli	29.747145	80.007287
7	Dhauri Kauli	29.825579	80.169292
8	Dhunga	29.813645	80.272595
9	Didihat	29.800940	80.246812
10	Dugeti	29.592818	80.226337
11	Dyokali	29.755650	80.214729
12	Ganai	29.739499	80.319897
13	Garsoli	29.785307	80.289280
14	Ghatyuri	29.710282	80.330000
15	Hat tharp	29.791280	80.292041
16	Kajera	29.751991	80.342204
17	Karela	29.833287	80.171672
18	Kasindav	29.774704	80.261302
19	Khirkiri	29.744246	80.348800
20	Khitoli	29.847151	80.147690
21	Kholi Kanuri	29.333003	80.202739
22	Kholia Gaon	29.778759	80.335250
23	Kirauli	29.824546	80.179068
24	Lamaghar	29.843736	80.207056
25	Lathara	29.772540	80.273265
26	Leparti	29.847462	80.169983
27	Lezam	29.844023	80.152538
28	Lohargaon	29.801023	80.257776
29	Mahat Gaon	29.763828	80.269750
30	Majhera	29.500265	80.474883
31	Mirthi	29.779141	80.277656
32	Mirthi Biniya	29.789087	80.300429
33	Nag	29.693579	80.054907
34	Namukh	29.754206	80.333691
35	Nankote	29.783176	80.317876
36	Narayan Nagar	29.777455	80.88892
37	Naret	29.746016	80.336306
38	Ogla	29.777535	80.277011
39	Ojhagaon Malla	29.750578	80.322698
40	Pant Gaon	29.807663	80.241866

41	Pasama	29.746217	80.342154
42	Patharoli	29.738268	80.311538
43	Patet	29.847248	80.160979
44	Pamtori	29.837983	80.186001
45	Puni Gaon	29.846644	80.195130
46	Raizrait	29.838472	80.155412
47	Ranikhet	29.855560	80.222464
48	Sann Khan	29.843304	80.183251
49	Sata	29.827554	80.200052
50	Saukiya	29.852394	80.160261
51	Sirakot	29.816271	80.243635
52	Siroli	29.750009	80.317148
53	Sitoli	29.802886	80.263462
54	Soonakot	29.733921	80.326157
55	Thal	29.826368	80.140797
56	Topra Dhar	29.844094	80.164492
57	Turgoli	29.850958	80.169366
58	Unchakot	29.748728	80.347037

CHAPTER-13

ANNEXURES

13. Annexure I_Field Observation Points

SI No	Location	Latitude	Longitude	Lithology
1	GSPL-Askot-01	29.755281	80.3342	Chlorite Schist
2	GSPL-Askot-02	29.754781	80.33415	Chlorite Schist
3	GSPL-Askot-03	29.754606	80.3342	Leucogranite
4	GSPL-Askot-04	29.754606	80.3342	Leucogranite
5	GSPL-Askot-05	29.754279	80.33454	Leucogranite
6	GSPL-Askot-06	29.754647	80.33483	Chlorite Schist
7	GSPL-Askot-07	29.754647	80.33483	Chlorite Schist
8	GSPL-Askot-08	29.754723	80.33643	Chlorite Schist
9	GSPL-Askot-09	29.754426	80.33682	Chlorite Schist
10	GSPL-Askot-10	29.75437	80.33463	Leucogranite
11	GSPL-Askot-11	29.756	80.33515	Chlorite Schist
12	GSPL-Askot-12	29.75553	80.33527	Chlorite Schist
13	GSPL-Askot-13	29.75524	80.33569	Chlorite Schist
14	GSPL-Askot-14	29.755238	80.33582	Chlorite Schist
15	GSPL-Askot-15	29.755688	80.33645	Amphibolite
16	GSPL-Askot-16	29.755789	80.33657	Chlorite Schist
17	GSPL-Askot-17	29.755882	80.33736	Chlorite Schist
18	GSPL-Askot-18	29.756573	80.33749	Amphibolite
19	GSPL-Askot-19	29.757428	80.33906	Amphibolite
20	GSPL-Askot-20	29.756214	80.33489	Amphibolite

21	GSPL-Askot-21	29.760235	80.3342	Amphibolite
22	GSPL-Askot-22	29.757224	80.29894	Granite Gneiss
23	GSPL-Askot-23	29.815171	80.24705	Quartzite
24	GSPL-Askot-24	29.821888	80.24657	Quartzite
25	GSPL-Askot-25	29.828	80.24624	Phyllite
26	GSPL-Askot-26	29.83	80.24647	Phyllite
27	GSPL-Askot-27	29.8332	80.24539	Phyllite
28	GSPL-Askot-28	29.8324	80.24594	Phyllite
29	GSPL-Askot-29	29.8274	80.24636	Phyllite
30	GSPL-Askot-30	29.8183	80.24743	Quartzite
31	GSPL-Askot-31	29.8139	80.24556	Amphibolite
32	GSPL-Askot-32	29.81294	80.24431	Chlorite Schist
33	GSPL-Askot-33	29.81019	80.24149	Amphibolite
34	GSPL-Askot-34	29.80882	80.24242	Amphibolite
35	GSPL-Askot-35	29.81075	80.24735	Chlorite Schist
36	GSPL-Askot-36	29.80875	80.245	Chlorite Schist
37	GSPL-Askot-37	29.75548	80.33593	Amphibolite
38	GSPL-Askot-38	29.75527	80.33644	Chlorite Schist
39	GSPL-Askot-39	29.75527	80.33644	Chlorite Schist
40	GSPL-Askot-40	29.75538	80.33574	Chlorite Schist
41	GSPL-Askot-41	29.75266	80.33308	Chlorite Schist
42	GSPL-Askot-42	29.75175	80.3325	Chlorite Schist
43	GSPL-Askot-43	29.75145	80.33259	Chlorite Schist

44	GSPL-Askot-44	29.75126	80.33254	Chlorite Schist
45	GSPL-Askot-45	29.75017	80.33185	Chlorite Schist
46	GSPL-Askot-46	29.74935	80.33224	Chlorite Schist
47	GSPL-Askot-47	29.74898	80.33242	Granite Gneiss
48	GSPL-Askot-48	29.74867	80.33253	Chlorite Schist
49	GSPL-Askot-49	29.74848	80.33245	Chlorite Schist
50	GSPL-Askot-50	29.74848	80.33245	Chlorite Schist
51	GSPL-Askot-51	29.78339	80.27324	Granite Gneiss
52	GSPL-Askot-52	29.79523	80.26172	Granite Gneiss
53	GSPL-Askot-53	29.75403	80.34232	Amphibolite
54	GSPL-Askot-54	29.75404	80.34233	Amphibolite
55	GSPL-Askot-55	29.75326	80.34257	Amphibolite
56	GSPL-Askot-56	29.7531	80.34203	Amphibolite
57	GSPL-Askot-57	29.75288	80.34192	Amphibolite
58	GSPL-Askot-58	29.75261	80.34122	Amphibolite
59	GSPL-Askot-59	29.752808	80.34012	Quartzite
60	GSPL-Askot-60	29.752691	80.33981	Amphibolite
61	GSPL-Askot-61	29.754045	80.34233	Chlorite Schist
62	GSPL-Askot-62	29.752692	80.33877	Chlorite Schist
63	GSPL-Askot-63	29.753703	80.33935	Chlorite Schist
64	GSPL-Askot-64	29.754105	80.33983	Chlorite Schist
65	GSPL-Askot-65	29.754533	80.34034	Amphibolite
66	GSPL-Askot-66	29.764346	80.33064	Amphibolite

67	GSPL-Askot-67	29.763954	80.33149	Chlorite Schist
68	GSPL-Askot-68	29.762681	80.33254	Quartzite
69	GSPL-Askot-69	29.762863	80.33323	Quartzite
70	GSPL-Askot-70	29.762586	80.33368	Quartzite
71	GSPL-Askot-71	29.762462	80.33378	Quartzite
72	GSPL-Askot-72	29.761813	80.33454	Amphibolite
73	GSPL-Askot-73	29.761725	80.33467	Amphibolite
74	GSPL-Askot-74	29.760964	80.33529	Chlorite Schist
75	GSPL-Askot-75	29.758911	80.33713	Chlorite Schist
76	GSPL-Askot-76	29.758979	80.33784	Amphibolite
77	GSPL-Askot-77	29.759536	80.34074	Quartzite
78	GSPL-Askot-78	29.758844	80.34247	Quartzite
79	GSPL-Askot-79	29.758241	80.34396	Quartzite
80	GSPL-Askot-80	29.757354	80.34491	Quartzite
81	GSPL-Askot-81	29.756666	80.34503	Quartzite
82	GSPL-Askot-82	29.764814	80.32242	Chlorite Schist
83	GSPL-Askot-83	29.75899	80.32833	Amphibolite
84	GSPL-Askot-84	29.755673	80.32868	Amphibolite
85	GSPL-Askot-85	29.754729	80.32901	Amphibolite
86	GSPL-Askot-86	29.759049	80.32641	Granite Gneiss
87	GSPL-Askot-87	29.760755	80.32308	Granite Gneiss
88	GSPL-Askot-88	29.764789	80.32566	Chlorite Schist
89	GSPL-Askot-89	29.764248	80.3255	Chlorite Schist
90	GSPL-Askot-90	29.763901	80.32615	Chlorite Schist

91	GSPL-Askot-91	29.763933	80.3265	Chlorite Schist
92	GSPL-Askot-92	29.763267	80.32615	Chlorite Schist
93	GSPL-Askot-93	29.762745	80.32605	Chlorite Schist
94	GSPL-Askot-94	29.762163	80.32749	Chlorite Schist
95	GSPL-Askot-95	29.761699	80.32817	Chlorite Schist
96	GSPL-Askot-96	29.761263	80.32919	Chlorite Schist
97	GSPL-Askot-97	29.75482	80.34576	Chlorite Schist
98	GSPL-Askot-98	29.761377	80.32977	Chlorite Schist
99	GSPL-Askot-99	29.761525	80.33045	Chlorite Schist
100	GSPL-Askot-100	29.761525	80.33045	Chlorite Schist
101	GSPL-Askot-101	29.763183	80.32957	Chlorite Schist
102	GSPL-Askot-102	29.748453	80.33231	Amphibolite
103	GSPL-Askot-103	29.748453	80.33231	Amphibolite
104	GSPL-Askot-104	29.747852	80.33193	Chlorite Schist
105	GSPL-Askot-105	29.747803	80.3319	Chlorite Schist
106	GSPL-Askot-106	29.746857	80.33156	Chlorite Schist
107	GSPL-Askot-107	29.747231	80.33119	Chlorite Schist
108	GSPL-Askot-108	29.746635	80.33147	Chlorite Schist
109	GSPL-Askot-109	29.746799	80.33187	Chlorite Schist
110	GSPL-Askot-110	29.745706	80.33503	Quartzite
111	GSPL-Askot-111	29.745122	80.33516	Quartzite
112	GSPL-Askot-112	29.757158	80.34004	Quartzite
113	GSPL-Askot-113	29.757186	80.34029	Chlorite Schist

114	GSPL-Askot-114	29.757337	80.34045	Quartzite
115	GSPL-Askot-115	29.756946	80.34137	Quartzite
116	GSPL-Askot-116	29.758564	80.34866	Quartzite
117	GSPL-Askot-117	29.73389	80.3165	Amphibolite
118	GSPL-Askot-118	29.731166	80.31667	Quartzite
119	GSPL-Askot-119	29.728969	80.31653	Chlorite Schist
120	GSPL-Askot-120	29.729173	80.3169	Chlorite Schist
121	GSPL-Askot-121	29.729494	80.31868	Quartzite
122	GSPL-Askot-122	29.735118	80.31743	Amphibolite
123	GSPL-Askot-123	29.735471	80.33005	Quartzite
124	GSPL-Askot-124	29.732384	80.32925	Quartzite
125	GSPL-Askot-125	29.732201	80.32763	Quartzite
126	GSPL-Askot-126	29.732877	80.32163	Amphibolite
127	GSPL-Askot-127	29.736773	80.3358	Quartzite
128	GSPL-Askot-128	29.735953	80.33296	Quartzite
129	GSPL-Askot-129	29.733198	80.32505	Amphibolite
130	GSPL-Askot-130	29.733265	80.3215	Amphibolite
131	GSPL-Askot-131	29.729996	80.32016	Amphibolite
132	GSPL-Askot-132	29.735929	80.33293	Quartzite
133	GSPL-Askot-133	29.736539	80.33331	Quartzite
134	GSPL-Askot-134	29.733478	80.32588	Amphibolite
135	GSPL-Askot-135	29.732514	80.32206	Amphibolite
136	GSPL-Askot-136	29.732208	80.3276	Amphibolite

137	GSPL-Askot-137	29.764639	80.32463	Chlorite Schist
138	GSPL-Askot-138	29.764293	80.3271	Chlorite Schist
139	GSPL-Askot-139	29.764819	80.32794	Chlorite Schist
140	GSPL-Askot-140	29.764956	80.32815	Amphibolite
141	GSPL-Askot-141	29.760584	80.33448	Amphibolite
142	GSPL-Askot-142	29.738527	80.32879	Chlorite Schist
143	GSPL-Askot-143	29.754451	80.33813	Amphibolite
144	GSPL-Askot-144	29.739212	80.32714	Amphibolite
145	GSPL-Askot-145	29.739793	80.32657	Amphibolite
146	GSPL-Askot-146	29.740102	80.32651	Chlorite Schist
147	GSPL-Askot-147	29.772656	80.31195	Chlorite Schist
148	GSPL-Askot-148	29.77295	80.31219	Amphibolite
149	GSPL-Askot-149	29.775029	80.3132	Quartzite
150	GSPL-Askot-150	29.774358	80.31308	Quartzite
151	GSPL-Askot-151	29.7734	80.31257	Amphibolite
152	GSPL-Askot-152	29.7672	80.32008	Chlorite Schist
153	GSPL-Askot-153	29.764631	80.33041	Amphibolite
154	GSPL-Askot-154	29.763803	80.33713	Chlorite Schist
155	GSPL-Askot-155	29.763632	80.33772	Amphibolite
156	GSPL-Askot-156	29.76369	80.33826	Amphibolite
157	GSPL-Askot-157	29.763509	80.33955	Quartzite
158	GSPL-Askot-158	29.763415	80.33989	Quartzite
159	GSPL-Askot-159	29.765886	80.34239	Quartzite
160	GSPL-Askot-160	29.765866	80.34138	Chlorite Schist

161	GSPL-Askot-161	29.765571	80.34116	Chlorite Schist
162	GSPL-Askot-162	29.765373	80.34099	Chlorite Schist
163	GSPL-Askot-163	29.802756	80.25339	Amphibolite
164	GSPL-Askot-164	29.803333	80.25403	Amphibolite
165	GSPL-Askot-165	29.803333	80.25403	Chlorite Schist
166	GSPL-Askot-166	29.803232	80.25426	Granite Gneiss
167	GSPL-Askot-167	29.803061	80.25451	Amphibolite
168	GSPL-Askot-168	29.801904	80.25541	Chlorite Schist
169	GSPL-Askot-169	29.801887	80.26004	Amphibolite
170	GSPL-Askot-170	29.785673	80.27272	Granite Gneiss
171	GSPL-Askot-171	29.786074	80.27347	Granite Gneiss
172	GSPL-Askot-172	29.784241	80.27327	Granite Gneiss
173	GSPL-Askot-173	29.791414	80.27161	Chlorite Schist
174	GSPL-Askot-174	29.786921	80.27242	Granite Gneiss
175	GSPL-Askot-175	29.787628	80.27383	Granite Gneiss
176	GSPL-Askot-176	29.787276	80.27535	Granite Gneiss
177	GSPL-Askot-177	29.786828	80.27508	Granite Gneiss
178	GSPL-Askot-178	29.786877	80.27585	Granite Gneiss
179	GSPL-Askot-179	29.785742	80.278	Chlorite Schist
180	GSPL-Askot-180	29.785919	80.27943	Chlorite Schist
181	GSPL-Askot-181	29.78594	80.27722	Chlorite Schist
182	GSPL-Askot-182	29.78594	80.27722	Chlorite Schist
183	GSPL-Askot-183	29.787166	80.2796	Chlorite Schist

184	GSPL-Askot-184	29.787094	80.27981	Chlorite Schist
185	GSPL-Askot-185	29.787055	80.27981	Chlorite Schist
186	GSPL-Askot-186	29.786849	80.2815	Amphibolite
187	GSPL-Askot-187	29.786411	80.28187	Chlorite Schist
188	GSPL-Askot-188	29.785558	80.28133	Chlorite Schist
189	GSPL-Askot-189	29.78551	80.28128	Chlorite Schist
190	GSPL-Askot-190	29.784742	80.28059	Chlorite Schist
191	GSPL-Askot-191	29.784796	80.28189	Chlorite Schist
192	GSPL-Askot-192	29.784553	80.28293	Chlorite Schist
193	GSPL-Askot-193	29.78484	80.2834	Chlorite Schist
194	GSPL-Askot-194	29.78484	80.2834	Chlorite Schist
195	GSPL-Askot-195	29.785353	80.28296	Chlorite Schist
196	GSPL-Askot-196	29.78592	80.28228	Amphibolite
197	GSPL-Askot-197	29.786482	80.28177	Chlorite Schist
198	GSPL-Askot-198	29.809859	80.22715	Chlorite Schist
199	GSPL-Askot-199	29.810062	80.23792	Chlorite Schist
200	GSPL-Askot-200	29.810262	80.23827	Chlorite Schist
201	GSPL-Askot-201	29.791719	80.27388	Chlorite Schist
202	GSPL-Askot-202	29.792366	80.27465	Chlorite Schist
203	GSPL-Askot-203	29.792207	80.27649	Quartzite
204	GSPL-Askot-204	29.791947	80.27606	Quartzite
205	GSPL-Askot-205	29.78974	80.27571	Chlorite Schist
206	GSPL-Askot-206	29.789484	80.27566	Chlorite Schist

207	GSPL-Askot-207	29.789404	80.27732	Chlorite Schist
208	GSPL-Askot-208	29.788901	80.27841	Chlorite Schist
209	GSPL-Askot-209	29.787223	80.27299	Chlorite Schist
210	GSPL-Askot-210	29.795843	80.26623	Chlorite Schist
211	GSPL-Askot-211	29.796281	80.26633	Chlorite Schist
212	GSPL-Askot-212	29.797445	80.26733	Quartzite
213	GSPL-Askot-213	29.797736	80.2675	Quartzite
214	GSPL-Askot-214	29.798184	80.26854	Quartzite
215	GSPL-Askot-215	29.797566	80.27349	Quartzite
216	GSPL-Askot-216	29.799908	80.27318	Quartzite
217	GSPL-Askot-217	29.798675	80.27022	Quartzite
218	GSPL-Askot-218	29.811693	80.23996	Chlorite Schist
219	GSPL-Askot-219	29.812225	80.24059	Chlorite Schist
220	GSPL-Askot-220	29.813058	80.24195	Amphibolite
221	GSPL-Askot-221	29.813077	80.24147	Chlorite Schist
222	GSPL-Askot-222	29.81316	80.24166	Amphibolite
223	GSPL-Askot-223	29.813838	80.23969	Chlorite Schist
224	GSPL-Askot-224	29.814095	80.24032	Chlorite Schist
225	GSPL-Askot-225	29.814028	80.24014	Chlorite Schist
226	GSPL-Askot-226	29.815072	80.24244	Quartzite
227	GSPL-Askot-227	29.811239	80.23996	Chlorite Schist
228	GSPL-Askot-228	29.810904	80.24028	Amphibolite

229	GSPL-Askot-229	29.808651	80.24065	Amphibolite
230	GSPL-Askot-230	29.808699	80.24154	Amphibolite
231	GSPL-Askot-231	29.810889	80.24133	Amphibolite
232	GSPL-Askot-232	29.810889	80.24133	Amphibolite
233	GSPL-Askot-233	29.812776	80.2286	Amphibolite
234	GSPL-Askot-234	29.8116	80.22835	Granite Gneiss
235	GSPL-Askot-235	29.811299	80.22871	Granite Gneiss
236	GSPL-Askot-236	29.809884	80.23005	Granite Gneiss
237	GSPL-Askot-237	29.810153	80.23078	Granite Gneiss
238	GSPL-Askot-238	29.808015	80.24325	Chlorite Schist
239	GSPL-Askot-239	29.812152	80.23689	Chlorite Schist
240	GSPL-Askot-240	29.811915	80.23638	Chlorite schist
241	GSPL-Askot-241	29.811915	80.23638	Chlorite schist
242	GSPL-Askot-242	29.812397	80.23524	Chlorite Schist
243	GSPL-Askot-243	29.812397	80.23524	Amphibolite
244	GSPL-Askot-244	29.812671	80.23354	Amphibolite
245	GSPL-Askot-245	29.812671	80.23354	Quartzite
246	GSPL-Askot-246	29.813248	80.23288	Granite Gneiss
247	GSPL-Askot-247	29.813066	80.23459	Amphibolite
248	GSPL-Askot-248	29.812807	80.23469	Amphibolite
249	GSPL-Askot-249	29.816788	80.22792	Amphibolite
250	GSPL-Askot-250	29.822203	80.22635	Granite Gneiss

251	GSPL-Askot-251	29.819733	80.2354	Granite Gneiss
252	GSPL-Askot-252	29.81942	80.23685	Amphibolite
253	GSPL-Askot-253	29.749441	80.33297	Granite Gneiss
254	GSPL-Askot-254	29.749441	80.33297	Granite Gneiss
255	GSPL-Askot-255	29.749441	80.33297	Chlorite Schist
256	GSPL-Askot-256	29.810674	80.2461	Amphibolite
257	GSPL-Askot-257	29.810834	80.24607	Amphibolite
258	GSPL-Askot-258	29.810826	80.24669	Amphibolite
259	GSPL-Askot-259	29.81089	80.24691	Quartzite
260	GSPL-Askot-260	29.751827	80.33333	Chlorite Schist
261	GSPL-Askot-261	29.7515	80.33336	Chlorite Schist
262	GSPL-Askot-262	29.748652	80.33357	Chlorite Schist
263	GSPL-Askot-263	29.751209	80.33411	Chlorite Schist
264	GSPL-Askot-264	29.751062	80.3343	Chlorite Schist
265	GSPL-Askot-265	29.75111	80.33473	Chlorite Schist
266	GSPL-Askot-266	29.75111	80.33473	Chlorite Schist
267	GSPL-Askot-267	29.75111	80.33473	Chlorite Schist
268	GSPL-Askot-268	29.750972	80.33532	Chlorite Schist
269	GSPL-Askot-269	29.750471	80.33517	Chlorite Schist
270	GSPL-Askot-270	29.750428	80.33435	Chlorite Schist
271	GSPL-Askot-271	29.750551	80.33473	Chlorite Schist
272	GSPL-Askot-272	29.752524	80.33339	Leucogranite
273	GSPL-Askot-273	29.748598	80.33383	Chlorite Schist

274	GSPL-Askot-274	29.749089	80.33456	Chlorite Schist
275	GSPL-Askot-275	29.749223	80.33497	Chlorite Schist
276	GSPL-Askot-276	29.748542	80.33315	Chlorite Schist
277	GSPL-Askot-277	29.74814	80.34323	Chlorite Schist
278	GSPL-Askot-278	29.747694	80.34337	Chlorite Schist
279	GSPL-Askot-279	29.747147	80.34265	Chlorite Schist
280	GSPL-Askot-280	29.747038	80.34245	Amphibolite
281	GSPL-Askot-281	29.74691	80.34195	Amphibolite
282	GSPL-Askot-282	29.746712	80.34164	Amphibolite
283	GSPL-Askot-283	29.746707	80.34092	Amphibolite
284	GSPL-Askot-284	29.746812	80.34072	Amphibolite
285	GSPL-Askot-285	29.746397	80.34101	Amphibolite
286	GSPL-Askot-286	29.746274	80.34059	Amphibolite
287	GSPL-Askot-287	29.746293	80.3407	Amphibolite
288	GSPL-Askot-288	29.74628	80.34068	Amphibolite
289	GSPL-Askot-289	29.746193	80.34026	Quartzite
290	GSPL-Askot-290	29.746139	80.33991	Quartzite
291	GSPL-Askot-291	29.746335	80.33889	Quartzite
292	GSPL-Askot-292	29.746642	80.33807	Quartzite
293	GSPL-Askot-293	29.746709	80.33802	Quartzite
294	GSPL-Askot-294	29.747493	80.33866	Quartzite
295	GSPL-Askot-295	29.747068	80.33991	Amphibolite
296	GSPL-Askot-296	29.747054	80.34018	Amphibolite

297	GSPL-Askot-297	29.7484	80.34302	Chlorite Schist
298	GSPL-Askot-298	29.748837	80.34295	Chlorite Schist
299	GSPL-Askot-299	29.749026	80.34297	Chlorite Schist
300	GSPL-Askot-300	29.838916	80.20194	Amphibole
301	GSPL-Askot-301	29.74912	80.34272	Amphibole
302	GSPL-Askot-302	29.749242	80.34265	Chlorite Schist
303	GSPL-Askot-303	29.74922	80.34245	Chlorite Schist
304	GSPL-Askot-304	29.749491	80.34212	Chlorite Schist
305	GSPL-Askot-305	29.750082	80.34135	Chlorite Schist
306	GSPL-Askot-306	29.750063	80.34142	Chlorite Schist
307	GSPL-Askot-307	29.750137	80.34123	Chlorite Schist
308	GSPL-Askot-308	29.750696	80.34089	Chlorite Schist
309	GSPL-Askot-309	29.751068	80.34074	Chlorite Schist
310	GSPL-Askot-310	29.751515	80.34092	Chlorite Schist
311	GSPL-Askot-311	29.751746	80.34153	Chlorite Schist
312	GSPL-Askot-312	29.751405	80.34224	Chlorite Schist
313	GSPL-Askot-313	29.750742	80.34328	Chlorite Schist
314	GSPL-Askot-314	29.750519	80.34353	Chlorite Schist
315	GSPL-Askot-315	29.748226	80.34391	Chlorite Schist
316	GSPL-Askot-316	29.74996	80.34585	Chlorite Schist
317	GSPL-Askot-317	29.749902	80.34792	Granite Gneiss
318	GSPL-Askot-318	29.773085	80.29693	Granite Gneiss

319	GSPL-Askot-319	29.773411	80.29754	Granite Gneiss
320	GSPL-Askot-320	29.773589	80.29771	Granite Gneiss
321	GSPL-Askot-321	29.773686	80.29788	Chlorite Schist
322	GSPL-Askot-322	29.773937	80.2986	Chlorite Schist
323	GSPL-Askot-323	29.774459	80.29893	Chlorite Schist
324	GSPL-Askot-324	29.774568	80.29916	Chlorite Schist
325	GSPL-Askot-325	29.774687	80.29954	Granite Gneiss
326	GSPL-Askot-326	29.774494	80.30021	Granite Gneiss
327	GSPL-Askot-327	29.774359	80.3003	Amphibolite
328	GSPL-Askot-328	29.821773	80.2118	Amphibolite
329	GSPL-Askot-329	29.822815	80.20814	Granite Gneiss
330	GSPL-Askot-330	29.813417	80.22104	Granite Gneiss
331	GSPL-Askot-331	29.813732	80.22032	Granite Gneiss
332	GSPL-Askot-332	29.815099	80.21768	Granite Gneiss
333	GSPL-Askot-333	29.824357	80.20511	Granite Gneiss
334	GSPL-Askot-334	29.829018	80.20376	Chlorite Schist
335	GSPL-Askot-335	29.816593	80.20503	Amphibolite
336	GSPL-Askot-336	29.818231	80.20525	Granite Gneiss
337	GSPL-Askot-337	29.815823	80.20461	Granite Gneiss
338	GSPL-Askot-338	29.8336	80.2084	Amphibolite
339	GSPL-Askot-339	29.833622	80.20953	Amphibolite
340	GSPL-Askot-340	29.833084	80.20983	Amphibolite

341	GSPL-Askot-341	29.833061	80.21021	Chlorite Schist
342	GSPL-Askot-342	29.833158	80.21103	Chlorite Schist
343	GSPL-Askot-343	29.834032	80.21045	Amphibolite
344	GSPL-Askot-344	29.812847	80.23469	Chlorite Schist
345	GSPL-Askot-345	29.813124	80.23458	Amphibolite
346	GSPL-Askot-346	29.812721	80.23415	Amphibolite
347	GSPL-Askot-347	29.813534	80.23332	Chlorite Schist
348	GSPL-Askot-348	29.812655	80.23479	Chlorite Schist
349	GSPL-Askot-349	29.751764	80.34126	Chlorite Schist
350	GSPL-Askot-350	29.812091	80.23917	Chlorite Schist
351	GSPL-Askot-351	29.751961	80.3411	Chlorite Schist
352	GSPL-Askot-352	29.751907	80.34085	Chlorite Schist
353	GSPL-Askot-353	29.751601	80.34037	Chlorite Schist
354	GSPL-Askot-354	29.75188	80.33935	Chlorite Schist
355	GSPL-Askot-355	29.752007	80.33901	Chlorite Schist
356	GSPL-Askot-356	29.752021	80.33906	Chlorite Schist
357	GSPL-Askot-357	29.746281	80.33646	Chlorite Schist
358	GSPL-Askot-358	29.74621	80.3368	Amphibolite
359	GSPL-Askot-359	29.746285	80.33653	Amphibolite
360	GSPL-Askot-360	29.746442	80.33652	Amphibolite
361	GSPL-Askot-361	29.746447	80.33618	Chlorite Schist
362	GSPL-Askot-362	29.755626	80.33526	Chlorite Schist
363	GSPL-Askot-363	29.755491	80.3353	Chlorite Schist

364	GSPL-Askot-364	29.75559	80.33542	Chlorite Schist
365	GSPL-Askot-365	29.755391	80.33558	Amphibolite
366	GSPL-Askot-366	29.75522	80.33626	Chlorite Schist
367	GSPL-Askot-367	29.755413	80.33602	Chlorite Schist
368	GSPL-Askot-368	29.753639	80.33632	Chlorite Schist
369	GSPL-Askot-369	29.75308	80.3368	Chlorite Schist
370	GSPL-Askot-370	29.752951	80.33699	Chlorite Schist
371	GSPL-Askot-371	29.752928	80.33724	Chlorite Schist
372	GSPL-Askot-372	29.752907	80.33721	Chlorite Schist
373	GSPL-Askot-373	29.752711	80.33717	Chlorite Schist
374	GSPL-Askot-374	29.752739	80.33727	Chlorite Schist
375	GSPL-Askot-375	29.752617	80.3372	Chlorite Schist
376	GSPL-Askot-376	29.753057	80.3379	Chlorite Schist
377	GSPL-Askot-377	29.753076	80.33788	Chlorite Schist
378	GSPL-Askot-378	29.752862	80.33744	Chlorite Schist
379	GSPL-Askot-379	29.751931	80.33892	Chlorite Schist
380	GSPL-Askot-380	29.751507	80.33907	Chlorite Schist
381	GSPL-Askot-381	29.75066	80.33886	Chlorite Schist
382	GSPL-Askot-382	29.750288	80.33855	Chlorite Schist
383	GSPL-Askot-383	29.749366	80.33809	Chlorite Schist
384	GSPL-Askot-384	29.750052	80.33781	Chlorite Schist
385	GSPL-Askot-385	29.751642	80.33751	Chlorite Schist
386	GSPL-Askot-386	29.752829	80.33672	Leucogranite

387	GSPL-Askot-387	29.75428	80.33977	Leucogranite
388	GSPL-Askot-388	29.752859	80.33436	Leucogranite
389	GSPL-Askot-389	29.754474	80.33155	Leucogranite
390	GSPL-Askot-390	29.751733	80.33495	Leucogranite
391	GSPL-Askot-391	29.751554	80.33507	Chlorite Schist
392	GSPL-Askot-392	29.751616	80.33502	Chlorite Schist
393	GSPL-Askot-393	29.751249	80.33557	Chlorite Schist
394	GSPL-Askot-394	29.751205	80.33594	Chlorite Schist
395	GSPL-Askot-395	29.750975	80.33614	Chlorite Schist
396	GSPL-Askot-396	29.750795	80.33802	Chlorite Schist
397	GSPL-Askot-397	29.750063	80.33767	Chlorite Schist
398	GSPL-Askot-398	29.749485	80.33785	Chlorite Schist
399	GSPL-Askot-399	29.748553	80.33712	Chlorite Schist
400	GSPL-Askot-400	29.748254	80.33722	Chlorite Schist
401	GSPL-Askot-401	29.748239	80.33754	Chlorite Schist
402	GSPL-Askot-402	29.748401	80.33765	Chlorite Schist
403	GSPL-Askot-403	29.746427	80.33781	Chlorite Schist
404	GSPL-Askot-404	29.748532	80.33794	Chlorite Schist
405	GSPL-Askot-405	29.748577	80.3379	Chlorite Schist
406	GSPL-Askot-406	29.751989	80.33486	Leucogranite
407	GSPL-Askot-407	29.753834	80.33393	Chlorite Schist
408	GSPL-Askot-408	29.751551	80.33363	Chlorite Schist
409	GSPL-Askot-409	29.751209	80.33457	Chlorite Schist

SI No	Location	Latitude	Longitude	Lithology
410	GSPL-Askot-410	29.750954	80.33451	Chlorite Schist
411	GSPL-Askot-411	29.750899	80.33415	Amphibolite
412	GSPL-Askot-412	29.750809	80.33389	Amphibolite
413	GSPL-Askot-413	29.75086	80.33308	Granite Gneiss
414	GSPL-Askot-414	29.748909	80.33244	Amphibolite
415	GSPL-Askot-415	29.748527	80.33227	Amphibolite
416	GSPL-Askot-416	29.748444	80.33255	Amphibolite
417	GSPL-Askot-417	29.748617	80.33308	Amphibolite
418	GSPL-Askot-418	29.748677	80.33319	Chlorite Schist
419	GSPL-Askot-419	29.748577	80.33479	Granite Gneiss
420	GSPL-Askot-420	29.749304	80.33258	Granite Gneiss
421	GSPL-Askot-421	29.749453	80.33246	Amphibolite
422	GSPL-Askot-422	29.74647	80.33624	Amphibolite
423	GSPL-Askot-423	29.74733	80.33045	Chlorite Schist
424	GSPL-Askot-424	29.747354	80.33036	Chlorite Schist
425	GSPL-Askot-425	29.747775	80.33006	Chlorite Schist
426	GSPL-Askot-426	29.746586	80.32968	Chlorite Schist
427	GSPL-Askot-427	29.745868	80.32801	Chlorite Schist
428	GSPL-Askot-428	29.754403	80.33677	Chlorite Schist
429	GSPL-Askot-429	29.754397	80.3369	Chlorite Schist
430	GSPL-Askot-430	29.754397	80.3369	Chlorite Schist
431	GSPL-Askot-431	29.754665	80.33642	Chlorite Schist

SI No	Location	Latitude	Longitude	Lithology
432	GSPL-Askot-432	29.754436	80.33661	Chlorite Schist
433	GSPL-Askot-433	29.754357	80.33689	Chlorite Schist
434	GSPL-Askot-434	29.753862	80.33712	Chlorite Schist
435	GSPL-Askot-435	29.753709	80.33734	Chlorite Schist
436	GSPL-Askot-436	29.753524	80.33733	Chlorite Schist
437	GSPL-Askot-437	29.753086	80.3379	Chlorite Schist
438	GSPL-Askot-438	29.753152	80.33809	Chlorite Schist
439	GSPL-Askot-439	29.753302	80.33826	Chlorite Schist
440	GSPL-Askot-440	29.753372	80.3384	Chlorite Schist
441	GSPL-Askot-441	29.752708	80.33871	Chlorite Schist
442	GSPL-Askot-442	29.75295	80.33896	Chlorite Schist
443	GSPL-Askot-443	29.753397	80.33924	Chlorite Schist
444	GSPL-Askot-444	29.753484	80.33953	Leucogranite
445	GSPL-Askot-445	29.753647	80.33298	Leucogranite
446	GSPL-Askot-446	29.753655	80.33297	Leucogranite
447	GSPL-Askot-447	29.753803	80.3326	Leucogranite
448	GSPL-Askot-448	29.75381	80.33254	Leucogranite
449	GSPL-Askot-449	29.753912	80.3322	Leucogranite
450	GSPL-Askot-450	29.753942	80.33225	Leucogranite
451	GSPL-Askot-451	29.754377	80.33198	Chlorite Schist
452	GSPL-Askot-452	29.75584	80.33471	Amphibolite
453	GSPL-Askot-453	29.753672	80.34452	Granite Gneiss

SI No	Location	Latitude	Longitude	Lithology
454	GSPL-Askot-454	29.762442	80.31237	Amphibolite
455	GSPL-Askot-455	29.753668	80.34455	Amphibolite
456	GSPL-Askot-456	29.754011	80.34459	Chlorite Schist
457	GSPL-Askot-457	29.742247	80.32538	Chlorite Schist
458	GSPL-Askot-458	29.743729	80.32638	Granite Gneiss
459	GSPL-Askot-459	29.742826	80.32634	Granite Gneiss
460	GSPL-Askot-460	29.742069	80.33376	Granite Gneiss
461	GSPL-Askot-461	29.74184	80.33357	Chlorite Schist
462	GSPL-Askot-462	29.830824	80.22342	Chlorite Schist
463	GSPL-Askot-463	29.830114	80.22502	Chlorite Schist
464	GSPL-Askot-464	29.829705	80.2269	Chlorite Schist
465	GSPL-Askot-465	29.829493	80.22818	Amphibolite
466	GSPL-Askot-466	29.829684	80.22896	Quartzite
467	GSPL-Askot-467	29.830278	80.22866	Amphibolite
468	GSPL-Askot-468	29.830862	80.2278	Quartzite
469	GSPL-Askot-469	29.831038	80.2277	Chlorite schsit
470	GSPL-Askot-470	29.830423	80.22739	Chlorite schsit
471	GSPL-Askot-471	29.830209	80.22594	Chlorite schsit
472	GSPL-Askot-472	29.83119	80.22297	Amphibolite
473	GSPL-Askot-473	29.836541	80.20004	Quartzite
474	GSPL-Askot-474	29.836654	80.20008	Chlorite Schist
475	GSPL-Askot-475	29.836221	80.20025	Amphibolite

SI No	Location	Latitude	Longitude	Lithology
476	GSPL-Askot-476	29.834008	80.20011	Amphibolite
477	GSPL-Askot-477	29.833562	80.20031	Granite Gneiss
478	GSPL-Askot-478	29.828785	80.19836	Granite Gneiss
479	GSPL-Askot-479	29.828766	80.19836	Granite Gneiss
480	GSPL-Askot-480	29.849349	80.15559	Granite Gneiss
481	GSPL-Askot-481	29.849348	80.1556	Granite Gneiss
482	GSPL-Askot-482	29.849327	80.15557	Granite Gneiss
483	GSPL-Askot-483	29.849395	80.15556	Granite Gneiss
484	GSPL-Askot-484	29.849341	80.15553	Granite Gneiss
485	GSPL-Askot-485	29.849284	80.15562	Granite Gneiss
486	GSPL-Askot-486	29.848511	80.15552	Granite Gneiss
487	GSPL-Askot-487	29.850446	80.22827	Amphibolite
488	GSPL-Askot-488	29.830909	80.22643	Amphibolite
489	GSPL-Askot-489	29.830682	80.22612	Amphibolite
490	GSPL-Askot-490	29.831006	80.22589	Quartzite
491	GSPL-Askot-491	29.830938	80.22596	Quartzite
492	GSPL-Askot-492	29.814527	80.25123	Quartzite
493	GSPL-Askot-493	29.816553	80.2632	Quartzite
494	GSPL-Askot-494	29.75156	80.3381	Amphibolite
495	GSPL-Askot-495	29.751808	80.34044	Amphibolite
496	GSPL-Askot-496	29.796783	80.27436	Quartzite
497	GSPL-Askot-497	29.734121	80.31629	Amphibolite

SI No	Location	Latitude	Longitude	Lithology
498	GSPL-Askot-498	29.735061	80.31734	Amphibolite
499	GSPL-Askot-499	29.73515	80.31639	Amphibolite
500	GSPL-Askot-500	29.734478	80.3159	Amphibolite
501	GSPL-Askot-501	29.734469	80.31583	Amphibolite
502	GSPL-Askot-502	29.734561	80.31597	Amphibolite
503	GSPL-Askot-503	29.734673	80.31667	Amphibolite
504	GSPL-Askot-504	29.733639	80.31628	Amphibolite
505	GSPL-Askot-505	29.733478	80.31645	Chlorite Schist
506	GSPL-Askot-506	29.734121	80.31709	Chlorite Schist
507	GSPL-Askot-507	29.733951	80.31693	Amphibolite
508	GSPL-Askot-508	29.733302	80.31739	Amphibolite
509	GSPL-Askot-509	29.733042	80.31751	Amphibolite
510	GSPL-Askot-510	29.732408	80.31769	Chlorite Schist
511	GSPL-Askot-511	29.796657	80.27408	Chlorite Schist
512	GSPL-Askot-512	29.797482	80.27264	Chlorite Schist
513	GSPL-Askot-513	29.796265	80.27325	Chlorite Schist
514	GSPL-Askot-514	29.796001	80.27286	Chlorite Schist
515	GSPL-Askot-515	29.79577	80.27292	Chlorite Schist
516	GSPL-Askot-516	29.795618	80.27286	Chlorite Schist

517	GSPL-Askot-517	29.795344	80.27262	Chlorite Schist
518	GSPL-Askot-518	29.795145	80.27269	Amphibolite
519	GSPL-Askot-519	29.795135	80.27311	Chlorite Schist
520	GSPL-Askot-520	29.794961	80.27301	Chlorite Schist
521	GSPL-Askot-521	29.794943	80.27315	Chlorite Schist
522	GSPL-Askot-522	29.794857	80.27342	Chlorite Schist
523	GSPL-Askot-523	29.795134	80.27315	Chlorite Schist
524	GSPL-Askot-524	29.795716	80.2736	Chlorite Schist
525	GSPL-Askot-525	29.795995	80.27339	Chlorite Schist
526	GSPL-Askot-526	29.796362	80.27379	Chlorite Schist
527	GSPL-Askot-527	29.796419	80.27426	Amphibolite
528	GSPL-Askot-528	29.797449	80.27699	Chlorite Schist
529	GSPL-Askot-529	29.817126	80.25465	Chlorite Schist
530	GSPL-Askot-530	29.817025	80.25459	Chlorite Schist
531	GSPL-Askot-531	29.816982	80.25452	Chlorite Schist
532	GSPL-Askot-532	29.817109	80.25491	Chlorite Schist
533	GSPL-Askot-533	29.816037	80.26367	Chlorite Schist
534	GSPL-Askot-534	29.817592	80.25714	Amphibolite
535	GSPL-Askot-535	29.799229	80.27538	Amphibolite
536	GSPL-Askot-536	29.799154	80.27516	Amphibolite
537	GSPL-Askot-537	29.799299	80.27548	Chlorite Schist
538	GSPL-Askot-538	29.799055	80.27519	Amphibolite

539	GSPL-Askot-539	29.799055	80.27519	Amphibolite
540	GSPL-Askot-540	29.816895	80.26327	Amphibolite
541	GSPL-Askot-541	29.816944	80.26327	Granite Gneiss
542	GSPL-Askot-542	29.756099	80.33461	Granite Gneiss
543	GSPL-Askot-543	29.755577	80.3351	Granite Gneiss
544	GSPL-Askot-544	29.755455	80.33529	Granite Gneiss
545	GSPL-Askot-545	29.755976	80.3358	Granite Gneiss
546	GSPL-Askot-546	29.755465	80.3356	Granite Gneiss
547	GSPL-Askot-547	29.756052	80.33868	Granite Gneiss
548	GSPL-Askot-548	29.756376	80.33616	Granite Gneiss
549	GSPL-Askot-549	29.755974	80.33561	Granite Gneiss
550	GSPL-Askot-550	29.756014	80.33565	Granite Gneiss
551	GSPL-Askot-551	29.756335	80.33606	Chlorite Schist
552	GSPL-Askot-552	29.756375	80.33692	Chlorite Schist
553	GSPL-Askot-553	29.756123	80.33703	Granite Gneiss
554	GSPL-Askot-554	29.755954	80.3368	Granite Gneiss
555	GSPL-Askot-555	29.755501	80.33611	Chlorite Schist
556	GSPL-Askot-556	29.755455	80.33589	Chlorite Schist
557	GSPL-Askot-557	29.755284	80.33594	Chlorite Schist
558	GSPL-Askot-558	29.754825	80.33571	Chlorite Schist
559	GSPL-Askot-559	29.754977	80.33588	Chlorite Schist
560	GSPL-Askot-560	29.755184	80.33605	Granite Gneiss

561	GSPL-Askot-561	29.75528	80.33618	Granite Gneiss
562	GSPL-Askot-562	29.75529	80.33629	Chlorite Schist
563	GSPL-Askot-563	29.755462	80.3368	Chlorite Schist
564	GSPL-Askot-564	29.755224	80.33658	Granite Gneiss
565	GSPL-Askot-565	29.754689	80.33606	Chlorite Schist
566	GSPL-Askot-566	29.75478	80.33585	Chlorite Schist
567	GSPL-Askot-567	29.754382	80.33485	Chlorite Schist
568	GSPL-Askot-568	29.754077	80.33663	Chlorite Schist
569	GSPL-Askot-569	29.754239	80.33678	Granite Gneiss
570	GSPL-Askot-570	29.754309	80.33679	Granite Gneiss
571	GSPL-Askot-571	29.753945	80.33678	Granite Gneiss
572	GSPL-Askot-572	29.754105	80.33729	Granite Gneiss
573	GSPL-Askot-573	29.753815	80.3372	Granite Gneiss
574	GSPL-Askot-574	29.751734	80.34077	Granite Gneiss
575	GSPL-Askot-575	29.751522	80.34057	Chlorite Schist
576	GSPL-Askot-576	29.753866	80.35051	Chlorite Schist
577	GSPL-Askot-577	29.753039	80.348	Quartzite
578	GSPL-Askot-578	29.750439	80.34858	Quartzite
579	GSPL-Askot-579	29.750599	80.34629	Quartzite
580	GSPL-Askot-580	29.751848	80.34513	Quartzite

581	GSPL-Askot-581	29.758337	80.34826	Quartzite
582	GSPL-Askot-582	29.758586	80.34852	Quartzite
583	GSPL-Askot-583	29.758645	80.34524	Quartzite
584	GSPL-Askot-584	29.759849	80.3425	Quartzite
585	GSPL-Askot-585	29.757818	80.34079	Quartzite
586	GSPL-Askot-586	29.758745	80.33715	Quartzite
587	GSPL-Askot-587	29.762552	80.33349	Quartzite
588	GSPL-Askot-588	29.762552	80.33349	Quartzite
589	GSPL-Askot-589	29.764664	80.32278	Quartzite
590	GSPL-Askot-590	29.761983	80.3212	Chlorite Schist
591	GSPL-Askot-591	29.760167	80.31979	Granite Gneiss
592	GSPL-Askot-592	29.76097	80.31865	Granite Gneiss
593	GSPL-Askot-593	29.762412	80.31272	Granite Gneiss
594	GSPL-Askot-594	29.760423	80.31282	Granite Gneiss
595	GSPL-Askot-595	29.757136	80.30896	Granite Gneiss
596	GSPL-Askot-596	29.757911	80.2993	Granite Gneiss
597	GSPL-Askot-597	29.758187	80.29166	Granite Gneiss
598	GSPL-Askot-598	29.759454	80.28725	Granite Gneiss
599	GSPL-Askot-599	29.763926	80.28597	Granite Gneiss
600	GSPL-Askot-600	29.75967	80.28462	Granite Gneiss
601	GSPL-Askot-601	29.756161	80.28354	Granite Gneiss
602	GSPL-Askot-602	29.731673	80.27409	Granite Gneiss

603	GSPL-Askot-603	29.726889	80.27552	Chlorite Schist
604	GSPL-Askot-604	29.676765	80.27172	Quartzite
605	GSPL-Askot-605	29.672675	80.26613	Quartzite
606	GSPL-Askot-606	29.67433	80.27037	Quartzite
607	GSPL-Askot-607	29.678674	80.27132	Quartzite
608	GSPL-Askot-608	29.677203	80.27184	Chlorite Schist
609	GSPL-Askot-609	29.680114	80.27267	Chlorite Schist
610	GSPL-Askot-610	29.682568	80.27189	Chlorite Schist
611	GSPL-Askot-611	29.684599	80.27274	Chlorite Schist
612	GSPL-Askot-612	29.687195	80.27048	Chlorite Schist
613	GSPL-Askot-613	29.691309	80.26783	Chlorite Schist
614	GSPL-Askot-614	29.694756	80.2672	Chlorite Schist
615	GSPL-Askot-615	29.702121	80.25984	Chlorite Schist
616	GSPL-Askot-616	29.703647	80.25956	Quartzite
617	GSPL-Askot-617	29.71054	80.26246	Quartzite
618	GSPL-Askot-618	29.716573	80.27335	Quartzite
619	GSPL-Askot-619	29.755022	80.34618	Quartzite
620	GSPL-Askot-620	29.850628	80.23944	Quartzite
621	GSPL-Askot-621	29.848155	80.23654	Quartzite
622	GSPL-Askot-622	29.846779	80.23757	Quartzite
623	GSPL-Askot-623	29.845105	80.23777	Phyllite

624	GSPL-Askot-624	29.844587	80.23791	Phyllite
625	GSPL-Askot-625	29.843071	80.23974	Phyllite
626	GSPL-Askot-626	29.84025	80.24339	Phyllite
627	GSPL-Askot-627	29.838036	80.24537	Phyllite
628	GSPL-Askot-628	29.835347	80.24716	Phyllite
629	GSPL-Askot-629	29.830856	80.24612	Phyllite
630	GSPL-Askot-630	29.828465	80.2462	Phyllite
631	GSPL-Askot-631	29.826851	80.2464	Phyllite
632	GSPL-Askot-632	29.755805	80.33478	Phyllite
633	GSPL-Askot-633	29.756467	80.3361	Phyllite
634	GSPL-Askot-634	29.756478	80.3361	Phyllite
635	GSPL-Askot-635	29.75656	80.33745	Phyllite
636	GSPL-Askot-636	29.757587	80.33797	Chlorite Schist
637	GSPL-Askot-637	29.825975	80.24661	Chlorite Schist
638	GSPL-Askot-638	29.818827	80.24808	Quartzite
639	GSPL-Askot-639	29.818818	80.24751	Quartzite
640	GSPL-Askot-640	29.813916	80.24545	Quartzite
641	GSPL-Askot-641	29.81105	80.24141	Amphibolite
642	GSPL-Askot-642	29.809936	80.2417	Chlorite Schist
643	GSPL-Askot-643	29.787145	80.22685	Amphibolite
644	GSPL-Askot-644	29.78654	80.22814	Granite gniess

645	GSPL-Askot-645	29.790288	80.22943	Granite Gneiss
646	GSPL-Askot-646	29.792042	80.23098	Granite Gneiss
647	GSPL-Askot-647	29.793146	80.23547	Granite Gneiss
648	GSPL-Askot-648	29.794642	80.23587	Granite Gneiss
649	GSPL-Askot-649	29.796859	80.23621	Granite Gneiss
650	GSPL-Askot-650	29.798416	80.23927	Granite Gneiss
651	GSPL-Askot-651	29.798214	80.24104	Granite Gneiss
652	GSPL-Askot-652	29.799862	80.2461	Granite Gneiss
653	GSPL-Askot-653	29.799165	80.249	Granite Gneiss
654	GSPL-Askot-654	29.764358	80.33069	Granite Gneiss
655	GSPL-Askot-655	29.752579	80.33634	Quartzite
656	GSPL-Askot-656	29.752242	80.33737	Amphibolite
657	GSPL-Askot-657	29.752963	80.33775	Chlorite Schist
658	GSPL-Askot-658	29.75304	80.33802	Quartzite
659	GSPL-Askot-659	29.752814	80.3375	Quartzite
660	GSPL-Askot-660	29.735081	80.31732	Quartzite
661	GSPL-Askot-661	29.735001	80.31731	Quartzite
662	GSPL-Askot-662	29.73437	80.317	Chlorite Schist
663	GSPL-Askot-663	29.734037	80.31638	Amphibolite
664	GSPL-Askot-664	29.733849	80.31643	Amphibolite
665	GSPL-Askot-665	29.732517	80.31757	Amphibolite

666	GSPL-Askot-666	29.733064	80.17592	Amphibolite
667	GSPL-Askot-667	29.733529	80.31785	Amphibolite
668	GSPL-Askot-668	29.733155	80.31845	Amphibolite
669	GSPL-Askot-669	29.732121	80.32083	Amphibolite
670	GSPL-Askot-670	29.732464	80.32137	Amphibolite
671	GSPL-Askot-671	29.733487	80.32174	Amphibolite
672	GSPL-Askot-672	29.734386	80.32161	Amphibolite
673	GSPL-Askot-673	29.755138	80.33588	Amphibolite
674	GSPL-Askot-674	29.750901	80.34224	Chlorite Schist
675	GSPL-Askot-675	29.758556	80.3326	Chlorite Schist
676	GSPL-Askot-676	29.758533	80.33253	Chlorite Schist
677	GSPL-Askot-677	29.758491	80.33232	Chlorite Schist
678	GSPL-Askot-678	29.758497	80.33236	Granite Gneiss
679	GSPL-Askot-679	29.758526	80.33241	Granite Gneiss
680	GSPL-Askot-680	29.75943	80.33255	Chlorite Schist
681	GSPL-Askot-681	29.755714	80.33473	Chlorite Schist

Annexure II_Structural Data of Field Observation Points

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
1	A01	29.754279	80.334535	Leucogranite	140	70	SW
2	A02	29.754723	80.336434	Chlorite Schist	150	42	SW
3	A03	29.754426	80.33682	Chlorite Schist	140	90	SW
4	A04	29.75553	80.335272	Chlorite Schist	145	44	NE
5	A05	29.75524	80.33569	Chlorite Schist	120	90	0
6	A06	29.755238	80.335816	Chlorite Schist	140	78	NE
7	A07	29.755688	80.336454	Chlorite Schist	140	68	NE
8	A08	29.755789	80.336566	Chlorite Schist	170	30	E
9	A09	29.755882	80.337362	Chlorite Schist	170	50	E
10	A10	29.756573	80.337485	Chlorite Schist	170	65	E
11	A11	29.815171	80.247045	Quartzite	125	78	SW
12	A12	29.821888	80.246566	Quartzite	100	62	S
13	A13	29.828019	80.246239	Phyllite	110	70	S
14	A14	29.830021	80.24647	Phyllite	110	70	S
15	A15	29.833238	80.245388	Phyllite	120	80	SW
16	A16	29.832497	80.245939	Phyllite	120	80	SW
17	A17	29.827466	80.246356	Phyllite	125	78	SW
18	A18	29.818359	80.24743	Quartzite	125	78	SW
19	A19	29.813947	80.24556	Quartzite	140	50	SW
20	A20	29.812942	80.244309	Quartzite	140	50	SW
21	A21	29.810191	80.24149	Amphibolite	110	50	S
22	A22	29.808823	80.242415	Amphibolite	110	50	S
23	A23	29.810751	80.24735	Quartzite	110	60	SW
24	A24	29.808753	80.245004	Chlorite Schist	110	60	SW

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
25	A25	29.755487	80.335925	Chlorite Schist	140	90	0
26	A26	29.755272	80.336437	Chlorite Schist	140	90	0
27	A27	29.755272	80.336437	Chlorite Schist	130	90	0
28	A28	29.752667	80.333078	Chlorite Schist	20	30	E
29	A29	29.751752	80.332495	Chlorite Schist	30	46	NW
30	A30	29.751459	80.332587	Chlorite Schist	40	50	NW
31	A31	29.751261	80.332535	Chlorite Schist	65	70	NW
32	A32	29.750173	80.331847	Chlorite Schist	80	74	N
33	A33	29.749358	80.33224	Chlorite Schist	90	52	N
34	A34	29.74898	80.332416	Chlorite Schist	80	50	N
35	A35	29.748671	80.332534	Chlorite Schist	80	50	N
36	A36	29.748486	80.332454	Chlorite Schist	70	65	N
37	A37	29.748486	80.332454	Chlorite Schist	70	65	N
38	A38	29.783398	80.273239	Granite Gneiss	70	65	N
39	A39	29.795233	80.261719	Granite Gneiss	70	65	N
40	A40	29.754035	80.342317	Amphibolite	60	70	SE
41	A41	29.754045	80.342327	Amphibolite	60	70	SE
42	A42	29.753267	80.342569	Amphibolite	60	70	SE
43	A43	29.753101	80.342026	Amphibolite	60	70	SE
44	A44	29.75288	80.341921	Amphibolite	60	70	SE
45	A45	29.752611	80.341215	Amphibolite	60	70	SE
46	A46	29.752691	80.339805	Amphibolite	50	48	SE
47	A47	29.754045	80.342327	Chlorite Schist	50	48	SE
48	A48	29.752692	80.338773	Chlorite Schist	50	48	SE
49	A49	29.753703	80.339348	Chlorite Schist	50	48	SE
50	A50	29.754105	80.339827	Chlorite Schist	50	48	SE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
51	A51	29.754533	80.340339	Amphibolite	60	70	SE
52	A52	29.764346	80.330642	Amphibolite	130	50	NE
53	A53	29.762681	80.332543	Amphibolite	155	40	NE
54	A54	29.762863	80.333231	Amphibolite	130	60	NE
55	A55	29.762462	80.333781	Amphibolite	160	60	NE
56	A56	29.758911	80.337129	Chlorite Schist	0	28	E
57	A57	29.759536	80.340739	Quartzite	100	80	ENE
58	A58	29.758844	80.34247	Quartzite	155	40	NE
59	A59	29.758241	80.343958	Quartzite	110	60	NE
60	A60	29.756666	80.345027	Quartzite	100	42	S
61	A61	29.75899	80.328331	Quartzite	160	40	SW
62	A62	29.755673	80.328678	Amphibolite	150	50	SW
63	A63	29.754729	80.329005	Amphibolite	100	60	SW
64	A64	29.764789	80.325662	Chlorite Schist	120	16	NE
65	A65	29.764248	80.325501	Chlorite Schist	120	16	NE
66	A66	29.763901	80.326147	Chlorite Schist	100	40	NE
67	A67	29.763933	80.326502	Chlorite Schist	100	64	NE
68	A68	29.763267	80.326148	Chlorite Schist	100	64	NE
69	A69	29.762745	80.326046	Chlorite Schist	100	64	NE
70	A70	29.762163	80.327494	Chlorite Schist	90	64	NE
71	A71	29.761699	80.328172	Chlorite Schist	90	64	NE
72	A72	29.761263	80.329191	Chlorite Schist	90	64	NE
73	A73	29.75482	80.345759	Chlorite Schist	60	30	SE
74	A74	29.761377	80.329766	Chlorite Schist	50	40	SE
75	A75	29.761525	80.330454	Chlorite Schist	130	60	NE
76	A76	29.761525	80.330454	Chlorite Schist	130	60	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
77	A77	29.763183	80.329571	Chlorite Schist	130	60	NE
78	A78	29.748453	80.332312	Chlorite Schist	110	20	NE
79	A79	29.747852	80.331929	Chlorite Schist	90	30	N
80	A80	29.747803	80.331903	Chlorite Schist	140	20	NE
81	A81	29.746857	80.331555	Chlorite Schist	70	57	N
82	A82	29.747231	80.331192	Chlorite Schist	80	50	N
83	A83	29.746635	80.33147	Chlorite Schist	80	50	N
84	A84	29.746799	80.33187	Chlorite Schist	90	46	N
85	A85	29.745706	80.335025	Quartzite	80	54	N
86	A86	29.745122	80.335155	Quartzite	80	54	N
87	A87	29.757158	80.340043	Quartzite	80	54	N
88	A88	29.757186	80.340287	Chlorite Schist	140	70	NE
89	A89	29.757337	80.340445	Quartzite	150	45	NE
90	A90	29.756946	80.34137	Quartzite	110	58	NE
91	A91	29.758564	80.348664	Quartzite	110	58	NE
92	A92	29.73389	80.316504	Amphibolite	45	75	NW
93	A93	29.735118	80.317432	Amphibolite	45	55	NW
94	A94	29.735471	80.330045	Quartzite	48	32	NW
95	A95	29.732384	80.329252	Quartzite	82	83	N
96	A96	29.732201	80.327632	Quartzite	82	83	N
97	A97	29.732877	80.321627	Amphibolite	82	83	N
98	A98	29.736773	80.335796	Quartzite	110	28	NE
99	A99	29.735953	80.332962	Quartzite	70	17	N
100	A100	29.733198	80.325049	Amphibolite	70	18	N
101	A101	29.733265	80.321504	Amphibolite	70	19	N
102	A102	29.729996	80.320157	Amphibolite	50	42	NW

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
103	A103	29.735929	80.332929	Quartzite	77	30	N
104	A104	29.736539	80.333309	Quartzite	77	30	N
105	A105	29.764293	80.327098	Quartzite	120	60	SW
106	A106	29.764819	80.327941	Quartzite	110	40	SW
107	A107	29.764956	80.328153	Chlorite Schist	110	40	SW
108	A108	29.760584	80.334483	Chlorite Schist	140	40	NE
109	A109	29.738527	80.328785	Chlorite Schist	90	20	N
110	A110	29.754451	80.338129	Chlorite Schist	80	40	N
111	A111	29.739212	80.327136	Amphibolite	70	40	N
112	A112	29.739793	80.326574	Amphibolite	85	85	N
113	A113	29.740102	80.326506	Chlorite Schist	75	39	N
114	A114	29.772656	80.311954	Chlorite Schist	110	70	NE
115	A115	29.77295	80.312192	Chlorite Schist	120	45	NE
116	A116	29.775029	80.3132	Chlorite Schist	120	55	NE
117	A117	29.774358	80.313082	Chlorite Schist	120	55	NE
118	A118	29.7734	80.312567	Amphibolite	120	45	NE
119	A119	29.7672	80.320081	Chlorite Schist	140	62	SW
120	A120	29.764631	80.330414	Amphibolite	110	80	NE
121	A121	29.763803	80.33713	Chlorite Schist	140	72	SW
122	A122	29.763632	80.337721	Amphibolite	140	56	SW
123	A123	29.76369	80.338259	Amphibolite	140	56	SW
124	A124	29.763509	80.339548	Chlorite Schist	148	68	SW
125	A125	29.763415	80.339886	Chlorite Schist	155	68	SW
126	A126	29.765886	80.342386	Chlorite Schist	140	86	SW
127	A127	29.765866	80.341378	Chlorite Schist	150	65	SW
128	A128	29.765571	80.341159	Chlorite Schist	135	65	SW

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
129	A129	29.765373	80.340989	Chlorite Schist	135	65	SW
130	A130	29.802756	80.253392	Chlorite Schist	110	9	SW
131	A131	29.803333	80.254025	Chlorite Schist	100	20	SW
132	A132	29.803333	80.254025	Chlorite Schist	100	20	SW
133	A133	29.803232	80.254263	Chlorite Schist	100	20	SW
134	A134	29.803061	80.254508	Chlorite Schist	100	20	SW
135	A135	29.801904	80.255412	Chlorite Schist	140	50	SW
136	A136	29.801887	80.260041	Amphibolite	140	50	SW
137	A137	29.785673	80.272716	Granite Gneiss	200	45	NW
138	A138	29.786074	80.273474	Granite Gneiss	200	45	NW
139	A139	29.784241	80.273272	Granite Gneiss	200	45	NW
140	A140	29.791414	80.271606	Chlorite Schist	120	50	NE
141	A141	29.786921	80.272415	Chlorite Schist	105	37	NE
142	A142	29.787628	80.273825	Chlorite Schist	140	29	NE
143	A143	29.787276	80.275351	Chlorite Schist	140	29	NE
144	A144	29.786828	80.275083	Granite Gneiss	120	70	NE
145	A145	29.786877	80.275845	Granite Gneiss	125	70	NE
146	A146	29.785742	80.278003	Granite Gneiss	140	40	NE
147	A147	29.785919	80.27943	Granite Gneiss	125	70	NE
148	A148	29.78594	80.277224	Granite Gneiss	125	70	NE
149	A149	29.787166	80.279601	Granite Gneiss	125	30	NE
150	A150	29.787094	80.279811	Granite Gneiss	125	30	NE
151	A151	29.787055	80.279811	Chlorite Schist	125	30	NE
152	A152	29.786849	80.281497	Amphibolite	125	30	NE
153	A153	29.786411	80.281868	Chlorite Schist	110	59	NE
154	A154	29.785558	80.28133	Chlorite Schist	110	59	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
155	A155	29.78551	80.281275	Chlorite Schist	138	50	NE
156	A156	29.784742	80.280591	Chlorite Schist	138	50	NE
157	A157	29.784796	80.281889	Chlorite Schist	138	50	NE
158	A158	29.784553	80.28293	Chlorite Schist	125	62	NE
159	A159	29.78484	80.283395	Chlorite Schist	125	55	NE
160	A160	29.785353	80.282955	Chlorite Schist	125	55	NE
161	A161	29.78592	80.282275	Chlorite Schist	125	55	NE
162	A162	29.786482	80.281767	Chlorite Schist	125	55	NE
163	A163	29.809859	80.227151	Granite Gneiss	100	29	NE
164	A164	29.810062	80.237915	Granite Gneiss	100	18	NE
165	A165	29.810262	80.238265	Granite Gneiss	100	18	NE
166	A166	29.791719	80.273884	Granite Gneiss	140	49	NE
167	A167	29.792366	80.274646	Granite Gneiss	115	58	NE
168	A168	29.792207	80.276489	Chlorite Schist	115	58	NE
169	A169	29.791947	80.276059	Granite Gneiss	115	58	NE
170	A170	29.78974	80.275705	Granite Gneiss	110	22	NE
171	A171	29.789484	80.275664	Granite Gneiss	110	22	NE
172	A172	29.789404	80.277324	Granite Gneiss	110	22	NE
173	A173	29.788901	80.278414	Chlorite Schist	110	22	NE
174	A174	29.7872232	80.272992	Chlorite Schist	110	22	NE
175	A175	29.795843	80.266227	Chlorite Schist	129	38	NE
176	A176	29.796281	80.266328	Chlorite Schist	129	38	NE
177	A177	29.797445	80.267332	Quartzite	124	54	NE
178	A178	29.797736	80.267499	Quartzite	124	54	NE
179	A179	29.798184	80.268538	Quartzite	130	40	NE
180	A180	29.797566	80.273486	Quartzite	130	40	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
181	A181	29.799908	80.273179	Quartzite	130	40	NE
182	A182	29.798675	80.270218	Quartzite	107	58	NNE
183	A183	29.811693	80.239958	Chlorite Schist	128	55	NE
184	A184	29.812225	80.240585	Chlorite Schist	110	75	NE
185	A185	29.813058	80.241953	Amphibolite	110	75	NE
186	A186	29.813077	80.241472	Chlorite Schist	135	72	NE
187	A187	29.81316	80.241657	Amphibolite	135	72	NE
188	A188	29.813838	80.239688	Chlorite Schist	132	82	NE
189	A189	29.814095	80.240315	Chlorite Schist	132	82	NE
190	A190	29.814028	80.24014	Chlorite Schist	135	77	NE
191	A191	29.815072	80.242444	Chlorite Schist	147	82	NE
192	A192	29.811239	80.239963	Chlorite Schist	147	82	NE
193	A193	29.810904	80.240281	Chlorite Schist	147	82	NE
194	A194	29.808651	80.240654	Chlorite Schist	130	58	NE
195	A195	29.808699	80.241536	Chlorite Schist	130	58	NE
196	A196	29.810889	80.241331	Chlorite Schist	97	49	S
197	A197	29.810889	80.241331	Chlorite Schist	97	57	S
198	A198	29.812776	80.228602	Chlorite Schist	150	44	NE
199	A199	29.8116	80.228352	Chlorite Schist	150	35	NE
200	A200	29.811299	80.228709	Chlorite Schist	155	59	NE
201	A201	29.809884	80.230045	Granite Gneiss	155	59	NE
202	A202	29.810153	80.230777	Granite Gneiss	130	35	NE
203	A203	29.808015	80.243251	Chlorite Schist	120	79	NE
204	A204	29.812152	80.236889	Chlorite Schist	110	30	NE
205	A205	29.811915	80.236375	Chlorite Schist	110	30	NE
206	A206	29.811915	80.236375	Chlorite Schist	110	30	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
207	A207	29.812397	80.235242	Chlorite Schist	150	60	NE
208	A208	29.812671	80.23354	Amphibolite	150	60	NE
209	A209	29.812671	80.23354	Quartzite	150	60	NE
210	A210	29.813248	80.232883	Chlorite Schist	150	60	NE
211	A211	29.813066	80.234592	Chlorite Schist	150	60	NE
212	A212	29.812807	80.234686	Chlorite Schist	150	60	NE
213	A213	29.816788	80.227919	Chlorite Schist	130	79	NE
214	A214	29.822203	80.226349	Chlorite Schist	122	61	NE
215	A215	29.819733	80.235402	Chlorite Schist	115	60	NE
216	A216	29.81942	80.236846	Amphibolite	115	60	NE
217	A217	29.749441	80.332966	Chlorite Schist	80	28	N
218	A218	29.810674	80.246098	Chlorite Schist	126	85	NE
219	A219	29.810834	80.246069	Amphibolite	126	85	NE
220	A220	29.810826	80.246686	Amphibolite	126	85	NE
221	A221	29.81089	80.246905	Chlorite Schist	128	72	NE
222	A222	29.751827	80.333333	Chlorite Schist	71	31	NW
223	A223	29.7515	80.333364	Chlorite Schist	71	31	NW
224	A224	29.748652	80.333566	Chlorite Schist	71	31	NW
225	A225	29.751209	80.334109	Chlorite Schist	71	31	NW
226	A226	29.751062	80.334304	Chlorite Schist	61	44	NNW
227	A227	29.75111	80.334726	Chlorite Schist	61	44	NNW
228	A228	29.750972	80.335319	Chlorite Schist	61	44	NNW
229	A229	29.750471	80.33517	Chlorite Schist	62	31	NNW
230	A230	29.750428	80.334354	Chlorite Schist	62	31	NNW
231	A231	29.750551	80.334731	Chlorite Schist	62	31	NNW
232	A232	29.752524	80.333385	Leucogranite	55	38	NW

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
233	A233	29.748598	80.333831	Chlorite Schist	71	31	NW
234	A234	29.749089	80.334556	Chlorite Schist	58	65	NW
235	A235	29.749223	80.334968	Chlorite Schist	58	65	NW
236	A236	29.748542	80.333145	Chlorite Schist	62	45	NW
237	A237	29.74814	80.343231	Chlorite Schist	149	47	NE
238	A238	29.747694	80.34337	Chlorite Schist	130	54	NE
239	A239	29.747147	80.342647	Chlorite Schist	80	43	N
240	A240	29.747038	80.342452	Chlorite Schist	80	43	N
241	A241	29.74691	80.341947	Chlorite Schist	120	83	NE
242	A242	29.746712	80.341638	Chlorite Schist	100	47	NE
243	A243	29.746812	80.340718	Amphibolite	97	43	N
244	A244	29.746397	80.341014	Amphibolite	67	73	NNW
245	A245	29.746274	80.340589	Amphibolite	90	33	N
246	A246	29.746293	80.340702	Amphibolite	107	18	NE
247	A247	29.74628	80.340678	Amphibolite	90	33	N
248	A248	29.746193	80.340264	Quartzite	105	33	N
249	A249	29.746335	80.338887	Quartzite	105	33	N
250	A250	29.746709	80.338016	Quartzite	106	57	S
251	A251	29.747493	80.338655	Chlorite Schist	105	59	S
252	A252	29.747054	80.340176	Amphibolite	170	29	E
253	A253	29.7484	80.343015	Chlorite Schist	120	42	NE
254	A254	29.748837	80.342951	Chlorite Schist	120	42	NE
255	A255	29.749026	80.342967	Chlorite Schist	80	42	N
256	A256	29.838916	80.201938	Chlorite Schist	150	37	SW
257	A257	29.749242	80.342648	Chlorite Schist	82	51	E
258	A258	29.74922	80.342448	Chlorite Schist	112	41	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
259	A259	29.750137	80.341228	Chlorite Schist	120	47	NE
260	A260	29.750696	80.340893	Chlorite Schist	97	43	N
261	A261	29.751068	80.340735	Chlorite Schist	107	39	N
262	A262	29.751405	80.342236	Chlorite Schist	148	54	NE
263	A263	29.750742	80.343282	Chlorite Schist	88	44	N
264	A264	29.773411	80.297542	Granite Gneiss	135	69	ENE
265	A265	29.773589	80.297705	Granite Gneiss	165	39	ENE
266	A266	29.774459	80.298932	Granite Gneiss	110	69	NE
267	A267	29.774359	80.300303	Granite Gneiss	120	32	NE
268	A268	29.821773	80.211801	Granite Gneiss	118	71	SW
269	A269	29.813417	80.221039	Granite Gneiss	160	47	W
270	A270	29.815099	80.217683	Granite Gneiss	85	61	S
271	A271	29.824357	80.20511	Granite Gneiss	90	57	S
272	A272	29.829018	80.203764	Granite Gneiss	140	49	SW
273	A273	29.816593	80.205034	Granite Gneiss	140	12	NE
274	A274	29.818231	80.205246	Amphibolite	121	46	SW
275	A275	29.815823	80.204612	Granite Gneiss	150	71	NE
276	A276	29.8336	80.208397	Granite Gneiss	97	80	S
277	A277	29.833622	80.209525	Granite Gneiss	110	60	S
278	A278	29.834032	80.210445	Granite Gneiss	137	79	SW
279	A279	29.812721	80.234151	Amphibolite	140	52	SW
280	A280	29.813534	80.233321	Amphibolite	140	52	SW
281	A281	29.812655	80.234787	Chlorite Schist	150	72	SW
282	A282	29.812091	80.23917	Chlorite Schist	120	65	NE
283	A283	29.751961	80.341097	Chlorite Schist	90	59	S
284	A284	29.751907	80.340852	Chlorite Schist	140	36	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
285	A285	29.746281	80.336463	Chlorite Schist	87	32	N
286	A286	29.74621	80.336802	Chlorite Schist	87	32	N
287	A287	29.746442	80.336518	Chlorite Schist	90	57	N
288	A288	29.752951	80.33699	Chlorite Schist	61	54	NW
289	A289	29.752928	80.337241	Chlorite Schist	54	55	NW
290	A290	29.752617	80.337204	Chlorite Schist	61	55	NE
291	A291	29.751931	80.338917	Chlorite Schist	87	35	N
292	A292	29.751507	80.339066	Chlorite Schist	59	32	NW
293	A293	29.75066	80.338864	Chlorite Schist	68	82	NNW
294	A294	29.749366	80.338092	Chlorite Schist	90	27	N
295	A295	29.752829	80.336716	Chlorite Schist	56	66	NE
296	A296	29.75428	80.33977	Chlorite Schist	90	43	N
297	A297	29.752859	80.33436	Chlorite Schist	50	28	NNE
298	A298	29.751733	80.334951	Chlorite Schist	105	62	NNE
299	A299	29.751554	80.335074	Chlorite Schist	90	56	N
300	A300	29.751249	80.335566	Chlorite Schist	80	45	N
301	A301	29.751205	80.335939	Chlorite Schist	110	30	NNE
302	A302	29.750975	80.336142	Chlorite Schist	80	48	N
303	A303	29.750063	80.337666	Chlorite Schist	93	72	N
304	A304	29.749485	80.33785	Chlorite Schist	73	62	N
305	A305	29.748553	80.337122	Chlorite Schist	103	32	N
306	A306	29.748254	80.337221	Chlorite Schist	113	52	NE
307	A307	29.748239	80.337539	Chlorite Schist	93	38	N
308	A308	29.748401	80.337648	Chlorite Schist	93	38	N
309	A309	29.748577	80.337899	Chlorite Schist	80	22	N
310	A310	29.753834	80.333934	Leucogranite	83	52	N

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
311	A311	29.748577	80.334786	Chlorite Schist	60	28	NW
312	A312	29.749304	80.332576	Chlorite Schist	100	34	N
313	A313	29.747354	80.330356	Chlorite Schist	57	50	NW
314	A314	29.747775	80.330059	Chlorite Schist	57	50	NW
315	A315	29.746586	80.329676	Chlorite Schist	90	50	N
316	A316	29.745868	80.328007	Chlorite Schist	100	35	N
317	A317	29.754403	80.336767	Chlorite Schist	60	59	NW
318	A318	29.754397	80.336902	Chlorite Schist	170	72	E
319	A319	29.754665	80.336422	Chlorite Schist	172	62	W
320	A320	29.753862	80.337123	Chlorite Schist	180	53	E
321	A321	29.753709	80.337336	Chlorite Schist	180	53	E
322	A322	29.753524	80.337327	Chlorite Schist	162	73	E
323	A323	29.753086	80.337904	Chlorite Schist	182	61	E
324	A324	29.753152	80.338088	Chlorite Schist	182	61	E
325	A325	29.753302	80.33826	Chlorite Schist	182	61	E
326	A326	29.752708	80.338709	Chlorite Schist	20	63	W
327	A327	29.75295	80.33896	Chlorite Schist	20	63	W
328	A328	29.753397	80.339244	Chlorite Schist	160	53	E
329	A329	29.753484	80.339534	Chlorite Schist	160	23	E
330	A330	29.753647	80.332975	Leucogranite	0	48	E
331	A331	29.753655	80.332968	Leucogranite	155	28	E
332	A332	29.753803	80.3326	Leucogranite	145	19	NE
333	A333	29.75381	80.332543	Leucogranite	145	19	NE
334	A334	29.753912	80.332195	Leucogranite	20	53	NE
335	A335	29.753942	80.332246	Leucogranite	20	53	NE
336	A336	29.754377	80.331979	Leucogranite	20	53	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
337	A337	29.74184	80.333568	Chlorite Schist	85	45	SE
338	A338	29.830824	80.223421	Chlorite Schist	165	35	W
339	A339	29.830114	80.225016	Chlorite Schist	165	35	SSW
340	A340	29.829705	80.226904	Chlorite Schist	165	35	SSW
341	A341	29.829493	80.228184	Chlorite Schist	165	35	SSW
342	A342	29.829684	80.228961	Amphibolite	135	35	W
343	A343	29.830278	80.228663	Chlorite Schist	135	35	W
344	A344	29.830862	80.227804	Chlorite Schist	135	35	W
345	A345	29.831038	80.227698	Chlorite Schist	140	78	NE
346	A346	29.830423	80.227388	Chlorite Schist	165	35	W
347	A347	29.830209	80.22594	Chlorite Schist	165	35	W
348	A348	29.83119	80.222972	Chlorite Schist	165	35	W
349	A349	29.836654	80.200078	Chlorite Schist	110	51	SW
350	A350	29.836221	80.200251	Chlorite Schist	118	41	SW
351	A351	29.834008	80.200105	Amphibolite	110	40	SW
352	A352	29.833562	80.200313	Amphibolite	110	40	SW
353	A353	29.828766	80.198364	Granite gneiss	121	60	SW
354	A354	29.848511	80.155524	Chlorite Schist	60	62	SE
355	A355	29.850446	80.22827	Chlorite Schist	60	62	SE
356	A356	29.830682	80.226124	Chlorite Schist	130	50	NE
357	A357	29.830938	80.225955	Chlorite Schist	130	50	NE
358	A358	29.816553	80.263203	Chlorite Schist	114	72	SW
359	A359	29.734673	80.316673	Amphibolite	40	62	SE
360	A360	29.733639	80.316279	Amphibolite	40	62	SE
361	A361	29.733478	80.31645	Amphibolite	40	62	SE
362	A362	29.734121	80.317092	Amphibolite	40	65	SE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
363	A363	29.733951	80.316929	Chlorite Schist	50	12	SE
364	A364	29.733302	80.317386	Chlorite Schist	50	12	SE
365	A365	29.733042	80.317514	Amphibolite	80	25	SE
366	A366	29.732408	80.317689	Chlorite Schist	80	25	SE
367	A367	29.796657	80.274084	Chlorite Schist	80	25	SE
368	A368	29.797482	80.272643	Chlorite Schist	50	12	SE
369	A369	29.796265	80.273249	Chlorite Schist	87	30	SE
370	A370	29.796001	80.272861	Chlorite Schist	87	30	SE
371	A371	29.79577	80.272917	Chlorite Schist	87	30	SE
372	A372	29.795618	80.272858	Chlorite Schist	87	30	SE
373	A373	29.795344	80.272616	Chlorite Schist	87	30	SE
374	A374	29.795145	80.272689	Chlorite Schist	50	12	SE
375	A375	29.795135	80.273105	Chlorite Schist	50	12	SE
376	A376	29.794961	80.27301	Chlorite Schist	110	20	NE
377	A377	29.794943	80.273151	Chlorite Schist	87	30	SE
378	A378	29.794857	80.273421	Chlorite Schist	87	30	SE
379	A379	29.795134	80.27315	Chlorite Schist	50	12	SE
380	A380	29.795716	80.273597	Chlorite Schist	110	20	NE
381	A381	29.795995	80.273388	Chlorite Schist	50	12	SE
382	A382	29.796362	80.27379	Chlorite Schist	87	30	SE
383	A383	29.796419	80.274264	Chlorite Schist	110	20	NE
384	A384	29.797449	80.276988	Chlorite Schist	50	12	SE
385	A385	29.817025	80.254594	Chlorite Schist	120	80	NE
386	A386	29.816982	80.254515	Chlorite Schist	130	80	NE
387	A387	29.817109	80.254907	Chlorite Schist	120	80	NE
388	A388	29.816037	80.263674	Chlorite Schist	130	80	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
389	A389	29.799299	80.275482	Chlorite Schist	140	70	NE
390	A390	29.799055	80.275189	Chlorite Schist	140	70	NE
391	A391	29.755577	80.335095	Granite Gneiss	110	5	NE
392	A392	29.755455	80.33529	Granite Gneiss	140	40	NE
393	A393	29.755976	80.335798	Granite Gneiss	182	30	SE
394	A394	29.755465	80.335602	Granite Gneiss	40	42	SE
395	A395	29.756052	80.338677	Granite Gneiss	120	80	SW
396	A396	29.756376	80.336163	Granite Gneiss	180	68	E
397	A397	29.755974	80.335612	Granite Gneiss	125	72	SW
398	A398	29.756014	80.335645	Granite Gneiss	172	60	E
399	A399	29.756335	80.336062	Granite Gneiss	160	70	ENE
400	A400	29.756375	80.336919	Granite Gneiss	160	70	ENE
401	A401	29.756123	80.337031	Granite Gneiss	140	85	W
402	A402	29.755954	80.336798	Granite Gneiss	160	80	NE
403	A403	29.755501	80.336106	Granite Gneiss	160	90	N
404	A404	29.755455	80.335885	Granite Gneiss	180	45	E
405	A405	29.755284	80.33594	Chlorite Schist	130	65	SW
406	A406	29.754825	80.335713	Granite Gneiss	120	90	N
407	A407	29.754977	80.335878	Granite Gneiss	140	80	NE
408	A408	29.755184	80.336048	Granite Gneiss	100	80	SW
409	A409	29.75528	80.336182	Granite Gneiss	70	80	SE
410	A410	29.75529	80.336294	Granite Gneiss	190	60	ENE
411	A411	29.755462	80.336799	Granite Gneiss	190	60	ENE
412	A412	29.755224	80.336576	Granite Gneiss	125	32	NE
413	A413	29.754689	80.336064	Granite Gneiss	125	32	NE
414	A414	29.75478	80.335853	Granite Gneiss	170	50	E

