



COMPANY PROFILE | 2025

PROJECTS

200+

CLIENTELE

100+

EXPERIENCE

15+Y

COUNTRIES

40+

ABOUT US

Capstone Geo Consultants is a globally engaged, single-window service provider specializing in mineral exploration and mining consultancy. Backed by seasoned domain experts and a dynamic field workforce, we combine deep technical insight with cutting-edge technologies to deliver robust, reliable solutions across the mineral value chain.

We offer end-to-end services — from strategic consulting services to geospatial analysis, geological mapping, geochemical, geophysical surveys, core and non-core drilling, resource modelling, mine planning, beneficiation, and feasibility studies — supporting informed, cost-effective, and eco-sustainable mineral asset development. Our expertise spans a wide spectrum of commodities—gold, base metals, critical and battery minerals (including lithium, graphite, cobalt, and nickel), REEs, copper, iron ore, chromite, manganese, limestone, industrial minerals (including gypsum, barite, and fluorspar), and dimensional stones.

With a footprint in over 40 countries spanning Latin America, Africa, the Middle East, and Southeast Asia, we have successfully completed 200+ projects over the past 15 years. Our work is driven by a commitment to sustainable resource development, supported by state-of-the-art tools, advanced software, and proven methodologies.

VISION

To be a globally preferred partner in compliant, high-integrity mineral resource evaluation and mine planning, grounded in technical excellence and aligned with international standards.

MISSION

To deliver comprehensive, eco-conscious, and efficient solutions while bridging technoscientific knowledge with industry needs.



OUR SERVICES

Strategic Support Services

Geospatial Solutions

Geological Solutions

Geophysical Solutions

Drilling & Allied Solutions

Resource Modelling & Mine Planning

Mineral Testing Services

Water Resources & Risk Assessment

Specialized Services



STRATEGIC SUPPORT SERVICES



Asset Evaluation & Investment Support

- ✓ Quick-look and in-depth evaluations of greenfield and brownfield mining assets
- ✓ Advisory support for acquisitions & mergers, JV decisions, and prioritization of investment portfolios



Advisory & Audit Services

- ✓ Technical, legal & financial due diligence to guide strategic investments
- ✓ Independent technical audits & mining project evaluation
- ✓ Mining Licence Bid support advisory
- ✓ Mineral Resource & Reserve audits
- ✓ Technical Report auditing in compliant with JORC, NI 43-101 & other CRIRSCO standards



Data Analytics & Target Generation

- ✓ Exploratory Data Analysis – Identify high potential targets using integrated geological, geochemical, & geophysical datasets
- ✓ Conceptualize & define new exploration targets tailored to client objectives
- ✓ Scoping to feasibility studies with risk assessment & cost optimization



