

# NATIONAL INTEGRATED MINERAL EXPLORATION PROJECT (NIMEP)



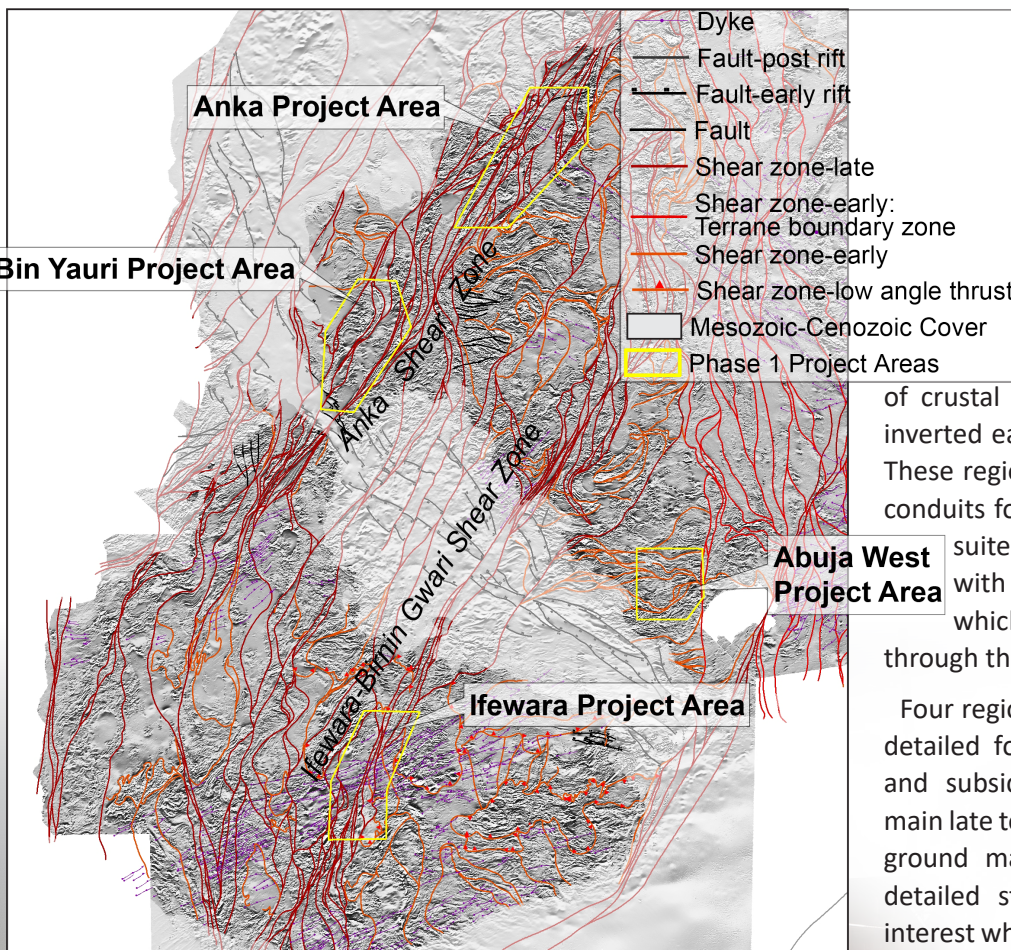
## Lot A1 Program

**FEDERAL REPUBLIC OF NIGERIA**  
 MINISTRY OF MINES AND STEEL DEVELOPMENT  
 and the  
**NIGERIAN GEOLOGICAL SURVEY AGENCY**



The National Integrated Mineral Exploration Project' (NIMEP) is a Ministry of Mines and Steel Development program for the development and promotion of the Nigerian mineral industry.

The NIMEP objectives were to delineate to "international standards" a series of prospective targets supported with detailed reporting of the methodology and results encompassing definition of the nature and style of economic deposits. The Lot A1 project covers approximately 300,500km<sup>2</sup> of the Western Nigerian Shield and included two programs: gold vein hosted mineralisation systems and Ni-Cr-Co-PGE intrusive host mineralisation systems.



Both the gold mineralisation and the Ni-Cr-Co-PGE intrusive systems through the Western Nigerian Shield are associated with a series of regional, late tectonic, NNE-SSW trending shear zones which transect Nigeria. These late Neoproterozoic structures represent zones of progressive, dextral transpressional strain localisation along domains of crustal weakness established on a series of inverted early to mid Neoproterozoic rift basins. These regional shear zone systems provided the conduits for emplacement of ultramafic intrusive suites and gold mineralisation associated with a late tectonic sinistral reactivation which facilitated efficient fluid pathways through the shear zone network.

Four regional project areas were delineated for detailed follow up programs targeting primary and subsidiary structural networks along the main late tectonic shear zone corridors. Extensive ground magnetic surveys were used to build detailed structural frameworks over areas of interest which provided the basis for targeted soil sampling programs.

Positive results were obtained in all areas with follow-up drilling programs undertaken in two target zones: two within the Anka Project Area and three in the Abuja West Project Area.