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
415	A415	29.754382	80.33485	Granite Gneiss	110	85	SW
416	A416	29.754077	80.33663	Granite Gneiss	120	40	SW
417	A417	29.754239	80.336782	Granite Gneiss	120	45	NE
418	A418	29.754309	80.336785	Granite Gneiss	110	80	SW
419	A419	29.753945	80.336776	Granite Gneiss	20	85	SE
420	A420	29.754105	80.337294	Granite Gneiss	160	90	N
421	A421	29.753815	80.337195	Granite Gneiss	130	60	SW
422	A422	29.751734	80.340769	Granite Gneiss	168	37	SW
423	A423	29.751522	80.340569	Granite Gneiss	145	50	NE
424	A424	29.753866	80.35051	Granite Gneiss	140	65	NE
425	A425	29.753039	80.347999	Granite Gneiss	160	30	E
426	A426	29.750439	80.348575	Granite Gneiss	80	30	W
427	A427	29.751848	80.345134	Quartzite	130	80	SW
428	A428	29.758337	80.348261	Quartzite	90	25	S
429	A429	29.759849	80.342498	Quartzite	350	55	E
430	A430	29.757818	80.34079	Quartzite	130	70	NE
431	A431	29.762552	80.333487	Quartzite	110	40	N
432	A432	29.762552	80.333487	Quartzite	140	86	SE
433	A433	29.764664	80.322778	Chlorite Schist	160	45	NE
434	A434	29.76097	80.318654	Chlorite Schist	115	80	NE
435	A435	29.762412	80.312722	Granite Gneiss	110	45	SW
436	A436	29.760423	80.312821	Granite Gneiss	132	32	SW
437	A437	29.757136	80.308955	Granite Gneiss	100	35	S
438	A438	29.757911	80.299304	Granite Gneiss	140	35	SW
439	A439	29.758187	80.291659	Granite Gneiss	152	40	SW
440	A440	29.759454	80.287254	Granite Gneiss	135	15	NE

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
441	A441	29.763926	80.285972	Granite Gneiss	70	30	NW
442	A442	29.75967	80.284617	Granite Gneiss	110	42	NNE
443	A443	29.756161	80.283537	Granite Gneiss	110	35	NNE
444	A444	29.731673	80.274087	Granite Gneiss	90	40	NE
445	A445	29.726889	80.275522	Granite Gneiss	100	40	NNE
446	A446	29.676765	80.271715	Granite Gneiss	100	47	NE
447	A447	29.672675	80.266132	Chlorite Schist	70	45	NW
448	A448	29.67433	80.270365	Chlorite Schist	70	45	NW
449	A449	29.677203	80.271844	Chlorite Schist	150	20	NE
450	A450	29.682568	80.271888	Chlorite Schist	95	30	N
451	A451	29.684599	80.272735	Chlorite Schist	95	30	N
452	A452	29.687195	80.270477	Chlorite Schist	105	52	N
453	A453	29.691309	80.267834	Chlorite Schist	70	20	NNW
454	A454	29.694756	80.267204	Chlorite Schist	150	52	SW
455	A455	29.702121	80.259843	Chlorite Schist	160	63	ENE
456	A456	29.703647	80.259563	Chlorite Schist	102	49	NNE
457	A457	29.71054	80.262457	Chlorite Schist	110	15	NNE
458	A458	29.716573	80.273351	Quartzite	130	19	NE
459	A459	29.755022	80.346183	Quartzite	104	49	NNE
460	A460	29.850628	80.23944	Quartzite	0	0	0
461	A461	29.848155	80.236535	Quartzite	170	42	ENE
462	A462	29.846779	80.237567	Quartzite	85	30	S
463	A463	29.845105	80.237774	Quartzite	140	54	SW
464	A464	29.844587	80.237914	Quartzite	100	60	SSW
465	A465	29.843071	80.239744	Phyllite	120	75	SSW
466	A466	29.84025	80.243385	Phyllite	120	60	SW

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
467	A467	29.838036	80.245365	Phyllite	110	58	SSW
468	A468	29.835347	80.247156	Phyllite	110	62	SSW
469	A469	29.830856	80.246116	Phyllite	0	0	0
470	A470	29.828465	80.246204	Phyllite	85	52	N
471	A471	29.826851	80.246396	Phyllite	110	80	S
472	A472	29.755805	80.334784	Phyllite	100	65	NNE
473	A473	29.756467	80.336095	Phyllite	110	57	SSW
474	A474	29.756478	80.336095	Phyllite	80	45	SSE
475	A475	29.75656	80.337446	Chlorite Schist	150	15	NE
476	A476	29.825975	80.246608	Chlorite Schist	125	75	NE
477	A477	29.818827	80.248082	Chlorite Schist	125	75	NE
478	A478	29.818818	80.247513	Chlorite Schist	135	75	NE
479	A479	29.813916	80.245446	Quartzite	110	52	SSW
480	A480	29.81105	80.241407	Quartzite	138	83	SW
481	A481	29.809936	80.241696	Quartzite	138	83	SW
482	A482	29.787145	80.226853	Quartzite	130	64	SW
483	A483	29.78654	80.228142	Quartzite	115	72	W
484	A484	29.790288	80.229431	Quartzite	120	38	SSW
485	A485	29.792042	80.230984	Granite Gniess	70	20	NNW
486	A486	29.793146	80.235466	Granite Gniess	95	29	N
487	A487	29.794642	80.235866	Granite Gniess	110	32	N
488	A488	29.796859	80.236208	Granite Gniess	100	40	N
489	A489	29.798416	80.239269	Granite Gniess	120	34	SW
490	A490	29.798214	80.241037	Granite Gniess	120	36	NE
491	A491	29.799862	80.246099	Granite Gniess	175	32	E
492	A492	29.799165	80.248995	Granite Gniess	110	78	S

SI No	Location	Latitude	Longitude	Lithology	Bedding/ F0		
					Strike	Dip Amount	Dip Direction
493	A493	29.764358	80.330685	Granite Gniess	125	44	NE
494	A494	29.752579	80.336341	Granite Gniess	140	48	NE
495	A495	29.752242	80.337369	Granite Gniess	88	52	NNW
496	A496	29.734037	80.316382	Granite Gniess	120	22	NE
497	A497	29.733529	80.317851	Amphibolite	60	68	NNW
498	A498	29.733155	80.318447	Amphibolite	100	38	NNE
499	A499	29.732464	80.321373	Amphibolite	107	42	NNE
500	A500	29.733487	80.32174	Amphibolite	107	42	NNE
501	A501	29.755138	80.335884	Amphibolite	106	25	NNE
502	A502	29.758556	80.332598	Amphibolite	97	42	NNE
503	A503	29.758497	80.332356	Chlorite Schist	160	30	NE
504	A504	29.758526	80.332409	Chlorite Schist	140	48	NE
505	A505	29.75943	80.332545	Granite Gneiss	160	40	NE
506	A506	29.755714	80.334733	Granite Gneiss	160	50	NE
507	A507	29.750901	80.342241	Granite Gneiss	142	29	NE
508	A508	29.758533	80.332526	Granite Gneiss	130	50	NE
509	A509	29.758491	80.332316	Granite Gneiss	160	25	NE

Annexure III_Pitting and Trenching Location Points

Pit/Trench ID	Type	Latitude	Longitude	Description	Area	Rock Type	Length (in m)	Width (in m)	Depth (in m)	Volume (cubic m)
GSPL/Askot/PIT01	Pit	29.8132	80.2346	Highly weathered deep reddish brown coloured amphibolite, a few fresh amphibolite is also visible at 2m depth; looks like gossan. 0-0.2m soil cover with leaf litter and humus. Weathered amphibolite continues from 0.2-1.7	West of Sirakot	Amphibolite	2.5	2.4	1.4	8.4
GSPL/Askot/PIT02	Pit	29.8131	80.234	Highly weathered deep reddish brown coloured amphibolite, a few fresh amphibolite is also visible at 2m depth; looks like gossan. 0-0.2m soil cover with leaf litter and humus. Weathered amphibolite continues from 0.2-1.8	West of Sirakot	Amphibolite	2.4	2.1	1.8	9.1
GSPL/Askot/PIT03	Pit	29.7658	80.3421	Unaltered chlorite schist associated with quartz vein (anastomosing), m of overburden	Dugal gaon	Chlorite Schist	2.2	2.1	1.6	7.4
GSPL/Askot/PIT04	Pit	29.7554	80.3357	Chlorite schist, the pit is done in gossan zone of chlorite schist, the chlorite schist is altered associated with released quartz vein, m of soil cover with leaf litter is present.	Dugal gaon	Chlorite Schist	2.1	2	1.44	6.05
GSPL/Askot/PIT05	Pit	29.7551	80.3355	Chlorite schist, the pit is done in gossan zone of chlorite schist, the chlorite schist is altered associated with reddish colored released quartz vein, m of soil cover with leaf litter is present.	Askot	Chlorite Schist	2.3	2.2	1.9	9.6
GSPL/Askot/PIT06	Pit	29.7537	80.3364	Altered brecciated chlorite schist, chalcocite, bornite, chalcopryrite present within the pit, m of overburden	Askot	Chlorite Schist	2.4	2.1	1.5	7.6
GSPL/Askot/PIT07	Pit	29.7528	80.3371	Azurite, Chalcocite in Altered becciated chl schist	Namukh	Chlorite Schist	2.3	2.2	1.7	8.602
GSPL/Askot/PIT08	Pit	29.7519	80.3391	Altered brecciated chlorite schist with pyrite	Baira	Chlorite Schist	2.3	2.25	1.84	9.522
GSPL/Askot/PIT09	Pit	29.7515	80.3409	Pit covered by pyrite leached water within chlorite schist	Unchakote	Chlorite Schist	2.25	2.2	1.7	8.415
GSPL/Askot/PIT010	Pit	29.752	80.3391	Brecciated garnet bearing chlorite schist with presence of pyrite, m of soil is covered with leaf litter	Baira	Chlorite Schist	2.3	2.2	1.8	9.108
GSPL/Askot/PIT11	Pit	29.7541	80.3337	Leucogranite with cassiterite at a few places at a depth of 2m from the overburden, m of soil is covered with leaf litter	Namukh	Leucogranite	2.3	2.3	1.6	8.464
GSPL/Askot/TRENCH1	Trench	29.7658	80.3421	Brecciated garnet bearing chlorite schist with presence of pyrite, m of soil is covered with leaf litter	Dugal gaon	Chlorite Schist	6.55	2.15	0.65	9.16
Total										101.38

Annexure IV_Chemical Assay Values of XRF Analyses for Surface Samples

Sl. NO.	Sample ID	Rock Type	Latitude	Longitude	Al ₂ O ₃	BaO	CaO	Cr ₂ O ₃	Fe ₂ O ₃	K ₂ O	MgO	MnO	Na ₂ O	P ₂ O ₅	TiO ₂	SiO ₂	LOI	S
1	106962	Amphibolite	29.810191	80.241490	14.64	<0.01	8.97	<0.01	14.64	0.44	7.51	0.18	1.92	0.18	1.45	49.19	0.74	0.10
2	106963	Chlorite Schist	29.810751	80.247350	15.53	0.02	0.47	0.01	6.19	3.30	1.16	0.08	0.39	0.16	0.71	69.37	2.31	0.12
3	106964	Quartzite	29.818359	80.247430	2.66	<0.01	0.14	<0.01	1.07	0.45	0.22	<0.01	<0.01	0.09	0.05	94.61	0.56	0.06
4	106965	Quartzite	29.756666	80.345027	13.00	<0.01	0.28	<0.01	17.56	1.18	5.34	0.15	<0.01	0.20	2.53	49.85	9.76	0.06
5	106966	Phyllite	29.828019	80.246239	6.96	<0.01	15.16	<0.01	3.47	1.03	7.19	0.15	0.27	0.25	0.17	48.73	16.25	0.06
6	106967	Amphibolite	29.733890	80.316504	13.79	<0.01	7.28	<0.01	20.14	0.68	4.24	0.22	2.09	0.22	3.19	47.06	0.92	0.11
7	106968	Amphibolite	29.733198	80.325049	15.40	<0.01	6.44	<0.01	15.28	0.88	5.44	0.18	3.74	0.23	1.92	49.80	0.58	0.09
8	106969	Quartzite	29.735471	80.330045	2.92	<0.01	0.17	<0.01	7.88	0.04	1.40	<0.01	<0.01	0.10	0.03	86.13	1.22	0.06
9	106970	Amphibolite	29.739793	80.326574	14.07	<0.01	6.56	<0.01	15.12	1.61	5.27	0.19	2.48	0.20	1.59	52.07	0.76	0.11
10	106971	Amphibolite	29.748453	80.332312	21.49	0.05	6.56	<0.01	12.46	1.15	4.72	0.13	1.89	0.26	0.83	47.64	2.53	0.90
11	106972	Chlorite Schist	29.747231	80.331192	13.40	<0.01	6.31	<0.01	19.55	0.46	3.22	0.25	2.39	0.32	3.29	49.45	0.86	1.04
12	106974	Granite Gneiss	29.748980	80.332416	15.73	<0.01	0.27	<0.01	1.78	3.17	0.44	<0.01	0.67	0.16	0.02	74.78	2.69	0.09
13	106975	Amphibolite	29.755487	80.335925	18.76	0.02	0.50	<0.01	7.30	5.21	1.96	0.03	0.28	0.12	0.65	60.91	3.68	0.08
14	106976	Chlorite Schist	29.755382	80.335736	18.08	<0.01	0.17	<0.01	8.12	4.07	3.13	<0.01	0.40	0.20	0.50	50.05	7.33	1.87
15	106977	Chlorite Schist	29.754370	80.334628	8.69	<0.01	0.22	<0.01	46.30	1.15	0.98	0.02	0.24	0.67	0.35	27.30	11.39	0.32
16	106978	Chlorite Schist	29.772656	80.311954	14.04	<0.01	0.35	<0.01	1.46	4.47	0.12	<0.01	2.93	0.26	<0.01	75.19	1.06	0.08
17	106979	Chlorite Schist	29.772656	80.311954	17.99	<0.01	8.04	<0.01	15.62	0.30	6.07	0.18	3.07	0.20	1.49	46.09	0.77	0.10
18	106980	Chlorite Schist	29.772656	80.311954	23.85	0.02	0.25	0.01	8.53	4.87	2.47	0.02	0.68	0.13	0.83	53.41	4.79	0.08
19	106981	Chlorite Schist	29.772656	80.311954	14.76	<0.01	7.51	<0.01	17.33	0.43	5.25	0.22	2.50	0.29	2.07	48.06	1.23	0.29
20	106982	Chlorite Schist	29.772656	80.311954	11.66	<0.01	7.28	<0.01	20.46	0.50	5.41	0.25	1.54	0.25	3.42	48.11	0.88	0.39

Annexure V_Chemical Assay Values of ICPMS Analyses for Surface Samples

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
1	106349	Amphibolite	Bedrock	29.8132	80.2346	9.71	1.41	<5	7469	16958	66316	962	100	2824	36302	35.34	18721	445	32	1965
2	106350	Amphibolite	Bedrock	29.8131	80.234	9.91	2.41	<5	14858	43209	82740	435	100	1681	57752	34.34	9466	293	145	1436
3	106447	Chlorite Schist	Stream Sediments	29.80427	80.33925	26.43	9.43	<5	4088	10554	80124	2222	3908	28369	5134	14.95	4490	74	153	900
4	106449	Chlorite Schist	Stream Sediments	29.80427	80.33925	34.99	1.95	<5	8846	24223	98515	688	495	23059	22876	23.09	5145	182	144	759
5	106450	Chlorite Schist	Stream Sediments	29.80495	80.33962	47.54	3.15	<5	6110	21467	95178	916	391	24495	6794	21.41	5085	140	159	736
6	106983	Chlorite Schist	Bedrock	29.76576	80.34206	21.30	1.47	<5	12246	44799	77995	546	100	19501	30098	32.59	5013	195	195	1138
7	106984	Chlorite Schist	Bedrock	29.75539	80.33572	16.72	1.87	<5	6047	9541	78888	396	100	24193	14567	12.05	4266	49	210	540
8	106985	Chlorite Schist	Bedrock	29.75508	80.33545	2.84	0.84	<5	666	3370	24190	1044	18723	9315	736	5.93	686	51	266	100
9	106986	Chlorite Schist	Bedrock	29.7536	80.3364	5.70	<0.5	<5	100	3400	11607	165	320	797	878	<0.5	267	9	513	339
10	106987	Chlorite Schist	Bedrock	29.7536	80.3364	18.11	1.37	<5	1020	7475	56358	532	366	11953	4132	8.71	2994	44	612	727
11	106988	Chlorite Schist	Bedrock	29.752824	80.33711	5.20	1.19	<5	1139	5140	51447	303	6214	20186	490	8.19	1986	47	402	102
12	106989	Chlorite Schist	Bedrock	29.7519	80.3391	13.54	3.33	<5	24589	3729	91528	640	100	25883	20810	11.65	5035	46	54	205
13	106990	Leucogranite	Bedrock	29.7515	80.3409	24.37	3.80	<5	14495	15018	1E+05	478	100	24484	6103	18.49	3880	94	124	293
14	106991	Leucogranite	Bedrock	29.7541	80.3337	39.27	1.57	<5	15224	2098	74398	547	100	17120	1692	2.26	556	5	79	128
15	106992	Leucogranite	Bedrock	29.7541	80.3337	114.37	4.39	<5	12429	3056	68934	551	100	26288	1420	1.93	368	5	115	141
16	108701	Chlorite Schist	Bedrock	29.75153	80.340875	9.55	0.78	<5	2584	5531	44265	221	100	3331	1085	3.69	1805	26	415	118
17	108702	Chlorite Schist	Bedrock	29.751963	80.339094	11.30	<0.5	<5	2003	8667	18677	564	100	225	1973	1.03	155	19	471	100
18	108703	Chlorite Schist	Bedrock	29.7463	80.3365	13.31	2.19	<5	1795	6540	72975	967	148	21739	3036	11.27	4616	51	137	379
19	108704	Amphibolite	Bedrock	29.7464	80.3362	14.55	1.38	<5	21985	37891	68142	779	1917	6600	47070	34.82	14207	402	77	1601
20	108705	Chlorite Schist	Bedrock	29.75575	80.3356212	16.85	4.67	<5	5971	12962	69334	856	938	18508	4685	8.30	1160	50	238	127
21	108706	Chlorite Schist	Bedrock	29.75365	80.33644	9.06	<0.5	<5	355	6802	27000	312	28258	4067	1056	1.37	454	20	228	142
22	108707	Amphibolite	Bedrock	29.7531	80.3368	16.85	1.94	<5	2827	9161	83017	283	190	11223	465	9.15	2964	51	121	158
23	108708	Amphibolite	Bedrock	29.753	80.337	21.46	4.10	7.23	5805	19262	1E+05	365	277	11257	1966	15.51	3884	98	136	249

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

24	108709	Amphibolite	Bedrock	29.752824	80.33711	24.84	4.15	7.42	4741	13777	1E+05	277	100	12932	1503	13.16	4048	84	146	180
25	108710	Chlorite Schist	Bedrock	29.752824	80.33711	8.47	0.69	<5	1069	12513	56728	485	5490	5801	648	6.39	1983	47	230	161

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
1	106349	Amphibolite	Bedrock	29.8132	80.2346	2E+05	63.50	30	94	140	26.71	<0.5	11.94	25.01	79	47.71	13	6.80	0.97	<1
2	106350	Amphibolite	Bedrock	29.8131	80.234	97199	50.86	52	63	118	20.89	<0.5	14.39	3.59	132	23.58	7	5.84	<0.5	<1
3	106447	Chlorite Schist	Stream Sediments	29.80427	80.33925	87331	29.55	45	117	66	21.41	<0.5	1.28	304.95	35	30.68	6	11.80	15.69	<1
4	106449	Chlorite Schist	Stream Sediments	29.80427	80.33925	60116	29.89	49	46	87	24.49	<0.5	<0.5	125.10	165	19.23	11	6.04	1.27	<1
5	106450	Chlorite Schist	Stream Sediments	29.80495	80.33962	54045	21.45	56	48	84	24.19	<0.5	<0.5	170.68	81	22.56	23	11.06	0.80	<1
6	106983	Chlorite Schist	Bedrock	29.76576	80.34206	81077	52.33	125	75	96	18.27	<0.5	13.46	84.03	125	22.05	9	5.28	<0.5	<1
7	106984	Chlorite Schist	Bedrock	29.75539	80.33572	43082	13.45	10	594	875	22.72	<0.5	12.78	155.51	109	35.55	<5	9.46	<0.5	<1
8	106985	Chlorite Schist	Bedrock	29.75508	80.33545	3E+05	2.49	6	13780	1286	28.45	<0.5	88.64	49.54	61	5.83	<5	0.96	5.34	63
9	106986	Chlorite Schist	Bedrock	29.7536	80.3364	31742	7.21	10	183	42	3.05	<0.5	13.53	15.05	5	11.49	<5	<0.5	<0.5	<1
10	106987	Chlorite Schist	Bedrock	29.7536	80.3364	92492	13.45	22	249	122	16.45	<0.5	14.44	128.81	34	27.24	<5	5.44	3.72	<1
11	106988	Chlorite Schist	Bedrock	29.752824	80.33711	50926	20.15	16	1338	229	14.78	<0.5	13.46	104.76	17	15.16	<5	2.90	0.62	<1
12	106989	Chlorite Schist	Bedrock	29.7519	80.3391	19576	3.86	7	53	53	22.37	<0.5	14.26	135.94	220	40.93	<5	11.34	<0.5	<1
13	106990	Leucogranite	Bedrock	29.7515	80.3409	56725	18.90	46	46	122	25.57	<0.5	12.44	159.69	100	19.03	<5	9.35	<0.5	<1
14	106991	Leucogranite	Bedrock	29.7541	80.3337	20442	2.13	5	27	92	27.07	<0.5	12.74	276.96	14	9.14	<5	2.13	<0.5	<1
15	106992	Leucogranite	Bedrock	29.7541	80.3337	17050	1.52	5	67	85	28.14	<0.5	10.85	664.31	12	10.09	<5	8.99	<0.5	<1
16	108701	Chlorite Schist	Bedrock	29.75153	80.340875	31166	8.40	19	227	35	7.09	<0.5	12.86	19.26	27	6.20	<5	1.90	<0.5	<1
17	108702	Chlorite Schist	Bedrock	29.751963	80.339094	38026	9.31	28	171	73	5.29	<0.5	11.67	2.81	16	3.41	<5	<0.5	<0.5	<1
18	108703	Chlorite Schist	Bedrock	29.7463	80.3365	46796	7.71	11	12	66	18.39	<0.5	11.82	144.52	23	25.36	<5	8.41	<0.5	<1
19	108704	Amphibolite	Bedrock	29.7464	80.3362	99299	45.81	29	105	114	19.49	<0.5	13.46	28.31	83	28.03	10	9.20	<0.5	<1
20	108705	Chlorite Schist	Bedrock	29.75575	80.3356212	28108	3.89	11	21324	1347	14.73	<0.5	15.92	125.35	61	17.58	<5	1.83	<0.5	54
21	108706	Chlorite Schist	Bedrock	29.75365	80.33644	1E+05	149.61	33	690	98	8.82	<0.5	43.33	37.67	179	10.83	<5	0.87	0.53	<1
22	108707	Amphibolite	Bedrock	29.7531	80.3368	43228	7.72	24	432	80	16.51	<0.5	12.74	118.03	22	4.84	<5	3.20	2.45	3

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

23	108708	Amphibolite	Bedrock	29.753	80.337	54796	17.47	36	59	129	29.78	<0.5	12.95	96.62	53	12.63	<5	3.81	<0.5	<1
24	108709	Amphibolite.	Bedrock	29.752824	80.33711	45946	19.74	29	46	98	25.70	<0.5	11.49	191.03	42	13.92	<5	6.96	<0.5	<1
25	108710	Chlorite Schist	Bedrock	29.752824	80.33711	66778	5.88	11	8873	225	12.57	<0.5	12.78	33.24	17	7.49	<5	2.55	0.59	16

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
1	106349	Amphibolite	Bedrock	29.8132	80.2346	<0.5	<0.5	<0.5	<0.5	<0.5	1.63	162	43.32	75.21	11.63	49.10	11.29	3.41	12.31	1.91
2	106350	Amphibolite	Bedrock	29.8131	80.234	<0.5	<0.5	4.74	<0.5	<0.5	<0.5	77	17.46	33.79	4.98	21.42	5.13	1.94	5.59	0.92
3	106447	Chlorite Schist	Stream Sediments	29.80427	80.33925	1.05	<0.5	5.77	4.48	1.92	24.40	330	64.07	140.21	15.08	54.97	11.37	1.58	10.02	1.37
4	106449	Chlorite Schist	Stream Sediments	29.80427	80.33925	1.03	<0.5	<0.5	0.85	1.10	6.16	402	44.86	93.04	10.52	39.54	7.69	1.85	6.78	0.84
5	106450	Chlorite Schist	Stream Sediments	29.80495	80.33962	<0.5	<0.5	<0.5	0.71	<0.5	9.86	511	49.98	106.36	11.32	41.09	7.81	1.55	7.07	0.89
6	106983	Chlorite Schist	Bedrock	29.76576	80.34206	<0.5	<0.5	<0.5	<0.5	<0.5	2.61	214	20.46	43.20	5.29	21.59	4.62	1.37	5.00	0.78
7	106984	Chlorite Schist	Bedrock	29.75539	80.33572	1.74	<0.5	7.40	2.04	<0.5	6.72	767	62.31	123.76	14.13	51.12	9.55	1.74	9.54	1.34
8	106985	Chlorite Schist	Bedrock	29.75508	80.33545	7.65	54.01	274.70	260.34	<0.5	1.38	589	44.74	77.39	7.77	24.44	4.03	0.87	3.70	<0.5
9	106986	Chlorite Schist	Bedrock	29.7536	80.3364	<0.5	<0.5	<0.5	7.68	<0.5	1.51	154	3.88	8.61	1.07	3.92	0.96	<0.5	1.18	<0.5
10	106987	Chlorite Schist	Bedrock	29.7536	80.3364	0.86	1.08	46.88	5.12	<0.5	8.23	145	60.29	101.48	12.09	40.83	7.12	1.66	7.44	1.02
11	106988	Chlorite Schist	Bedrock	29.752824	80.33711	<0.5	1.02	16.74	23.43	<0.5	1.77	242	34.88	59.59	6.76	24.12	4.38	0.88	4.32	0.57
12	106989	Chlorite Schist	Bedrock	29.7519	80.3391	<0.5	<0.5	<0.5	0.54	<0.5	2.49	727	71.06	140.50	16.38	59.12	11.29	2.09	11.16	1.58
13	106990	Leucogranite	Bedrock	29.7515	80.3409	<0.5	<0.5	<0.5	<0.5	<0.5	7.65	396	51.13	103.06	11.67	42.92	7.96	1.61	7.20	0.99
14	106991	Leucogranite	Bedrock	29.7541	80.3337	<0.5	<0.5	<0.5	<0.5	<0.5	9.14	15	2.44	6.48	0.83	3.02	1.29	<0.5	1.53	<0.5
15	106992	Leucogranite	Bedrock	29.7541	80.3337	<0.5	<0.5	11.70	7.72	<0.5	29.42	13	3.58	10.04	1.09	3.71	1.46	<0.5	1.61	<0.5
16	108701	Chlorite Schist	Bedrock	29.75153	80.340875	<0.5	<0.5	<0.5	<0.5	<0.5	0.81	80	28.32	57.06	6.73	24.03	4.20	0.95	3.53	<0.5
17	108702	Chlorite Schist	Bedrock	29.751963	80.339094	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	4.17	6.01	0.76	2.59	0.56	<0.5	0.64	<0.5
18	108703	Chlorite Schist	Bedrock	29.7463	80.3365	<0.5	<0.5	16.78	<0.5	<0.5	4.88	418	46.70	100.89	10.96	39.57	7.17	1.33	6.95	0.97
19	108704	Amphibolite	Bedrock	29.7464	80.3362	<0.5	<0.5	<0.5	<0.5	<0.5	3.80	106	20.19	45.25	5.83	24.70	5.99	1.56	6.54	1.09
20	108705	Chlorite Schist	Bedrock	29.75575	80.3356212	1.19	15.56	57.09	58.14	<0.5	10.97	201	35.16	67.10	7.46	27.29	5.07	0.87	4.88	0.66
21	108706	Chlorite Schist	Bedrock	29.75365	80.33644	0.58	<0.5	5.58	154.95	1.49	2.27	309	6.82	15.51	2.09	7.98	1.92	<0.5	2.02	<0.5

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

22	108707	Amphibolite	Bedrock	29.7531	80.3368	<0.5	2.98	36.37	29.61	0.66	22.68	148	37.39	66.50	8.24	29.39	5.27	0.97	4.50	0.52
23	108708	Amphibolite	Bedrock	29.753	80.337	<0.5	<0.5	20.10	4.47	<0.5	8.67	144	27.79	52.92	6.29	22.98	4.02	0.86	3.60	<0.5
24	108709	Amphibolite	Bedrock	29.752824	80.33711	<0.5	<0.5	28.02	<0.5	<0.5	45.51	132	13.17	18.17	3.15	11.80	2.53	0.65	3.04	0.53
25	108710	Chlorite Schist	Bedrock	29.752824	80.33711	0.89	4.79	15.00	2.79	<0.5	0.72	54	25.82	45.20	5.39	19.34	3.38	0.74	2.99	<0.5

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
1	106349	Amphibolite	Bedrock	29.8132	80.2346	10.41	2.04	5.61	0.77	4.46	0.61	1.39	<0.5	<0.5	<0.5	56	0.80	6.53	0.81
2	106350	Amphibolite	Bedrock	29.8131	80.234	5.56	1.09	2.97	<0.5	2.48	<0.5	0.54	0.74	<0.5	<0.5	23	0.52	3.64	0.51
3	106447	Chlorite Schist	Stream Sediments	29.8043	80.33925	6.50	0.99	2.53	<0.5	1.74	<0.5	20.39	1.44	13.27	1.55	11	7.25	21.92	12.30
4	106449	Chlorite Schist	Stream Sediments	29.8043	80.33925	4.02	0.67	1.82	<0.5	1.26	<0.5	25.20	0.82	8.07	0.61	12	<0.5	12.42	1.75
5	106450	Chlorite Schist	Stream Sediments	29.8049	80.33962	4.52	0.80	2.21	<0.5	1.62	<0.5	1.83	2.22	6.74	0.80	23	<0.5	13.72	2.56
6	106983	Chlorite Schist	Bedrock	29.76576	80.34206	4.48	0.89	2.61	<0.5	2.08	<0.5	0.99	<0.5	0.87	<0.5	8	<0.5	4.21	0.79
7	106984	Chlorite Schist	Bedrock	29.75539	80.33572	7.26	1.41	4.27	0.59	3.55	<0.5	<0.5	1.28	5.86	1.08	133	1.40	29.34	8.15
8	106985	Chlorite Schist	Bedrock	29.75508	80.33545	1.60	<0.5	0.71	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.75	61541	68.40	10.71	2.81
9	106986	Chlorite Schist	Bedrock	29.7536	80.3364	1.66	<0.5	1.23	<0.5	1.25	<0.5	<0.5	<0.5	<0.5	<0.5	411	5.84	1.39	0.77
10	106987	Chlorite Schist	Bedrock	29.7536	80.3364	5.24	1.03	2.94	<0.5	2.38	<0.5	0.75	<0.5	<0.5	0.59	665	2.31	19.47	4.14
11	106988	Chlorite Schist	Bedrock	29.752824	80.33711	2.91	0.56	1.56	<0.5	1.11	<0.5	<0.5	<0.5	<0.5	<0.5	75	39.75	10.82	2.14
12	106989	Chlorite Schist	Bedrock	29.7519	80.3391	9.12	1.65	5.13	0.63	3.71	<0.5	0.51	1.43	7.49	0.83	107	8.30	31.78	7.58
13	106990	Leucogranite	Bedrock	29.7515	80.3409	4.82	0.85	2.20	<0.5	1.43	<0.5	<0.5	1.24	2.66	1.22	38	2.02	21.75	3.67
14	106991	Leucogranite	Bedrock	29.7541	80.3337	2.14	<0.5	0.79	<0.5	0.62	<0.5	<0.5	0.59	<0.5	1.81	19	8.87	10.23	2.22
15	106992	Leucogranite	Bedrock	29.7541	80.3337	2.44	<0.5	0.84	<0.5	0.80	<0.5	0.81	2.80	14.40	2.98	17	3.74	14.24	2.56
16	108701	Chlorite Schist	Bedrock	29.75153	80.340875	1.59	<0.5	0.69	<0.5	<0.5	<0.5	0.59	<0.5	<0.5	<0.5	99	9.10	10.13	1.95
17	108702	Chlorite Schist	Bedrock	29.751963	80.339094	0.66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.68	158	6.67	0.94	0.63
18	108703	Chlorite Schist	Bedrock	29.7463	80.3365	4.90	0.98	2.84	<0.5	2.42	<0.5	0.93	0.86	6.34	1.33	12	<0.5	23.72	3.55
19	108704	Amphibolite.	Bedrock	29.7464	80.3362	6.29	1.18	3.43	<0.5	2.82	<0.5	1.40	0.64	<0.5	<0.5	9	<0.5	4.77	0.58
20	108705	Chlorite Schist	Bedrock	29.75575	80.3356212	3.62	0.73	2.17	<0.5	1.83	<0.5	0.63	<0.5	<0.5	0.90	9839	123.28	12.01	3.72

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

21	108706	Chlorite Schist	Bedrock	29.75365	80.33644	2.47	0.50	1.34	<0.5	1.09	<0.5	0.81	<0.5	<0.5	<0.5	163	119.85	2.91	2.03
22	108707	Amphibolite	Bedrock	29.7531	80.3368	1.96	<0.5	0.68	<0.5	<0.5	<0.5	4.33	<0.5	<0.5	1.49	44	82.74	19.73	5.57
23	108708	Amphibolite	Bedrock	29.753	80.337	2.59	0.51	1.58	<0.5	1.38	<0.5	0.75	<0.5	<0.5	0.86	<5	6.85	17.51	1.70
24	108709	Amphibolite	Bedrock	29.752824	80.33711	3.30	0.63	1.81	<0.5	1.31	<0.5	1.15	0.55	1.76	2.26	<5	4.97	19.02	3.04
25	108710	Chlorite Schist	Bedrock	29.752824	80.33711	1.66	<0.5	0.86	<0.5	0.70	<0.5	1.58	<0.5	<0.5	<0.5	400	47.28	10.50	1.87

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
26	108711	Chlorite Schist	Bedrock	29.7526	80.3372	1.98	0.79	<5	1804	1522	6993	106	817	541	724	<0.5	258	9	656	100
27	108712	Chlorite Schist	Bedrock	29.7531	80.3379	11.75	0.88	<5	783	16694	60958	592	20776	11638	3409	10.08	2013	62	349	534
28	108713	Chlorite Schist	Bedrock	29.7529	80.3374	5.21	0.74	<5	2414	14198	88884	308	1872	1389	2529	7.72	3153	58	175	137
29	108714	Amphibolite	Bedrock	29.7507	80.3389	25.08	2.74	<5	5082	7776	1E+05	875	140	23410	14345	25.87	3374	100	139	5369
30	108715	Chlorite Schist	Bedrock	29.7503	80.3386	21.40	1.60	<5	3420	11939	62652	205	289	15516	1140	14.11	2486	72	145	219
31	108716	Chlorite Schist	Bedrock	29.7501	80.3378	38.44	3.16	<5	4541	12552	1E+05	431	100	36808	7983	58.10	4823	143	213	2723
32	108717	Chlorite Schist	Bedrock	29.7516	80.3375	13.90	8.54	<5	37650	6588	83320	265	100	3427	12531	2.47	2701	25	94	122
33	108718	Amphibolite	Bedrock	29.7528	80.3367	18.05	3.12	<5	5537	16941	1E+05	278	100	10621	1640	16.95	5072	99	133	187
34	108719	Leucogranite	Bedrock	29.7545	80.3315	20.03	2.26	<5	21539	45613	80074	556	3707	2355	60016	35.53	9410	299	126	1334
35	108720	Chlorite Schist	Bedrock	29.7508	80.338	15.94	2.10	<5	6908	14732	1E+05	358	100	4979	3697	15.43	3651	79	143	120
36	108721	Amphibolite	Bedrock	29.751	80.3345	19.34	1.57	14.49	4349	25575	1E+05	394	100	2430	2499	12.90	3812	78	123	232
37	108722	Amphibolite	Bedrock	29.7508	80.3339	12.69	<0.5	<5	100	7257	52713	537	188	3239	6814	8.02	2746	36	103	758
38	108723	Amphibolite	Bedrock	29.7486	80.3331	6.01	0.94	<5	1144	5540	43070	190	100	4481	764	4.56	841	25	170	100
39	108724	Chlorite Schist	Bedrock	29.7478	80.3301	17.94	1.90	<5	5847	12269	1E+05	211	100	21906	1499	14.74	3565	73	164	159
40	108725	Chlorite Schist	Bedrock	29.75365	80.33644	12.53	1.09	<5	4046	19082	1E+05	603	100	3656	3366	11.74	4465	70	114	141
41	108726	Chlorite Schist	Bedrock	29.7539	80.3371	33.51	0.79	<5	186	17526	64480	638	706	33060	1791	8.20	2921	39	41	955
42	108727	Chlorite Schist	Bedrock	29.7531	80.3379	20.50	2.32	<5	3096	16561	1E+05	471	9251	13235	2201	15.13	3292	74	97	262
43	108728	Chlorite Schist	Bedrock	29.7532	80.3381	11.77	4.64	<5	15623	17643	69285	1553	710	5258	9184	5.97	2159	34	123	282
44	108729	Chlorite Schist	Bedrock	29.7533	80.3383	7.37	0.99	<5	974	9645	50599	334	4543	14883	230	9.07	1986	58	520	145
45	108730	Chlorite Schist	Bedrock	29.753	80.339	18.78	0.80	<5	1592	7163	50948	336	100	10148	5933	11.59	1565	45	535	1241
46	108731	Chlorite Schist	Bedrock	29.7545	80.3307	3.21	1.04	<5	3795	5443	13431	482	350	3801	431	<0.5	233	9	568	113
47	108732	Granite Gneiss	Bedrock	29.7428	80.3263	15.96	5.64	<5	14391	1491	74885	666	100	45959	9333	2.24	662	5	346	157
48	108733	Chlorite Schist	Bedrock	29.841011	80.221058	19.99	1.85	<5	4145	3703	43482	178	100	14294	1187	5.42	2249	39	572	1517
49	108734	Chlorite Schist	Bedrock	29.764631	80.330414	11.43	1.44	<5	16479	19602	64613	1010	<100	11850	51680	40.11	14118	514	41	1755
50	108735	Chlorite Schist	Bedrock	29.831006	80.225887	12.39	1.02	<5	16089	29980	74619	604	<100	8520	61006	37.15	12136	410	84	1608

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
26	108711	Chlorite Schist	Bedrock	29.7526	80.3372	22120	1.93	7	221	21	1.79	<0.5	12.66	3.89	14	1.76	<5	<0.5	<0.5	<1
27	108712	Chlorite Schist	Bedrock	29.7531	80.3379	2E+05	22.08	16	3426	466	18.45	<0.5	34.90	61.63	41	15.26	<5	8.36	0.96	4
28	108713	Chlorite Schist	Bedrock	29.7529	80.3374	71506	11.16	12	410	70	13.99	<0.5	15.69	6.66	47	10.89	<5	3.22	<0.5	<1
29	108714	Amphibolite	Bedrock	29.7507	80.3389	1E+05	43.14	23	170	53	21.97	<0.5	14.70	162.71	55	78.04	<5	9.96	3.65	<1
30	108715	Chlorite Schist	Bedrock	29.7503	80.3386	53416	16.12	28	616	103	18.40	<0.5	14.08	106.16	36	11.43	<5	6.51	<0.5	<1
31	108716	Chlorite Schist	Bedrock	29.7501	80.3378	1E+05	21.81	43	65	121	33.26	<0.5	15.97	225.59	60	104.16	<5	14.11	0.89	<1
32	108717	Chlorite Schist	Bedrock	29.7516	80.3375	28343	5.87	22	28	63	12.74	<0.5	13.98	11.09	223	3.88	<5	4.85	<0.5	<1
33	108718	Amphibolite	Bedrock	29.7528	80.3367	50557	15.86	21	112	88	26.60	<0.5	13.63	119.79	58	10.58	7	6.21	<0.5	<1
34	108719	Leucogranite	Bedrock	29.7545	80.3315	95486	45.99	38	185	96	21.55	<0.5	12.70	8.93	149	21.90	8	7.32	<0.5	<1
35	108720	Chlorite Schist	Bedrock	29.7508	80.338	44846	13.15	28	292	73	23.57	<0.5	12.40	25.81	106	11.17	<5	5.42	3.27	<1
36	108721	Amphibolite	Bedrock	29.751	80.3345	57479	23.14	57	23	114	19.79	<0.5	12.66	16.33	52	14.21	<5	4.30	<0.5	<1
37	108722	Amphibolite	Bedrock	29.7508	80.3339	2E+05	8.89	13	199	65	15.41	<0.5	13.42	55.76	6	30.80	6	5.77	<0.5	<1
38	108723	Amphibolite	Bedrock	29.7486	80.3331	20549	3.81	12	21	24	7.66	<0.5	11.02	50.20	12	3.38	<5	1.34	<0.5	<1
39	108724	Chlorite Schist	Bedrock	29.7478	80.3301	39355	12.73	33	33	98	21.86	<0.5	12.98	142.92	52	14.01	<5	5.73	<0.5	<1
40	108725	Chlorite Schist	Bedrock	29.75365	80.33644	53698	8.23	35	159	187	20.04	<0.5	12.25	24.61	84	16.25	<5	5.03	<0.5	<1
41	108726	Chlorite Schist	Bedrock	29.7539	80.3371	3E+05	52.90	9	2355	763	18.01	<0.5	13.20	125.03	37	18.71	<5	8.13	2.58	<1
42	108727	Chlorite Schist	Bedrock	29.7531	80.3379	93474	34.53	25	1509	314	30.80	<0.5	25.92	151.00	31	17.08	<5	7.40	3.23	2
43	108728	Chlorite Schist	Bedrock	29.7532	80.3381	63559	10.30	26	557	550	15.08	<0.5	21.11	43.32	122	6.97	<5	4.17	<0.5	57
44	108729	Chlorite Schist	Bedrock	29.7533	80.3383	54647	14.87	16	2217	2168	15.96	<0.5	17.90	78.60	12	13.83	<5	4.30	<0.5	18
45	108730	Chlorite Schist	Bedrock	29.753	80.339	63202	11.07	23	57	69	11.07	<0.5	12.60	68.15	24	29.46	<5	2.91	<0.5	<1
46	108731	Chlorite Schist	Bedrock	29.7545	80.3307	63596	1.82	7	7609	18	5.52	<0.5	14.00	74.07	6	3.03	<5	3.69	12.37	57
47	108732	Granite Gneiss	Bedrock	29.7428	80.3263	15670	2.21	5	88	50	27.27	<0.5	12.29	794.31	31	18.86	<5	9.97	3.87	<1
48	108733	Chlorite Schist	Bedrock	29.841011	80.221058	30502	7.71	10	38	42	10.36	<0.5	12.07	100.24	40	11.12	<5	5.03	<0.5	<1
49	108734	Chlorite Schist	Bedrock	29.764631	80.330414	1E+05	48.39	37	415	173	21.30	<0.5	<0.5	38.67	89	37.02	12	3.31	1.62	<1
50	108735	Chlorite Schist	Bedrock	29.831006	80.225887	1E+05	44.81	24	60	109	22.98	<0.5	<0.5	34.36	227	22.38	13	5.71	0.57	<1

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
26	108711	Chlorite Schist	Bedrock	29.7526	80.3372	<0.5	<0.5	<0.5	0.66	<0.5	<0.5	7	4.10	6.99	0.83	3.03	0.57	<0.5	0.55	<0.5
27	108712	Chlorite Schist	Bedrock	29.7531	80.3379	0.90	1.61	13.59	89.34	<0.5	2.37	127	33.65	55.23	6.09	21.32	4.17	1.16	4.52	0.63
28	108713	Chlorite Schist	Bedrock	29.7529	80.3374	<0.5	<0.5	<0.5	1.39	<0.5	<0.5	17	44.34	74.45	7.70	26.68	4.45	0.83	4.17	0.55
29	108714	Amphibolite	Bedrock	29.7507	80.3389	1.72	<0.5	<0.5	0.64	<0.5	7.10	317	57.85	119.95	13.78	50.93	10.93	2.14	11.17	1.79
30	108715	Chlorite Schist	Bedrock	29.7503	80.3386	<0.5	<0.5	3.03	1.11	<0.5	3.05	257	26.57	54.19	5.97	21.97	4.01	0.92	3.88	0.56
31	108716	Chlorite Schist	Bedrock	29.7501	80.3378	0.55	<0.5	12.50	0.92	<0.5	6.14	547	31.56	108.44	8.04	30.45	6.46	1.44	7.95	1.73
32	108717	Chlorite Schist	Bedrock	29.7516	80.3375	<0.5	<0.5	<0.5	1.32	<0.5	0.79	62	5.26	9.70	1.35	4.97	0.93	<0.5	0.89	<0.5
33	108718	Amphibolite	Bedrock	29.7528	80.3367	<0.5	1.49	54.36	<0.5	<0.5	18.02	137	44.89	71.78	9.28	32.06	5.53	1.13	4.72	0.56
34	108719	Leucogranite	Bedrock	29.7545	80.3315	<0.5	<0.5	<0.5	<0.5	<0.5	0.81	16	17.09	36.72	4.74	19.86	4.68	1.72	5.30	0.80
35	108720	Chlorite Schist	Bedrock	29.7508	80.338	<0.5	3.60	60.02	2.23	<0.5	0.99	82	45.05	83.17	9.36	33.33	5.92	1.34	5.20	0.62
36	108721	Amphibolite	Bedrock	29.751	80.3345	<0.5	0.59	26.69	<0.5	3.15	1.19	33	27.07	57.81	6.74	23.52	4.29	0.73	3.70	0.50
37	108722	Amphibolite	Bedrock	29.7508	80.3339	<0.5	0.81	36.40	1.76	<0.5	9.58	40	55.42	83.96	11.02	38.15	6.92	1.25	6.98	1.03
38	108723	Amphibolite	Bedrock	29.7486	80.3331	<0.5	<0.5	26.97	<0.5	<0.5	3.66	42	13.04	24.41	2.88	10.49	1.87	<0.5	1.71	<0.5
39	108724	Chlorite Schist	Bedrock	29.7478	80.3301	<0.5	<0.5	5.92	0.58	<0.5	4.69	267	35.39	69.75	7.81	28.58	5.05	0.98	4.95	0.64
40	108725	Chlorite Schist	Bedrock	29.75365	80.33644	<0.5	<0.5	4.25	2.93	<0.5	0.62	56	31.07	62.39	7.32	26.69	4.93	1.04	4.72	0.67
41	108726	Chlorite Schist	Bedrock	29.7539	80.3371	<0.5	<0.5	18.05	4.21	<0.5	8.11	516	36.46	59.06	8.46	30.68	5.70	0.71	5.52	0.73
42	108727	Chlorite Schist	Bedrock	29.7531	80.3379	<0.5	1.58	43.29	49.74	<0.5	19.43	149	36.32	69.30	7.96	28.80	5.22	1.03	4.88	0.66
43	108728	Chlorite Schist	Bedrock	29.7532	80.3381	0.79	0.87	<0.5	20.25	3.46	0.65	76	18.25	33.91	3.93	13.95	2.57	0.52	2.57	<0.5
44	108729	Chlorite Schist	Bedrock	29.7533	80.3383	5.87	1.50	14.52	8.76	<0.5	1.03	123	34.72	63.77	7.08	24.78	4.38	0.90	3.87	0.56
45	108730	Chlorite Schist	Bedrock	29.753	80.339	<0.5	<0.5	<0.5	0.61	<0.5	6.05	151	24.54	45.17	5.50	19.48	3.68	0.82	4.18	0.75
46	108731	Chlorite Schist	Bedrock	29.7545	80.3307	0.78	20.47	127.03	3.71	0.51	6.08	8	5.64	8.72	1.17	3.93	1.01	<0.5	0.99	<0.5
47	108732	Granite Gneiss	Bedrock	29.7428	80.3263	0.50	<0.5	40.75	4.60	2.95	18.29	62	15.74	33.69	4.00	14.09	3.52	<0.5	3.28	0.55
48	108733	Chlorite Schist	Bedrock	29.841011	80.221058	<0.5	<0.5	<0.5	<0.5	<0.5	6.04	263	21.83	46.30	4.82	17.12	3.04	0.61	2.77	<0.5
49	108734	Chlorite Schist	Bedrock	29.764631	80.330414	<0.5	<0.5	<0.5	2.26	<0.5	0.90	259	27.20	59.09	7.32	29.68	6.76	1.65	7.00	1.10
50	108735	Chlorite Schist	Bedrock	29.831006	80.225887	<0.5	<0.5	<0.5	0.59	<0.5	0.58	93	16.28	35.43	4.43	18.59	4.38	1.37	4.69	0.70

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
26	108711	Chlorite Schist	Bedrock	29.7526	80.3372	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	13	0.63	1.13	<0.5
27	108712	Chlorite Schist	Bedrock	29.7531	80.3379	3.29	0.64	1.82	<0.5	1.55	<0.5	4.34	1.35	7.80	<0.5	501	28.84	11.75	2.24
28	108713	Chlorite Schist	Bedrock	29.7529	80.3374	2.58	<0.5	1.18	<0.5	0.85	<0.5	1.02	<0.5	<0.5	<0.5	15	1.75	13.39	1.75
29	108714	Amphibolite	Bedrock	29.7507	80.3389	11.36	2.47	7.75	1.21	8.43	1.20	0.73	1.34	8.42	0.75	31	6.84	19.43	3.86
30	108715	Chlorite Schist	Bedrock	29.7503	80.3386	2.67	<0.5	1.26	<0.5	1.09	<0.5	4.52	1.76	1.58	0.55	15	1.35	14.04	3.14
31	108716	Chlorite Schist	Bedrock	29.7501	80.3378	14.84	3.90	13.37	2.25	15.79	2.47	2.31	3.62	10.12	0.95	41	1.15	28.85	5.93
32	108717	Chlorite Schist	Bedrock	29.7516	80.3375	0.83	<0.5	<0.5	<0.5	<0.5	<0.5	1.43	<0.5	<0.5	<0.5	48	<0.5	2.36	0.55
33	108718	Amphibolite	Bedrock	29.7528	80.3367	2.54	<0.5	1.35	<0.5	0.99	<0.5	0.68	0.72	2.25	0.90	<5	13.24	24.00	1.99
34	108719	Leucogranite	Bedrock	29.7545	80.3315	4.63	0.91	2.73	<0.5	2.37	<0.5	<0.5	0.61	<0.5	<0.5	6	0.95	4.28	0.59
35	108720	Chlorite Schist	Bedrock	29.7508	80.338	2.73	<0.5	1.32	<0.5	1.08	<0.5	1.81	<0.5	<0.5	<0.5	34	8.13	18.02	2.36
36	108721	Amphibolite	Bedrock	29.751	80.3345	2.78	0.56	1.69	<0.5	1.60	<0.5	0.80	<0.5	<0.5	<0.5	8	1.11	18.05	1.77
37	108722	Amphibolite	Bedrock	29.7508	80.3339	5.34	1.19	3.54	<0.5	3.22	<0.5	<0.5	0.50	<0.5	0.77	552	19.87	17.85	4.77
38	108723	Amphibolite	Bedrock	29.7486	80.3331	0.91	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	16	30.55	4.86	1.48
39	108724	Chlorite Schist	Bedrock	29.7478	80.3301	3.16	0.58	1.62	<0.5	1.20	<0.5	3.05	<0.5	1.16	0.98	37	1.40	24.09	2.22
40	108725	Chlorite Schist	Bedrock	29.75365	80.33644	3.50	0.70	2.02	<0.5	1.51	<0.5	2.22	0.90	<0.5	<0.5	46	0.91	21.28	2.14
41	108726	Chlorite Schist	Bedrock	29.7539	80.3371	3.78	0.76	2.23	<0.5	1.96	<0.5	0.85	<0.5	<0.5	1.54	92	<0.5	19.90	3.47
42	108727	Chlorite Schist	Bedrock	29.7531	80.3379	3.53	0.71	2.09	<0.5	1.62	<0.5	1.99	0.93	5.09	1.30	209	38.66	17.00	2.43
43	108728	Chlorite Schist	Bedrock	29.7532	80.3381	1.54	<0.5	0.82	<0.5	0.65	<0.5	0.77	<0.5	<0.5	<0.5	9493	980.89	8.50	1.82
44	108729	Chlorite Schist	Bedrock	29.7533	80.3383	2.89	0.53	1.57	<0.5	1.05	<0.5	<0.5	<0.5	<0.5	0.53	5823	135.13	11.55	2.67
45	108730	Chlorite Schist	Bedrock	29.753	80.339	4.94	1.03	3.07	<0.5	2.82	<0.5	3.62	<0.5	<0.5	<0.5	37	3.73	9.00	1.51
46	108731	Chlorite Schist	Bedrock	29.7545	80.3307	0.77	<0.5	<0.5	<0.5	<0.5	<0.5	2.11	<0.5	<0.5	<0.5	46	239.54	7.54	218.99
47	108732	Granite Gneiss	Bedrock	29.7428	80.3263	2.98	<0.5	1.28	<0.5	1.08	<0.5	7.56	1.89	9.51	4.30	29	2.64	17.21	8.47
48	108733	Chlorite Schist	Bedrock	29.841011	80.221058	2.32	<0.5	1.33	<0.5	1.21	<0.5	1.36	<0.5	<0.5	<0.5	24	1.24	9.38	1.50
49	108734	Chlorite Schist	Bedrock	29.764631	80.330414	6.53	1.32	3.93	0.53	3.29	<0.5	1.73	<0.5	18.94	<0.5	43	<0.5	3.48	0.72
50	108735	Chlorite Schist	Bedrock	29.831006	80.225887	4.17	0.80	2.25	<0.5	1.84	<0.5	1.27	0.58	14.70	<0.5	7	<0.5	2.87	<0.5

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
51	108736	Amphibolite	Bedrock	29.751808	80.34044	36.56	4.28	<5	7690	8469	1E+05	345	<100	35302	1542	23.32	4241	93	135	149
52	108737	Amphibolite	Bedrock	29.796783	80.274358	10.17	<0.5	<5	980	11149	92319	620	<100	332	1E+05	15.53	3156	461	178	775
53	108738	Amphibolite	Bedrock	29.734388	80.318348	0.77	<0.5	<5	272	9806	75812	375	<100	155	92205	16.23	4126	219	173	673
54	108739	Amphibolite	Bedrock	29.796657	80.274084	23.70	0.56	<5	14451	48319	76629	603	<100	1967	61066	37.71	12944	446	186	1605
55	108740	Chlorite schist	Bedrock	29.797482	80.272643	29.03	2.02	<5	1958	59435	61691	496	1356	934	12737	23.90	4057	189	187	1648
56	108741	Chlorite schist	Bedrock	29.79577	80.272917	50.54	0.84	<5	17219	55992	81163	523	<100	24135	22610	28.19	3854	168	393	1320
57	108742	Amphibolite	Bedrock	29.795135	80.273105	25.84	1.49	<5	24022	42588	90026	570	<100	9689	55680	35.90	11345	329	89	1385
58	108743	Amphibolite	Bedrock	29.796362	80.27379	9.84	0.59	<5	18470	43906	75289	626	<100	1803	72007	35.62	10183	368	213	1546
59	106354	Amphibolite	Stream Sediment	29.75422	80.343513	29.90	1.49	<5	8096	22697	94026	824	368	10665	24355	27.52	5939	230	118	1056
60	108744	Amphibolite	Bedrock	29.799299	80.275482	10.50	0.53	<5	23256	38255	79124	570	<100	2538	69879	40.21	13056	389	249	1066
61	108745	Amphibolite	Bedrock	29.799055	80.275189	24.93	1.70	<5	8799	55791	77123	1049	268	11375	8119	40.39	12371	346	28	1023
62	108746	Chlorite Schist	Bedrock	29.816944	80.263267	24.49	3.95	<5	3428	1707	33895	1238	516	9575	509	7.59	589	161	178	<100
63	108747	Chlorite Schist	Bedrock	29.731673	80.274087	8.27	0.74	<5	20742	21031	66373	816	133	6685	55448	29.30	9429	315	93	2366
64	108748	Phyllite	Bedrock	29.758586	80.348523	26.38	1.77	<5	8873	11368	58960	286	13679	25582	19190	8.60	1666	776	267	267
65	108749	Phyllite	Bedrock	29.730752	80.329887	6.84	2.42	<5	392	10837	47520	391	317	17358	784	10.36	4049	107	198	210
66	108750	Phyllite	Bedrock	29.831025	80.238385	70.12	0.75	<5	13674	42143	73172	474	100	982	18144	25.72	8234	344	212	1089
67	110151	Amphibolite	Stream sediments	29.791656	80.313954	44.89	2.21	<5	7478	27288	89186	997	454	14291	20323	27.21	5751	189	141	953
68	110152	Amphibolite	Stream sediments	29.79033	80.238402	30.21	4.18	<5	17557	14557	88813	722	108	28040	14571	19.74	4653	91	200	473
69	110153	Amphibolite	Stream sediments	29.795693	80.242958	38.71	3.81	<5	14392	18473	94177	1031	444	25392	18718	18.29	5423	104	195	630
70	110154	Amphibolite	Stream sediments	29.796834	80.241069	19.74	3.47	<5	19906	16683	97700	813	119	18752	25170	19.67	7603	147	131	618
71	110155	Amphibolite	Stream sediments	29.774348	80.249082	39.76	4.80	<5	12618	13731	76247	868	462	24389	9999	10.39	2861	48	155	401
72	110251	Amphibolite	Bedrock	29.832018	80.23595	5.09	<0.5	<5	238	1047	8500	100	100	3370	128	1.54	458	15	229	106
73	110252	Amphibolite	Bedrock	29.81089	80.246905	14.43	2.22	<5	25801	7531	76796	438	1181	12364	17339	13.90	3725	75	233	354
74	110253	Amphibolite	Bedrock	29.747852	80.331929	15.68	1.87	<5	4996	9016	72162	270	100	23426	1330	14.22	2792	90	138	205
75	110254	Amphibolite	Bedrock	29.755571	80.336212	29.13	3.11	<5	1680	21434	79650	579	4167	29560	512	13.26	1398	100	149	157

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Sample type	Host Lithology	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
51	108736	Bedrock	Amphibolite	29.751808	80.34044	37972	9.56	22	159	27	33.90	<0.5	0.61	205.48	76	17.06	<5	18.34	1.58	<1
52	108737	Bedrock	Amphibolite	29.796783	80.274358	72666	11.25	34	341	<5	49.01	<0.5	<0.5	1.35	1038	25.83	10	4.47	<0.5	<1
53	108738	Bedrock	Amphibolite	29.734388	80.318348	70980	18.97	15	33	<5	30.80	<0.5	<0.5	0.58	1037	8.84	15	2.29	<0.5	<1
54	108739	Bedrock	Amphibolite	29.796657	80.274084	1E+05	52.07	127	170	65	21.63	<0.5	<0.5	2.89	146	22.75	16	7.76	2.64	<1
55	108740	Bedrock	Chlorite schist	29.797482	80.272643	1E+05	68.91	95	234	98	16.67	<0.5	<0.5	2.24	12	15.78	10	4.86	<0.5	<1
56	108741	Bedrock	Chlorite schist	29.79577	80.272917	66488	39.46	110	20	62	15.31	<0.5	<0.5	61.26	65	12.86	<5	1.35	0.79	<1
57	108742	Bedrock	Amphibolite	29.795135	80.273105	97152	53.93	45	38	79	24.46	<0.5	<0.5	38.34	201	22.28	8	7.07	<0.5	<1
58	108743	Bedrock	Amphibolite	29.796362	80.27379	87876	41.92	119	111	46	18.74	<0.5	<0.5	2.23	254	18.59	15	3.38	<0.5	<1
59	106354	Stream sediments	Amphibolite	29.75422	80.343513	78885	37.64	51	67	111	23.77	<0.5	<0.5	66.80	161	21.37	12	5.10	0.78	<1
60	108744	Bedrock	Amphibolite	29.799299	80.275482	82593	35.49	96	153	32	19.29	<0.5	<0.5	12.37	244	17.57	17	4.31	<0.5	<1
61	108745	Bedrock	Amphibolite	29.799055	80.275189	1E+05	44.85	26	181	79	24.39	<0.5	<0.5	39.64	66	34.30	8	9.04	1.00	<1
62	108746	Bedrock	Amphibolite	29.816944	80.263267	2E+05	2.14	11	109	48	10.57	<0.5	<0.5	65.67	17	5.09	<5	0.62	10.97	2
63	108747	Bedrock	Amphibolite	29.731673	80.274087	98313	35.49	28	456	120	18.24	<0.5	0.63	11.65	167	35.09	16	8.17	<0.5	<1
64	108748	Bedrock	Phyllite	29.758586	80.348523	25668	10.28	92	37	580	13.12	<0.5	1.69	94.81	63	4.45	11	4.02	21.27	<1
65	108749	Bedrock	Phyllite	29.730752	80.329887	58377	8.80	17	9	41	12.30	<0.5	<0.5	79.91	8	2.87	16	6.46	0.63	<1
66	108750	Bedrock	Phyllite	29.831025	80.238385	1E+05	39.60	98	103	136	18.00	<0.5	0.87	4.70	60	17.17	18	5.64	0.68	<1
67	110151	Stream sediments	Amphibolite	29.791656	80.313954	69257	31.84	59	58	79	22.38	<0.5	0.54	98.27	130	26.13	15	7.54	<0.5	<1
68	110152	Stream sediments	Amphibolite	29.79033	80.238402	37221	14.48	31	24	47	29.16	<0.5	0.70	151.75	253	41.23	5	9.65	<0.5	<1
69	110153	Stream sediments	Amphibolite	29.795693	80.242958	46478	18.96	33	26	87	27.19	<0.5	0.93	148.11	222	30.94	11	9.33	<0.5	<1
70	110154	Stream sediments	Amphibolite	29.796834	80.241069	51172	21.74	28	28	35	27.41	<0.5	<0.5	98.74	269	35.09	6	11.44	1.17	<1
71	110155	Stream sediments	Amphibolite	29.774348	80.249082	27438	9.32	23	38	49	21.36	<0.5	<0.5	164.41	150	20.36	9	8.19	0.64	<1
72	110251	Bedrock	Amphibolite	29.832018	80.23595	14849	2.84	7	22	15	2.33	<0.5	<0.5	25.26	5	3.01	<5	1.12	<0.5	<1
73	110252	Bedrock	Amphibolite	29.81089	80.246905	36728	9.10	24	148	35	14.09	<0.5	1.20	66.89	256	30.54	<5	7.34	<0.5	<1
74	110253	Bedrock	Amphibolite	29.747852	80.331929	38007	11.76	33	427	63	19.13	<0.5	<0.5	131.51	41	15.08	6	7.86	1.07	<1
75	110254	Bedrock	Amphibolite	29.755571	80.336212	44038	5.55	14	4891	4091	18.98	<0.5	2.99	155.27	23	17.24	<5	3.24	2.21	9

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
51	108736	Amphibolite	Bedrock	29.751808	80.34044	<0.5	<0.5	4.66	2.46	1.08	6.12	941	63.61	126.48	14.37	50.37	8.69	1.95	6.84	0.79
52	108737	Amphibolite	Bedrock	29.796783	80.274358	<0.5	<0.5	<0.5	5.47	<0.5	<0.5	<5	11.28	24.01	3.06	12.81	3.48	2.31	4.01	0.62
53	108738	Amphibolite	Bedrock	29.734388	80.318348	<0.5	<0.5	<0.5	1.06	<0.5	<0.5	<5	5.91	12.58	1.62	6.76	1.57	0.95	1.74	<0.5
54	108739	Amphibolite	Bedrock	29.796657	80.274084	0.60	<0.5	9.77	1.48	<0.5	<0.5	<5	6.88	17.45	2.61	12.59	3.61	1.17	4.25	0.68
55	108740	Chlorite schist	Bedrock	29.797482	80.272643	<0.5	<0.5	<0.5	0.76	<0.5	<0.5	<5	22.40	45.75	5.44	20.44	3.82	1.02	3.26	<0.5
56	108741	Chlorite schist	Bedrock	29.79577	80.272917	<0.5	<0.5	<0.5	<0.5	<0.5	1.96	893	9.54	21.66	2.76	11.07	2.43	0.83	2.58	<0.5
57	108742	Amphibolite	Bedrock	29.795135	80.273105	<0.5	<0.5	<0.5	<0.5	<0.5	0.66	156	17.91	38.59	4.72	19.52	4.57	1.48	4.87	0.72
58	108743	Amphibolite	Bedrock	29.796362	80.27379	<0.5	<0.5	<0.5	0.79	<0.5	<0.5	<5	5.59	14.81	2.21	10.86	3.14	1.08	3.66	0.60
59	106354	Amphibolite	Stream Sediment	29.75422	80.343513	<0.5	<0.5	<0.5	0.59	<0.5	3.26	258	22.04	48.25	5.65	22.07	4.84	1.57	4.91	0.72
60	108744	Amphibolite	Bedrock	29.799299	80.275482	<0.5	<0.5	<0.5	1.45	<0.5	0.67	13	4.66	12.52	1.89	9.27	2.79	1.11	3.37	0.55
61	108745	Amphibolite	Bedrock	29.799055	80.275189	<0.5	<0.5	<0.5	1.55	<0.5	1.24	179	30.12	63.89	7.62	30.72	7.04	1.69	7.63	1.13
62	108746	Amphibolite	Bedrock	29.816944	80.263267	<0.5	<0.5	<0.5	7.20	<0.5	3.41	176	27.68	52.72	6.00	21.00	3.85	0.59	3.16	<0.5
63	108747	Amphibolite	Bedrock	29.731673	80.274087	<0.5	<0.5	1.11	<0.5	<0.5	<0.5	223	26.93	51.18	7.02	29.25	6.35	1.78	7.55	1.00
64	108748	Phyllite	Bedrock	29.758586	80.348523	2.64	<0.5	0.73	2.61	<0.5	3.44	611	9.92	16.88	2.26	8.18	1.66	0.50	1.74	<0.5
65	108749	Phyllite	Bedrock	29.730752	80.329887	<0.5	<0.5	1.46	<0.5	<0.5	0.92	105	24.54	43.40	5.54	20.88	4.11	0.80	3.65	<0.5
66	108750	Phyllite	Bedrock	29.831025	80.238385	<0.5	<0.5	1.01	0.56	<0.5	<0.5	48	7.40	15.94	2.43	11.96	3.24	1.05	4.12	0.60
67	110151	Amphibolite	Stream sediments	29.791656	80.313954	<0.5	<0.5	<0.5	0.60	<0.5	5.37	331	37.34	82.96	9.00	34.68	7.03	1.79	6.89	0.95
68	110152	Amphibolite	Stream sediments	29.79033	80.238402	<0.5	<0.5	<0.5	<0.5	<0.5	4.97	563	90.59	182.62	20.56	74.09	13.74	3.23	12.00	1.55
69	110153	Amphibolite	Stream sediments	29.795693	80.242958	0.76	<0.5	6.49	2.09	<0.5	6.78	504	57.46	114.66	13.07	48.13	9.47	2.34	8.79	1.17
70	110154	Amphibolite	Stream sediments	29.796834	80.241069	1.17	<0.5	<0.5	1.01	1.16	3.87	407	73.88	147.75	16.90	62.63	12.25	3.35	11.16	1.46
71	110155	Amphibolite	Stream sediments	29.774348	80.249082	<0.5	<0.5	<0.5	2.17	<0.5	11.64	326	53.32	105.90	11.80	42.99	8.17	1.67	6.87	0.88
72	110251	Amphibolite	Bedrock	29.832018	80.23595	<0.5	<0.5	<0.5	<0.5	<0.5	1.54	46	13.58	20.90	2.77	9.55	1.85	<0.5	1.69	<0.5
73	110252	Amphibolite	Bedrock	29.81089	80.246905	<0.5	<0.5	2.22	<0.5	<0.5	2.32	295	43.95	76.35	9.47	35.06	6.69	1.28	7.57	0.94
74	110253	Amphibolite	Bedrock	29.747852	80.331929	<0.5	0.51	19.72	0.75	<0.5	4.74	342	37.46	55.00	7.35	26.53	4.88	0.97	4.79	0.56
75	110254	Amphibolite	Bedrock	29.755571	80.336212	1.46	0.74	124.74	44.23	<0.5	4.07	291	45.73	101.80	9.83	36.65	6.48	1.18	6.70	0.81

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)	
51	108736	Amphibolite	Bedrock	29.751808	80.34044	3.66	0.60	1.62	<0.5	1.07	<0.5	1.07	5.61	21.81	0.80	22	6.41	14.77	2.47	
52	108737	Amphibolite	Bedrock	29.796783	80.274358	4.01	0.83	2.44	<0.5	1.95	<0.5	1.81	0.88	3.42	<0.5	7	<0.5	2.63	1.79	
53	108738	Amphibolite	Bedrock	29.734388	80.318348	1.69	<0.5	0.91	<0.5	0.73	<0.5	0.90	0.57	8.06	<0.5	<5	<0.5	1.16	<0.5	
54	108739	Amphibolite	Bedrock	29.796657	80.274084	4.14	0.80	2.16	<0.5	1.66	<0.5	8.95	0.70	21.55	<0.5	<5	<0.5	0.81	<0.5	
55	108740	Chlorite schist	Bedrock	29.797482	80.272643	2.41	0.52	1.69	<0.5	1.47	<0.5	1.98	2.65	15.79	<0.5	<5	<0.5	3.04	<0.5	
56	108741	Chlorite schist	Bedrock	29.79577	80.272917	2.28	<0.5	1.30	<0.5	1.06	<0.5	<0.5	0.93	8.12	<0.5	5	<0.5	1.50	<0.5	
57	108742	Amphibolite	Bedrock	29.795135	80.273105	4.17	0.79	2.22	<0.5	1.71	<0.5	1.25	1.17	8.49	<0.5	7	<0.5	2.95	0.62	
58	108743	Amphibolite	Bedrock	29.796362	80.27379	3.50	0.65	1.84	<0.5	1.44	<0.5	3.28	<0.5	9.85	<0.5	<5	<0.5	<0.5	<0.5	
59	106354	Amphibolite	Stream Sediment	29.75422	80.343513	4.00	0.78	2.11	<0.5	1.68	<0.5	2.81	0.66	11.03	<0.5	9	<0.5	5.49	0.90	
60	108744	Amphibolite	Bedrock	29.799299	80.275482	3.30	0.63	1.67	<0.5	1.37	<0.5	2.87	1.00	6.39	<0.5	6	<0.5	0.95	<0.5	
61	108745	Amphibolite	Bedrock	29.799055	80.275189	6.53	1.24	3.35	<0.5	2.24	<0.5	1.06	1.20	18.88	<0.5	<5	<0.5	3.82	0.58	
62	108746	Amphibolite	Bedrock	29.816944	80.263267	1.35	<0.5	0.60	<0.5	<0.5	<0.5	<0.5	<0.5	20.61	0.73	128	<0.5	9.28	1.13	
63	108747	Amphibolite	Bedrock	29.731673	80.274087	6.30	1.32	3.84	<0.5	3.54	0.50	1.29	3.21	0.67	<0.5	16	<0.5	6.14	0.92	
64	108748	Phyllite	Bedrock	29.758586	80.348523	0.92	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.64	2.01	1.24	25	0.54	10.72	8.90	
65	108749	Phyllite	Bedrock	29.730752	80.329887	1.08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.82	<0.5	<0.5	<5	<0.5	7.71	0.74	
66	108750	Phyllite	Bedrock	29.831025	80.238385	3.35	0.69	1.78	<0.5	1.42	<0.5	0.82	3.18	0.56	<0.5	<5	<0.5	2.28	<0.5	
67	110151	Amphibolite	Stream sediments	29.791656	80.313954	5.27	0.95	2.59	<0.5	1.96	<0.5	0.67	1.16	11.43	0.54	15	<0.5	8.99	1.62	
68	110152	Amphibolite	Stream sediments	29.79033	80.238402	7.80	1.38	3.94	<0.5	2.85	<0.5	<0.5	1.47	<0.5	0.71	31	0.91	22.52	7.15	
69	110153	Amphibolite	Stream sediments	29.795693	80.242958	5.97	1.07	2.85	<0.5	2.33	<0.5	9.39	1.59	2.39	0.77	21	0.87	16.65	6.53	
70	110154	Amphibolite	Stream sediments	29.796834	80.241069	7.26	1.28	3.29	<0.5	2.38	<0.5	38.72	1.57	8.86	0.56	16	<0.5	19.24	5.53	
71	110155	Amphibolite	Stream sediments	29.774348	80.249082	4.06	0.68	1.75	<0.5	1.27	<0.5	2.98	1.30	<0.5	0.74	19	2.37	15.17	11.50	
72	110251	Amphibolite	Bedrock	29.832018	80.23595	0.76	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	98	4.29	2.65	<0.5	
73	110252	Amphibolite	Bedrock	29.81089	80.246905	5.35	1.07	3.01	<0.5	2.43	<0.5	<0.5	3.83	0.75	<0.5	88	<0.5	20.52	3.08	
74	110253	Amphibolite	Bedrock	29.747852	80.331929	2.90	0.57	1.59	<0.5	1.17	<0.5	<0.5	3.22	2.19	0.56	171	3.41	14.37	2.17	
75	110254	Amphibolite	Bedrock	29.755571	80.336212	4.20	0.80	2.19	<0.5	1.55	<0.5	<0.5	1.81	3.56	0.72	26932	3.35	25.24	3.46	
Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
76	110255	Amphibolite	Bedrock	29.813077	80.241472	13.55	1.26	<5	29001	33055	84670	787	100	2259	58271	25.45	9046	309	86	1394
77	110256	Quartzite	Bedrock	29.753267	80.342569	<0.5	<0.5	<5	162	234	4589	100	100	1880	298	<0.5	581	10	376	100

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

78	110257	Amphibolite	Bedrock	29.772656	80.311954	4.96	2.35	<5	2028	5478	1E+05	650	100	34575	2075	20.93	4056	165	190	282
79	110258	Chlorite Schist	Bedrock	29.819733	80.235402	1.71	<0.5	<5	165	584	2048	100	1270	432	242	<0.5	108	9	344	100
80	110259	Chlorite Schist	Bedrock	29.811693	80.239958	21.57	3.59	<5	18947	7933	57436	468	274	7927	11135	10.59	1697	60	197	613
81	110260	Amphibolite	Bedrock	29.810834	80.246069	10.00	2.75	<5	22336	34752	74560	623	1828	4220	52814	30.57	9033	315	127	1134
82	110261	Amphibolite	Bedrock	29.774358	80.313082	6.27	0.63	<5	21538	27781	70719	1038	126	9686	58537	13.69	8516	310	78	1690
83	110262	Amphibolite	Bedrock	29.786828	80.275083	19.80	1.45	<5	2036	11138	31151	748	2692	19622	2586	4.44	2074	42	468	227
84	110263	Granite Gneiss	Bedrock	29.829018	80.203764	1.08	<0.5	<5	634	1370	8263	100	3513	3175	277	0.85	144	11	163	100
85	110264	Amphibolite	Bedrock	29.732877	80.321627	0.72	0.87	<5	58039	646	79692	142	100	12612	20183	<0.5	174	10	71	100
86	110265	Phyllite	Bedrock	29.829105	80.241407	31.62	4.70	<5	1265	5593	69125	4914	367	11509	1566	4.61	918	289	50	3443
87	110266	Granite Gneiss	Bedrock	29.761983	80.321196	18.22	3.70	<5	14872	3032	64203	432	100	43797	1801	2.02	667	8	130	100
88	110267	Granite Gneiss	Bedrock	29.732899	80.332937	3.49	<0.5	<5	227	6613	13919	705	100	5510	2276	2.11	1188	27	131	100
89	110268	Phyllite	Bedrock	29.834567	80.231498	40.97	3.03	<5	2053	8546	1E+05	290	100	47756	566	17.11	5310	132	188	1330
90	110269	Amphibolite	Bedrock	29.809936	80.241696	12.26	1.03	<5	22069	38119	79834	425	100	3067	69303	31.89	8559	329	133	1367
91	110270	Phyllite	Bedrock	29.83407	80.232014	15.60	1.03	<5	520	2403	29974	144	100	11822	298	4.57	1348	41	495	451
92	110271	Phyllite	Bedrock	29.849395	80.155559	48.56	2.60	<5	1305	3913	52077	361	256	17945	1074	6.60	1086	152	134	1252
93	110272	Amphibolite	Bedrock	29.833061	80.210211	6.81	1.01	<5	16692	24231	62930	616	295	6055	59518	35.54	19856	955	48	1641
94	110273	Granite Gneiss	Bedrock	29.773589	80.297705	10.54	1.13	<5	6639	5614	46570	441	100	5744	2120	4.69	955	22	219	100
95	110274	Chlorite Schist	Bedrock	29.816593	80.205034	23.06	3.34	52.52	7068	20714	1E+05	567	100	6556	4905	16.08	2600	123	190	206
96	110275	Amphibolite	Bedrock	29.810834	80.246069	15.33	1.10	<5	18029	33359	69612	635	931	5439	55537	28.93	9739	346	95	1257
97	110276	Amphibolite	Bedrock	29.750519	80.343528	9.23	0.76	<5	9615	24369	61205	741	843	3494	59258	35.63	24380	581	31	2004
98	110277	Amphibolite	Bedrock	29.796783	80.274358	33.27	3.42	<5	8602	29818	73316	413	100	1221	96788	<5	8225	414	172	997
99	106355	Stream Sediment	Stream Sediment	29.755487	80.335925	38.89	3.54	NA	NA	NA	50000	NA	NA	NA	5000	24.10	500	107	132	NA
100	106356	Stream Sediment	Stream Sediment	29.75505	80.336569	40.50	3.83	NA	NA	NA	50000	NA	NA	NA	5000	24.80	500	113	108	NA

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
76	110255	Amphibolite	Bedrock	29.813077	80.241472	98464	34.84	36	89	112	19.97	<0.5	<0.5	2.37	268	18.70	12	6.98	<0.5	<1
77	110256	Quartzite	Bedrock	29.753267	80.342569	13656	0.54	5	5	5	1.17	<0.5	<0.5	6.66	5	0.66	<5	<0.5	<0.5	<1
78	110257	Amphibolite	Bedrock	29.772656	80.311954	61636	8.80	14	67	70	28.30	<0.5	1.62	184.73	33	6.28	6	13.49	0.86	<1
79	110258	Chlorite Schist	Bedrock	29.819733	80.235402	8319	4.60	22	463	9	0.54	<0.5	<0.5	4.38	5	<0.5	<5	<0.5	0.56	<1
80	110259	Chlorite Schist	Bedrock	29.811693	80.239958	49544	7.37	19	59	182	11.17	<0.5	<0.5	130.33	79	18.55	<5	5.86	0.62	<1
81	110260	Amphibolite	Bedrock	29.810834	80.246069	95190	34.40	23	152	83	19.93	<0.5	8.16	9.70	171	21.50	13	7.21	0.73	<1
82	110261	Amphibolite	Bedrock	29.774358	80.313082	1E+05	17.08	21	132	184	11.00	<0.5	<0.5	10.73	318	11.91	16	3.86	<0.5	<1
83	110262	Amphibolite	Bedrock	29.786828	80.275083	45646	24.33	12	2818	60	9.32	<0.5	0.87	301.21	11	15.11	<5	6.77	10.39	<1
84	110263	Granite Gneiss	Bedrock	29.829018	80.203764	15760	23.33	8	200	5	3.18	<0.5	<0.5	11.36	5	<0.5	<5	<0.5	1.35	<1
85	110264	Amphibolite	Bedrock	29.732877	80.321627	3505	1.11	5	5	5	10.62	<0.5	6.69	21.53	458	<0.5	<5	1.60	<0.5	<1
86	110265	Phyllite	Bedrock	29.829105	80.241407	2E+05	135.75	320	1182	1413	8.69	<0.5	1.34	78.39	42	38.88	7	0.96	39.51	<1
87	110266	Granite Gneiss	Bedrock	29.761983	80.321196	13478	0.92	5	8	18	17.41	<0.5	<0.5	629.26	26	12.61	<5	11.76	0.67	<1
88	110267	Granite Gneiss	Bedrock	29.732899	80.332937	60449	1.15	6	5	13	3.60	<0.5	<0.5	22.58	8	4.62	6	1.86	0.52	<1
89	110268	Phyllite	Bedrock	29.834567	80.231498	44632	4.57	8	31	87	26.34	<0.5	<0.5	382.31	48	14.32	19	20.06	0.71	<1
90	110269	Amphibolite	Bedrock	29.809936	80.241696	1E+05	44.96	57	45	122	20.01	<0.5	0.59	6.58	211	22.52	10	8.85	<0.5	<1
91	110270	Phyllite	Bedrock	29.83407	80.232014	26114	6.36	11	48	54	7.31	<0.5	<0.5	84.26	10	4.66	<5	4.24	0.63	<1
92	110271	Phyllite	Bedrock	29.849395	80.155559	83127	47.96	134	210	102	11.59	<0.5	0.63	106.04	14	7.22	<5	1.03	5.25	<1
93	110272	Amphibolite	Bedrock	29.833061	80.210211	1E+05	63.17	39	121	150	24.11	<0.5	<0.5	34.84	211	23.67	10	8.93	0.71	<1
94	110273	Granite Gneiss	Bedrock	29.773589	80.297705	22105	4.93	8	5	52	16.98	<0.5	8.03	50.25	17	13.68	<5	2.66	<0.5	<1
95	110274	Chlorite Schist	Bedrock	29.816593	80.205034	67437	18.44	45	98	231	26.08	<0.5	1.10	38.84	93	40.44	6	5.28	<0.5	<1
96	110275	Amphibolite	Bedrock	29.810834	80.246069	97633	36.08	21	71	91	19.90	<0.5	<0.5	11.35	195	22.11	15	7.38	0.75	<1
97	110276	Amphibolite	Bedrock	29.750519	80.343528	1E+05	17.87	5	17	107	23.11	<0.5	1.05	2.86	132	28.27	11	11.91	1.00	<1
98	110277	Amphibolite	Bedrock	29.796783	80.274358	81707	32.72	69	86	61	31.72	12.50	<0.5	<0.5	452	<0.5	17	<0.5	14.36	<1
99	106355	Stream Sediment	Stream Sediment	29.755487	80.335925	1000	21.41	39	5495	1367	38.05	0.52	6.46	200.14	126	48.58	10	16.11	0.72	<1
100	106356	Stream Sediment	Stream Sediment	29.75505	80.336569	1000	18.95	38	980	547	38.09	0.57	7.48	204.89	124	49.06	6	14.35	0.59	<1