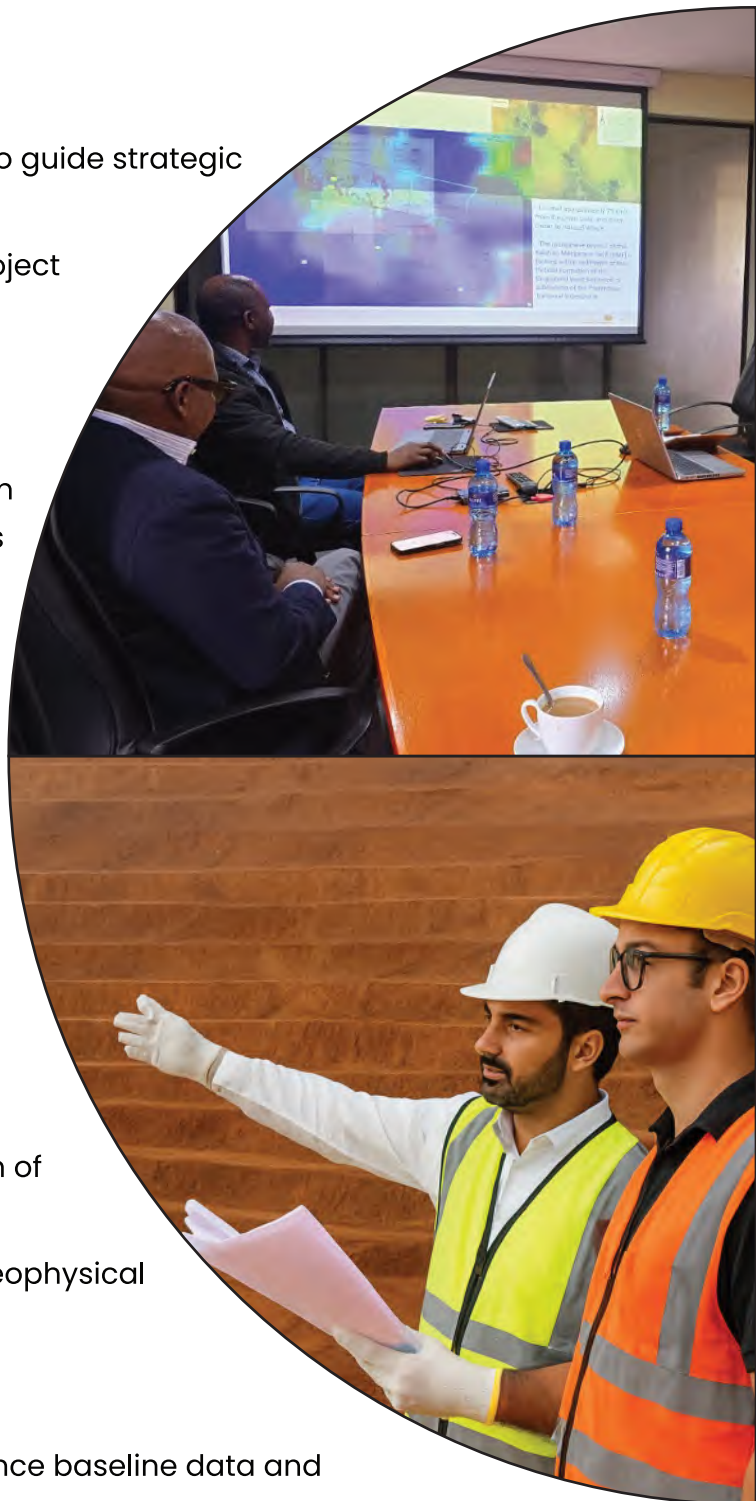
Exploration Project Management

- ✓ End-to-end support for design & execution of exploration programs
- ✓ Supervision of geological, geochemical, geophysical & drilling campaigns



ESG Risk Assessment & Mitigation

- ✓ Establish Environmental, Social & Governance baseline data and identification of ESG Risks
- ✓ Effective mitigation measures with a focus on energy efficiency, mine land restoration & ecosystem remodelling, pollutant reduction, waste recycling and implementation of efficient water management systems.
- ✓ CSR strategy development and stakeholder & community engagement planning
- ✓ Creating value through positive social impact





GEOSPATIAL SOLUTIONS



Satellite Data Analysis

- ☑ Terrain analysis including topography, drainage, and elevation modelling
- ☑ Litho-structural mapping using spectral signatures and feature extraction
 - ☑ Multispectral & Hyperspectral data processing & interpretations
 - ☑ Land use / land cover (LULC) and surface feature mapping
 - ☑ Hydrothermal alteration and mineral abundance mapping
 - ☑ Monitoring temporal changes to support exploration and environmental assessments



Airborne data interpretation

- ☑ Analysis of Airborne / Heliborne Magnetic, Gravity, Radiometric & Electromagnetic datasets
- ☑ Mapping geological structures, mineral deposits & groundwater resources
- ☑ Anomaly mapping for lithological insights & alteration zoning
- ☑ Integrating airborne analysis & geological datasets for delineation of potential mineralized zones
- ☑ Regional to district level target delineation & generation of prospective mineral deposits



UAS/Drone Based Survey

- ☑ High-resolution terrain mapping using UAV/ Drone photogrammetry & LiDAR to generate terrain models (DEM, DSM) & orthorectified imagery
- ☑ UAS-based geophysical survey (magnetic, radiometric & VLF) for subsurface mineral investigations & structural mapping
- ☑ UAS-based GPR survey for shallow surface mapping
- ☑ Integration of UAS-based geophysical interpretations & geological datasets for enhanced targeting
- ☑ Rapid deployment for high density & resolution data acquisition in rugged or inaccessible terrains



Lithological and Structural Mapping

- ✓ Geological mapping from regional to detailed scale
- ✓ Lithological contacts, structural features (fault, fold & shear), & alteration zones delineation
- ✓ Integration of geological map sets with geospatial & geophysical data for intelligent mineral prospecting