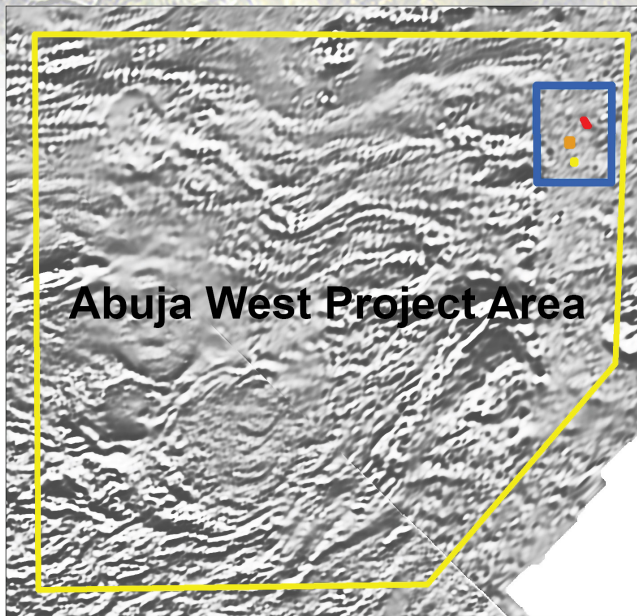
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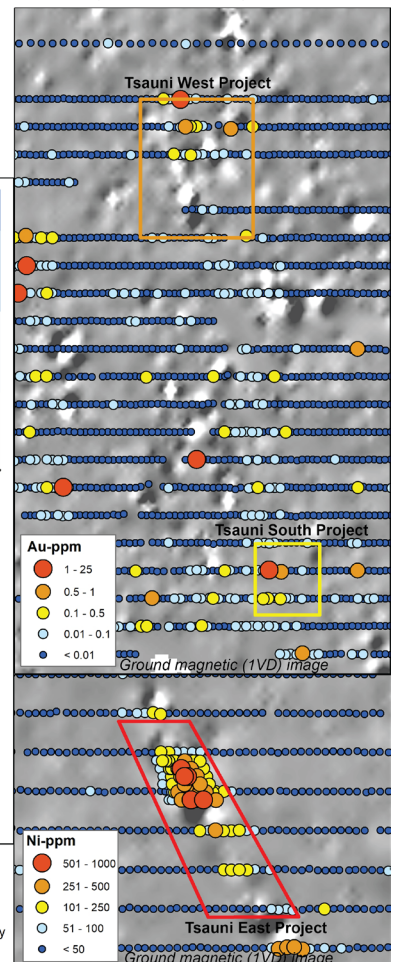
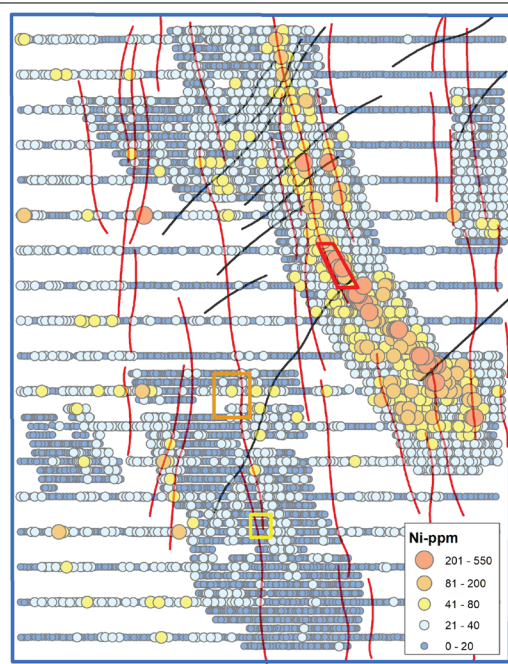
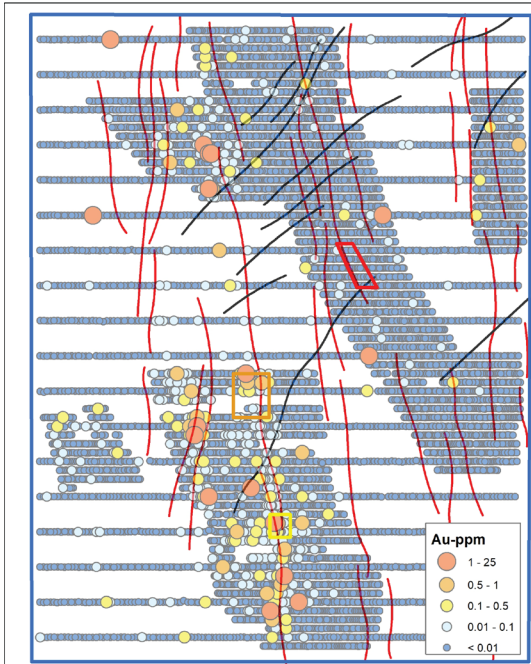
# The Abuja West Project Area



The Tsauni project area occurs along the eastern margin of the Western Nigerian Shield. The primary target area is a N-S trending shear zone characterised by a discordant demagnetised zone along the western margin of the Abuja West Project Area.

A regional soil sampling program (initial 500 x 50m sample grid with a 125x25m infill) highlighted a series of discrete anomalous corridors delineated by anomalous Au, Pb and Zn defining a series of discrete N-S trending zones and in the east anomalous Ni-Cr-Co-Cu defining a NNW-SSE trending zone.

Defined targets included a series of late brittle-ductile, gold bearing vein systems developed within a broad (~6km wide) discordant demagnetised shear zone and Ni-Cu-PGE bearing ultramafic units.