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
76	110255	Amphibolite	Bedrock	29.813077	80.241472	<0.5	<0.5	2.94	<0.5	<0.5	<0.5	55	12.37	24.07	3.40	14.66	3.62	1.22	4.25	0.56
77	110256	Quartzite	Bedrock	29.753267	80.342569	<0.5	<0.5	4.62	<0.5	<0.5	<0.5	17	6.02	10.55	1.26	4.61	0.86	<0.5	0.70	<0.5
78	110257	Amphibolite	Bedrock	29.772656	80.311954	<0.5	<0.5	5.14	0.50	<0.5	4.99	549	55.94	93.67	11.77	44.15	8.02	1.44	7.04	0.68
79	110258	Chlorite Schist	Bedrock	29.819733	80.235402	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	0.51	1.12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
80	110259	Chlorite Schist	Bedrock	29.811693	80.239958	<0.5	<0.5	2.07	<0.5	<0.5	11.50	72	14.23	24.25	3.10	11.29	2.22	<0.5	2.23	<0.5
81	110260	Amphibolite	Bedrock	29.810834	80.246069	<0.5	<0.5	0.93	<0.5	<0.5	0.66	52	17.06	32.93	4.62	19.43	4.61	1.54	5.52	0.76
82	110261	Amphibolite	Bedrock	29.774358	80.313082	<0.5	<0.5	1.51	0.66	<0.5	<0.5	223	9.19	18.33	2.53	10.94	2.55	0.94	2.98	<0.5
83	110262	Amphibolite	Bedrock	29.786828	80.275083	<0.5	<0.5	10.15	<0.5	<0.5	22.35	124	11.85	18.85	2.53	9.71	1.99	<0.5	2.46	<0.5
84	110263	Granite Gneiss	Bedrock	29.829018	80.203764	<0.5	<0.5	2.55	<0.5	<0.5	<0.5	16	0.80	1.48	<0.5	0.69	<0.5	<0.5	<0.5	<0.5
85	110264	Amphibolite	Bedrock	29.732877	80.321627	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	172	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
86	110265	Phyllite	Bedrock	29.829105	80.241407	12.33	<0.5	1.15	8.20	<0.5	5.03	241	22.97	45.01	5.14	19.58	3.71	0.82	5.11	0.65
87	110266	Granite Gneiss	Bedrock	29.761983	80.321196	<0.5	<0.5	15.25	<0.5	<0.5	20.53	58	11.64	18.60	3.11	10.15	2.75	<0.5	3.14	<0.5
88	110267	Granite Gneiss	Bedrock	29.732899	80.332937	<0.5	<0.5	3.40	<0.5	<0.5	0.55	43	27.97	53.65	6.00	22.51	4.33	0.65	3.74	<0.5
89	110268	Phyllite	Bedrock	29.834567	80.231498	<0.5	<0.5	5.28	0.64	<0.5	15.56	812	53.44	87.08	10.66	38.01	6.37	1.26	6.01	0.67
90	110269	Amphibolite	Bedrock	29.809936	80.241696	<0.5	<0.5	2.04	<0.5	<0.5	1.42	90	14.21	27.21	3.79	16.41	4.10	1.65	4.82	0.72
91	110270	Phyllite	Bedrock	29.83407	80.232014	<0.5	<0.5	1.38	0.73	<0.5	4.41	179	19.74	42.95	4.61	16.34	2.99	0.50	2.57	<0.5
92	110271	Phyllite	Bedrock	29.849395	80.155559	<0.5	<0.5	2.43	10.84	<0.5	4.71	340	27.82	45.41	6.10	22.95	4.05	0.83	3.91	<0.5
93	110272	Amphibolite	Bedrock	29.833061	80.210211	<0.5	<0.5	<0.5	<0.5	<0.5	7.07	181	15.69	30.36	4.31	19.01	4.64	1.59	5.77	0.80
94	110273	Granite Gneiss	Bedrock	29.773589	80.297705	<0.5	<0.5	4.58	<0.5	<0.5	2.23	32	37.01	67.96	8.79	32.19	6.64	<0.5	6.23	0.73
95	110274	Chlorite Schist	Bedrock	29.816593	80.205034	<0.5	<0.5	13.01	<0.5	<0.5	1.87	75	258.16	408.66	38.14	139.51	23.05	4.69	20.41	2.13
96	110275	Amphibolite	Bedrock	29.810834	80.246069	<0.5	<0.5	1.01	<0.5	<0.5	0.59	125	16.27	31.42	4.25	18.77	4.40	1.45	5.30	0.72
97	110276	Amphibolite	Bedrock	29.750519	80.343528	<0.5	<0.5	1.14	<0.5	<0.5	<0.5	64	18.75	36.69	5.24	22.69	5.67	1.88	6.85	0.91
98	110277	Amphibolite	Bedrock	29.796783	80.274358	79.91	156.26	18.10	65.93	11.93	2.29	12	10.42	20.65	2.89	12.83	3.51	1.37	4.41	0.62
99	106355	Stream Sediment	Stream Sediment	29.755487	80.335925	6.62	<0.5	7.86	0.64	<0.5	8.75	572	109.52	223.47	25.08	86.68	16.09	2.38	14.13	2.08
100	106356	Stream Sediment	Stream Sediment	29.75505	80.336569	1.31	<0.5	9.80	0.64	0.54	9.91	624	113.66	228.79	25.92	89.48	16.69	2.53	14.52	2.18

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
76	110255	Amphibolite	Bedrock	29.813077	80.241472	3.51	0.75	2.10	<0.5	1.62	<0.5	0.83	3.58	<0.5	<0.5	64	<0.5	3.54	<0.5
77	110256	Quartzite	Bedrock	29.753267	80.342569	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	2.64	<0.5
78	110257	Amphibolite	Bedrock	29.772656	80.311954	2.29	<0.5	0.63	<0.5	<0.5	<0.5	<0.5	8.26	21.57	0.64	11	<0.5	21.95	3.73
79	110258	Chlorite Schist	Bedrock	29.819733	80.235402	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5
80	110259	Chlorite Schist	Bedrock	29.811693	80.239958	2.12	0.58	2.44	<0.5	5.33	1.10	<0.5	4.29	<0.5	0.72	183	<0.5	5.02	1.11
81	110260	Amphibolite	Bedrock	29.810834	80.246069	4.28	0.87	2.34	<0.5	1.98	<0.5	0.57	4.91	<0.5	<0.5	22	0.54	4.25	0.52
82	110261	Amphibolite	Bedrock	29.774358	80.313082	2.29	<0.5	1.30	<0.5	1.08	<0.5	<0.5	1.57	<0.5	<0.5	627	<0.5	2.30	<0.5
83	110262	Amphibolite	Bedrock	29.786828	80.275083	2.13	<0.5	1.31	<0.5	1.11	<0.5	<0.5	4.44	12.95	1.42	39	20.22	4.47	18.87
84	110263	Granite Gneiss	Bedrock	29.829018	80.203764	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.54	<0.5	<5	17.78	<0.5	0.95
85	110264	Amphibolite	Bedrock	29.732877	80.321627	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.19	<0.5	<0.5	11	<0.5	0.64	<0.5
86	110265	Phyllite	Bedrock	29.829105	80.241407	4.53	1.12	3.42	<0.5	2.91	<0.5	<0.5	<0.5	0.81	1.12	23	<0.5	7.83	6.52
87	110266	Granite Gneiss	Bedrock	29.761983	80.321196	2.61	<0.5	1.01	<0.5	0.82	<0.5	<0.5	8.18	3.43	2.06	16	<0.5	23.64	8.15
88	110267	Granite Gneiss	Bedrock	29.732899	80.332937	1.35	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.09	<0.5	7	<0.5	10.44	1.06
89	110268	Phyllite	Bedrock	29.834567	80.231498	2.88	0.53	1.73	<0.5	1.64	<0.5	0.51	14.58	5.17	1.02	38	<0.5	25.63	1.96
90	110269	Amphibolite	Bedrock	29.809936	80.241696	4.18	0.85	2.50	<0.5	2.01	<0.5	0.76	12.03	0.73	<0.5	19	<0.5	3.40	0.87
91	110270	Phyllite	Bedrock	29.83407	80.232014	1.54	<0.5	0.55	<0.5	<0.5	<0.5	<0.5	<0.5	0.68	<0.5	33	1.10	6.91	0.87
92	110271	Phyllite	Bedrock	29.849395	80.155559	1.61	<0.5	0.81	<0.5	0.57	<0.5	<0.5	<0.5	<0.5	0.80	21	0.80	9.09	4.53
93	110272	Amphibolite	Bedrock	29.833061	80.210211	4.68	0.96	2.59	<0.5	2.16	<0.5	0.78	2.97	<0.5	<0.5	12	<0.5	4.01	1.41
94	110273	Granite Gneiss	Bedrock	29.773589	80.297705	3.30	0.52	1.23	<0.5	0.85	<0.5	<0.5	2.34	1.07	<0.5	<5	16.32	30.04	3.15
95	110274	Chlorite Schist	Bedrock	29.816593	80.205034	8.27	1.49	4.11	0.51	3.34	<0.5	0.88	3.26	0.97	<0.5	6	10.79	23.63	5.81
96	110275	Amphibolite	Bedrock	29.810834	80.246069	4.12	0.85	2.43	<0.5	2.00	<0.5	0.75	3.87	<0.5	<0.5	7	<0.5	4.23	<0.5
97	110276	Amphibolite	Bedrock	29.750519	80.343528	5.47	1.12	2.97	<0.5	2.33	<0.5	0.69	4.44	<0.5	<0.5	7	0.53	4.14	0.55
98	110277	Amphibolite	Bedrock	29.796783	80.274358	3.78	0.80	2.27	<0.5	1.79	<0.5	0.99	10.43	<0.5	<0.5	<5	<0.5	2.85	1.20
99	106355	Stream Sediment	Stream Sediment	29.755487	80.335925	2.68	1.60	4.89	<0.5	3.59	<0.5	1.63	2.02	2.86	0.63	477.00	1.22	58.53	11.26
100	106356	Stream Sediment	Stream Sediment	29.755505	80.336569	2.84	1.67	5.04	<0.5	3.60	<0.5	0.50	1.85	2.82	0.56	463.00	1.36	62.15	12.83

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
101	106357	Stream Sediment	29.75505	80.336569	40.43	4.08	NA	NA	NA	50000	NA	NA	NA	5000	17.88	500	88	121	NA
102	106358	Stream Sediment	29.755471	80.33549	37.26	3.82	NA	NA	NA	50000	NA	NA	NA	5000	23.50	500	89	76	NA
103	106359	Stream Sediment	29.746547	80.333686	39.92	3.81	NA	NA	NA	50000	NA	NA	NA	5000	24.03	500	65	65	NA
104	106360	Stream Sediment	29.757655	80.341093	13.52	1.23	NA	NA	NA	50000	NA	NA	NA	5000	20.33	500	154	88	NA
105	106361	Stream Sediment	29.757321	80.340328	19.92	3.48	NA	NA	NA	50000	NA	NA	NA	5000	23.38	500	89	84	NA
106	106362	Stream Sediment	29.757365	80.337853	30.98	1.98	NA	NA	NA	50000	NA	NA	NA	5000	22.44	500	165	112	NA
107	106363	Stream Sediment	29.737096	80.323188	31.57	1.66	NA	NA	NA	50000	NA	NA	NA	5000	32.35	500	256	151	NA
108	106364	Stream Sediment	29.735254	80.321102	32.40	1.52	NA	NA	NA	50000	NA	NA	NA	5000	33.29	500	285	98	NA
109	106365	Stream Sediment	29.735274	80.328896	40.79	1.71	NA	NA	NA	50000	NA	NA	NA	5000	37.69	500	317	112	NA
110	106366	Stream Sediment	29.735598	80.332695	45.86	2.12	NA	NA	NA	50000	NA	NA	NA	5000	15.96	500	113	114	NA
111	106367	Stream Sediment	29.733438	80.326019	29.99	1.67	NA	NA	NA	50000	NA	NA	NA	5000	45.50	500	365	86	NA
112	106368	Stream Sediment	29.732635	80.322157	27.99	0.97	NA	NA	NA	50000	NA	NA	NA	5000	26.19	500	222	141	NA
113	106369	Stream Sediment	29.730562	80.324657	43.71	1.51	NA	NA	NA	50000	NA	NA	NA	5000	33.33	500	308	136	NA
114	106370	Stream Sediment	29.764495	80.324575	55.20	3.15	NA	NA	NA	50000	NA	NA	NA	5000	26.79	500	142	176	NA
115	106371	Stream Sediment	29.764405	80.327224	39.91	2.26	NA	NA	NA	50000	NA	NA	NA	5000	24.98	500	151	180	NA
116	106372	Stream Sediment	29.763345	80.332635	32.19	2.49	NA	NA	NA	50000	NA	NA	NA	5000	31.12	500	223	94	NA
117	106373	Stream Sediment	29.760644	80.33446	20.67	1.51	NA	NA	NA	50000	NA	NA	NA	5000	25.17	500	211	153	NA
118	106374	Stream Sediment	29.740416	80.326428	43.49	3.77	NA	NA	NA	50000	NA	NA	NA	5000	25.54	500	125	188	NA
119	106375	Stream Sediment	29.739365	80.327449	35.55	1.60	NA	NA	NA	50000	NA	NA	NA	5000	31.14	500	311	74	NA
120	106376	Stream Sediment	29.732166	80.3239	30.81	1.48	NA	NA	NA	50000	NA	NA	NA	5000	33.93	500	286	153	NA
121	106377	Stream Sediment	29.802749	80.25339	147.53	5.28	NA	NA	NA	50000	NA	NA	NA	5000	8.70	500	42	101	NA
122	106378	Stream Sediment	29.802017	80.255048	59.74	6.11	NA	NA	NA	50000	NA	NA	NA	5000	11.01	500	67	176	NA
123	106379	Stream Sediment	29.801823	80.255379	37.59	5.20	NA	NA	NA	50000	NA	NA	NA	5000	24.72	500	214	103	NA
124	106380	Stream Sediment	29.801526	80.258396	35.99	4.20	NA	NA	NA	50000	NA	NA	NA	5000	20.09	500	122	138	NA
125	106381	Stream Sediment	29.801898	80.260063	26.83	2.40	NA	NA	NA	50000	NA	NA	NA	5000	24.10	500	138	106	NA

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
101	106357	Stream Sediment	29.75505	80.336569	1000	14.31	39	50	104	31.24	<0.5	2.31	339.55	58	43.07	7	16.10	<0.5	<1
102	106358	Stream Sediment	29.755471	80.33549	1000	19.59	27	53	122	36.41	<0.5	5.54	196.58	127	47.66	4	11.39	0.54	<1
103	106359	Stream Sediment	29.746547	80.333686	1000	15.23	36	2490	1608	38.24	0.79	11.68	166.58	163	1688.29	60	14.62	0.96	<1
104	106360	Stream Sediment	29.757655	80.341093	1000	25.19	32	64	67	18.39	<0.5	3.17	44.79	106	25.42	6	5.48	<0.5	<1
105	106361	Stream Sediment	29.757321	80.340328	1000	13.44	22	22	45	40.06	0.58	7.68	266.13	29	21.46	6	10.19	1.07	<1
106	106362	Stream Sediment	29.757365	80.337853	1000	31.92	42	78	129	25.78	<0.5	3.86	110.87	146	26.93	9	6.82	<0.5	<1
107	106363	Stream Sediment	29.737096	80.323188	1000	42.15	61	99	124	28.45	<0.5	4.72	81.45	166	42.46	12	11.09	1.69	<1
108	106364	Stream Sediment	29.735254	80.321102	1000	48.49	59	110	100	28.08	<0.5	4.74	74.83	151	42.64	14	10.00	<0.5	<1
109	106365	Stream Sediment	29.735274	80.328896	1000	48.70	80	126	124	26.33	<0.5	3.82	83.98	108	34.60	13	9.24	<0.5	<1
110	106366	Stream Sediment	29.735598	80.332695	1000	17.41	57	48	93	24.95	<0.5	4.49	117.27	53	19.28	45	11.36	0.90	<1
111	106367	Stream Sediment	29.733438	80.326019	1000	48.95	51	115	115	29.35	<0.5	6.71	49.97	120	56.29	7	9.26	0.58	<1
112	106368	Stream Sediment	29.732635	80.322157	1000	42.65	55	87	105	24.72	<0.5	3.21	59.15	188	28.21	9	6.04	0.57	<1
113	106369	Stream Sediment	29.730562	80.324657	1000	50.14	53	128	144	31.29	<0.5	4.87	72.89	183	42.29	9	8.37	0.57	<1
114	106370	Stream Sediment	29.764495	80.324575	1000	28.37	52	78	134	32.45	<0.5	4.98	187.39	127	48.38	9	10.65	0.63	<1
115	106371	Stream Sediment	29.764405	80.327224	1000	34.49	78	116	229	28.02	<0.5	4.49	157.16	106	48.38	8	12.15	0.62	<1
116	106372	Stream Sediment	29.763345	80.332635	1000	39.00	55	120	169	29.40	<0.5	5.59	122.57	125	37.99	11	8.64	0.54	<1
117	106373	Stream Sediment	29.760644	80.33446	1000	38.36	47	71	106	26.00	<0.5	3.40	69.78	236	30.08	9	8.64	<0.5	<1
118	106374	Stream Sediment	29.740416	80.326428	1000	32.85	52	59	71	37.31	<0.5	6.48	240.75	72	44.23	10	15.89	0.75	<1
119	106375	Stream Sediment	29.739365	80.327449	1000	72.39	32	100	149	32.03	<0.5	5.32	84.95	147	45.83	15	14.18	0.93	<1
120	106376	Stream Sediment	29.732166	80.3239	1000	51.16	52	91	109	26.88	<0.5	4.08	58.55	159	35.79	11	8.67	0.68	<1
121	106377	Stream Sediment	29.802749	80.25339	1000	9.10	33	53	152	31.13	<0.5	2.53	455.07	39	38.44	27	23.30	0.88	<1
122	106378	Stream Sediment	29.802017	80.255048	1000	13.73	38	50	172	25.37	<0.5	2.99	291.75	71	29.87	27	16.07	0.93	<1
123	106379	Stream Sediment	29.801823	80.255379	1000	40.03	46	114	188	31.34	<0.5	5.84	194.79	80	40.78	12	11.19	0.86	<1
124	106380	Stream Sediment	29.801526	80.258396	1000	23.60	45	64	117	32.53	<0.5	5.47	246.21	69	41.93	16	15.49	0.70	<1
125	106381	Stream Sediment	29.801898	80.260063	1000	26.14	48	46	83	28.27	<0.5	5.72	111.18	72	33.41	16	7.57	0.67	<1

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
101	106357	Stream Sediment	29.75505	80.336569	<0.5	<0.5	26.52	0.63	0.54	16.15	434	47.15	101.80	11.48	39.09	7.36	1.07	6.36	0.96
102	106358	Stream Sediment	29.755471	80.33549	<0.5	<0.5	11.21	<0.5	<0.5	6.05	652	92.90	186.96	21.50	74.23	13.89	1.95	12.48	1.92
103	106359	Stream Sediment	29.746547	80.333686	1.94	0.67	43.73	0.73	0.92	7.97	593	164.56	338.67	37.18	127.96	24.33	3.20	21.85	3.43
104	106360	Stream Sediment	29.757655	80.341093	<0.5	<0.5	3.83	0.52	<0.5	1.82	154	34.44	79.17	9.21	34.09	7.21	1.43	6.41	0.99
105	106361	Stream Sediment	29.757321	80.340328	<0.5	<0.5	19.36	0.62	<0.5	5.27	1030	122.30	250.63	27.74	95.48	17.35	2.57	13.51	1.57
106	106362	Stream Sediment	29.757365	80.337853	<0.5	<0.5	4.81	0.51	<0.5	4.07	348	38.35	87.36	9.95	35.82	7.17	1.55	6.61	1.03
107	106363	Stream Sediment	29.737096	80.323188	<0.5	<0.5	4.15	0.64	<0.5	3.23	399	44.76	102.01	12.14	46.58	9.86	2.44	9.81	1.59
108	106364	Stream Sediment	29.735254	80.321102	<0.5	<0.5	2.31	<0.5	<0.5	2.72	372	40.96	94.42	11.45	44.05	9.64	2.40	9.62	1.58
109	106365	Stream Sediment	29.735274	80.328896	<0.5	<0.5	2.53	0.62	<0.5	3.63	364	34.38	77.70	9.63	36.97	8.11	1.93	7.99	1.31
110	106366	Stream Sediment	29.735598	80.332695	<0.5	<0.5	8.38	0.51	<0.5	7.85	350	56.59	128.85	14.07	48.78	9.18	1.34	6.85	0.94
111	106367	Stream Sediment	29.733438	80.326019	<0.5	<0.5	2.79	0.60	<0.5	1.55	314	49.62	117.65	14.40	55.26	12.04	2.91	12.84	2.11
112	106368	Stream Sediment	29.732635	80.322157	<0.5	<0.5	1.92	0.59	<0.5	1.94	254	23.41	52.30	6.61	25.54	6.00	1.84	6.31	1.04
113	106369	Stream Sediment	29.730562	80.324657	<0.5	<0.5	3.18	0.67	<0.5	2.35	386	30.77	68.82	8.86	34.47	8.01	2.33	8.30	1.36
114	106370	Stream Sediment	29.764495	80.324575	<0.5	<0.5	7.93	0.63	<0.5	9.14	456	70.48	159.18	17.48	62.21	12.27	2.05	11.53	1.86
115	106371	Stream Sediment	29.764405	80.327224	0.79	<0.5	5.89	0.66	<0.5	7.07	426	53.11	112.57	13.26	46.27	9.26	1.82	8.42	1.32
116	106372	Stream Sediment	29.763345	80.332635	<0.5	<0.5	4.59	0.63	0.56	5.99	311	51.84	118.73	13.64	49.21	10.36	2.14	9.82	1.55
117	106373	Stream Sediment	29.760644	80.33446	<0.5	<0.5	3.04	<0.5	<0.5	3.70	273	35.73	79.71	9.63	36.15	7.73	2.34	7.79	1.23
118	106374	Stream Sediment	29.740416	80.326428	<0.5	<0.5	6.99	0.65	<0.5	8.33	639	100.69	206.12	23.38	80.11	15.23	2.33	13.25	1.96
119	106375	Stream Sediment	29.739365	80.327449	<0.5	<0.5	2.75	<0.5	<0.5	3.82	507	39.20	95.90	11.55	46.61	11.00	3.27	11.00	1.82
120	106376	Stream Sediment	29.732166	80.3239	<0.5	<0.5	3.02	0.61	<0.5	2.54	289	30.32	70.05	8.72	34.02	7.72	2.19	8.02	1.34
121	106377	Stream Sediment	29.802749	80.25339	<0.5	<0.5	27.20	<0.5	<0.5	37.01	208	25.67	60.29	6.98	23.87	6.03	0.67	6.43	1.36
122	106378	Stream Sediment	29.802017	80.255048	0.63	<0.5	11.54	<0.5	<0.5	22.88	284	35.25	86.52	9.11	31.32	6.81	1.03	6.34	1.15
123	106379	Stream Sediment	29.801823	80.255379	<0.5	<0.5	10.67	<0.5	<0.5	16.90	335	58.55	134.65	15.65	57.44	12.48	2.40	11.82	1.87
124	106380	Stream Sediment	29.801526	80.258396	<0.5	<0.5	14.67	<0.5	<0.5	12.48	398	71.94	167.04	18.19	62.89	12.82	2.04	11.50	1.90
125	106381	Stream Sediment	29.801898	80.260063	<0.5	<0.5	5.80	<0.5	<0.5	5.10	371	66.98	163.89	16.97	59.81	11.42	2.04	9.94	1.50

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
101	106357	Stream Sediment	29.75505	80.336569	1.20	0.70	2.05	<0.5	1.52	<0.5	<0.5	2.91	3.97	0.91	34.00	3.03	29.54	5.15
102	106358	Stream Sediment	29.755471	80.33549	2.19	1.61	5.07	<0.5	3.66	<0.5	<0.5	1.50	3.38	<0.5	57.00	0.94	57.70	12.33
103	106359	Stream Sediment	29.746547	80.333686	3.59	2.90	9.05	0.75	6.58	0.53	1.39	2.36	4.88	0.75	1296	2.35	103.47	21.63
104	106360	Stream Sediment	29.757655	80.341093	1.60	0.82	2.57	<0.5	1.91	<0.5	<0.5	0.74	1.25	<0.5	12.00	<0.5	18.30	2.36
105	106361	Stream Sediment	29.757321	80.340328	2.89	0.66	1.76	<0.5	0.95	<0.5	<0.5	1.55	10.09	0.56	16.00	<0.5	79.04	13.18
106	106362	Stream Sediment	29.757365	80.337853	1.75	0.83	2.69	<0.5	1.92	<0.5	<0.5	0.90	1.77	<0.5	39.00	<0.5	20.47	3.48
107	106363	Stream Sediment	29.737096	80.323188	2.74	1.39	4.47	<0.5	3.24	<0.5	0.56	1.29	1.83	<0.5	18.00	<0.5	15.38	2.80
108	106364	Stream Sediment	29.735254	80.321102	2.69	1.38	4.31	<0.5	3.30	<0.5	0.56	1.08	1.56	<0.5	11.00	<0.5	11.85	2.19
109	106365	Stream Sediment	29.735274	80.328896	2.16	1.14	3.67	<0.5	2.70	<0.5	0.56	0.82	1.33	<0.5	12.00	<0.5	11.00	2.00
110	106366	Stream Sediment	29.735598	80.332695	1.51	0.64	2.02	<0.5	1.57	<0.5	1.30	1.10	3.15	<0.5	39.00	0.51	38.60	4.83
111	106367	Stream Sediment	29.733438	80.326019	3.27	1.89	5.97	<0.5	4.31	<0.5	<0.5	1.03	1.64	<0.5	17.00	<0.5	14.84	2.56
112	106368	Stream Sediment	29.732635	80.322157	2.06	0.93	3.04	<0.5	2.29	<0.5	<0.5	0.65	1.23	<0.5	12.00	<0.5	6.96	1.33
113	106369	Stream Sediment	29.730562	80.324657	2.62	1.21	3.82	<0.5	2.81	<0.5	0.59	0.92	1.60	<0.5	27.00	0.59	9.53	1.74
114	106370	Stream Sediment	29.764495	80.324575	2.31	1.60	5.08	<0.5	3.83	<0.5	<0.5	1.88	2.73	0.51	34.00	1.60	43.69	9.74
115	106371	Stream Sediment	29.764405	80.327224	2.05	1.20	3.49	<0.5	2.59	<0.5	<0.5	1.47	2.08	0.51	72.00	0.76	28.74	5.28
116	106372	Stream Sediment	29.763345	80.332635	2.40	1.36	4.06	<0.5	2.96	<0.5	<0.5	1.35	2.24	<0.5	41.00	0.91	27.52	5.63
117	106373	Stream Sediment	29.760644	80.33446	2.63	1.14	3.28	<0.5	2.47	<0.5	<0.5	1.07	1.76	<0.5	25.00	<0.5	15.11	3.06
118	106374	Stream Sediment	29.740416	80.326428	2.61	1.63	4.73	<0.5	3.25	<0.5	<0.5	2.54	3.78	0.59	29.00	2.24	54.25	10.31
119	106375	Stream Sediment	29.739365	80.327449	3.68	1.67	5.09	<0.5	3.76	<0.5	0.62	1.48	1.77	<0.5	16.00	0.97	12.30	2.30
120	106376	Stream Sediment	29.732166	80.3239	2.46	1.30	3.83	<0.5	2.91	<0.5	<0.5	0.83	1.34	<0.5	20.00	<0.5	9.26	1.75
121	106377	Stream Sediment	29.802749	80.25339	0.75	1.19	3.25	<0.5	2.51	<0.5	0.87	7.40	15.63	1.14	63.00	6.87	46.40	9.59
122	106378	Stream Sediment	29.802017	80.255048	1.16	1.02	2.80	<0.5	2.18	<0.5	0.88	3.86	6.01	0.69	32.00	2.01	31.01	37.92
123	106379	Stream Sediment	29.801823	80.255379	2.69	1.49	4.20	<0.5	2.91	<0.5	<0.5	2.21	3.56	<0.5	19.00	3.16	33.80	24.11
124	106380	Stream Sediment	29.801526	80.258396	2.29	1.53	4.31	<0.5	3.00	<0.5	<0.5	2.90	4.96	0.58	32.00	2.92	49.81	9.45
125	106381	Stream Sediment	29.801898	80.260063	2.29	1.29	3.74	<0.5	2.74	<0.5	0.53	1.40	2.11	<0.5	19.00	0.75	44.60	6.43

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
126	106382	Stream Sediment	29.785629	80.272716	32.83	4.31	NA	NA	NA	50000	NA	NA	NA	5000	8.55	500	35	133	NA
127	106383	Stream Sediment	29.787313	80.275282	36.08	3.84	NA	NA	NA	50000	NA	NA	NA	5000	12.52	500	63	157	NA
128	106384	Stream Sediment	29.787941	80.274339	39.12	3.87	NA	NA	NA	50000	NA	NA	NA	5000	18.90	500	108	168	NA
129	106385	Stream Sediment	29.786021	80.277098	47.24	3.64	NA	NA	NA	50000	NA	NA	NA	5000	18.79	500	106	129	NA
130	106386	Stream Sediment	29.785915	80.279454	61.49	3.01	NA	NA	NA	50000	NA	NA	NA	5000	18.67	500	115	144	NA
131	106387	Stream Sediment	29.785728	80.281612	30.54	2.65	NA	NA	NA	50000	NA	NA	NA	5000	19.52	500	121	180	NA
132	106388	Stream Sediment	29.784823	80.27681	43.53	5.05	NA	NA	NA	50000	NA	NA	NA	5000	11.10	500	49	133	NA
133	106389	Stream Sediment	29.784787	80.283032	35.36	2.90	NA	NA	NA	50000	NA	NA	NA	5000	21.08	500	105	134	NA
134	106390	Stream Sediment	29.787062	80.280807	63.38	1.64	NA	NA	NA	50000	NA	NA	NA	5000	27.20	500	214	128	NA
135	106391	Stream Sediment	29.806916	80.238853	50.70	5.07	NA	NA	NA	50000	NA	NA	NA	5000	15.60	500	99	110	NA
136	106392	Stream Sediment	29.807581	80.232781	28.09	7.05	NA	NA	NA	50000	NA	NA	NA	5000	6.75	500	28	183	NA
137	106393	Stream Sediment	29.812987	80.230022	61.62	9.50	NA	NA	NA	50000	NA	NA	NA	5000	9.74	500	46	295	NA
138	106394	Stream Sediment	29.814563	80.229042	32.99	3.44	NA	NA	NA	50000	NA	NA	NA	5000	23.92	500	124	165	NA
139	106395	Stream Sediment	29.789937	80.276074	48.84	2.94	NA	NA	NA	50000	NA	NA	NA	5000	16.01	500	109	122	NA
140	106396	Stream Sediment	29.790122	80.275831	59.45	3.83	NA	NA	NA	50000	NA	NA	NA	5000	14.46	500	118	122	NA
141	106397	Stream Sediment	29.789271	80.277377	55.46	3.46	NA	NA	NA	50000	NA	NA	NA	5000	15.49	500	121	111	NA
142	106398	Stream Sediment	29.795866	80.266204	49.24	2.63	NA	NA	NA	50000	NA	NA	NA	5000	15.19	500	101	128	NA
143	106399	Stream Sediment	29.797694	80.267479	36.23	1.78	NA	NA	NA	50000	NA	NA	NA	5000	18.13	500	146	89	NA
144	106400	Stream Sediment	29.798184	80.268538	38.51	2.27	NA	NA	NA	50000	NA	NA	NA	5000	18.52	500	142	97	NA
145	106401	Stream Sediment	29.797503	80.273398	25.96	2.78	NA	NA	NA	50000	NA	NA	NA	5000	27.94	500	172	132	NA
146	106402	Stream Sediment	29.798532	80.272734	27.68	1.51	NA	NA	NA	50000	NA	NA	NA	5000	21.84	500	150	150	NA
147	106403	Stream Sediment	29.79863	80.270146	38.76	2.28	NA	NA	NA	50000	NA	NA	NA	5000	10.57	500	83	131	NA
148	106404	Stream Sediment	29.812337	80.227953	47.30	1.83	NA	NA	NA	50000	NA	NA	NA	5000	14.68	500	109	110	NA
149	106405	Stream Sediment	29.812346	80.23332	28.00	2.33	<5	NA	NA	69218	NA	NA	NA	12488	17.93	4509	101	239	NA
150	106406	Stream Sediment	29.812167	80.240598	49.58	3.64	<5	NA	NA	115605	NA	NA	NA	8040	24.92	5777	132	328	NA

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
126	106382	Stream Sediment	29.785629	80.272716	1000	9.39	24	31	106	29.34	<0.5	4.70	344.59	37	39.62	12	15.91	0.62	<1
127	106383	Stream Sediment	29.787313	80.275282	1000	15.41	36	130	96	34.19	0.57	7.78	241.07	54	48.56	8	14.12	0.74	<1
128	106384	Stream Sediment	29.787941	80.274339	1000	22.07	64	103	121	33.93	<0.5	6.05	241.43	43	37.96	24	14.39	0.84	<1
129	106385	Stream Sediment	29.786021	80.277098	1000	20.63	61	161	174	35.36	<0.5	5.42	316.34	47	34.29	21	13.77	1.17	<1
130	106386	Stream Sediment	29.785915	80.279454	1000	20.63	67	95	147	34.88	<0.5	4.95	250.65	71	24.56	23	14.34	0.93	<1
131	106387	Stream Sediment	29.785728	80.281612	1000	21.97	53	72	114	31.27	<0.5	4.53	200.37	70	22.97	10	12.12	1.42	<1
132	106388	Stream Sediment	29.784823	80.27681	1000	10.59	30	41	81	34.87	<0.5	6.76	285.08	42	53.75	21	16.24	0.88	<1
133	106389	Stream Sediment	29.784787	80.283032	1000	19.10	52	57	119	30.28	<0.5	4.20	207.40	64	26.11	11	12.69	0.62	<1
134	106390	Stream Sediment	29.787062	80.280807	1000	45.43	53	299	116	26.76	<0.5	3.64	118.78	122	45.78	11	7.86	0.50	<1
135	106391	Stream Sediment	29.806916	80.238853	1000	23.58	41	48	105	31.22	<0.5	2.98	339.66	56	31.90	20	15.54	0.67	<1
136	106392	Stream Sediment	29.807581	80.232781	1000	7.47	24	21	110	25.35	<0.5	3.63	332.99	50	36.14	18	16.89	0.68	<1
137	106393	Stream Sediment	29.812987	80.230022	1000	10.24	33	24	117	27.69	<0.5	4.57	361.91	61	34.49	22	18.08	1.17	<1
138	106394	Stream Sediment	29.814563	80.229042	1000	20.21	58	85	105	40.15	<0.5	6.38	225.69	68	38.84	14	16.37	0.68	<1
139	106395	Stream Sediment	29.789937	80.276074	1000	16.88	67	105	164	30.68	<0.5	3.56	208.25	70	17.57	22	14.73	0.86	<1
140	106396	Stream Sediment	29.790122	80.275831	1000	15.98	52	54	137	29.35	<0.5	5.16	218.35	94	13.05	22	17.18	1.14	<1
141	106397	Stream Sediment	29.789271	80.277377	1000	18.33	58	214	193	30.73	<0.5	5.83	219.92	97	14.45	16	21.50	0.66	<1
142	106398	Stream Sediment	29.795866	80.266204	1000	16.54	51	53	128	26.49	<0.5	6.42	200.24	92	26.89	18	15.44	1.07	<1
143	106399	Stream Sediment	29.797694	80.267479	1000	28.28	65	51	114	21.60	<0.5	5.12	105.28	100	23.63	24	10.35	<0.5	<1
144	106400	Stream Sediment	29.798184	80.268538	1000	23.11	54	47	113	22.81	<0.5	3.37	128.22	89	21.12	25	11.37	<0.5	<1
145	106401	Stream Sediment	29.797503	80.273398	1000	38.09	103	68	115	18.10	<0.5	3.15	61.05	117	20.00	12	4.84	<0.5	<1
146	106402	Stream Sediment	29.798532	80.272734	1000	29.83	92	63	101	17.96	<0.5	1.36	78.90	83	12.29	12	4.73	<0.5	<1
147	106403	Stream Sediment	29.79863	80.270146	1000	11.46	58	24	110	21.70	<0.5	6.70	131.72	75	19.81	28	10.76	0.62	<1
148	106404	Stream Sediment	29.812337	80.227953	1000	14.68	54	29	88	20.67	<0.5	4.29	150.51	70	16.37	45	15.14	0.54	<1
149	106405	Stream Sediment	29.812346	80.23332	41557	23.05	46	40	142	17.90	<0.5	1.06	102.82	91	17.78	26	8.79	2.47	<1
150	106406	Stream Sediment	29.812167	80.240598	50198	23.46	44	57	127	33.82	0.69	3.42	223.33	111	51.61	13	13.99	5.06	<1

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
126	106382	Stream Sediment	29.785629	80.272716	<0.5	<0.5	13.04	<0.5	<0.5	19.49	184	53.08	134.19	14.02	47.28	10.50	1.01	9.69	1.70
127	106383	Stream Sediment	29.787313	80.275282	<0.5	<0.5	10.84	<0.5	0.83	14.90	414	130.74	258.84	29.76	101.03	19.08	2.74	16.39	2.53
128	106384	Stream Sediment	29.787941	80.274339	<0.5	<0.5	10.37	<0.5	<0.5	18.61	488	94.82	192.12	21.03	73.24	13.65	2.14	12.24	1.83
129	106385	Stream Sediment	29.786021	80.277098	<0.5	<0.5	20.03	<0.5	<0.5	20.47	531	78.48	204.87	19.35	65.54	12.78	1.93	11.26	1.75
130	106386	Stream Sediment	29.785915	80.279454	<0.5	<0.5	14.32	<0.5	<0.5	20.11	589	82.65	203.04	18.93	64.76	11.97	1.96	10.12	1.46
131	106387	Stream Sediment	29.785728	80.281612	<0.5	<0.5	5.98	<0.5	<0.5	7.83	673	59.45	130.81	14.60	50.28	9.44	1.71	8.15	1.20
132	106388	Stream Sediment	29.784823	80.27681	<0.5	<0.5	12.61	<0.5	<0.5	19.25	236	100.07	241.91	24.68	84.04	17.63	1.49	15.33	2.54
133	106389	Stream Sediment	29.784787	80.283032	<0.5	<0.5	4.41	<0.5	0.71	8.75	569	62.83	137.13	14.82	50.17	9.54	1.65	8.15	1.22
134	106390	Stream Sediment	29.787062	80.280807	<0.5	<0.5	2.50	<0.5	<0.5	4.98	646	45.62	105.57	12.76	48.29	10.41	2.47	10.42	1.68
135	106391	Stream Sediment	29.806916	80.238853	<0.5	<0.5	9.59	<0.5	<0.5	25.20	248	25.47	59.61	7.07	24.75	6.13	1.03	5.99	1.18
136	106392	Stream Sediment	29.807581	80.232781	0.52	<0.5	10.59	<0.5	<0.5	18.56	171	22.96	52.66	6.44	21.64	6.05	0.60	6.39	1.38
137	106393	Stream Sediment	29.812987	80.230022	0.50	<0.5	14.02	<0.5	<0.5	22.57	243	36.52	85.36	9.47	31.43	7.51	0.84	6.96	1.34
138	106394	Stream Sediment	29.814563	80.229042	<0.5	<0.5	10.25	<0.5	<0.5	10.11	607	114.90	253.15	25.33	86.05	15.73	2.50	12.98	1.94
139	106395	Stream Sediment	29.789937	80.276074	<0.5	<0.5	5.41	<0.5	<0.5	14.00	503	52.98	145.29	13.10	45.38	8.57	1.52	7.13	1.00
140	106396	Stream Sediment	29.790122	80.275831	2.00	<0.5	7.90	0.64	<0.5	11.99	575	53.14	151.30	12.47	43.93	7.99	1.43	7.57	0.85
141	106397	Stream Sediment	29.789271	80.277377	0.92	<0.5	9.01	1.64	<0.5	12.20	561	64.55	180.90	14.94	52.57	9.56	1.72	8.74	0.99
142	106398	Stream Sediment	29.795866	80.266204	0.51	<0.5	12.20	0.60	<0.5	14.17	519	67.43	165.81	15.46	55.24	10.19	1.71	9.66	1.20
143	106399	Stream Sediment	29.797694	80.267479	5.58	<0.5	5.13	0.67	<0.5	5.59	370	36.80	91.00	9.20	34.72	6.68	1.48	6.77	0.88
144	106400	Stream Sediment	29.798184	80.268538	<0.5	<0.5	4.67	0.66	<0.5	6.72	416	40.25	105.37	9.77	35.75	6.89	1.31	6.55	0.84
145	106401	Stream Sediment	29.797503	80.273398	<0.5	<0.5	1.11	0.61	<0.5	1.65	246	21.05	52.20	5.64	21.91	4.63	1.15	5.00	0.71
146	106402	Stream Sediment	29.798532	80.272734	<0.5	<0.5	1.79	0.67	<0.5	3.11	286	21.47	53.39	5.40	20.57	3.99	0.88	3.97	0.51
147	106403	Stream Sediment	29.79863	80.270146	<0.5	<0.5	4.18	0.68	0.69	7.57	368	46.38	123.03	12.47	45.61	8.95	1.38	6.94	0.72
148	106404	Stream Sediment	29.812337	80.227953	1.00	<0.5	3.61	0.67	<0.5	8.76	462	39.01	96.46	9.47	34.07	6.59	1.18	5.89	0.73
149	106405	Stream Sediment	29.812346	80.23332	0.75	<0.5	<0.5	6.13	1.48	7.61	335	34.94	71.01	8.06	30.34	5.86	1.33	5.68	0.79
150	106406	Stream Sediment	29.812167	80.240598	<0.5	<0.5	5.92	2.46	1.93	15.89	727	177.62	366.39	39.90	146.49	28.15	5.00	26.93	3.56

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
126	106382	Stream Sediment	29.785629	80.272716	1.13	1.36	3.80	<0.5	2.68	<0.5	<0.5	3.89	4.51	0.72	34.00	3.99	58.24	13.60
127	106383	Stream Sediment	29.787313	80.275282	3.08	1.76	4.74	<0.5	3.05	<0.5	<0.5	2.66	4.33	0.60	48.00	19.92	67.49	20.24
128	106384	Stream Sediment	29.787941	80.274339	2.40	1.38	3.69	<0.5	2.29	<0.5	0.72	1.73	3.79	0.71	22.00	12.25	46.94	8.63
129	106385	Stream Sediment	29.786021	80.277098	2.16	1.32	3.55	<0.5	2.32	<0.5	0.68	2.42	4.82	0.81	54.00	20.29	53.66	11.19
130	106386	Stream Sediment	29.785915	80.279454	2.20	1.01	2.55	<0.5	1.63	<0.5	0.67	1.91	2.98	0.68	35.00	7.72	51.18	8.29
131	106387	Stream Sediment	29.785728	80.281612	1.92	0.89	2.44	<0.5	1.66	<0.5	<0.5	1.30	2.48	<0.5	29.00	0.81	28.88	5.11
132	106388	Stream Sediment	29.784823	80.27681	1.67	1.80	4.96	<0.5	3.37	<0.5	0.64	3.53	4.54	0.60	32.00	3.51	105.23	30.36
133	106389	Stream Sediment	29.784787	80.283032	1.85	0.97	2.68	<0.5	1.70	<0.5	<0.5	1.94	2.98	<0.5	24.00	0.73	32.86	6.08
134	106390	Stream Sediment	29.787062	80.280807	2.78	1.58	4.72	<0.5	3.60	<0.5	0.57	1.01	1.51	<0.5	19.00	<0.5	14.42	2.90
135	106391	Stream Sediment	29.806916	80.238853	1.15	1.06	2.90	<0.5	2.22	<0.5	0.60	4.03	7.17	0.77	34.00	4.09	30.15	8.22
136	106392	Stream Sediment	29.807581	80.232781	0.68	1.19	3.12	<0.5	2.27	<0.5	0.54	3.58	5.96	0.66	30.00	3.35	31.52	20.61
137	106393	Stream Sediment	29.812987	80.230022	0.95	1.13	3.01	<0.5	2.10	<0.5	0.73	3.91	7.52	0.75	29.00	3.72	36.66	48.54
138	106394	Stream Sediment	29.814563	80.229042	2.81	1.44	3.94	<0.5	2.60	<0.5	<0.5	2.35	3.17	<0.5	28.00	2.01	52.15	8.41
139	106395	Stream Sediment	29.789937	80.276074	1.71	0.74	1.84	<0.5	1.38	<0.5	0.70	1.85	2.43	<0.5	267.00	1.02	31.10	4.85
140	106396	Stream Sediment	29.790122	80.275831	3.54	0.56	1.46	<0.5	0.96	<0.5	0.59	1.95	3.79	1.63	19.00	1.07	29.52	5.33
141	106397	Stream Sediment	29.789271	80.277377	4.21	0.64	1.70	<0.5	1.24	<0.5	0.62	2.51	3.77	1.30	649.00	1.52	36.79	5.38
142	106398	Stream Sediment	29.795866	80.266204	5.72	0.96	2.69	<0.5	1.76	<0.5	0.67	1.69	3.78	1.15	11.00	4.10	35.55	7.12
143	106399	Stream Sediment	29.797694	80.267479	4.57	0.80	2.37	<0.5	1.94	<0.5	0.93	0.96	1.68	0.58	10.00	<0.5	18.54	3.16
144	106400	Stream Sediment	29.798184	80.268538	4.30	0.78	2.36	<0.5	1.87	<0.5	0.74	0.98	1.71	0.55	18.00	0.56	22.32	3.66
145	106401	Stream Sediment	29.797503	80.273398	3.90	0.74	2.25	<0.5	1.72	<0.5	0.73	<0.5	<0.5	<0.5	8.00	<0.5	7.94	11.26
146	106402	Stream Sediment	29.798532	80.272734	2.59	<0.5	1.49	<0.5	1.23	<0.5	<0.5	<0.5	<0.5	<0.5	10.00	<0.5	10.48	1.86
147	106403	Stream Sediment	29.79863	80.270146	2.96	<0.5	1.59	<0.5	0.97	<0.5	0.98	1.02	1.73	0.58	30.00	<0.5	41.23	4.13
148	106404	Stream Sediment	29.812337	80.227953	3.61	0.62	1.95	<0.5	1.62	<0.5	1.29	1.34	2.46	0.73	20.00	<0.5	21.53	4.58
149	106405	Stream Sediment	29.812346	80.23332	3.85	0.68	1.81	<0.5	1.43	<0.5	7.94	3.24	6.25	<0.5	20	1.20	14.03	2.60
150	106406	Stream Sediment	29.812167	80.240598	14.68	2.12	5.09	0.54	2.92	<0.5	2.74	5.17	10.85	1.46	60	1.37	75.77	15.99

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
151	106407	Stream Sediment	29.809991	80.241689	25.95	1.89	<5	NA	NA	97392	NA	NA	NA	45886	28.81	7872	214	115	NA
152	106408	Stream Sediment	29.816774	80.227918	31.30	3.23	<5	NA	NA	87406	NA	NA	NA	15731	17.95	4163	81	688	NA
153	106409	Stream Sediment	29.822281	80.226401	23.01	3.47	<5	NA	NA	104057	NA	NA	NA	9937	15.86	3083	71	295	NA
154	106410	Stream Sediment	29.819666	80.235368	32.45	3.38	<5	NA	NA	114432	NA	NA	NA	8926	26.97	6596	128	360	NA
155	106411	Stream Sediment	29.819431	80.236862	30.59	2.66	<5	NA	NA	85903	NA	NA	NA	8905	17.67	4507	89	271	NA
156	106412	Stream Sediment	29.821188	80.231787	31.84	3.11	<5	NA	NA	91144	NA	NA	NA	22245	25.80	4279	89	499	NA
157	106413	Stream Sediment	29.7499	80.335702	34.65	3.60	<5	NA	NA	123026	NA	NA	NA	4037	26.19	5567	119	215	NA
158	106414	Stream Sediment	29.749465	80.334173	23.63	2.89	<5	NA	NA	106631	NA	NA	NA	9284	21.75	4829	92	318	NA
159	106415	Stream Sediment	29.750324	80.334412	34.42	2.98	<5	NA	NA	104546	NA	NA	NA	9404	21.24	5067	85	280	NA
160	106416	Stream Sediment	29.749441	80.332966	59.78	8.17	<5	NA	NA	110992	NA	NA	NA	2204	7.57	1566	27	303	NA
161	106417	Stream Sediment	29.749146	80.333232	26.71	3.44	<5	NA	NA	100477	NA	NA	NA	7032	19.29	5679	86	223	NA
162	106418	Stream Sediment	29.749108	80.334765	37.91	4.11	<5	NA	NA	138411	NA	NA	NA	3522	30.21	5914	150	237	NA
163	106419	Stream Sediment	29.74912	80.334995	37.16	3.55	<5	NA	NA	114272	NA	NA	NA	6790	25.67	5475	113	296	NA
164	106420	Stream Sediment	29.811573	80.239845	32.52	3.24	<5	NA	NA	104924	NA	NA	NA	16320	22.09	4824	88	566	NA
165	106421	Stream Sediment	29.810658	80.246133	23.79	3.19	<5	NA	NA	98232	NA	NA	NA	17891	24.89	8783	187	274	NA
166	106422	Stream Sediment	29.810824	80.246183	25.54	1.67	<5	NA	NA	87282	NA	NA	NA	33122	33.39	8248	231	399	NA
167	106423	Stream Sediment	29.813327	80.221	18.21	0.87	<5	NA	NA	100382	NA	NA	NA	50525	30.83	7540	232	198	NA
168	106424	Stream Sediment	29.745639	80.337545	27.14	2.10	<5	NA	NA	81545	NA	NA	NA	2506	12.60	3539	87	336	NA
169	106425	Stream Sediment	29.747558	80.338587	33.37	2.58	<5	NA	NA	99090	NA	NA	NA	16104	30.33	6205	163	193	NA
170	106426	Stream Sediment	29.749297	80.342605	23.49	1.56	<5	NA	NA	108263	NA	NA	NA	7275	11.02	6494	59	356	NA
171	106427	Stream Sediment	29.749916	80.341648	28.04	2.55	<5	NA	NA	98209	NA	NA	NA	15367	25.61	6345	124	295	NA
172	106428	Stream Sediment	29.75153	80.340871	28.84	2.74	<5	NA	NA	105519	NA	NA	NA	16415	23.88	6231	133	449	NA
173	106429	Stream Sediment	29.774059	80.299204	38.86	4.94	<5	NA	NA	97488	NA	NA	NA	5311	10.76	3133	49	292	NA
174	106430	Stream Sediment	29.774259	80.300439	38.56	5.56	<5	NA	NA	102773	NA	NA	NA	4729	8.63	2891	40	428	NA
175	106431	Stream Sediment	29.82185	80.211833	21.47	2.48	<5	NA	NA	83462	NA	NA	NA	21344	13.87	4113	85	318	NA

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
151	106407	Stream Sediment	29.809991	80.241689	74045	54.20	53	61	93	24.33	<0.5	1.35	106.46	279	29.32	9	7.69	1.40	<1
152	106408	Stream Sediment	29.816774	80.227918	47791	17.65	43	36	116	24.30	<0.5	2.21	145.79	144	34.45	13	11.08	1.58	<1
153	106409	Stream Sediment	29.822281	80.226401	30161	16.97	32	44	48	27.32	<0.5	0.68	134.30	205	26.94	6	7.54	<0.5	<1
154	106410	Stream Sediment	29.819666	80.235368	54222	23.00	52	74	100	32.41	0.54	1.52	211.79	100	45.19	26	13.97	0.71	<1
155	106411	Stream Sediment	29.819431	80.236862	44423	18.26	45	54	122	23.01	<0.5	1.62	171.73	91	22.47	21	11.44	0.73	<1
156	106412	Stream Sediment	29.821188	80.231787	46096	16.40	41	28	80	28.51	<0.5	1.70	157.23	193	57.72	13	9.83	<0.5	<1
157	106413	Stream Sediment	29.7499	80.335702	45796	17.29	37	60	164	32.37	<0.5	1.70	236.92	84	28.72	8	15.35	<0.5	<1
158	106414	Stream Sediment	29.749465	80.334173	53556	18.09	29	55	103	26.90	<0.5	1.21	185.59	101	41.89	11	8.59	<0.5	<1
159	106415	Stream Sediment	29.750324	80.334412	52692	20.58	40	196	244	26.85	<0.5	1.42	218.95	106	37.10	23	11.86	<0.5	<1
160	106416	Stream Sediment	29.749441	80.332966	27964	7.86	17	49	90	35.85	<0.5	<0.5	751.20	39	28.75	12	20.33	<0.5	<1
161	106417	Stream Sediment	29.749146	80.333232	43848	16.45	31	58	118	25.74	<0.5	0.58	239.86	87	25.22	17	11.51	1.11	<1
162	106418	Stream Sediment	29.749108	80.334765	53764	20.45	44	64	102	37.60	<0.5	1.37	301.10	71	36.31	7	14.69	<0.5	<1
163	106419	Stream Sediment	29.74912	80.334995	49428	22.51	42	82	134	32.97	0.53	1.63	248.06	95	38.12	5	15.97	<0.5	<1
164	106420	Stream Sediment	29.811573	80.239845	49205	19.17	31	61	103	30.35	0.52	1.73	220.73	136	50.80	10	13.96	<0.5	<1
165	106421	Stream Sediment	29.810658	80.246133	68466	38.55	47	98	136	26.45	<0.5	<0.5	164.98	117	38.43	5	12.11	<0.5	<1
166	106422	Stream Sediment	29.810824	80.246183	81391	41.67	52	88	107	22.52	<0.5	<0.5	78.66	141	36.47	9	8.99	<0.5	<1
167	106423	Stream Sediment	29.813327	80.221	75659	43.67	58	58	99	23.95	<0.5	<0.5	46.54	228	24.95	8	6.13	<0.5	<1
168	106424	Stream Sediment	29.745639	80.337545	39325	11.70	36	28	55	20.42	<0.5	<0.5	123.03	79	13.16	28	7.44	<0.5	<1
169	106425	Stream Sediment	29.747558	80.338587	69064	36.98	51	95	126	28.65	<0.5	1.76	167.67	125	36.69	8	14.43	0.66	<1
170	106426	Stream Sediment	29.749297	80.342605	61474	24.14	44	86	121	15.36	<0.5	<0.5	117.13	36	29.41	5	4.18	<0.5	<1
171	106427	Stream Sediment	29.749916	80.341648	59876	26.28	39	58	109	27.35	<0.5	0.88	161.74	124	40.58	10	11.20	<0.5	<1
172	106428	Stream Sediment	29.75153	80.340871	64127	28.30	43	69	115	28.14	<0.5	2.09	180.43	122	29.49	5	10.33	7.08	<1
173	106429	Stream Sediment	29.774059	80.299204	34481	11.00	21	24	93	27.24	<0.5	0.97	299.56	42	46.64	11	12.97	<0.5	<1
174	106430	Stream Sediment	29.774259	80.300439	35146	9.11	22	24	93	28.43	<0.5	0.96	343.12	39	50.15	17	16.29	<0.5	<1
175	106431	Stream Sediment	29.82185	80.211833	41324	19.24	40	49	92	19.35	<0.5	0.64	110.48	206	26.51	9	7.27	<0.5	<1

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
151	106407	Stream Sediment	29.809991	80.241689	<0.5	<0.5	0.87	0.53	<0.5	19.65	239	29.06	63.48	7.69	32.50	7.38	2.60	7.77	1.17
152	106408	Stream Sediment	29.816774	80.227918	<0.5	<0.5	<0.5	2.34	<0.5	8.51	496	67.09	135.60	15.34	56.44	11.00	2.04	10.53	1.45
153	106409	Stream Sediment	29.822281	80.226401	<0.5	<0.5	0.68	<0.5	<0.5	5.42	569	42.99	84.87	9.79	38.14	8.37	2.44	8.17	1.18
154	106410	Stream Sediment	29.819666	80.235368	<0.5	<0.5	<0.5	<0.5	<0.5	10.73	588	113.45	237.58	25.54	93.05	17.43	3.12	16.38	2.15
155	106411	Stream Sediment	29.819431	80.236862	0.67	<0.5	<0.5	<0.5	<0.5	10.72	494	55.65	112.92	12.40	45.85	8.55	1.60	8.14	1.03
156	106412	Stream Sediment	29.821188	80.231787	<0.5	<0.5	1.04	<0.5	<0.5	7.73	566	109.41	222.44	24.87	90.77	17.16	2.97	16.30	2.28
157	106413	Stream Sediment	29.7499	80.335702	<0.5	<0.5	2.24	2.26	<0.5	11.42	633	71.76	149.45	16.13	57.94	10.57	1.95	10.05	1.31
158	106414	Stream Sediment	29.749465	80.334173	<0.5	<0.5	13.14	0.60	<0.5	7.98	612	76.64	168.19	17.55	63.95	11.91	2.06	12.00	1.64
159	106415	Stream Sediment	29.750324	80.334412	<0.5	0.51	16.94	<0.5	<0.5	18.11	600	71.03	149.51	16.06	59.59	11.26	1.98	11.04	1.47
160	106416	Stream Sediment	29.749441	80.332966	<0.5	0.54	74.11	<0.5	<0.5	37.64	130	28.75	66.97	7.20	25.20	6.19	0.55	6.24	1.15
161	106417	Stream Sediment	29.749146	80.333232	0.85	<0.5	38.65	23.03	0.53	15.30	508	57.12	117.03	12.85	46.99	8.97	1.54	8.45	1.10
162	106418	Stream Sediment	29.749108	80.334765	<0.5	<0.5	1.16	<0.5	<0.5	11.16	667	78.71	155.42	17.53	64.16	11.30	2.21	11.18	1.48
163	106419	Stream Sediment	29.74912	80.334995	<0.5	<0.5	2.51	4.67	<0.5	12.13	602	81.18	156.19	18.53	67.93	12.58	2.35	12.07	1.57
164	106420	Stream Sediment	29.811573	80.239845	1.11	<0.5	8.05	0.50	<0.5	12.01	509	108.45	225.66	24.57	90.01	17.03	2.80	16.86	2.33
165	106421	Stream Sediment	29.810658	80.246133	<0.5	<0.5	0.91	<0.5	<0.5	10.10	477	77.48	157.25	18.04	67.82	13.20	2.85	12.92	1.79
166	106422	Stream Sediment	29.810824	80.246183	<0.5	<0.5	<0.5	<0.5	<0.5	5.20	318	45.94	95.69	11.59	45.57	9.81	2.58	9.97	1.46
167	106423	Stream Sediment	29.813327	80.221	<0.5	<0.5	<0.5	0.75	<0.5	2.87	214	22.44	48.68	5.97	24.29	5.68	2.16	6.09	0.93
168	106424	Stream Sediment	29.745639	80.337545	<0.5	<0.5	4.08	0.75	<0.5	7.36	352	53.46	114.46	12.64	46.51	8.85	1.40	7.28	0.79
169	106425	Stream Sediment	29.747558	80.338587	<0.5	<0.5	2.38	2.00	<0.5	8.38	459	56.44	120.32	13.58	51.73	9.95	2.35	10.05	1.49
170	106426	Stream Sediment	29.749297	80.342605	0.62	<0.5	29.66	3.93	<0.5	8.03	230	72.88	144.57	16.58	60.48	11.15	1.91	10.37	1.33
171	106427	Stream Sediment	29.749916	80.341648	0.59	<0.5	2.95	3.53	<0.5	7.31	469	86.59	173.74	19.86	73.44	13.95	2.63	13.33	1.77
172	106428	Stream Sediment	29.75153	80.340871	<0.5	<0.5	22.22	1.48	8.64	10.36	492	73.62	146.76	16.75	61.63	11.48	2.46	10.78	1.40
173	106429	Stream Sediment	29.774059	80.299204	<0.5	<0.5	8.54	<0.5	<0.5	22.09	218	95.66	213.66	23.12	82.56	16.91	1.48	16.47	2.35
174	106430	Stream Sediment	29.774259	80.300439	<0.5	<0.5	1.19	0.84	<0.5	22.49	192	90.15	219.76	21.69	77.24	16.28	1.25	15.81	2.35
175	106431	Stream Sediment	29.82185	80.211833	<0.5	<0.5	<0.5	<0.5	0.54	6.27	425	48.45	99.51	11.27	42.62	8.41	2.20	8.30	1.17

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
151	106407	Stream Sediment	29.809991	80.241689	6.11	1.12	2.99	<0.5	2.34	<0.5	1.00	2.47	3.93	0.97	16	0.60	7.84	2.04
152	106408	Stream Sediment	29.816774	80.227918	7.02	1.34	3.66	<0.5	2.76	<0.5	2.91	3.17	6.53	0.91	48	1.80	31.62	7.23
153	106409	Stream Sediment	29.822281	80.226401	5.90	1.01	2.73	<0.5	2.06	<0.5	1.69	2.33	18.73	0.57	18	2.29	22.70	7.26
154	106410	Stream Sediment	29.819666	80.235368	10.36	1.78	4.70	0.56	3.26	<0.5	1.42	3.41	10.95	0.95	27	1.70	48.19	9.42
155	106411	Stream Sediment	29.819431	80.236862	5.08	0.88	2.37	<0.5	1.69	<0.5	4.88	2.59	6.81	0.86	27	1.04	23.49	4.21
156	106412	Stream Sediment	29.821188	80.231787	11.55	2.20	6.28	0.79	4.78	0.63	1.06	2.79	4.97	0.88	36	1.12	50.89	10.89
157	106413	Stream Sediment	29.7499	80.335702	6.25	1.18	3.02	<0.5	2.13	<0.5	2.23	2.91	9.28	1.23	38	1.10	34.68	4.99
158	106414	Stream Sediment	29.749465	80.334173	8.39	1.60	4.43	0.59	3.38	0.54	2.46	1.51	6.16	0.94	36	0.99	35.80	7.13
159	106415	Stream Sediment	29.750324	80.334412	8.84	1.42	4.01	<0.5	3.04	<0.5	0.91	2.03	12.45	1.35	112	2.38	34.93	6.96
160	106416	Stream Sediment	29.749441	80.332966	6.37	0.99	2.63	<0.5	2.06	<0.5	0.91	7.38	25.05	3.57	28	16.09	34.09	9.09
161	106417	Stream Sediment	29.749146	80.333232	5.44	0.97	2.58	<0.5	1.94	<0.5	10.27	2.30	6.86	1.46	30	3.62	26.57	5.16
162	106418	Stream Sediment	29.749108	80.334765	7.58	1.43	4.05	0.51	2.76	<0.5	1.48	3.38	10.49	1.33	31	0.88	32.41	5.65
163	106419	Stream Sediment	29.74912	80.334995	8.21	1.46	4.08	0.54	3.23	<0.5	2.74	3.43	11.19	1.30	40	1.07	33.93	6.21
164	106420	Stream Sediment	29.811573	80.239845	11.28	2.01	5.47	0.66	4.20	0.55	10.39	3.06	8.08	1.22	32	3.84	54.50	11.63
165	106421	Stream Sediment	29.810658	80.246133	8.83	1.64	4.19	0.50	2.95	<0.5	1.15	2.23	6.55	0.90	20	3.61	32.45	5.54
166	106422	Stream Sediment	29.810824	80.246183	7.85	1.47	4.07	0.53	3.10	<0.5	1.04	1.14	2.37	<0.5	12	0.64	14.36	2.67
167	106423	Stream Sediment	29.813327	80.221	5.21	1.02	2.74	<0.5	2.24	<0.5	1.81	1.67	3.68	<0.5	131	<0.5	5.78	1.07
168	106424	Stream Sediment	29.745639	80.337545	3.24	0.57	1.56	<0.5	1.09	<0.5	2.00	0.95	4.46	0.78	20	<0.5	32.24	3.55
169	106425	Stream Sediment	29.747558	80.338587	7.52	1.51	4.05	0.54	3.24	<0.5	2.64	1.84	12.55	0.85	29	0.62	21.93	4.42
170	106426	Stream Sediment	29.749297	80.342605	6.42	1.18	3.33	<0.5	2.28	<0.5	7.27	<0.5	<0.5	0.75	18	2.83	29.95	5.39
171	106427	Stream Sediment	29.749916	80.341648	8.99	1.61	4.54	0.59	3.46	<0.5	7.88	1.94	4.63	0.72	29	0.87	37.37	6.54
172	106428	Stream Sediment	29.75153	80.340871	6.66	1.19	3.25	<0.5	2.29	<0.5	5.43	0.78	1.72	0.90	27	1.98	28.14	4.80
173	106429	Stream Sediment	29.774059	80.299204	10.83	1.74	4.58	0.53	3.12	<0.5	1.65	2.01	3.00	1.62	29	1.78	65.86	14.93
174	106430	Stream Sediment	29.774259	80.300439	11.32	1.84	4.64	0.55	3.13	<0.5	1.25	3.79	10.36	1.82	34	3.28	80.45	18.34
175	106431	Stream Sediment	29.82185	80.211833	5.70	1.06	2.92	<0.5	2.26	<0.5	1.05	1.26	2.84	0.64	31	1.49	23.75	5.92

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
176	106432	Stream Sediment	29.822701	80.207888	23.21	2.40	<5	NA	NA	91286	NA	NA	NA	23791	17.18	7112	123	496	NA
177	106433	Stream Sediment	29.813098	80.2209	63.44	3.84	<5	NA	NA	72832	NA	NA	NA	12455	7.82	2169	46	181	NA
178	106434	Stream Sediment	29.813701	80.220436	50.27	10.71	<5	NA	NA	71353	NA	NA	NA	9771	8.17	2040	43	597	NA
179	106435	Stream Sediment	29.81566	80.21803	34.53	3.40	<5	NA	NA	81479	NA	NA	NA	8351	11.18	3154	66	273	NA
180	106436	Stream Sediment	29.824294	80.205083	25.55	3.17	<5	NA	NA	82451	NA	NA	NA	15913	10.56	2929	52	183	NA
181	106437	Stream Sediment	29.825396	80.203345	37.68	3.25	<5	NA	NA	93779	NA	NA	NA	16815	16.21	3466	69	145	NA
182	106438	Stream Sediment	29.816446	80.204951	49.65	3.75	<5	NA	NA	87521	NA	NA	NA	6868	13.50	3715	77	176	NA
183	106439	Stream Sediment	29.818177	80.205263	36.50	2.36	<5	NA	NA	79630	NA	NA	NA	7354	13.87	4241	83	155	NA
184	106440	Stream Sediment	29.816057	80.204486	54.35	4.90	<5	NA	NA	84806	NA	NA	NA	4390	11.51	3451	74	160	NA
185	106441	Stream Sediment	29.833651	80.208319	22.28	3.18	<5	NA	NA	86118	NA	NA	NA	14934	12.52	3360	61	108	NA
186	106442	Stream Sediment	29.832961	80.21003	22.96	2.99	<5	NA	NA	84365	NA	NA	NA	16808	10.74	3157	56	183	NA
187	106443	Stream Sediment	29.832938	80.211044	29.06	3.21	<5	NA	NA	86314	NA	NA	NA	18230	13.83	3976	71	222	NA
188	106444	Stream Sediment	29.742176	80.325424	25.54	3.96	<5	NA	NA	138491	NA	NA	NA	2536	30.11	5562	166	171	NA
189	106445	Stream Sediment	29.7428	80.325677	37.74	3.81	<5	NA	NA	116437	NA	NA	NA	4876	20.77	4880	101	170	NA
190	106446	Stream Sediment	29.743675	80.326238	29.49	3.83	<5	NA	NA	123458	NA	NA	NA	4248	20.50	6374	106	261	NA
191	106448	Stream Sediment	29.7405	80.332335	29.02	2.91	<5	NA	NA	118838	NA	NA	NA	6167	22.17	3899	117	161	NA
192	106945	Stream Sediment	29.7428	80.325677	38.18	3.14	<5	NA	NA	111275	NA	NA	NA	5325	19.89	5172	104	246	NA
193	106946	Stream Sediment	29.743675	80.326238	30.58	2.82	<5	NA	NA	102361	NA	NA	NA	9235	18.95	6128	90	226	NA
194	106947	Stream Sediment	29.742838	80.326348	21.22	2.90	<5	NA	NA	87991	NA	NA	NA	22913	19.44	4089	73	320	NA
195	106948	Stream Sediment	29.7405	80.332335	33.27	3.42	<5	NA	NA	126038	NA	NA	NA	5550	23.79	5128	138	168	NA
196	106949	Stream Sediment	29.741637	80.333459	38.27	3.19	<5	NA	NA	115460	NA	NA	NA	6295	20.62	5316	103	173	NA
197	106950	Stream Sediment	29.831098	80.225348	36.40	2.86	<5	NA	NA	99667	NA	NA	NA	12240	19.09	5539	87	175	NA
198	106951	Stream Sediment	29.83223	80.224581	23.13	2.26	<5	NA	NA	101721	NA	NA	NA	16040	23.79	9010	160	220	NA
199	106952	Stream Sediment	29.838916	80.201938	47.96	6.75	<5	NA	NA	89587	NA	NA	NA	4456	4.37	1062	13	95	NA
200	106953	Stream Sediment	29.836262	80.199612	60.01	6.31	<5	NA	NA	85895	NA	NA	NA	3646	4.29	1158	18	122	NA

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
176	106432	Stream Sediment	29.822701	80.207888	57923	23.80	44	56	99	22.84	<0.5	<0.5	135.52	193	39.07	10	9.85	<0.5	<1
177	106433	Stream Sediment	29.813098	80.2209	27020	8.07	23	34	115	21.58	<0.5	<0.5	371.44	53	21.91	16	11.78	<0.5	<1
178	106434	Stream Sediment	29.813701	80.220436	33287	8.30	28	34	125	19.31	<0.5	<0.5	315.25	56	23.97	19	10.07	<0.5	<1
179	106435	Stream Sediment	29.81566	80.21803	37787	13.58	32	37	95	22.61	<0.5	<0.5	239.56	69	32.60	23	10.28	<0.5	<1
180	106436	Stream Sediment	29.824294	80.205083	28794	9.52	25	32	95	21.08	<0.5	0.50	108.45	221	24.00	8	6.85	<0.5	<1
181	106437	Stream Sediment	29.825396	80.203345	35180	13.20	36	149	106	24.53	<0.5	0.55	127.18	224	32.93	10	8.95	<0.5	<1
182	106438	Stream Sediment	29.816446	80.204951	41279	19.80	48	71	110	24.25	<0.5	<0.5	238.28	71	28.39	27	12.46	<0.5	<1
183	106439	Stream Sediment	29.818177	80.205263	43104	18.84	57	73	114	19.46	<0.5	0.83	159.91	92	21.39	20	9.42	<0.5	<1
184	106440	Stream Sediment	29.816057	80.204486	37313	14.89	39	35	95	24.78	<0.5	0.51	292.09	63	26.81	35	17.44	<0.5	<1
185	106441	Stream Sediment	29.833651	80.208319	30373	12.27	19	14	67	23.08	<0.5	<0.5	107.40	183	30.54	5	7.20	<0.5	<1
186	106442	Stream Sediment	29.832961	80.21003	28848	9.92	20	17	89	21.98	<0.5	<0.5	111.02	216	28.74	6	7.33	<0.5	<1
187	106443	Stream Sediment	29.832938	80.211044	36888	14.16	31	42	96	21.66	<0.5	<0.5	163.68	188	33.61	6	9.24	<0.5	<1
188	106444	Stream Sediment	29.742176	80.325424	52724	17.06	42	46	81	36.25	<0.5	<0.5	345.02	43	42.19	5	13.39	<0.5	<1
189	106445	Stream Sediment	29.7428	80.325677	48188	64.03	76	301	157	28.98	<0.5	2.03	327.23	55	57.63	10	14.06	<0.5	<1
190	106446	Stream Sediment	29.743675	80.326238	51232	20.27	47	86	105	30.88	<0.5	<0.5	389.02	44	35.81	5	16.40	<0.5	<1
191	106448	Stream Sediment	29.7405	80.332335	49960	28.70	52	85	92	28.80	0.55	<0.5	215.68	58	18.89	14	12.37	0.87	<1
192	106945	Stream Sediment	29.7428	80.325677	44543	17.68	37	72	143	29.14	<0.5	0.86	247.31	89	29.95	6	12.51	1.35	<1
193	106946	Stream Sediment	29.743675	80.326238	48556	18.00	38	203	367	25.99	<0.5	3.02	258.83	83	32.87	8	11.32	2.22	<1
194	106947	Stream Sediment	29.742838	80.326348	46782	21.31	68	88	146	24.00	<0.5	0.57	159.75	172	53.79	5	8.89	<0.5	<1
195	106948	Stream Sediment	29.7405	80.332335	53840	22.87	48	77	113	32.72	<0.5	<0.5	260.84	76	31.72	5	12.50	<0.5	<1
196	106949	Stream Sediment	29.741637	80.333459	49680	18.16	49	61	127	28.53	<0.5	<0.5	278.32	78	26.90	12	13.84	<0.5	<1
197	106950	Stream Sediment	29.831098	80.225348	56863	17.95	29	145	217	26.96	<0.5	<0.5	261.76	118	50.17	10	11.96	<0.5	<1
198	106951	Stream Sediment	29.83223	80.224581	62412	23.32	37	74	129	27.34	<0.5	<0.5	162.70	126	46.16	5	12.06	<0.5	<1
199	106952	Stream Sediment	29.838916	80.201938	19042	4.39	7	22	67	35.25	<0.5	14.88	790.24	21	39.07	5	22.12	<0.5	<1
200	106953	Stream Sediment	29.836262	80.199612	19942	4.87	11	88	156	29.03	<0.5	13.57	677.30	28	29.37	8	18.37	<0.5	<1

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
176	106432	Stream Sediment	29.822701	80.207888	<0.5	<0.5	13.76	<0.5	<0.5	7.46	472	81.25	162.46	18.50	68.70	13.23	3.14	12.59	1.74
177	106433	Stream Sediment	29.813098	80.2209	<0.5	<0.5	16.40	<0.5	<0.5	25.86	212	25.86	57.43	6.35	22.79	5.30	0.69	5.24	0.90
178	106434	Stream Sediment	29.813701	80.220436	1.26	<0.5	16.40	<0.5	<0.5	21.86	199	23.53	52.41	5.42	20.08	5.03	0.66	4.68	0.88
179	106435	Stream Sediment	29.81566	80.21803	<0.5	<0.5	<0.5	0.99	<0.5	13.93	308	46.87	101.70	11.18	40.80	8.73	1.34	8.68	1.32
180	106436	Stream Sediment	29.824294	80.205083	0.99	<0.5	1.16	2.63	<0.5	5.14	431	52.62	105.12	11.99	44.59	8.53	2.12	7.95	1.08
181	106437	Stream Sediment	29.825396	80.203345	<0.5	<0.5	<0.5	1.19	<0.5	7.27	457	61.45	123.58	13.89	51.42	9.98	2.72	9.68	1.38
182	106438	Stream Sediment	29.816446	80.204951	<0.5	<0.5	<0.5	<0.5	<0.5	23.11	418	64.60	135.98	14.80	54.62	10.51	1.66	9.91	1.31
183	106439	Stream Sediment	29.818177	80.205263	<0.5	<0.5	<0.5	<0.5	<0.5	15.91	406	61.14	127.56	13.65	49.47	9.22	1.68	8.56	1.10
184	106440	Stream Sediment	29.816057	80.204486	<0.5	<0.5	2.75	<0.5	<0.5	23.38	363	48.86	111.92	11.67	41.85	8.83	1.07	8.41	1.31
185	106441	Stream Sediment	29.833651	80.208319	<0.5	<0.5	9.77	1.16	<0.5	4.96	372	73.71	147.80	16.67	61.42	11.84	2.85	10.89	1.43
186	106442	Stream Sediment	29.832961	80.21003	<0.5	<0.5	0.52	<0.5	<0.5	5.46	394	62.44	124.67	14.13	52.04	10.05	2.43	9.70	1.31
187	106443	Stream Sediment	29.832938	80.211044	<0.5	<0.5	<0.5	<0.5	<0.5	9.53	428	57.38	115.87	13.03	49.14	10.02	2.33	9.76	1.40
188	106444	Stream Sediment	29.742176	80.325424	<0.5	<0.5	0.74	<0.5	<0.5	19.36	848	84.20	168.36	18.80	70.48	12.72	2.66	12.19	1.80
189	106445	Stream Sediment	29.7428	80.325677	<0.5	<0.5	<0.5	<0.5	<0.5	36.13	524	122.35	156.97	28.12	104.79	20.16	3.68	19.32	2.60
190	106446	Stream Sediment	29.743675	80.326238	<0.5	<0.5	4.58	<0.5	<0.5	29.33	532	106.44	213.88	24.48	88.16	16.75	2.75	15.80	2.06
191	106448	Stream Sediment	29.7405	80.332335	<0.5	<0.5	2.07	6.24	0.75	7.39	618	67.85	139.45	15.49	56.65	10.67	1.90	9.71	1.15
192	106945	Stream Sediment	29.7428	80.325677	<0.5	<0.5	<0.5	0.62	<0.5	14.21	550	79.54	165.24	17.86	65.03	11.88	2.16	11.34	1.46
193	106946	Stream Sediment	29.743675	80.326238	1.14	<0.5	17.46	14.78	5.48	19.01	495	78.90	158.55	18.05	65.40	12.20	2.15	11.77	1.56
194	106947	Stream Sediment	29.742838	80.326348	0.53	<0.5	7.34	0.80	<0.5	7.79	509	98.36	199.78	22.63	82.74	15.49	2.55	15.89	2.18
195	106948	Stream Sediment	29.7405	80.332335	<0.5	<0.5	<0.5	2.72	<0.5	14.36	592	79.91	156.26	18.10	65.93	11.93	2.29	11.41	1.51
196	106949	Stream Sediment	29.741637	80.333459	<0.5	<0.5	6.24	0.53	<0.5	18.55	539	62.45	129.64	14.37	52.30	9.91	1.78	9.63	1.27
197	106950	Stream Sediment	29.831098	80.225348	<0.5	<0.5	10.23	3.12	<0.5	13.08	629	98.28	194.88	22.49	82.27	15.50	2.69	15.22	2.11
198	106951	Stream Sediment	29.83223	80.224581	<0.5	<0.5	2.78	<0.5	<0.5	6.38	427	91.03	184.47	21.34	79.36	15.59	3.15	14.94	2.04
199	106952	Stream Sediment	29.838916	80.201938	<0.5	<0.5	22.92	<0.5	<0.5	34.11	72	27.90	61.74	7.25	25.72	7.26	<0.5	7.63	1.57
200	106953	Stream Sediment	29.836262	80.199612	<0.5	<0.5	9.93	1.18	<0.5	33.29	103	20.58	46.72	5.58	19.22	5.63	<0.5	5.99	1.15

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
176	106432	Stream Sediment	29.822701	80.207888	8.43	1.55	4.37	0.57	3.31	<0.5	0.71	1.73	34.03	0.85	24	2.56	35.87	8.36
177	106433	Stream Sediment	29.813098	80.2209	4.71	0.78	1.96	<0.5	1.53	<0.5	2.99	3.51	12.29	1.93	33	5.06	24.14	10.05
178	106434	Stream Sediment	29.813701	80.220436	4.83	0.83	1.97	<0.5	1.63	<0.5	1.06	3.50	11.49	1.67	23	2.61	19.16	46.12
179	106435	Stream Sediment	29.81566	80.21803	7.21	1.19	3.23	<0.5	2.20	<0.5	0.62	2.77	7.79	1.47	27	2.31	27.22	8.02
180	106436	Stream Sediment	29.824294	80.205083	5.24	0.94	2.57	<0.5	2.04	<0.5	3.18	1.48	7.27	0.66	24	1.90	23.40	13.51
181	106437	Stream Sediment	29.825396	80.203345	7.00	1.29	3.72	<0.5	2.98	<0.5	1.25	1.88	4.18	0.80	37	2.86	29.65	10.83
182	106438	Stream Sediment	29.816446	80.204951	6.39	1.13	3.04	<0.5	2.31	<0.5	1.12	2.61	10.94	1.39	33	3.24	31.47	7.41
183	106439	Stream Sediment	29.818177	80.205263	4.94	0.90	2.52	<0.5	1.87	<0.5	1.84	1.65	8.75	0.94	23	2.04	27.29	4.96
184	106440	Stream Sediment	29.816057	80.204486	6.29	1.05	2.68	<0.5	2.01	<0.5	2.22	3.00	11.85	1.60	24	3.63	38.65	12.93
185	106441	Stream Sediment	29.833651	80.208319	6.99	1.23	3.24	<0.5	2.43	<0.5	3.12	1.54	4.25	0.88	199	1.15	31.41	9.22
186	106442	Stream Sediment	29.832961	80.21003	6.34	1.14	3.10	<0.5	2.41	<0.5	1.88	1.54	3.63	0.69	24	1.55	24.06	9.31
187	106443	Stream Sediment	29.832938	80.211044	7.25	1.35	3.65	<0.5	2.84	<0.5	0.68	1.92	8.74	1.32	26	2.38	30.06	13.17
188	106444	Stream Sediment	29.742176	80.325424	8.93	1.73	5.03	0.62	3.46	<0.5	2.08	2.49	9.03	2.13	27	0.82	40.10	6.30
189	106445	Stream Sediment	29.7428	80.325677	12.19	2.16	5.60	0.63	3.39	<0.5	1.23	3.09	13.13	2.10	33	4.33	34.26	19.23
190	106446	Stream Sediment	29.743675	80.326238	9.23	1.52	3.90	<0.5	2.52	<0.5	1.91	3.21	10.82	2.25	20	6.18	53.13	10.61
191	106448	Stream Sediment	29.7405	80.332335	5.01	0.82	2.11	<0.5	1.38	<0.5	2.98	1.33	12.98	0.92	20	3.02	31.13	4.13
192	106945	Stream Sediment	29.7428	80.325677	6.95	1.18	3.22	<0.5	2.32	<0.5	2.04	1.76	7.46	1.32	49	1.18	36.77	6.51
193	106946	Stream Sediment	29.743675	80.326238	7.43	1.34	3.65	<0.5	2.59	<0.5	5.93	1.31	<0.5	1.70	244	3.17	37.25	7.82
194	106947	Stream Sediment	29.742838	80.326348	11.49	2.21	6.33	0.79	4.91	0.62	1.03	1.61	6.57	1.01	48	2.97	48.27	10.44
195	106948	Stream Sediment	29.7405	80.332335	7.27	1.37	3.63	<0.5	2.86	<0.5	3.00	1.85	8.24	1.45	34	1.40	31.30	6.95
196	106949	Stream Sediment	29.741637	80.333459	6.38	1.10	3.01	<0.5	2.15	<0.5	1.13	2.68	6.60	1.60	31	2.18	30.95	7.07
197	106950	Stream Sediment	29.831098	80.225348	10.94	2.07	5.56	0.74	4.36	0.54	0.92	2.06	9.66	1.62	102	1.72	48.21	10.19
198	106951	Stream Sediment	29.83223	80.224581	10.27	1.95	5.49	0.68	4.00	0.52	0.92	1.54	3.79	0.77	22	0.73	36.84	6.15
199	106952	Stream Sediment	29.838916	80.201938	8.56	1.38	3.41	<0.5	2.60	<0.5	1.82	5.18	21.46	3.21	22	5.38	36.44	29.79
200	106953	Stream Sediment	29.836262	80.199612	6.32	0.99	2.49	<0.5	1.91	<0.5	1.66	6.59	21.84	2.77	79	10.65	29.57	33.87