Surface Excavation and Profiling

- ✓ Exploratory pits & trenches to expose subsurface geology
- ✓ In-field logging of lithologies, structures, & mineralized horizons
- ✓ Trench face mapping & logging



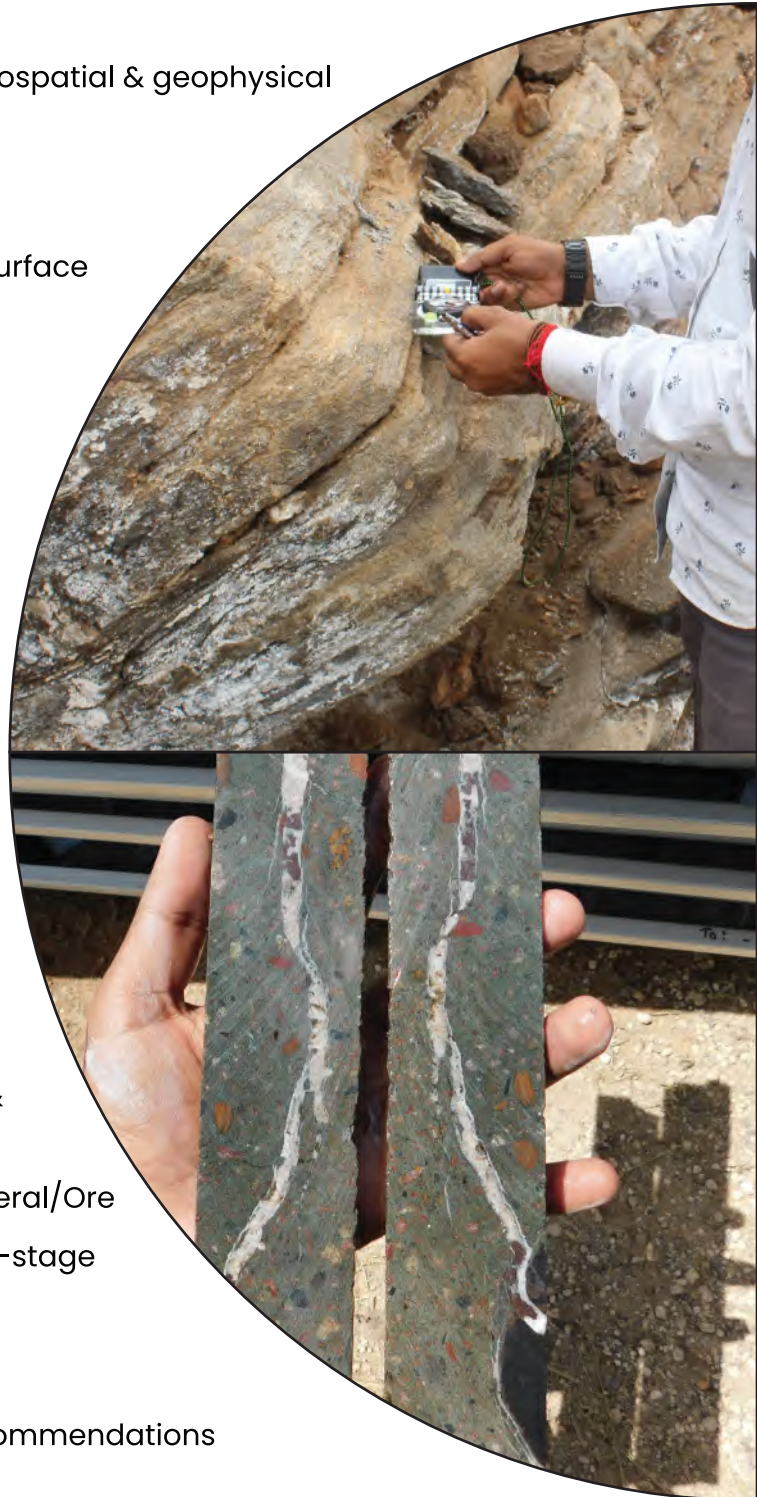
Geochemical Solutions

- ✓ Reconnaissance to detailed, outcrop, soil, regolith & stream sediment sampling
- ✓ Trench, channel, rock-chip & bore-hole sampling
- ✓ Bio-geochemical sampling
- ✓ Stringent QA/QC sampling protocols
- ✓ Ore petrology & petrography
- ✓ Rock classification, alteration zoning, & mineral paragenesis
- ✓ Multi-element geochemical data QA/QC & analysis
- ✓ Elemental & Phase characterization of Mineral/Ore
- ✓ Geochemical anomaly delineation & early-stage exploration targeting