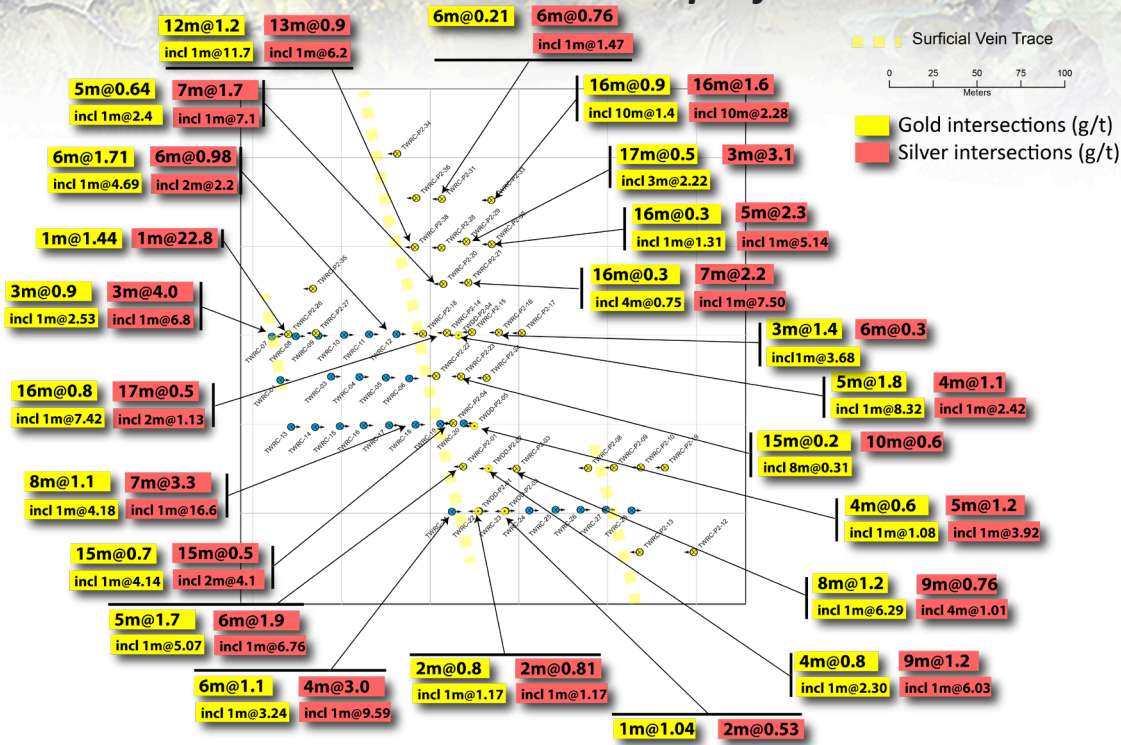
- Tsauni West Project
- Tsauni East Project
- Tsauni South Project
- Late NE fault sets
- Intrusive boundary
- Late fault
- Lithological boundary
- Tsauni Project Area

The Tsauni West and Tsauni South project areas occur along the same structural corridor. The mineralisation is hosted within en-echelon, laminated to vuggy quartz veins within a reactivated regional high-grade shear zone. These project areas define a mineralised structure with a strike of 1.8km and may extend for >9km along the extent of the Tsauni Project Area. Strong intersections along this zone include 12m@ 1.2g/t Au and 13m@ 0.9g/t Ag; 16m@ 0.9g/t Au and 1.6g/t Ag; 3m@ 32.43g/t Au and 2.59g/t Ag.