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)
201	110156	Stream Sediment	29.816553	80.263203	36.77	4.29	<5	2459	9150	63657	1966	207	12596	2974	7.21	1775	186	113	2653
202	110157	Stream Sediment	29.851087	80.179057	69.18	1.53	<5	1109	41966	51724	442	129	22492	91901	9.21	1942	68	296	417
203	110158	Stream Sediment	29.851263	80.167515	58.06	2.62	<5	2686	26337	83585	685	121	38458	28207	13.38	3064	132	451	819
204	110159	Stream Sediment	29.848672	80.166873	55.71	2.56	<5	2770	20969	83925	639	182	39123	22397	13.90	3113	151	363	413
205	110160	Stream Sediment	29.851403	80.166131	58.98	2.94	<5	1556	19920	93456	578	169	42949	8316	14.71	3657	180	359	524
206	110161	Stream Sediment	29.843308	80.157155	43.06	2.18	<5	1543	12688	79631	405	461	24235	3306	9.92	1863	187	145	1159
207	110162	Stream Sediment	29.832059	80.171575	53.24	2.91	<5	9471	15202	90100	823	451	22143	16185	16.60	4913	98	609	676
208	110163	Stream Sediment	29.841403	80.169288	31.69	2.67	<5	8706	23026	101677	659	254	28736	14321	22.44	5295	127	298	598
209	110164	Stream Sediment	29.841796	80.175007	40.79	3.50	<5	14540	12640	93119	907	287	23734	20359	17.23	4062	84	577	601
210	110165	Stream Sediment	29.849116	80.159211	76.33	2.86	<5	3176	20020	101158	458	245	46297	1533	18.36	4084	144	164	320
211	110166	Stream Sediment	29.85034	80.161439	53.94	3.01	<5	1867	12995	87718	899	253	35199	3393	14.77	3396	172	298	587
212	110167	Stream Sediment	29.851616	80.160258	87.52	2.35	<5	5544	23763	74541	885	328	26171	38634	12.23	2792	115	333	636
213	110168	Stream Sediment	29.851094	80.16397	52.15	2.23	<5	1691	13327	75962	797	328	29801	2930	13.04	3073	155	453	735
214	110169	Stream Sediment	29.843747	80.161866	51.88	4.06	<5	9378	13427	91413	668	248	36904	5648	11.67	2748	59	226	570
215	110170	Stream Sediment	29.835646	80.158774	113.56	8.58	<5	12259	9339	98989	671	118	34924	6549	10.75	2830	74	967	598
216	110318	Stream Sediment	29.847353	80.194769	83.9	0.9	-	-	-	-	-	-	-	-	4.8	-	39.3	38.2	1211.0
217	110321	Stream Sediment	29.847475	80.194513	87.8	0.8	-	-	-	-	-	-	-	-	5.0	-	41.2	37.2	1394.2
218	110353	Stream Sediment	29.848674	80.182853	62.2	1.4	-	-	-	-	-	-	-	-	5.9	-	36.2	91.3	386.3
219	110354	Stream Sediment	29.848336	80.188259	95.1	0.8	-	-	-	-	-	-	-	-	3.1	-	25.2	35.8	360.0
220	110398	Stream Sediment	29.853014	80.162105	56.6	3.3	-	-	-	-	-	-	-	-	12.2	-	95.9	101.0	3039.9

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	Ga (ppm)	Ge (ppm)	Se (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ag (ppm)
201	110156	Stream Sediment	29.816553	80.263203	111751	45.51	176	1197	1873	12.36	<0.5	3.27	95.63	39	25.73	12	3.83	17.40	<1
202	110157	Stream Sediment	29.851087	80.179057	25754	7.16	23	28	41	12.11	<0.5	<0.5	94.77	26	12.69	13	6.09	<0.5	<1
203	110158	Stream Sediment	29.851263	80.167515	43482	11.05	33	24	83	19.50	<0.5	0.67	173.56	30	25.42	19	8.76	0.83	<1
204	110159	Stream Sediment	29.848672	80.166873	35981	9.88	34	31	93	20.12	<0.5	<0.5	179.46	24	22.79	19	9.01	0.94	<1
205	110160	Stream Sediment	29.851403	80.166131	48529	11.83	45	44	79	20.91	<0.5	<0.5	182.39	30	24.80	20	10.06	1.32	<1
206	110161	Stream Sediment	29.843308	80.157155	34330	8.21	35	43	73	17.36	<0.5	<0.5	124.77	25	11.58	7	2.91	6.05	<1
207	110162	Stream Sediment	29.832059	80.171575	52637	16.64	43	39	133	24.58	<0.5	1.32	164.19	167	39.43	24	17.34	0.76	<1
208	110163	Stream Sediment	29.841403	80.169288	54419	21.46	63	57	114	25.81	<0.5	<0.5	155.41	166	36.47	13	13.27	0.69	<1
209	110164	Stream Sediment	29.841796	80.175007	45702	14.32	33	47	99	25.87	<0.5	0.91	210.76	208	43.70	18	16.99	<0.5	<1
210	110165	Stream Sediment	29.849116	80.159211	45012	12.77	30	23	66	23.21	<0.5	0.72	200.78	29	16.97	17	8.63	1.38	<1
211	110166	Stream Sediment	29.85034	80.161439	56881	11.00	37	42	116	22.00	<0.5	1.40	165.59	45	22.74	28	14.09	3.76	<1
212	110167	Stream Sediment	29.851616	80.160258	39497	11.36	38	43	120	17.27	<0.5	<0.5	157.02	34	20.29	17	8.78	0.95	<1
213	110168	Stream Sediment	29.851094	80.16397	63305	11.85	41	38	126	17.65	<0.5	<0.5	137.70	49	17.04	23	12.19	4.88	<1
214	110169	Stream Sediment	29.843747	80.161866	36831	11.16	24	61	102	25.48	<0.5	1.03	440.99	64	28.14	14	14.45	0.60	<1
215	110170	Stream Sediment	29.835646	80.158774	50170	13.01	23	42	82	30.96	<0.5	1.14	864.81	47	40.97	17	20.27	0.84	<1
216	110318	Stream Sediment	29.847353	80.194769	-	8.2	18.7	14.8	47.2	7.5	0.2	0.2	4.7	32.1	7.6	12.6	15.5	0.9	0.15
217	110321	Stream Sediment	29.847475	80.194513	-	8.2	18.6	16.0	131.6	5.9	0.2	1.3	28.3	31.6	7.9	14.6	13.3	0.6	0.06
218	110353	Stream Sediment	29.848674	80.182853	-	7.1	14.8	17.4	55.9	8.3	<0.1	0.6	53.0	26.6	8.9	14.1	28.2	0.7	0.51
219	110354	Stream Sediment	29.848336	80.188259	-	4.1	11.3	4.9	26.5	3.5	<0.1	1.4	<0.1	42.9	5.6	9.5	11.7	0.8	0.31
220	110398	Stream Sediment	29.853014	80.162105	-	32.9	48.4	38.9	151.3	22.3	0.2	1.8	292.8	40.2	12.6	21.8	35.6	2.5	0.39
Sl. No.	Sample ID	Sample type	Latitude	Longitude	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)	Tb (ppm)
201	110156	Stream Sediment	29.816553	80.263203	5.62	<0.5	1.26	4.21	0.76	6.04	298	28.93	69.79	6.73	25.43	5.37	1.13	6.12	0.80
202	110157	Stream Sediment	29.851087	80.179057	<0.5	<0.5	2.27	1.19	<0.5	6.05	763	25.54	45.01	5.69	20.91	3.91	0.87	4.17	0.50
203	110158	Stream Sediment	29.851263	80.167515	<0.5	<0.5	3.39	1.66	<0.5	8.25	521	37.64	69.61	8.61	31.95	6.27	1.30	6.88	0.83
204	110159	Stream Sediment	29.848672	80.166873	<0.5	<0.5	3.37	1.65	<0.5	7.69	556	38.00	67.32	8.56	32.30	6.34	1.31	6.61	0.80
205	110160	Stream Sediment	29.851403	80.166131	<0.5	<0.5	3.22	1.93	<0.5	8.23	525	61.20	117.19	13.64	50.46	9.45	1.89	9.65	1.16
206	110161	Stream Sediment	29.843308	80.157155	<0.5	<0.5	1.97	1.24	<0.5	7.76	581	33.99	56.72	7.41	26.76	4.50	0.96	4.38	<0.5
207	110162	Stream Sediment	29.832059	80.171575	<0.5	<0.5	4.36	0.52	<0.5	10.08	410	82.61	207.33	18.44	68.36	12.62	2.75	12.56	1.53
208	110163	Stream Sediment	29.841403	80.169288	<0.5	<0.5	6.71	<0.5	<0.5	5.99	551	77.70	193.19	17.35	64.99	12.37	2.94	12.27	1.38
209	110164	Stream Sediment	29.841796	80.175007	<0.5	<0.5	18.56	<0.5	<0.5	11.14	370	88.02	216.88	19.50	70.89	13.28	3.04	13.43	1.64
210	110165	Stream Sediment	29.849116	80.159211	<0.5	<0.5	3.12	<0.5	<0.5	10.32	436	31.09	53.84	7.04	26.28	4.10	0.95	4.96	0.57
211	110166	Stream Sediment	29.85034	80.161439	<0.5	<0.5	4.86	3.79	<0.5	7.76	486	52.07	89.85	11.41	43.02	7.64	1.50	7.70	0.85
212	110167	Stream Sediment	29.851616	80.160258	<0.5	<0.5	1.86	0.89	<0.5	10.57	323	28.21	50.08	6.31	23.46	4.54	0.95	5.00	0.60

Reconnaissance Survey (G4 Stage) for Basemetal in Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand

213	110168	Stream Sediment	29.851094	80.16397	<0.5	<0.5	2.44	7.72	<0.5	5.87	428	46.81	83.31	10.17	37.25	6.67	1.30	6.69	0.72
214	110169	Stream Sediment	29.843747	80.161866	<0.5	<0.5	12.94	<0.5	<0.5	12.67	249	42.24	81.60	10.11	36.75	7.47	0.99	7.65	0.96
215	110170	Stream Sediment	29.835646	80.158774	<0.5	<0.5	40.21	0.65	<0.5	43.56	140	35.79	70.94	8.58	31.88	7.44	0.88	8.41	1.25
216	110318	Stream Sediment	29.847353	80.194769	0.22	0.02	13.8	4.2	1.9	3.4	842.6	15.9	29.9	2.4	10.7	2.1	0.7	1.4	0.5
217	110321	Stream Sediment	29.847475	80.194513	0.34	0.04	11.6	2.8	2.8	0.3	495.7	15.6	29.3	3.72	9.8	2.4	0.4	1.76	0.5
218	110353	Stream Sediment	29.848674	80.182853	0.29	0.03	40.0	<0.1	1.9	1.17	626.7	22.6	44.3	4.3	14.4	2.9	0.7	2.5	0.6
219	110354	Stream Sediment	29.848336	80.188259	0.08	0.03	101.3	1.15	<0.05	<0.1	1228.1	14.6	25.9	2.2	7.6	1.8	0.4	1.7	0.28
220	110398	Stream Sediment	29.853014	80.162105	0.60	0.04	45.4	5.94	<0.05	<0.1	594.7	54.6	117.4	15.13	37.10	9.00	1.47	8.54	0.94

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)	Th (ppm)	U (ppm)
201	110156	Stream Sediment	29.816553	80.263203	4.46	0.95	2.65	<0.5	2.37	<0.5	<0.5	1.39	0.91	0.51	39	1.00	12.98	6.48
202	110157	Stream Sediment	29.851087	80.179057	2.40	<0.5	1.32	<0.5	1.02	<0.5	<0.5	0.93	1.21	<0.5	15	<0.5	10.35	0.68
203	110158	Stream Sediment	29.851263	80.167515	4.82	0.95	2.67	<0.5	2.41	<0.5	<0.5	6.92	3.45	1.10	30	<0.5	19.03	1.19
204	110159	Stream Sediment	29.848672	80.166873	4.39	0.88	2.48	<0.5	2.13	<0.5	<0.5	2.49	3.11	1.23	32	<0.5	19.67	1.05
205	110160	Stream Sediment	29.851403	80.166131	5.06	0.92	2.52	<0.5	2.16	<0.5	<0.5	2.55	3.16	1.32	37	0.60	22.11	1.56
206	110161	Stream Sediment	29.843308	80.157155	2.23	<0.5	1.20	<0.5	0.89	<0.5	<0.5	1.95	0.85	0.99	29	<0.5	13.66	2.69
207	110162	Stream Sediment	29.832059	80.171575	7.56	1.43	4.00	<0.5	3.24	<0.5	0.80	10.39	4.31	0.84	29	1.94	34.96	11.35
208	110163	Stream Sediment	29.841403	80.169288	7.03	1.36	3.74	<0.5	2.86	<0.5	0.52	6.28	2.69	0.67	29	1.19	28.47	6.08
209	110164	Stream Sediment	29.841796	80.175007	8.29	1.59	4.31	0.52	3.52	<0.5	0.63	21.09	8.79	0.94	31	4.21	36.67	10.04
210	110165	Stream Sediment	29.849116	80.159211	3.15	0.62	1.65	<0.5	1.25	<0.5	<0.5	2.99	1.98	3.19	8	<0.5	13.39	1.40
211	110166	Stream Sediment	29.85034	80.161439	4.43	0.81	2.26	<0.5	1.71	<0.5	0.58	5.68	3.22	13.54	43	0.72	19.11	2.25
212	110167	Stream Sediment	29.851616	80.160258	3.56	0.70	1.99	<0.5	1.57	<0.5	<0.5	1.95	1.52	1.83	30	<0.5	11.58	0.84
213	110168	Stream Sediment	29.851094	80.16397	3.32	0.66	1.68	<0.5	1.14	<0.5	<0.5	3.74	2.48	19.28	79	0.71	15.53	1.93
214	110169	Stream Sediment	29.843747	80.161866	5.07	1.25	2.93	<0.5	2.42	<0.5	<0.5	11.44	8.36	1.98	34	2.27	24.21	12.29
215	110170	Stream Sediment	29.835646	80.158774	7.35	1.30	3.60	<0.5	3.07	<0.5	0.62	32.79	26.98	3.19	28	13.32	39.81	7.36
216	110318	Stream Sediment	29.847353	80.194769	1.7	<0.1	0.8	0.27	0.7	0.10	2.4	1.0	0.1	2.2	41.0	<0.1	<0.1	0.9
217	110321	Stream Sediment	29.847475	80.194513	1.9	<0.1	0.9	<0.1	0.7	0.11	1.1	0.9	<0.1	3.0	101.4	<0.1	<0.1	1.4
218	110353	Stream Sediment	29.848674	80.182853	1.7	<0.1	0.9	<0.1	0.7	0.10	1.4	0.6	1.0	1.1	56.5	0.2	<0.1	0.6
219	110354	Stream Sediment	29.848336	80.188259	1.0	<0.1	0.5	0.2	0.4	0.06	3.7	0.3	<0.1	2.4	21.2	<0.1	<0.1	<0.1
220	110398	Stream Sediment	29.853014	80.162105	4.06	<0.1	1.3	<0.1	1.20	0.23	1.6	1.6	3.1	4.8	97.0	<0.1	23.8	3.9

Annexure VI_Chemical Assay Values of AAS Analyses for Surface Samples

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
1	106301	Limestone	Bedrock	29.813108	80.266996	<0.05	12.19	0.12	<0.01	<0.05	0.01	23.89	<0.01	<5	37	0.03	0.82	<5	6	<5	260
2	106302	Carb Phyllite	Bedrock	29.8533	80.15588	0.16	0.76	8.81	0.05	<0.05	3.71	0.18	0.22	130	75	0.02	2.85	10	5	50	39
3	106303	Quartzite	Bedrock	29.80056	80.28045	0.24	0.57	0.55	0.02	<0.05	0.12	39.19	0.02	9	42	0.02	0.38	<5	8	11	65
4	106304	Carb Phyllite	Bedrock	29.839549	80.222855	0.58	0.87	8.85	0.01	0.91	4.04	0.40	0.34	101	95	0.25	3.54	27	9	56	67
5	106305	Carb Phyllite	Bedrock	29.85125	80.16057	0.27	1.40	5.52	0.15	<0.05	2.55	3.59	0.23	120	84	0.02	1.83	29	41	31	330
6	106306	Limestone	Bedrock	29.81663	80.20911	<0.05	14.59	8.53	0.39	<0.05	0.79	0.80	0.71	181	158	<0.01	7.24	49	63	33	61
7	106307	Carb Phyllite	Bedrock	29.85089	80.16073	0.07	0.46	4.37	0.03	0.06	2.00	0.18	0.19	158	56	<0.01	4.38	24	6	<5	18
8	106308	Chlorite Schist	Bedrock	29.757335	80.333114	0.12	2.03	1.89	0.06	16.57	0.59	1.92	0.07	18	49	0.05	20.36	178	98	81309	100629
9	106309	Phyllite	Bedrock	29.8442	80.15292	<0.05	0.18	0.77	0.02	<0.05	0.37	<0.1	0.03	6	54	0.01	0.79	44	7	168	224
10	106310	Carb Phyllite	Bedrock	29.843582	80.154923	0.24	0.51	8.59	0.83	0.19	3.46	0.54	0.23	219	276	<0.01	0.72	14	33	109	52
11	106311	Carb Phyllite	Bedrock	29.84426	80.15725	0.14	0.29	1.83	0.01	13.53	1.06	0.44	0.09	360	110	<0.01	12.49	41	89	16	85
12	106312	Carb Phyllite	Bedrock	29.842328	80.156594	0.24	0.24	3.27	0.38	0.26	1.50	0.18	0.10	110	93	0.06	31.62	120	252	307	3041
13	106313	Carb Phyllite	Bedrock	29.841669	80.155604	0.23	0.69	8.61	0.02	0.10	4.42	0.18	0.35	364	328	<0.01	0.51	18	5	11	26
14	106314	Chlorite Schist	Bedrock	29.80527	80.28225	0.54	1.09	10.40	0.04	<0.05	3.44	0.56	0.37	101	133	0.08	7.21	37	39	74	140
15	106315	Phyllite	Bedrock	29.80527	80.28225	1.11	1.54	8.48	0.017	0.24	3.09	0.59	0.38	275	95	0.06	1.66	41	<5	<5	37
16	106316	Phyllite	Bedrock	29.80595	80.28162	0.62	1.34	6.88	0.050	<0.05	2.33	0.45	0.22	283	83	0.04	3.50	42	60	55	319
17	106317	Phyllite	Bedrock	29.84796	80.15879	<0.05	3.05	2.07	0.008	27.50	1.71	3.35	0.07	25	14	<0.01	26.41	70	68	189	31
18	106318	Phyllite	Bedrock	29.847029	80.165324	0.55	0.49	2.28	0.038	2.25	0.72	0.55	0.05	26	47	<0.01	4.30	90	113	99	12
19	106319	Phyllite	Bedrock	29.831112	80.236987	<0.05	4.32	3.04	0.226	<0.05	1.87	8.24	0.12	38	31	0.05	1.03	10	11	38	421
20	106320	Chlorite Schist	Bedrock	29.80126	80.26233	<0.05	8.77	6.09	0.040	<0.05	<0.01	<0.1	0.06	29	16	<0.01	9.60	28	8	<5	<5
21	106321	Amphibolite	Bedrock	29.7351	80.31742	0.90	2.83	5.83	0.074	0.83	0.30	5.82	2.27	1024	9	0.21	13.14	291	31	668	108
22	106322	Amphibolite	Bedrock	29.80362	80.25905	0.84	3.14	7.08	0.017	0.09	1.01	3.41	0.24	349	<5	0.13	15.30	70	23	1199	123
23	106323	Quartzite	Bedrock	29.808	80.26428	<0.05	0.20	1.32	0.107	<0.05	0.53	0.25	0.06	67	44	0.01	11.54	48	53	<5	<5
24	106324	Amphibolite	Bedrock	29.80354	80.25905	1.88	1.30	5.74	0.099	0.33	0.23	3.18	0.76	196	12	0.09	6.94	69	13	525	61
25	106325	Quartzite	Bedrock	29.80242	80.26051	<0.05	2.24	1.27	0.014	1.41	0.01	<0.1	0.01	<5	16	<0.01	5.72	43	6	<5	<5

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
1	106301	Limestone	Bedrock	29.813108	80.266996	<5	<5	13	<5	<5	<1	<5	16	<5	<5	<5	<5	<5	<5	<5
2	106302	Carb Phyllite	Bedrock	29.8533	80.15588	27	165	87	8	<5	<1	<5	17	11	<5	394	54	52	57	<5
3	106303	Quartzite	Bedrock	29.80056	80.28045	<5	<5	354	<5	<5	<1	<5	4	10	8	20	<5	<5	42	<5
4	106304	Carb Phyllite	Bedrock	29.839549	80.222855	23	8	50	11	<5	<1	<5	5	<5	<5	712	135	39	42	<5
5	106305	Carb Phyllite	Bedrock	29.85125	80.16057	17	11	47	6	<5	<1	<5	15	9	<5	292	170	26	18	<5
6	106306	Limestone	Bedrock	29.81663	80.20911	27	31	-	148	<5	<1	<5	20	<5	<5	5000	<5	36	8	<5
7	106307	Carb Phyllite	Bedrock	29.85089	80.16073	13	51	20	6	22	<1	<5	3	7	<5	279	162	28	119	<5
8	106308	VMS	Bedrock	29.757335	80.333114	5	69267	<5	6	<5	157	347	607	906	35	33	9	<5	71020	112
9	106309	Phyllite	Bedrock	29.8442	80.15292	<5	235	8	6	<5	<1	<5	3	<5	<5	36	284	<5	179	<5
10	106310	Carb Phyllite	Bedrock	29.843582	80.154923	30	17	1005	<5	8	<1	<5	4	<5	<5	883	53	29	46	<5
11	106311	Carb Phyllite	Bedrock	29.84426	80.15725	6	213	32	<5	21	2	<5	<3	9	<5	319	198	<5	33	<5
12	106312	Carb Phyllite	Bedrock	29.842328	80.156594	<5	111	41	9	83	<1	5	<3	26	24	326	70	<5	55	<5
13	106313	Carb Phyllite	Bedrock	29.841669	80.155604	29	11	86	<5	20	<1	<5	5	12	<5	961	105	32	36	<5
14	106314	Chlorite Schist	Bedrock	29.80527	80.28225	26	95	53	6	<5	<1	<5	9	6	<5	432	136	36	31	<5
15	106315	Carb Phyllite	Bedrock	29.80527	80.28225	21	12	149	<5	9	<1	<5	<3	<5	<5	823	277	37	15	<5
16	106316	Phyllite	Bedrock	29.80595	80.28162	15	75	58	<5	8	<1	<5	<3	<5	<5	507	129	14	161	<5
17	106317	Carb Phyllite	Bedrock	29.84796	80.15879	<5	49	13	8	<5	2	<5	<3	17	24	124	84	7	411	<5
18	106318	Carb Phyllite	Bedrock	29.847029	80.165324	<5	<5	27	<5	<5	<1	<5	<3	<5	<5	74	589	<5	<5	<5
19	106319	Carb Phyllite	Bedrock	29.831112	80.236987	7	80	30	<5	<5	<1	<5	<3	<5	<5	198	42	16	51	<5
20	106320	Chlorite Schist	Bedrock	29.80126	80.26233	11	<5	<5	<5	<5	<1	<5	4	7	10	<5	163	<5	<5	<5
21	106321	Amphibolite	Bedrock	29.7351	80.31742	22	<5	110	11	<5	<1	<5	<3	<5	<5	37	288	100	6	<5
22	106322	Amphibolite	Bedrock	29.80362	80.25905	25	<5	26	<5	<5	<1	<5	<3	<5	15	393	50	13	9	<5
23	106323	Quartzite	Bedrock	29.808	80.26428	<5	<5	8	<5	<5	<1	<5	<3	<5	8	23	174	<5	<5	<5
24	106324	Amphibolite	Bedrock	29.80354	80.25905	11	<5	229	9	<5	<1	<5	<3	<5	<5	116	209	31	12	<5
25	106325	Quartzite	Bedrock	29.80242	80.26051	<5	<5	<5	<5	<5	<1	<5	<3	<5	<5	6	144	<5	7	6

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
26	106326	Amphibolite	Bedrock	29.75641	80.2836	1.44	4.02	7.06	0.690	0.34	0.16	4.54	2.58	412	17	0.14	12.56	42	23	194	160
27	106327	Amphibolite	Bedrock	29.81836	80.20519	1.45	2.21	6.37	0.087	<0.05	0.62	4.68	1.78	655	<5	0.18	13.41	64	27	92	172
28	106328	Chlorite Schist	Bedrock	29.840615	80.177443	0.64	0.97	5.80	0.041	<0.05	1.57	0.42	0.25	58	161	0.02	3.67	32	28	116	46
29	106329	Chlorite Schist	Bedrock	29.822	80.2379	0.07	0.35	2.24	0.019	<0.05	0.70	<0.1	0.08	23	26	<0.01	1.39	39	10	23	31
30	106330	Amphibolite	Bedrock	29.7351	80.31742	1.53	2.84	6.64	0.07	<0.05	0.69	6.58	1.78	612	54	0.17	12.39	84	26	38	139
31	106331	Amphibolite	Bedrock	29.7351	80.31742	2.25	2.82	7.93	0.09	0.33	0.26	5.68	1.03	291	51	0.17	9.73	64	24	62	102
32	106332	Amphibolite	Bedrock	29.73857	80.32767	1.36	2.31	6.76	0.11	0.29	0.25	6.83	1.43	348	62	0.20	9.63	59	14	210	96
33	106333	Amphibolite	Bedrock	29.7395	80.32627	1.64	3.65	6.44	0.16	1.22	0.33	6.94	1.45	413	139	0.16	11.02	116	43	654	120
34	106334	Limestone	Bedrock	29.838256	80.224322	2.31	2.73	6.40	0.04	0.37	0.10	5.64	0.48	198	110	0.11	5.96	53	53	150	111
35	106335	Phyllite	Bedrock	29.841631	80.219621	0.67	1.07	9.42	0.01	1.04	4.04	0.32	0.39	112	141	0.20	3.45	18	10	47	63
36	106336	Phyllite	Bedrock	29.806881	80.279182	0.80	1.08	6.93	0.04	<0.05	2.33	0.32	0.18	281	170	0.04	1.11	<5	7	12	25
37	106337	Amphibolite	Bedrock	29.807009	80.277509	0.78	1.24	8.16	0.06	0.37	0.62	6.97	0.24	135	89	0.19	6.75	26	11	315	104
38	111553	Limestone	Bedrock	29.81624	80.264097	-	-	-	-	-	-	-	-	61.3	67.0	58.8	-	8.0	8.9	38.2	104.9
39	106339	Phyllite	Bedrock	29.852822	80.164643	1.04	1.06	5.29	0.07	0.68	1.73	0.69	0.17	84	115	0.03	19.18	7	7	38	1347
40	106340	Phyllite	Bedrock	29.849158	80.171564	1.05	1.90	9.75	0.06	2.59	4.39	0.80	0.38	211	154	0.03	5.37	19	83	54	207
41	106341	Limestone	Bedrock	29.811139	80.270884	0.03	1.25	2.08	0.05	<0.05	0.64	0.25	0.04	16	150	0.02	1.54	5	9	<5	117
42	106342	Phyllite	Bedrock	29.85123	80.16178	0.05	1.36	3.79	0.12	1.30	2.04	1.93	0.20	143	89	0.03	20.83	20	46	543	190
43	106343	Chlorite Schist	Bedrock	29.842014	80.165741	0.26	1.02	9.96	0.02	<0.05	3.09	0.02	0.56	136	166	0.03	6.92	31	59	78	108
44	106344	Phyllite	Bedrock	29.80527	80.28225	0.97	1.16	7.09	0.01	0.26	2.57	0.48	0.17	216	136	0.04	1.16	5	<5	5	38
45	106345	Phyllite	Bedrock	29.82913	80.14304	0.25	0.92	3.47	0.08	5.76	1.73	0.39	0.11	60	144	<0.01	8.68	70	253	186	28
46	106346	Amphibolite	Bedrock	29.81085	80.24636	1.86	3.34	7.71	0.07	0.08	0.49	5.93	1.15	370	104	0.15	10.30	67	39	43	105
47	106347	Amphibolite	Bedrock	29.75069	80.34352	2.48	3.01	7.35	0.10	<0.05	0.35	6.11	1.16	289	80	0.16	9.62	45	25	84	98
48	106348	Phyllite	Bedrock	29.84568	80.16966	0.08	2.16	1.93	0.05	0.61	1.04	6.16	0.06	47	144	0.02	1.97	6	47	28	42
49	106801	Stream Sediment	Stream Sediment	29.747484	80.345654	1.67	0.92	8.85	0.04	<0.05	2.90	1.17	0.47	56	200	0.04	3.43	21	13	37	228
50	106802	Stream Sediment	Stream Sediment	29.73957	80.326287	1.54	3.46	9.08	0.10	<0.05	1.43	4.06	0.94	257	177	0.10	8.24	57	46	84	98

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
26	106326	Amphibolite	Bedrock	29.75641	80.2836	15	<5	196	<5	<5	<1	<5	<3	<5	<5	19	<5	123	<5	<5
27	106327	Amphibolite	Bedrock	29.81836	80.20519	22	<5	198	9	<5	<1	<5	<3	<5	<5	166	5	99	15	<5
28	106328	Chlorite Schist	Bedrock	29.840615	80.177443	12	<5	55	<5	<5	<1	<5	4	<5	<5	227	134	13	<5	<5
29	106329	Chlorite Schist	Bedrock	29.822	80.2379	<5	<5	9	<5	<5	<1	<5	<3	<5	<5	94	236	<5	<5	<5
30	106330	Amphibolite	Bedrock	29.7351	80.31742	37	<5	263	16	<5	<1	<5	<3	17	18	335	<5	69	<5	<5
31	106331	Amphibolite	Bedrock	29.7351	80.31742	35	14	271	13	<5	<1	<5	<3	15	11	39	<5	32	5	<5
32	106332	Amphibolite	Bedrock	29.73857	80.32767	39	<5	318	15	<5	<1	<5	4	11	19	58	<5	50	<5	<5
33	106333	Amphibolite	Bedrock	29.7395	80.32627	32	13	201	18	<5	<1	<5	<3	14	16	80	<5	41	9	<5
34	106334	Limestone	Bedrock	29.838256	80.224322	18	252	74	8	<5	<1	<5	<3	21	<5	212	<5	17	38	<5
35	106335	Phyllite	Bedrock	29.841631	80.219621	28	<5	43	18	<5	<1	<5	5	11	<5	779	<5	<5	21	<5
36	106336	Phyllite	Bedrock	29.806881	80.279182	18	11	65	<5	8	<1	<5	4	<5	<5	674	<5	<5	30	<5
37	106337	Amphibolite	Bedrock	29.807009	80.277509	40	<5	406	12	<5	<1	<5	27	11	8	139	12	<5	16	160
38	111553	Limestone	Bedrock	29.81624	80.264097	13.0	<5	34.6	2.9	1.5	0.22	0.31	30.5	<0.1	<0.05	428.2	0.8	1.0	7.4	<0.1
39	106339	Phyllite	Bedrock	29.852822	80.164643	32	11	114	6	21	<1	9	3	19	13	1287	<5	<5	22	<5
40	106340	Phyllite	Bedrock	29.849158	80.171564	34	<5	96	<5	19	<1	<5	6	<5	8	3105	<5	<5	12	<5
41	106341	Limestone	Bedrock	29.811139	80.270884	5	<5	<5	<5	<5	<1	<5	<3	9	<5	132	<5	12	<5	<5
42	106342	Phyllite	Bedrock	29.85123	80.16178	36	596	14	11	18	<1	<5	<3	52	25	255	<5	34	50	<5
43	106343	Chlorite Schist	Bedrock	29.842014	80.165741	32	<5	26	<5	<5	<1	<5	5	<5	5	368	<5	<5	8	<5
44	106344	Phyllite	Bedrock	29.80527	80.28225	19	6	133	<5	6	<1	<5	3	8	<5	724	<5	<5	5	<5
45	106345	Phyllite	Bedrock	29.82913	80.14304	16	<5	14	<5	<5	<1	<5	<3	12	10	195	<5	<5	12	<5
46	106346	Amphibolite	Bedrock	29.81085	80.24636	34	<5	210	12	<5	<1	<5	5	12	17	167	<5	32	22	<5
47	106347	Amphibolite	Bedrock	29.75069	80.34352	33	<5	244	15	<5	<1	<5	6	6	22	57	<5	39	42	<5
48	106348	Phyllite	Bedrock	29.84568	80.16966	5	<5	42	<5	<5	<1	<5	<3	11	6	119	<5	<5	18	<5
49	106801	Stream Sediment	Stream Sediment	29.747484	80.345654	26	9	195	8	<5	<1	<5	7	<5	<5	742	<5	17	14	<5
50	106802	Stream Sediment	Stream Sediment	29.73957	80.326287	33	<5	233	25	<5	<1	<5	3	6	11	338	<5	37	9	<5

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
51	106803	Stream Sediment	29.757493	80.330407	1.17	1.97	9.08	0.094	<0.05	1.84	2.67	0.65	185	79	0.09	6.69	41	54	687	2838
52	106804	Stream Sediment	29.829224	80.240395	0.30	1.80	7.39	0.05	<0.05	2.29	0.27	0.21	111	181	0.06	3.63	17	34	25	86
53	106805	Stream Sediment	29.819608	80.228265	1.53	1.60	10.04	0.11	<0.05	2.45	1.70	0.35	77	210	0.04	3.48	17	37	16	72
54	106806	Stream Sediment	29.790341	80.271054	0.63	1.62	9.83	0.08	0.05	3.08	1.00	0.61	102	199	0.04	4.68	29	47	77	126
55	106807	Stream Sediment	29.809698	80.244191	1.32	1.67	9.15	0.08	<0.05	1.90	2.45	0.62	136	132	0.08	5.25	39	42	43	95
56	106808	Stream Sediment	29.816617	80.2082	0.94	0.66	7.17	0.13	0.06	2.13	0.72	0.26	52	112	0.05	2.82	12	25	26	95
57	106809	Stream Sediment	29.814317	80.204285	0.76	0.80	8.28	0.10	0.05	2.18	0.74	0.34	71	109	0.04	3.71	15	32	30	98
58	106810	Stream Sediment	29.819393	80.229279	0.79	1.18	9.20	0.12	0.06	2.45	0.95	0.59	100	148	0.06	4.65	30	46	55	118
59	106811	Stream Sediment	29.828104	80.236835	0.70	1.31	11.26	0.08	<0.05	3.23	0.70	0.86	121	196	0.05	5.80	35	52	59	120
60	106812	Stream Sediment	29.762382	80.312317	1.01	0.66	8.39	0.12	0.05	2.87	0.73	0.21	26	101	0.03	2.41	10	13	22	93
61	106813	Stream Sediment	29.764635	80.32216	1.00	1.17	8.97	0.12	0.06	3.17	0.72	0.45	71	114	0.04	3.88	24	31	43	97
62	106814	Stream Sediment	29.760196	80.340487	0.93	2.22	7.71	0.10	<0.05	1.56	2.16	0.82	243	104	0.12	8.58	54	45	118	119
63	106815	Stream Sediment	29.765851	80.327494	1.32	3.66	9.16	0.090	<0.05	1.36	3.78	0.68	283	117	0.15	9.04	53	60	114	128
64	106816	Stream Sediment	29.747796	80.340375	0.97	1.85	9.58	0.090	<0.05	3.35	1.56	0.70	169	82	0.06	6.50	31	36	81	134
65	106817	Stream Sediment	29.750681	80.339993	1.03	1.59	8.30	0.083	<0.05	2.63	1.86	0.67	134	77	0.06	5.49	23	44	72	123
66	106818	Stream Sediment	29.744383	80.338633	1.56	2.07	9.12	0.13	<0.05	2.30	3.23	0.96	171	72	0.08	6.08	43	32	65	133
67	106819	Stream Sediment	29.742771	80.340781	0.90	2.54	8.69	0.071	<0.05	2.28	1.95	0.51	133	68	0.06	5.08	26	33	22	53
68	106820	Stream Sediment	29.746857	80.337918	0.98	1.66	9.48	0.088	<0.05	2.56	1.94	0.70	155	76	0.06	6.02	28	39	74	124
69	106821	Stream Sediment	29.747347	80.33871	0.77	1.66	11.06	0.08	<0.05	3.08	1.48	0.66	146	137	0.06	6.00	37	58	73	133
70	106822	Stream Sediment	29.745365	80.331232	1.26	3.07	8.94	0.105	<0.05	2.44	3.09	0.91	234	85	0.09	7.98	41	44	62	104
71	106823	Stream Sediment	29.745848	80.334692	1.46	1.94	9.14	0.12	<0.05	2.37	2.78	0.72	151	127	0.07	5.47	37	33	46	111
72	106824	Stream Sediment	29.761155	80.33085	1.39	2.33	9.34	0.103	<0.05	1.62	2.98	0.67	220	59	0.10	7.34	41	49	112	166
73	106825	Stream Sediment	29.757362	80.344895	1.10	1.53	8.88	0.09	<0.05	1.22	1.60	0.99	262	61	0.14	9.63	64	44	133	129
74	106826	Stream Sediment	29.754869	80.342012	0.68	2.77	9.71	0.14	0.05	1.60	2.50	0.52	193	137	0.09	7.36	51	95	70	236
75	106827	Stream Sediment	29.754243	80.343583	0.76	2.95	9.28	0.095	<0.05	1.36	2.66	0.49	184	94	0.09	6.71	42	50	53	119

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
51	106803	Stream Sediment	29.757493	80.330407	22	65	147	7	<5	<1	7	8	5	<5	330	<5	28	92	<5
52	106804	Stream Sediment	29.829224	80.240395	23	8	55	<5	<5	<1	<5	3	8	<5	421	<5	9	32	<5
53	106805	Stream Sediment	29.819608	80.228265	32	<5	262	11	<5	<1	<5	8	8	10	526	<5	<5	16	<5
54	106806	Stream Sediment	29.790341	80.271054	31	6	77	11	<5	<1	<5	13	10	<5	586	<5	10	25	<5
55	106807	Stream Sediment	29.809698	80.244191	29	6	182	17	<5	<1	<5	11	<5	7	281	<5	16	19	<5
56	106808	Stream Sediment	29.816617	80.2082	24	30	69	36	<5	<1	<5	15	10	<5	297	<5	17	54	<5
57	106809	Stream Sediment	29.814317	80.204285	27	37	79	40	<5	<1	<5	14	5	<5	374	11	16	39	<5
58	106810	Stream Sediment	29.819393	80.229279	28	12	107	39	<5	<1	<5	10	14	9	540	<5	26	19	<5
59	106811	Stream Sediment	29.828104	80.236835	35	16	99	43	<5	<1	<5	7	8	13	640	<5	27	19	<5
60	106812	Stream Sediment	29.762382	80.312317	26	14	51	16	<5	<1	<5	14	5	5	166	7	10	28	<5
61	106813	Stream Sediment	29.764635	80.32216	30	13	49	13	<5	<1	<5	20	<5	7	270	5	7	15	<5
62	106814	Stream Sediment	29.760196	80.340487	30	<5	133	39	<5	<1	<5	4	16	14	302	<5	42	12	<5
63	106815	Stream Sediment	29.765851	80.327494	21	<5	162	10	<5	<1	<5	3	<5	<5	288	25	31	22	<5
64	106816	Stream Sediment	29.747796	80.340375	27	32	112	<5	<5	<1	<5	25	<5	<5	567	24	40	47	<5
65	106817	Stream Sediment	29.750681	80.339993	22	26	125	<5	<5	<1	<5	14	<5	<5	471	<5	24	46	<5
66	106818	Stream Sediment	29.744383	80.338633	31	23	179	30	<5	<1	<5	11	9	15	282	<5	31	33	<5
67	106819	Stream Sediment	29.742771	80.340781	22	<5	145	10	<5	<1	<5	7	<5	<5	435	20	36	15	<5
68	106820	Stream Sediment	29.746857	80.337918	23	18	135	6	<5	<1	<5	10	<5	<5	462	9	23	37	<5
69	106821	Stream Sediment	29.747347	80.33871	34	18	123	50	<5	<1	<5	10	<5	10	571	<5	37	18	<5
70	106822	Stream Sediment	29.745365	80.331232	27	<5	153	6	<5	<1	<5	8	<5	<5	485	<5	48	15	<5
71	106823	Stream Sediment	29.745848	80.334692	32	15	165	33	<5	<1	<5	12	6	<5	300	<5	29	15	<5
72	106824	Stream Sediment	29.761155	80.33085	21	<5	182	8	<5	<1	<5	<3	<5	<5	313	14	33	33	<5
73	106825	Stream Sediment	29.757362	80.344895	34	<5	165	63	<5	<1	<5	<3	15	10	289	<5	34	50	<5
74	106826	Stream Sediment	29.754869	80.342012	30	6	161	34	<5	<1	<5	4	<5	10	326	<5	26	16	<5
75	106827	Stream Sediment	29.754243	80.343583	20	<5	155	9	<5	<1	<5	<3	<5	<5	274	<5	7	12	<5

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
76	106828	Stream Sediment	29.748338	80.340883	0.89	1.61	10.74	0.12	<0.05	3.00	1.51	0.61	138	119	0.09	6.48	40	47	69	134
77	106829	Stream Sediment	29.755182	80.348297	0.42	2.40	9.07	0.08	<0.05	1.94	0.87	0.49	204	101	0.09	7.94	46	47	97	119
78	106830	Stream Sediment	29.748397	80.321316	1.46	2.88	9.37	0.10	<0.05	1.85	3.39	0.83	203	137	0.10	7.11	51	47	36	118
79	106831	Stream Sediment	29.750587	80.317591	1.60	0.56	8.65	0.11	<0.05	3.52	0.76	0.23	22	109	0.03	2.34	9	25	20	77
80	106832	Stream Sediment	29.757638	80.326071	1.06	0.77	8.20	0.221	0.06	3.57	0.90	0.12	14	5	0.05	2.91	11	7	104	437
81	106833	Stream Sediment	29.76135	80.319658	0.81	0.60	10.05	0.08	<0.05	3.65	0.38	0.22	33	84	0.04	2.81	11	17	22	93
82	106834	Stream Sediment	29.758234	80.310682	1.23	0.66	8.58	0.13	<0.05	2.84	0.93	0.22	25	52	0.05	2.64	11	10	21	101
83	106835	Stream Sediment	29.764372	80.322023	0.90	1.98	8.77	0.11	0.06	2.81	2.24	0.42	106	100	0.05	4.43	29	30	62	102
84	106836	Stream Sediment	29.738051	80.340626	0.98	5.85	9.00	0.16	<0.05	1.71	3.03	0.88	313	100	0.10	10.23	67	84	103	107
85	106837	Stream Sediment	29.738657	80.327722	1.39	2.76	8.73	0.074	<0.05	1.35	3.38	0.92	267	43	0.11	8.26	44	49	120	94
86	106838	Stream Sediment	29.735373	80.316536	0.88	1.41	10.33	0.11	0.05	2.97	1.43	0.42	110	122	0.05	4.80	32	41	58	153
87	106839	Stream Sediment	29.734147	80.31672	1.46	3.09	8.98	0.14	<0.05	1.59	3.55	1.06	243	121	0.10	7.98	54	52	88	116
88	106840	Stream Sediment	29.735718	80.318761	1.09	2.33	10.98	0.085	<0.05	3.01	2.29	0.64	154	120	0.06	5.69	30	50	55	99
89	106841	Stream Sediment	29.730777	80.327027	0.70	5.29	7.52	0.38	<0.05	1.01	4.49	1.01	266	61	0.09	9.35	57	42	129	242
90	106842	Stream Sediment	29.738632	80.328911	0.63	3.32	9.31	0.08	<0.05	2.12	1.48	0.57	181	128	0.08	6.64	38	53	63	106
91	106843	Stream Sediment	29.804388	80.257221	1.41	1.19	9.89	0.12	<0.05	2.71	1.38	0.50	116	85	0.05	4.84	24	30	77	109
92	106844	Stream Sediment	29.80447	80.258911	1.15	2.25	9.25	0.10	<0.05	1.83	2.22	0.55	167	120	0.08	6.28	34	55	56	104
93	106845	Stream Sediment	29.773192	80.295568	1.81	0.57	9.16	0.09	<0.05	3.33	0.72	0.14	20	75	0.02	1.99	6	10	16	56
94	106846	Stream Sediment	29.756186	80.299299	1.31	0.71	8.65	0.12	<0.05	2.82	0.73	0.22	32	73	0.04	2.61	8	35	21	89
95	106847	Stream Sediment	29.762288	80.295959	1.13	0.65	8.74	0.10	<0.05	2.91	0.72	0.24	43	83	0.04	2.85	10	17	28	86
96	106848	Stream Sediment	29.75687	80.295328	1.42	0.81	8.15	0.14	<0.05	3.29	0.65	0.18	21	61	0.03	2.19	6	9	16	75
97	106849	Stream Sediment	29.795729	80.265124	1.30	1.21	9.91	0.10	<0.05	3.28	0.88	0.39	75	107	0.03	3.62	13	30	74	91
98	106850	Stream Sediment	29.750693	80.34352	0.68	1.58	10.76	0.103	<0.05	3.21	1.13	0.58	146	94	0.07	6.55	32	49	66	114
99	106851	Stream Sediment	29.761133	80.343183	0.17	1.80	6.42	0.06	<0.05	1.75	0.26	0.19	60	92	0.03	3.05	14	36	12	69
100	106852	Stream Sediment	29.819545	80.233436	0.70	1.74	11.40	0.09	<0.05	3.55	1.41	0.52	134	162	0.04	5.16	21	48	69	139

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
76	106828	Stream Sediment	29.748338	80.340883	34	17	136	48	<5	<1	<5	12	14	8	595	<5	20	20	<5
77	106829	Stream Sediment	29.755182	80.348297	31	6	73	60	<5	<1	<5	8	<5	11	257	<5	16	19	<5
78	106830	Stream Sediment	29.748397	80.321316	34	18	194	25	<5	<1	<5	13	6	13	197	<5	22	15	<5
79	106831	Stream Sediment	29.750587	80.317591	27	19	49	16	<5	<1	<5	19	<5	7	158	6	<5	15	<5
80	106832	Stream Sediment	29.757638	80.326071	25	100	33	<5	<5	<1	<5	24	<5	<5	74	17	<5	113	<5
81	106833	Stream Sediment	29.76135	80.319658	35	25	44	20	<5	<1	<5	23	7	<5	180	8	5	31	<5
82	106834	Stream Sediment	29.758234	80.310682	28	13	59	15	<5	<1	<5	15	<5	<5	144	6	<5	18	<5
83	106835	Stream Sediment	29.764372	80.322023	28	18	100	23	<5	<1	<5	17	7	10	312	<5	<5	19	<5
84	106836	Stream Sediment	29.738051	80.340626	38	<5	144	46	<5	<1	<5	4	<5	16	315	<5	27	6	<5
85	106837	Stream Sediment	29.738657	80.327722	21	<5	198	15	<5	<1	<5	3	<5	<5	334	<5	39	11	<5
86	106838	Stream Sediment	29.735373	80.316536	32	15	119	35	<5	<1	<5	24	8	12	400	<5	<5	17	<5
87	106839	Stream Sediment	29.734147	80.31672	33	<5	191	54	<5	<1	<5	5	<5	15	387	<5	29	11	<5
88	106840	Stream Sediment	29.735718	80.318761	25	<5	131	7	<5	<1	<5	7	<5	<5	486	<5	23	19	<5
89	106841	Stream Sediment	29.730777	80.327027	31	6	168	54	<5	<1	<5	4	10	19	625	<5	37	39	<5
90	106842	Stream Sediment	29.738632	80.328911	31	6	108	60	<5	<1	<5	6	6	11	462	<5	15	16	<5
91	106843	Stream Sediment	29.804388	80.257221	34	22	102	8	<5	<1	<5	26	15	<5	405	<5	25	17	<5
92	106844	Stream Sediment	29.80447	80.258911	28	6	123	14	<5	<1	<5	8	7	<5	315	<5	38	12	<5
93	106845	Stream Sediment	29.773192	80.295568	32	15	30	5	<5	<1	<5	18	<5	<5	99	7	<5	16	<5
94	106846	Stream Sediment	29.756186	80.299299	30	11	46	7	<5	<1	<5	19	7	<5	161	13	9	16	<5
95	106847	Stream Sediment	29.762288	80.295959	31	20	49	9	<5	<1	<5	11	6	<5	197	7	<5	17	<5
96	106848	Stream Sediment	29.75687	80.295328	30	10	33	<5	<5	<1	<5	20	<5	<5	127	16	<5	14	<5
97	106849	Stream Sediment	29.795729	80.265124	34	6	59	10	<5	<1	<5	21	7	<5	407	6	34	11	<5
98	106850	Stream Sediment	29.750693	80.34352	27	8	95	12	<5	<1	<5	7	<5	<5	568	29	46	37	<5
99	106851	Stream Sediment	29.761133	80.343183	19	6	48	16	<5	<1	<5	9	6	<5	159	<5	12	16	<5
100	106852	Stream Sediment	29.819545	80.233436	38	8	81	11	<5	<1	<5	8	15	<5	630	6	<5	25	<5

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
101	106853	Stream Sediment	29.814864	80.228043	1.06	4.31	7.40	0.13	<0.05	1.65	2.29	0.44	141	430	0.07	5.66	39	171	77	157
102	106854	Stream Sediment	29.819984	80.238274	0.86	1.77	9.77	0.09	<0.05	2.65	1.68	0.62	148	149	0.06	5.31	26	48	64	122
103	106855	Stream Sediment	29.825196	80.240525	0.79	5.33	5.62	0.07	<0.05	1.19	6.95	0.27	103	92	0.06	3.80	20	37	28	91
104	106856	Stream Sediment	29.820367	80.239533	1.26	1.98	9.25	0.10	<0.05	1.97	2.38	0.51	157	84	0.08	5.88	29	43	69	107
105	106857	Stream Sediment	29.808716	80.218203	0.84	0.75	7.27	0.13	0.07	1.96	0.58	0.27	63	96	0.07	3.02	13	32	27	96
106	106858	Stream Sediment	29.838805	80.208122	1.43	1.48	8.72	0.11	<0.05	2.54	1.76	0.43	87	102	0.05	3.82	18	32	43	107
107	106859	Stream Sediment	29.835608	80.20837	1.54	1.58	9.48	0.11	<0.05	2.68	1.84	0.43	91	115	0.05	3.91	18	33	42	109
108	106860	Stream Sediment	29.829395	80.195721	1.59	1.06	8.46	0.13	0.06	1.87	1.41	0.30	64	115	0.05	3.21	13	29	37	103
109	106861	Stream Sediment	29.832435	80.184053	1.60	1.11	9.12	0.12	<0.05	2.06	1.55	0.37	63	108	0.05	3.28	13	24	42	111
110	106862	Stream Sediment	29.835819	80.185941	1.40	1.25	9.23	0.09	<0.05	2.65	1.30	0.35	69	84	0.05	3.29	15	25	34	94
111	106863	Stream Sediment	29.832854	80.171914	1.21	0.63	9.10	0.08	<0.05	3.62	0.44	0.17	32	69	0.03	1.86	6	18	27	82
112	106864	Stream Sediment	29.832065	80.172035	1.11	0.97	8.71	0.14	<0.05	2.81	1.40	0.31	52	108	0.05	2.80	11	22	108	107
113	106865	Stream Sediment	29.82869	80.17902	1.80	1.27	9.39	0.15	<0.05	2.19	2.21	0.41	68	90	0.07	3.32	13	22	25	111
114	106866	Stream Sediment	29.81357	80.2235	1.51	0.88	7.81	0.13	<0.05	2.45	1.49	0.24	63	68	0.05	2.89	12	22	33	102
115	106867	Stream Sediment	29.81416	80.21259	0.73	0.86	7.40	0.14	<0.05	1.95	0.82	0.28	76	92	0.06	3.53	11	35	22	101
116	106868	Stream Sediment	29.84015	80.20549	1.42	1.44	8.98	0.12	0.05	2.46	1.75	0.42	86	120	0.05	3.74	18	33	44	109
117	106869	Stream Sediment	29.84098	80.20534	1.09	1.29	9.79	0.11	<0.05	2.20	1.16	0.38	70	86	0.05	3.62	14	28	18	133
118	106870	Stream Sediment	29.81507	80.21796	0.89	0.89	8.61	0.13	<0.05	2.30	0.88	0.24	59	92	0.06	3.18	10	27	32	94
119	106871	Stream Sediment	29.81527	80.21041	0.78	0.82	8.32	0.15	<0.05	2.09	0.86	0.27	69	94	0.05	3.56	9	31	27	113
120	106872	Stream Sediment	29.78278	80.286662	1.34	0.85	8.96	0.13	<0.05	3.07	0.83	0.36	53	149	0.03	3.13	13	23	53	95
121	106873	Stream Sediment	29.782028	80.285255	0.83	1.57	11.10	0.11	<0.05	4.00	0.67	0.81	131	192	0.03	5.39	23	49	87	127
122	106874	Stream Sediment	29.781744	80.28805	0.85	1.50	10.15	0.12	<0.05	3.12	0.79	0.39	90	132	0.04	4.23	18	37	55	116
123	106875	Stream Sediment	29.777948	80.286205	1.20	0.78	8.59	0.11	<0.05	2.93	0.86	0.19	29	141	0.03	2.33	7	12	18	78
124	106876	Stream Sediment	29.800787	80.277389	0.34	1.00	5.41	0.12	<0.05	2.08	0.74	0.24	68	220	0.02	2.75	10	23	12	18
125	106877	Stream Sediment	29.79892	80.259955	0.96	1.62	9.21	0.11	<0.05	2.67	2.06	0.42	76	130	0.03	3.70	14	27	52	119

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
101	106853	Stream Sediment	29.814864	80.228043	26	16	108	9	<5	<1	<5	8	8	<5	333	<5	10	10	<5
102	106854	Stream Sediment	29.819984	80.238274	32	15	100	12	<5	<1	<5	6	6	<5	498	<5	31	14	<5
103	106855	Stream Sediment	29.825196	80.240525	16	9	98	12	<5	<1	<5	<3	13	<5	295	<5	13	75	<5
104	106856	Stream Sediment	29.820367	80.239533	30	19	164	18	<5	<1	<5	6	8	<5	477	<5	16	31	<5
105	106857	Stream Sediment	29.808716	80.218203	25	19	61	22	<5	<1	<5	17	9	<5	294	12	10	34	<5
106	106858	Stream Sediment	29.838805	80.208122	30	8	173	7	<5	<1	<5	8	<5	<5	458	<5	21	16	<5
107	106859	Stream Sediment	29.835608	80.20837	32	8	184	7	<5	<1	<5	9	<5	<5	500	<5	<5	36	<5
108	106860	Stream Sediment	29.829395	80.195721	28	5	196	12	<5	<1	<5	14	7	<5	394	<5	<5	20	<5
109	106861	Stream Sediment	29.832435	80.184053	31	8	213	8	<5	<1	<5	21	8	<5	395	5	16	22	<5
110	106862	Stream Sediment	29.835819	80.185941	32	<5	200	7	<5	<1	<5	7	12	<5	477	<5	34	24	<5
111	106863	Stream Sediment	29.832854	80.171914	38	8	51	11	<5	<1	<5	76	<5	<5	193	18	<5	21	<5
112	106864	Stream Sediment	29.832065	80.172035	32	13	118	10	<5	<1	<5	36	<5	<5	236	9	14	15	<5
113	106865	Stream Sediment	29.82869	80.17902	34	<5	258	6	<5	<1	<5	20	<5	<5	409	<5	16	21	<5
114	106866	Stream Sediment	29.81357	80.2235	28	17	64	11	<5	<1	<5	19	7	<5	162	9	<5	21	5
115	106867	Stream Sediment	29.81416	80.21259	27	18	72	25	<5	<1	<5	9	7	<5	353	<5	16	28	<5
116	106868	Stream Sediment	29.84015	80.20549	30	7	180	8	<5	<1	<5	9	<5	<5	450	<5	12	25	<5
117	106869	Stream Sediment	29.84098	80.20534	34	6	163	11	<5	<1	<5	11	<5	<5	461	<5	6	23	<5
118	106870	Stream Sediment	29.81507	80.21796	27	9	69	23	<5	<1	<5	16	<5	<5	276	<5	<5	23	<5
119	106871	Stream Sediment	29.81527	80.21041	26	24	81	32	<5	<1	<5	14	<5	<5	336	<5	18	28	<5
120	106872	Stream Sediment	29.78278	80.286662	25	12	55	5	<5	<1	<5	12	<5	<5	259	<5	28	45	<5
121	106873	Stream Sediment	29.782028	80.285255	32	10	76	7	<5	<1	<5	17	8	<5	609	<5	30	27	<5
122	106874	Stream Sediment	29.781744	80.28805	30	13	75	10	<5	<1	<5	14	7	<5	415	<5	22	22	<5
123	106875	Stream Sediment	29.777948	80.286205	26	11	51	9	<5	<1	<5	13	<5	<5	178	<5	10	37	<5
124	106876	Stream Sediment	29.800787	80.277389	15	<5	42	17	<5	<1	<5	3	<5	<5	147	<5	14	5	<5
125	106877	Stream Sediment	29.79892	80.259955	27	16	71	16	<5	<1	<5	21	6	<5	341	<5	23	18	<5

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
126	106878	Stream Sediment	29.777162	80.311562	1.52	2.94	8.90	0.13	<0.05	1.48	2.94	0.53	210	112	0.09	6.74	38	53	33	90
127	106879	Stream Sediment	29.773715	80.309121	0.94	1.08	8.62	0.12	0.06	2.62	1.06	0.34	65	125	0.04	3.48	13	27	35	105
128	106880	Stream Sediment	29.772695	80.323718	0.89	3.07	7.99	0.13	<0.05	1.57	2.31	0.57	210	113	0.09	6.90	36	48	83	111
129	106881	Stream Sediment	29.774124	80.32025	0.94	2.27	9.56	0.12	<0.05	2.87	1.52	0.53	155	131	0.06	5.64	25	41	62	105
130	106882	Stream Sediment	29.77084	80.32605	1.07	1.70	9.33	0.09	<0.05	1.50	2.26	0.47	199	90	0.10	6.59	37	48	86	111
131	106883	Stream Sediment	29.771136	80.314976	0.62	1.36	12.16	0.11	<0.05	4.13	0.61	0.37	125	130	0.05	5.09	23	47	65	119
132	106884	Stream Sediment	29.77324	80.322117	1.03	3.61	8.23	0.16	<0.05	1.59	1.86	0.70	275	64	0.09	8.44	40	48	89	111
133	106885	Stream Sediment	29.780488	80.29962	0.81	2.22	8.96	0.10	<0.05	2.98	1.58	0.50	187	273	0.06	5.42	26	65	33	60
134	106886	Stream Sediment	29.779073	80.298661	0.88	1.37	8.90	0.12	<0.05	2.44	1.15	0.42	86	188	0.05	4.08	17	35	44	113
135	106887	Stream Sediment	29.77692	80.298215	0.81	1.02	8.93	0.13	<0.05	2.59	0.76	0.34	59	143	0.04	3.42	13	30	47	111
136	106888	Stream Sediment	29.777565	80.296466	0.94	0.99	9.31	0.12	<0.05	2.78	0.84	0.37	65	147	0.04	3.56	13	29	48	134
137	106889	Stream Sediment	29.770012	80.318143	0.97	1.26	10.48	0.09	<0.05	2.90	1.47	0.39	91	111	0.06	4.74	19	29	45	153
138	106890	Stream Sediment	29.777496	80.30618	0.91	1.08	7.81	0.13	0.06	2.41	1.12	0.30	62	93	0.05	3.05	12	28	29	85
139	106891	Stream Sediment	29.776561	80.3052	1.11	1.20	9.19	0.10	<0.05	2.69	0.92	0.39	90	108	0.04	4.00	16	32	48	86
140	106892	Stream Sediment	29.774961	80.30423	0.82	0.95	8.67	0.10	0.07	2.46	0.76	0.32	62	267	0.03	3.50	13	29	43	114
141	106893	Stream Sediment	29.78607	80.27781	0.66	1.27	11.15	0.09	<0.05	3.48	0.56	0.54	115	199	0.03	4.84	19	49	72	149
142	106894	Stream Sediment	29.812748	80.24401	0.94	2.12	10.06	0.09	<0.05	2.27	1.73	0.60	165	166	0.06	5.95	27	46	73	108
143	106895	Stream Sediment	29.811893	80.24218	1.18	1.97	11.30	0.10	<0.05	2.55	2.28	0.87	206	92	0.08	7.47	39	50	72	120
144	106896	Stream Sediment	29.811556	80.247732	1.04	3.01	8.72	0.12	<0.05	1.85	2.04	0.52	201	68	0.08	6.50	31	51	68	93
145	106897	Stream Sediment	29.787141	80.27486	0.61	1.40	10.92	0.12	0.05	3.21	0.37	0.48	114	106	0.05	5.22	24	52	113	152
146	106898	Stream Sediment	29.814405	80.250646	0.98	2.34	8.28	0.14	<0.05	1.41	1.82	0.59	181	70	0.10	6.54	31	45	84	108
147	106899	Stream Sediment	29.777103	80.30968	0.76	1.59	8.27	0.13	0.06	2.07	1.32	0.41	121	72	0.07	4.89	21	42	48	93
148	106900	Stream Sediment	29.775034	80.31057	0.66	1.55	6.79	0.10	0.05	1.45	1.14	0.50	142	51	0.07	5.15	21	37	48	83
149	106901	Stream Sediment	29.76699	80.33544	0.44	1.26	7.54	0.06	<0.05	1.49	0.78	0.54	169	52	0.07	5.93	28	42	74	95
150	106902	Stream Sediment	29.806154	80.24073	1.27	1.73	8.84	0.12	0.06	2.55	2.79	0.15	39	42	0.04	2.44	10	22	26	116

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
126	106878	Stream Sediment	29.777162	80.311562	21	<5	220	16	<5	<1	<5	<3	6	<5	341	<5	28	14	<5
127	106879	Stream Sediment	29.773715	80.309121	26	17	65	18	<5	<1	<5	8	<5	<5	298	<5	21	26	<5
128	106880	Stream Sediment	29.772695	80.323718	21	6	133	24	<5	<1	<5	4	10	<5	476	<5	16	27	<5
129	106881	Stream Sediment	29.774124	80.32025	27	9	92	13	<5	<1	<5	8	<5	<5	421	<5	15	19	<5
130	106882	Stream Sediment	29.77084	80.32605	23	7	171	27	<5	<1	<5	4	<5	<5	382	<5	13	14	<5
131	106883	Stream Sediment	29.771136	80.314976	36	26	79	15	<5	<1	<5	10	6	<5	580	<5	23	18	<5
132	106884	Stream Sediment	29.77324	80.322117	23	5	127	19	<5	<1	<5	3	7	5	406	<5	52	18	<5
133	106885	Stream Sediment	29.780488	80.29962	19	<5	113	28	<5	<1	<5	<3	15	<5	424	<5	10	16	<5
134	106886	Stream Sediment	29.779073	80.298661	25	10	91	19	<5	<1	<5	9	15	<5	397	<5	12	21	<5
135	106887	Stream Sediment	29.77692	80.298215	26	14	78	18	<5	<1	<5	12	6	<5	313	<5	10	26	<5
136	106888	Stream Sediment	29.777565	80.296466	28	13	80	15	<5	<1	<5	12	<5	<5	330	<5	16	24	<5
137	106889	Stream Sediment	29.770012	80.318143	28	11	148	19	<5	<1	<5	14	<5	<5	611	<5	8	22	<5
138	106890	Stream Sediment	29.777496	80.30618	22	10	70	16	<5	<1	<5	9	<5	<5	285	<5	12	19	<5
139	106891	Stream Sediment	29.776561	80.3052	25	11	76	17	<5	<1	<5	8	<5	<5	362	<5	16	25	<5
140	106892	Stream Sediment	29.774961	80.30423	23	10	76	13	<5	<1	<5	12	<5	<5	307	<5	8	31	<5
141	106893	Stream Sediment	29.78607	80.27781	30	11	98	10	<5	<1	<5	13	7	<5	677	<5	24	24	<5
142	106894	Stream Sediment	29.812748	80.24401	25	11	125	21	<5	<1	<5	6	5	<5	418	<5	31	13	<5
143	106895	Stream Sediment	29.811893	80.24218	30	6	170	10	<5	<1	<5	5	<5	<5	453	<5	34	26	<5
144	106896	Stream Sediment	29.811556	80.247732	22	5	138	19	<5	<1	<5	4	<5	<5	354	<5	11	24	<5
145	106897	Stream Sediment	29.787141	80.27486	30	8	64	15	<5	<1	<5	22	<5	<5	564	<5	14	45	<5
146	106898	Stream Sediment	29.814405	80.250646	21	5	131	30	<5	<1	<5	3	6	<5	356	<5	14	21	<5
147	106899	Stream Sediment	29.777103	80.30968	21	10	82	23	<5	<1	<5	5	7	<5	383	<5	13	19	<5
148	106900	Stream Sediment	29.775034	80.31057	18	<5	97	25	<5	<1	<5	<3	<5	<5	288	<5	<5	17	<5
149	106901	Stream Sediment	29.76699	80.33544	20	13	74	28	<5	<1	<5	5	<5	<5	239	<5	28	32	<5
150	106902	Stream Sediment	29.806154	80.24073	27	9	52	10	<5	<1	<5	21	<5	<5	177	<5	<5	20	<5

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
151	106903	Stream Sediment	29.807737	80.23306	0.95	0.96	9.18	0.13	0.05	2.25	0.71	0.21	55	48	0.04	2.92	10	23	19	100
152	106904	Stream Sediment	29.808418	80.23649	0.81	1.02	10.74	0.09	<0.05	2.67	1.20	0.44	96	62	0.05	4.29	18	32	70	111
153	106905	Stream Sediment	29.80842	80.23649	1.13	1.16	8.86	0.07	<0.05	2.85	1.04	0.44	73	57	0.03	3.38	11	27	44	75
154	106906	Stream Sediment	29.79916	80.26376	1.66	1.43	9.57	0.10	<0.05	2.49	2.06	0.30	84	47	0.04	3.59	18	24	30	70
155	106907	Stream Sediment	29.79922	80.26232	1.10	1.92	9.49	0.08	<0.05	2.46	1.69	0.50	110	64	0.05	4.57	18	29	46	98
156	106908	Stream Sediment	29.80347	80.25907	0.78	1.61	12.01	0.06	<0.05	3.49	1.10	0.60	140	112	0.03	5.54	20	44	68	106
157	106909	Stream Sediment	29.80162	80.26016	1.38	2.50	9.48	0.09	<0.05	1.94	3.72	0.67	150	63	0.07	5.51	29	36	45	105
158	106910	Stream Sediment	29.809758	80.243747	1.84	1.90	9.93	0.10	<0.05	1.66	3.51	0.76	173	70	0.08	6.09	34	38	47	104
159	106911	Stream Sediment	29.800843	80.264804	0.74	1.58	7.19	0.08	<0.05	1.69	1.19	0.36	124	55	0.06	4.68	23	32	44	67
160	106912	Stream Sediment	29.800204	80.266529	1.40	1.24	8.48	0.09	<0.05	2.68	1.54	0.32	58	44	0.03	2.79	9	20	34	79
161	106913	Stream Sediment	29.80699	80.26445	0.78	2.84	8.35	0.06	<0.05	1.62	1.32	0.44	174	85	0.07	6.05	30	49	53	64
162	106914	Stream Sediment	29.7895	80.28091	0.79	1.70	11.83	0.06	<0.05	3.15	0.87	0.51	158	106	0.04	5.72	26	52	66	127
163	106915	Stream Sediment	29.80704	80.25246	1.75	0.77	9.79	0.16	<0.05	3.02	1.07	0.31	50	37	0.04	2.80	9	14	31	81
164	106916	Stream Sediment	29.80544	80.25346	1.02	1.24	9.94	0.14	0.06	2.63	2.08	0.64	104	84	0.04	4.69	18	33	82	119
165	106917	Stream Sediment	29.80042	80.26792	1.46	1.55	8.31	0.10	<0.05	2.35	2.18	0.43	82	62	0.04	3.44	14	22	38	72
166	106918	Stream Sediment	29.79756	80.26562	0.94	1.59	9.12	0.11	0.06	2.58	1.71	0.49	97	82	0.05	4.31	18	32	51	99
167	106919	Stream Sediment	29.79656	80.27505	0.33	1.68	8.90	0.11	<0.05	2.99	0.67	0.28	106	70	0.03	3.72	12	32	15	60
168	106920	Stream Sediment	29.79675	80.2742	0.97	2.76	8.88	0.13	<0.05	2.00	1.76	0.50	173	108	0.07	5.96	28	59	58	78
169	106921	Stream Sediment	29.78613	80.28097	0.64	1.23	12.54	0.07	<0.05	3.78	0.37	0.47	136	134	0.02	4.91	23	62	73	146
170	106922	Stream Sediment	29.79581	80.26551	0.80	1.38	10.01	0.10	<0.05	2.77	0.63	0.44	114	135	0.04	5.10	20	54	63	130
171	106923	Stream Sediment	29.830308	80.215364	1.71	1.62	10.47	0.10	<0.05	3.25	1.14	0.29	56	53	0.04	3.04	13	17	19	93
172	106924	Stream Sediment	29.83345	80.217502	1.38	2.24	8.62	0.09	<0.05	1.57	2.70	0.64	200	76	0.09	6.84	35	45	95	152
173	106925	Stream Sediment	29.837166	80.214414	1.02	1.30	9.51	0.08	<0.05	2.61	1.44	0.49	84	83	0.05	4.41	16	28	23	82
174	106926	Stream Sediment	29.835466	80.214913	1.01	1.30	10.15	0.09	<0.05	2.80	1.73	0.48	89	90	0.05	4.79	21	35	48	127
175	106927	Stream Sediment	29.822923	80.237009	1.20	2.10	9.08	0.13	0.05	1.88	2.37	0.60	162	96	0.08	5.91	31	50	75	104

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
151	106903	Stream Sediment	29.807737	80.23306	27	10	63	21	<5	<1	<5	16	9	<5	214	<5	<5	20	<5
152	106904	Stream Sediment	29.808418	80.23649	31	31	105	13	<5	<1	<5	19	<5	<5	426	<5	29	25	<5
153	106905	Stream Sediment	29.80842	80.23649	25	10	68	12	<5	<1	<5	15	<5	<5	366	<5	23	61	<5
154	106906	Stream Sediment	29.79916	80.26376	25	7	129	13	<5	<1	<5	10	5	<5	227	<5	13	16	<5
155	106907	Stream Sediment	29.79922	80.26232	26	10	92	7	<5	<1	<5	16	9	<5	318	<5	15	39	<5
156	106908	Stream Sediment	29.80347	80.25907	34	10	90	9	<5	<1	<5	7	8	<5	575	<5	33	24	<5
157	106909	Stream Sediment	29.80162	80.26016	26	7	188	20	<5	<1	<5	7	<5	<5	395	<5	32	32	<5
158	106910	Stream Sediment	29.809758	80.243747	26	5	258	17	<5	<1	<5	8	11	<5	314	<5	25	21	<5
159	106911	Stream Sediment	29.800843	80.264804	18	<5	105	18	<5	<1	<5	5	<5	<5	201	<5	13	15	<5
160	106912	Stream Sediment	29.800204	80.266529	24	8	72	15	<5	<1	<5	13	<5	<5	297	<5	9	14	<5
161	106913	Stream Sediment	29.80699	80.26445	19	<5	97	21	<5	<1	<5	6	8	<5	217	<5	26	12	<5
162	106914	Stream Sediment	29.7895	80.28091	31	7	103	9	<5	<1	<5	3	7	<5	562	<5	14	22	<5
163	106915	Stream Sediment	29.80704	80.25246	30	7	61	8	<5	<1	<5	19	<5	<5	209	<5	15	21	<5
164	106916	Stream Sediment	29.80544	80.25346	29	45	159	16	<5	<1	<5	28	9	<5	542	<5	17	22	<5
165	106917	Stream Sediment	29.80042	80.26792	22	7	103	13	<5	<1	<5	10	5	<5	283	<5	18	15	<5
166	106918	Stream Sediment	29.79756	80.26562	26	13	101	14	<5	<1	<5	10	<5	<5	457	<5	<5	17	<5
167	106919	Stream Sediment	29.79656	80.27505	24	5	67	16	<5	<1	<5	6	6	<5	279	<5	6	16	<5
168	106920	Stream Sediment	29.79675	80.2742	22	6	124	25	<5	<1	<5	<3	<5	<5	356	<5	26	17	<5
169	106921	Stream Sediment	29.78613	80.28097	35	12	99	30	<5	<1	<5	10	7	<5	671	<5	35	33	<5
170	106922	Stream Sediment	29.79581	80.26551	29	14	99	29	<5	<1	<5	15	10	<5	624	<5	7	30	<5
171	106923	Stream Sediment	29.830308	80.215364	30	7	198	13	<5	<1	<5	9	9	<5	452	<5	10	21	<5
172	106924	Stream Sediment	29.83345	80.217502	22	13	171	24	<5	<1	<5	<3	8	<5	275	<5	26	33	<5
173	106925	Stream Sediment	29.837166	80.214414	25	6	181	29	<5	<1	<5	6	<5	<5	628	<5	23	25	<5
174	106926	Stream Sediment	29.835466	80.214913	29	24	203	42	<5	<1	<5	7	<5	<5	704	<5	33	34	<5
175	106927	Stream Sediment	29.822923	80.237009	22	9	164	41	<5	<1	<5	4	<5	<5	502	<5	27	18	<5

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Na (ppm)	Mg (ppm)	Al (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)
176	106928	Stream Sediment	29.821961	80.237862	0.94	2.49	8.08	0.07	<0.05	1.54	2.00	0.51	151	80	0.07	5.09	27	40	46	73
177	106929	Stream Sediment	29.825845	80.233643	1.01	1.34	9.79	0.09	<0.05	2.60	1.55	0.60	116	111	0.06	4.97	21	43	56	103
178	106930	Stream Sediment	29.8254	80.234965	1.10	1.44	10.03	0.11	0.06	2.63	1.94	0.55	110	123	0.06	4.77	19	43	48	139
179	106931	Stream Sediment	29.81702	80.224342	0.52	1.54	10.92	0.13	<0.05	3.01	0.61	0.60	129	135	0.07	5.62	22	57	47	132
180	106932	Stream Sediment	29.801848	80.255171	0.82	2.64	8.84	0.20	0.06	2.22	1.61	0.64	188	70	0.06	7.05	33	37	106	196
181	106933	Stream Sediment	29.830058	80.22024	0.41	1.10	10.30	0.08	<0.05	2.78	0.42	0.48	125	117	0.05	4.99	22	55	44	131
182	106934	Stream Sediment	29.803059	80.25449	0.65	2.10	8.31	0.09	<0.05	2.30	0.94	0.31	133	103	0.08	4.26	19	47	43	112
183	106935	Stream Sediment	29.812423	80.252135	0.72	3.82	8.76	0.18	<0.05	1.45	1.15	0.61	248	84	0.11	8.63	40	52	86	122
184	106936	Stream Sediment	29.813731	80.251527	0.97	2.39	8.84	0.15	<0.05	1.35	1.65	0.55	194	81	0.11	7.13	34	54	88	113
185	106937	Stream Sediment	29.847202	80.158997	0.79	1.72	7.09	0.08	<0.05	1.94	0.97	0.31	111	84	0.06	3.58	15	38	36	88
186	106938	Stream Sediment	29.844733	80.151236	0.94	1.43	10.59	0.12	0.06	3.02	1.53	0.40	116	89	0.05	4.75	24	39	57	147
187	106939	Stream Sediment	29.827729	80.223135	0.56	1.57	11.63	0.10	<0.05	3.39	0.43	0.52	136	132	0.04	5.39	22	56	56	133
188	106940	Stream Sediment	29.825283	80.225237	0.89	1.84	11.78	0.06	<0.05	3.61	0.84	0.39	110	134	0.03	4.38	24	52	40	81
189	106941	Stream Sediment	29.75333	80.3302777	0.87	1.01	9.50	0.103	<0.05	3.50	0.62	0.31	60	53	0.04	3.30	17	29	73	120
190	106942	Stream Sediment	29.754018	80.33107	1.06	0.65	8.02	0.106	<0.05	3.22	0.61	0.10	15	7	0.03	1.75	<5	9	51	92
191	106943	Stream Sediment	29.848909	80.161057	0.20	1.42	9.29	0.11	<0.05	3.20	0.23	0.33	152	82	0.08	5.17	14	35	42	125
192	106944	Stream Sediment	29.844429	80.165934	1.19	1.59	10.11	0.09	<0.05	3.82	0.83	0.30	63	104	0.06	3.66	15	36	55	102
193	106803 (80 mesh)	Stream Sediment	29.757493	80.330407	1.24	1.90	8.05	0.050	<0.05	1.80	2.21	0.58	143	67	0.07	5.60	30	43	207	901
194	106819 (80 mesh)	Stream Sediment	29.742771	80.340781	0.71	2.06	5.53	0.065	<0.05	1.27	1.72	0.46	104	55	0.05	4.24	30	22	14	39
195	106820 (80 mesh)	Stream Sediment	29.746857	80.337918	0.80	1.17	5.86	0.038	<0.05	1.60	1.19	0.46	89	36	0.04	4.09	25	21	37	79
196	106822 (80 mesh)	Stream Sediment	29.745365	80.331232	1.44	1.63	7.24	0.080	<0.05	2.21	2.26	0.55	118	28	0.06	4.48	27	21	28	72
197	106824 (80 mesh)	Stream Sediment	29.761155	80.33085	0.67	3.50	9.36	0.080	<0.05	2.14	1.54	0.57	187	93	0.08	6.60	33	52	63	100
198	106832 (80 mesh)	Stream Sediment	29.757638	80.326071	1.15	0.70	8.11	0.148	<0.05	4.35	0.59	0.10	9	<5	0.03	2.08	14	<5	56	243
199	106941 (80 mesh)	Stream Sediment	29.730777	80.327027	0.98	0.83	8.46	0.066	<0.05	3.36	0.39	0.25	53	43	0.03	2.64	14	22	26	76
200	106942 (80 mesh)	Stream Sediment	29.738632	80.328911	1.33	0.43	6.86	0.067	<0.05	3.41	0.34	0.06	6	<5	0.02	1.17	<5	<5	31	50

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Ga (ppm)	As (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Ba (ppm)	W (ppm)	Tl (ppm)	Pb (ppm)	Bi (ppm)
176	106928	Stream Sediment	29.82196	80.237862	20	6	148	42	<5	<1	<5	6	<5	<5	321	<5	20	23	<5
177	106929	Stream Sediment	29.82584	80.233643	27	13	147	43	<5	<1	<5	8	6	<5	575	<5	32	26	<5
178	106930	Stream Sediment	29.8254	80.234965	27	11	173	48	<5	<1	<5	7	7	<5	596	<5	23	29	<5
179	106931	Stream Sediment	29.81702	80.224342	29	15	87	42	<5	<1	<5	6	7	<5	572	<5	40	43	<5
180	106932	Stream Sediment	29.80184	80.255171	26	160	98	33	<5	<1	<5	12	<5	<5	379	<5	37	31	<5
181	106933	Stream Sediment	29.83005	80.22024	26	10	82	54	<5	<1	<5	5	5	<5	580	<5	24	29	<5
182	106934	Stream Sediment	29.80305	80.25449	21	10	81	30	<5	<1	<5	5	6	<5	393	<5	16	24	<5
183	106935	Stream Sediment	29.81242	80.252135	24	7	91	43	<5	<1	<5	3	10	<5	357	<5	27	19	<5
184	106936	Stream Sediment	29.81373	80.251527	22	8	127	59	<5	<1	<5	<3	8	<5	361	<5	31	34	<5
185	106937	Stream Sediment	29.84720	80.158997	18	6	94	22	<5	<1	<5	5	7	<5	310	<5	5	28	<5
186	106938	Stream Sediment	29.84473	80.151236	29	16	121	34	<5	<1	<5	24	11	<5	388	<5	14	26	<5
187	106939	Stream Sediment	29.82772	80.223135	32	8	82	35	<5	<1	<5	6	8	<5	622	<5	17	44	<5
188	106940	Stream Sediment	29.82528	80.225237	33	9	146	22	<5	<1	<5	7	8	<5	680	<5	28	28	<5
189	106941	Stream Sediment	29.75333	80.330277	27	56	46	10	<5	<1	<5	33	<5	<5	282	35	16	24	<5
190	106942	Stream Sediment	29.75401	80.33107	26	34	28	7	<5	<1	<5	25	<5	<5	100	16	6	33	<5
191	106943	Stream Sediment	29.84890	80.161057	23	44	53	51	<5	<1	<5	4	<5	<5	474	<5	21	56	<5
192	106944	Stream Sediment	29.84442	80.165934	30	12	109	10	<5	<1	<5	15	<5	<5	352	<5	10	26	<5
193	106803 (80 mesh)	Stream Sediment	29.77493	80.330407	18	13	120	5	<5	<1	<5	8	<5	<5	285	<5	19	32	<5
194	106819 (80 mesh)	Stream Sediment	29.74277	80.340781	11	<5	87	8	<5	<1	<5	3	<5	<5	232	97	20	8	<5
195	106820 (80 mesh)	Stream Sediment	29.74685	80.337918	13	9	83	<5	<5	<1	<5	5	<5	<5	281	55	29	19	<5
196	106822 (80 mesh)	Stream Sediment	29.74536	80.331232	18	<5	106	<5	<5	<1	<5	8	<5	<5	177	57	18	18	<5
197	106824 (80 mesh)	Stream Sediment	29.76115	80.33085	22	<5	102	17	<5	<1	<5	6	<5	<5	460	16	28	19	<5
198	106832 (80 mesh)	Stream Sediment	29.75763	80.326071	25	39	25	<5	<5	<1	<5	26	<5	<5	61	85	<5	62	<5
199	106941 (80 mesh)	Stream Sediment	29.73077	80.327027	24	25	30	5	<5	<1	<5	31	<5	<5	235	47	14	14	<5
200	106942 (80 mesh)	Stream Sediment	29.73863	80.328911	23	10	19	<5	<5	<1	<5	23	<5	<5	50	27	<5	23	<5