Exploration Results Reporting

- ✓ Target generation & work programme recommendations
- ✓ Exploration results reporting





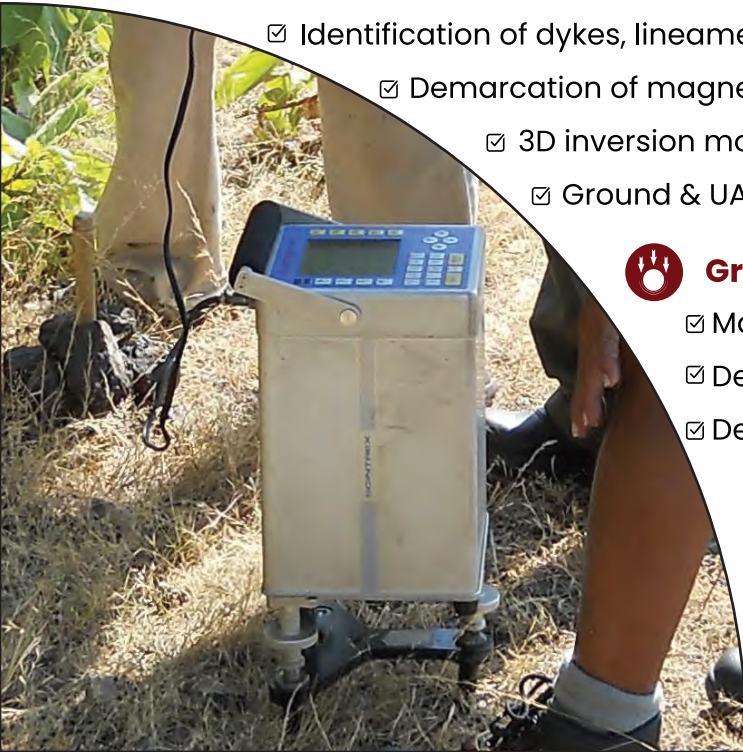
GEOPHYSICAL SOLUTIONS

Potential Field Methods



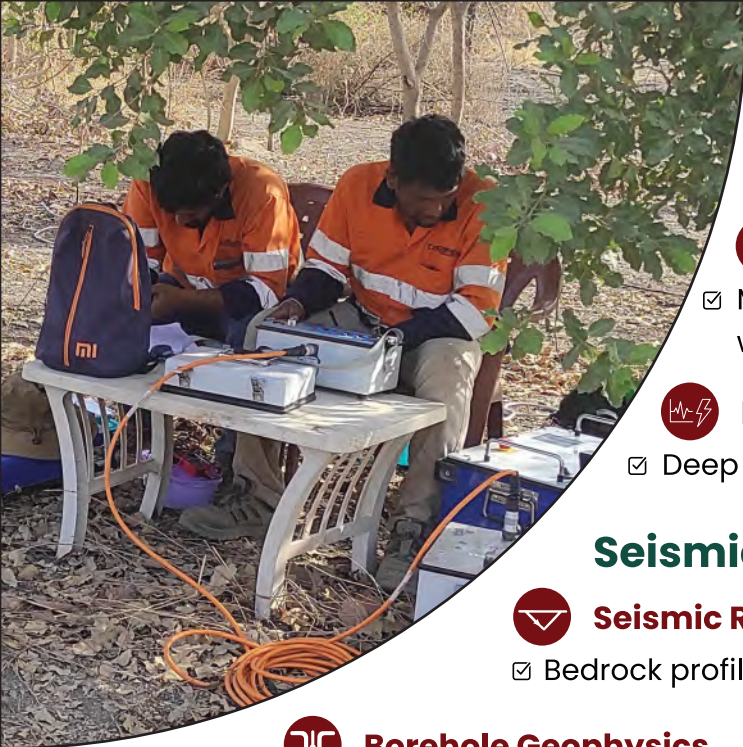
Magnetic

- ☑ Mapping of lithological boundaries, geological structures & alteration zone
- ☑ Identification of dykes, lineaments, & basement trends
- ☑ Demarcation of magnetic & paramagnetic mineralization zones
- ☑ 3D inversion modelling for sub-surface mapping
- ☑ Ground & UAS-based high-resolution data acquisition