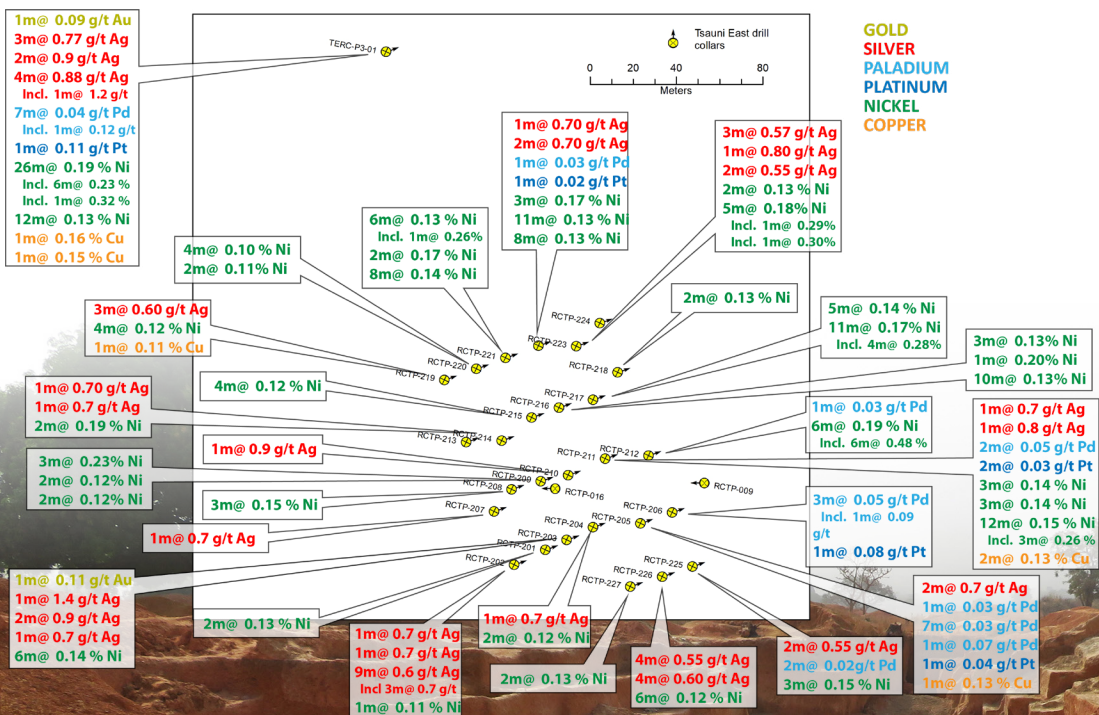
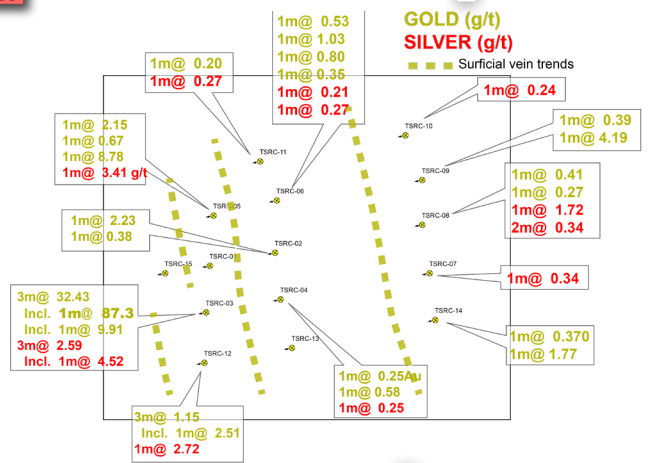
In Tsauni East, drilling results reveal a Ni-PGE mineralisation with low level copper. Grade distribution is most strongly developed along steeply plunging lenses dispersed along strike. Nickel grades include (26m@ 0.19% including 6m@ 0.23%). Patchy PGE results delineate the lens-like nature of the mineralisation with grades up to 7m@ 0.04g/t Pd including 1m@ 0.12 g/t. Silver and gold mineralisation is associated with overprinting shear zones. Gold mineralisation is patchy with grades up to 1m@ 0.11g/t while silver mineralisation is more pervasive with grades of 4m@ 0.88g/t including 1m@ 1.2g/t and 3m@ 0.57g/t.

# The Abuja West Project Area

## Summary of drilling results in the Tsauni West, South and East project areas



# TSAUNI SOUTH



# TSAUNI EAST

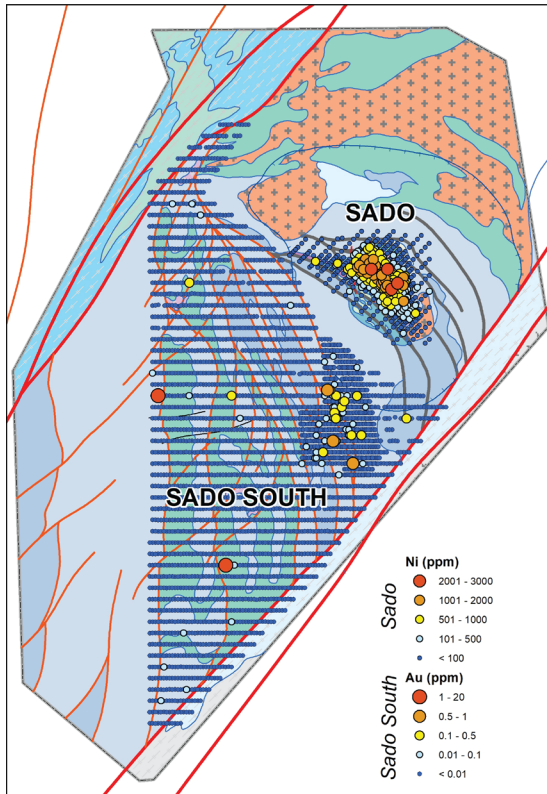
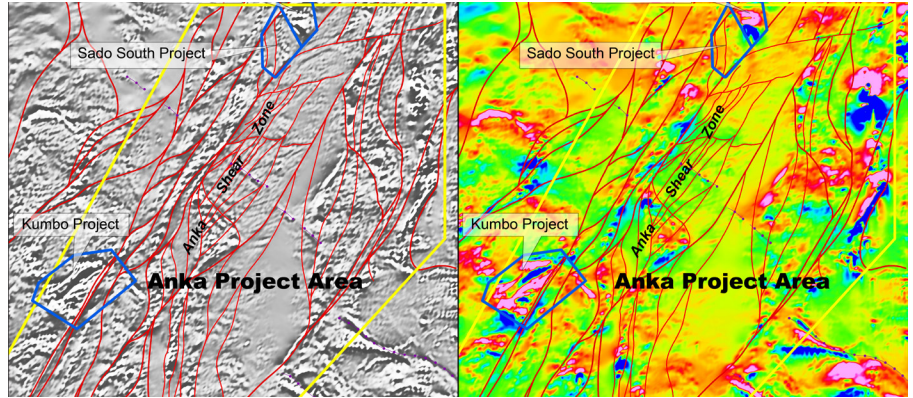
# The Anka Project Area

The Anka area is an historic area of interest for gold and base metal exploration and has seen extensive artisanal mining activities through the area. The area is dominated by the Anka Shear Zone, a high-strain, linear shear zone which represents one of the major NNE – SSW trending late tectonic, shear zones which cross-cut Nigeria.

Gold mineralisation is hosted within late tectonic reactivated elements of the Anka Shear Zone including subsidiary splays prominently developed along the eastern side of the shear zone.