Annexure VII_AAS analysis (Check Samples) for Surface Samples

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Ag ppm	Al ppm	As ppm	Ba ppm	Ca ppm	Cr ppm	Cu ppm	Fe ppm	K ppm	Mg ppm	Mn ppm	Na ppm
1	106308	Chlorite Schist	Bedrock	29.757335	80.333114	136.705	18014.3	86031	28.73	17781.51	88.412	67393	191001	5577.5	19331	449.86	1091.9
2	106309	Phyllite	Bedrock	29.8442	80.15292	<1	7049.06	253.14	30.51	251.734	415	197.16	16930.8	3470.9	1670.84	188.011	226.05
3	106315	Phyllite	Bedrock	29.80527	80.28225	<1	79182	185.77	754.73	5629.158	329.31	185.06	19513.1	29927	14643.8	569.549	10617
4	106316	Phyllite	Bedrock	29.80595	80.28162	<1	64198.9	81.81	459.52	4316.217	364.9	54.07	39761	22448	12481.85	456.296	5959.3
5	106317	Phyllite	Bedrock	29.84796	80.15879	<1	19725.8	95.88	115.15	33691.02	248.46	179.12	273816	17667	29717.2	105.449	379.31
6	106318	Phyllite	Bedrock	29.847029	80.165324	<1	22339.5	26.12	71.08	5283.696	584.2	89.13	54271.8	7911.9	5034.2	114.427	5237.1
7	106319	Phyllite	Bedrock	29.831112	80.236987	<1	30928.3	91.38	186.61	85744	190.91	42.65	14001.9	19735	41503.85	562.619	437.79
8	106320	Chlorite Schist	Bedrock	29.80126	80.26233	<1	63178.1	9.32	<5	193.5081	44.051	<5	97356.3	236.69	82535.75	<100	<100
9	106321	Amphibolite	Bedrock	29.7351	80.31742	<1	57160	<5	36.69	58690.02	353.41	640.5	141501	3241.3	27945.2	2146.99	9028.2
10	106322	Amphibolite	Bedrock	29.80362	80.25905	<1	56599	<5	33.64	58078.2	110.78	686.45	138188	3190.2	27213.35	2118.01	8800.5
11	106323	Quartzite	Bedrock	29.808	80.26428	<1	12613.3	<5	20.31	2469.53	179.77	<5	124622	5425.3	2079.92	133.736	433.1
12	106324	Amphibolite	Bedrock	29.80354	80.25905	<1	56414.2	<5	111.31	32852.47	149.01	516.51	75935.6	2584	13548.65	917.299	18301
13	106325	Quartzite	Bedrock	29.80242	80.26051	<1	12621	<5	<5	139.8245	286.3	<5	64382.8	322.5	22540.85	<100	<100
14	106326	Amphibolite	Bedrock	29.75641	80.2836	<1	76863.2	<5	20.99	39455.8	65.743	273.92	137077	1825.7	43944.05	1343	14792
15	106327	Amphibolite	Bedrock	29.81836	80.20519	<1	63102.2	<5	152.49	47574.26	31.029	94.27	143679	6487.8	22326.65	1795.76	14614
16	106328	Chlorite Schist	Bedrock	29.840615	80.177443	<1	55578.2	<5	203.02	4155.125	201.49	110.27	39569.8	15822	9849.29	228.53	5933.3
17	106329	Chlorite Schist	Bedrock	29.822	80.2379	<1	19928.3	<5	76.9	563.0309	392.06	23.79	21320	6488.6	3246.05	<100	744.99
18	106344	Phyllite	Bedrock	29.80527	80.28225	<1	68996	6.49	669.44	4849.963	250.7	6.29	13907.9	25558	12196.25	460.433	9324.3
19	106347	Amphibolite	Bedrock	29.75069	80.34352	<1	72819.6	<5	54.79	62929.5	45.453	92.41	102399	3824	30595.4	1550.9	24317
20	106832	Stream Sediment	Stream Sediment	29.757638	80.326071	<1	84143	108.97	67.19	9185.13	226	110.49	33957	36934	7995.935	570.19	10822

Sl. No.	Sample ID	Host Lithology	Sample type	Latitude	Longitude	Ni ppm	P ppm	Pb ppm	S ppm	Sr ppm	Ti ppm	V ppm	Zn ppm	Zr ppm
1	106308	VMS	Bedrock	29.757335	80.333114	99.62	2448.31	65718	158325	<5	604.11	22.41	88162	<5
2	106309	Phyllite	Bedrock	29.8442	80.15292	8.05	114.511	164.61	549.63	6.48	294.33	12.99	177.43	<5
3	106315	Phyllite	Bedrock	29.80527	80.28225	<5	235.3655	215.82	2580.32	140.27	2756.5	264.1	241.24	24.54
4	106316	Phyllite	Bedrock	29.80595	80.28162	60.65	400.3875	154.38	213.84	55.14	1536.5	276.68	303.23	9.63
5	106317	Phyllite	Bedrock	29.84796	80.15879	69.66	378.0085	408.25	253206	15.46	709.78	25.66	45.47	5.73
6	106318	Phyllite	Bedrock	29.847029	80.165324	113.11	325.8715	6.55	25799.4	26.74	508.76	34.77	13.79	<5
7	106319	Phyllite	Bedrock	29.831112	80.236987	11.97	1469.215	56.74	1670.21	35.09	1236.5	43.54	444.35	<5
8	106320	Chlorite Schist	Bedrock	29.80126	80.26233	9.17	417.073	7.95	376.878	<5	372.84	34.46	9.53	<5
9	106321	Amphibolite	Bedrock	29.7351	80.31742	34.95	725.875	10.68	7558.51	111	23728	1088.7	120.21	13.78
10	106322	Amphibolite	Bedrock	29.80362	80.25905	33.92	717.49	10.84	8049.93	109.14	23387	1093.9	113.09	9.31
11	106323	Quartzite	Bedrock	29.808	80.26428	44.65	741.605	5.97	106.318	7.63	564.83	72.02	<5	<5
12	106324	Amphibolite	Bedrock	29.80354	80.25905	16.08	747.715	14.16	2666.73	225.57	8020	226.53	68.6	7
13	106325	Quartzite	Bedrock	29.80242	80.26051	7.38	184.4705	9.49	12564.9	<5	103.83	8.58	<5	<5
14	106326	Amphibolite	Bedrock	29.75641	80.2836	34.58	3121.255	5.59	6290.58	210.02	21144	423.78	189.04	7.67
15	106327	Amphibolite	Bedrock	29.81836	80.20519	26.48	759.22	17.23	<100	201.28	18018	709.38	180.23	9.36
16	106328	Chlorite Schist	Bedrock	29.840615	80.177443	30.88	335.5565	7.9	<100	54.56	2555.7	65.14	53.77	<5
17	106329	Chlorite Schist	Bedrock	29.822	80.2379	14.17	140.6475	5.29	<100	9.01	735.83	28.3	33.48	<5
18	106344	Phyllite	Bedrock	29.80527	80.28225	<5	164.457	12.25	2549.83	116.95	2010.9	240.79	44.79	7.29
19	106347	Amphibolite	Bedrock	29.75069	80.34352	25.22	871.54	6.6	525.734	223.13	10339	309.81	110.07	13.31
20	106832	Stream Sediment	Stream Sediment	29.757638	80.326071	7.81	1506.005	117.17	669.594	34.9	1203.6	18.34	458.91	5.77

Annexure VIII_Chemical Assay Values of Gold (Au) by Fire Assay Technique for Surface Samples

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Au (ppm)
1	110201	Bedrock	29.75111	80.334726	<0.01
2	110202	Bedrock	29.732877	80.321627	0.01
3	110203	Bedrock	29.753267	80.342569	<0.01
4	110204	Bedrock	29.754723	80.336434	<0.01
5	110205	Bedrock	29.749441	80.332966	<0.01
6	110206	Bedrock	29.748542	80.333145	<0.01
7	110207	Bedrock	29.747852	80.331929	<0.01
8	110208	Bedrock	29.748532	80.337937	<0.01
9	110209	Bedrock	29.755487	80.335925	0.03
10	110210	Bedrock	29.751616	80.335015	<0.01
11	110211	Bedrock	29.754436	80.336608	<0.01
12	110212	Bedrock	29.748401	80.337648	<0.01
13	110213	Bedrock	29.751931	80.338917	<0.01
14	110214	Bedrock	29.752617	80.337204	0.03
15	110215	Bedrock	29.752021	80.339056	0.19
16	110216	Bedrock	29.75156	80.338097	<0.01
17	110217	Bedrock	29.752617	80.337204	0.05
18	110218	Bedrock	29.751507	80.339066	0.01
19	110219	Bedrock	29.796783	80.274358	0.03
20	110220	Bedrock	29.748453	80.332312	0.19
21	110221	Bedrock	29.75559	80.335422	0.12
22	110222	Bedrock	29.754045	80.342327	<0.01
23	110223	Bedrock	29.746635	80.33147	0.01
24	110224	Bedrock	29.751808	80.34044	0.01
25	110225	Bedrock	29.755487	80.335925	0.02

Sl. No.	Sample ID	Sample type	Latitude	Longitude	Au (ppm)
26	110226	Bedrock	29.78484	80.283395	<0.01
27	110227	Bedrock	29.752829	80.336716	0.05
28	110228	Bedrock	29.755391	80.335578	<0.01
29	110229	Bedrock	29.751907	80.340852	<0.01
30	110230	Bedrock	29.748577	80.337899	<0.01
31	110231	Bedrock	29.753709	80.337336	<0.01
32	110232	Bedrock	29.81089	80.246905	<0.01
33	110233	Bedrock	29.752862	80.337439	<0.01
34	110234	Bedrock	29.751642	80.337513	<0.01
35	110235	Bedrock	29.748671	80.332534	0.03
36	110236	Bedrock	29.751209	80.334109	<0.01
37	106301	Bedrock	29.813108	80.266996	<0.01
38	106302	Bedrock	29.85089	80.160734	<0.02
39	106303	Bedrock	29.853303	80.155877	<0.03
40	106304	Bedrock	29.839549	80.222855	<0.04
41	106305	Bedrock	29.844202	80.152917	<0.05
42	106306	Bedrock	29.800558	80.280453	<0.01
43	106307	Bedrock	29.851058	80.161786	0.0123
44	106308	Bedrock	29.757335	80.333114	1.85
45	106309	Bedrock	29.851249	80.160574	<0.01
46	106310	Bedrock	29.843582	80.154923	<0.02
47	106311	Bedrock	29.84426	80.15725	<0.03
48	106312	Bedrock	29.842328	80.156594	<0.04
49	106313	Bedrock	29.841669	80.155604	<0.05
50	106314	Bedrock	29.816629	80.209114	<0.01

Annexure IX_Chemical Assay Values of mercury (Hg) for Surface Samples

Sample ID	Sample type	Latitude	Longitude	Hg (ppm)
106301	Bedrock	29.813108	80.266996	22
106303	Bedrock	29.853303	80.155877	40
106306	Bedrock	29.800558	80.280453	36
106307	Bedrock	29.851058	80.161786	313
106308	Bedrock	29.757335	80.333114	49469
106309	Bedrock	29.851249	80.160574	143
106314	Bedrock	29.816629	80.209114	25

Annexure X_Thin section samples for surface petrographic study

Sample tag No	Latitude	Longitude	Host Lithology	Petrographic Description
114626	29.80826	80.28077	Amphibolite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite, bornite and galena present.
114627	29.807999	80.264282	Quartzite	Quartzite with recrystallized interlocking quartz grains and minor mica, sometimes with tourmaline. Sparse sulphides, mainly chalcopyrite and galena, occur along fractures.
114628	29.829127	80.143038	Leucogranite	Thin section shows medium grained, composed of the quartz and feldspar mainly. Very minor disseminated chalcopyrite and galena are associated with alteration minerals.
114629	29.85256	80.2322	Limestone	Thin section shows metamorphic fabric with recrystallized carbonate minerals. Minor disseminated chalcopyrite and galena are associated with alteration minerals.
114630	29.796616	80.264595	Chlorite Schist	Chlorite schist with strong schistosity; quartz and chlorite dominate with minor sericite. Disseminated to stringer chalcopyrite, galena and subordinate sulphides occur along foliation.
114631	29.797849	80.260924	Chlorite Schist	Chlorite schist with strong schistosity; quartz and chlorite dominate with minor sericite. Disseminated to stringer chalcopyrite, galena and subordinate sulphides occur along foliation.
114632	29.64706	79.758896	Phyllite	Fine-grained phyllite composed of sericite, quartz and chlorite with well-developed foliation. Minor pyrite, chalcopyrite and galena occur along cleavage planes.
114633	29.813392	80.224061	Granite Gneiss	Thin section shows metamorphic fabric with recrystallized silicate minerals. Minor disseminated chalcopyrite and galena are associated with alteration minerals.
114634	30.15919	80.29576	Phyllite	Fine-grained phyllite composed of sericite, quartz and chlorite with well-developed foliation. Minor pyrite, chalcopyrite and galena occur along cleavage planes.
114635	29.764758	80.322367	Granite Gneiss	Thin section composed of quartz, feldspar, biotite and muscovite, having equigranular texture. Minor disseminated chalcopyrite and galena are associated with alteration minerals.
114636	29.735167	80.317407	Amphibolite	Amphibolite comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena occur as disseminations and fracture fillings.
114637	29.803623	80.25905	Amphibolite	Amphibolite comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena occur as disseminations and fracture fillings.
114638	29.84959	80.22849	Phyllite	Fine-grained phyllite composed of sericite, quartz and chlorite with well-developed foliation. Minor pyrite, chalcopyrite and galena are present in minor amount.

114639	29.81 085	80.24 6364	Amphib olite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena present.
114640	29.80 3543	80.25 9049	Amphib olite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena present.
114641	29.81 1566	80.24 7732	Amphib olite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena present.
114642	29.73 51	80.31 742	Amphib olite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena present.
114643	29.73 857	80.32 767	Amphib olite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena present.
114644	29.75 0693	80.34 352	Amphib olite	Amphibolite is coarse to medium grained, comprising hornblende and plagioclase with granoblastic texture. Sulphides including chalcopyrite and galena present.
114645	29.75 734	80.33 3114	Chlorite Schist	Chlorite schist with strong schistosity; quartz and chlorite dominate with minor sericite/carbonate. Disseminated to stringer chalcopyrite, galena present.
114646	29.79 9755	80.26 0437	Leucogr anite	Thin section shows metamorphic fabric with recrystallized silicate minerals. Minor disseminated chalcopyrite and galena are associated with alteration minerals.
114647	29.80 2415	80.26 0506	Quartzit e	Quartzite with recrystallized interlocking quartz grains and minor mica. Sparse sulphides, mainly chalcopyrite and galena, occur along fractures.
114648	29.80 424	80.32 297	Limesto ne	Thin section shows metamorphic fabric with recrystallized carbonate minerals. Minor disseminated chalcopyrite and galena are associated with alteration minerals.
114649	29.75 5138	80.33 5884	Chlorite Schist	Chlorite schist with strong schistosity; quartz and chlorite dominate with minor sericite/carbonate. Disseminated to stringer chalcopyrite, galena.
114650	29.75 0901	80.34 2241	Chlorite Schist	Chlorite schist with strong schistosity; quartz and chlorite dominate with minor sericite/carbonate. Disseminated to stringer chalcopyrite, galena.

Annexure XI_Resistivity Survey (VES) Raw Data

Sheet: ASK_VES01

Date	21/03/2025		ASK_VES-1	Elevation- 1042 m	Direction-0°N
Location	29.756209	80.33576	Village:	Near Baragaon Village	
Sl No:	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	84.8	18.846	1598.141
2	5	1	23.7	77.73975	1842.432
3	10	1	2.56	313.31475	802.086
4	15	1	0.699	705.93975	493.452
5	20	1	0.451	1255.61475	566.282
6	25	1	0.352	1962.33975	690.744
7	30	1	0.284	2826.11475	802.617
8	35	1	0.227	3846.93975	873.255
9	40	1	0.15	5024.81475	753.722
10	45	1	0.106	6359.73975	674.132
11	50	1	0.156	7851.71475	1224.868
12	55	1	0.12	9500.73975	1140.089
13	60	1	0.114	11306.81475	1288.977
14	65	1	0.172	13269.93975	2282.430
15	70	1	0.163	15390.11475	2508.589
16	75	1	0.127	17667.33975	2243.752
17	80	1	0.233	20101.61475	4683.676

Sheet: ASK_VES02

Date	3/22/2025		ASK_VES-2	Elevation- 1067 m	Direction-0°N
Location	29.755196	80.3359	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	15.3	18.846	288.344
2	5	1	1.167	77.73975	90.722
3	10	1	0.189	313.31475	59.216
4	15	1	0.082	705.93975	57.887
5	20	1	0.06	1255.61475	75.337
6	25	1	0.029	1962.33975	56.908
7	30	1	0.032	2826.11475	90.436
8	35	1	0.056	3846.93975	215.429
9	40	1	0.057	5024.81475	286.414
10	45	1	0.034	6359.73975	216.231
11	50	1	0.026	7851.71475	204.145

Sheet: ASK_VES03

Date	3/22/2025		ASK_VES-3	Elevation- 1064 m	Direction-0°N
Location	29.755014	80.33587	Village:	Near Baragaon Village	
Sl No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	99.2	18.846	1869.523
2	5	1	71.4	77.73975	5550.618
3	10	1	25.2	313.31475	7895.532
4	15	1	1.3	705.93975	917.722
5	20	1	0.837	1255.61475	1050.950
6	25	1	0.388	1962.33975	761.388
7	30	1	0.255	2826.11475	720.659
8	35	1	0.184	3846.93975	707.837
9	40	1	0.13	5024.81475	653.226
10	45	1	0.071	6359.73975	451.542
11	50	1	0.112	7851.71475	879.392
12	55	1	0.116	9500.73975	1102.086
13	60	1	0.138	11306.81475	1560.340
14	65	1	0.078	13269.93975	1035.055
15	70	1	0.153	15390.11475	2354.688
16	75	1	0.143	17667.33975	2526.430
17	80	1	0.099	20101.61475	1990.060

Sheet: ASK_VES04

Date	3/28/2025		ASK_VES-4	Elevation- 1078 m	Direction- 0°N
Location	29.754847	80.33447	Village:	Near Baragaon Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	187	18.846	3524.202
2	5	1	14	77.73975	1088.357
3	10	1	1.036	313.31475	324.594
4	15	1	0.753	705.93975	531.573
5	20	1	0.71	1255.61475	891.486
6	25	1	0.535	1962.33975	1049.852
7	30	1	0.391	2826.11475	1105.011
8	35	1	0.43	3846.93975	1654.184
9	40	1	0.559	5024.81475	2808.871
10	45	1	0.212	6359.73975	1348.265
11	50	1	0.377	7851.71475	2960.096
12	55	1	0.501	9500.73975	4759.871
13	60	1	0.447	11306.81475	5054.146
14	70	1	0.434	15390.11475	6679.310
15	80	1	0.559	20101.61475	11236.803
16	85	1	0.208	22692.93975	4720.131
17	90	1	0.308	25441.31475	7835.925

Sheet: ASK_VES05

Date	3/28/2025		ASK_VES5	Elevation- 1060 m	Direction-0°N
Location	29.754649	80.33501	Village:	Near Baragaon Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	111.1	18.846	2093.791
2	5	1	6.38	77.73975	495.980
3	10	1	0.892	313.31475	279.477
4	15	1	1.126	705.93975	794.888
5	25	1	0.441	1962.33975	865.392
6	35	1	0.265	3846.93975	1019.439
7	40	1	0.398	5024.81475	1999.876
8	45	1	0.436	6359.73975	2772.847
9	50	1	0.392	7851.71475	3077.872
10	55	1	0.556	9500.73975	5282.411
11	60	1	0.617	11306.81475	6976.305
12	65	1	0.714	13269.93975	9474.737
13	70	1	0.859	15390.11475	13220.109
14	75	1	0.637	17667.33975	11254.095
15	80	1	0.643	20101.61475	12925.338

Sheet: ASK_VES06

Date	3/30/2025		ASK_VES6	Elevation- 1078 m	Direction- 0°N
Location	29.7548	80.3341	Village:	Near Baragaon Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	138	18.846	2600.748
2	5	1	14.7	77.73975	1142.774
3	10	1	1.87	313.31475	585.899
4	15	1	0.882	705.93975	622.639
5	20	1	0.39	1255.61475	489.690
6	25	1	0.264	1962.33975	518.058
7	30	1	0.232	2826.11475	655.659
8	35	1	0.264	3846.93975	1015.592
9	40	1	0.344	5024.81475	1728.536
10	45	1	0.255	6359.73975	1621.734
11	50	1	0.124	7851.71475	973.613
12	55	1	0.302	9500.73975	2869.223
13	60	1	0.241	11306.81475	2724.942
14	65	1	0.228	13269.93975	3025.546

Sheet: ASK_VES07

Date	3/30/2025		ASK_VES7	Elevation- 1073 m	Direction- 0°N
Location	29.7545	80.3342	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	237	18.846	4466.502
2	5	1	46.1	77.73975	3583.802
3	10	1	9.29	313.31475	2910.694
4	15	1	2.45	705.93975	1729.552
5	20	1	1.49	1255.61475	1870.866
6	50	1	1.047	7851.71475	8220.745
7	55	1	0.827	9500.73975	7857.112
8	60	1	0.364	11306.81475	4115.681

Sheet: ASK_VES08

Date	3/31/2025		ASK_VES8	Elevation- 1023 m	Direction- 0°N
Location	29.7511	80.3352	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	296	18.846	5578.416
2	5	1	58.8	77.73975	4571.097
3	10	1	6.09	313.31475	1908.087
4	15	1	2.18	705.93975	1538.949
5	20	1	1.32	1255.61475	1657.411
6	25	1	0.925	1962.33975	1815.164
7	30	1	1.103	2826.11475	3117.205
8	35	1	0.794	3846.93975	3054.470
9	40	1	1.34	5024.81475	6733.252
10	45	1	1.42	6359.73975	9030.830
11	50	1	0.379	7851.71475	2975.800
12	55	1	2.01	9500.73975	19096.487
13	60	1	1.037	11306.81475	11725.167
14	65	1	0.821	13269.93975	10894.621
15	70	1	0.942	15390.11475	14497.488
16	75	1	1.172	17667.33975	20706.122

Sheet: ASK_VES09

Date	3/31/2025		ASK_VES9	Elevation- 1008 m	Direction- 5°N
Location	29.7521	80.3355	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	190	18.846	3580.740
2	5	1	52.6	77.73975	4089.111
3	10	1	4.6	313.31475	1441.248
4	15	1	0.716	705.93975	505.453
5	20	1	0.389	1255.61475	488.434
6	25	1	0.168	1962.33975	329.673
7	30	1	0.102	2826.11475	288.264
8	35	1	0.107	3846.93975	411.623
9	40	1	0.064	5024.81475	321.588
10	45	1	0.061	6359.73975	387.944
11	50	1	0.046	7851.71475	361.179
12	55	1	0.036	9500.73975	342.027
13	60	1	0.038	11306.81475	429.659
14	65	1	0.031	13269.93975	411.368
15	70	1	0.062	15390.11475	954.187
16	75	1	0.044	17667.33975	777.363

Sheet: ASK_VES10

Date	3/31/2025		ASK_VES10	Elevation- 1001 m	Direction- 5°N
Location	29.7528	80.3354	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	55.9	18.846	1053.491
2	5	1	10.93	77.73975	849.695
3	10	1	1.95	313.31475	610.964
4	15	1	0.598	705.93975	422.152
5	20	1	0.314	1255.61475	394.263
6	25	1	0.223	1962.33975	437.602
7	30	1	0.161	2826.11475	455.004
8	35	1	0.126	3846.93975	484.714
9	40	1	0.1	5024.81475	502.481
10	45	1	0.081	6359.73975	515.139
11	50	1	0.057	7851.71475	447.548

Sheet: ASK_VES11

Date	4/1/2025		ASK_VES11	Elevation- 1020 m	Direction-5°N
Location	29.7536	80.3353	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance(Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	46.2	18.846	870.685
2	5	1	7.23	77.73975	562.058
3	10	1	1.45	313.31475	454.306
4	15	1	0.502	705.93975	354.382
5	20	1	0.301	1255.61475	377.940
6	25	1	0.216	1962.33975	423.865
7	30	1	0.149	2826.11475	421.091
8	35	1	0.108	3846.93975	415.469
9	40	1	0.093	5024.81475	467.308
10	45	1	0.073	6359.73975	464.261
11	50	1	0.061	7851.71475	478.955

Sheet: ASK_VES12

Date	4/1/2025		ASK_VES12	Elevation- 1010 m	Direction- 5°N
Location	29.7537	80.3356	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	19	18.846	358.074
2	5	1	3.3	77.73975	256.541
3	10	1	0.993	313.31475	311.122
4	15	1	0.394	705.93975	278.140
5	20	1	0.189	1255.61475	237.311
6	25	1	0.151	1962.33975	296.313
7	30	1	0.148	2826.11475	418.265
8	35	1	0.062	3846.93975	238.510
9	40	1	0.038	5024.81475	190.943
10	45	1	0.037	6359.73975	235.310
11	50	1	0.061	7851.71475	478.955
12	55	1	0.021	9500.73975	199.516
13	60	1	0.017	11306.81475	192.216
14	65	1	0.018	13269.93975	238.859
15	70	1	0.018	15390.11475	277.022
16	75	1	0.044	17667.33975	777.363

Sheet: ASK_VES13

Date	4/1/2025		ASK_VES13	Elevation- 987 m	Direction- 5°N
Location	29.753	80.3358	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	53.5	18.846	1008.261
2	5	1	9.42	77.73975	732.308
3	10	1	1.67	313.31475	523.236
4	15	1	0.706	705.93975	498.393
5	20	1	0.393	1255.61475	493.457
6	25	1	0.238	1962.33975	467.037
7	30	1	0.157	2826.11475	443.700
8	35	1	0.195	3846.93975	750.153
9	40	1	0.086	5024.81475	432.134
10	45	1	0.062	6359.73975	394.304
11	50	1	0.049	7851.71475	384.734
12	55	1	0.038	9500.73975	361.028
13	60	1	0.036	11306.81475	407.045
14	65	1	0.031	13269.93975	411.368
15	70	1	0.031	15390.11475	477.094

Sheet: ASK_VES14

Date	4/2/2025		ASK_VES14	Elevation- 960 m	Direction- 5°N
Location	29.751482	80.33681	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	424	18.846	7990.704
2	5	1	111	77.73975	8629.112
3	10	1	15.6	313.31475	4887.710
4	15	1	3.42	705.93975	2414.314
5	20	1	2.8	1255.61475	3515.721
6	25	1	0.533	1962.33975	1045.927
7	30	1	0.407	2826.11475	1150.229
8	35	1	0.364	3846.93975	1400.286
9	40	1	0.254	5024.81475	1276.303
10	45	1	0.208	6359.73975	1322.826
11	50	1	0.19	7851.71475	1491.826
12	55	1	0.19	9500.73975	1805.141
13	60	1	0.25	11306.81475	2826.704
14	65	1	0.113	13269.93975	1499.503
15	70	1	0.142	15390.11475	2185.396
16	75	1	0.116	17667.33975	2049.411

Sheet: ASK_VES15

Date	4/2/2025		ASK_VES15	Elevation- 893 m	Direction- 5°N
Location	29.751995	80.33853	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	309	18.846	5823.414
2	5	1	138	77.73975	10728.086
3	10	1	29.7	313.31475	9305.448
4	15	1	6.27	705.93975	4426.242
5	20	1	1.39	1255.61475	1745.305
6	25	1	0.509	1962.33975	998.831
7	30	1	0.386	2826.11475	1090.880
8	35	1	0.281	3846.93975	1080.990
9	40	1	0.245	5024.81475	1231.080
10	45	1	0.192	6359.73975	1221.070
11	50	1	0.19	7851.71475	1491.826
12	55	1	0.162	9500.73975	1539.120
13	60	1	0.171	11306.81475	1933.465
14	65	1	0.093	13269.93975	1234.104
15	70	1	0.084	15390.11475	1292.770

Sheet: ASK_VES16

Date	4/3/2025		ASK_VES16	Elevation- 985 m	Direction- 5°N
Location	29.753393	80.33612	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	84.7	18.846	1596.256
2	5	1	7.02	77.73975	545.733
3	10	1	0.934	313.31475	292.636
4	15	1	0.354	705.93975	249.903
5	20	1	0.903	1255.61475	1133.820
6	25	1	0.052	1962.33975	102.042
7	30	1	0.048	2826.11475	135.654
8	35	1	0.068	3846.93975	261.592
9	40	1	0.026	5024.81475	130.645
10	45	1	0.007	6359.73975	44.518
11	50	1	0.002	7851.71475	15.703
12	55	1	0.009	9500.73975	85.507
13	60	1	0.009	11306.81475	101.761
14	65	1	0.011	13269.93975	145.969
15	70	1	0.05	15390.11475	769.506

Sheet: ASK_VES17

Date	4/3/2025		ASK_VES17	Elevation- 964 m	Direction- 5°N
Location	29.75267	80.33665	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	610	18.846	11496.060
2	5	1	86.2	77.73975	6701.166
3	10	1	6.65	313.31475	2083.543
4	15	1	1.56	705.93975	1101.266
5	20	1	0.758	1255.61475	951.756
6	25	1	0.542	1962.33975	1063.588
7	30	1	0.176	2826.11475	497.396
8	35	1	0.103	3846.93975	396.235
9	40	1	0.194	5024.81475	974.814
10	45	1	0.126	6359.73975	801.327
11	50	1	0.134	7851.71475	1052.130
12	60	1	0.216	11306.81475	2442.272
13	70	1	0.09	15390.11475	1385.110
14	75	1	0.473	17667.33975	8356.652

Sheet: ASK_VES18

Date	4/4/2025		ASK_VES18	Elevation- 973 m	Direction- 5°N
Location	29.753378	80.33677	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	22.1	18.846	416.497
2	5	1	4.02	77.73975	312.514
3	10	1	0.668	313.31475	209.294
4	15	1	0.395	705.93975	278.846
5	20	1	0.167	1255.61475	209.688
6	25	1	0.092	1962.33975	180.535
7	30	1	0.066	2826.11475	186.524
8	35	1	0.039	3846.93975	150.031
9	40	1	0.042	5024.81475	211.042
10	45	1	0.032	6359.73975	203.512
11	50	1	0.027	7851.71475	211.996

Sheet: ASK_VES19

Date	4/4/2025		ASK_VES19	Elevation- 951 m	Direction- 5°N
Location	29.753367	80.33733	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	29.6	18.846	557.842
2	5	1	5.95	77.73975	462.552
3	10	1	1.99	313.31475	623.496
4	15	1	0.828	705.93975	584.518
5	25	1	0.389	1962.33975	763.350
6	30	1	0.294	2826.11475	830.878
7	35	1	0.227	3846.93975	873.255
8	40	1	0.204	5024.81475	1025.062
9	45	1	0.167	6359.73975	1062.077
10	50	1	0.149	7851.71475	1169.905

Sheet: ASK_VES20

Date	4/4/2025		ASK_VES20	Elevation- 993 m	Direction- 5°N
Location	29.753706	80.33655	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	135	18.846	2544.210
2	5	1	20.6	77.73975	1601.439
3	10	1	1.31	313.31475	410.442
4	15	1	0.466	705.93975	328.968
5	20	1	0.265	1255.61475	332.738
6	25	1	0.168	1962.33975	329.673
7	30	1	0.147	2826.11475	415.439
8	35	1	0.137	3846.93975	527.031
9	40	1	0.088	5024.81475	442.184
10	45	1	0.077	6359.73975	489.700
11	50	1	0.072	7851.71475	565.323

Sheet: ASK_VES21

Date	4/5/2025		ASK_VES21	Elevation- 994 m	Direction- 5°N
Location	29.754039	80.33699	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	126	18.846	2374.596
2	5	1	14.2	77.73975	1103.904
3	10	1	4.1	313.31475	1284.590
4	20	1	0.508	1255.61475	637.852
5	25	1	0.547	1962.33975	1073.400
6	30	1	0.355	2826.11475	1003.271
7	40	1	0.439	5024.81475	2205.894
8	45	1	0.25	6359.73975	1589.935
9	50	1	0.235	7851.71475	1845.153
10	55	1	0.198	9500.73975	1881.146
11	60	1	0.202	11306.81475	2283.977
12	65	1	0.227	13269.93975	3012.276
13	70	1	0.155	15390.11475	2385.468
14	75	1	0.109	17667.33975	1925.740

Sheet: ASK_VES22

Date	4/5/2025		ASK_VES22	Elevation- 996 m	Direction- 5°N
Location	29.754483	80.3376	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	11.38	18.846	214.467
2	5	1	3.57	77.73975	277.531
3	10	1	1.09	313.31475	341.513
4	15	1	0.523	705.93975	369.206
5	20	1	0.318	1255.61475	399.285
6	30	1	0.157	2826.11475	443.700
7	35	1	0.116	3846.93975	446.245
8	40	1	0.085	5024.81475	427.109
9	45	1	0.062	6359.73975	394.304
10	50	1	0.044	7851.71475	345.475
11	60	1	0.041	11306.81475	463.579
12	70	1	0.036	15390.11475	554.044

Sheet: ASK_VES23

Date	4/6/2025		ASK_VES23	Elevation- 1007 m	Direction- 15°N
Location	29.754614	80.33718	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	85.8	18.846	1616.987
2	5	1	27	77.73975	2098.973
3	10	1	5.5	313.31475	1723.231
4	15	1	1.54	705.93975	1087.147
5	20	1	0.626	1255.61475	786.015
6	35	1	0.144	3846.93975	553.959
7	40	1	0.09	5024.81475	452.233
8	45	1	0.089	6359.73975	566.017
9	50	1	0.087	7851.71475	683.099
10	60	1	0.091	11306.81475	1028.920
11	70	1	0.085	15390.11475	1308.160
12	75	1	0.08	17667.33975	1413.387

Sheet: ASK_VES24

Date	4/6/2025		ASK_VES24	Elevation- 1012 m	Direction- 15°N
Location	29.754326	80.33649	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	10	1	4.14	313.31475	1297.123
2	15	1	0.578	705.93975	408.033
3	20	1	0.305	1255.61475	382.962
4	25	1	0.512	1962.33975	1004.718
5	30	1	0.259	2826.11475	731.964
6	35	1	0.229	3846.93975	880.949
7	40	1	0.255	5024.81475	1281.328
8	45	1	0.348	6359.73975	2213.189
9	50	1	0.181	7851.71475	1421.160
10	60	1	0.104	11306.81475	1175.909
11	70	1	0.05	15390.11475	769.506
12	75	1	0.0709	17667.33975	1252.614

Sheet: ASK_VES25

Date	4/6/2025		ASK_VES25	Elevation- 1037 m	Direction- 15°N
Location	29.754623	80.33617	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	128	18.846	2412.288
2	5	1	19.2	77.73975	1492.603
3	10	1	1.86	313.31475	582.765
4	15	1	0.747	705.93975	527.337
5	20	1	0.424	1255.61475	532.381
6	25	1	0.386	1962.33975	757.463
7	30	1	0.299	2826.11475	845.008
8	35	1	0.184	3846.93975	707.837
9	40	1	0.215	5024.81475	1080.335
10	45	1	0.19	6359.73975	1208.351
11	50	1	0.172	7851.71475	1350.495

Sheet: ASK_VES26

Date	4/6/2025		ASK_VES26	Elevation- 1025 m	Direction- 15°N
Location	29.754856	80.33651	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Apparent Resistivity (ρ_a)
1	2.5	1	270	18.846	5088.420
2	5	1	76.3	77.73975	5931.543
3	10	1	12.3	313.31475	3853.771
4	15	1	2.42	705.93975	1708.374
5	20	1	0.792	1255.61475	994.447
6	25	1	0.475	1962.33975	932.111
7	30	1	0.277	2826.11475	782.834
8	35	1	0.323	3846.93975	1242.562
9	40	1	0.186	5024.81475	934.616
10	45	1	0.13	6359.73975	826.766
11	50	1	0.1059	7851.71475	831.497
12	60	1	0.123	11306.81475	1390.738

Sheet: ASK_VES27

Date	4/7/2025		ASK_VES27	Elevation- 1011 m	Direction- 15°N
Location	29.754327	80.33649	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	5	1	34	77.73975	349.829
2	10	1	4.5	313.31475	335.247
3	15	1	1.07	705.93975	444.036
4	20	1	0.629	1255.61475	710.678
5	25	1	0.566	1962.33975	569.079
6	30	1	0.29	2826.11475	695.224
7	35	1	0.246	3846.93975	665.521
8	40	1	0.173	5024.81475	577.854
9	45	1	0.115	6359.73975	712.291
10	50	1	0.112	7851.71475	965.761
11	60	1	0.123	11306.81475	859.318
12	70	1	0.076	15390.11475	1046.528

Sheet: ASK_VES28

Date	4/7/2025		ASK_VES28	Elevation- 1010 m	Direction- 15°N
Location	29.754326	80.33649	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	220	18.846	
2	5	1	40	77.73975	3109.590
3	10	1	8.65	313.31475	2710.173
4	15	1	2.63	705.93975	1856.622
5	20	1	1.64	1255.61475	2059.208
6	25	1	1.23	1962.33975	2413.678
7	30	1	0.885	2826.11475	2501.112
8	35	1	0.1184	3846.93975	455.478
9	40	1	0.468	5024.81475	2351.613
10	45	1	0.31	6359.73975	1971.519
11	50	1	0.268	7851.71475	2104.260
12	60	1	0.225	11306.81475	2544.033
13	70	1	0.206	15390.11475	3170.364
14	75	1	0.164	17667.33975	2897.444

Sheet: ASK_VES29

Date	4/7/2025		ASK_VES29	Elevation- 1077 m	Direction- 15°N
Location	29.755024	80.33533	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	114.9	18.846	2165.405
2	5	1	25.9	77.73975	2013.460
3	10	1	0.938	313.31475	293.889
4	15	1	0.58	705.93975	409.445
5	20	1	0.466	1255.61475	585.116
6	25	1	18	1962.33975	35322.116
7	30	1	0.301	2826.11475	850.661
8	35	1	0.132	3846.93975	507.796
9	40	1	17.9	5024.81475	89944.184
10	45	1	0.092	6359.73975	585.096
11	50	1	0.399	7851.71475	3132.834
12	60	1	0.166	11306.81475	1876.931
13	70	1	0.083	15390.11475	1277.380
14	75	1	0.069	17667.33975	1219.046

Sheet: ASK_VES30

Date	4/7/2025		ASK_VES30	Elevation- 1091 m	Direction- 15°N
Location	29.755254	80.33436	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	89	18.846	1677.294
2	5	1	7.76	77.73975	603.260
3	10	1	0.879	313.31475	275.404
4	15	1	0.352	705.93975	248.491
5	20	1	40.8	1255.61475	51229.082
6	25	1	0.132	1962.33975	259.029
7	30	1	0.106	2826.11475	299.568
8	35	1	0.067	3846.93975	257.745
9	40	1	0.045	5024.81475	226.117
10	45	1	0.039	6359.73975	248.030
11	50	1	0.036	7851.71475	282.662
12	60	1	0.057	11306.81475	644.488
13	70	1	0.037	15390.11475	569.434
14	75	1	0.042	17667.33975	742.028

Sheet: ASK_VES31

Date	4/9/2025		ASK_VES31	Elevation- 1065 m	Direction- 15°N
Location	29.754493	80.33446	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	55.2	18.846	1040.299
2	5	1	29.6	77.73975	2301.097
3	10	1	1.45	313.31475	454.306
4	15	1	0.341	705.93975	240.725
5	20	1	0.175	1255.61475	219.733
6	25	1	0.126	1962.33975	247.255
7	30	1	0.291	2826.11475	822.399
8	35	1	0.119	3846.93975	457.786
9	40	1	0.492	5024.81475	2472.209
10	45	1	0.023	6359.73975	146.274

Sheet: ASK_VES32

Date	4/9/2025		ASK_VES32	Elevation- 1051 m	Direction- 15°N
Location	29.754641	80.33542	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Apparent Resistivity (ρ_a)
1	2.5	1	42.7	18.846	804.724
2	5	1	14.6	77.73975	1135.000
3	10	1	2.33	313.31475	730.023
4	15	1	1.067	705.93975	753.238
5	20	1	51.5	1255.61475	64664.160
6	25	1	0.342	1962.33975	671.120
7	30	1	0.288	2826.11475	813.921
8	35	1	0.184	3846.93975	707.837
9	40	1	0.189	5024.81475	949.690
10	45	1	0.15	6359.73975	953.961
11	50	1	0.171	7851.71475	1342.643
12	60	1	0.195	11306.81475	2204.829
13	70	1	0.184	15390.11475	2831.781
14	75	1	0.187	17667.33975	3303.793

Sheet: ASK_VES33

Date	4/9/2025		ASK_VES33	Elevation- 1104 m	Direction- 15°N
Location	29.755486	80.33482	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Apparent Resistivity (Rho_a)
1	2.5	1	125	18.846	2355.750
2	5	1	10.84	77.73975	842.699
3	10	1	2.1	313.31475	657.961
4	15	1	0.611	705.93975	431.329
5	20	1	0.535	1255.61475	671.754
6	25	1	0.345	1962.33975	677.007
7	30	1	0.32	2826.11475	904.357
8	35	1	0.269	3846.93975	1034.827
9	40	1	0.455	5024.81475	2286.291
10	45	1	0.278	6359.73975	1768.008
11	50	1	0.255	7851.71475	2002.187
12	60	1	0.2388	11306.81475	2700.067
13	70	1	0.278	15390.11475	4278.452
14	75	1	0.161	17667.33975	2844.442

Sheet: ASK_VES34

Date	4/10/2025		ASK_VES34	Elevation- 1049 m	Direction- 15°N
Location	29.754186	80.33471	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	261	18.846	4918.806
2	5	1	25.4	77.73975	1974.590
3	10	1	2.28	313.31475	714.358
4	15	1	0.626	705.93975	441.918
5	20	1	0.477	1255.61475	598.928
6	25	1	1.073	1962.33975	2105.591
7	30	1	0.675	2826.11475	1907.627
8	35	1	0.119	3846.93975	457.786
9	40	1	0.103	5024.81475	517.556
10	45	1	0.109	6359.73975	693.212
11	50	1	0.562	7851.71475	4412.664
12	60	1	0.295	11306.81475	3335.510
13	70	1	0.388	15390.11475	5971.365
14	75	1	0.223	17667.33975	3939.817

Sheet: ASK_VES35

Date	4/10/2025		ASK_VES35	Elevation- 1062 m	Direction- 15°N
Location	29.75465	80.33479	Village:	Near Baragaon Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	27.8	18.846	523.919
2	5	1	4.6	77.73975	357.603
3	10	1	1.25	313.31475	391.643
4	15	1	0.689	705.93975	486.392
5	20	1	1.39	1255.61475	1745.305
6	25	1	0.244	1962.33975	478.811
7	30	1	0.231	2826.11475	652.833
8	35	1	0.142	3846.93975	546.265
9	40	1	0.125	5024.81475	628.102
10	45	1	0.138	6359.73975	877.644
11	50	1	0.122	7851.71475	957.909
12	60	1	0.103	11306.81475	1164.602
13	70	1	0.103	15390.11475	1585.182
14	75	1	0.095	17667.33975	1678.397

Sheet: ASK_VES36

Date	4/10/2025		ASK_VES36	Elevation- 1077 m	Direction- 15°N
Location	29.754928	80.3347	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	89.5	18.846	1686.717
2	5	1	12.2	77.73975	948.425
3	10	1	2.36	313.31475	739.423
4	15	1	0.932	705.93975	657.936
5	20	1	0.415	1255.61475	521.080
6	25	1	0.385	1962.33975	755.501
7	30	1	0.223	2826.11475	630.224
8	35	1	0.201	3846.93975	773.235
9	40	1	0.186	5024.81475	934.616
10	45	1	0.146	6359.73975	928.522
11	50	1	0.108	7851.71475	847.985
12	60	1	0.12	11306.81475	1356.818
13	70	1	0.126	15390.11475	1939.154
14	75	1	0.074	17667.33975	1307.383

Sheet: ASK_VES37

Date	4/11/2025		ASK_VES3 7	Elevation- 1023 m	Direction- 15°N
Location	29.754156	80.33578	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivit y (Rho_a)
1	2.5	1	71.4	18.846	1345.604
2	5	1	8.52	77.73975	662.343
3	10	1	1.59	313.31475	498.170
4	15	1	0.797	705.93975	562.634
5	20	1	0.498	1255.61475	625.296
6	25	1	0.267	1962.33975	523.945
7	30	1	0.237	2826.11475	669.789
8	35	1	0.242	3846.93975	930.959
9	40	1	0.795	5024.81475	3994.728
10	45	1	0.473	6359.73975	3008.157
11	50	1	0.229	7851.71475	1798.043
12	60	1	0.433	11306.81475	4895.851
13	70	1	0.089	15390.11475	1369.720
14	75	1	0.079	17667.33975	1395.720

Sheet: ASK_VES38

Date	4/11/2025		ASK_VES38	Elevation- 1018 m	Direction- 15°N
Location	29.754009	80.33581	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	17.9	18.846	337.343
2	5	1	3.98	77.73975	309.404
3	10	1	0.433	313.31475	135.665
4	15	1	0.324	705.93975	228.724
5	20	1	0.38	1255.61475	477.134
6	25	1	0.228	1962.33975	447.413
7	30	1	0.173	2826.11475	488.918
8	35	1	0.128	3846.93975	492.408
9	40	1	0.07	5024.81475	351.737
10	45	1	0.029	6359.73975	184.432
11	50	1	0.048	7851.71475	376.882
12	60	1	0.033	11306.81475	373.125
13	70	1	0.022	15390.11475	338.583

Sheet: ASK_VES39

Date	4/11/2025		ASK_VES39	Elevation- 1008 m	Direction- 15°N
Location	29.75392	80.33618	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	112.4	18.846	2118.290
2	5	1	11.17	77.73975	868.353
3	10	1	1.078	313.31475	337.753
4	15	1	0.434	705.93975	306.378
5	20	1	0.424	1255.61475	532.381
6	25	1	0.182	1962.33975	357.146
7	30	1	0.125	2826.11475	353.264
8	35	1	0.103	3846.93975	396.235
9	40	1	0.104	5024.81475	522.581
10	45	1	0.104	6359.73975	661.413
11	50	1	0.1	7851.71475	785.171
12	60	1	0.087	11306.81475	983.693
13	70	1	0.076	15390.11475	1169.649
14	75	1	0.072	17667.33975	1272.048

Sheet: ASK_VES40

Date	4/12/2025		ASK_VES40	Elevation- 1009 m	Direction- 15°N
Location	29.754195	80.33644	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	112	18.846	2110.752
2	5	1	17.8	77.73975	1383.768
3	10	1	2.98	313.31475	933.678
4	15	1	1.009	705.93975	712.293
5	20	1	1.074	1255.61475	1348.530
6	25	1	0.498	1962.33975	977.245
7	30	1	0.692	2826.11475	1955.671
8	35	1	0.415	3846.93975	1596.480
9	40	1	0.453	5024.81475	2276.241
10	45	1	0.29	6359.73975	1844.325
11	50	1	0.141	7851.71475	1107.092
12	60	1	0.236	11306.81475	2668.408
13	70	1	0.377	15390.11475	5802.073
14	75	1	0.058	17667.33975	1024.706

Sheet: ASK_VES41

Date	4/12/2025		ASK_VES41	Elevation- 1034 m	Direction- 25°N
Location	29.754531	80.33588	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Apparent Resistivity (Rho_a)
1	2.5	1	518	18.846	9762.228
2	5	1	39.5	77.73975	3070.720
3	10	1	4.41	313.31475	1381.718
4	15	1	2.02	705.93975	1425.998
5	20	1	1.31	1255.61475	1644.855
6	25	1	1.019	1962.33975	1999.624
7	30	1	0.579	2826.11475	1636.320
8	35	1	0.426	3846.93975	1638.796
9	40	1	0.39	5024.81475	1959.678
10	45	1	0.655	6359.73975	4165.630
11	50	1	0.3	7851.71475	2355.514
12	60	1	0.3	11306.81475	3392.044
13	70	1	0.487	15390.11475	7494.986
14	75	1	0.414	17667.33975	7314.279

Sheet: ASK_VES42

Date	4/12/2025		ASK_VES42	Elevation- 1061 m	Direction- 25°N
Location	29.754963	80.33568	Village:	Near Baragaon Village	
SI No:	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	239	18.846	4504.194
2	5	1	42.6	77.73975	3311.713
3	10	1	4.98	313.31475	1560.307
4	15	1	0.649	705.93975	458.155
5	20	1	0.407	1255.61475	511.035
6	25	1	0.443	1962.33975	869.317
7	30	1	0.268	2826.11475	757.399
8	40	1	0.205	5024.81475	1030.087
9	45	1	0.233	6359.73975	1481.819
10	50	1	0.138	7851.71475	1083.537
11	70	1	0.29	15390.11475	4463.133
12	75	1	0.311	17667.33975	5494.543

Sheet: ASK_VES43

Date	4/13/2025		ASK_VES43	Elevation- 1007 m	Direction- 30°N
Location	29.754609	80.33697	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrod e Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivit y (Rho_a)
1	5	1	116.4	77.73975	9048.907
2	10	1	5.23	313.31475	1638.636
3	15	1	1.4	705.93975	988.316
4	20	1	0.78	1255.61475	979.380
5	25	1	0.462	1962.33975	906.601
6	30	1	0.311	2826.11475	878.922
7	35	1	0.245	3846.93975	942.500
8	40	1	0.248	5024.81475	1246.154
9	45	1	0.204	6359.73975	1297.387
10	50	1	0.148	7851.71475	1162.054
11	55	1	0.196	9500.73975	1862.145

Sheet: ASK_VES44

Date	4/13/2025		ASK_VES44	Elevation- 995 m	Direction- 30°N
Location	29.754365	80.33725	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	387	18.846	7293.402
2	15	1	1.24	705.93975	875.365
3	20	1	0.983	1255.61475	1234.269
4	25	1	0.627	1962.33975	1230.387
5	30	1	0.489	2826.11475	1381.970
6	35	1	0.404	3846.93975	1554.164
7	40	1	0.505	5024.81475	2537.531
8	45	1	0.278	6359.73975	1768.008
9	50	1	0.395	7851.71475	3101.427
10	60	1	0.236	11306.81475	2668.408
11	70	1	0.395	15390.11475	6079.095
12	75	1	0.227	17667.33975	4010.486

Sheet: ASK_VES45

Date	4/13/2025		ASK_VES45	Elevation- 959 m	Direction- 30°N
Location	29.754031	80.33767	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	51.2	18.846	964.915
2	5	1	11.82	77.73975	918.884
3	10	1	3.1	313.31475	971.276
4	15	1	1.23	705.93975	868.306
5	20	1	0.652	1255.61475	818.661
6	25	1	0.464	1962.33975	910.526
7	30	1	0.336	2826.11475	949.575
8	35	1	0.255	3846.93975	980.970
9	40	1	0.26	5024.81475	1306.452
10	50	1	0.208	7851.71475	1633.157
11	60	1	0.201	11306.81475	2272.670
12	70	1	0.214	15390.11475	3293.485
13	75	1	0.188	17667.33975	3321.460

Sheet: ASK_VES46

Date	4/14/2025		ASK_VES46	Elevation- 978 m	Direction- 30°N
Location	29.753664	80.33699	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	25.1	18.846	473.035
2	5	1	5.21	77.73975	405.024
3	10	1	1.43	313.31475	448.040
4	15	1	0.761	705.93975	537.220
5	20	1	0.547	1255.61475	686.821
6	25	1	0.321	1962.33975	629.911
7	30	1	0.237	2826.11475	669.789
8	35	1	0.177	3846.93975	680.908
9	40	1	0.152	5024.81475	763.772
10	45	1	0.143	6359.73975	909.443
11	50	1	0.127	7851.71475	997.168
12	60	1	0.113	11306.81475	1277.670
13	70	1	0.194	15390.11475	2985.682
14	75	1	0.193	17667.33975	3409.797

Sheet: ASK_VES47

Date	4/14/2025		ASK_VES47	Elevation- 945 m	Direction- 30°N
Location	29.75352	80.33743	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	10	1	4.49	313.31475	1406.783
2	15	1	1.27	705.93975	896.543
3	20	1	0.84	1255.61475	1054.716
4	25	1	0.545	1962.33975	1069.475
5	30	1	0.293	2826.11475	828.052
6	35	1	0.276	3846.93975	1061.755
7	40	1	0.308	5024.81475	1547.643
8	45	1	0.126	6359.73975	801.327
9	50	1	0.086	7851.71475	675.247
10	60	1	0.243	11306.81475	2747.556
11	70	1	0.255	15390.11475	3924.479
12	75	1	0.258	17667.33975	4558.174

Sheet: ASK_VES48

Date	4/14/2025		ASK_VES48	Elevation- 987 m	Direction- 30°N
Location	29.752311	80.33608	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	233	18.846	4391.118
2	5	1	33.1	77.73975	2573.186
3	10	1	5.76	313.31475	1804.693
4	15	1	2.12	705.93975	1496.592
5	20	1	1.196	1255.61475	1501.715
6	25	1	0.591	1962.33975	1159.743
7	30	1	0.441	2826.11475	1246.317
8	35	1	0.307	3846.93975	1181.011
9	40	1	0.175	5024.81475	879.343
10	45	1	0.143	6359.73975	909.443
11	50	1	0.109	7851.71475	855.837
12	60	1	0.101	11306.81475	1141.988
13	70	1	0.142	15390.11475	2185.396
14	75	1	0.13	17667.33975	2296.754

Sheet: ASK_VES49

Date	4/15/2025		ASK_VES49	Elevation- 967 m	Direction- 30°N
Location	29.752636	80.33661	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	443	18.846	8348.778
2	5	1	110.1	77.73975	8559.146
3	10	1	13.7	313.31475	4292.412
4	15	1	3.34	705.93975	2357.839
5	20	1	1.84	1255.61475	2310.331
6	25	1	1.78	1962.33975	3492.965
7	30	1	1.175	2826.11475	3320.685
8	35	1	1.21	3846.93975	4654.797
9	40	1	1.49	5024.81475	7486.974
10	45	1	0.414	6359.73975	2632.932
11	50	1	0.002	7851.71475	15.703
12	60	1	0.335	11306.81475	3787.783
13	70	1	0.022	15390.11475	338.583
14	75	1	0.305	17667.33975	5388.539

Sheet: ASK_VES50

Date	4/15/2025		ASK_VES50	Elevation- 958 m	Direction- 30°N
Location	29.752192	80.33671	Village:	Near Askot Village ground	
SI NO.	Current Electrode Spacing (AB/2)	Potential Electrod e Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivit y (Rho_a)
1	2.5	1	372	18.846	7010.712
2	5	1	12.5	77.73975	971.747
3	10	1	0.699	313.31475	219.007
4	20	1	0.944	1255.61475	1185.300
5	25	1	0.663	1962.33975	1301.031
6	30	1	0.355	2826.11475	1003.271
7	35	1	0.419	3846.93975	1611.868
8	40	1	0.196	5024.81475	984.864
9	45	1	0.246	6359.73975	1564.496
10	50	1	0.25	7851.71475	1962.929
11	60	1	0.214	11306.81475	2419.658
12	70	1	0.219	15390.11475	3370.435
13	75	1	0.16	17667.33975	2826.774

Sheet: ASK_VES51

Date	4/16/2025		ASK_VES51	Elevation- 945 m	Direction- 30°N
Location	29.75177	80.33709	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	88.5	18.846	1667.871
2	5	1	19.3	77.73975	1500.377
3	10	1	3.3	313.31475	1033.939
4	15	1	1.089	705.93975	768.768
5	20	1	0.471	1255.61475	591.395
6	25	1	0.432	1962.33975	847.731
7	30	1	0.12	2826.11475	339.134
8	35	1	0.726	3846.93975	2792.878
9	40	1	0.232	5024.81475	1165.757
10	45	1	0.101	6359.73975	642.334
11	50	1	0.249	7851.71475	1955.077



Sheet: ASK_VES52

Date	4/16/2025		ASK_VES52	Elevation- 921 m	Direction- 30°N
Location	29.752439	80.33749	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	116.4	18.846	2193.674
2	5	1	22.7	77.73975	1764.692
3	10	1	3.34	313.31475	1046.471
4	15	1	1.137	705.93975	802.653
5	20	1	0.729	1255.61475	915.343
6	25	1	0.481	1962.33975	943.885
7	30	1	0.377	2826.11475	1065.445
8	35	1	0.266	3846.93975	1023.286
9	40	1	0.156	5024.81475	783.871
10	45	1	0.12	6359.73975	763.169
11	50	1	0.108	7851.71475	847.985
12	60	1	0.089	11306.81475	1006.307
13	70	1	0.067	15390.11475	1031.138
14	75	1	0.058	17667.33975	1024.706

Sheet: ASK_VES53

Date	4/17/2025		ASK_VES53	Elevation- 921 m	Direction- 30°N
Location	29.753045	80.33803	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrod e Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	113.3	18.846	2135.252
2	5	1	18.1	77.73975	1407.089
3	10	1	2.5	313.31475	783.287
4	15	1	0.932	705.93975	657.936
5	20	1	0.564	1255.61475	708.167
6	25	1	0.349	1962.33975	684.857
7	30	1	0.309	2826.11475	873.269
8	35	1	0.294	3846.93975	1131.000
9	40	1	0.209	5024.81475	1050.186
10	45	1	0.179	6359.73975	1138.393
11	50	1	0.146	7851.71475	1146.350

Sheet: ASK_VES54

Date	4/17/2025		ASK_VES54	Elevation- 920 m	Direction- 30°N
Location	29.75188	80.3377	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	107.6	18.846	2027.830
2	5	1	32.2	77.73975	2503.220
3	10	1	4.1	313.31475	1284.590
4	15	1	1.26	705.93975	889.484
5	20	1	0.541	1255.61475	679.288
6	25	1	0.373	1962.33975	731.953
7	30	1	0.275	2826.11475	777.182
8	35	1	0.178	3846.93975	684.755
9	40	1	0.131	5024.81475	658.251
10	45	1	0.12	6359.73975	763.169
11	50	1	0.105	7851.71475	824.430
12	60	1	0.078	11306.81475	881.932
13	70	1	0.071	15390.11475	1092.698
14	75	1	0.077	17667.33975	1360.385

Sheet: ASK_VES55

Date	4/17/2025		ASK_VES55	Elevation- 939 m	Direction- 30°N
Location	29.75287 3	80.33725	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	83.5	18.846	1573.641
2	5	1	11.56	77.73975	898.672
3	10	1	2.61	313.31475	817.751
4	15	1	1.31	705.93975	924.781
5	20	1	0.739	1255.61475	927.899
6	25	1	0.463	1962.33975	908.563
7	30	1	0.387	2826.11475	1093.706
8	35	1	0.275	3846.93975	1057.908
9	40	1	0.223	5024.81475	1120.534
10	45	1	0.14	6359.73975	890.364
11	50	1	0.118	7851.71475	926.502
12	60	1	0.105	11306.81475	1187.216
13	70	1	0.118	15390.11475	1816.034
14	75	1	0.078	17667.33975	1378.053

Sheet: ASK_VES56

Date	4/17/2025		ASK_VES56	Elevation- 944 m	Direction- 30°N
Location	29.752289	80.33689	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	810	18.846	15265.260
2	5	1	85	77.73975	6607.879
3	10	1	5.6	313.31475	1754.563
4	15	1	2.87	705.93975	2026.047
5	20	1	2.26	1255.61475	2837.689
6	25	1	1.8	1962.33975	3532.212
7	30	1	0.559	2826.11475	1579.798
8	35	1	1.46	3846.93975	5616.532
9	40	1	1.15	5024.81475	5778.537
10	45	1	1.133	6359.73975	7205.585
11	50	1	0.84	7851.71475	6595.440
12	55	1	0.867	9500.73975	8237.141

Sheet: ASK_VES57

Date	4/18/2025		ASK_VES57	Elevation- 898 m	Direction- 30°N
Location	29.751844	80.33838	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	262	18.846	4937.652
2	5	1	93.5	77.73975	7268.667
3	10	1	15.1	313.31475	4731.053
4	15	1	3.88	705.93975	2739.046
5	20	1	1.38	1255.61475	1732.748
6	25	1	0.684	1962.33975	1342.240
7	30	1	0.441	2826.11475	1246.317
8	35	1	0.371	3846.93975	1427.215
9	40	1	0.26	5024.81475	1306.452
10	45	1	0.161	6359.73975	1023.918
11	50	1	0.127	7851.71475	997.168
12	60	1	0.26	11306.81475	2939.772
13	70	1	0.234	15390.11475	3601.287
14	75	1	0.075	17667.33975	1325.050

Sheet: ASK_VES58

Date	4/18/2025		ASK_VES58	Elevation- 890 m	Direction- 30°N
Location	29.751965	80.33913	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	113.6	18.846	2140.906
2	5	1	19.6	77.73975	1523.699
3	10	1	3.15	313.31475	986.941
4	15	1	0.968	705.93975	683.350
5	20	1	0.434	1255.61475	544.937
6	25	1	0.281	1962.33975	551.417
7	30	1	0.203	2826.11475	573.701
8	35	1	0.179	3846.93975	688.602
9	40	1	0.207	5024.81475	1040.137
10	45	1	0.093	6359.73975	591.456
11	50	1	0.093	7851.71475	730.209

Sheet: ASK_VES59

Date	4/18/2025		ASK_VES59	Elevation- 888 m	Direction- 30°N
Location	29.751918	80.3394	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	250	18.846	4711.500
2	5	1	68.6	77.73975	5332.947
3	10	1	9.5	313.31475	2976.490
4	15	1	2.84	705.93975	2004.869
5	20	1	1.141	1255.61475	1432.656
6	25	1	0.422	1962.33975	828.107
7	30	1	0.261	2826.11475	737.616
8	35	1	0.153	3846.93975	588.582
9	40	1	0.12	5024.81475	602.978
10	45	1	0.095	6359.73975	604.175
11	50	1	0.073	7851.71475	573.175
12	60	1	0.06	11306.81475	678.409
13	70	1	0.052	15390.11475	800.286
14	75	1	0.051	17667.33975	901.034

Sheet: ASK_VES60

Date	4/19/2025		ASK_VES60	Elevation- 906 m	Direction- 30°N
Location	29.752287	80.33899	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	148	18.846	2789.208
2	5	1	21.2	77.73975	1648.083
3	10	1	3.72	313.31475	1165.531
4	15	1	1.47	705.93975	1037.731
5	20	1	0.743	1255.61475	932.922
6	25	1	0.373	1962.33975	731.953
7	30	1	0.248	2826.11475	700.876
8	35	1	0.176	3846.93975	677.061
9	40	1	0.246	5024.81475	1236.104
10	45	1	0.056	6359.73975	356.145
11	50	1	0.097	7851.71475	761.616
12	60	1	0.053	11306.81475	599.261

Sheet: ASK_VES61

Date	4/19/2025		ASK_VES61	Elevation- 920 m	Direction- 30°N
Location	29.752287	80.34003	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	253	18.846	4768.038
2	5	1	29.8	77.73975	2316.645
3	10	1	5.53	313.31475	1732.631
4	15	1	2.19	705.93975	1546.008
5	20	1	1.195	1255.61475	1500.460
6	25	1	0.665	1962.33975	1304.956
7	30	1	0.838	2826.11475	2368.284
8	35	1	0.838	3846.93975	3223.736
9	40	1	0.658	5024.81475	3306.328
10	45	1	0.713	6359.73975	4534.494
11	50	1	0.675	7851.71475	5299.907
12	60	1	0.553	11306.81475	6252.669
13	70	1	0.255	15390.11475	3924.479
14	75	1	0.181	17667.33975	3197.788

Sheet: ASK_VES62

Date	4/19/2025		ASK_VES62	Elevation- 945 m	Direction- 50°N
Location	29.75287	80.33932	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	414	18.846	7802.244
2	5	1	58.5	77.73975	4547.775
3	10	1	6.89	313.31475	2158.739
4	15	1	1.63	705.93975	1150.682
5	20	1	0.845	1255.61475	1060.994
6	25	1	0.609	1962.33975	1195.065
7	30	1	0.395	2826.11475	1116.315
8	35	1	0.353	3846.93975	1357.970
9	40	1	0.359	5024.81475	1803.908
10	45	1	0.298	6359.73975	1895.202
11	50	1	0.299	7851.71475	2347.663
12	60	1	0.482	11306.81475	5449.885
13	70	1	0.409	15390.11475	6294.557
14	75	1	0.313	17667.33975	5529.877

Sheet: ASK_VES63

Date	4/20/2025		ASK_VES63	Elevation- 925 m	Direction- 50°N
Location	29.752878	80.33862	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	711	18.846	13399.506
2	5	1	211	77.73975	16403.087
3	10	1	40.9	313.31475	12814.573
4	15	1	34.4	705.93975	24284.327
5	20	1	64.6	1255.61475	81112.713
6	25	1	22.2	1962.33975	43563.942
7	30	1	91.2	2826.11475	257741.665
8	35	1	62.5	3846.93975	240433.734
9	40	1	42.6	5024.81475	214057.108
10	45	1	32.3	6359.73975	205419.594
11	50	1	36.7	7851.71475	288157.931

Sheet: ASK_VES64

Date	4/20/2025		ASK_VES64	Elevation- 943 m	Direction- 50°N
Location	29.753068	80.33903	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	303	18.846	5710.338
2	5	1	56.6	77.73975	4400.070
3	10	1	24.9	313.31475	7801.537
4	15	1	19.3	705.93975	13624.637
5	20	1	11.5	1255.61475	14439.570
6	25	1	5.85	1962.33975	11479.688
7	30	1	9.4	2826.11475	26565.479
8	35	1	22.3	3846.93975	85786.756
9	40	1	13.3	5024.81475	66830.036
10	50	1	15.4	7851.71475	120916.407
11	60	1	4.64	11306.81475	52463.620
12	70	1	5.81	15390.11475	89416.567

Sheet: ASK_VES65

Date	4/20/2025		ASK_VES65	Elevation- 958 m	Direction- 50°N
Location	29.753325	80.33929	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	112.1	18.846	2112.637
2	5	1	45.8	77.73975	3560.481
3	10	1	23.1	313.31475	7237.571
4	15	1	16	705.93975	11295.036
5	20	1	20.3	1255.61475	25488.979
6	25	1	21.8	1962.33975	42779.007
7	30	1	21.5	2826.11475	60761.467
8	35	1	26.6	3846.93975	102328.597
9	40	1	34.2	5024.81475	171848.664
10	45	1	69.2	6359.73975	440093.991
11	50	1	69.3	7851.71475	544123.832
12	60	1	58	11306.81475	655795.256
13	70	1	99.1	15390.11475	1525160.372
14	75	1	38.6	17667.33975	681959.314

Sheet: ASK_VES66

Date	4/21/2025		ASK_VES66	Elevation- 948 m	Direction- 50°N
Location	29.753667	80.33887	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	269	18.846	5069.574
2	10	1	2.24	313.31475	701.825
3	15	1	0.903	705.93975	637.464
4	20	1	1.53	1255.61475	1921.091
5	25	1	0.047	1962.33975	92.230
6	30	1	0.025	2826.11475	70.653
7	35	1	0.32	3846.93975	1231.021
8	40	1	0.031	5024.81475	155.769
9	45	1	0.279	6359.73975	1774.367
10	50	1	0.092	7851.71475	722.358
11	60	1	2.85	11306.81475	32224.422
12	70	1	2.18	15390.11475	33550.450
13	75	1	1.99	17667.33975	35158.006

Sheet: ASK_VES67

Date	4/21/2025		ASK_VES67	Elevation- 947 m	Direction- 50°N
Location	29.754198	80.33886	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	52.6	18.846	991.300
2	5	1	6.4	77.73975	497.534
3	10	1	1.34	313.31475	419.842
4	15	1	0.588	705.93975	415.093
5	20	1	0.383	1255.61475	480.900
6	25	1	0.224	1962.33975	439.564
7	30	1	0.177	2826.11475	500.222
8	35	1	0.145	3846.93975	557.806
9	40	1	0.143	5024.81475	718.549
10	45	1	0.133	6359.73975	845.845
11	50	1	0.131	7851.71475	1028.575
12	60	1	0.395	11306.81475	4466.192
13	70	1	0.373	15390.11475	5740.513
14	75	1	0.329	17667.33975	5812.555

Sheet: ASK_VES68

Date	4/21/2025		ASK_VES68	Elevation- 963 m	Direction- 50°N
Location	29.753027	80.33979	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	28.1	18.846	529.573
2	5	1	4.34	77.73975	337.391
3	10	1	0.863	313.31475	270.391
4	15	1	0.301	705.93975	212.488
5	20	1	0.17	1255.61475	213.455
6	25	1	0.143	1962.33975	280.615
7	30	1	0.147	2826.11475	415.439
8	35	1	0.06	3846.93975	230.816
9	40	1	0.071	5024.81475	356.762
10	45	1	0.08	6359.73975	508.779
11	50	1	0.081	7851.71475	635.989
12	60	1	0.096	11306.81475	1085.454

Sheet: ASK_VES69

Date	4/22/2025		ASK_VES69	Elevation- 939 m	Direction- 50°N
Location	29.75254	80.34056	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	78.2	18.846	1473.757
2	5	1	11.4	77.73975	886.233
3	10	1	1.57	313.31475	491.904
4	15	1	0.577	705.93975	407.327
5	20	1	0.274	1255.61475	344.038
6	25	1	0.224	1962.33975	439.564
7	30	1	0.178	2826.11475	503.048
8	35	1	0.151	3846.93975	580.888
9	40	1	0.11	5024.81475	552.730
10	45	1	0.126	6359.73975	801.327
11	50	1	0.126	7851.71475	989.316
12	60	1	0.122	11306.81475	1379.431
13	70	1	0.095	15390.11475	1462.061
14	75	1	0.129	17667.33975	2279.087

Sheet: ASK_VES70

Date	4/22/2025		ASK_VES70	Elevation- 975 m	Direction- 50°N
Location	29.753624	80.33971	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	83.1	18.846	1566.103
2	5	1	15	77.73975	1166.096
3	10	1	9.5	313.31475	2976.490
4	15	1	7.62	705.93975	5379.261
5	20	1	4.11	1255.61475	5160.577
6	25	1	0.727	1962.33975	1426.621
7	30	1	0.524	2826.11475	1480.884
8	35	1	0.358	3846.93975	1377.204
9	40	1	0.264	5024.81475	1326.551
10	45	1	0.254	6359.73975	1615.374
11	50	1	0.174	7851.71475	1366.198
12	60	1	0.179	11306.81475	2023.920
13	70	1	0.114	15390.11475	1754.473
14	75	1	0.081	17667.33975	1431.055

Sheet: ASK_VES71

Date	4/22/2025		ASK_VES71	Elevation- 954 m	Direction- 50°N
Location	29.754026	80.33798	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	188	18.846	3543.048
2	5	1	20.9	77.73975	1624.761
3	10	1	4.79	313.31475	1500.778
4	20	1	0.847	1255.61475	1063.506
5	25	1	0.881	1962.33975	1728.821
6	30	1	0.059	2826.11475	166.741
7	35	1	0.186	3846.93975	715.531
8	40	1	0.928	5024.81475	4663.028
9	45	1	0.544	6359.73975	5901.838
10	50	1	0.721	7851.71475	4271.333
11	60	1	0.532	11306.81475	8152.213
12	65	1	0.625	13269.93975	7059.608

Sheet: ASK_VES72

Date	4/23/2025		ASK_VES72	Elevation- 955 m	Direction- 50°N
Location	29.75288	80.34078	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	81.4	18.846	1534.064
2	5	1	8.82	77.73975	685.665
3	10	1	1.47	313.31475	460.573
4	15	1	0.805	705.93975	568.281
5	20	1	0.417	1255.61475	523.591
6	25	1	0.418	1962.33975	820.258
7	30	1	0.337	2826.11475	952.401
8	35	1	0.379	3846.93975	1457.990
9	40	1	0.345	5024.81475	1733.561
10	45	1	0.176	6359.73975	1119.314
11	50	1	0.196	7851.71475	1538.936
12	60	1	0.098	11306.81475	1108.068
13	70	1	0.046	15390.11475	707.945
14	75	1	0.061	17667.33975	1077.708

Sheet: ASK_VES73

Date	4/23/2025		ASK_VES73	Elevation- 886 m	Direction- 50°N
Location	29.751487	80.3408	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	57.2	18.846	1077.991
2	5	1	5.47	77.73975	425.236
3	10	1	0.855	313.31475	267.884
4	15	1	0.366	705.93975	258.374
5	20	1	0.225	1255.61475	282.513
6	25	1	0.143	1962.33975	280.615
7	30	1	0.104	2826.11475	293.916
8	35	1	0.091	3846.93975	350.072
9	40	1	0.06	5024.81475	301.489
10	45	1	0.547	6359.73975	3478.778
11	50	1	0.229	7851.71475	1798.043
12	60	1	0.089	11306.81475	1006.307
13	70	1	0.102	15390.11475	1569.792
14	75	1	0.044	17667.33975	777.363

Sheet: ASK_VES74

Date	4/23/2025		ASK_VES74	Elevation- 876 m	Direction- 50°N
Location	29.751261	80.34029	Village:	Near Rasgari Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	47	18.846	886
2	5	1	9.94	77.73975	773
3	10	1	1.78	313.31475	558
4	15	1	0.856	705.93975	604
5	20	1	0.59	1255.61475	741
6	25	1	0.494	1962.33975	969
7	30	1	0.424	2826.11475	1198
8	35	1	0.322	3846.93975	1239
9	40	1	0.236	5024.81475	1186
10	45	1	0.167	6359.73975	1062
11	50	1	0.153	7851.71475	1201
12	60	1	0.076	11306.81475	859
13	70	1	0.081	15390.11475	1247
14	75	1	0.074	17667.33975	1307

Sheet: ASK_VES75

Date	4/24/2025		ASK_VES75	Elevation- 1012 m	Direction- 50°N
Location	29.749859	80.33236	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	413	18.846	7783
2	5	1	100.5	77.73975	7813
3	10	1	15.4	313.31475	4825
4	15	1	3.16	705.93975	2231
5	20	1	1.136	1255.61475	1426
6	25	1	0.57	1962.33975	1119
7	30	1	0.298	2826.11475	842
8	35	1	0.225	3846.93975	866
9	40	1	0.177	5024.81475	889
10	45	1	0.143	6359.73975	909
11	50	1	0.118	7851.71475	927
12	60	1	0.094	11306.81475	1063
13	70	1	0.1	15390.11475	1539
14	75	1	0.103	17667.33975	1820

Sheet: ASK_VES76

Date	4/24/2025		ASK_VES76	Elevation- 1028 m	Direction- 50°N
Location	29.750752	80.33415	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	67.6	18.846	1274
2	5	1	5.78	77.73975	449
3	10	1	0.67	313.31475	210
4	15	1	0.067	705.93975	47
5	20	1	0.175	1255.61475	220
6	25	1	0.284	1962.33975	557
7	30	1	0.881	2826.11475	2490
8	35	1	0.374	3846.93975	1439
9	40	1	0.287	5024.81475	1442
10	45	1	0.015	6359.73975	95
11	50	1	0.016	7851.71475	126
12	60	1	0.068	11306.81475	769
13	70	1	0.032	15390.11475	492
14	75	1	0.009	17667.33975	159

Sheet: ASK_VES77

Date	4/24/2025		ASK_VES77	Elevation- 994 m	Direction- 50°N
Location	29.75021	80.33478	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	36.7	18.846	692
2	5	1	3.03	77.73975	236
3	10	1	0.573	313.31475	180
4	15	1	0.343	705.93975	242
5	20	1	0.249	1255.61475	313
6	25	1	0.184	1962.33975	361
7	30	1	0.107	2826.11475	302
8	35	1	0.067	3846.93975	258
9	40	1	0.058	5024.81475	291
10	45	1	0.062	6359.73975	394
11	50	1	0.064	7851.71475	503
12	60	1	0.043	11306.81475	486
13	70	1	0.034	15390.11475	523
14	75	1	0.062	17667.33975	1095

Sheet: ASK_VES78

Date	4/25/2025		ASK_VES78	Elevation- 974 m	Direction- 50°N
Location	29.750299	80.33602	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	78.3	18.846	1476
2	5	1	12.4	77.73975	964
3	10	1	1.56	313.31475	489
4	15	1	0.369	705.93975	260
5	20	1	0.106	1255.61475	133
6	25	1	0.149	1962.33975	292
7	30	1	0.847	2826.11475	2394
8	35	1	0.395	3846.93975	1520
9	40	1	0.186	5024.81475	935
10	45	1	0.314	6359.73975	1997
11	50	1	0.29	7851.71475	2277
12	60	1	0.471	11306.81475	5326
13	70	1	0.306	15390.11475	4709
14	75	1	0.09	17667.33975	1590

Sheet: ASK_VES79

Date	4/25/2025		ASK_VES79	Elevation- 955 m	Direction- 50°N
Location	29.749175	80.33442	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	133	18.846	2507
2	5	1	16.6	77.73975	1290
3	10	1	1.27	313.31475	398
4	15	1	0.498	705.93975	352
5	20	1	0.285	1255.61475	358
6	30	1	0.139	2826.11475	393
7	35	1	0.147	3846.93975	566
8	40	1	0.137	5024.81475	688
9	45	1	0.132	6359.73975	839
10	50	1	0.129	7851.71475	1013
11	60	1	0.131	11306.81475	1481
12	70	1	0.128	15390.11475	1970
13	75	1	0.126	17667.33975	2226

Sheet: ASK_VES80

Date	4/25/2025		ASK_VES80	Elevation- 981 m	Direction- 50°N
Location	29.749366	80.3336	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	241	18.846	4542
2	5	1	21.7	77.73975	1687
3	10	1	1.93	313.31475	605
4	15	1	0.938	705.93975	662
5	20	1	0.555	1255.61475	697
6	25	1	0.376	1962.33975	738
7	30	1	0.286	2826.11475	808
8	35	1	0.228	3846.93975	877
9	40	1	0.225	5024.81475	1131
10	45	1	0.226	6359.73975	1437
11	50	1	0.219	7851.71475	1720
12	60	1	0.224	11306.81475	2533
13	70	1	0.221	15390.11475	3401
14	75	1	0.19	17667.33975	3357

Sheet: ASK_VES81

Date	4/26/2025		ASK_VES81	Elevation- 940 m	Direction- 50°N
Location	29.748096	80.33257	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	130	18.846	2450
2	5	1	16.5	77.73975	1283
3	10	1	3.73	313.31475	1169
4	15	1	1.6	705.93975	1130
5	20	1	0.975	1255.61475	1224
6	25	1	0.677	1962.33975	1329
7	30	1	0.411	2826.11475	1162
8	35	1	0.301	3846.93975	1158
9	40	1	0.24	5024.81475	1206
10	45	1	0.22	6359.73975	1399
11	50	1	0.206	7851.71475	1617
12	60	1	0.763	11306.81475	8627
13	70	1	0.544	15390.11475	8372
14	75	1	0.184	17667.33975	3251

Sheet: ASK_VES82

Date	4/26/2025		ASK_VES82	Elevation- 943 m	Direction- 50°N
Location	29.748798	80.33177	Village:	Near Mouchora Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	497	18.846	9366
2	5	1	41.6	77.73975	3234
3	15	1	1.86	705.93975	1313
4	20	1	0.995	1255.61475	1249
5	25	1	0.724	1962.33975	1421
6	30	1	0.427	2826.11475	1207
7	35	1	0.4	3846.93975	1539
8	40	1	0.511	5024.81475	2568
9	45	1	0.278	6359.73975	1768
10	50	1	0.289	7851.71475	2269
11	60	1	0.377	11306.81475	4263
12	70	1	0.273	15390.11475	4202
13	75	1	0.285	17667.33975	5035

Sheet: ASK_VES83

Date	4/26/2025		ASK_VES83	Elevation- 924 m	Direction-70°N
Location	29.748494	80.33444	Village:	Near Mouchora Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	249	18.846	4693
2	5	1	46.8	77.73975	3638
3	10	1	3.73	313.31475	1169
4	15	1	1.05	705.93975	741
5	20	1	0.592	1255.61475	743
6	25	1	0.304	1962.33975	597
7	30	1	0.225	2826.11475	636
8	40	1	0.136	5024.81475	683
9	45	1	0.117	6359.73975	744
10	50	1	0.103	7851.71475	809
11	60	1	0.082	11306.81475	927
12	70	1	0.081	15390.11475	1247
13	75	1	0.06	17667.33975	1060

Sheet: ASK_VES84

Date	4/27/2025		ASK_VES84	Elevation- 890 m	Direction- 70°N
Location	29.749878	80.33875	Village:	Near Rasgari Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	67.7	18.846	1276
2	5	1	13.8	77.73975	1073
3	10	1	1.48	313.31475	464
4	15	1	0.701	705.93975	495
5	20	1	0.386	1255.61475	485
6	25	1	0.133	1962.33975	261
7	30	1	0.14	2826.11475	396
8	35	1	0.097	3846.93975	373
9	40	1	0.221	5024.81475	1110

Sheet: ASK_VES85

Date	4/27/2025		ASK_VES85	Elevation- 882 m	Direction- 70°N
Location	29.749566	80.33891	Village:	Near Rasgari Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	268	18.846	5051
2	5	1	21.4	77.73975	1664
3	20	1	0.178	1255.61475	223
4	25	1	0.187	1962.33975	367
5	30	1	0.172	2826.11475	486
6	35	1	0.165	3846.93975	635
7	60	1	0.083	11306.81475	938
8	70	1	0.235	15390.11475	3617
9	75	1	0.289	17667.33975	5106