Gravity

- ☑ Mapping of geological basin & regional structures
- ☑ Delineating ore/minerals based on density contrast
- ☑ Detection of voids & cavities for safe mining operations



Electrical & Electromagnetic Methods



Self-Potential (SP)

- ☑ Passive method for detecting oxidation zones and sulphide-related anomalies



2D/3D Electrical Tomography

- ☑ Resistivity for sub-surface imaging of overburden, mineralized zones, faults & lithological contacts
- ☑ IP for detection of sulphide zones, graphite etc.



Electromagnetic (EM)

- ☑ Mapping of metalliferous minerals & ground-water exploration



Magnetotelluric (MT) and Audio-MT

- ☑ Deep crustal studies & geothermal anomaly mapping

Seismic Methods



Seismic Refraction and MASW

- ☑ Bedrock profile mapping & geotechnical assessment



Borehole Geophysics

- ☑ Aquifer zone & coal bed identification
- ☑ Borehole lithology correlations



DRILLING & ALLIED SOLUTIONS



Drilling

- ✓ Diamond Core Drilling – High-quality, continuous core for geological & structural logging, and ore body modelling
- ✓ Reverse Circulation (RC) – Fast, cost-effective evaluations
- ✓ Rotary Air Blast (RAB) – Rapid reconnaissance drilling
- ✓ Auger & Hand Auger – Surface sampling in soils, laterite, & weathered profiles
- ✓ Backpack Drilling – Lightweight drilling in rugged or inaccessible terrain
- ✓ Split-Barrel Sampling – Ideal for soft formations & geotechnical logging



Drilling Management

- ✓ End-to-end drill program planning, execution & supervision
- ✓ Drill hole planning & management using advanced software & cost optimization
- ✓ Borehole deviation measurement using advanced gyro tools & tele viewers
- ✓ Core photography & core logging using advanced software
- ✓ Core-shed management
- ✓ Onsite coordination, QA/QC, & drill data integration
- ✓ Seamless data flow & integration in advanced 3D geological software



Sampling and QA/QC

- ✓ Core sampling, sample preparation & secure packaging & transportation
- ✓ Stringent QA/QC protocols for sampling, sample preparation & sample transportation
- ✓ Digital archive for sample management & retrieval



Compliant operations

- ✓ Adhering to HSE standards to minimize environmental impact
- ✓ Adherence to regulatory norms, landowner protocols, & access agreements





RESOURCE MODELLING & MINE PLANNING



Exploratory Data Analysis

- ☑ QA/QC & validation of litho & assay datasets to ensure integrity & consistency
- ☑ Analysis of grade distributions, detection of statistical outliers, and defining geological & mineralized domains



3D Geological Modelling

- ☑ Lithological & geochemical wireframing based on drill data, topographic information, geological maps & other ancillary inputs
- ☑ Modelling mineralized envelopes using geological controls, grade thresholds, & alteration signatures



Grade Modelling & Geostatistics

- ☑ Block modelling by compositing, top-cutting, declustering & domain assignments
- ☑ Grade interpolations using optimized geostatistical parameters
- ☑ Validation of variograms, anisotropy & model accuracy
- ☑ Model reassessments with swath plots, cross-sections & reconciliation with sample data



Resource Estimation & Reporting

- ☑ Estimation supported by sound geological controls & geostatistical confidence
- ☑ Resource classification in compliance with JORC / NI 43-101 & other CRIRSCO standards
- ☑ Deliverables designed to support technical studies & investment reporting



Mine Design, Scheduling & Reconciliation

- ☑ Pit optimization using cut-off grades, geological parameters, market scenario, revenue factors & geotechnical constraints
- ☑ Designing pit shells, benches, ramps, haul roads, dumps & stockpiles
- ☑ Short- & long-term production scheduling aligned with plant capacity & blending goals
- ☑ Mine-to-mill reconciliation to align production forecasts with actual mill performance & recovery
- ☑ Integration of design, schedule & compliance requirements into a coherent mining plan