Primary targets for Ni-Cr-Co-PGE mineralisation were mafic to ultramafic intrusive systems. A series of strong magnetic features along and within the Anka Shear Zone delineated a number of intrusive bodies emplaced within the Anka shear zone including the Sado and Kumbo project areas

The Sado project is on a small ultramafic sequence which is part of a broader granite gabbro intrusive complex. Drilling results show the mineralisation to have a PGE-Cr association.

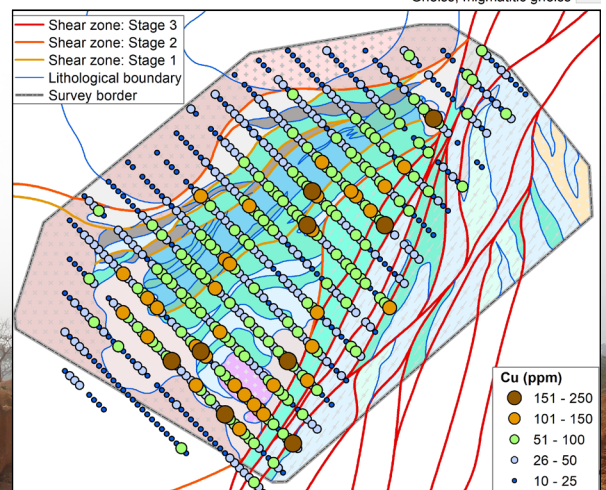
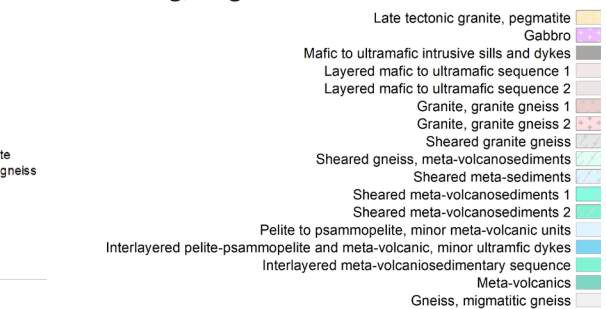


The strongest mineralisation at Sado is associated with a primary igneous layering and specifically associated with a conductive pyroxenite suite. Low-level Co is prevalent throughout the drilling area of the Sado complex increasing in grade at the surface suggesting it has been enriched through supergene processes.

Reconnaissance drilling in Sado South targeted anomalous soil results along a NNW-SSE late tectonic fault zone developed within the pressure shadow of the Sado intrusive complex. The mineralisation is associated with a quartz vein system hosted in volcanics and included grades of 1m@ 8.89g/t Au and 3m@ 1.36g/t Ag.

The Kumbo mafic to ultramafic complex represents a distinct intrusive complex emplaced within the pressure shadow domain of large batholithic Older Granite bodies along the margin of the Anka Shear Zone. Emplacement of the mafic and ultramafic suites of the Kumbo Complex occurred as discrete bodies within a host volcano-sedimentary sequence.

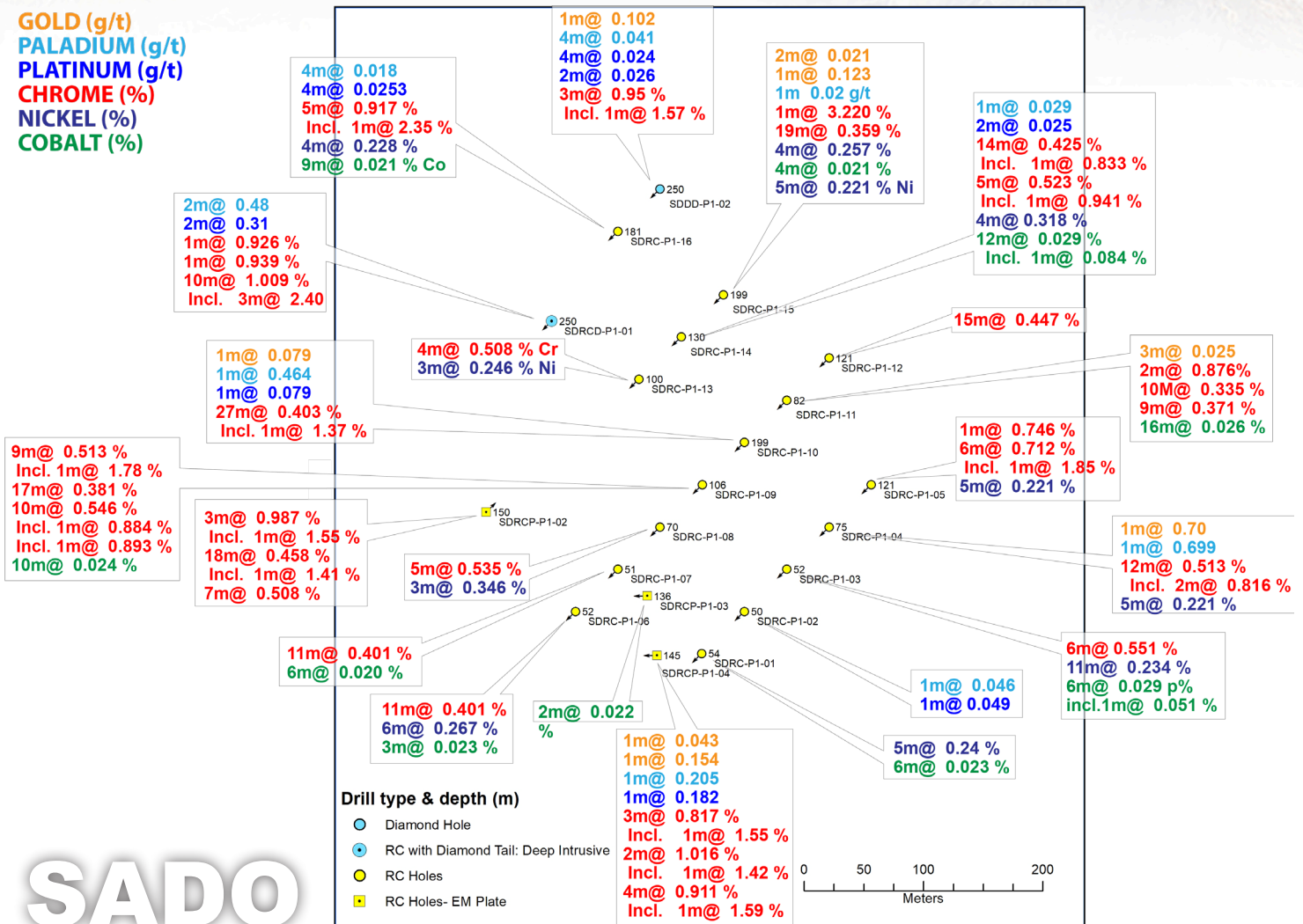
Only a regional phase soil sampling program has been completed over the Kumbo area on a coarse 800X200m sample grid. This program highlights the open potential of the Kumbo complex showing, a number of anomalous zones with elevated Cr-Ni-Co-Cu-Pd and Pt results.