Sheet: ASK_VES86

Date	4/27/2025		ASK_VES86	Elevation- 807 m	Direction- 70°N
Location	29.74517	80.33882	Village:	Near Naret Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	24.4	18.846	460
2	5	1	9.71	77.73975	755
3	10	1	2.38	313.31475	746
4	15	1	0.812	705.93975	573
5	20	1	0.379	1255.61475	476
6	25	1	0.239	1962.33975	469
7	30	1	0.773	2826.11475	2185
8	40	1	0.17	5024.81475	854
9	45	1	0.085	6359.73975	541
10	50	1	0.068	7851.71475	534
11	60	1	0.058	11306.81475	656
12	70	1	0.05	15390.11475	770
13	75	1	0.051	17667.33975	901

Sheet: ASK_VES87

Date	4/28/2025		ASK_VES87	Elevation- 924 m	Direction- 70°N
Location	29.749322	80.33665	Village:	Near Naret Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	159	18.846	2997
2	5	1	24.9	77.73975	1936
3	10	1	2.71	313.31475	849
4	15	1	0.865	705.93975	611
5	20	1	0.476	1255.61475	598
6	30	1	0.262	2826.11475	740
7	35	1	0.244	3846.93975	939
8	40	1	0.185	5024.81475	930
9	45	1	0.18	6359.73975	1145
10	50	1	0.182	7851.71475	1429
11	60	1	0.114	11306.81475	1289
12	70	1	0.124	15390.11475	1908
13	75	1	0.077	17667.33975	1360

Sheet: ASK_VES88

Date	4/28/2025		ASK_VES88	Elevation- 899 m	Direction- 70°N
Location	29.748568	80.3366	Village:	Near Naret Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	30.4	18.846	573
2	5	1	3.85	77.73975	299
3	10	1	0.602	313.31475	189
4	15	1	0.379	705.93975	268
5	20	1	0.759	1255.61475	953
6	25	1	0.667	1962.33975	1309
7	30	1	0.453	2826.11475	1280
8	35	1	0.21	3846.93975	808
9	40	1	0.4	5024.81475	2010
10	45	1	0.516	6359.73975	3282
11	50	1	0.034	7851.71475	267
12	60	1	0.731	11306.81475	8265
13	70	1	1.069	15390.11475	16452
14	75	1	0.811	17667.33975	14328

Sheet: ASK_VES89

Date	4/28/2025		ASK_VES89	Elevation- 824 m	Direction- 70°N
Location	29.747371	80.33559	Village:	Near Naret Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	67.2	18.846	1266
2	5	1	10.18	77.73975	791
3	10	1	1.39	313.31475	436
4	15	1	0.6	705.93975	424
5	20	1	0.306	1255.61475	384
6	25	1	0.231	1962.33975	453
7	30	1	0.187	2826.11475	528
8	35	1	0.155	3846.93975	596
9	40	1	0.459	5024.81475	2306
10	45	1	0.141	6359.73975	897
11	50	1	0.094	7851.71475	738
12	60	1	0.027	11306.81475	305
13	70	1	0.035	15390.11475	539
14	75	1	0.026	17667.33975	459

Sheet: ASK_VES90

Date	4/29/2025		ASK_VES90	Elevation- 798 m	Direction- 70°N
Location	29.746267	80.33726	Village:	Near Naret Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	0.009	18.846	0.2
2	5	1	0.011	77.73975	0.7
3	10	1	0.021	313.31475	3.4
4	15	1	0.018	705.93975	14.8
5	20	1	0.013	1255.61475	22.6
6	25	1	0.016	1962.33975	25.5
7	30	1	0.035	2826.11475	45.2
8	35	1	0.014	3846.93975	134.6
9	40	1	0.046	5024.81475	70.3
10	45	1	0.073	6359.73975	292.5
11	50	1	0.095	7851.71475	573.2
12	60	1	0.363	11306.81475	1074.1
13	70	1	0.237	15390.11475	5586.6
14	75	1	0.284	17667.33975	5017.5

Sheet: ASK_VES91

Date	4/29/2025		ASK_VES91	Elevation- 824 m	Direction- 80°N
Location	29.747188	80.33643	Village:	Near Naret Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	2.42	18.846	46
2	5	1	0.388	77.73975	188
3	10	1	0.044	313.31475	122
4	15	1	0.078	705.93975	31
5	20	1	0.068	1255.61475	98
6	25	1	0.015	1962.33975	133
7	30	1	0.009	2826.11475	42
8	35	1	0.021	3846.93975	35
9	40	1	0.013	5024.81475	106
10	45	1	0.015	6359.73975	83
11	50	1	0.009	7851.71475	118
12	60	1	0.009	11306.81475	102
13	70	1	0.063	15390.11475	139
14	75	1	0.04	17667.33975	707

Sheet: ASK_VES92

Date	4/29/2025		ASK_VES92	Elevation- 861m	Direction- 80°N
Location	29.747728	80.33482	Village:	Near Naret Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	0.126	18.846	2.375
2	5	1	0.044	77.73975	9.795
3	15	1	0.108	705.93975	31.061
4	25	1	0.101	1962.33975	211.933
5	30	1	0.066	2826.11475	285.438
6	35	1	0.142	3846.93975	253.898
7	40	1	0.191	5024.81475	713.524
8	45	1	0.182	6359.73975	1214.710
9	50	1	0.122	7851.71475	1429.012
10	60	1	0.097	11306.81475	1379.431

Sheet: ASK_VES93

Date	4/30/2025		ASK_VES93	Elevation- 873 m	Direction- 80°N
Location	29.748358	80.33762	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	188	18.846	3543.048
2	5	1	10.21	77.73975	14615.073
3	20	1	2.39	1255.61475	3000.919
4	25	1	0.778	1962.33975	1526.700
5	30	1	2.72	2826.11475	7687.032
6	35	1	3.11	3846.93975	11963.983
7	40	1	2.72	5024.81475	13667.496
8	45	1	4.61	6359.73975	29318.400
9	50	1	5.91	7851.71475	46403.634
10	60	1	1.47	11306.81475	16621.018
11	70	1	1.124	15390.11475	17298.489
12	75	1	0.263	17667.33975	4646.510

Sheet: ASK_VES94

Date	4/30/2025		ASK_VES94	Elevation- 833 m	Direction- 80°N
Location	29.746811	80.33948	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	8.06	18.846	152
2	5	1	1.97	77.73975	627
3	10	1	0.549	313.31475	617
4	15	1	0.284	705.93975	388
5	20	1	0.18	1255.61475	226
6	25	1	0.076	1962.33975	149
7	30	1	0.061	2826.11475	172
8	35	1	0.055	3846.93975	212
9	40	1	0.037	5024.81475	186
10	45	1	0.024	6359.73975	153
11	50	1	0.038	7851.71475	298
12	60	1	0.022	11306.81475	249
13	70	1	0.01	15390.11475	154
14	75	1	0.001	17667.33975	18

Sheet: ASK_VES95

Date	4/30/2025		ASK_VES95	Elevation- 874 m	Direction- 80°N
Location	29.750102	80.3407	Village:	Near Askot Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	16.8	18.846	317
2	5	1	2.96	77.73975	230
3	10	1	0.43	313.31475	135
4	15	1	0.239	705.93975	169
5	20	1	0.356	1255.61475	447
6	25	1	0.323	1962.33975	634
7	30	1	0.227	2826.11475	642
8	35	1	0.183	3846.93975	704
9	40	1	0.149	5024.81475	749
10	45	1	0.081	6359.73975	515
11	50	1	0.108	7851.71475	848
12	60	1	0.025	11306.81475	283
13	70	1	0.022	15390.11475	339
14	75	1	0.027	17667.33975	477

Sheet: ASK_VES96

Date	5/1/2025		ASK_VES96	Elevation- 869 m	Direction- 80°N
Location	29.748603	80.34132	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	33.2	18.846	626
2	5	1	5.82	77.73975	452
3	10	1	2	313.31475	627
4	15	1	1.85	705.93975	1306
5	20	1	1.22	1255.61475	1532
6	25	1	0.863	1962.33975	1693
7	30	1	0.739	2826.11475	2088
8	35	1	0.612	3846.93975	2354
9	40	1	0.636	5024.81475	3196
10	45	1	1.26	6359.73975	8013
11	50	1	0.786	7851.71475	6171
12	60	1	0.229	11306.81475	2589
13	70	1	0.816	15390.11475	12558
14	75	1	0.72	17667.33975	12720

Sheet: ASK_VES97

Date	5/1/2025		ASK_VES97	Elevation- 907 m	Direction- 80°N
Location	29.749761	80.34264	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	8.4	18.846	158
2	5	1	1.56	77.73975	121
3	10	1	0.368	313.31475	115
4	15	1	0.099	705.93975	70
5	20	1	0.19	1255.61475	239
6	25	1	0.129	1962.33975	253
7	30	1	0.126	2826.11475	356
8	35	1	0.085	3846.93975	327
9	40	1	0.244	5024.81475	1226
10	45	1	0.042	6359.73975	267
11	50	1	0.03	7851.71475	236
12	60	1	0.272	11306.81475	3075
13	70	1	0.338	15390.11475	5202
14	75	1	0.033	17667.33975	583

Sheet: ASK_VES98

Date	5/2/2025		ASK_VES98	Elevation- 817 m	Direction- 80°N
Location	29.746654	80.33243	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	93.2	18.846	1756
2	5	1	31.8	77.73975	2472
3	10	1	8.33	313.31475	2610
4	15	1	3.93	705.93975	2774
5	20	1	3.04	1255.61475	3817
6	25	1	1.7	1962.33975	3336
7	30	1	1.016	2826.11475	2871
8	35	1	1.199	3846.93975	4612
9	40	1	1.083	5024.81475	5442
10	45	1	0.459	6359.73975	2919
11	50	1	0.903	7851.71475	7090
12	60	1	1.06	11306.81475	11985
13	70	1	1.82	15390.11475	28010
14	75	1	0.969	17667.33975	17120

Sheet: ASK_VES99

Date	5/2/2025		ASK_VES99	Elevation- 826 m	Direction- 80°N
Location	29.746881	80.33243	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	169	18.846	3185
2	5	1	15.4	77.73975	1197
3	10	1	1.164	313.31475	365
4	15	1	0.354	705.93975	250
5	20	1	0.176	1255.61475	221
6	25	1	0.173	1962.33975	339
7	30	1	0.127	2826.11475	359
8	35	1	0.146	3846.93975	562
9	40	1	0.143	5024.81475	719
10	45	1	0.219	6359.73975	1393
11	50	1	0.224	7851.71475	1759
12	60	1	0.22	11306.81475	2487
13	70	1	0.245	15390.11475	3771
14	75	1	0.196	17667.33975	3463

Sheet: ASK_VES100

Date	5/2/2025		ASK_VES100	Elevation- 847 m	Direction- 80°N
Location	29.74772	80.33087	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	44	18.846	829
2	5	1	7.78	77.73975	605
3	10	1	1.56	313.31475	489
4	15	1	0.609	705.93975	430
5	20	1	0.13	1255.61475	163
6	25	1	0.048	1962.33975	94
7	30	1	0.04	2826.11475	113
8	35	1	0.04	3846.93975	154
9	40	1	0.009	5024.81475	45
10	45	1	0.27	6359.73975	1717
11	50	1	0.423	7851.71475	3321
12	60	1	0.23	11306.81475	2601
13	70	1	0.249	15390.11475	3832
14	75	1	0.207	17667.33975	3657

Sheet: ASK_VES101

Date	5/3/2025		ASK_VES101	Elevation- 851 m	Direction- 80°N
Location	29.746063	80.32972	Village:	Near Dugal Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	38.7	18.846	729
2	5	1	6.57	77.73975	511
3	10	1	1.065	313.31475	334
4	15	1	0.405	705.93975	286
5	20	1	0.283	1255.61475	355
6	25	1	0.155	1962.33975	206
7	30	1	0.105	2826.11475	260
8	35	1	0.092	3846.93975	88
9	40	1	0.023	5024.81475	412
10	45	1	0.082	6359.73975	4038
11	50	1	0.635	7851.71475	118
12	60	1	0.015	11306.81475	509
13	70	1	0.045	15390.11475	693
14	75	1	0.097	17667.33975	1714

Sheet: ASK_VES102

Date	5/3/2025		ASK_VES102	Elevation- 855 m	Direction- 80°N
Location	29.745571	80.32981	Village:	Near Dugal Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	349	18.846	6577
2	5	1	113.4	77.73975	8816
3	10	1	11.95	313.31475	3744
4	15	1	0.33	705.93975	233
5	20	1	0.221	1255.61475	277
6	25	1	0.027	1962.33975	53
7	30	1	0.09	2826.11475	254
8	35	1	0.04	3846.93975	154
9	40	1	0.003	5024.81475	15
10	45	1	0.182	6359.73975	1157
11	50	1	0.345	7851.71475	2709
12	60	1	0.255	11306.81475	2883
13	70	1	0.004	15390.11475	62
14	75	1	0.028	17667.33975	495

Sheet: ASK_VES103

Date	5/3/2025		ASK_VES103	Elevation- 828 m	Direction- 90°N
Location	29.744992	80.33047	Village:	Near Dugal Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	114.9	18.846	2165
2	5	1	36.9	77.73975	2869
3	10	1	6.65	313.31475	2084
4	15	1	2.76	705.93975	1948
5	20	1	1.36	1255.61475	1708
6	25	1	0.713	1962.33975	1399
7	30	1	0.548	2826.11475	1549
8	35	1	0.447	3846.93975	1720
9	40	1	0.463	5024.81475	2326
10	45	1	0.287	6359.73975	1825
11	50	1	0.2	7851.71475	1570
12	60	1	0.175	11306.81475	1979
13	70	1	0.161	15390.11475	2478
14	75	1	0.118	17667.33975	2085

Sheet: ASK_VES104

Date	5/4/2025		ASK_VES104	Elevation- 821 m	Direction- 90°N
Location	29.744439	80.33134	Village:	Near Dugal Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	40.8	18.846	769
2	5	1	13.7	77.73975	1065
3	10	1	5.06	313.31475	1585
4	15	1	2.35	705.93975	1659
5	20	1	1.142	1255.61475	1434
6	25	1	0.68	1962.33975	1334
7	30	1	0.405	2826.11475	1145
8	35	1	0.254	3846.93975	977
9	40	1	0.176	5024.81475	884
10	45	1	0.131	6359.73975	833
11	50	1	0.085	7851.71475	667
12	60	1	0.05	11306.81475	565
13	70	1	0.045	15390.11475	693
14	75	1	0.022	17667.33975	389

Sheet: ASK_VES105

Date	5/4/2025		ASK_VES105	Elevation- 802 m	Direction- 90°N
Location	29.745693	80.33267	Village:	Near Dugal Village	
Sl.No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	93.1	18.846	1755
2	5	1	30.2	77.73975	2348
3	10	1	6.64	313.31475	2080
4	15	1	2.32	705.93975	1638
5	20	1	0.932	1255.61475	1170
6	25	1	0.401	1962.33975	787
7	30	1	0.218	2826.11475	616
8	35	1	0.112	3846.93975	431
9	40	1	0.084	5024.81475	422
10	45	1	0.09	6359.73975	572
11	50	1	0.062	7851.71475	487
12	60	1	0.095	11306.81475	1074
13	70	1	0.065	15390.11475	1000
14	75	1	0.074	17667.33975	1307

Sheet: ASK_VES106

Date	5/4/2025		ASK_VES106	Elevation- 798 m	Direction- 90°N
Location	29.745531	80.33357	Village:	Near Naret Village	
Sl.No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	40.2	18.846	758
2	5	1	15.5	77.73975	1205
3	10	1	4.46	313.31475	1397
4	15	1	1.45	705.93975	1024
5	20	1	0.706	1255.61475	886
6	25	1	0.415	1962.33975	814
7	30	1	0.322	2826.11475	910
8	35	1	0.153	3846.93975	589
9	40	1	0.12	5024.81475	603
10	45	1	0.059	6359.73975	375
11	50	1	0.056	7851.71475	440
12	60	1	0.014	11306.81475	158
13	70	1	0.055	15390.11475	846
14	75	1	0.038	17667.33975	671

Sheet: ASK_VES107

Date	5/5/2025		ASK_VES107	Elevation- 871 m	Direction- 90°N
Location	29.744475	80.33541	Village:	Near Naret Village	
Sl. No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	251	18.846	4730
2	5	1	79.9	77.73975	6211
3	10	1	21.3	313.31475	6674
4	15	1	9.2	705.93975	6495
5	20	1	4.99	1255.61475	6266
6	25	1	3.42	1962.33975	6711
7	30	1	2.5	2826.11475	7065
8	35	1	1.74	3846.93975	6694
9	40	1	1.21	5024.81475	6080
10	45	1	0.962	6359.73975	6118
11	50	1	0.792	7851.71475	6219
12	60	1	0.402	11306.81475	4545
13	70	1	0.225	15390.11475	3463
14	75	1	0.029	17667.33975	512

Sheet: ASK_VES108

Date	5/5/2025		ASK_VES108	Elevation- 956 m	Direction- 110°N
Location	29.7402	80.32896	Village:	Near Pant Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	12.3	18.846	232
2	5	1	3.39	77.73975	264
3	10	1	0.574	313.31475	180
4	15	1	0.181	705.93975	128
5	20	1	0.075	1255.61475	94
6	25	1	0.027	1962.33975	53
7	30	1	0.145	2826.11475	410
8	35	1	0.017	3846.93975	65
9	40	1	0.067	5024.81475	337
10	45	1	0.085	6359.73975	541
11	50	1	0.082	7851.71475	644
12	60	1	0.047	11306.81475	531
13	70	1	0.058	15390.11475	893
14	75	1	0.046	17667.33975	813

Sheet: ASK_VES109

Date	5/5/2025		ASK_VES109	Elevation-983 m	Direction-110°N
Location	29.739476	80.33048	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	35.3	18.846	665
2	5	1	8.45	77.73975	657
3	10	1	1.62	313.31475	508
4	15	1	0.485	705.93975	342
5	20	1	0.277	1255.61475	348
6	25	1	0.153	1962.33975	300
7	30	1	0.091	2826.11475	257
8	35	1	0.069	3846.93975	265
9	40	1	0.056	5024.81475	281
10	45	1	0.1	6359.73975	636
11	50	1	0.027	7851.71475	212
12	60	1	0.022	11306.81475	249
13	70	1	0.028	15390.11475	431
14	75	1	0.014	17667.33975	247

Sheet: ASK_VES110

Date	5/6/2025		ASK_VES110	Elevation- 872 m	Direction- 110°N
Location	29.742726	80.33259	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	12.2	18.846	230
2	5	1	2.34	77.73975	182
3	10	1	0.352	313.31475	110
4	15	1	0.156	705.93975	110
5	20	1	0.113	1255.61475	142
6	25	1	0.079	1962.33975	155
7	30	1	0.067	2826.11475	189
8	35	1	0.088	3846.93975	339
9	40	1	0.052	5024.81475	261
10	45	1	0.051	6359.73975	324
11	50	1	0.051	7851.71475	400
12	60	1	0.022	11306.81475	249
13	70	1	0.015	15390.11475	231
14	75	1	0.032	17667.33975	565

Sheet: ASK_VES111

Date	5/6/2025		ASK_VES111	Elevation-843 m	Direction-115°N
Location	29.743489	80.33159	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	227	18.846	4278
2	5	1	50.1	77.73975	3895
3	10	1	7.4	313.31475	2319
4	15	1	2.29	705.93975	1617
5	20	1	1.57	1255.61475	1971
6	25	1	0.348	1962.33975	683
7	30	1	0.536	2826.11475	1515
8	35	1	0.019	3846.93975	73
9	40	1	0.076	5024.81475	382
10	45	1	0.001	6359.73975	6
11	60	1	0.096	11306.81475	1085
12	70	1	0.135	15390.11475	2078
13	75	1	0.073	17667.33975	1290

Sheet: ASK_VES112

Date	5/6/2025		ASK_VES112	Elevation-842 m	Direction-115°N
Location	29.743302	80.33217	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	92.3	18.846	1739
2	5	1	26.9	77.73975	2091
3	10	1	6.01	313.31475	1883
4	15	1	2.93	705.93975	2068
5	20	1	1.6	1255.61475	2009
6	25	1	0.923	1962.33975	1811
7	30	1	0.467	2826.11475	1320
8	35	1	0.313	3846.93975	1204
9	40	1	0.101	5024.81475	508
10	45	1	0.077	6359.73975	490
11	50	1	0.113	7851.71475	887
12	60	1	0.541	11306.81475	6117
13	70	1	1.45	15390.11475	22316
14	75	1	0.87	17667.33975	15371

Sheet: ASK_VES113

Date	5/7/2025		ASK_VES113	Elevation- 925 m	Direction- 115°N
Location	29.741118	80.33178	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	33.6	18.846	633
2	5	1	9.27	77.73975	721
3	10	1	1.75	313.31475	548
4	15	1	0.629	705.93975	444
5	20	1	0.183	1255.61475	230
6	25	1	0.266	1962.33975	522
7	30	1	0.08	2826.11475	226
8	35	1	0.172	3846.93975	662
9	40	1	0.002	5024.81475	10
10	45	1	0.161	6359.73975	1024
11	50	1	0.068	7851.71475	534
12	60	1	0.132	11306.81475	1492
13	70	1	0.021	15390.11475	323
14	75	1	0.062	17667.33975	1095

Sheet: ASK_VES114

Date	5/7/2025		ASK_VES114	Elevation- 917 m	Direction- 115°N
Location	29.741578	80.33084	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	17.7	18.846	334
2	5	1	2.74	77.73975	213
3	10	1	0.078	313.31475	24
4	15	1	0.094	705.93975	66
5	20	1	0.148	1255.61475	186
6	25	1	0.053	1962.33975	104
7	30	1	0.039	2826.11475	110
8	35	1	0.028	3846.93975	108
9	40	1	0.022	5024.81475	111
10	45	1	0.02	6359.73975	127
11	50	1	0.025	7851.71475	196
12	60	1	1.79	11306.81475	20239
13	70	1	0.87	15390.11475	13389
14	75	1	0.909	17667.33975	16060

Sheet: ASK_VES115

Date	5/7/2025		ASK_VES115	Elevation- 876 m	Direction- 115°N
Location	29.742722	80.33002	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	26.4	18.846	498
2	5	1	2.05	77.73975	159
3	10	1	0.557	313.31475	175
4	15	1	0.2	705.93975	141
5	20	1	0.12	1255.61475	151
6	25	1	0.069	1962.33975	135
7	30	1	0.045	2826.11475	127
8	35	1	0.058	3846.93975	223
9	40	1	0.054	5024.81475	271
10	45	1	0.024	6359.73975	153
11	50	1	0.025	7851.71475	196
12	60	1	0.038	11306.81475	430
13	70	1	0.024	15390.11475	369
14	75	1	0.021	17667.33975	371

Sheet: ASK_VES116

Date	5/8/2025		ASK_VES116	Elevation- 860 m	Direction- 120°N
Location	29.742876	80.32948	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	45	18.846	848
2	5	1	15.8	77.73975	1228
3	10	1	5.16	313.31475	1617
4	15	1	1.98	705.93975	1398
5	20	1	3.24	1255.61475	4068
6	25	1	1.89	1962.33975	3709
7	30	1	1.147	2826.11475	3242
8	35	1	3	3846.93975	11541
9	40	1	3.08	5024.81475	15476
10	45	1	2.86	6359.73975	18189
11	50	1	3.18	7851.71475	24968
12	60	1	1.119	11306.81475	12652
13	70	1	0.792	15390.11475	12189
14	75	1	1.81	17667.33975	31978

Sheet: ASK_VES117

Date	5/8/2025		ASK_VES117	Elevation- 861 m	Direction- 120°N
Location	29.74326	80.32865	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	59.7	18.846	1125
2	5	1	10.25	77.73975	797
3	10	1	0.355	313.31475	111
4	15	1	0.784	705.93975	553
5	20	1	0.125	1255.61475	157
6	25	1	0.093	1962.33975	182
7	30	1	0.218	2826.11475	616
8	35	1	0.082	3846.93975	315
9	40	1	0.071	5024.81475	357
10	45	1	0.018	6359.73975	114
11	50	1	0.136	7851.71475	1068
12	60	1	0.091	11306.81475	1029
13	70	1	0.179	15390.11475	2755
14	75	1	0.085	17667.33975	1502

Sheet: ASK_VES118

Date	5/8/2025		ASK_VES118	Elevation- 907 m	Direction- 120°N
Location	29.743828	80.32786	Village:	Near Dugal Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	45.4	18.846	856
2	5	1	7.34	77.73975	571
3	10	1	0.992	313.31475	311
4	15	1	0.377	705.93975	266
5	20	1	0.405	1255.61475	509
6	25	1	0.225	1962.33975	442
7	30	1	0.17	2826.11475	480
8	35	1	0.169	3846.93975	650
9	40	1	0.159	5024.81475	799
10	45	1	0.027	6359.73975	172
11	50	1	0.012	7851.71475	94
12	60	1	0.184	11306.81475	2080
13	70	1	0.15	15390.11475	2309
14	75	1	0.132	17667.33975	2332

Sheet: ASK_VES119

Date	5/9/2025		ASK_VES119	Elevation- 955 m	Direction- 120°N
Location	29.744115	80.32718	Village:	Near Dugal Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	130	18.846	2450
2	5	1	18.3	77.73975	1423
3	10	1	2.85	313.31475	893
4	15	1	0.751	705.93975	530
5	20	1	0.074	1255.61475	93
6	25	1	0.074	1962.33975	145
7	30	1	0.327	2826.11475	924
8	35	1	0.309	3846.93975	1189
9	40	1	0.396	5024.81475	1990
10	45	1	0.345	6359.73975	2194
11	50	1	0.145	7851.71475	1138
12	60	1	0.126	11306.81475	1425
13	70	1	0.062	15390.11475	954
14	75	1	0.677	17667.33975	11961

Sheet: ASK_VES120

Date	5/9/2025		ASK_VES120	Elevation- 947 m	Direction- 120°N
Location	29.74257	80.32554	Village:	Near Dugal Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	20.8	18.846	392
2	5	1	6.05	77.73975	470
3	10	1	0.908	313.31475	284
4	15	1	0.415	705.93975	293
5	20	1	0.206	1255.61475	259
6	25	1	0.293	1962.33975	575
7	30	1	0.11	2826.11475	311
8	35	1	0.088	3846.93975	339
9	40	1	0.19	5024.81475	955
10	45	1	0.133	6359.73975	846
11	50	1	0.041	7851.71475	322
12	60	1	0.094	11306.81475	1063
13	70	1	0.021	15390.11475	323
14	75	1	0.022	17667.33975	389

Sheet: ASK_VES121

Date	5/9/2025		ASK_VES121	Elevation- 938 m	Direction- 120°N
Location	29.742009	80.32614	Village:	Near Dugal Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	17.6	18.846	332
2	5	1	3.43	77.73975	267
3	10	1	0.607	313.31475	190
4	15	1	0.331	705.93975	234
5	20	1	0.18	1255.61475	226
6	25	1	0.142	1962.33975	279
7	30	1	0.18	2826.11475	509
8	35	1	0.053	3846.93975	204
9	40	1	0.067	5024.81475	337
10	45	1	0.063	6359.73975	401
11	50	1	0.072	7851.71475	565
12	60	1	0.025	11306.81475	283
13	70	1	0.119	15390.11475	1831
14	75	1	0.082	17667.33975	1449

Sheet: ASK_VES122

Date	5/10/2025		ASK_VES122	Elevation- 928 m	Direction- 120°N
Location	29.741616	80.32679	Village:	Near Dugal Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	61.6	18.846	1161
2	5	1	15.1	77.73975	1174
3	10	1	2.8	313.31475	877
4	15	1	0.598	705.93975	422
5	20	1	0.215	1255.61475	270
6	25	1	0.126	1962.33975	247
7	30	1	0.092	2826.11475	260
8	35	1	0.236	3846.93975	908
9	40	1	0.179	5024.81475	899
10	45	1	0.215	6359.73975	1367
11	50	1	0.129	7851.71475	1013
12	60	1	0.072	11306.81475	814
13	70	1	0.235	15390.11475	3617
14	75	1	0.128	17667.33975	2261

Sheet: ASK_VES123

Date	5/10/2025		ASK_VES123	Elevation -900 m	Direction- 120°N
Location	29.741052	80.32727	Village:	Near Pant Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	17.5	18.846	330
2	5	1	6.64	77.73975	516
3	10	1	2.49	313.31475	780
4	15	1	1.24	705.93975	875
5	20	1	7.81	1255.61475	9806
6	25	1	9.62	1962.33975	18878
7	30	1	2.87	2826.11475	8111
8	35	1	36.8	3846.93975	141567
9	40	1	13.6	5024.81475	68337
10	45	1	0.138	6359.73975	878
11	50	1	0.21	7851.71475	1649
12	60	1	0.238	11306.81475	2691

Sheet: ASK_VES124

Date	5/10/2025		ASK_VES124	Elevation- 938 m	Direction- 135°N
Location	29.74053	80.32855	Village:	Near Pant Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	161	18.846	3034
2	5	1	20.9	77.73975	1625
3	10	1	2.29	313.31475	717
4	15	1	0.79	705.93975	558
5	20	1	0.556	1255.61475	698
6	25	1	0.343	1962.33975	673
7	30	1	0.186	2826.11475	526
8	35	1	0.103	3846.93975	396
9	40	1	0.191	5024.81475	960
10	45	1	0.109	6359.73975	693
11	50	1	0.073	7851.71475	573
12	60	1	0.073	11306.81475	825
13	70	1	0.045	15390.11475	693
14	75	1	0.091	17667.33975	1608

Sheet: ASK_VES125

Date	5/11/2025		ASK_VES125	Elevation- 992 m	Direction- 135°N
Location	29.742072	80.33499	Village:	Near Naret	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	74.4	18.846	1402
2	5	1	30.6	77.73975	2379
3	10	1	9.75	313.31475	3055
4	15	1	4.5	705.93975	3177
5	20	1	2.55	1255.61475	3202
6	25	1	1.44	1962.33975	2826
7	30	1	0.97	2826.11475	2741
8	35	1	0.798	3846.93975	3070
9	40	1	0.805	5024.81475	4045
10	45	1	0.528	6359.73975	3358
11	50	1	0.526	7851.71475	4130
12	60	1	0.617	11306.81475	6976
13	70	1	0.351	15390.11475	5402
14	75	1	0.409	17667.33975	7226

Sheet: ASK_VES126

Date	5/11/2025		ASK_VES126	Elevation- 1011 m	Direction- 135°N
Location	29.740102	80.33352	Village:	Near Pant Village	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	15.1	18.846	285
2	5	1	5.7	77.73975	443
3	10	1	1.72	313.31475	539
4	15	1	0.751	705.93975	530
5	20	1	0.513	1255.61475	644
6	25	1	0.389	1962.33975	763
7	30	1	0.346	2826.11475	978
8	35	1	0.347	3846.93975	1335
9	40	1	0.196	5024.81475	985
10	45	1	0.362	6359.73975	2302
11	50	1	0.245	7851.71475	1924
12	60	1	0.141	11306.81475	1594
13	70	1	0.263	15390.11475	4048
14	75	1	0.183	17667.33975	3233

Sheet: ASK_VES127

Date	5/11/2025		ASK_VES127	Elevation- 1019 m	Direction- 135°N
Location	29.738408	80.33148	Village:	Near Pant Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	2.31	18.846	44
2	5	1	0.85	77.73975	66
3	10	1	0.354	313.31475	111
4	15	1	0.231	705.93975	163
5	20	1	0.179	1255.61475	225
6	25	1	0.087	1962.33975	171
7	30	1	0.046	2826.11475	130
8	35	1	0.054	3846.93975	208
9	40	1	0.032	5024.81475	161
10	45	1	0.02	6359.73975	127
11	50	1	0.234	7851.71475	1837
12	60	1	0.021	11306.81475	237
13	70	1	0.006	15390.11475	92
14	75	1	0.009	17667.33975	159

Sheet: ASK_VES128

Date	5/12/2025		ASK_VES128	Elevation- 1018 m	Direction- 135°N
Location	29.740801	80.32397	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	0.228	18.846	4
2	5	1	0.018	77.73975	1
3	10	1	0.034	313.31475	11
4	15	1	0.16	705.93975	113
5	20	1	0.022	1255.61475	28
6	25	1	0.07	1962.33975	137
7	30	1	0.118	2826.11475	333
8	35	1	0.061	3846.93975	235
9	40	1	0.196	5024.81475	985
10	45	1	0.118	6359.73975	750
11	50	1	0.038	7851.71475	298
12	60	1	0.159	11306.81475	1798
13	70	1	0.269	15390.11475	4140
14	75	1	0.06	17667.33975	1060

Sheet: ASK_VES129

Date	5/12/2025		ASK_VES129	Elevation- 1002 m	Direction- 135°N
Location	29.740538	80.32457	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	15.8	18.846	298
2	5	1	2.84	77.73975	221
3	10	1	0.535	313.31475	168
4	15	1	0.16	705.93975	113
5	20	1	0.157	1255.61475	197
6	25	1	0.032	1962.33975	63
7	30	1	0.015	2826.11475	42
8	35	1	0.17	3846.93975	654
9	40	1	0.209	5024.81475	1050
10	45	1	0.032	6359.73975	204
11	50	1	30	7851.71475	235551
12	60	1	44.7	11306.81475	505415
13	70	1	132	15390.11475	2031495
14	75	1	28.3	17667.33975	499986

Sheet: ASK_VES130

Date	5/12/2025		ASK_VES130	Elevation- 993 m	Direction- 135°N
Location	29.739819	80.32521	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	82.6	18.846	1557
2	5	1	20.8	77.73975	1617
3	10	1	4.82	313.31475	1510
4	15	1	1.95	705.93975	1377
5	20	1	1.084	1255.61475	1361
6	25	1	0.905	1962.33975	1776
7	30	1	0.767	2826.11475	2168
8	35	1	1.51	3846.93975	5809
9	40	1	0.652	5024.81475	3276
10	45	1	0.392	6359.73975	2493
11	50	1	0.296	7851.71475	2324
12	60	1	0.273	11306.81475	3087
13	70	1	0.173	15390.11475	2662
14	75	1	0.109	17667.33975	1926

Sheet: ASK_VES131

Date	5/13/2025		ASK_VES131	Elevation- 946 m	Direction- 135°N
Location	29.739274	80.32672	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	41.6	18.846	784
2	5	1	10.62	77.73975	826
3	10	1	1.88	313.31475	589
4	15	1	0.646	705.93975	456
5	20	1	0.313	1255.61475	393
6	25	1	0.253	1962.33975	496
7	30	1	0.267	2826.11475	755
8	35	1	0.181	3846.93975	696
9	40	1	0.284	5024.81475	1427
10	45	1	0.083	6359.73975	528
11	50	1	0.06	7851.71475	471

Sheet: ASK_VES132

Date	5/13/2025		ASK_VES132	Elevation- 971 m	Direction- 135°N
Location	29.738547	80.32728	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	36.3	18.846	684
2	5	1	9.07	77.73975	705
3	10	1	2.26	313.31475	708
4	15	1	0.896	705.93975	633
5	20	1	0.461	1255.61475	579
6	25	1	0.292	1962.33975	573
7	30	1	0.208	2826.11475	588
8	35	1	0.159	3846.93975	612
9	40	1	0.103	5024.81475	518
10	45	1	0.062	6359.73975	394
11	50	1	0.021	7851.71475	165
12	60	1	0.022	11306.81475	249
13	70	1	0.038	15390.11475	585
14	75	1	0.003	17667.33975	53

Sheet: ASK_VES133

Date	5/13/2025		ASK_VES133	Elevation- 987 m	Direction- 135°N
Location	29.738015	80.32814	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	6.53	18.846	123
2	5	1	3.27	77.73975	254
3	10	1	3.67	313.31475	1150
4	15	1	6.04	705.93975	4264
5	20	1	11.04	1255.61475	13862
6	25	1	1.86	1962.33975	3650
7	30	1	5.31	2826.11475	15007
8	35	1	1.53	3846.93975	5886
9	40	1	7.18	5024.81475	36078
10	45	1	3.26	6359.73975	20733
11	50	1	13.1	7851.71475	102857
12	60	1	7.23	11306.81475	81748
13	70	1	5.64	15390.11475	86800
14	75	1	9.44	17667.33975	166780

Sheet: ASK_VES134

Date	5/14/2025		ASK_VES134	Elevation- 1094 m	Direction- 135°N
Location	29.758074	80.3332	Village:	Near Baragaon Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	19.9	18.846	375
2	5	1	4.53	77.73975	352
3	10	1	0.729	313.31475	228
4	15	1	0.325	705.93975	229
5	20	1	0.159	1255.61475	200
6	25	1	0.184	1962.33975	361
7	30	1	0.127	2826.11475	359
8	35	1	0.048	3846.93975	185
9	40	1	0.074	5024.81475	372
10	45	1	0.062	6359.73975	394
11	50	1	0.023	7851.71475	181
12	55	1	0.916	9500.73975	8703
13	60	1	9.04	11306.81475	102214
14	65	1	10.06	13269.93975	133496
15	70	1	5.17	15390.11475	79567
16	75	1	0.013	17667.33975	230

Sheet: ASK_VES135

Date	5/14/2025		ASK_VES135	Elevation- 1078 m	Direction- 210°N
Location	29.758694	80.33286	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	60.8	18.846	1146
2	5	1	13.1	77.73975	1018
3	10	1	2.62	313.31475	821
4	15	1	0.371	705.93975	262
5	20	1	0.155	1255.61475	195
6	25	1	0.216	1962.33975	424
7	30	1	0.091	2826.11475	257
8	35	1	0.129	3846.93975	496
9	40	1	0.184	5024.81475	925
10	45	1	0.206	6359.73975	1310
11	50	1	0.189	7851.71475	1484
12	55	1	0.053	9500.73975	504
13	60	1	0.035	11306.81475	396
14	65	1	0.05	13269.93975	663
15	70	1	0.097	15390.11475	1493
16	75	1	0.114	17667.33975	2014

Sheet: ASK_VES136

Date	5/14/2025		ASK_VES136	Elevation- 1080 m	Direction- 210°N
Location	29.759086	80.33276	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	10.33	18.846	195
2	5	1	2.08	77.73975	162
3	10	1	1.38	313.31475	432
4	15	1	1.141	705.93975	805
5	20	1	0.144	1255.61475	181
6	25	1	0.45	1962.33975	883
7	30	1	0.632	2826.11475	1786
8	35	1	0.254	3846.93975	977
9	40	1	0.299	5024.81475	1502
10	45	1	0.513	6359.73975	3263
11	50	1	0.149	7851.71475	1170
12	55	1	0.089	9500.73975	846
13	60	1	0.34	11306.81475	3844
14	65	1	0.331	13269.93975	4392
15	70	1	0.191	15390.11475	2940
16	75	1	0.249	17667.33975	4399

Sheet: ASK_VES137

Date	5/15/2025		ASK_VES137	Elevation - 1055 m	Direction- 210°N
Location	29.73676	80.32554	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	13.8	18.846	260
2	5	1	3.15	77.73975	245
3	10	1	0.943	313.31475	295
4	15	1	0.319	705.93975	225
5	20	1	0.221	1255.61475	277
6	25	1	0.214	1962.33975	420
7	30	1	0.231	2826.11475	653
8	35	1	0.328	3846.93975	1262
9	40	1	0.765	5024.81475	3844
10	45	1	0.311	6359.73975	1978
11	50	1	0.329	7851.71475	2583
12	60	1	0.128	11306.81475	1447
13	70	1	0.105	15390.11475	1616
14	75	1	0.03	17667.33975	530

Sheet: ASK_VES138

Date	5/15/2025		ASK_VES138	Elevation- 1045 m	Direction- 210°N
Location	29.73752	80.32508	Village:	Near Askot Village ground	
SI No	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	3.54	18.846	67
2	5	1	8.11	77.73975	630
3	10	1	5.68	313.31475	1780
4	15	1	5.99	705.93975	4229
5	20	1	1.73	1255.61475	2172
6	25	1	1.49	1962.33975	2924
7	30	1	11.4	2826.11475	32218
8	35	1	0.26	3846.93975	1000
9	40	1	10.42	5024.81475	52359
10	45	1	21.4	6359.73975	136098
11	50	1	8.41	7851.71475	66033
12	60	1	1.29	11306.81475	14586
13	70	1	38.5	15390.11475	592519
14	75	1	1.76	17667.33975	31095

Sheet: ASK_VES139

Date	5/15/2025		ASK_VES139	Elevation- 1028 m	Direction- 210°N
Location	29.737668	80.32423	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	0.957	18.846	18
2	5	1	1.049	77.73975	82
3	10	1	0.263	313.31475	82
4	15	1	1.79	705.93975	1264
5	20	1	0.231	1255.61475	290
6	25	1	0.458	1962.33975	899
7	30	1	0.862	2826.11475	2436
8	35	1	0.839	3846.93975	3228
9	40	1	2.62	5024.81475	13165
10	45	1	0.868	6359.73975	5520
11	50	1	0.633	7851.71475	4970
12	60	1	0.459	11306.81475	5190
13	70	1	1.24	15390.11475	19084

Sheet: ASK_VES140

Date	5/16/2025		ASK_VES140	Elevation- 1047 m	Direction- 210°N
Location	29.736341	80.32312	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	1.07	18.846	20
2	5	1	2.74	77.73975	213
3	10	1	4.82	313.31475	1510
4	15	1	1.66	705.93975	1172
5	20	1	0.734	1255.61475	922
6	25	1	0.294	1962.33975	577
7	30	1	1.54	2826.11475	4352
8	35	1	5.77	3846.93975	22197
9	40	1	5.85	5024.81475	29395
10	45	1	0.576	6359.73975	3663
11	50	1	0.483	7851.71475	3792
12	60	1	1.115	11306.81475	12607
13	70	1	2.86	15390.11475	44016
14	75	1	2.56	17667.33975	45228

Sheet: ASK_VES141

Date	5/16/2025		ASK_VES141	Elevation- 1068 m	Direction- 210°N
Location	29.735997	80.32338	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	6.27	18.846	118
2	5	1	5.85	77.73975	455
3	10	1	10.46	313.31475	3277
4	15	1	6.07	705.93975	4285
5	20	1	3.07	1255.61475	3855
6	25	1	5.57	1962.33975	10930
7	30	1	8.52	2826.11475	24078
8	35	1	3.94	3846.93975	15157
9	40	1	4.09	5024.81475	20551
10	45	1	1.132	6359.73975	7199
11	50	1	5.15	7851.71475	40436
12	60	1	1.85	11306.81475	20918
13	70	1	0.126	15390.11475	1939
14	75	1	1.27	17667.33975	22438

Sheet: ASK_VES142

Date	5/16/2025		ASK_VES142	Elevation- 1088 m	Direction- 210°N
Location	29.735353	80.32412	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	5.41	18.846	102
2	5	1	7.65	77.73975	595
3	10	1	41.3	313.31475	12940
4	15	1	1.56	705.93975	1101
5	20	1	4.16	1255.61475	5223
6	25	1	4.24	1962.33975	8320
7	30	1	1.72	2826.11475	4861
8	35	1	5.25	3846.93975	20196
9	40	1	7.11	5024.81475	35726
10	45	1	3.83	6359.73975	24358
11	50	1	5.1	7851.71475	40044
12	60	1	6.12	11306.81475	69198
13	70	1	4.43	15390.11475	68178
14	75	1	7.96	17667.33975	140632

Sheet: ASK_VES143

Date	5/17/2025		ASK_VES143	Elevation- 1105 m	Direction- 210°N
Location	29.73458	80.32176	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	50.4	18.846	950
2	5	1	8.32	77.73975	647
3	10	1	0.952	313.31475	298
4	15	1	0.118	705.93975	83
5	20	1	0.157	1255.61475	197
6	25	1	0.109	1962.33975	214
7	30	1	0.14	2826.11475	396
8	35	1	0.154	3846.93975	592
9	40	1	0.093	5024.81475	467
10	45	1	0.022	6359.73975	140
11	50	1	0.08	7851.71475	628
12	60	1	0.013	11306.81475	147
13	70	1	0.004	15390.11475	62
14	75	1	0.007	17667.33975	124

Sheet: ASK_VES144

Date	5/17/2025		ASK_VES144	Elevation- 1134 m	Direction- 210°N
Location	29.734088	80.3226	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	22.2	18.846	418
2	5	1	6.09	77.73975	473
3	10	1	1.56	313.31475	489
4	15	1	0.588	705.93975	415
5	20	1	0.256	1255.61475	321
6	25	1	0.131	1962.33975	257
7	30	1	0.08	2826.11475	226
8	35	1	0.06	3846.93975	231
9	40	1	0.029	5024.81475	146
10	45	1	0.023	6359.73975	146
11	50	1	0.018	7851.71475	141
12	60	1	0.142	11306.81475	1606
13	70	1	0.126	15390.11475	1939
14	75	1	0.122	17667.33975	2155

Sheet: ASK_VES145

Date	5/17/2025		ASK_VES145	Elevation- 1144 m	Direction- 210°N
Location	29.733258	80.32368	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	0.334	18.846	6
2	5	1	3.49	77.73975	271
3	10	1	3.85	313.31475	1206
4	15	1	1.66	705.93975	1172
5	20	1	3.79	1255.61475	4759
6	25	1	3.11	1962.33975	6103
7	30	1	5.25	2826.11475	14837
8	35	1	4.57	3846.93975	17581
9	40	1	6.3	5024.81475	31656
10	45	1	6.93	6359.73975	44073
11	50	1	4.55	7851.71475	35725
12	60	1	7.32	11306.81475	82766
13	70	1	7.61	15390.11475	117119
14	75	1	7.61	17667.33975	134448

Sheet: ASK_VES146

Date	5/18/2025		ASK_VES146	Elevation- 1171 m	Direction- 210°N
Location	29.732345	80.32119	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	0.669	18.846	13
2	5	1	10.66	77.73975	829
3	10	1	3.5	313.31475	1097
4	15	1	1.039	705.93975	733
5	20	1	4.56	1255.61475	5726
6	25	1	18.3	1962.33975	35911
7	30	1	8.43	2826.11475	23824
8	35	1	2.8	3846.93975	10771
9	40	1	10.82	5024.81475	54368
10	45	1	9.52	6359.73975	60545
11	50	1	13.9	7851.71475	109139
12	60	1	5.34	11306.81475	60378
13	70	1	11.75	15390.11475	180834
14	75	1	4.52	17667.33975	79856

Sheet: ASK_VES147

Date	5/18/2025		ASK_VES147	Elevation- 1192 m	Direction- 210°N
Location	29.731855	80.32219	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	52.2	18.846	984
2	5	1	14.8	77.73975	1151
3	10	1	3.5	313.31475	1097
4	15	1	1.96	705.93975	1384
5	20	1	1.53	1255.61475	1921
6	25	1	0.912	1962.33975	1790
7	30	1	1.033	2826.11475	2919
8	35	1	0.325	3846.93975	1250
9	40	1	0.802	5024.81475	4030
10	45	1	0.296	6359.73975	1882
11	50	1	0.538	7851.71475	4224
12	60	1	0.129	11306.81475	1459
13	70	1	0.351	15390.11475	5402
14	75	1	0.758	17667.33975	13392

Sheet: ASK_VES148

Date	5/18/2025		ASK_VES148	Elevation- 1250 m	Direction- 210°N
Location	29.730476	80.32358	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	1.48	18.846	28
2	5	1	2.57	77.73975	200
3	10	1	2.49	313.31475	780
4	15	1	2.77	705.93975	1955
5	20	1	0.256	1255.61475	321
6	25	1	2.21	1962.33975	4337
7	30	1	6.07	2826.11475	17155
8	35	1	5.25	3846.93975	20196
9	40	1	4.59	5024.81475	23064
10	45	1	19.4	6359.73975	123379
11	50	1	12.2	7851.71475	95791
12	60	1	11.23	11306.81475	126976
13	70	1	22.7	15390.11475	349356
14	75	1	32.5	17667.33975	574189

Sheet: ASK_VES149

Date	5/19/2025		ASK_VES149	Elevation- 1069 m	Direction- 210°N
Location	29.736421	80.32967	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	3.83	18.846	72
2	5	1	4.11	77.73975	320
3	10	1	4.12	313.31475	1291
4	15	1	6.14	705.93975	4334
5	20	1	5.64	1255.61475	7082
6	25	1	4.03	1962.33975	7908
7	30	1	3.8	2826.11475	10739
8	35	1	1.51	3846.93975	5809
9	40	1	5.62	5024.81475	28239
10	45	1	0.632	6359.73975	4019
11	50	1	2.5	7851.71475	19629
12	60	1	1.68	11306.81475	18995
13	70	1	3.8	15390.11475	58482
14	75	1	3.77	17667.33975	66606

Sheet: ASK_VES150

Date	5/19/2025		ASK_VES150	Elevation- 1063 m	Direction- 210°N
Location	29.736064	80.32666	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	7.28	18.846	137
2	5	1	6.48	77.73975	504
3	10	1	3.4	313.31475	1065
4	15	1	3.75	705.93975	2647
5	20	1	17.2	1255.61475	21597
6	25	1	10.54	1962.33975	20683
7	30	1	10.53	2826.11475	29759
8	35	1	1.21	3846.93975	4655
9	40	1	1.77	5024.81475	8894
10	45	1	33.3	6359.73975	211779
11	50	1	0.034	7851.71475	267
12	60	1	4.54	11306.81475	51333
13	70	1	6.29	15390.11475	96804
14	75	1	0.948	17667.33975	16749

Sheet: ASK_VES151

Date	5/19/2025		ASK_VES151	Elevation- 1174 m	Direction- 245°N
Location	29.732054	80.32514	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	10.26	18.846	193
2	5	1	3.18	77.73975	247
3	10	1	0.205	313.31475	64
4	15	1	0.017	705.93975	12
5	20	1	4.3	1255.61475	5399
6	25	1	4.47	1962.33975	8772
7	30	1	21.5	2826.11475	60761
8	35	1	7.95	3846.93975	30583
9	40	1	19.8	5024.81475	99491
10	45	1	16.2	6359.73975	103028
11	50	1	12.3	7851.71475	96576
12	60	1	16	11306.81475	180909
13	70	1	8.27	15390.11475	127276
14	75	1	2.67	17667.33975	47172

Sheet: ASK_VES152

Date	5/20/2025		ASK_VES152	Elevation- 1115 m	Direction- 245°N
Location	29.735174	80.32809	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	7.69	18.846	145
2	5	1	3.99	77.73975	310
3	10	1	3.83	313.31475	1200
4	15	1	5.68	705.93975	4010
5	20	1	4.47	1255.61475	5613
6	25	1	9.72	1962.33975	19074
7	30	1	0.803	2826.11475	2269
8	35	1	4.77	3846.93975	18350
9	40	1	4.97	5024.81475	24973
10	45	1	0.794	6359.73975	5050
11	50	1	0.418	7851.71475	3282
12	60	1	0.111	11306.81475	1255
13	70	1	4.12	15390.11475	63407
14	75	1	6.86	17667.33975	121198

Sheet: ASK_VES153

Date	5/20/2025		ASK_VES153	Elevation- 1149 m	Direction- 245°N
Location	29.733486	80.32664	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	2.62	18.846	49
2	5	1	4.2	77.73975	327
3	10	1	3.95	313.31475	1238
4	15	1	8.75	705.93975	6177
5	20	1	18.1	1255.61475	22727
6	25	1	13.9	1962.33975	27277
7	30	1	12.3	2826.11475	34761
8	35	1	30.9	3846.93975	118870
9	40	1	3.77	5024.81475	18944
10	45	1	3.65	6359.73975	23213
11	50	1	13.7	7851.71475	107568
12	60	1	11.17	11306.81475	126297
13	70	1	2.26	15390.11475	34782
14	75	1	0.384	17667.33975	6784

Sheet: ASK_VES154

Date	5/20/2025		ASK_VES154	Elevation- 1117 m	Direction- 245°N
Location	29.734423	80.32498	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	1.61	18.846	30
2	5	1	1.99	77.73975	155
3	10	1	0.128	313.31475	40
4	15	1	5.74	705.93975	4052
5	20	1	2.47	1255.61475	3101
6	25	1	1.72	1962.33975	3375
7	30	1	7.79	2826.11475	22015
8	35	1	4.53	3846.93975	17427
9	40	1	4.94	5024.81475	24823
10	45	1	2.41	6359.73975	15327
11	50	1	0.538	7851.71475	4224

Sheet: ASK_VES155

Date	5/21/2025		ASK_VES155	Elevation- 1302 m	Direction- 245°N
Location	29.765395	80.32874	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	7.75	18.846	146
2	5	1	6.05	77.73975	470
3	10	1	0.794	313.31475	249
4	15	1	3.56	705.93975	2513
5	20	1	3.03	1255.61475	3805
6	25	1	4.12	1962.33975	8085
7	30	1	6.09	2826.11475	17211
8	35	1	3.53	3846.93975	13580
9	40	1	3.3	5024.81475	16582
10	45	1	5.45	6359.73975	34661
11	50	1	5.96	7851.71475	46796
12	60	1	2.88	11306.81475	32564

Sheet: ASK_VES156

Date	5/21/2025		ASK_VES156	Elevation- 1293 m	Direction- 245°N
Location	29.764302	80.32972	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	3.55	18.846	67
2	5	1	1.49	77.73975	116
3	10	1	6.55	313.31475	2052
4	15	1	0.504	705.93975	356
5	20	1	1.49	1255.61475	1871
6	25	1	3.97	1962.33975	7790
7	30	1	5.49	2826.11475	15515
8	35	1	7.65	3846.93975	29429
9	40	1	6.91	5024.81475	34721
10	45	1	3.91	6359.73975	24867
11	50	1	11.51	7851.71475	90373
12	60	1	5.94	11306.81475	67162
13	70	1	1.41	15390.11475	21700
14	75	1	4.24	17667.33975	74910

Sheet: ASK_VES157

Date	5/21/2025		ASK_VES157	Elevation- 1235 m	Direction- 245°N
Location	29.761585	80.33395	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	4.25	18.846	80
2	5	1	0.994	77.73975	77
3	10	1	0.395	313.31475	124
4	15	1	0.354	705.93975	250
5	20	1	0.196	1255.61475	246
6	25	1	0.11	1962.33975	216
7	30	1	0.083	2826.11475	235
8	35	1	0.057	3846.93975	219
9	40	1	0.004	5024.81475	20
10	45	1	0.104	6359.73975	661
11	50	1	0.344	7851.71475	2701
12	60	1	0.171	11306.81475	1933
13	70	1	0.973	15390.11475	14975
14	75	1	0.171	17667.33975	3021

Sheet: ASK_VES158

Date	5/22/2025		ASK_VES158	Elevation- 1066 m	Direction- 245°N
Location	29.736786	80.32169	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	49.1	18.846	925
2	5	1	8.39	77.73975	652
3	10	1	1.73	313.31475	542
4	15	1	0.687	705.93975	485
5	20	1	0.338	1255.61475	424
6	25	1	0.225	1962.33975	442
7	30	1	0.138	2826.11475	390
8	35	1	0.091	3846.93975	350
9	40	1	0.067	5024.81475	337
10	45	1	0.052	6359.73975	331
11	50	1	0.043	7851.71475	338
12	60	1	0.016	11306.81475	181
13	70	1	0.022	15390.11475	339
14	75	1	0.026	17667.33975	459

Sheet: ASK_VES159

Date	5/22/2025		ASK_VES159	Elevation- 1073 m	Direction- 245°N
Location	29.738829	80.32268	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	60.6	18.846	1142
2	5	1	13.1	77.73975	1018
3	10	1	1.95	313.31475	611
4	15	1	1.37	705.93975	967
5	20	1	1.059	1255.61475	1330
6	25	1	0.846	1962.33975	1660
7	30	1	0.681	2826.11475	1925
8	35	1	0.634	3846.93975	2439
9	40	1	0.589	5024.81475	2960
10	45	1	0.59	6359.73975	3752
11	50	1	0.512	7851.71475	4020
12	60	1	0.421	11306.81475	4760
13	70	1	0.381	15390.11475	5864
14	75	1	0.398	17667.33975	7032

Sheet: ASK_VES160

Date	5/22/2025		ASK_VES160	Elevation- 1083 m	Direction- 245°N
Location	29.739193	80.3221	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	54.1	18.846	1020
2	5	1	12.3	77.73975	956
3	10	1	3.12	313.31475	978
4	15	1	2.42	705.93975	1708
5	20	1	1.26	1255.61475	1582
6	25	1	2.28	1962.33975	4474
7	30	1	1.97	2826.11475	5567
8	35	1	3.73	3846.93975	14349
9	40	1	2.19	5024.81475	11004
10	45	1	3.92	6359.73975	24930
11	50	1	2.58	7851.71475	20257
12	60	1	1.48	11306.81475	16734

Sheet: ASK_VES161

Date	5/23/2025		ASK_VES161	Elevation- 1184 m	Direction- 255°N
Location	29.736451	80.31922	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	40.7	18.846	767
2	5	1	45.1	77.73975	3506
3	10	1	39.8	313.31475	12470
4	15	1	44.3	705.93975	31273
5	20	1	47.4	1255.61475	59516
6	25	1	66.7	1962.33975	130888
7	30	1	60.4	2826.11475	170697
8	35	1	62.3	3846.93975	239664
9	40	1	78.4	5024.81475	393945
10	45	1	0.956	6359.73975	6080
11	50	1	1.23	7851.71475	9658

Sheet: ASK_VES162

Date	5/23/2025		ASK_VES162	Elevation- 1248 m	Direction- 255°N
Location	29.735079	80.31748	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	11.77	18.846	222
2	5	1	47	77.73975	3654
3	10	1	10.93	313.31475	3425
4	15	1	1.26	705.93975	889
5	20	1	13.5	1255.61475	16951
6	25	1	5.29	1962.33975	10381
7	30	1	2.95	2826.11475	8337
8	35	1	0.188	3846.93975	723
9	40	1	3.83	5024.81475	19245
10	45	1	1.23	6359.73975	7822
11	50	1	15.1	7851.71475	118561
12	60	1	18.5	11306.81475	209176
13	70	1	40.8	15390.11475	627917
14	75	1	8.13	17667.33975	143635

Sheet: ASK_VES163

Date	5/23/2025		ASK_VES163	Elevation- 1265 m	Direction- 255°N
Location	29.733485	80.31644	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	7.45	18.846	140
2	5	1	45	77.73975	3498
3	10	1	8.93	313.31475	2798
4	15	1	37.4	705.93975	26402
5	20	1	34.9	1255.61475	43821
6	25	1	39.4	1962.33975	77316
7	30	1	51	2826.11475	144132
8	35	1	0.551	3846.93975	2120
9	40	1	0.338	5024.81475	1698
10	45	1	0.572	6359.73975	3638
11	50	1	0.215	7851.71475	1688
12	60	1	0.449	11306.81475	5077
13	70	1	0.687	15390.11475	10573
14	75	1	14.4	17667.33975	254410

Sheet: ASK_VES164

Date	5/24/2025		ASK_VES164	Elevation- 1247 m	Direction- 255°N
Location	29.731971	80.31808	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	170	18.846	3204
2	5	1	58.2	77.73975	4524
3	10	1	11.55	313.31475	3619
4	15	1	4.31	705.93975	3043
5	20	1	2.78	1255.61475	3491
6	25	1	1.38	1962.33975	2708
7	30	1	0.852	2826.11475	2408
8	35	1	0.574	3846.93975	2208
9	40	1	0.321	5024.81475	1613
10	45	1	0.208	6359.73975	1323
11	50	1	0.09	7851.71475	707
12	60	1	5.96	11306.81475	67389
13	70	1	10.52	15390.11475	161904
14	75	1	7.41	17667.33975	130915

Sheet: ASK_VES165

Date	5/24/2025		ASK_VES164	Elevation- 1248 m	Direction- 255°N
Location	29.732294	80.31723	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	38.6	18.846	727
2	5	1	4.68	77.73975	364
3	10	1	16.5	313.31475	5170
4	15	1	19.3	705.93975	13625
5	20	1	37.5	1255.61475	47086
6	25	1	20.8	1962.33975	40817
7	30	1	8.56	2826.11475	24192
8	35	1	8.27	3846.93975	31814
9	40	1	9.64	5024.81475	48439
10	45	1	15.9	6359.73975	101120
11	50	1	15.3	7851.71475	120131
12	60	1	5.88	11306.81475	66484
13	70	1	3.43	15390.11475	52788
14	75	1	4.93	17667.33975	87100

Sheet: ASK_VES166

Date	5/24/2025		ASK_VES166	Elevation- 1260 m	Direction- 255°N
Location	29.732954	80.31647	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	5.61	18.846	106
2	5	1	7.16	77.73975	557
3	10	1	9.2	313.31475	2882
4	15	1	12.7	705.93975	8965
5	20	1	32	1255.61475	40180
6	25	1	3.41	1962.33975	6692
7	30	1	9.51	2826.11475	26876
8	35	1	25.8	3846.93975	99251
9	40	1	31.1	5024.81475	156272
10	45	1	39.4	6359.73975	250574
11	50	1	30.3	7851.71475	237907
12	60	1	45	11306.81475	508807
13	70	1	31	15390.11475	477094
14	75	1	33	17667.33975	583022

Sheet: ASK_VES167

Date	5/26/2025		ASK_VES167	Elevation- 1286 m	Direction- 255°N
Location	29.728945	80.3217	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	37.2	18.846	701
2	5	1	8.45	77.73975	657
3	10	1	2.96	313.31475	927
4	15	1	1.85	705.93975	1306
5	20	1	1.42	1255.61475	1783
6	25	1	0.681	1962.33975	1336
7	30	1	0.643	2826.11475	1817
8	35	1	0.428	3846.93975	1646
9	40	1	0.056	5024.81475	281
10	45	1	0.086	6359.73975	547
11	50	1	0.032	7851.71475	251
12	60	1	1.95	11306.81475	22048
13	70	1	1.196	15390.11475	18407
14	75	1	2.18	17667.33975	38515

Sheet: ASK_VES168

Date	5/26/2025		ASK_VES168	Elevation - 1258 m	Direction- 255°N
Location	29.729916	80.32023	Village:	Near Askot Village ground	
Sl no.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	12.5	18.846	236
2	5	1	11.26	77.73975	875
3	10	1	7.58	313.31475	2375
4	15	1	13.4	705.93975	9460
5	20	1	9.09	1255.61475	11414
6	25	1	12.1	1962.33975	23744
7	30	1	6.53	2826.11475	18455
8	35	1	4.61	3846.93975	17734
9	40	1	4.09	5024.81475	20551
10	45	1	11.46	6359.73975	72883
11	50	1	3.89	7851.71475	30543
12	60	1	0.222	11306.81475	2510
13	70	1	5.51	15390.11475	84800
14	75	1	0.879	17667.33975	15530

Sheet: ASK_VES169

Date	5/26/2025		ASK_VES169	Elevation- 1260 m	Direction- 255°N
Location	29.731062	80.3194	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	31.2	18.846	588
2	5	1	13.1	77.73975	1018
3	10	1	5.02	313.31475	1573
4	15	1	1.9	705.93975	1341
5	20	1	1.33	1255.61475	1670
6	25	1	0.822	1962.33975	1613
7	30	1	0.63	2826.11475	1780
8	35	1	0.249	3846.93975	958
9	40	1	0.336	5024.81475	1688
10	45	1	0.034	6359.73975	216
11	50	1	0.031	7851.71475	243
12	60	1	0.208	11306.81475	2352
13	70	1	0.007	15390.11475	108
14	75	1	0.728	17667.33975	12862

Sheet: ASK_VES170

Date	5/26/2025		ASK_VES170	Elevation- 1239 m	Direction- 275°N
Location	29.731708	80.31888	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	24.7	18.846	465
2	5	1	9.14	77.73975	711
3	10	1	1.95	313.31475	611
4	15	1	3.06	705.93975	2160
5	20	1	0.237	1255.61475	298
6	25	1	0.105	1962.33975	206
7	30	1	0.218	2826.11475	616
8	35	1	0.566	3846.93975	2177
9	40	1	1.72	5024.81475	8643
10	45	1	0.247	6359.73975	1571
11	50	1	0.306	7851.71475	2403
12	60	1	0.072	11306.81475	814
13	70	1	0.82	15390.11475	12620
14	75	1	1.49	17667.33975	26324

Sheet: ASK_VES171

Date	5/27/2025		ASK_VES171	Elevation- 983 m	Direction- 275°N
Location	29.755069	80.3483	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	23.6	18.846	445
2	5	1	8.19	77.73975	637
3	10	1	1.7	313.31475	533
4	15	1	0.886	705.93975	625
5	20	1	0.71	1255.61475	891
6	25	1	0.531	1962.33975	1042
7	30	1	0.396	2826.11475	1119
8	35	1	0.102	3846.93975	392
9	40	1	0.312	5024.81475	1568
10	45	1	0.012	6359.73975	76
11	50	1	0.02	7851.71475	157
12	60	1	0.012	11306.81475	136
13	70	1	0.179	15390.11475	2755
14	75	1	0.019	17667.33975	336

Sheet: ASK_VES172

Date	5/27/2025		ASK_VES172	Elevation- 1098 m	Direction- 275°N
Location	29.75711	80.34534	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	9.04	18.846	170
2	5	1	3.71	77.73975	288
3	10	1	0.991	313.31475	310
4	15	1	1.64	705.93975	1158
5	20	1	0.818	1255.61475	1027
6	25	1	1.33	1962.33975	2610
7	30	1	0.506	2826.11475	1430
8	35	1	0.009	3846.93975	35
9	40	1	0.238	5024.81475	1196
10	45	1	0.654	6359.73975	4159
11	50	1	0.077	7851.71475	605
12	60	1	1.38	11306.81475	15603
13	70	1	0.588	15390.11475	9049
14	75	1	2.56	17667.33975	45228

Sheet: ASK_VES173

Date	5/27/2025		ASK_VES173	Elevation- 1187 m	Direction- 275°N
Location	29.759293	80.34253	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	3.09	18.846	58
2	5	1	2.19	77.73975	170
3	10	1	1.75	313.31475	548
4	15	1	1.3	705.93975	918
5	20	1	1.32	1255.61475	1657
6	25	1	0.827	1962.33975	1623
7	30	1	2.72	2826.11475	7687
8	35	1	0.94	3846.93975	3616
9	40	1	1.42	5024.81475	7135
10	45	1	0.53	6359.73975	3371
11	50	1	1.95	7851.71475	15311
12	60	1	2.11	11306.81475	23857
13	70	1	2.3	15390.11475	35397
14	75	1	0.238	17667.33975	4205

Sheet: ASK_VES174

Date	5/27/2025		ASK_VES174	Elevation- 1268 m	Direction- 275°N
Location	29.760858	80.33945	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	7.52	18.846	142
2	5	1	1.53	77.73975	119
3	10	1	0.645	313.31475	202
4	15	1	0.027	705.93975	19
5	20	1	0.161	1255.61475	202
6	25	1	0.198	1962.33975	389
7	30	1	0.485	2826.11475	1371
8	35	1	0.085	3846.93975	327
9	40	1	1.44	5024.81475	7236
10	45	1	0.169	6359.73975	1075
11	50	1	1.93	7851.71475	15154
12	60	1	0.621	11306.81475	7022
13	70	1	2.99	15390.11475	46016
14	75	1	6.54	17667.33975	115544

Sheet: ASK_VES175

Date	5/28/2025		ASK_VES175	Elevation- 973 m	Direction- 275°N
Location	29.751819	80.34297	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	8.52	18.846	161
2	5	1	2.12	77.73975	165
3	10	1	0.45	313.31475	141
4	15	1	0.233	705.93975	164
5	20	1	0.371	1255.61475	466
6	25	1	0.365	1962.33975	716
7	30	1	0.309	2826.11475	873
8	35	1	0.226	3846.93975	869
9	40	1	0.442	5024.81475	2221
10	45	1	0.475	6359.73975	3021
11	50	1	0.406	7851.71475	3188
12	60	1	0.121	11306.81475	1368
13	70	1	1.017	15390.11475	15652
14	75	1	0.63	17667.33975	11130

Sheet: ASK_VES176

Date	5/28/2025		ASK_VES176	Elevation- 979 m	Direction- 275°N
Location	29.751469	80.34409	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	8.96	18.846	169
2	5	1	0.322	77.73975	25
3	10	1	1.89	313.31475	592
4	15	1	0.435	705.93975	307
5	20	1	1.38	1255.61475	1733
6	25	1	1.43	1962.33975	2806
7	30	1	0.706	2826.11475	1995
8	35	1	0.836	3846.93975	3216
9	40	1	1.6	5024.81475	8040
10	45	1	0.204	6359.73975	1297
11	50	1	0.07	7851.71475	550
12	60	1	1.144	11306.81475	12935
13	70	1	2.31	15390.11475	35551
14	75	1	2.49	17667.33975	43992

Sheet: ASK_VES177

Date	5/28/2025		ASK_VES177	Elevation- 1040 m	Direction- 275°N
Location	29.752885	80.34402	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	5.91	18.846	111
2	5	1	1.119	77.73975	87
3	10	1	0.269	313.31475	84
4	15	1	0.066	705.93975	47
5	20	1	0.051	1255.61475	64
6	25	1	0.034	1962.33975	67
7	30	1	0.025	2826.11475	71
8	35	1	0.036	3846.93975	138
9	40	1	0.053	5024.81475	266
10	45	1	0.003	6359.73975	19
11	50	1	0.044	7851.71475	345
12	60	1	0.014	11306.81475	158
13	70	1	0.009	15390.11475	139
14	75	1	0.015	17667.33975	265

Sheet: ASK_VES178

Date	5/29/2025		ASK_VES178	Elevation- 1004	Direction- 275°N
Location	29.753101	80.34242	Village:	Near Rasgari Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	11.92	18.846	225
2	5	1	14.4	77.73975	1119
3	10	1	24.8	313.31475	7770
4	15	1	19.5	705.93975	13766
5	20	1	15.2	1255.61475	19085
6	25	1	33.4	1962.33975	65542
7	30	1	18.6	2826.11475	52566
8	35	1	22.8	3846.93975	87710
9	40	1	18.4	5024.81475	92457
10	45	1	24.1	6359.73975	153270
11	50	1	33.5	7851.71475	263032
12	60	1	22.6	11306.81475	255534
13	70	1	24.4	15390.11475	375519
14	75	1	21.8	17667.33975	385148

Sheet: ASK_VES179

Date	5/29/2025		ASK_VES179	Elevation- 1081 m	Direction- 275°N
Location	29.754468	80.34375	Village:	Near Baira Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	3.14	18.846	59
2	5	1	7.4	77.73975	575
3	10	1	7.48	313.31475	2344
4	15	1	22.5	705.93975	15884
5	20	1	6.74	1255.61475	8463
6	25	1	6.82	1962.33975	13383
7	30	1	7.81	2826.11475	22072
8	35	1	7.9	3846.93975	30391
9	40	1	6.23	5024.81475	31305
10	45	1	3.5	6359.73975	22259
11	50	1	1.74	7851.71475	13662
12	60	1	3.59	11306.81475	40591
13	70	1	7.45	15390.11475	114656
14	75	1	0.897	17667.33975	15848

Sheet: ASK_VES180

Date	5/29/2025		ASK_VES180	Elevation- 1066 m	Direction- 275°N
Location	29.75499	80.34627	Village:	Near Toonikhola Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	2.31	18.846	44
2	5	1	0.376	77.73975	29
3	10	1	0.792	313.31475	248
4	15	1	0.332	705.93975	234
5	20	1	0.2	1255.61475	251
6	25	1	0.162	1962.33975	318
7	30	1	0.13	2826.11475	367
8	35	1	0.11	3846.93975	423
9	40	1	0.11	5024.81475	553
10	45	1	1.25	6359.73975	7950
11	50	1	3.43	7851.71475	26931
12	60	1	0.627	11306.81475	7089
13	70	1	1.26	15390.11475	19392
14	75	1	5.25	17667.33975	92754

Sheet: ASK_VES181

Date	5/30/2025		ASK_VES181	Elevation- 1078 m	Direction- 300°N
Location	29.759657	80.3319	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	40.5	18.846	763
2	5	1	7	77.73975	544
3	10	1	1.36	313.31475	426
4	15	1	0.525	705.93975	371
5	20	1	0.15	1255.61475	188
6	25	1	0.18	1962.33975	353
7	30	1	0.271	2826.11475	766
8	35	1	0.487	3846.93975	1873
9	40	1	0.245	5024.81475	1231
10	45	1	0.158	6359.73975	1005
11	50	1	0.211	7851.71475	1657
12	60	1	0.048	11306.81475	543
13	70	1	0.103	15390.11475	1585
14	75	1	0.542	17667.33975	9576

Sheet: ASK_VES182

Date	5/30/2025		ASK_VES182	Elevation- 1130 m	Direction- 300°N
Location	29.757121	80.33431	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	28.7	18.846	541
2	5	1	9.72	77.73975	756
3	10	1	2.97	313.31475	931
4	15	1	1.116	705.93975	788
5	20	1	0.456	1255.61475	573
6	25	1	0.13	1962.33975	255
7	30	1	0.015	2826.11475	42
8	35	1	0.006	3846.93975	23
9	40	1	0.021	5024.81475	106
10	45	1	0.071	6359.73975	452
11	50	1	0.097	7851.71475	762
12	60	1	0.449	11306.81475	5077
13	70	1	0.047	15390.11475	723
14	75	1	0.036	17667.33975	636

Sheet: ASK_VES183

Date	5/30/2025		ASK_VES183	Elevation- 1148 m	Direction- 300°N
Location	29.756773	80.33447	Village:	Near Baragaon Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	1.46	18.846	28
2	5	1	0.184	77.73975	14
3	10	1	0.087	313.31475	27
4	15	1	0.077	705.93975	54
5	20	1	0.036	1255.61475	45
6	25	1	0.196	1962.33975	385
7	30	1	1.41	2826.11475	3985
8	35	1	0.189	3846.93975	727
9	40	1	0.173	5024.81475	869
10	45	1	0.132	6359.73975	839
11	50	1	0.075	7851.71475	589
12	60	1	0.015	11306.81475	170
13	70	1	0.081	15390.11475	1247
14	75	1	0.12	17667.33975	2120

Sheet: ASK_VES184

Date	5/31/2025		ASK_VES184	Elevation- 1060 m	Direction- 300°N
Location	29.755835	80.32777	Village:	Near Ghatyuri Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	17.4	18.846	328
2	5	1	2.38	77.73975	185
3	10	1	0.202	313.31475	63
4	15	1	0.388	705.93975	274
5	20	1	0.779	1255.61475	978
6	25	1	0.173	1962.33975	339
7	30	1	0.142	2826.11475	401
8	35	1	0.382	3846.93975	1470
9	40	1	0.215	5024.81475	1080
10	45	1	0.331	6359.73975	2105
11	50	1	0.366	7851.71475	2874
12	60	1	0.307	11306.81475	3471
13	70	1	0.079	15390.11475	1216
14	75	1	0.05	17667.33975	883

Sheet: ASK_VES185

Date	5/31/2025		ASK_VES185	Elevation- 1128 m	Direction- 300°N
Location	29.757529	80.32539	Village:	Near Ghatyuri Village	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	30.6	18.846	577
2	5	1	9	77.73975	700
3	10	1	1.135	313.31475	356
4	15	1	0.465	705.93975	328
5	20	1	1.65	1255.61475	2072
6	25	1	1.002	1962.33975	1966
7	30	1	2.19	2826.11475	6189
8	35	1	1.025	3846.93975	3943
9	40	1	2.17	5024.81475	10904
10	45	1	0.576	6359.73975	3663
11	50	1	0.134	7851.71475	1052
12	60	1	0.202	11306.81475	2284
13	70	1	0.32	15390.11475	4925
14	75	1	0.243	17667.33975	4293

Sheet: ASK_VES186

Date	5/31/2025		ASK_VES186	Elevation- 1183 m	Direction- 300°N
Location	29.75905	80.32367	Village:	Near Ghatyuri Village	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	10.09	18.846	190
2	5	1	3.42	77.73975	266
3	10	1	1.49	313.31475	467
4	15	1	0.712	705.93975	503
5	20	1	0.475	1255.61475	596
6	25	1	0.563	1962.33975	1105
7	30	1	0.329	2826.11475	930
8	35	1	0.138	3846.93975	531
9	40	1	0.035	5024.81475	176
10	45	1	0.43	6359.73975	2735
11	50	1	18.3	7851.71475	143686
12	60	1	10.24	11306.81475	115782
13	70	1	7.91	15390.11475	121736
14	75	1	8.92	17667.33975	157593

Sheet: ASK_VES187

Date	5/31/2025		ASK_VES187	Elevation- 1188 m	Direction- 310°N
Location	29.758487	80.33856	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	9.73	18.846	183
2	5	1	2.5	77.73975	194
3	10	1	0.739	313.31475	232
4	15	1	0.234	705.93975	165
5	20	1	0.083	1255.61475	104
6	25	1	0.003	1962.33975	6
7	30	1	0.056	2826.11475	158
8	35	1	0.054	3846.93975	208
9	40	1	0.002	5024.81475	10
10	45	1	0.046	6359.73975	293
11	50	1	0.01	7851.71475	79
12	60	1	0.009	11306.81475	102
13	70	1	0.01	15390.11475	154
14	75	1	0.006	17667.33975	106

Sheet: ASK_VES188

Date	6/1/2025		ASK_VES188	Elevation- 1265 m	Direction- 310°N
Location	29.760109	80.3357	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	9.73	18.846	183
2	5	1	2.5	77.73975	194
3	10	1	0.739	313.31475	232
4	15	1	0.234	705.93975	165
5	20	1	0.083	1255.61475	104
6	25	1	0.003	1962.33975	6
7	30	1	0.056	2826.11475	158
8	35	1	0.054	3846.93975	208
9	40	1	0.002	5024.81475	10
10	45	1	0.046	6359.73975	293
11	50	1	0.01	7851.71475	79
12	60	1	0.009	11306.81475	102
13	70	1	0.01	15390.11475	154
14	75	1	0.006	17667.33975	106

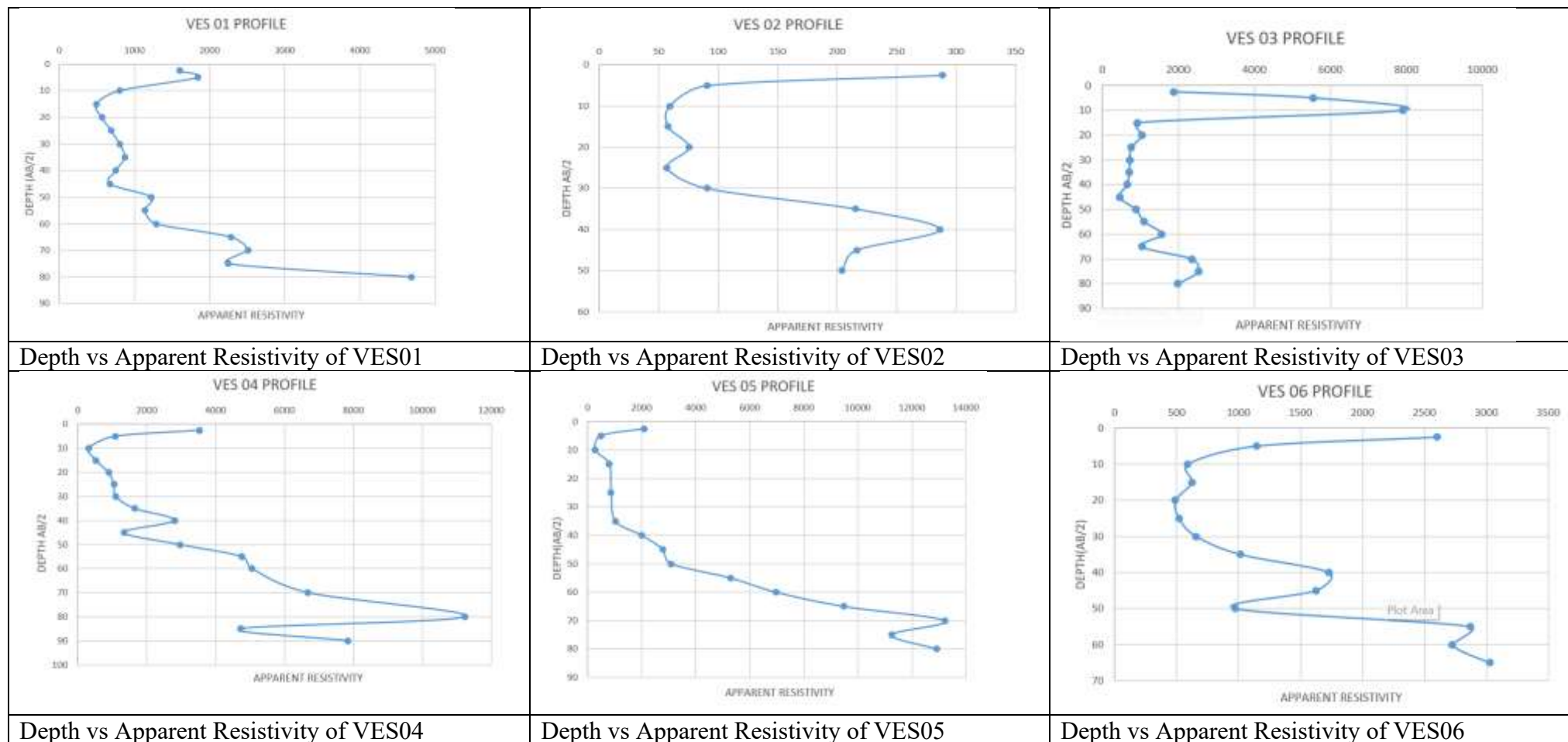
Sheet: ASK_VES189

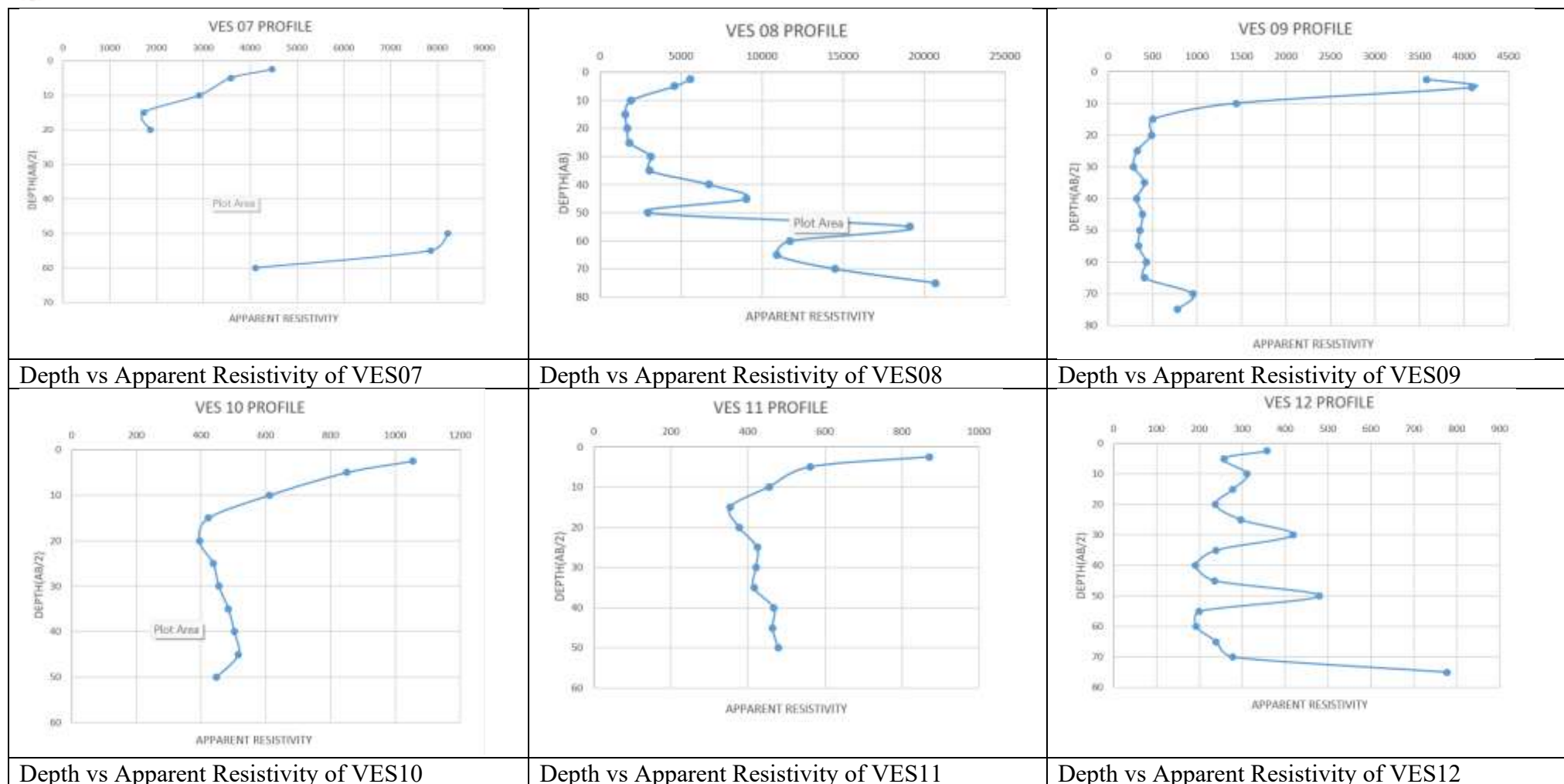
Date	6/1/2025		ASK_VES189	Elevation- 1231 m	Direction- 310°N
Location	29.760182	80.32204	Village:	Near Askot Village ground	
SI No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	62.7	18.846	1182
2	5	1	11.03	77.73975	857
3	10	1	1.49	313.31475	467
4	15	1	0.35	705.93975	247
5	20	1	0.01	1255.61475	13
6	25	1	0.018	1962.33975	35
7	30	1	0.026	2826.11475	73
8	35	1	0.003	3846.93975	12
9	40	1	0.008	5024.81475	40
10	45	1	0.055	6359.73975	350
11	50	1	0.049	7851.71475	385
12	60	1	0.027	11306.81475	305
13	70	1	0.013	15390.11475	200
14	75	1	0.044	17667.33975	777