ADVANCED MINERAL DIAGNOSTICS



Petrography & Mineralogy

- ✓ Optical petrography (transmitted & reflected light)
- ✓ Ore microscopy for sulphide & paragenetic studies
- ✓ Picto-micrography for textures & microstructures
- ✓ Cathodoluminescence microscopy
- ✓ Mineral phase identification studies
- ✓ Mineral chemistry & microtextural analysis
- ✓ Electron Microprobe for determination of elemental compositions
- ✓ Kimberlite indicator mineral analysis
- ✓ Fluid inclusion studies
- ✓ Multi-element analysis for major, minor, trace & pathfinder elements



Ore Characterization

- ✓ Lab scale testing to guide recovery models & processing efficiency optimization
- ✓ Particle size analysis, mineral liberation using magnetic separation, flotation, leachability tests etc., & physical property profiling
- ✓ Ore & concentrate characterizations



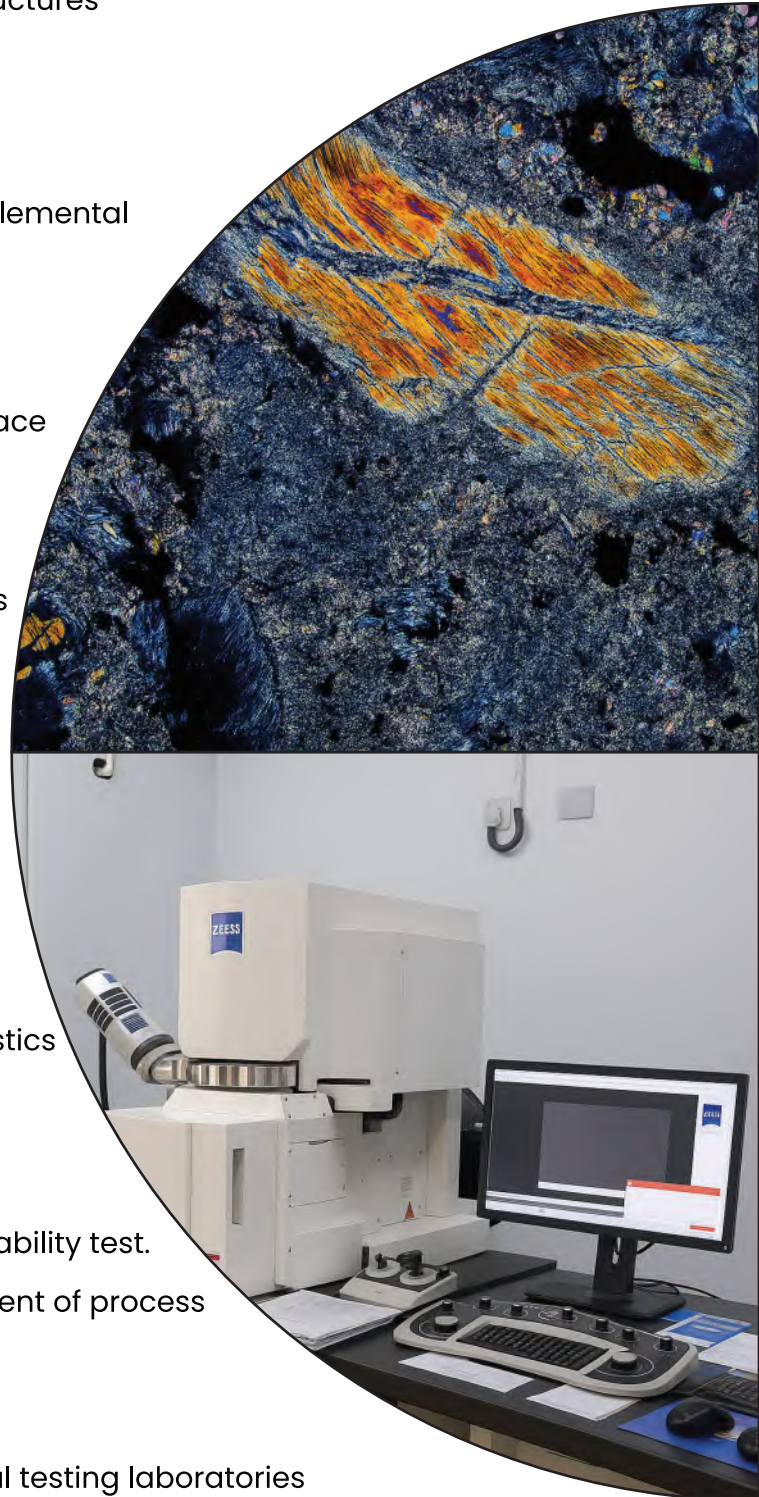
Geo-Metallurgy

- ✓ Bulk sampling using grade, ore characteristics & resource statement
- ✓ Bench & pilot-scale amenability test using flotation, gravity separation, magnetic separation, electrostatic separation, grindability test.
- ✓ Analysis of Beneficiation tests & development of process flowsheet for optimized plant design.