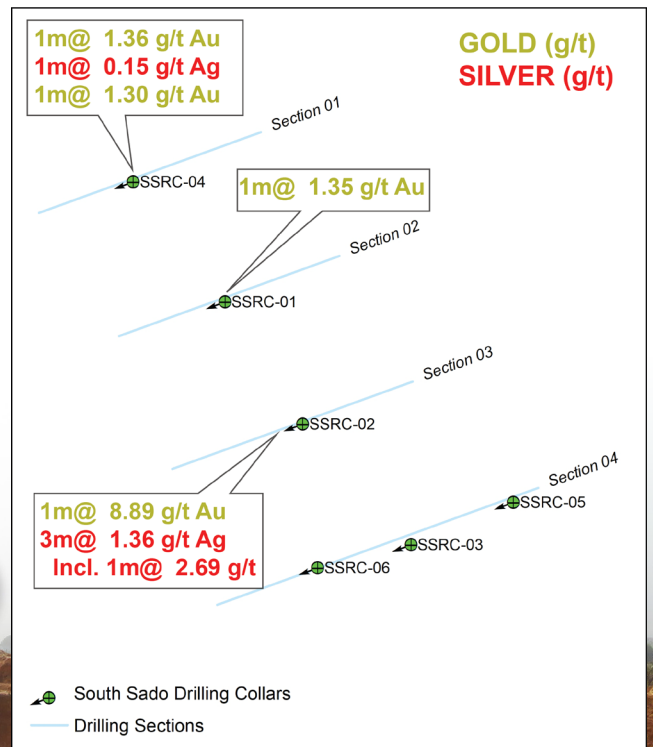
# The Anka Project Area

## Summary of drilling results in the Sado and Sado South project areas

**GOLD (g/t)**  
**PALADIUM (g/t)**  
**PLATINUM (g/t)**  
**CHROME (%)**  
**NICKEL (%)**  
**COBALT (%)**



**SADO**



**SADO SOUTH**

# The Bin Yauri Project Area

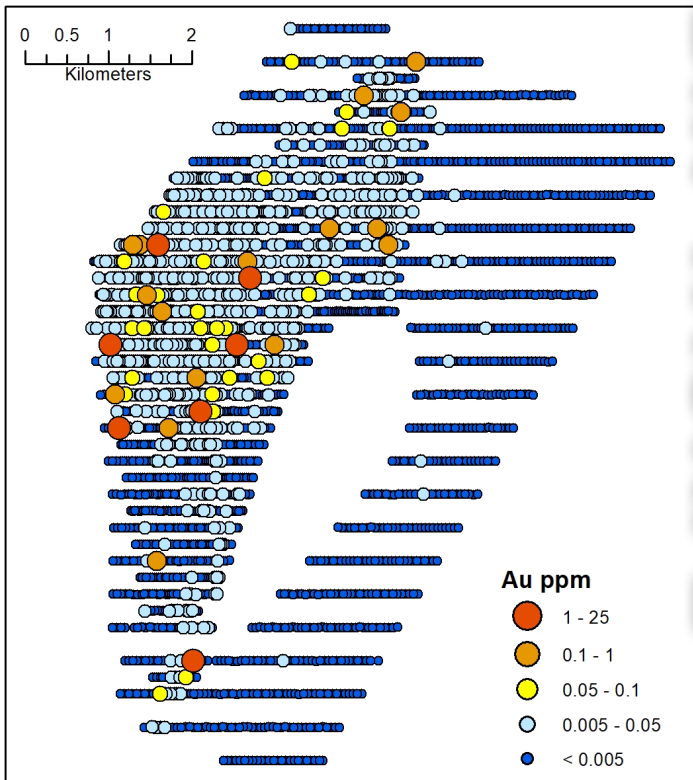
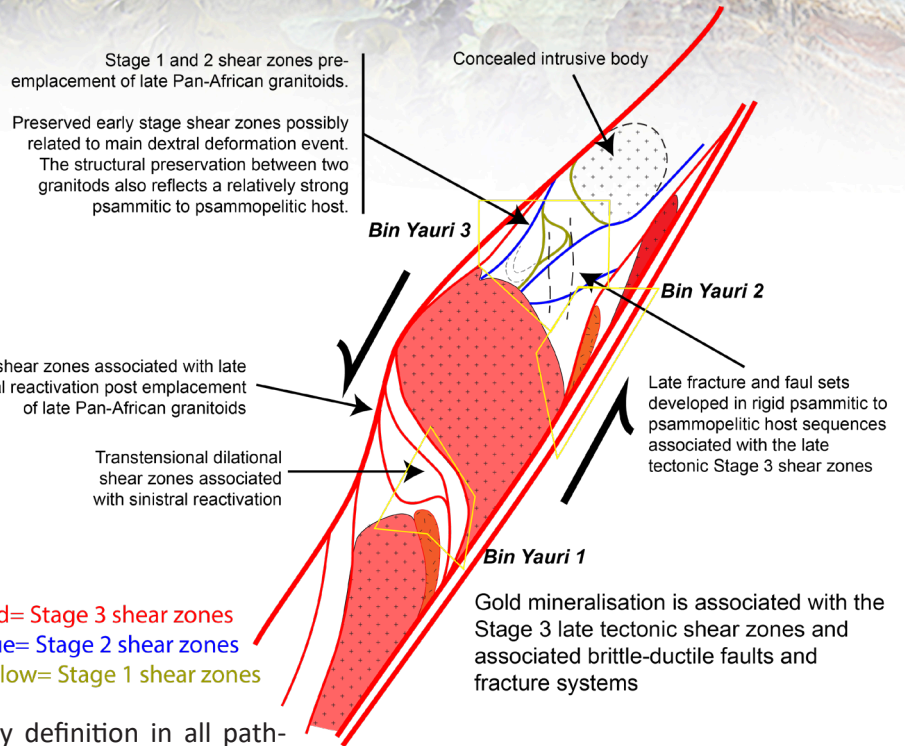
## Summary of Soil Sampling Programs

The Bin Yauri area is centered around a series of late tectonic intrusive bodies within the central Anka Shear Zone. The project areas target dilational structural sites in the pressure shadow regions of these late granites.