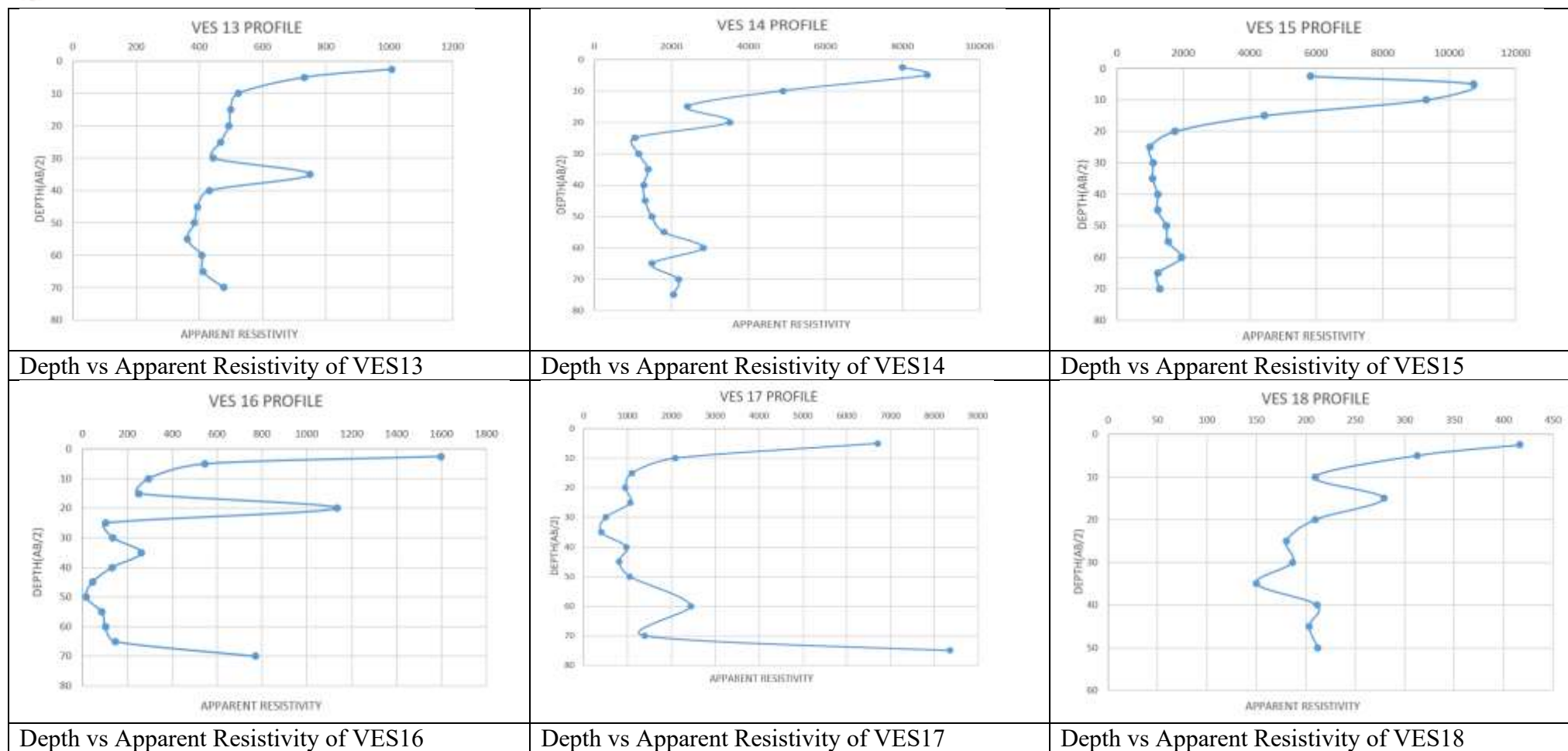
Sheet: ASK_VES190

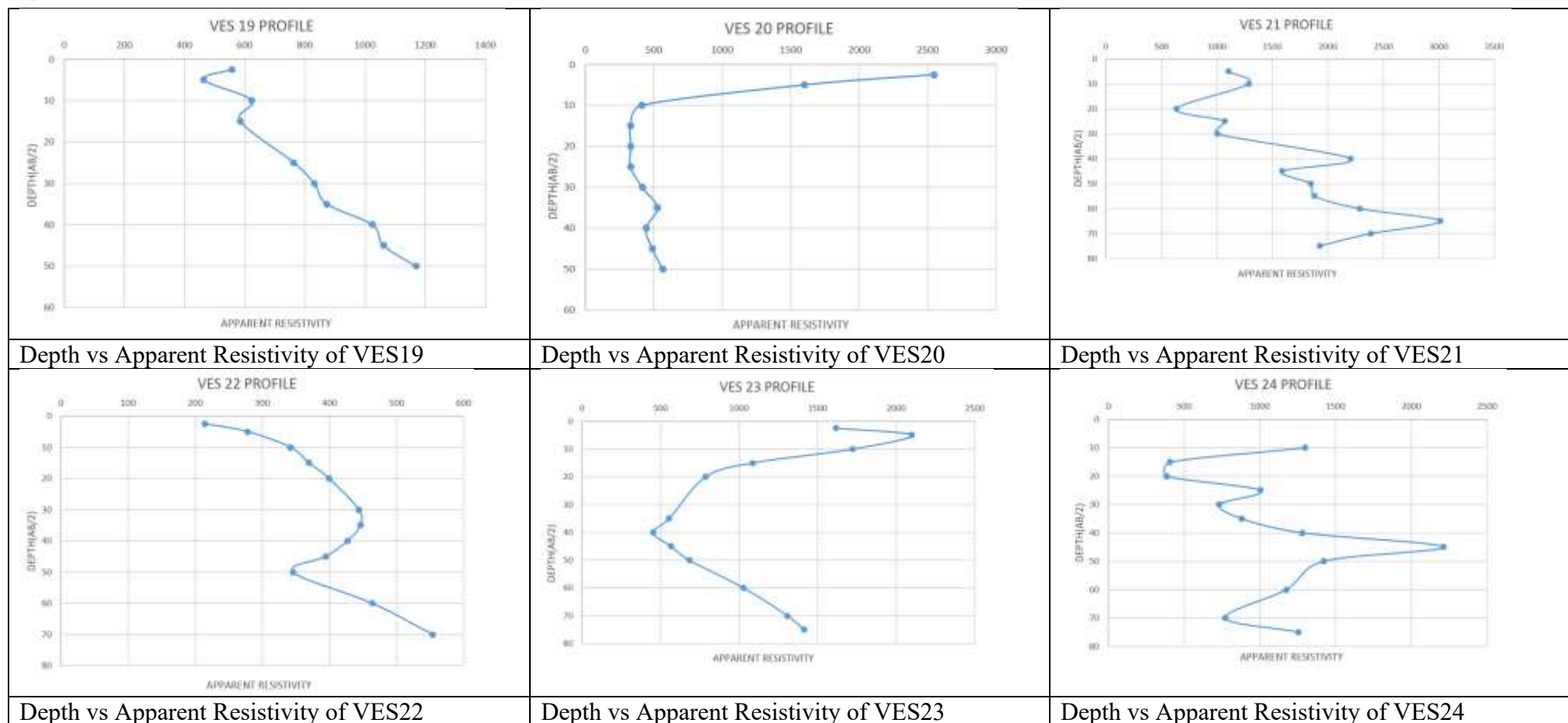
Date	6/1/2025		ASK_VES190	Elevation- 1357 m	Direction- 310°N
Location	29.761389	80.32042	Village:	Near Askot Village ground	
Sl No.	Current Electrode Spacing (AB/2)	Potential Electrode Spacing (MN)	Resistance (Ohm)	K value	Aparent Resistivity (Rho_a)
1	2.5	1	21.6	18.846	407
2	5	1	2.26	77.73975	176
3	10	1	0.105	313.31475	33
4	15	1	0.185	705.93975	131
5	20	1	0.487	1255.61475	611
6	25	1	0.106	1962.33975	208
7	30	1	0.69	2826.11475	1950
8	35	1	0.262	3846.93975	1008
9	40	1	0.291	5024.81475	1462
10	45	1	0.433	6359.73975	2754
11	50	1	0.83	7851.71475	6517
12	60	1	0.255	11306.81475	2883
13	70	1	0.016	15390.11475	246
14	75	1	0.371	17667.33975	6555

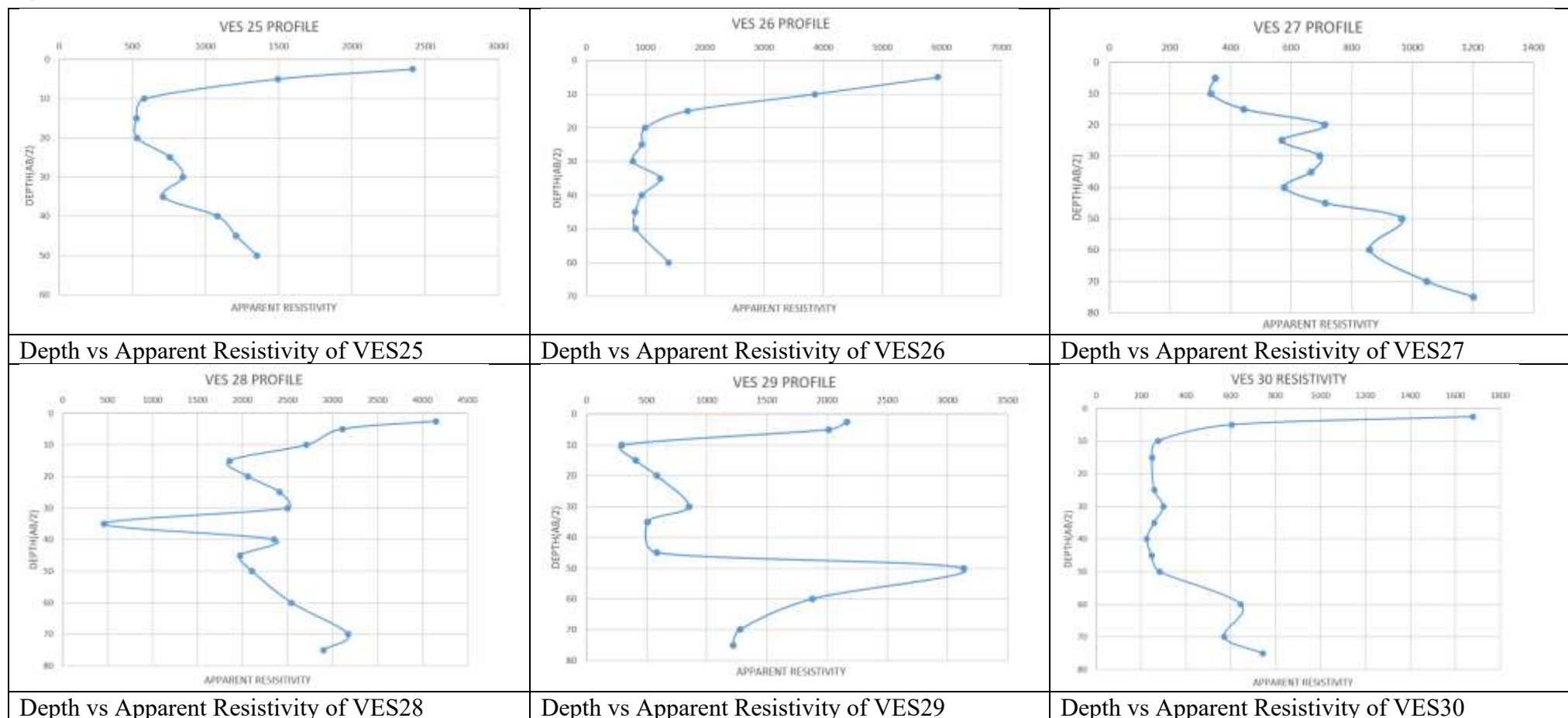
Annexure XII_2D models of Geophysical (VES) survey