Laboratory Setup

- ✓ Design & commissioning of on-site mineral testing laboratories
- ✓ Lab layout optimization & equipment selection
- ✓ Training of technical staff





WATER RESOURCES & RISK ASSESSMENT



Hydrogeological Investigations

- ✓ Assessment of aquifer potential & recharge zones
- ✓ Mapping of shallow & deep aquifer zones for borewell siting
- ✓ Evaluate aquifer characteristics, water table behaviour & seasonal fluctuations
- ✓ Mine hydrogeology assessment & water resource management



Surface Water Modelling & Catchment Analysis

- ✓ Surface water flow, accumulation & runoff modelling using topographic data, meteorological datasets in GIS environment
- ✓ Analysis of drainage patterns & watershed response
- ✓ Stormwater runoff simulation modelling with historical rainfall data & land-use scenarios
- ✓ Design of mitigation measures including drainage, water harvesting, & retention pond design etc.



Flood Risk & Water Hazard Mapping

- ✓ Floodplain analysis and inundation modelling for 1:10–1:100-year events
- ✓ Identify zones at risk from flooding events
- ✓ Recommend mitigation strategies with reinforcements, drainage enhancement & retention structures

Specialized Services



Engineering Geophysics

- ✓ 2D Electrical Resistivity Tomography
- ✓ High-Resolution Seismic Survey (HRSS / MASW)
- ✓ Ground Penetrating Radar (GPR) surveys
- ✓ Site-specific slope stability assessments



Geomatic Services

- ✓ Total Station, LiDAR, DGPS & 3D Laser survey
- ✓ Topographic & Cadastral Surveys
- ✓ Mine Dump assessment
- ✓ Mine Pit Survey & Production monitoring
- ✓ 3D Underground Mine surveys



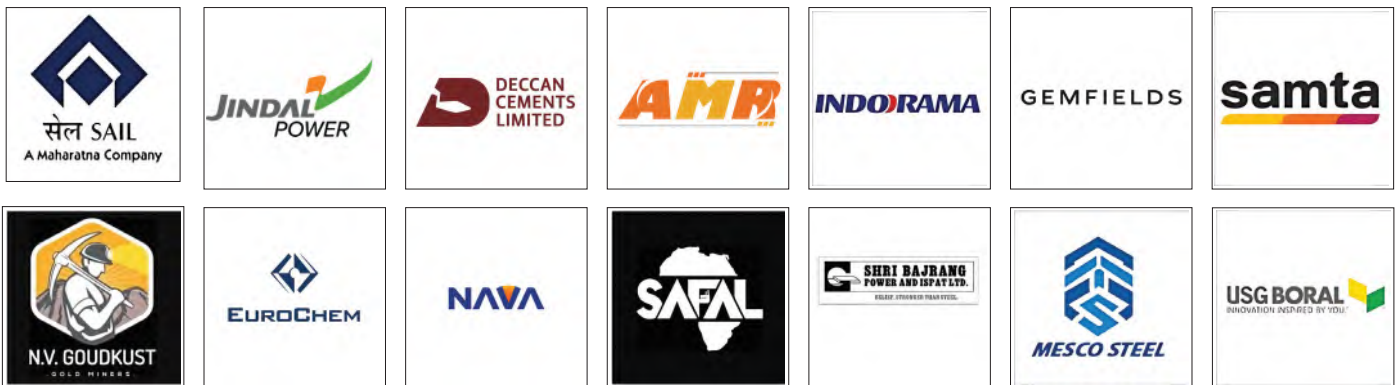
EPC for Processing & Beneficiation Plants

- ✓ Customized flowsheet design tailored to ore characteristics & recovery goals
- ✓ Engineering, Equipment selection and integration with utilities & infrastructure
- ✓ Turnkey support for mineral processing plant setup & commissioning

GLOBAL FOOTPRINTS



CLIENTELE



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