The soil geochemistry results for Area 1 are patchy for some elements, showing irregularly distributed anomalous results for As, and Au. More coherent cross line anomalous results occur with the Cu, Cr, Pb and Zn results.

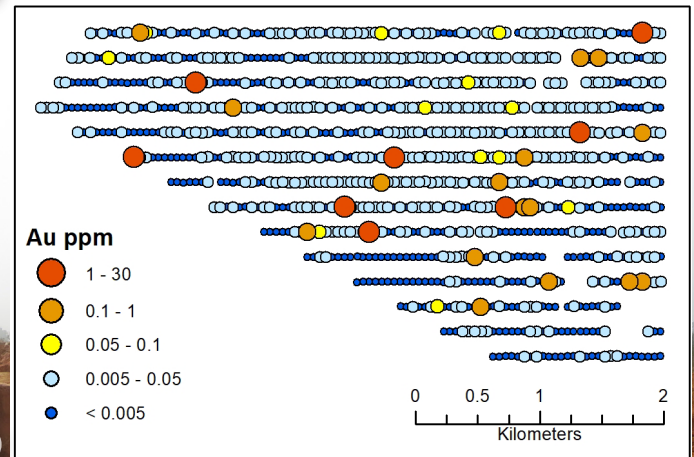
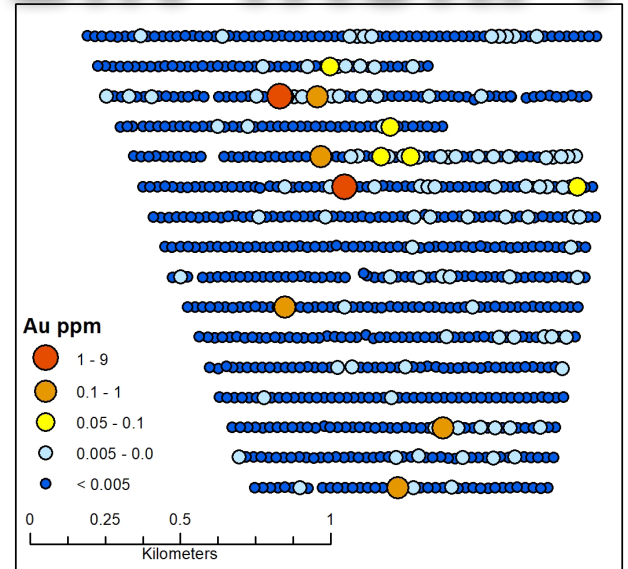
Area 2 was focused over reactivated structures which "necked" into the pressure shadow domain on the late tectonic granitoid body and produced more coherent in Au-As-Cu and Pb.

Area 3 soil samples yielded largely scattered results with poor multi line anomaly definition in all path-finder elements including Au which reflects the discrete nature of the thin brittle vein systems and distinct distal style of mineralisation.