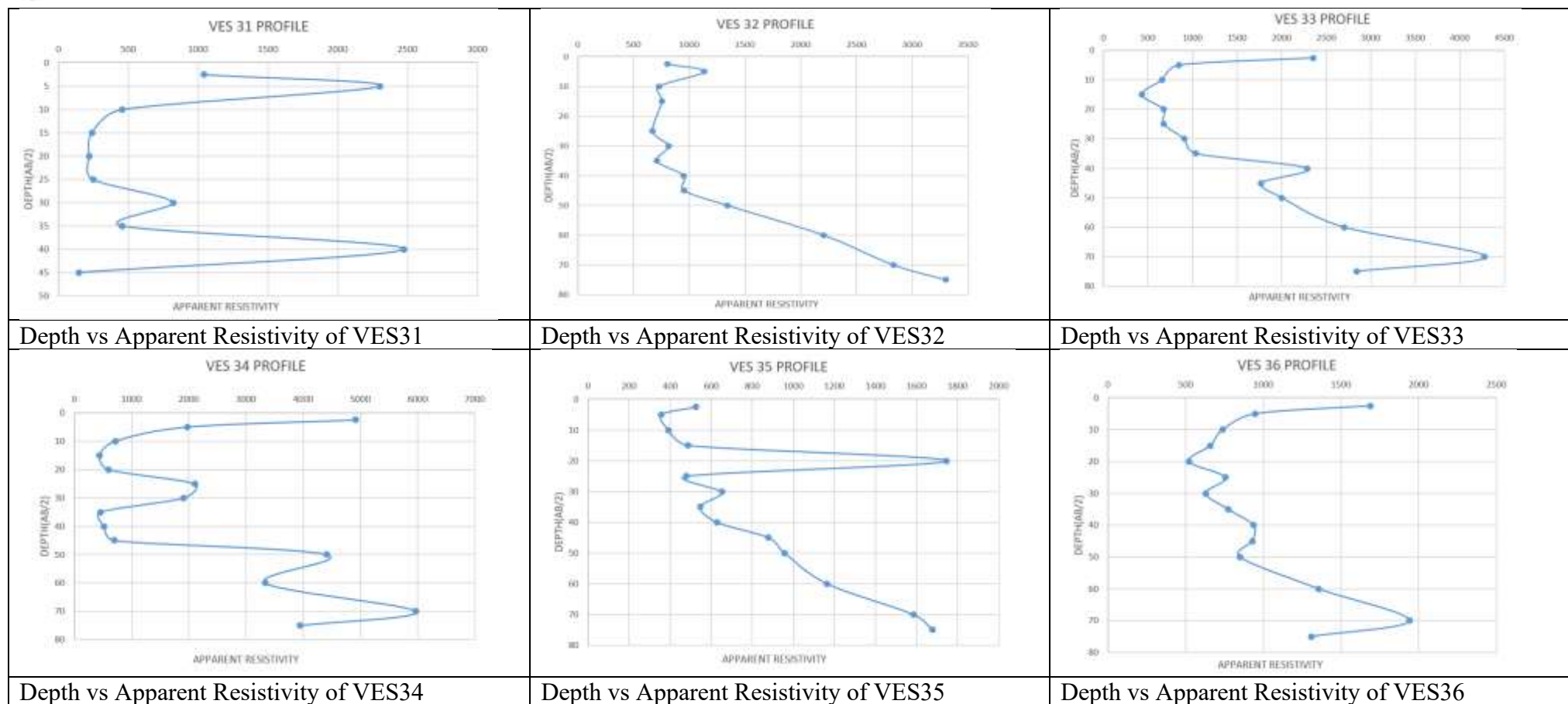


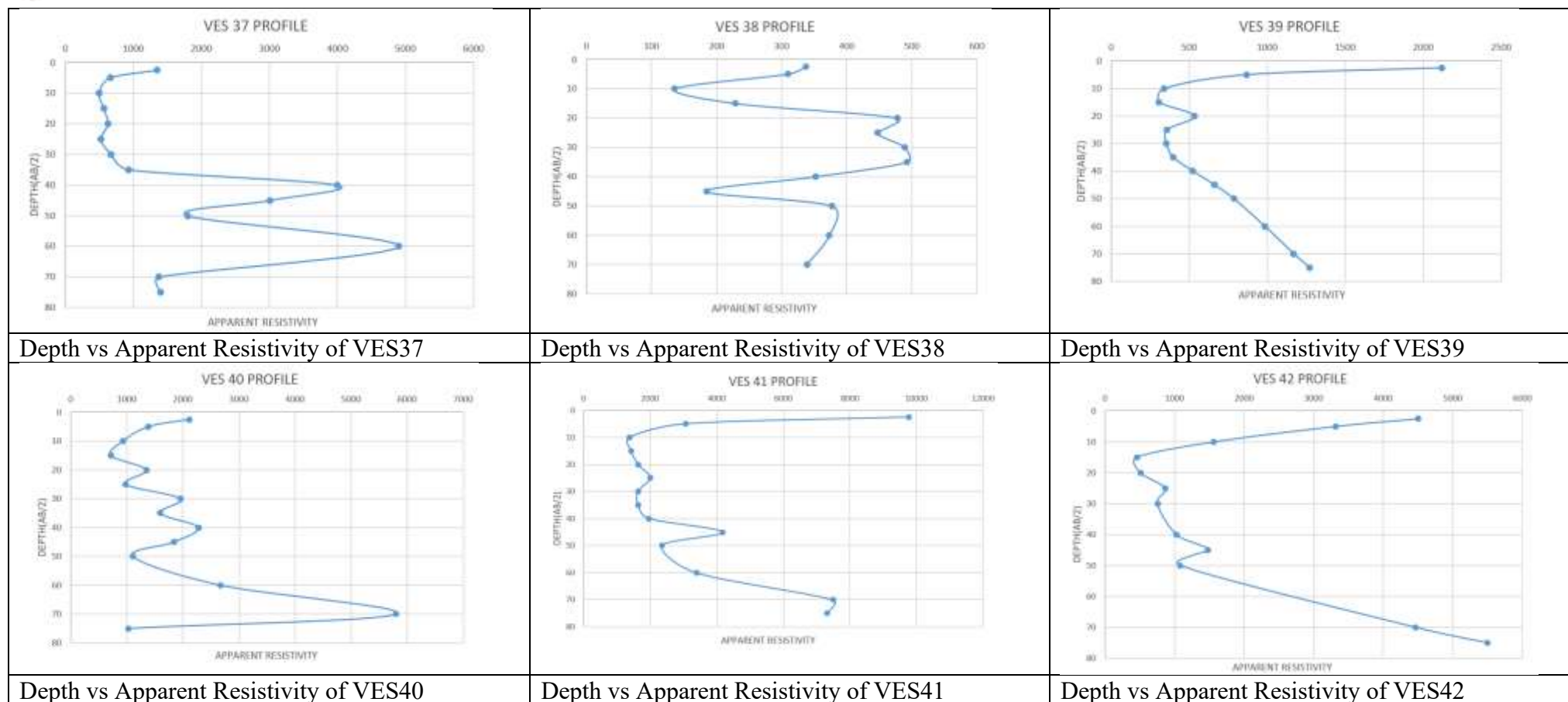


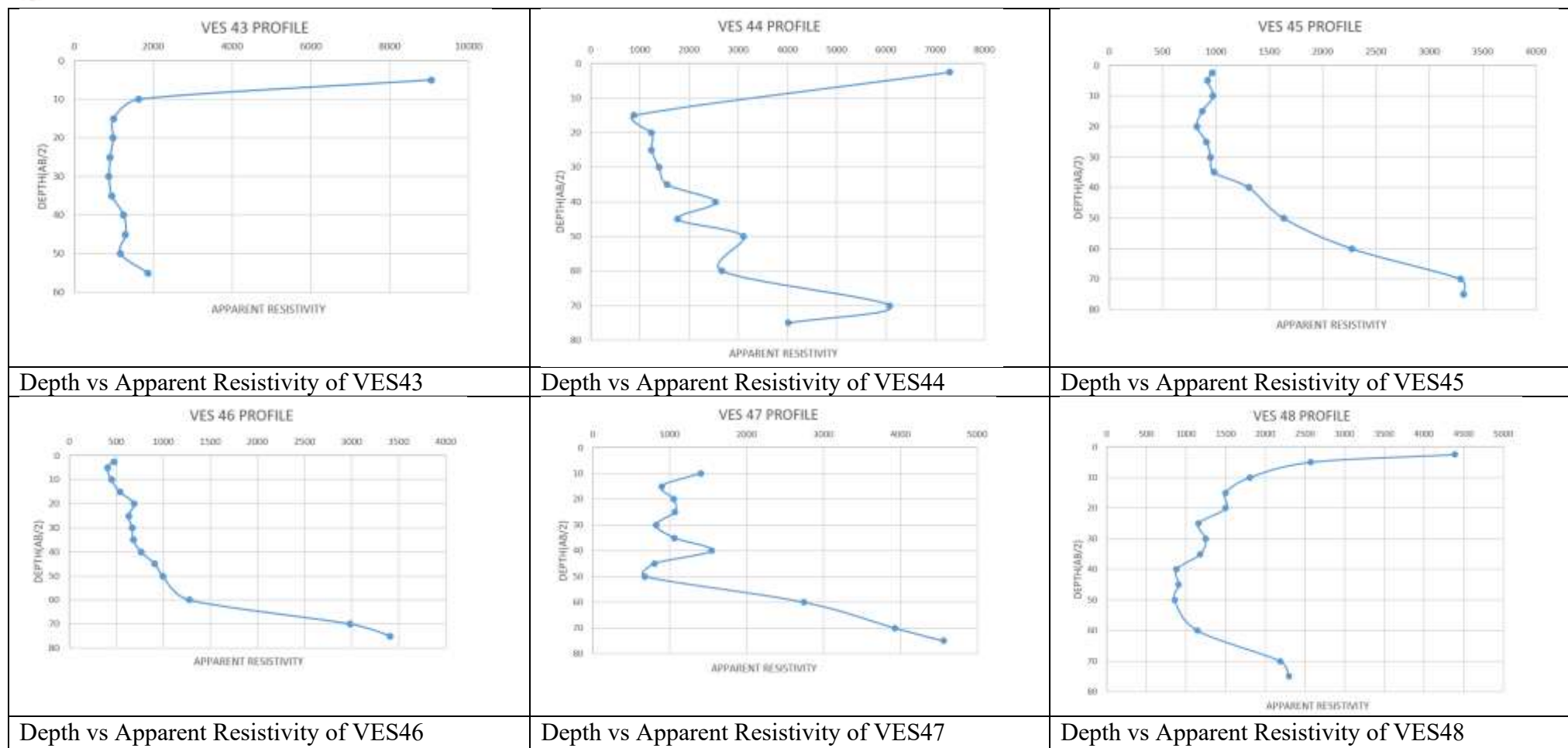


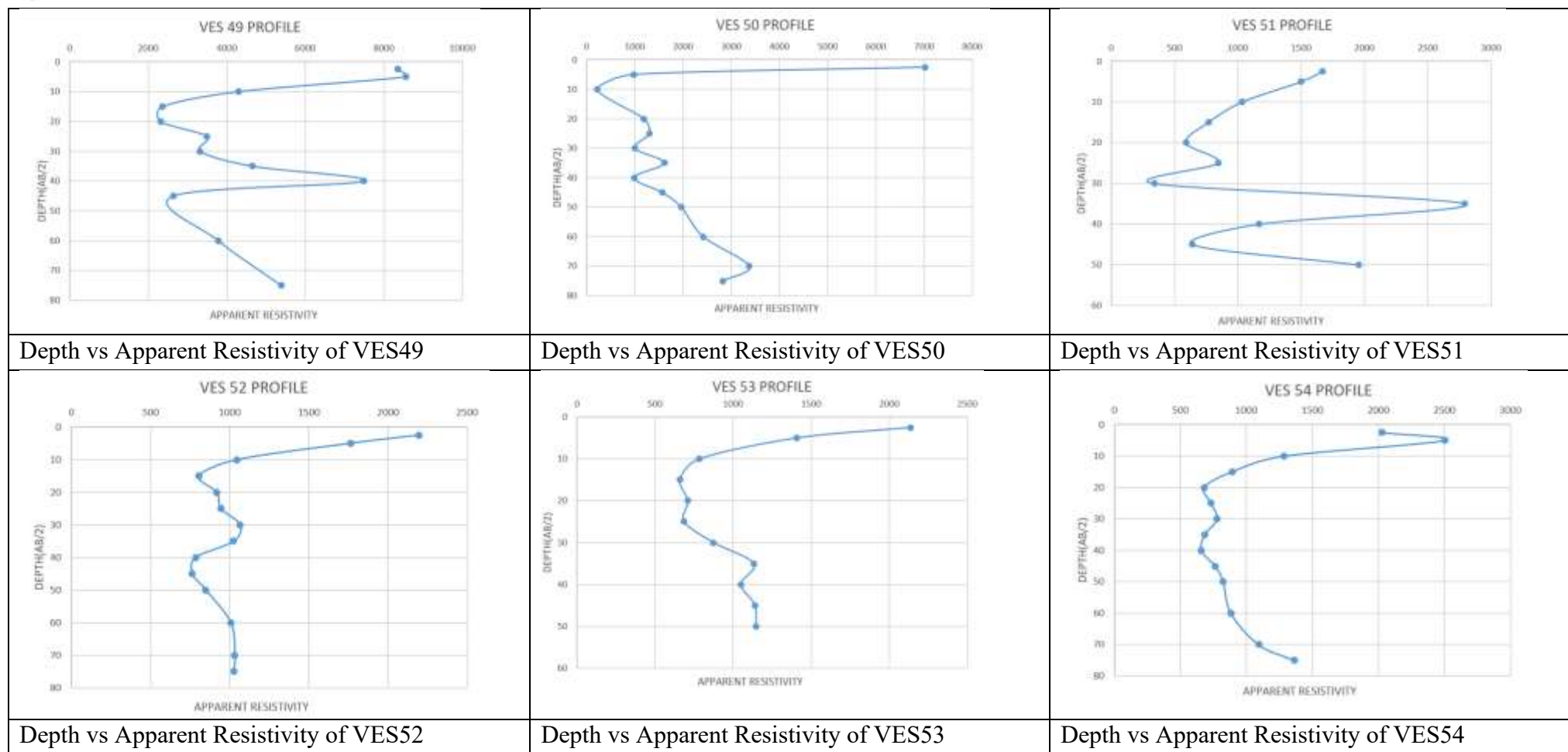


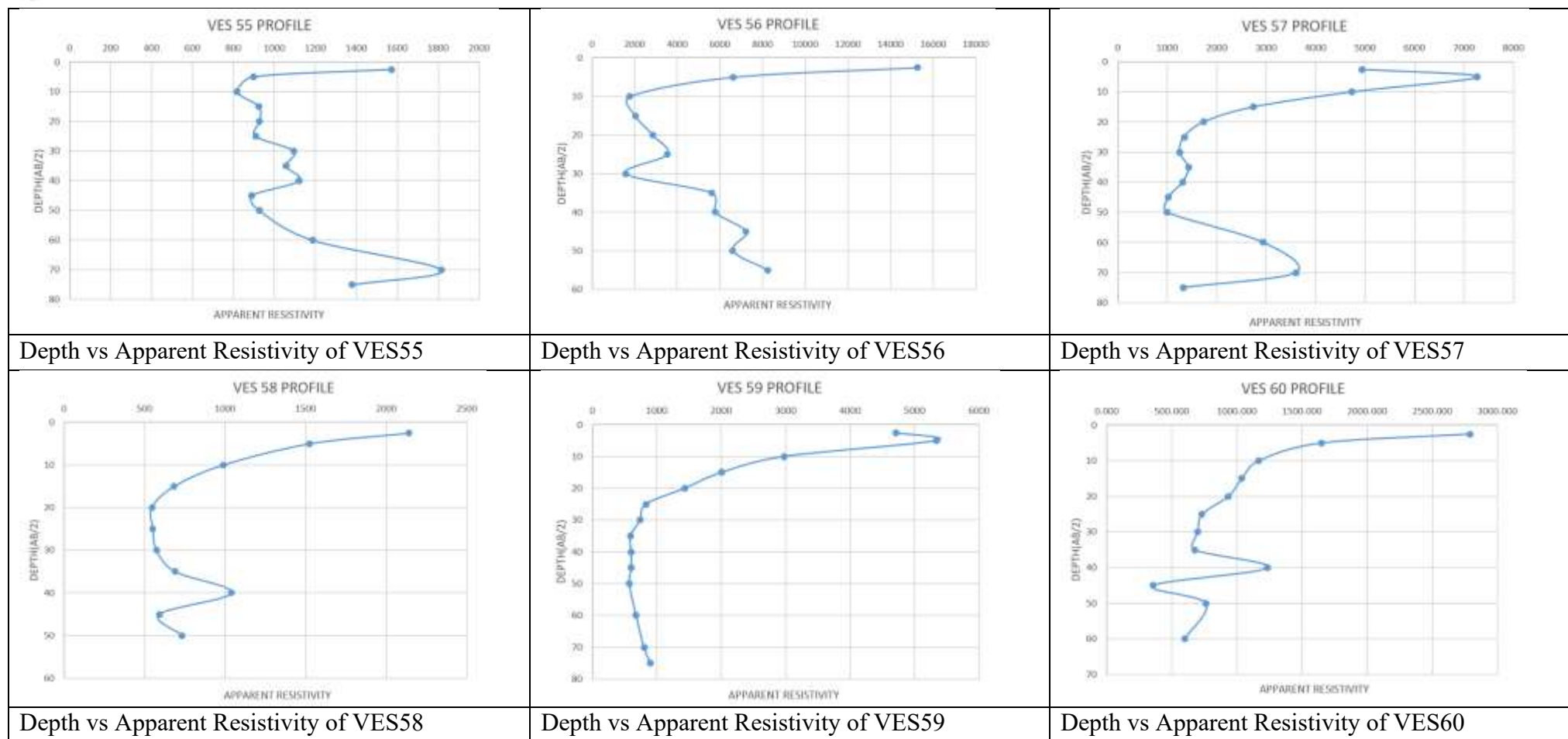


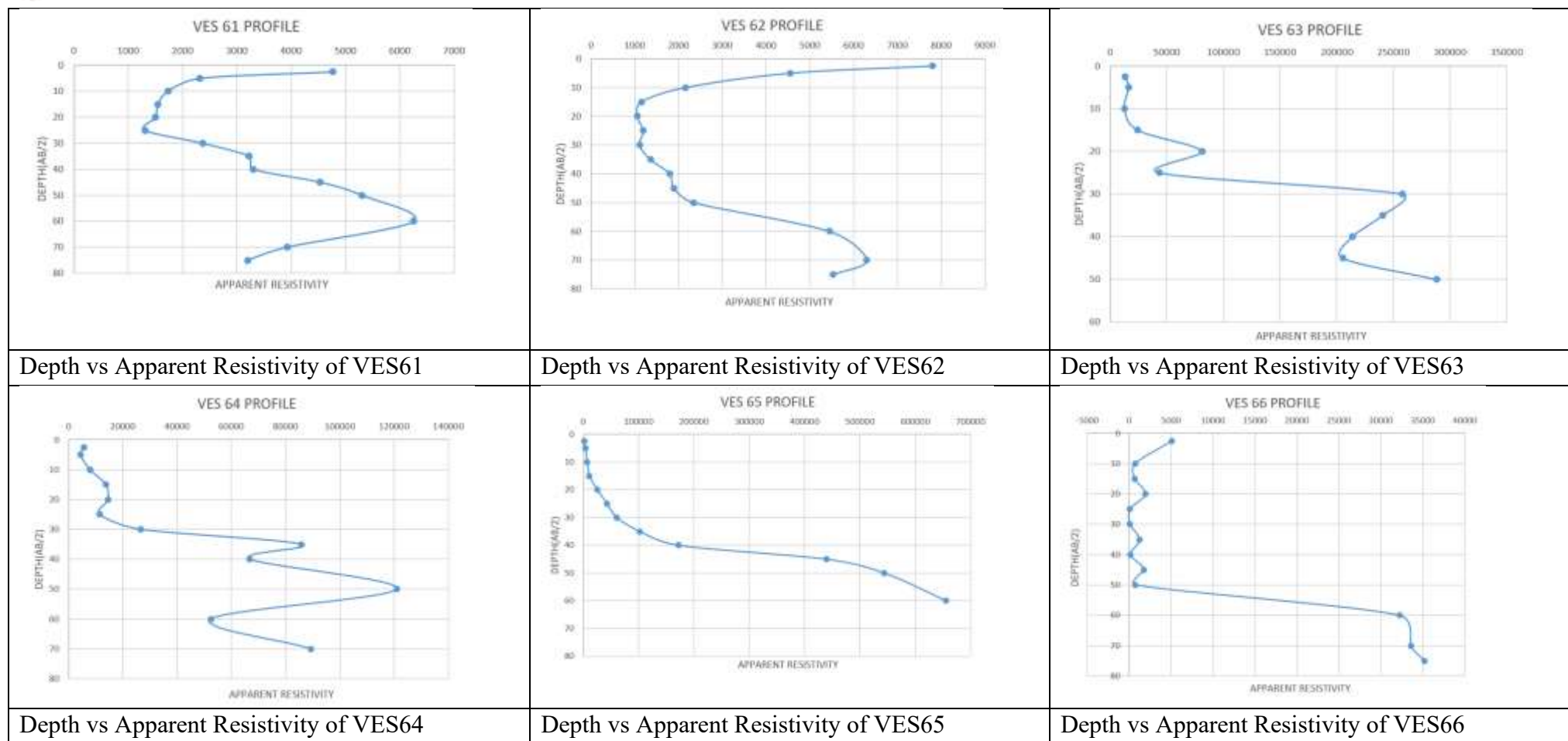


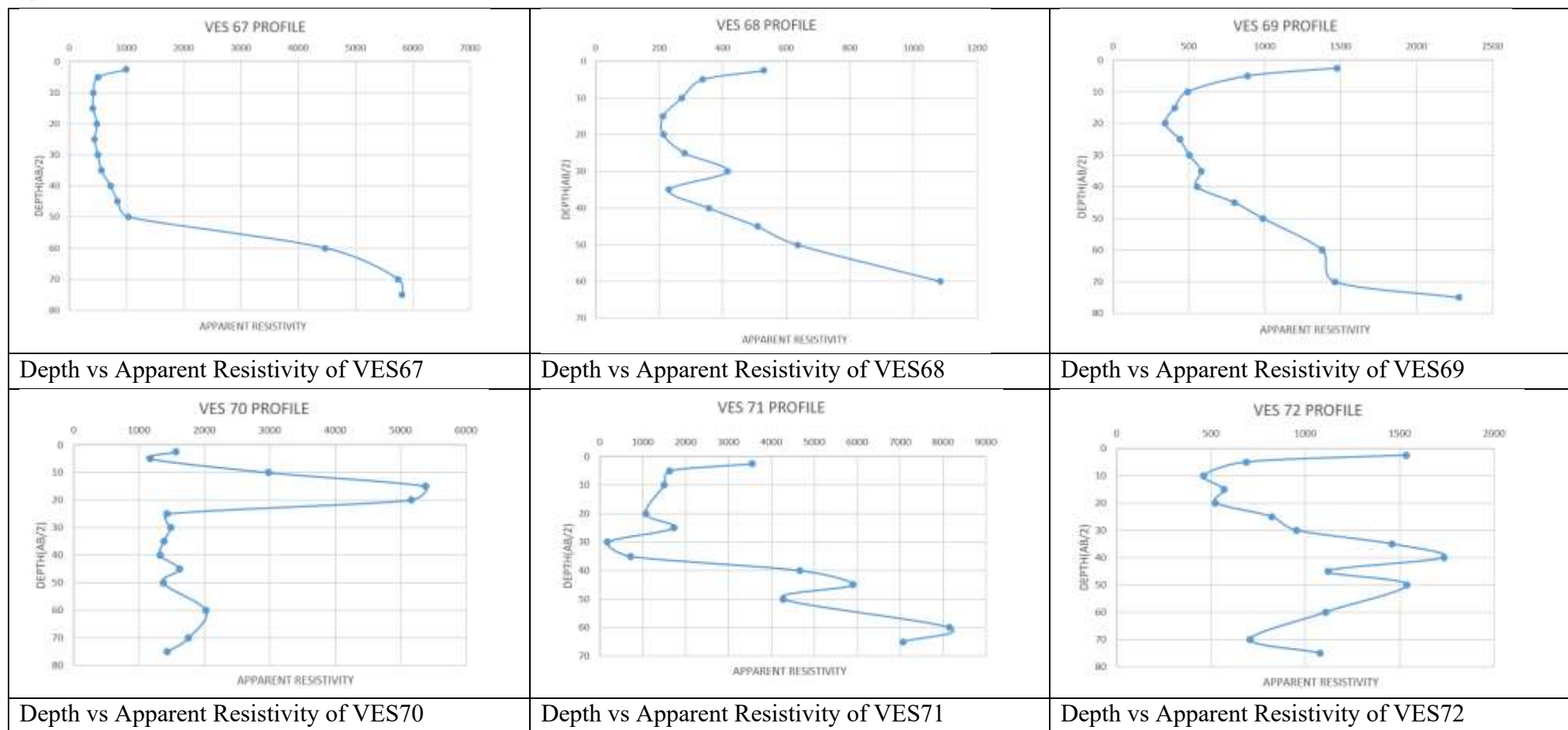


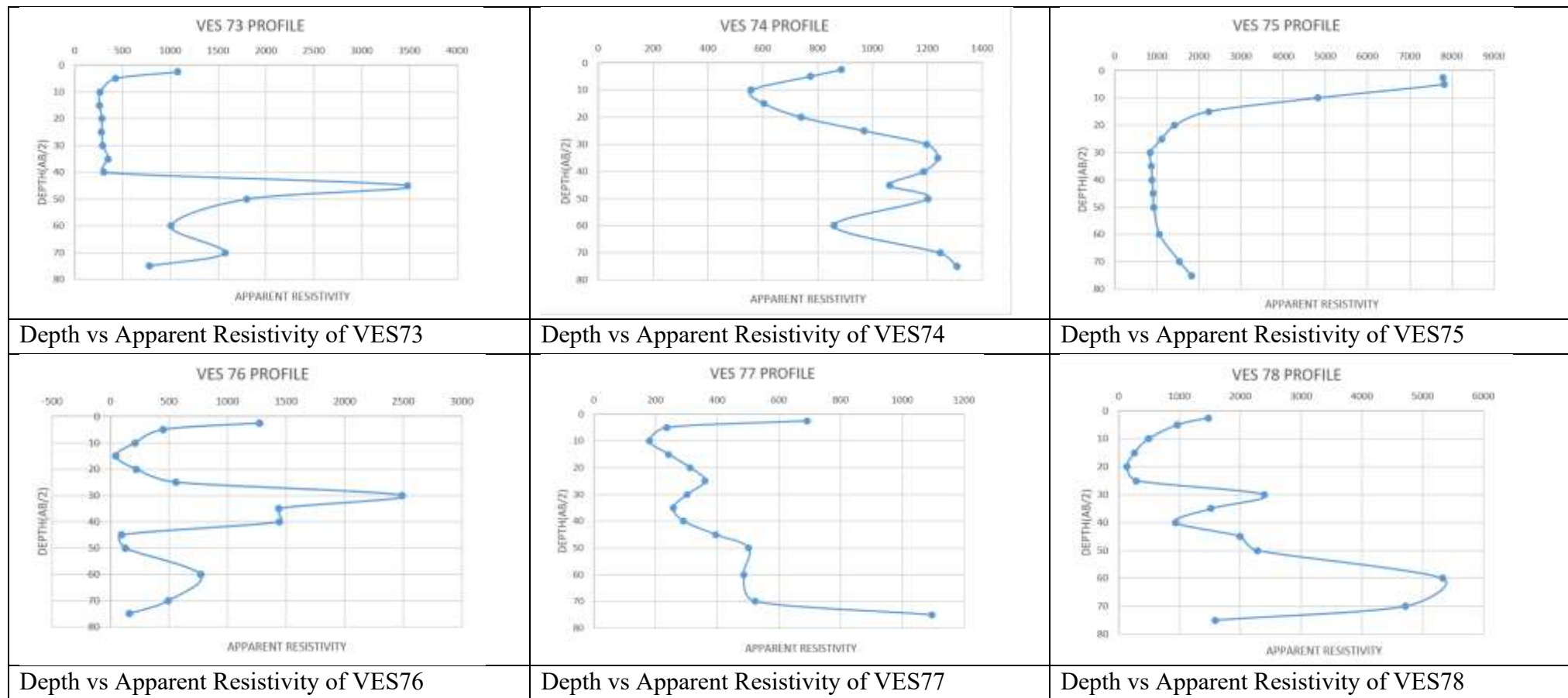


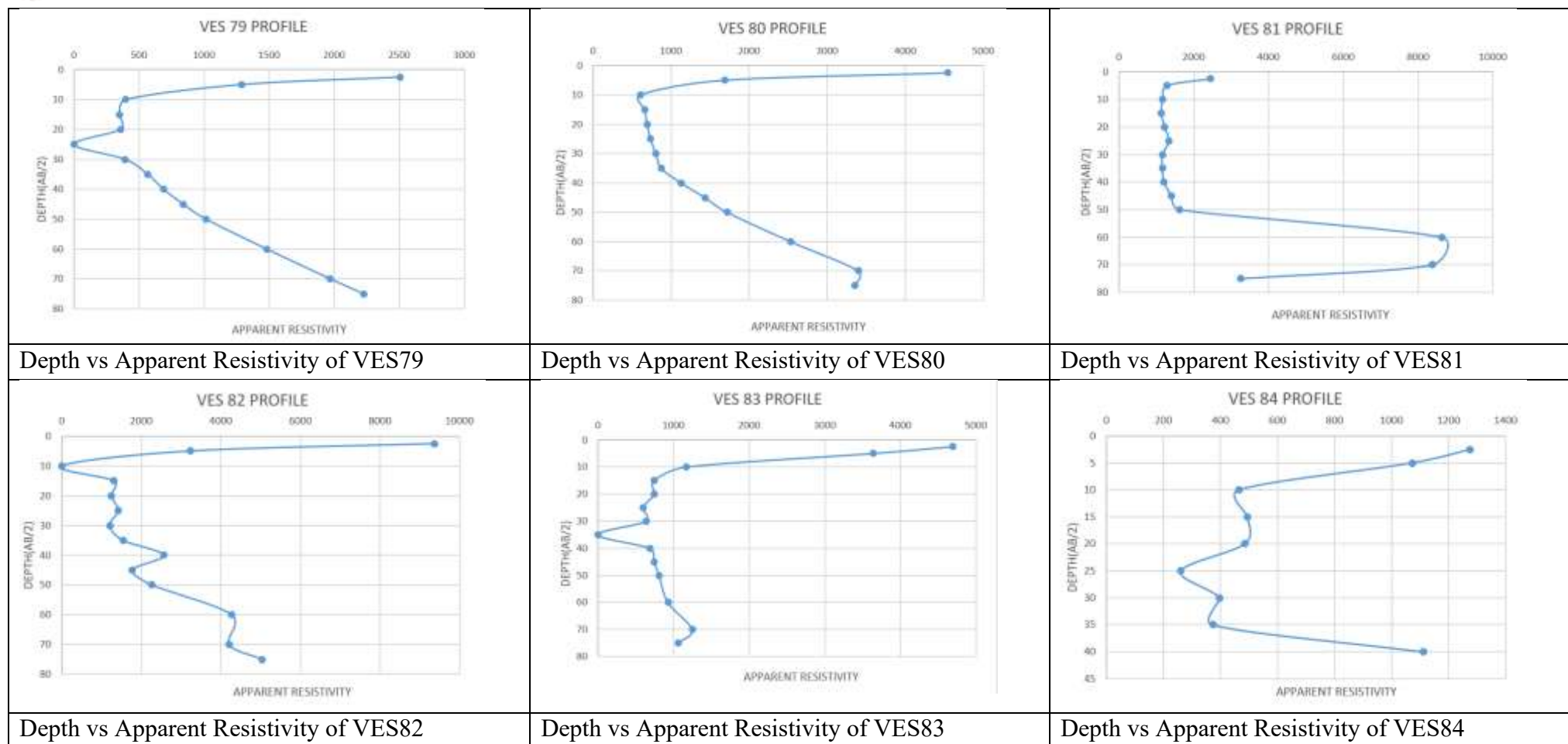


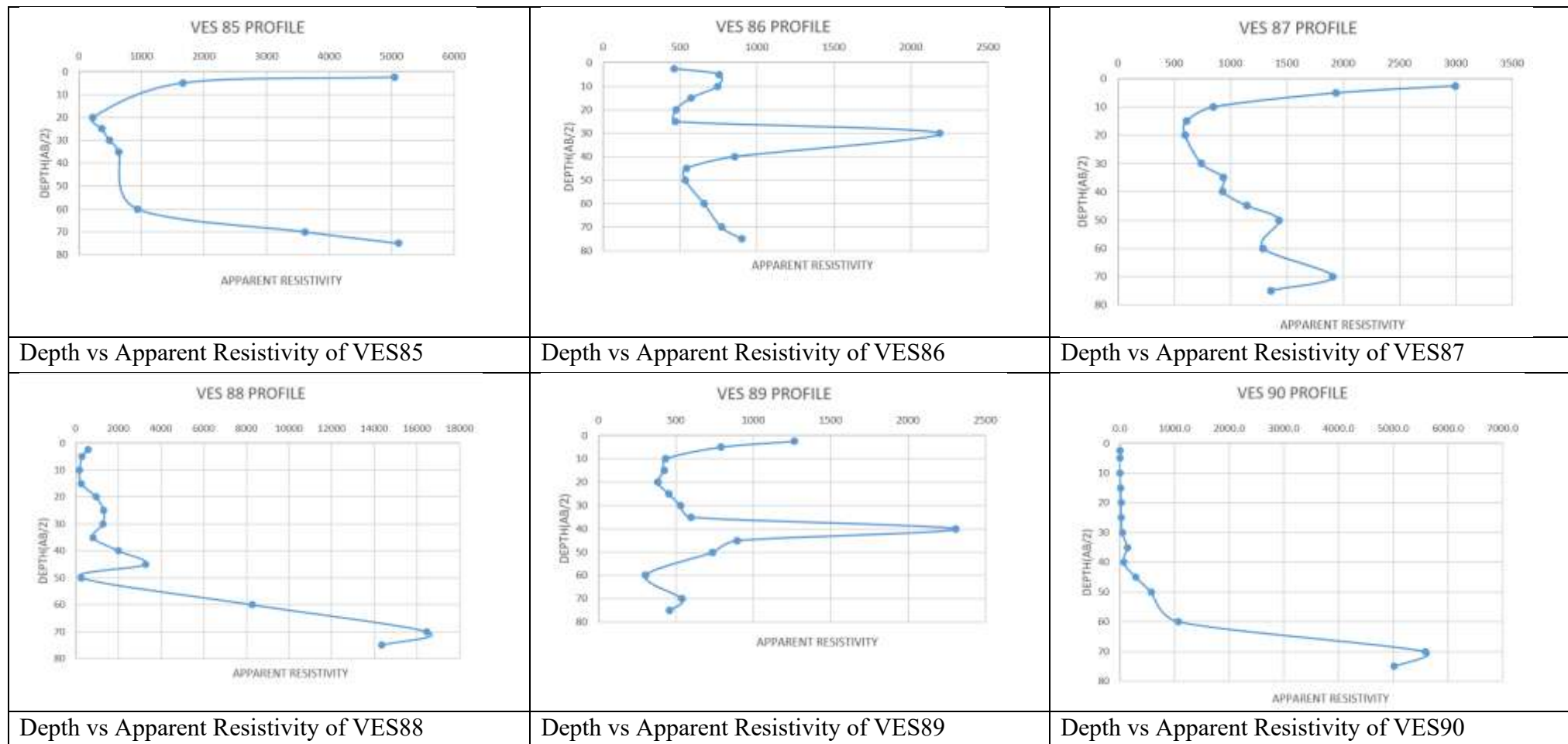


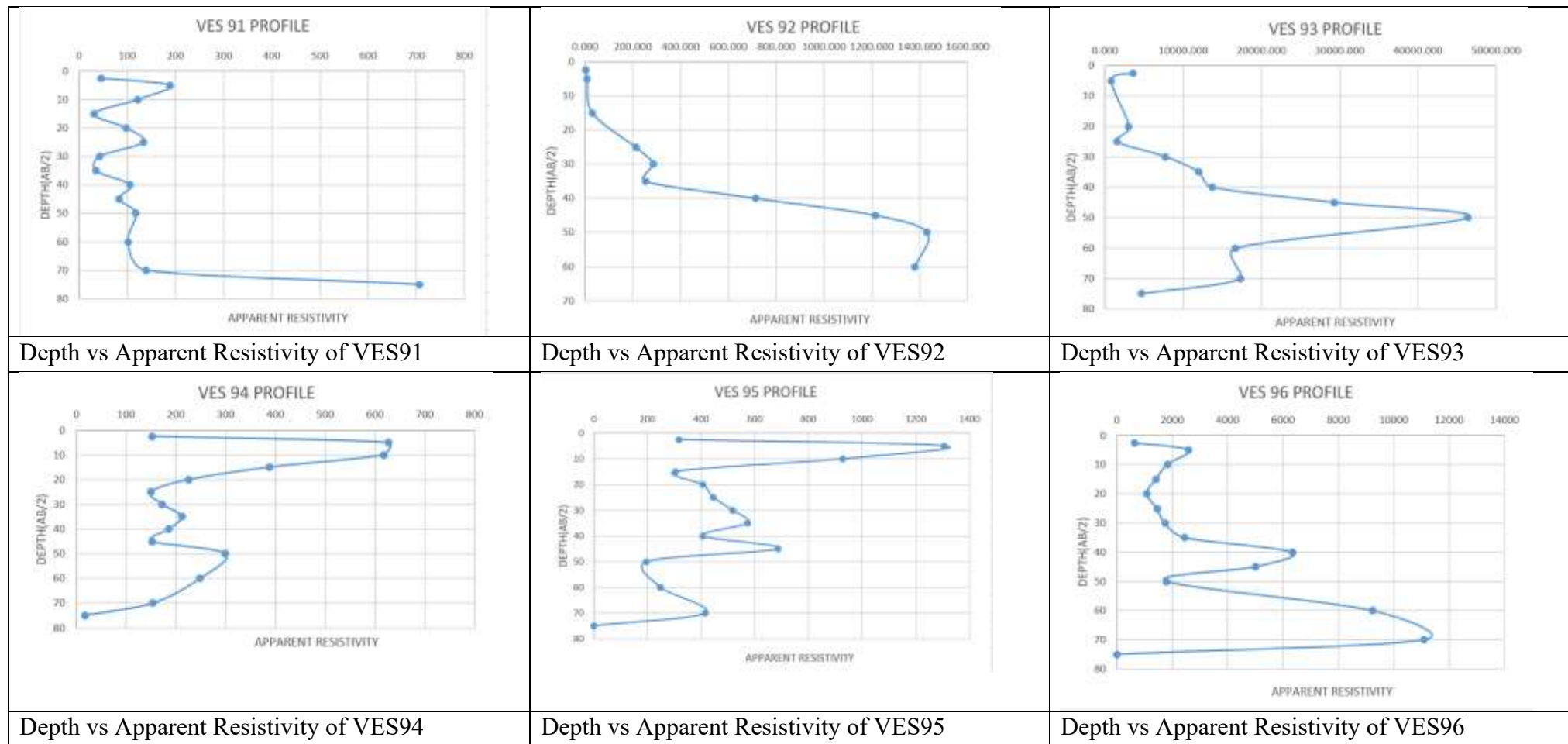


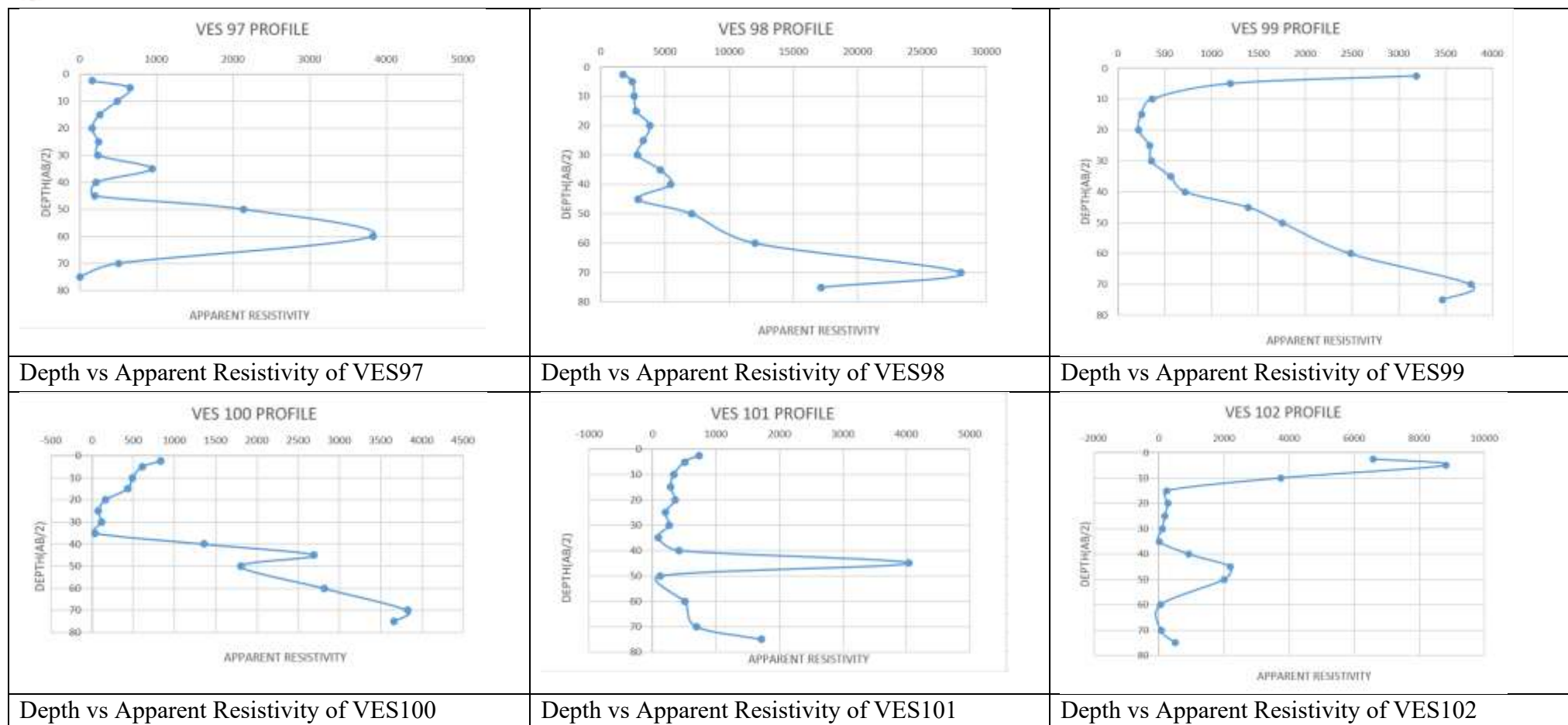


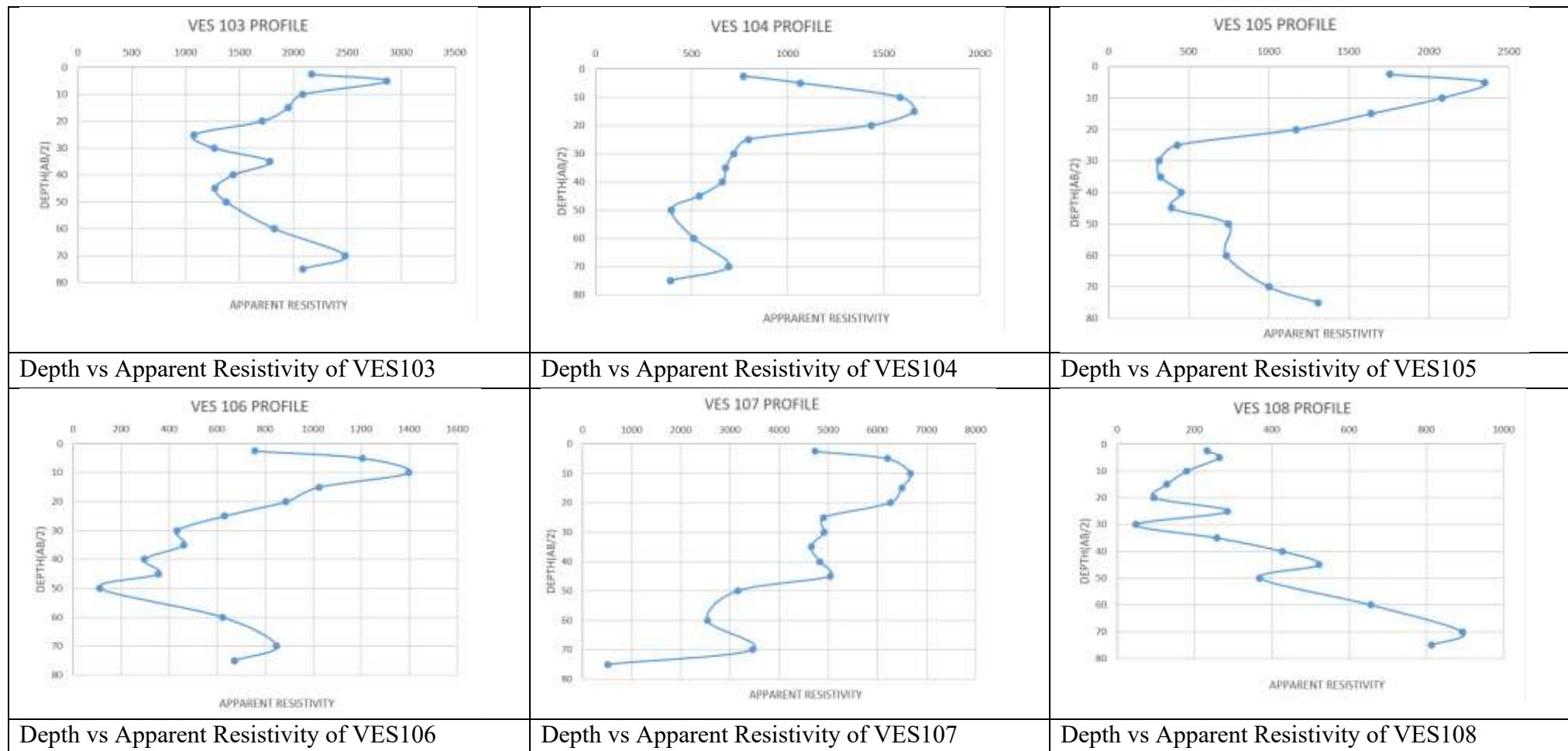


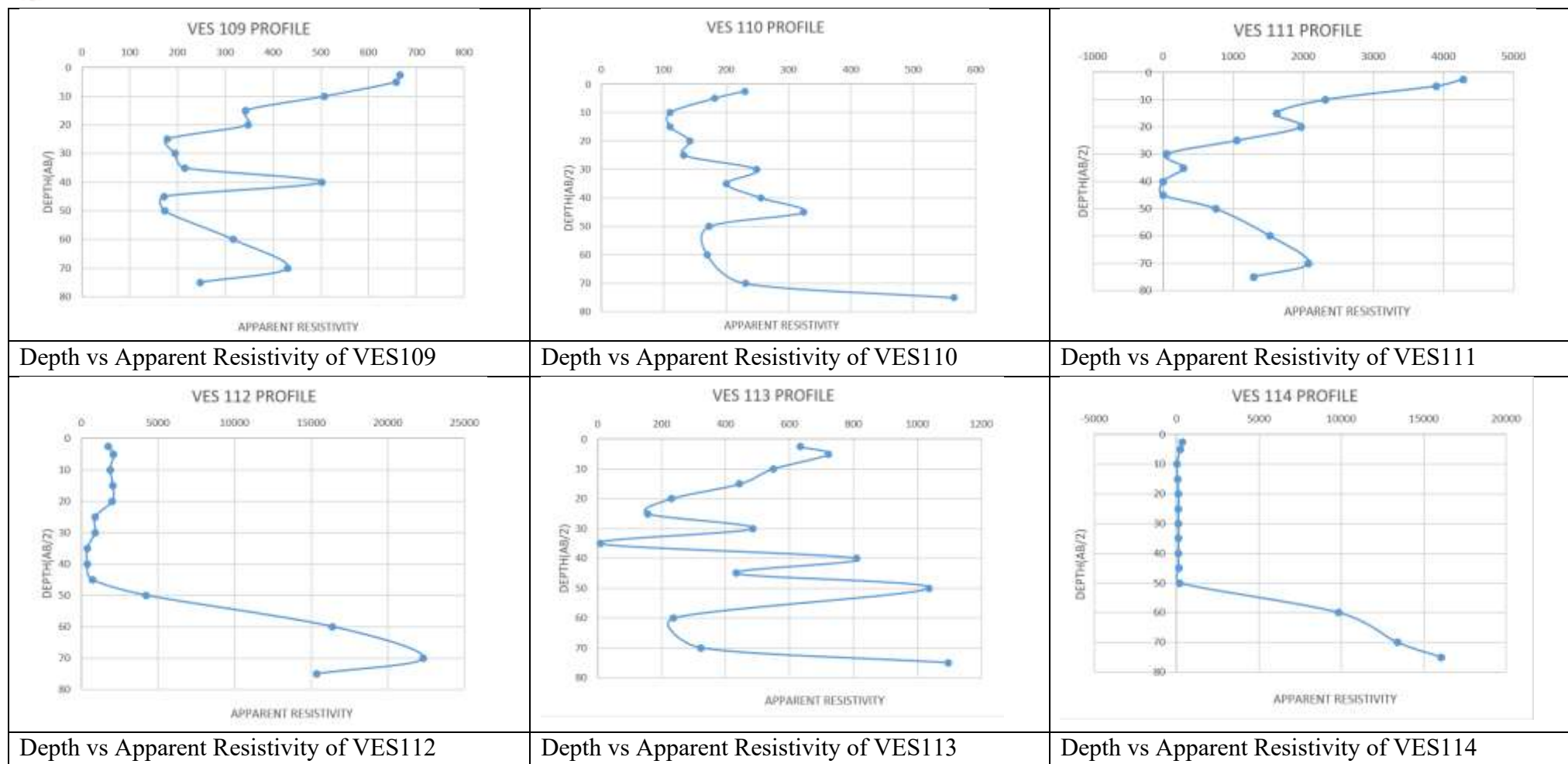


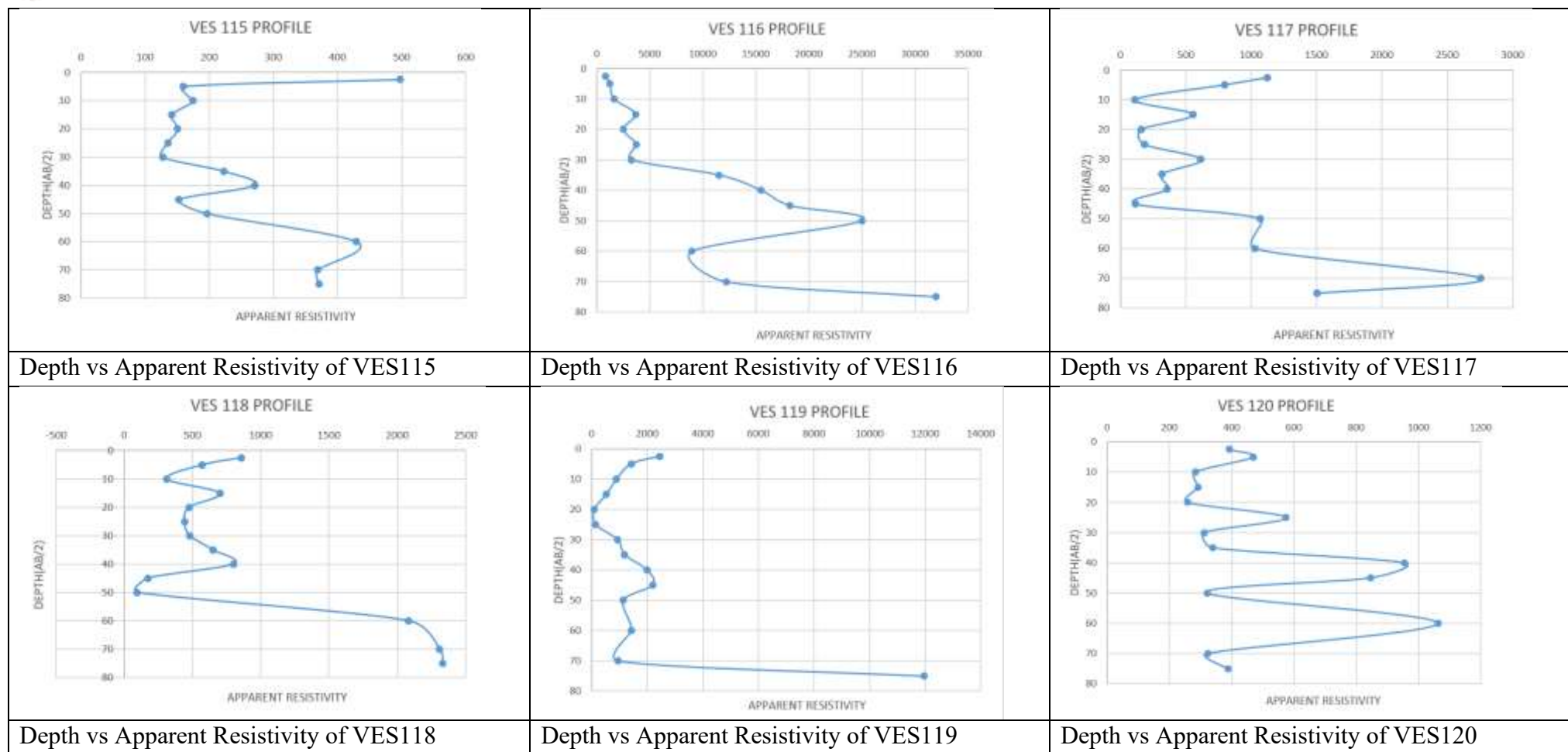


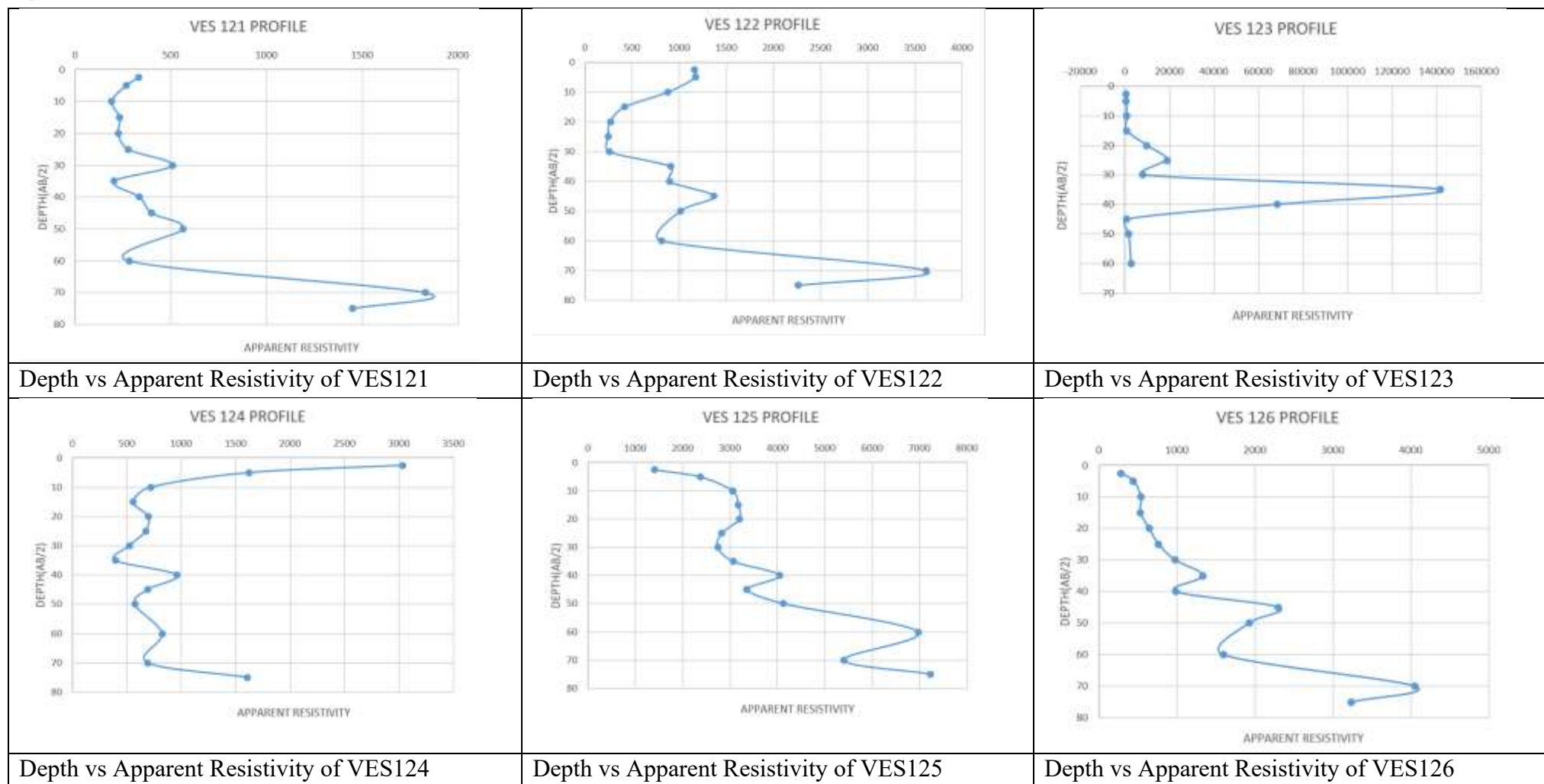


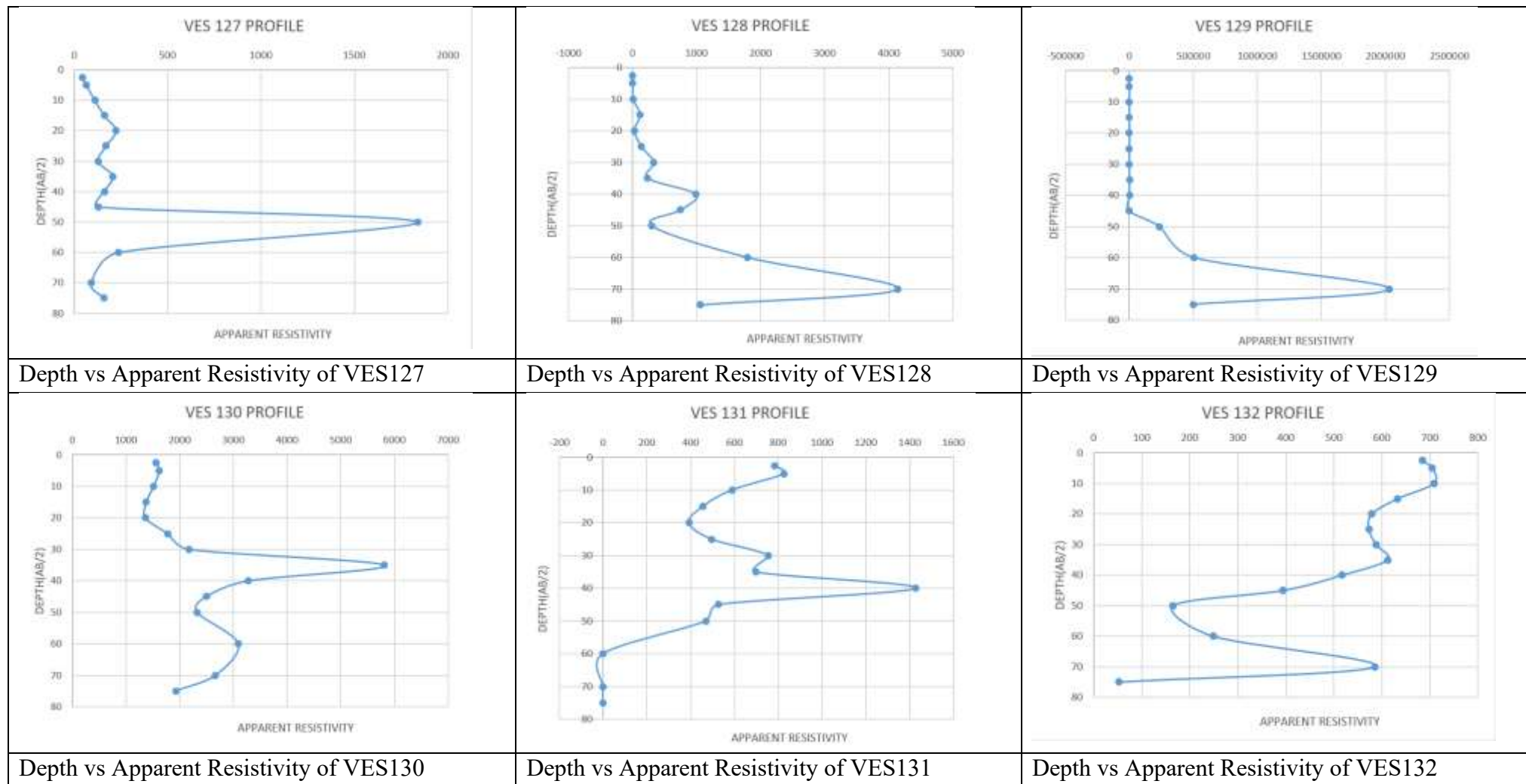


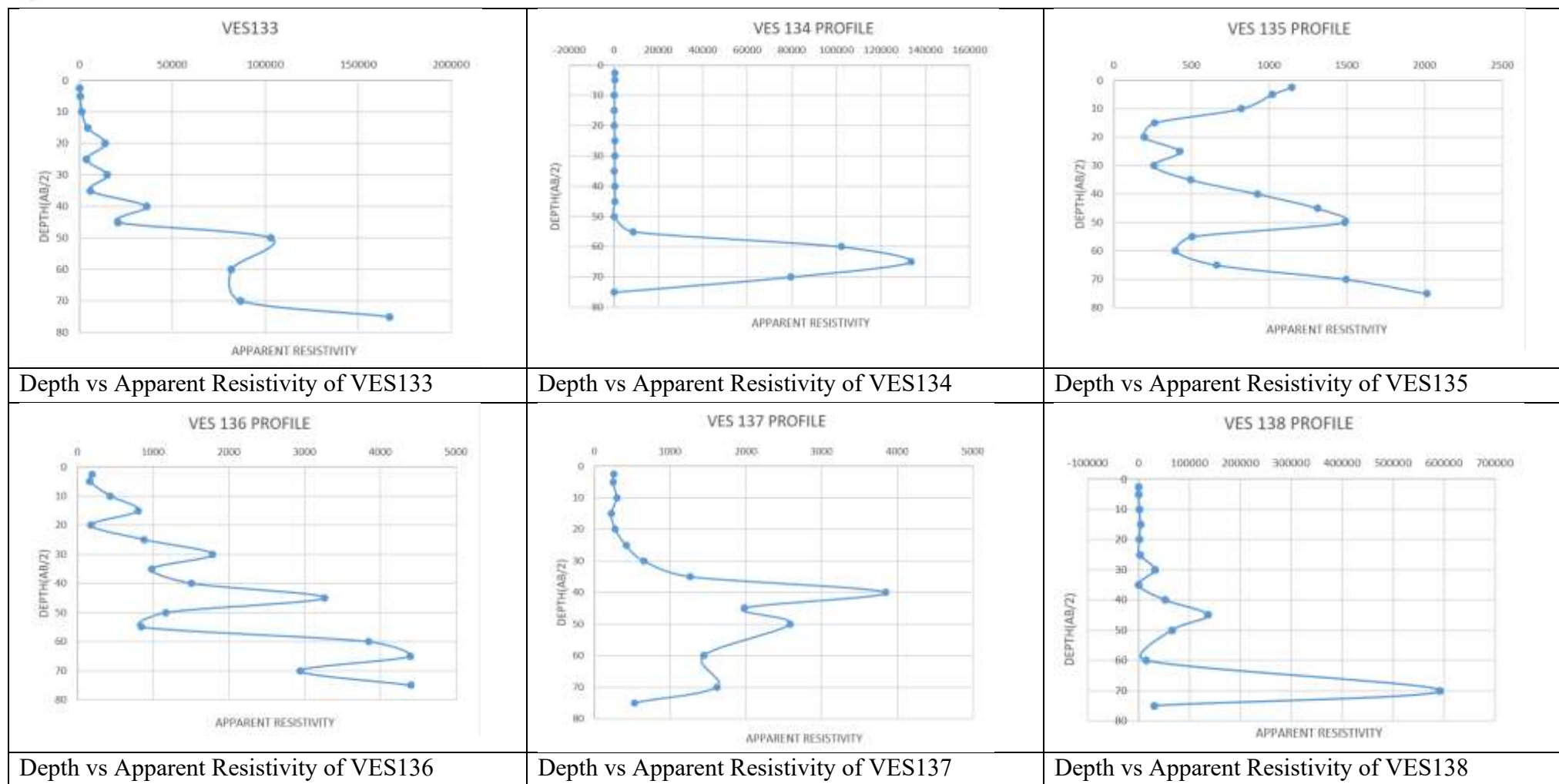


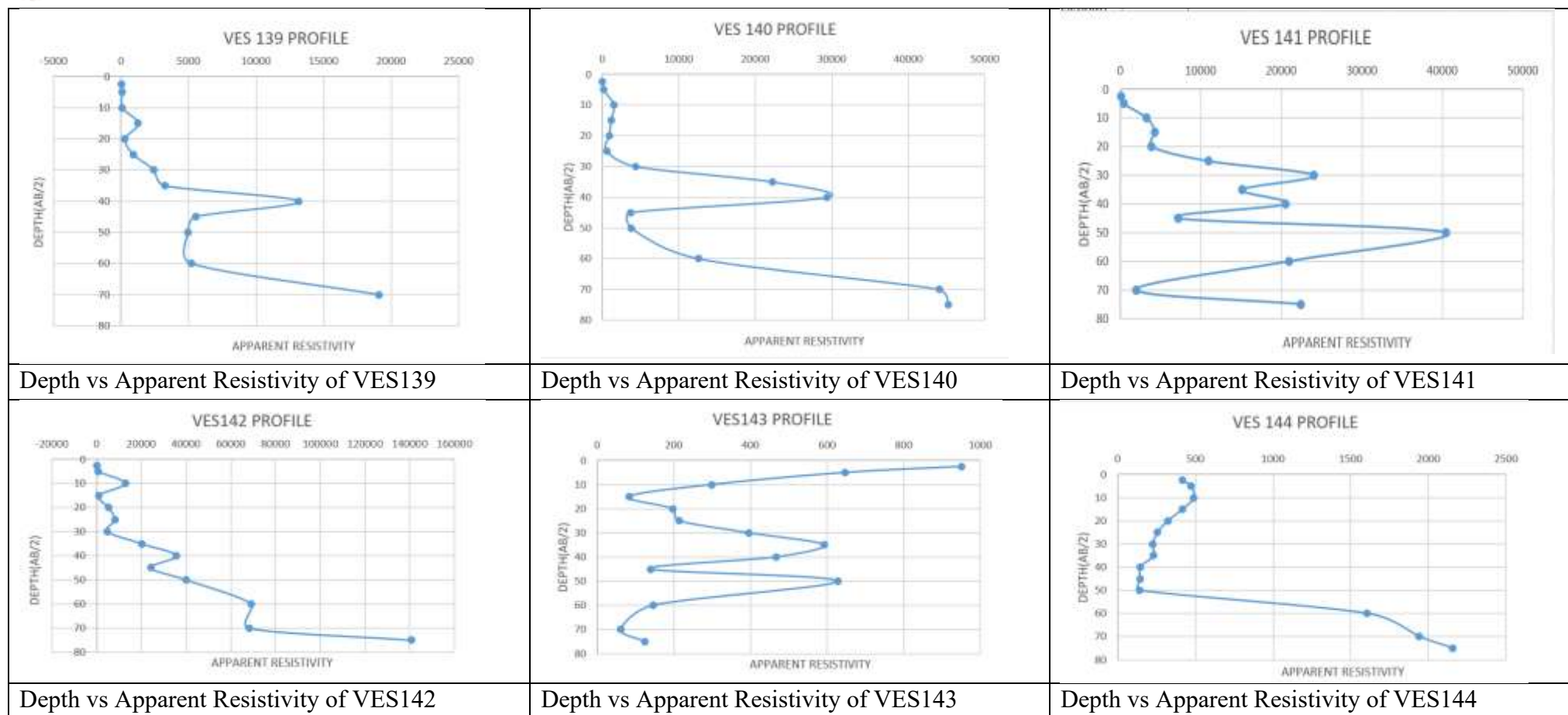


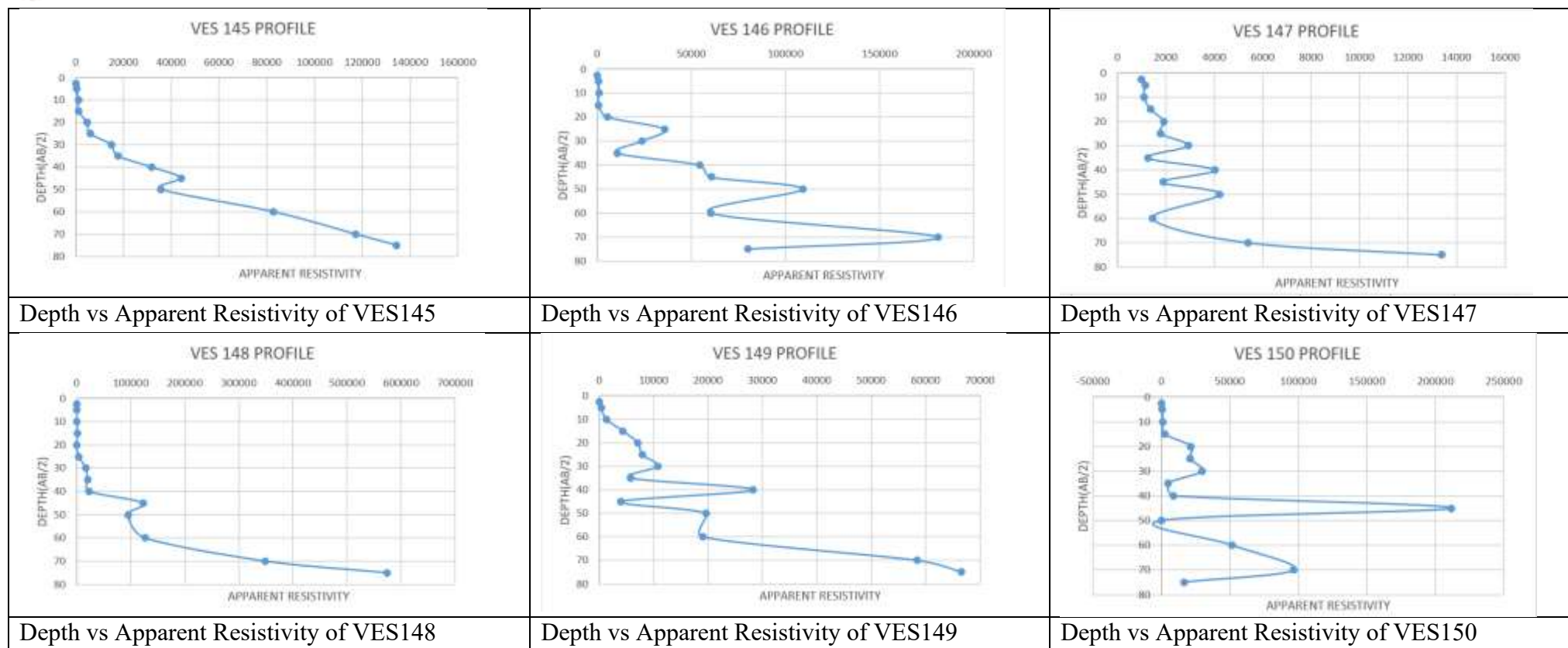


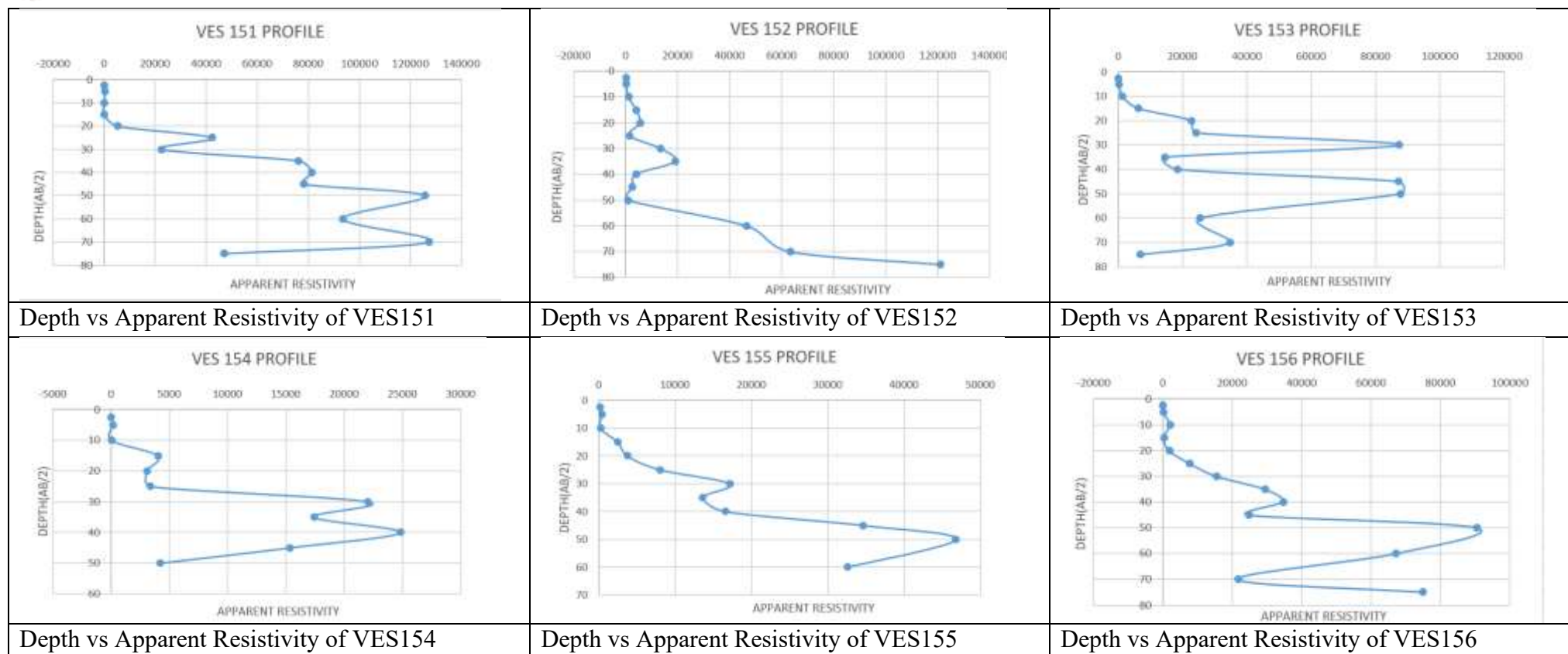


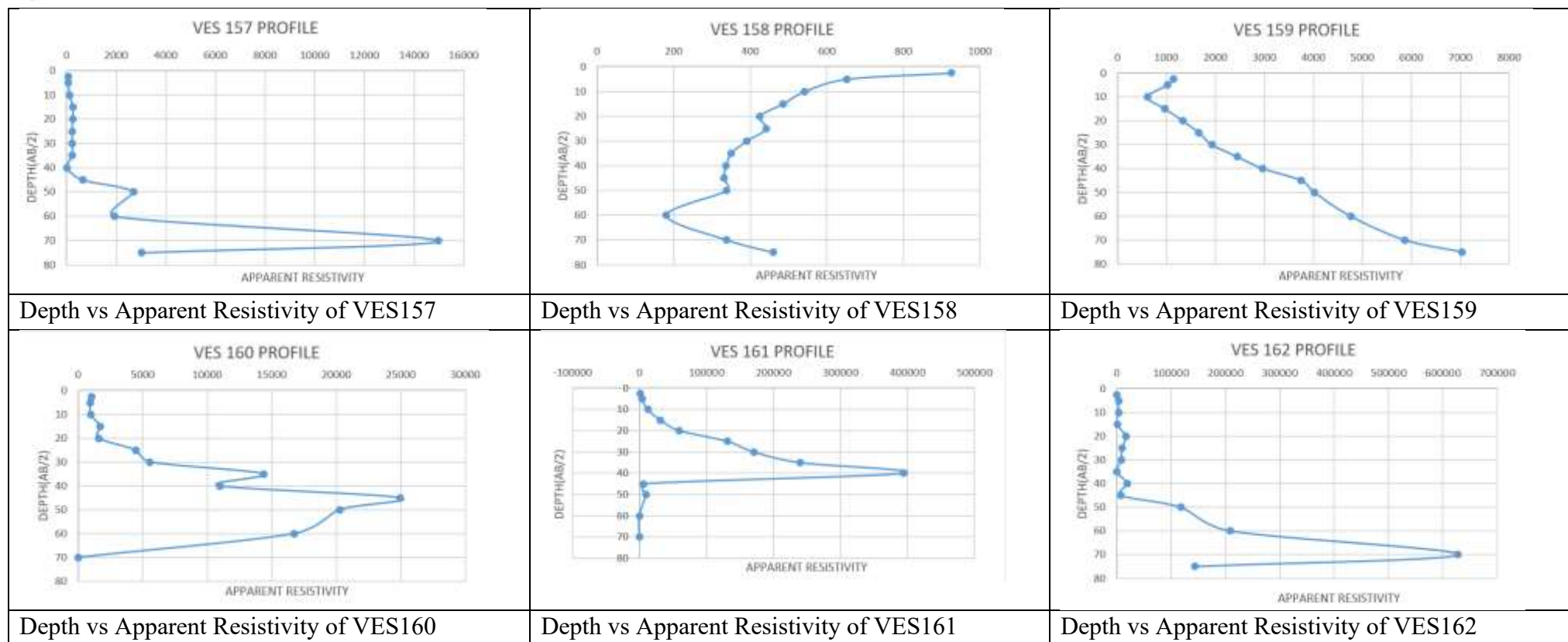


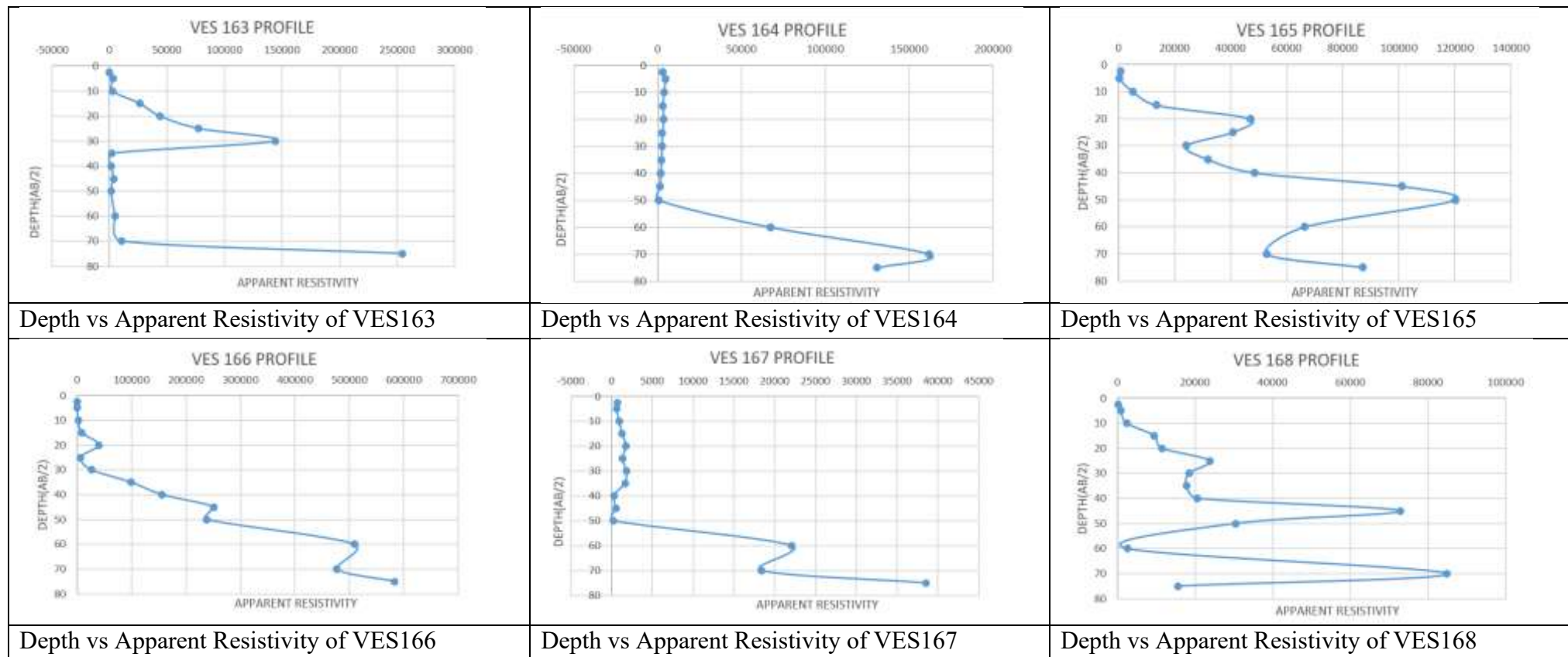


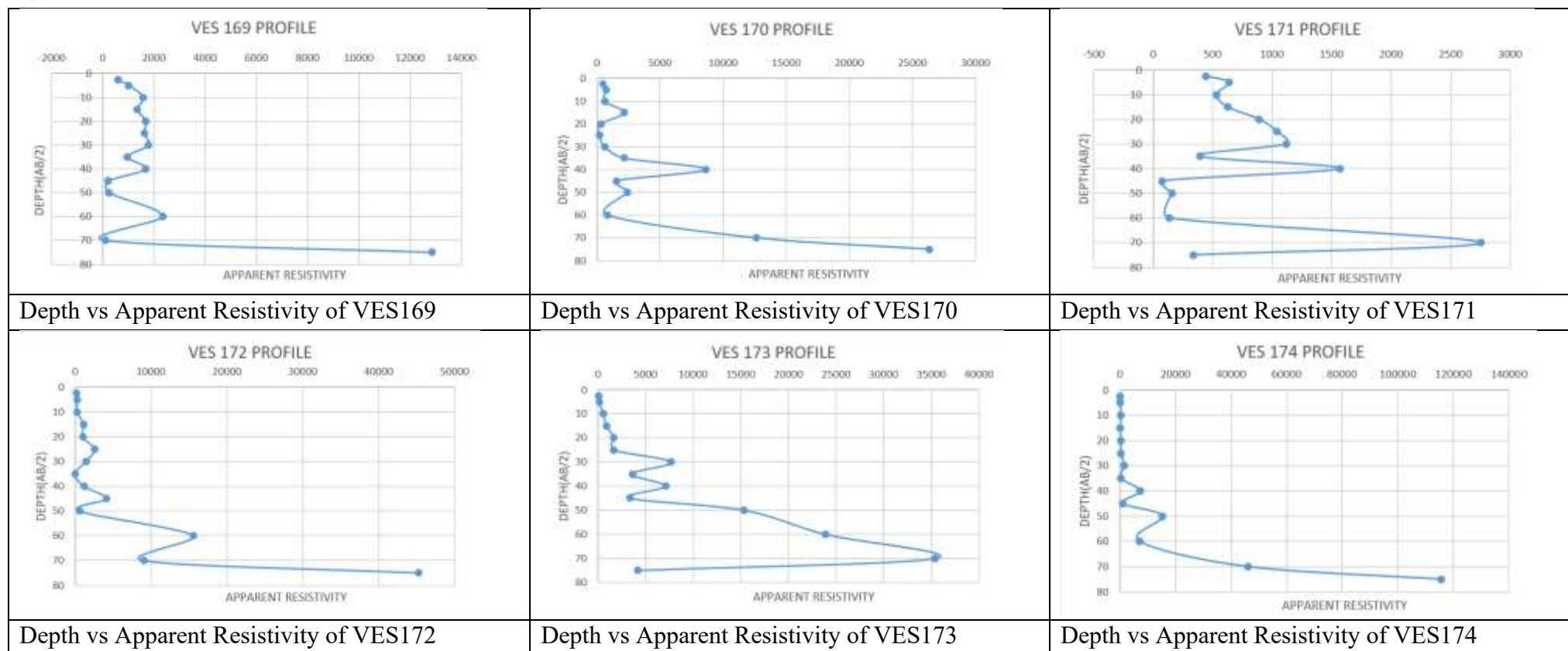


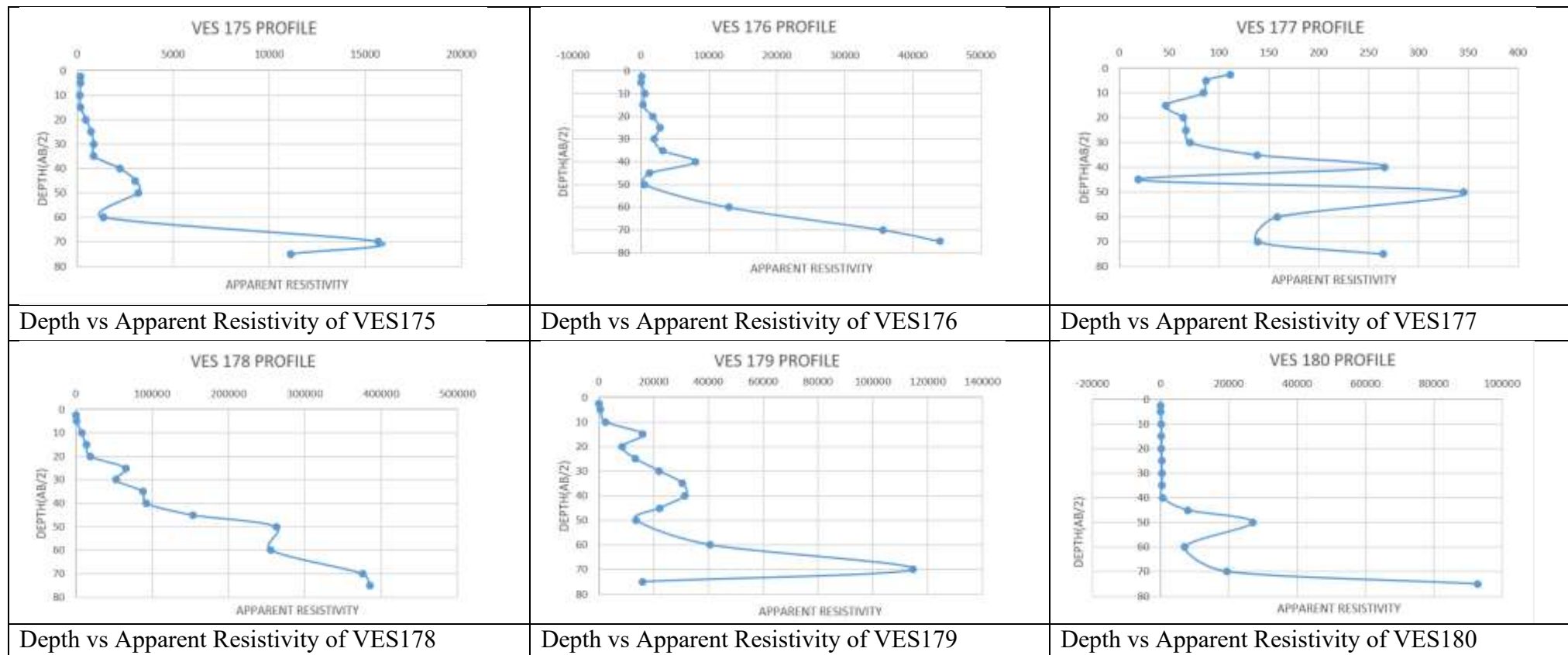


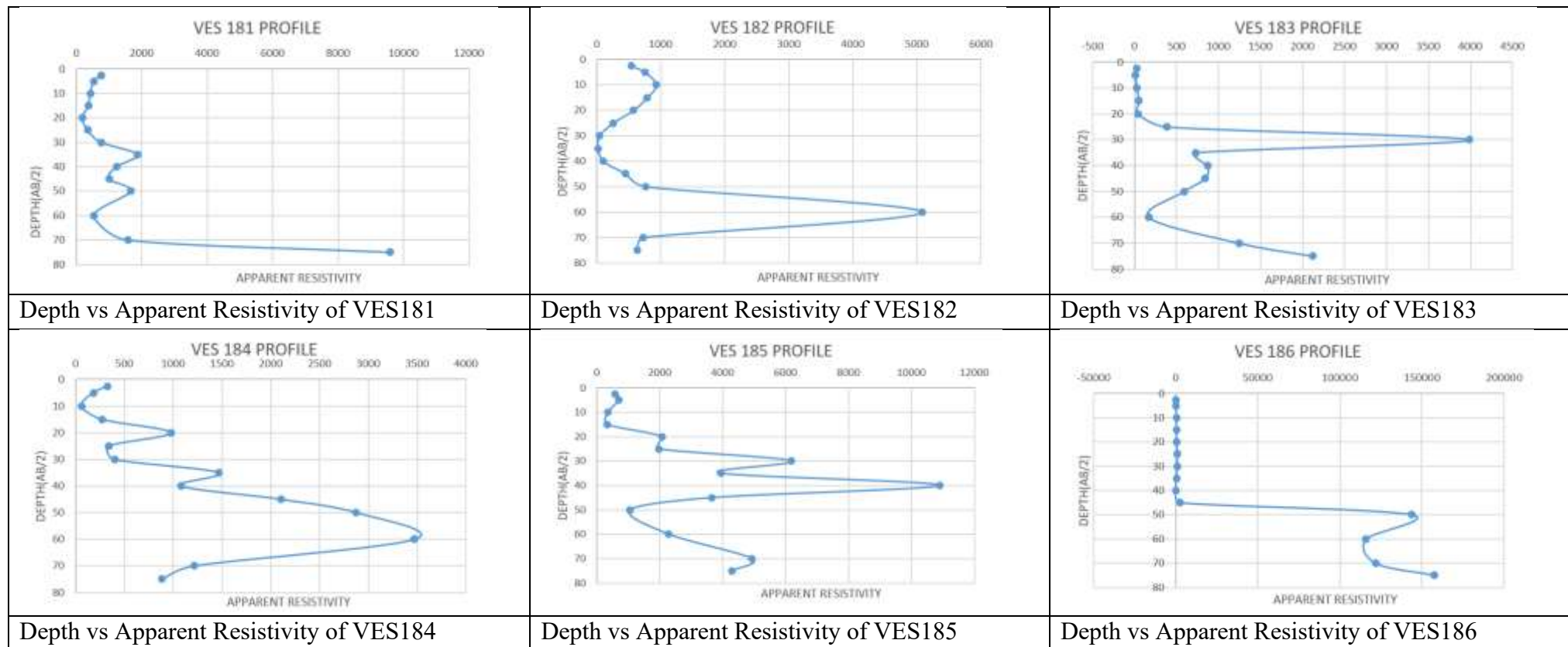


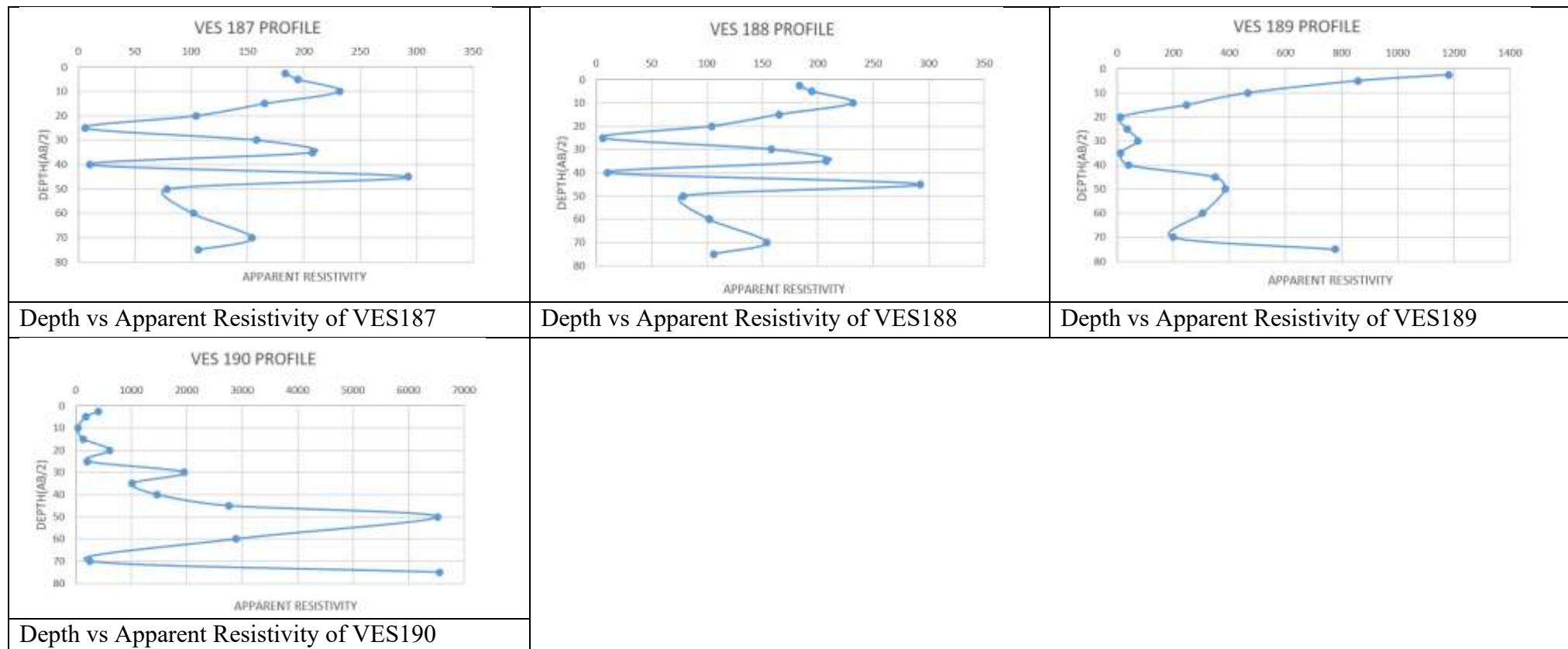












Annexure XIII_Chemical Assay Values of AAS Analyses for Boreholes

Sl. No.	Sample ID	BH No	Latitude	Longitude	Ag ppm	Al ppm	As ppm	Au ppm	Ba ppm	Bi ppm	Ca ppm	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe ppm	Ga ppm	K ppm	Mg ppm
1	111651	GSPL/ASK/BH01	29.755588	80.33535	<5	8.80	403	0.016	504	<5	0.44	<5	27	142	2196	5.91	27	3.25	1.58
2	111652	GSPL/ASK/BH01	29.755588	80.33535	<5	8.11	327	0.007	346	<5	0.16	<5	23	225	1258	5.60	24	2.33	1.30
3	111653	GSPL/ASK/BH01	29.755588	80.33535	<5	8.42	35	0.004	894	<5	1.66	<5	18	228	4558	3.72	26	2.13	0.82
4	111654	GSPL/ASK/BH01	29.755588	80.33535	<5	8.31	141	<0.001	331	<5	0.15	<5	28	221	1000	5.25	24	2.75	1.46
5	111655	GSPL/ASK/BH01	29.755588	80.33535	<5	5.87	3407	0.011	397	<5	0.25	6	13	60	6290	18.26	36	2.83	1.26
6	111656	GSPL/ASK/BH01	29.755588	80.33535	<5	7.77	105	0.013	437	<5	0.37	<5	29	243	477	4.84	22	2.86	1.76
7	111657	GSPL/ASK/BH01	29.755588	80.33535	<5	4.14	99	<0.001	381	6	1.17	<5	15	162	6944	3.87	21	1.56	0.82
8	111658	GSPL/ASK/BH01	29.755588	80.33535	<5	3.63	4751	0.004	99	6	0.03	12	24	85	7442	12.01	28	2.10	0.66
9	111659	GSPL/ASK/BH01	29.755588	80.33535	<5	5.90	28	<0.001	264	<5	0.27	<5	11	190	9	3.85	15	1.97	0.68
10	111660	GSPL/ASK/BH01	29.755588	80.33535	18	1.23	156	0.360	10	52	0.11	33	103	42	27415	40.40	46	0.39	1.30
11	111661	GSPL/ASK/BH01	29.755588	80.33535	<5	9.12	1739	0.013	392	<5	0.12	<5	44	133	4469	5.43	32	4.49	1.65
12	111662	GSPL/ASK/BH01	29.755588	80.33535	<5	9.67	549	0.005	382	<5	0.12	<5	20	136	256	5.74	30	3.54	1.83
13	111663	GSPL/ASK/BH01	29.755588	80.33535	<5	0.54	<5	0.020	25	<5	0.03	<5	<5	200	5325	1.28	<5	0.24	0.11
14	111664	GSPL/ASK/BH01	29.755588	80.33535	<5	3.03	<5	0.010	408	<5	0.25	<5	26	67	871	4.77	25	2.61	0.61
15	111665	GSPL/ASK/BH01	29.755588	80.33535	<5	3.94	<5	<0.001	701	<5	1.63	<5	18	48	13	3.65	21	2.46	0.94
16	111666	GSPL/ASK/BH01	29.755588	80.33535	<5	3.31	10	<0.001	380	<5	0.29	<5	19	53	13	3.79	20	2.41	1.11
17	111667	GSPL/ASK/BH01	29.755588	80.33535	<5	7.05	91	0.004	506	<5	0.92	<5	18	82	48	3.36	23	2.40	0.98
18	111668	GSPL/ASK/BH01	29.755588	80.33535	<5	4.81	26	<0.001	435	<5	1.78	<5	17	108	16	2.87	18	1.10	0.71
19	111669	GSPL/ASK/BH01	29.755588	80.33535	<5	6.83	6	0.003	582	<5	0.35	<5	14	86	214	5.00	22	3.04	1.66

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	BH No	Latitude	Longitude	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	S ppm	Sb ppm	Sn ppm	Sr ppm	Te ppm	Ti ppm	Tl ppm	V ppm
1	111651	GSPL/ASK/BH01	29.755588	80.33535	0.05	<5	0.81	35	0.042	274	0.12	22	15	95	<5	0.49	30	93
2	111652	GSPL/ASK/BH01	29.755588	80.33535	0.08	<5	0.44	43	0.028	284	0.09	17	11	67	<5	0.40	<5	86
3	111653	GSPL/ASK/BH01	29.755588	80.33535	0.07	<5	1.79	11	0.075	78	0.03	<5	14	214	<5	0.52	34	57
4	111654	GSPL/ASK/BH01	29.755588	80.33535	0.20	<5	0.36	45	0.031	90	0.04	6	7	62	<5	0.47	32	90
5	111655	GSPL/ASK/BH01	29.755588	80.33535	0.03	<5	0.22	8	0.018	465	0.56	46	14	66	<5	0.42	<5	52
6	111656	GSPL/ASK/BH01	29.755588	80.33535	0.05	<5	0.75	53	0.050	89	0.06	<5	6	92	<5	0.42	16	80
7	111657	GSPL/ASK/BH01	29.755588	80.33535	0.10	<5	1.72	13	0.074	150	0.08	21	6	92	<5	0.48	14	55
8	111658	GSPL/ASK/BH01	29.755588	80.33535	0.03	<5	0.20	9	0.123	2905	0.15	101	13	14	<5	0.27	<5	87
9	111659	GSPL/ASK/BH01	29.755588	80.33535	0.05	<5	0.21	22	0.036	31	0.14	<5	10	40	<5	0.26	<5	64
10	111660	GSPL/ASK/BH01	29.755588	80.33535	0.01	<5	0.02	252	0.043	4007	28.96	31	462	7	<5	0.04	<5	16
11	111661	GSPL/ASK/BH01	29.755588	80.33535	0.02	<5	0.30	58	0.052	235	1.74	11	117	34	<5	0.34	<5	117
12	111662	GSPL/ASK/BH01	29.755588	80.33535	0.02	<5	0.24	47	0.038	74	0.53	<5	14	37	<5	0.37	8	104
13	111663	GSPL/ASK/BH01	29.755588	80.33535	<0.01	<5	0.02	7	0.012	18	1.29	14	75	8	<5	0.02	<5	<5
14	111664	GSPL/ASK/BH01	29.755588	80.33535	0.04	<5	0.68	14	0.049	21	0.17	21	71	22	<5	0.41	16	66
15	111665	GSPL/ASK/BH01	29.755588	80.33535	0.04	<5	1.78	11	0.068	37	0.07	12	15	151	<5	0.44	20	50
16	111666	GSPL/ASK/BH01	29.755588	80.33535	0.04	<5	1.52	10	0.067	25	0.03	11	14	36	<5	0.42	13	48
17	111667	GSPL/ASK/BH01	29.755588	80.33535	0.04	<5	2.04	19	0.059	54	0.03	<5	43	159	<5	0.39	22	62
18	111668	GSPL/ASK/BH01	29.755588	80.33535	0.05	<5	3.04	10	0.065	56	0.03	<5	6	241	<5	0.37	14	42
19	111669	GSPL/ASK/BH01	29.755588	80.33535	0.03	<5	0.83	8	0.063	18	0.19	<5	117	66	<5	0.39	13	47

Sl. No.	Sample ID	BH No	Latitude	Longitude	W ppm	Zn ppm	Zr ppm
1	111651	GSPL/ASK/BH01	29.755588	80.33535	65	1251	<5
2	111652	GSPL/ASK/BH01	29.755588	80.33535	23	712	<5
3	111653	GSPL/ASK/BH01	29.755588	80.33535	<5	1109	<5
4	111654	GSPL/ASK/BH01	29.755588	80.33535	19	541	<5
5	111655	GSPL/ASK/BH01	29.755588	80.33535	<5	1381	6
6	111656	GSPL/ASK/BH01	29.755588	80.33535	58	582	<5
7	111657	GSPL/ASK/BH01	29.755588	80.33535	<5	2904	<5
8	111658	GSPL/ASK/BH01	29.755588	80.33535	6	2077	5
9	111659	GSPL/ASK/BH01	29.755588	80.33535	<5	85	<5
10	111660	GSPL/ASK/BH01	29.755588	80.33535	8	7649	13
11	111661	GSPL/ASK/BH01	29.755588	80.33535	6	277	<5
12	111662	GSPL/ASK/BH01	29.755588	80.33535	<5	311	<5
13	111663	GSPL/ASK/BH01	29.755588	80.33535	<5	508	<5
14	111664	GSPL/ASK/BH01	29.755588	80.33535	<5	159	<5
15	111665	GSPL/ASK/BH01	29.755588	80.33535	7	133	5
16	111666	GSPL/ASK/BH01	29.755588	80.33535	<5	81	<5
17	111667	GSPL/ASK/BH01	29.755588	80.33535	<5	162	<5
18	111668	GSPL/ASK/BH01	29.755588	80.33535	<5	103	<5
19	111669	GSPL/ASK/BH01	29.755588	80.33535	<5	69	<5

Sl. No.	Sample ID	BH No	Latitude	Longitude	Ag ppm	Al ppm	As ppm	Au ppm	Ba ppm	Bi ppm	Ca ppm	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe ppm	Ga ppm	K ppm	Mg ppm
20	111751	GSPL/ASK/BH02	29.755588	80.33535	<5	4.81	26	<0.001	660	<5	1.88	<5	20	63	134	3.32	21	1.65	0.47
21	111752	GSPL/ASK/BH02	29.755588	80.33535	<5	7.18	1063	<0.001	172	<5	0.06	<5	7	117	4775	3.12	24	3.01	1.86
22	111753	GSPL/ASK/BH02	29.755588	80.33535	76	3.19	48	0.278	5	62	1.91	279	55	196	33037	6.58	19	0.30	3.01
23	111754	GSPL/ASK/BH02	29.755588	80.33535	134	2.17	432	0.257	8	91	0.42	803	92	114	38798	9.03	22	0.25	1.94
24	111755	GSPL/ASK/BH02	29.755588	80.33535	99	2.89	3796	0.321	14	98	0.17	436	151	83	87863	10.12	22	0.33	2.79
25	111756	GSPL/ASK/BH02	29.755588	80.33535	23	3.01	683	0.106	72	14	0.24	62	24	153	18787	4.32	16	1.69	1.64
26	111757	GSPL/ASK/BH02	29.755588	80.33535	17	6.07	615	0.046	142	10	0.18	50	80	99	50226	8.59	29	3.23	1.84
27	111758	GSPL/ASK/BH02	29.755588	80.33535	<5	9.81	25	<0.001	245	<5	0.09	<5	19	129	447	5.30	30	3.21	1.32
28	111759	GSPL/ASK/BH02	29.755588	80.33535	<5	6.79	230	0.014	199	<5	0.15	<5	21	101	45	5.73	22	2.06	1.25
29	111760	GSPL/ASK/BH02	29.755588	80.33535	<5	4.36	16	<0.001	411	<5	1.28	<5	<5	152	8	1.55	8	2.03	0.45
30	111670	GSPL/ASK/BH02	29.755588	80.33535	<5	3.88	17	<0.001	589	<5	1.62	<5	18	91	221	2.96	21	3.00	0.45
31	111671	GSPL/ASK/BH02	29.755588	80.33535	<5	3.44	16	<0.001	573	<5	1.18	<5	19	90	185	3.03	18	3.35	0.43
32	111672	GSPL/ASK/BH02	29.755588	80.33535	<5	5.33	42	0.026	146	<5	0.06	<5	20	135	553	4.65	22	2.86	0.52
33	111673	GSPL/ASK/BH02	29.755588	80.33535	<5	6.52	90	<0.001	435	<5	0.96	<5	13	187	565	4.81	18	1.99	1.19
34	111674	GSPL/ASK/BH02	29.755588	80.33535	<5	7.65	757	0.023	735	6	0.56	11	16	77	2479	4.89	26	3.14	1.02
35	111675	GSPL/ASK/BH02	29.755588	80.33535	<5	7.68	101	0.037	244	<5	0.07	<5	10	101	14167	3.92	25	2.90	3.06
36	111676	GSPL/ASK/BH02	29.755588	80.33535	<5	3.38	4787	0.022	156	7	0.11	36	16	52	10267	29.73	35	1.32	0.54
37	111677	GSPL/ASK/BH02	29.755588	80.33535	<5	8.73	881	0.009	211	<5	0.04	<5	9	154	9049	3.40	27	3.24	1.42
38	111678	GSPL/ASK/BH02	29.755588	80.33535	<5	0.75	293	0.010	18	<5	0.19	<5	<5	268	247	1.05	<5	0.20	0.46
39	111679	GSPL/ASK/BH02	29.755588	80.33535	<5	5.18	3247	0.011	28	<5	0.01	<5	10	163	2298	3.92	26	2.84	0.60
40	111680	GSPL/ASK/BH02	29.755588	80.33535	<5	4.75	739	0.024	103	<5	0.03	<5	<5	152	454	4.05	17	2.10	1.65
41	111681	GSPL/ASK/BH02	29.755588	80.33535	<5	5.48	807	0.012	18	<5	<0.01	5	10	126	1285	5.79	29	3.02	0.47
42	111682	GSPL/ASK/BH02	29.755588	80.33535	<5	6.49	1158	0.012	79	<5	0.02	10	12	108	1611	6.20	29	2.98	0.84
43	111683	GSPL/ASK/BH02	29.755588	80.33535	<5	5.37	1439	0.028	57	<5	0.02	<5	18	153	6618	4.54	22	2.40	0.62
44	111684	GSPL/ASK/BH02	29.755588	80.33535	8	5.14	793	0.024	131	35	0.05	<5	17	217	373	3.37	17	2.15	0.75

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	BH No	Latitude	Longitude	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	S ppm	Sb ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Zn ppm	Zr ppm
20	111751	GSPL/ASK/BH02	29.755588	80.33535	0.05	<5	1.95	12	0.071	66	<0.01	5	5	196	0.38	49	<5	520	<5
21	111752	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.24	10	0.032	139	0.05	<5	11	23	0.20	93	<5	260	<5
22	111753	GSPL/ASK/BH02	29.755588	80.33535	0.04	<5	0.15	32	0.038	89976	5.83	466	685	17	0.07	34	<5	72106	<5
23	111754	GSPL/ASK/BH02	29.755588	80.33535	0.04	<5	0.02	27	0.037	132146	13.46	464	750	15	0.04	31	<5	216316	<5
24	111755	GSPL/ASK/BH02	29.755588	80.33535	0.04	<5	0.01	32	0.060	75395	11.17	260	547	13	0.09	29	<5	129059	<5
25	111756	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.20	21	0.069	11924	2.79	73	140	25	0.16	60	<5	15444	<5
26	111757	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.31	33	0.054	1059	5.22	26	253	31	0.19	88	<5	8918	<5
27	111758	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.33	49	0.035	33	0.02	<5	5	36	0.35	109	<5	345	<5
28	111759	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.20	31	0.027	39	0.06	6	13	30	0.24	70	<5	276	5
29	111760	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	1.16	6	0.049	58	0.02	<5	2	118	0.13	17	<5	84	14
30	111670	GSPL/ASK/BH02	29.755588	80.33535	0.05	<5	1.84	10	0.065	87	<0.01	<5	5	113	0.36	48	<5	381	<5
31	111671	GSPL/ASK/BH02	29.755588	80.33535	0.04	<5	1.49	11	0.066	59	<0.01	7	5	104	0.37	48	<5	1543	<5
32	111672	GSPL/ASK/BH02	29.755588	80.33535	0.05	<5	0.13	35	0.044	139	0.02	10	6	8	0.29	87	<5	584	<5
33	111673	GSPL/ASK/BH02	29.755588	80.33535	0.12	<5	1.07	12	0.057	124	0.01	6	6	93	0.33	44	<5	625	13
34	111674	GSPL/ASK/BH02	29.755588	80.33535	0.13	<5	0.64	11	0.080	627	0.03	13	9	61	0.44	58	<5	1591	<5
35	111675	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.17	12	0.015	105	0.16	<5	18	23	0.19	102	<5	319	<5
36	111676	GSPL/ASK/BH02	29.755588	80.33535	0.01	<5	0.15	14	0.123	537	0.14	90	4	35	0.15	23	6	7922	12
37	111677	GSPL/ASK/BH02	29.755588	80.33535	0.01	<5	0.26	9	0.017	111	0.20	5	23	13	0.19	101	<5	324	<5
38	111678	GSPL/ASK/BH02	29.755588	80.33535	<0.01	<5	<0.01	7	0.088	168	0.03	8	3	12	0.02	7	<5	233	<5
39	111679	GSPL/ASK/BH02	29.755588	80.33535	0.01	<5	<0.01	16	0.027	96	0.13	7	43	9	0.18	100	<5	345	<5
40	111680	GSPL/ASK/BH02	29.755588	80.33535	<0.01	<5	0.12	10	0.017	425	0.11	16	18	17	0.14	66	<5	320	<5
41	111681	GSPL/ASK/BH02	29.755588	80.33535	0.01	<5	<0.01	28	0.038	116	0.11	14	9	6	0.35	114	<5	659	<5
42	111682	GSPL/ASK/BH02	29.755588	80.33535	0.01	<5	0.24	45	0.046	98	0.04	46	7	10	0.35	116	<5	1051	<5
43	111683	GSPL/ASK/BH02	29.755588	80.33535	<0.01	7	0.09	27	0.034	53	0.55	14	4	11	0.28	86	<5	204	<5
44	111684	GSPL/ASK/BH02	29.755588	80.33535	0.01	8	0.16	34	0.039	1158	0.24	10	7	15	0.20	68	<5	413	<5

Sl. No.	Sample ID	BH No	Latitude	Longitude	Ag ppm	Al ppm	As ppm	Au ppm	Ba ppm	Bi ppm	Ca ppm	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe ppm	Ga ppm	K ppm	Mg ppm
45	111685	GSPL/ASK/BH02	29.755588	80.33535	<5	5.40	2908	0.012	22	<5	0.01	12	34	130	1563	4.99	31	3.08	0.46
46	111686	GSPL/ASK/BH02	29.755588	80.33535	42	6.52	849	0.158	195	23	0.35	121	40	115	50158	7.56	23	1.94	2.05
47	111687	GSPL/ASK/BH02	29.755588	80.33535	<5	7.70	169	0.021	243	<5	0.11	<5	16	131	1627	6.08	26	2.78	2.33
48	111688	GSPL/ASK/BH02	29.755588	80.33535	<5	6.36	1087	0.003	244	<5	0.08	<5	6	166	994	3.26	18	2.31	0.61
49	111689	GSPL/ASK/BH02	29.755588	80.33535	<5	5.39	811	0.072	186	<5	0.16	<5	14	215	3015	4.71	16	1.71	1.29
50	111690	GSPL/ASK/BH02	29.755588	80.33535	<5	0.91	218	0.010	27	<5	0.13	<5	<5	235	701	1.32	<5	0.24	0.18
51	111691	GSPL/ASK/BH02	29.755588	80.33535	<5	10.27	60	0.002	370	<5	0.11	<5	23	152	916	5.64	29	3.21	1.28
52	111692	GSPL/ASK/BH02	29.755588	80.33535	<5	9.74	54	0.010	267	<5	0.11	<5	25	129	597	5.46	30	3.43	1.14
53	111693	GSPL/ASK/BH02	29.755588	80.33535	<5	10.26	32	0.007	322	<5	0.12	<5	22	117	404	5.54	31	3.16	1.18
54	111694	GSPL/ASK/BH02	29.755588	80.33535	<5	9.52	25	0.010	390	<5	0.16	<5	22	133	41	5.04	26	2.86	1.16
55	111695	GSPL/ASK/BH02	29.755588	80.33535	<5	11.55	11	0.008	404	<5	0.20	<5	27	148	<5	6.98	36	3.57	1.29
56	111696	GSPL/ASK/BH02	29.755588	80.33535	<5	1.21	15	0.004	44	<5	0.07	<5	8	347	166	1.37	<5	0.39	0.22
57	111697	GSPL/ASK/BH02	29.755588	80.33535	<5	1.77	61	0.006	61	<5	0.09	<5	21	338	540	2.96	6	0.53	0.37
58	111698	GSPL/ASK/BH02	29.755588	80.33535	<5	6.84	<5	0.017	66	<5	0.39	<5	31	351	<5	8.19	24	0.45	2.91
59	111699	GSPL/ASK/BH02	29.755588	80.33535	<5	5.78	<5	0.009	251	<5	0.19	<5	18	156	46	3.77	16	1.91	0.75
60	111700	GSPL/ASK/BH02	29.755588	80.33535	<5	4.03	<5	0.003	95	<5	0.58	<5	6	172	<5	1.53	7	0.56	0.63
61	111701	GSPL/ASK/BH02	29.755588	80.33535	<5	8.83	12	0.019	415	<5	0.39	<5	23	173	114	5.29	25	3.22	1.29
62	111702	GSPL/ASK/BH02	29.755588	80.33535	<5	8.21	30	0.010	374	<5	0.39	<5	27	188	110	5.34	24	2.87	1.19
63	111703	GSPL/ASK/BH02	29.755588	80.33535	<5	7.41	<5	0.007	1251	<5	1.60	<5	24	62	<5	4.43	28	3.47	1.20
64	111704	GSPL/ASK/BH02	29.755588	80.33535	<5	4.56	<5	0.006	613	<5	1.95	<5	16	126	<5	3.58	20	2.17	0.72
65	111705	GSPL/ASK/BH02	29.755588	80.33535	<5	4.02	<5	0.023	386	<5	1.34	<5	16	91	245	4.64	22	2.67	0.41
66	111706	GSPL/ASK/BH02	29.755588	80.33535	<5	3.92	<5	0.008	372	<5	1.31	<5	17	87	234	4.45	20	2.56	0.40

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	BH No	Latitude	Longitude	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	S ppm	Sb ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Zn ppm	Zr ppm
45	111685	GSPL/ASK/BH02	29.755588	80.33535	0.02	6	<0.01	57	0.021	83	0.40	17	10	<5	0.37	120	<5	662	<5
46	111686	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.60	22	0.035	18971	4.53	134	325	55	0.12	57	<5	36156	<5
47	111687	GSPL/ASK/BH02	29.755588	80.33535	0.03	<5	0.18	28	0.016	187	0.18	8	35	32	0.27	83	<5	490	<5
48	111688	GSPL/ASK/BH02	29.755588	80.33535	<0.01	<5	0.20	14	0.022	147	0.02	7	13	33	0.24	67	<5	461	7
49	111689	GSPL/ASK/BH02	29.755588	80.33535	0.02	18	0.19	22	0.024	1350	0.38	26	39	30	0.20	56	22	1319	8
50	111690	GSPL/ASK/BH02	29.755588	80.33535	<0.01	32	0.04	8	0.021	22	0.02	8	3	13	0.03	9	<5	127	<5
51	111691	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.33	46	0.042	30	0.04	<5	6	58	0.35	109	<5	521	5
52	111692	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.35	50	0.037	34	0.05	5	7	42	0.36	113	<5	472	<5
53	111693	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.35	46	0.040	32	0.03	<5	6	53	0.35	111	<5	408	<5
54	111694	GSPL/ASK/BH02	29.755588	80.33535	0.02	<5	0.53	44	0.043	37	0.03	<5	5	63	0.35	98	<5	232	5
55	111695	GSPL/ASK/BH02	29.755588	80.33535	0.05	12	0.48	51	0.019	55	0.01	8	7	52	0.42	134	<5	233	<5
56	111696	GSPL/ASK/BH02	29.755588	80.33535	<0.01	65	0.03	34	0.007	12	0.19	<5	1	15	0.04	13	<5	150	<5
57	111697	GSPL/ASK/BH02	29.755588	80.33535	0.01	17	0.04	82	0.009	13	0.57	<5	2	16	0.06	18	<5	530	<5
58	111698	GSPL/ASK/BH02	29.755588	80.33535	0.03	6	1.01	81	0.059	17	<0.01	9	3	70	0.38	178	<5	362	8
59	111699	GSPL/ASK/BH02	29.755588	80.33535	0.02	21	0.44	32	0.030	25	0.17	<5	5	48	0.24	61	<5	235	<5
60	111700	GSPL/ASK/BH02	29.755588	80.33535	<0.01	35	1.44	23	0.016	31	0.02	<5	2	126	0.09	21	<5	40	<5
61	111701	GSPL/ASK/BH02	29.755588	80.33535	0.03	6	0.41	45	0.046	22	0.17	6	6	54	0.37	94	<5	125	<5
62	111702	GSPL/ASK/BH02	29.755588	80.33535	0.02	7	0.41	54	0.038	32	0.11	7	6	60	0.34	84	<5	137	<5
63	111703	GSPL/ASK/BH02	29.755588	80.33535	0.05	7	1.76	13	0.090	32	0.02	<5	8	157	0.49	63	<5	129	<5
64	111704	GSPL/ASK/BH02	29.755588	80.33535	0.04	5	2.09	10	0.067	25	<0.01	8	7	148	0.37	48	<5	62	<5
65	111705	GSPL/ASK/BH02	29.755588	80.33535	0.04	12	1.37	11	0.066	24	0.12	9	32	87	0.35	49	<5	71	<5
66	111706	GSPL/ASK/BH02	29.755588	80.33535	0.04	11	1.31	11	0.063	24	0.10	7	30	85	0.34	46	<5	68	<5

SL No.	Sample ID	BH No	Latitude	Longitude	Ag ppm	Al ppm	As ppm	Au ppm	Ba ppm	Bi ppm	Ca ppm	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe ppm	Ga ppm	K ppm	Mg ppm
67	111707	GSPL/ASK/BH03	29.759064	80.334520	<5	7.71	<5	0.006	80	15	7.85	<5	55	319	24	7.54	26	0.27	4.18
68	111708	GSPL/ASK/BH03	29.759064	80.334520	<5	7.32	41	0.012	698	<5	2.95	<5	23	96	25	4.21	26	2.31	1.22
69	111709	GSPL/ASK/BH03	29.759064	80.334520	<5	7.46	12	0.017	741	21	1.77	<5	17	60	16	3.10	30	3.39	0.73
70	111710	GSPL/ASK/BH03	29.759064	80.334520	<5	9.89	<5	0.030	708	8	3.24	<5	27	86	<5	5.83	42	4.26	1.29
71	111711	GSPL/ASK/BH03	29.759064	80.334520	<5	4.54	<5	0.029	1515	8	0.34	<5	<5	109	<5	0.45	7	4.19	0.08
72	111712	GSPL/ASK/BH03	29.759064	80.334520	<5	2.55	<5	0.040	202	16	0.20	<5	7	98	<5	1.07	9	1.50	0.67
73	111713	GSPL/ASK/BH03	29.759064	80.334520	<5	7.45	<5	0.051	309	<5	1.18	<5	18	76	49	3.60	26	1.91	0.93
74	111714	GSPL/ASK/BH03	29.759064	80.334520	<5	7.75	<5	0.055	677	10	1.98	<5	20	84	40	3.88	15	3.83	0.80
75	111715	GSPL/ASK/BH03	29.759064	80.334520	<5	3.70	<5	0.059	852	<5	0.32	<5	<5	115	32	0.78	12	3.19	0.11
76	111716	GSPL/ASK/BH03	29.759064	80.334520	<5	7.44	14	0.060	1351	<5	1.93	<5	20	110	29	4.63	28	5.21	0.69
77	111717	GSPL/ASK/BH03	29.759064	80.334520	<5	7.00	50	0.072	682	21	1.63	<5	22	66	78	7.39	27	3.81	1.03
78	111718	GSPL/ASK/BH03	29.759064	80.334520	18	7.65	69	0.073	702	<5	0.25	<5	19	108	<5	5.90	31	4.52	0.62
79	111719	GSPL/ASK/BH03	29.759064	80.334520	<5	3.39	<5	0.088	224	21	0.32	<5	5	108	<5	3.06	14	1.70	0.51
80	111720	GSPL/ASK/BH03	29.759064	80.334520	21	6.97	32	0.127	312	8	1.42	96	27	113	5003	10.24	31	2.51	1.88
81	111721	GSPL/ASK/BH03	29.759064	80.334520	<5	5.36	7	0.089	260	<5	0.30	<5	18	80	22	9.92	33	3.02	1.19
82	111722	GSPL/ASK/BH03	29.759064	80.334520	<5	7.46	<5	0.091	800	<5	1.33	<5	<5	100	106	3.67	<5	2.16	0.93

Sl. No.	Sample ID	BH No	Latitude	Longitude	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	S ppm	Sb ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Zn ppm	Zr ppm
67	111707	GSPL/ASK/BH03	29.759064	80.334520	0.12	<5	1.55	58	0.032	10	<0.05	<5	10	211	40	0.58	<5	254	<5
68	111708	GSPL/ASK/BH03	29.759064	80.334520	0.05	<5	2.23	11	0.059	34	<0.05	<5	3	267	<5	0.43	<5	72	<5
69	111709	GSPL/ASK/BH03	29.759064	80.334520	0.04	<5	2.24	7	0.064	46	<0.05	<5	9	218	31	0.39	<5	48	<5
70	111710	GSPL/ASK/BH03	29.759064	80.334520	0.06	<5	2.00	10	0.079	38	<0.05	<5	6	240	16	0.61	<5	80	<5
71	111711	GSPL/ASK/BH03	29.759064	80.334520	<0.01	<5	1.03	<5	0.018	49	<0.05	<5	1	156	<5	0.03	<5	5	<5
72	111712	GSPL/ASK/BH03	29.759064	80.334520	<0.01	<5	0.49	<5	0.031	9	<0.05	<5	1	31	<5	0.11	<5	15	<5
73	111713	GSPL/ASK/BH03	29.759064	80.334520	0.04	<5	3.48	<5	0.065	22	<0.05	8	9	172	<5	0.41	<5	52	<5
74	111714	GSPL/ASK/BH03	29.759064	80.334520	0.05	<5	2.31	<5	0.064	50	<0.05	<5	13	212	<5	0.41	<5	51	<5
75	111715	GSPL/ASK/BH03	29.759064	80.334520	<0.01	<5	0.87	<5	0.019	43	<0.05	<5	8	123	<5	0.05	<5	8	<5
76	111716	GSPL/ASK/BH03	29.759064	80.334520	0.04	<5	0.84	8	0.050	70	<0.05	<5	12	237	<5	0.47	<5	62	<5
77	111717	GSPL/ASK/BH03	29.759064	80.334520	0.07	<5	0.95	10	0.060	44	<0.05	10	38	168	56	0.38	<5	50	<5
78	111718	GSPL/ASK/BH03	29.759064	80.334520	0.01	<5	0.18	<5	0.064	49	<0.05	<5	115	31	27	0.42	<5	52	<5
79	111719	GSPL/ASK/BH03	29.759064	80.334520	0.02	<5	0.53	<5	0.058	48	<0.05	<5	43	35	<5	0.16	<5	26	<5
80	111720	GSPL/ASK/BH03	29.759064	80.334520	0.20	<5	0.99	16	0.050	18245	2.43	69	139	69	57	0.29	<5	64	<5
81	111721	GSPL/ASK/BH03	29.759064	80.334520	0.05	<5	0.07	7	0.044	8	<0.05	5	40	17	7	0.31	<5	42	<5
82	111722	GSPL/ASK/BH03	29.759064	80.334520	0.04	<5	2.05	<5	0.060	230	<0.05	<5	<1	224	<5	0.40	<5	<5	<5

Sl. No.	Sample ID	BH No	Latitude	Longitude	Ag ppm	Al ppm	As ppm	Au ppm	Ba ppm	Bi ppm	Ca ppm	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe ppm	Ga ppm	K ppm	Mg ppm
83	111723	GSPL/ASK/BH04	29.751716	80.332324	<5	6.49	298	0.004	289	8	0.08	<5	47	251	54	4.62	26	2.25	0.91
84	111724	GSPL/ASK/BH04	29.751716	80.332324	<5	7.58	47	0.014	306	12	0.10	<5	29	135	124	4.69	26	2.49	1.23
85	111725	GSPL/ASK/BH04	29.751716	80.332324	<5	6.73	54	0.011	271	27	0.20	<5	24	162	305	3.87	28	2.14	0.98
86	111726	GSPL/ASK/BH04	29.751716	80.332324	<5	4.81	51	0.009	196	19	0.08	<5	24	195	584	3.54	18	1.52	0.84
87	111727	GSPL/ASK/BH04	29.751716	80.332324	<5	1.08	22	0.042	19	40	0.09	<5	12	320	1889	2.14	<5	0.13	0.44
88	111728	GSPL/ASK/BH04	29.751716	80.332324	<5	9.77	<5	0.010	67	10	0.30	<5	18	138	208	4.73	36	0.59	1.50
89	111729	GSPL/ASK/BH04	29.751716	80.332324	<5	4.97	18	0.029	43	70	0.61	<5	16	256	89	3.84	19	0.38	1.23
90	111730	GSPL/ASK/BH04	29.751716	80.332324	<5	8.71	54	0.021	129	11	0.21	<5	25	173	106	3.93	30	1.07	1.29
91	111731	GSPL/ASK/BH04	29.751716	80.332324	<5	9.05	<5	0.023	465	10	0.81	<5	24	82	24	6.27	20	4.37	1.59
92	111732	GSPL/ASK/BH04	29.751716	80.332324	<5	0.91	<5	0.013	64	<5	2.49	<5	<5	349	<5	0.94	8	0.29	0.18
93	111733	GSPL/ASK/BH04	29.751716	80.332324	<5	6.20	<5	0.026	370	<5	5.17	16	73	46	1579	11.71	33	1.62	2.13
94	111734	GSPL/ASK/BH04	29.751716	80.332324	<5	8.23	<5	0.027	545	11	1.21	<5	23	106	81	5.29	31	2.89	1.25
95	111735	GSPL/ASK/BH04	29.751716	80.332324	<5	2.89	<5	0.032	114	14	0.23	<5	<5	208	<5	2.16	7	1.10	0.26
96	111736	GSPL/ASK/BH04	29.751716	80.332324	<5	2.95	<5	0.029	39	23	0.44	<5	<5	274	<5	0.43	9	0.23	0.09
97	111737	GSPL/ASK/BH04	29.751716	80.332324	<5	7.27	<5	0.040	515	<5	1.15	<5	29	131	10	4.98	27	3.28	2.25
98	111738	GSPL/ASK/BH04	29.751716	80.332324	<5	7.30	<5	0.043	628	<5	0.49	<5	18	63	36	3.56	27	3.42	1.72
99	111739	GSPL/ASK/BH04	29.751716	80.332324	<5	1.58	<5	0.054	88	8	0.47	<5	7	225	67	1.79	7	0.71	0.42
100	111740	GSPL/ASK/BH04	29.751716	80.332324	<5	7.47	<5	0.038	610	17	2.46	<5	18	69	26	3.67	26	1.92	0.75

**Reconnaissance Survey (G4 Stage) for Basemetal in
Thal-Didihat-Askot area, Pithoragarh district, Uttarakhand**

Sl. No.	Sample ID	BH No	Latitude	Longitude	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	S ppm	Sb ppm	Sn ppm	Sr ppm	Ti ppm	V ppm	W ppm	Zn ppm	Zr ppm
83	111723	GSPL/ASK/BH04	29.751716	80.332324	0.03	33	0.31	45	0.027	15	<0.05	<5	12	25	<5	0.24	<5	74	<5
84	111724	GSPL/ASK/BH04	29.751716	80.332324	0.02	9	0.61	51	0.026	19	0.04	<5	13	30	29	0.29	<5	80	21
85	111725	GSPL/ASK/BH04	29.751716	80.332324	0.02	23	0.66	38	0.029	24	0.05	<5	17	35	<5	0.23	<5	70	<5
86	111726	GSPL/ASK/BH04	29.751716	80.332324	0.02	19	0.43	40	0.020	31	0.09	<5	15	23	<5	0.18	<5	50	<5
87	111727	GSPL/ASK/BH04	29.751716	80.332324	0.01	59	0.08	40	0.005	24	0.27	7	6	7	<5	0.02	<5	9	<5
88	111728	GSPL/ASK/BH04	29.751716	80.332324	0.01	<5	0.80	21	0.039	20	0.11	<5	48	83	8	0.37	<5	114	<5
89	111729	GSPL/ASK/BH04	29.751716	80.332324	0.01	24	0.32	32	0.041	33	0.04	8	12	47	<5	0.12	<5	50	<5
90	111730	GSPL/ASK/BH04	29.751716	80.332324	0.01	10	0.80	37	0.037	15	0.07	7	81	52	<5	0.34	<5	100	<5
91	111731	GSPL/ASK/BH04	29.751716	80.332324	0.03	8	1.79	13	0.064	22	<0.05	<5	62	115	<5	0.51	<5	66	<5
92	111732	GSPL/ASK/BH04	29.751716	80.332324	0.03	46	0.36	5	0.015	20	0.02	<5	4	60	<5	0.05	<5	17	<5
93	111733	GSPL/ASK/BH04	29.751716	80.332324	0.17	6	1.40	27	0.093	3493	0.48	26	51	146	88	1.27	23	342	<5
94	111734	GSPL/ASK/BH04	29.751716	80.332324	0.04	11	2.21	12	0.065	117	0.08	12	36	162	29	0.49	8	67	<5
95	111735	GSPL/ASK/BH04	29.751716	80.332324	0.08	43	0.16	<5	0.013	24	<0.05	<5	15	12	<5	0.07	<5	20	<5
96	111736	GSPL/ASK/BH04	29.751716	80.332324	<0.01	50	1.84	<5	0.008	21	<0.05	<5	5	131	<5	0.02	<5	<5	<5
97	111737	GSPL/ASK/BH04	29.751716	80.332324	0.04	13	1.72	12	0.058	31	0.09	10	22	188	<5	0.44	<5	53	<5
98	111738	GSPL/ASK/BH04	29.751716	80.332324	0.04	6	1.74	8	0.061	26	<0.05	<5	16	90	<5	0.37	<5	52	<5
99	111739	GSPL/ASK/BH04	29.751716	80.332324	<0.01	48	0.26	<5	0.014	17	0.21	<5	38	32	<5	0.12	<5	15	<5
100	111740	GSPL/ASK/BH04	29.751716	80.332324	0.04	7	2.73	11	0.063	57	0.03	<5	17	261	<5	0.40	<5	51	<5

Annexure XIV_ICPMS Data of Borehole Samples

Sl. No.	Sample ID	BH No	Latitude	Longitude	Li ppm	Be ppm	Sc ppm	V ppm	Cr ppm	Mn ppm	Co ppm	Ni ppm	Cu ppm	Zn ppm	Ga ppm	Ge ppm	Se ppm	Rb ppm
1	111741	GSPL/ASK/BH02	29.751716	80.332324	21.53	2.71	13.80	54.74	57.60	720.11	17.19	9.24	282.06	468.83	27.68	0.26	6.78	152.52
2	111742	GSPL/ASK/BH02	29.751716	80.332324	28.34	1.92	14.93	91.60	83.14	332.14	7.29	26.66	340.19	369.14	24.29	0.22	4.38	132.75
3	111743	GSPL/ASK/BH02	29.751716	80.332324	35.18	3.23	13.40	54.57	41.58	536.25	12.49	6.80	1283.21	844.63	26.46	0.23	6.02	196.75
4	111744	GSPL/ASK/BH02	29.751716	80.332324	17.63	3.27	7.24	47.21	69.42	888.95	45.17	18.47	20892.19	49697.54	29.53	0.17	21.20	60.80
5	111745	GSPL/ASK/BH02	29.751716	80.332324	10.43	0.25	3.56	24.42	46.50	437.67	96.41	36.83	39819.64	252146.82	14.81	0.11	49.32	31.75
6	111746	GSPL/ASK/BH02	29.751716	80.332324	28.18	2.12	9.05	55.20	158.35	251.72	15.73	17.25	3294.83	2537.53	15.38	0.14	7.81	113.85
7	111747	GSPL/ASK/BH02	29.751716	80.332324	27.01	3.16	19.32	119.13	115.49	217.06	20.06	42.82	1142.97	577.48	32.99	0.25	6.39	231.47
8	111748	GSPL/ASK/BH02	29.751716	80.332324	25.65	1.32	8.45	55.89	89.62	471.11	19.21	25.54	451.61	506.87	16.46	0.19	3.97	88.62

Sl. No.	Sample ID	BH No	Latitude	Longitude	Sr ppm	Y ppm	Zr ppm	Nb ppm	Mo ppm	Ag ppm	Cd ppm	In ppm	Sn ppm	Sb ppm	Te ppm	Cs ppm	Ba ppm	La ppm	Ce ppm	Pr ppm	Nd ppm
1	111741	GSPL/ASK/BH02	29.751716	80.332324	268.3	40.3	11.7	14.3	6.006	0.261	3.251	0.082	9.291	0.9644	<0.05	5.344	901.34	60.951	118.13	13.156	49.12
2	111742	GSPL/ASK/BH02	29.751716	80.332324	34.64	20.6	4.66	12.61	2.542	0.103	0.471	0.073	6.955	<0.1	0.5537	1.873	602.67	45.544	85.706	10.036	36.038
3	111743	GSPL/ASK/BH02	29.751716	80.332324	114.5	40.2	11.7	15.01	4.143	0.818	2.86	0.192	15.88	<0.1	<0.05	9.255	741.6	56.164	110.14	12.428	46.221
4	111744	GSPL/ASK/BH02	29.751716	80.332324	28.39	18.6	15.4	10.23	3.487	64.78	193	15.19	703.6	203.89	<0.05	7.844	7.9244	24.746	46.103	5.246	19.018
5	111745	GSPL/ASK/BH02	29.751716	80.332324	12.26	6.28	1.37	1.658	4.735	178.8	833.2	59.93	727.7	450.6	0.4304	2.968	3.3393	10.223	19.167	2.0891	8.2868
6	111746	GSPL/ASK/BH02	29.751716	80.332324	20.02	13.1	5.16	6.577	20.64	5.318	9.334	1.807	40.38	17.029	0.942	5.799	161.09	38.571	72.055	8.0798	29.857
7	111747	GSPL/ASK/BH02	29.751716	80.332324	60.02	17.1	9.26	14.66	4.851	1.586	2.652	0.161	6.927	<0.1	<0.05	4.836	419.1	60.225	112.95	13.037	46.522
8	111748	GSPL/ASK/BH02	29.751716	80.332324	17.7	18.4	5.34	9.041	6.679	1.534	10.35	0.237	12.87	<0.1	0.5761	4.441	141.65	35.092	67.517	7.5301	28.021

Sl. No.	Sample ID	BH No	Latitude	Longitude	Sm ppm	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm	Yb ppm	Lu ppm	Hf ppm	Ta ppm	W ppm	Tl ppm	Pb ppm	Bi ppm	Th ppm	U ppm
1	111741	GSPL/ASK/BH02	29.751716	80.332324	9.286	1.458	9.157	1.156	7.089	1.31	3.952	0.646	3.492	0.439	0.639	0.977	1.447	0.941	84.66	0.2073	23.23	6.305
2	111742	GSPL/ASK/BH02	29.751716	80.332324	6.809	1.227	6.073	0.726	4.056	0.679	2.051	0.306	1.913	0.216	0.24	0.874	3.356	0.544	87.49	0.3462	15.67	2.787
3	111743	GSPL/ASK/BH02	29.751716	80.332324	9.146	1.149	8.518	1.155	7.005	1.287	4.079	0.644	3.202	0.398	0.509	1.073	5.595	1.256	845.7	0.6018	23.31	6.264
4	111744	GSPL/ASK/BH02	29.751716	80.332324	3.169	0.999	3.196	0.421	2.782	0.49	1.711	0.283	1.662	0.199	0.619	0.645	1.284	0.753	49608	25.67	8.651	2.838
5	111745	GSPL/ASK/BH02	29.751716	80.332324	1.355	0.431	1.225	0.149	0.984	0.138	0.552	<0.1	0.45	0.022	0.072	<0.1	0.751	0.7	72294	67.681	2.812	2.632
6	111746	GSPL/ASK/BH02	29.751716	80.332324	5.428	0.916	4.874	0.571	2.928	0.472	1.522	0.254	1.525	0.29	0.101	0.489	17.08	0.871	2103	4.1955	10.49	2.801
7	111747	GSPL/ASK/BH02	29.751716	80.332324	8.557	1.524	7.45	0.832	4.588	0.661	2.149	0.283	1.351	0.271	0.25	1.098	5.943	1.213	48.81	0.5725	19	4.39
8	111748	GSPL/ASK/BH02	29.751716	80.332324	5.229	0.938	4.943	0.625	3.521	0.587	1.824	0.256	1.643	0.318	0.178	0.694	4.635	0.507	26.45	4.2067	11.27	3.173

Sl. No.	Sample ID	BH No	Latitude	Longitude	Li ppm	Be ppm	Sc ppm	V ppm	Cr ppm	Mn ppm	Co ppm	Ni ppm	Cu ppm	Zn ppm	Ga ppm	Ge ppm	Se ppm	Rb ppm
9	111749	GSPL/ASK/BH04	29.751716	80.332324	32.22	3.01	19.61	113.75	146.21	236.49	17.89	49.03	45.02	113.54	30.37	0.25	3.70	258.37
10	111750	GSPL/ASK/BH04	29.751716	80.332324	20.81	1.54	8.43	58.16	180.42	178.74	20.63	40.51	270.04	120.50	16.11	0.12	1.83	140.12
11	111791	GSPL/ASK/BH04	29.751716	80.332324	26.74	3.08	18.55	112.55	122.17	219.65	20.57	52.14	52.81	113.65	27.74	0.22	4.75	226.39
12	111792	GSPL/ASK/BH04	29.751716	80.332324	26.23	3.69	19.64	122.11	147.50	251.59	21.91	54.67	49.29	148.66	32.07	0.19	4.36	241.36
13	111793	GSPL/ASK/BH04	29.751716	80.332324	27.02	3.58	19.19	118.89	130.09	226.53	19.16	58.23	92.75	148.82	30.07	0.19	4.46	235.74
14	111794	GSPL/ASK/BH04	29.751716	80.332324	34.06	3.28	20.17	121.82	127.87	237.79	21.23	56.97	107.50	88.96	30.13	0.22	4.80	323.63
15	111795	GSPL/ASK/BH04	29.751716	80.332324	39.54	0.99	12.29	50.23	80.90	584.24	12.63	6.98	124.93	161.61	26.75	0.24	6.00	241.60
16	111796	GSPL/ASK/BH04	29.751716	80.332324	13.07	4.07	11.28	44.68	109.74	216.45	11.39	10.24	287.56	127.47	21.41	0.25	5.62	76.14
17	111797	GSPL/ASK/BH04	29.751716	80.332324	35.05	3.30	14.04	52.12	82.19	447.40	13.66	7.80	20.00	102.91	26.94	0.21	4.96	210.82
18	111798	GSPL/ASK/BH04	29.751716	80.332324	21.51	2.24	11.17	49.12	139.28	393.87	13.50	12.89	34.22	83.38	25.22	0.21	4.75	147.73
19	111799	GSPL/ASK/BH04	29.751716	80.332324	15.07	1.86	11.72	53.41	125.15	707.65	11.15	19.19	612.38	245.85	23.50	0.29	5.43	186.85
20	111800	GSPL/ASK/BH04	29.751716	80.332324	9.44	1.57	4.91	21.98	72.86	213.43	7.79	12.58	347.75	70.73	17.31	0.21	3.57	124.19

Sl. No.	Sample ID	BH No	Latitude	Longitude	Sr ppm	Y ppm	Zr ppm	Nb ppm	Mo ppm	Ag ppm	Cd ppm	In ppm	Sn ppm	Sb ppm	Te ppm	Cs ppm	Ba ppm	La ppm	Ce ppm	Pr ppm	Nd ppm
9	111749	GSPL/ASK/BH04	29.751716	80.332324	26.99	20.94	14.88	15.59	8.76	1.43	1.02	0.63	58.59	<0.1	<0.05	18.24	496.84	44.85	84.82	9.52	35.09
10	111750	GSPL/ASK/BH04	29.751716	80.332324	15.50	8.81	5.49	7.63	18.89	1.51	0.49	0.15	5.35	<0.1	0.60	16.83	221.47	17.28	32.63	3.68	14.11
11	111791	GSPL/ASK/BH04	29.751716	80.332324	33.45	22.41	15.47	14.94	4.91	2.17	1.37	0.55	86.10	<0.1	0.61	17.15	447.40	54.58	100.68	11.78	42.77
12	111792	GSPL/ASK/BH04	29.751716	80.332324	36.47	22.37	12.79	16.20	5.27	0.55	0.25	0.19	7.89	<0.1	0.63	17.23	495.54	55.97	104.92	11.79	44.37
13	111793	GSPL/ASK/BH04	29.751716	80.332324	38.09	13.06	5.19	13.42	4.36	0.46	0.18	0.14	8.72	<0.1	1.19	12.95	466.65	48.82	89.83	10.40	37.80
14	111794	GSPL/ASK/BH04	29.751716	80.332324	22.55	20.21	10.45	16.89	7.23	0.46	1.19	0.76	79.88	<0.1	<0.05	24.94	441.35	49.72	87.65	10.89	39.32
15	111795	GSPL/ASK/BH04	29.751716	80.332324	24.62	32.94	9.24	12.81	6.34	0.43	1.49	0.77	94.86	<0.1	<0.05	20.49	449.66	53.91	106.02	12.06	44.15
16	111796	GSPL/ASK/BH04	29.751716	80.332324	206.43	35.86	26.87	12.77	12.29	0.66	0.95	0.69	32.52	<0.1	<0.05	5.13	437.30	61.16	119.73	13.51	50.25
17	111797	GSPL/ASK/BH04	29.751716	80.332324	144.45	33.28	6.14	13.64	5.61	0.42	0.82	0.70	52.26	<0.1	<0.05	8.08	463.68	53.63	105.14	11.84	44.37
18	111798	GSPL/ASK/BH04	29.751716	80.332324	174.60	35.46	36.70	11.34	7.78	0.43	1.38	1.71	89.97	<0.1	<0.05	4.67	307.13	55.57	106.00	12.17	44.50
19	111799	GSPL/ASK/BH04	29.751716	80.332324	32.78	32.39	6.84	12.25	8.93	1.17	2.82	1.40	149.04	<0.1	1.19	6.93	441.97	55.11	108.16	12.08	46.19
20	111800	GSPL/ASK/BH04	29.751716	80.332324	23.30	20.57	3.21	7.51	8.69	0.72	1.51	0.73	102.75	<0.1	<0.05	3.00	261.86	46.44	89.70	9.78	35.15

Sl. No.	Sample ID	BH No	Latitude	Longitude	Sm ppm	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm	Yb ppm	Lu ppm	Hf ppm	Ta ppm	W ppm	Tl ppm	Pb ppm	Bi ppm	Th ppm	U ppm
9	111749	GSPL/ASK/BH04	29.751716	80.332324	6.28	1.12	5.86	0.71	4.19	0.74	2.17	0.31	1.41	0.26	0.47	1.09	6.15	1.71	17.97	0.92	17.00	3.39
10	111750	GSPL/ASK/BH04	29.751716	80.332324	2.54	0.49	2.13	0.28	1.77	0.28	0.84	<0.1	0.63	0.17	0.28	0.57	2.34	1.06	10.29	4.02	8.08	2.28
11	111791	GSPL/ASK/BH04	29.751716	80.332324	7.84	1.46	6.79	0.82	5.69	0.81	2.39	0.34	1.54	0.33	0.62	1.10	5.69	1.44	10.99	0.69	17.70	3.57
12	111792	GSPL/ASK/BH04	29.751716	80.332324	8.11	1.51	7.01	0.89	4.89	0.86	2.25	0.32	1.80	0.18	0.49	1.14	4.33	1.44	31.35	0.53	18.85	4.66
13	111793	GSPL/ASK/BH04	29.751716	80.332324	6.68	1.26	5.55	0.66	3.12	0.53	1.40	0.12	0.83	0.12	0.23	0.98	3.70	1.32	31.93	0.37	17.48	3.17
14	111794	GSPL/ASK/BH04	29.751716	80.332324	7.42	1.27	6.60	0.73	4.07	0.71	2.14	0.34	1.62	0.18	0.52	1.25	7.31	2.44	4.43	2.03	17.69	3.83
15	111795	GSPL/ASK/BH04	29.751716	80.332324	8.53	1.53	7.78	1.05	6.32	1.13	3.36	0.59	3.13	0.42	0.14	1.00	4.27	1.57	31.32	0.91	21.72	5.54
16	111796	GSPL/ASK/BH04	29.751716	80.332324	9.57	1.52	9.32	1.19	7.11	1.30	3.87	0.61	3.34	0.43	0.54	1.09	2.07	0.56	143.92	1.00	25.28	7.11
17	111797	GSPL/ASK/BH04	29.751716	80.332324	8.10	1.07	8.50	1.07	6.64	1.16	3.39	0.55	2.85	0.34	0.48	1.11	5.29	1.24	23.25	0.83	24.94	6.24
18	111798	GSPL/ASK/BH04	29.751716	80.332324	8.00	1.77	8.25	1.11	6.79	1.18	3.60	0.62	3.01	0.39	0.45	0.93	3.59	0.96	23.42	1.42	21.62	5.66
19	111799	GSPL/ASK/BH04	29.751716	80.332324	8.58	1.17	8.19	1.06	5.96	1.11	3.43	0.55	3.04	0.43	0.20	1.08	4.59	1.05	33.70	7.65	23.16	5.96
20	111800	GSPL/ASK/BH04	29.751716	80.332324	6.01	0.71	5.41	0.66	4.02	0.70	2.20	0.29	1.57	0.19	0.13	0.69	4.21	0.61	42.10	2.64	20.42	4.87

Annexure XV_XRD Data of Borehole Samples

SL No	Sample no.	Latitude	Longitude	Sample type	Lithology	Depth (m)
1	114612	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	16.5
2	114610	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	17
3	114611	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	18
4	114613	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	18.55
5	114615	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	24.2
6	114616	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	27.5
7	114614	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	28
8	114619	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	28.25
9	114617	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	29.3
10	114618	29.7556	80.33452	GSPL/ASK/BH02	Chlorite Schist	31.3

Annexure XVI_List of thin section samples for petrographic study

Sample No.	Lithology	Location	Petrographic Description
111771	Sericite–Chlorite Schist	BH01	Fine- to medium-grained schist composed of sericite, chlorite, and quartz with a well-developed schistosity. Disseminated pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite occur along foliation planes and quartz-rich domains, indicating related to VMS-style base-metal mineralization.
111776	Sericite–Chlorite Schist	BH01	Strongly foliated sericite–chlorite schist displaying quartz ribbons and aligned chlorite flakes. Pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite occur as disseminations and thin stringers parallel to foliation, suggesting syn-metamorphic remobilization of sulphides.
111784	Sericite–Chlorite Schist	BH01	Quartz-sericite-chlorite assemblage with intense phyllitic to schistose fabric. Sulphides comprising pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite occur as disseminated grains and fracture fillings associated with hydrothermal alteration.
111785	VMS Ore	BH01	Massive to semi-massive sulphide composed predominantly of pyrite with chalcopyrite, sphalerite, galena, and arsenopyrite. The sulphides exhibit interlocking and locally recrystallized textures characteristic of metamorphosed VMS mineralization.

111779	Biotite–Sericite–Chlorite Schist	BH02	Medium-grained schist consisting of biotite, sericite, chlorite, and quartz with prominent schistosity. Disseminated pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite occur preferentially along foliation and microfractures, reflecting hydrothermal sulphide introduction.
111761	Chlorite Schist	BH02	Chlorite-rich schist with subordinate quartz and sericite showing a penetrative schistose fabric. Disseminated pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite are concentrated within chlorite-rich bands and quartz veins.
111762	VMS Ore	BH02	Polymetallic massive sulphide consisting mainly of pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite. Massive, brecciated, and locally banded ore textures are consistent with volcanogenic massive sulphide mineralization.
111763	Chlorite Schist	BH02	Fine-grained chlorite schist characterized by abundant chlorite and quartz with accessory sericite. Pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite occur as disseminated grains and thin stringers parallel to foliation.
111774	Chlorite Schist	BH02	Strongly foliated chlorite schist with quartz-rich bands and minor carbonate. Fine disseminations of pyrite, chalcopyrite, sphalerite, galena, and arsenopyrite indicate pervasive hydrothermal alteration and sulphide enrichment.