BIN YAURI 2

## BIN YAURI 1

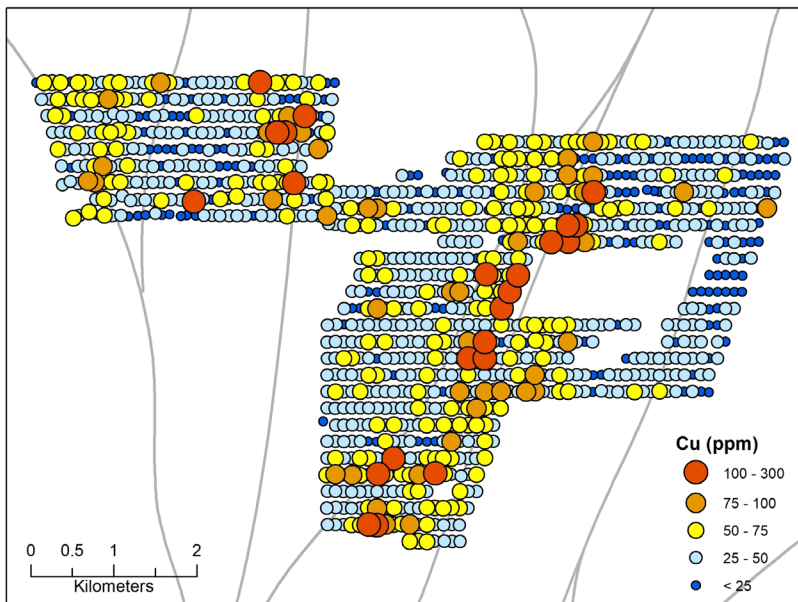
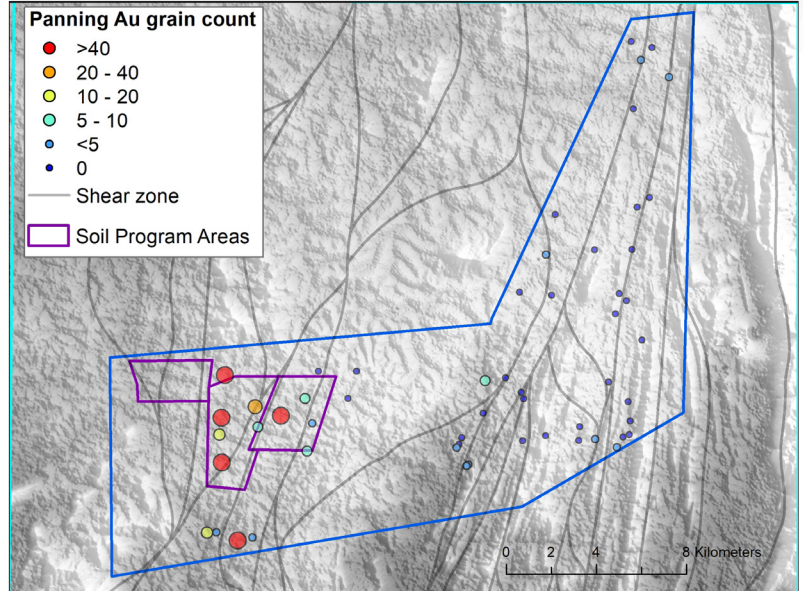
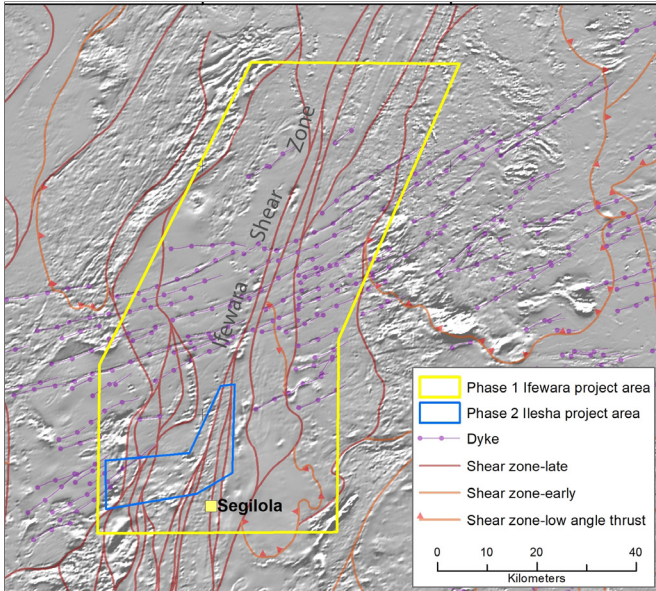


## BIN YAURI 3

# The Ifewara Project Area

## Summary of Soil Sampling Programs

The high-relief terrane and thick vegetation limited the possibility of ground magnetic data acquisition through the Iflesha Project area. Regional field mapping and a stream sediment sampling program were implemented for initial target definition. The stream sediment program yielded quite definitive positive results in the west associated highlighting the potential of the subsidiary shear zone system west of the main Ifewara Shear Zone which notably yielded poor results.



A soil program on a 200m x 100m sampling grid was completed across anomalous watershed domains highlighted in the stream sediment program.

A series of linear, cross-line anomalous results delineated the presence of a series of N-S to NNE-SSW trending shear zone systems. Elements with a high dispersive footprint (Cu, Zn and to a lesser extent Pb) produced the most coherent anomalous zones.

In contrast As and Au show a patchy and more irregular anomalous distribution though coextensive with the anomalies defined by the more mobile anomalous elements.

