# The Akobo Gold Exploration Project, Western Ethiopia. Competent Persons Report

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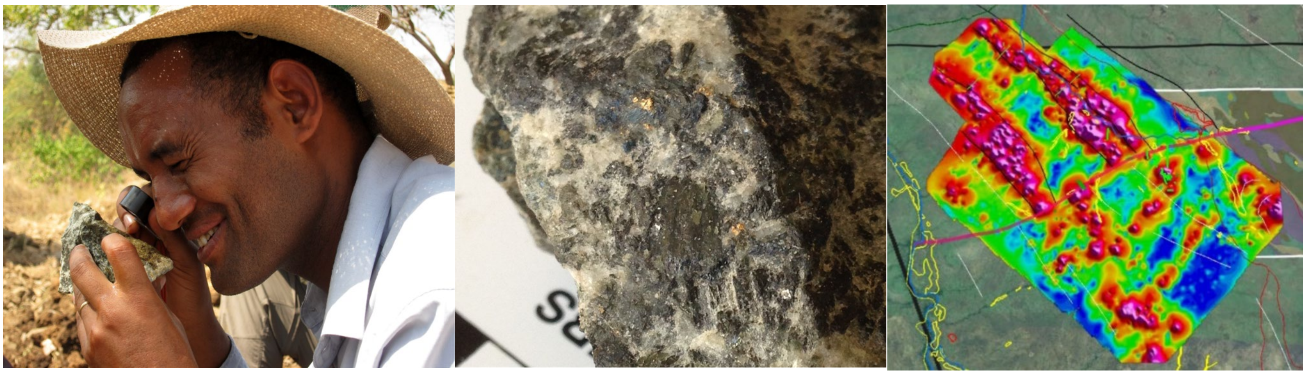

AKOBOMINERALS

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# Table of Contents

## Contents

# 1: Executive Summary

The Akobo gold project is located in south western Ethiopia, south of the Akobo River, roughly 720 km SW from the Ethiopian capital Addis Ababa. The project area currently covers 182 km2 of highly prospective geology within to the Arabian-Nubian Shield. The area is considered as lowland by Ethiopian standards, the elevation varies between 600 and 800 metre above sea level and is made up of a gently rolling savanna landscape.

The Akobo Project is hosted by the Western Ethiopian Shield (WES) which is an ancient mining region that has been largely ignored by modern exploration. The WES shield has hosted small-scale and artisanal mining for many hundreds of years in places such as Yubdo and Nejo further to the North. Since the 1990's the only successful exploration project in the WES has been the Tulu Kapi project (approximately 300km to the North). Tulu Kapi has inferred and indicated resources of 1.7 million ounces (grade of 2.65g/t) within the same orogenic belt as the Akobo project.

The exploration permit for the Akobo project is held by ETNO Mining Ltd, a 99.97% owned subsidiary of Akobo Minerals AB. All recent exploration has been conducted by a local team of geologists and support staff, the core of which is a group of former Geological Survey of Ethiopia geologists that were central in the exploration and discovery of the operational Lega Dembi gold mine. Exploration and previously also alluvial gold production has been ongoing for 8 years. This report covers only hard-rock gold exploration.

Between 2010 and 2017 over 4000 soil samples have been collected and analysed, 7.5 line kilometres of trenching has been completed and over 3000m of reverse circulation drilling has been performed. The QAQC methods used varied from year to year and for different methods. Although the levels of precision and accuracy for trenching was good, the QAQC used for sampling and analysis of the RC-drilling program indicate that the results should only be used in a broad qualitative sense.

This has led to the successful identification of two main targets Chamo-Segele and Joru. Additionally, numerous smaller targets have been identified based on soil-sampling, only two of these smaller targets have been investigated by trenching and drilling. The two main targets exhibit remarkable differences in style of mineralisation, inherent variability grades and size.

The Chamo - Segele gold occurrence is a small but potentially very high-grade target hosted by sheared and altered mafic to ultramafic rocks. Artisanal mining activity has been extensive at Segele. Government records suggest that around 1000 Kg of gold have been extracted from the site within less than 1.5 years, this is supported qualitatively by the size of the mining dedicated settlement nearby and the large extent of the workings. Although rock chip sampling from artisanal workings resulted in grades of between 2 and 61g/t, the highest value of gold from the systematic trenching program returned 0.24g/t – which is well below ore cut-off. Additionally, the RC drilling discovered no gold concentrations above 1g/t. Although the Chamo-Segele results appear paradoxical, they can be explained by a severe heterogenous gold distribution (nugget effect) and challenges in accessing the best mineralisation due to safety concerns. Consequently, it is recommended that only bulk sampling / trial mining be used to assess a reliable grade assessment.

The Joru target has the potential to be a large-low grade (1-2g/t) mineral deposit with high grade cores (for example 5 g/t at Joru Central) within quartz vein stockworks within a quartzofeldspathic host rock. Trenching and drilling has confirmed the size of the target to potentially be over 3km in length and deeper than 100m in one intersection. Soil sampling has been very effective at the target and suggests the mineralisation may extend to 4km in strike length or further. It is recommended that the Central Joru area be subjected to an intensive structural geology study alongside soil sampling and ground magnetics. The results of this study should be used to increase knowledge of the structure and location of the mineralisation throughout the entire target. It is recommended that a 1000m diamond drilling campaign be employed to more accurately assess the grades of the mineralisation and support the understanding of the structural geology. Subject to the successful completion of the 1000m drilling campaign it is recommended to advance to resource estimation.

Given the size, geology and results of regional soil sampling the potential for additional Au targets is excellent. It is recommended that Akobo Minerals reprocess and reinterpret much of the regional data and develop a prioritised target database.

## 2: Introduction

Akobo Minerals AB owns 99.97% of the Akobo project through its Norwegian and Ethiopian subsidiaries. The tenements in question (the Akobo Project) include an exploration license covering 182 $km^2$, situated in the far southwest of Ethiopia. In Ethiopian terms it is a lowland area, about 600-800 masl, of gently rolling savannah landscape, semi-arid with a gentle rainy season June-November, and temperatures reaching 40 degrees C during the hottest, dry periods. The distance from Addis Ababa to the ETNO Mining Akobo camp is about 710 km by road, the last 30 km by dirt track.

The southwestern Ethiopian Precambrian basement hosts sub horizontal auriferous quartz veins within the NNW-SSE trending low grade volcano sedimentary and high grade gneissic rocks. NNW-SSE trending lineaments and rock foliations are the major structures which control the southwestern low-grade metamorphic belt and it is part of the major "Surma shear zone".

Although exploration and small-scale mining has been underway in Western Ethiopia (eg Yubdo and Tulu Kapi) for many years during the last century most of the activity focused on projects more than 300km further north. Although Akobo lies in the same geological province as Yubdo and Tulu Kapi, systematic exploration work only started at the very end of last century (1999). Akobo Minerals subsidiary ETNO Mining first undertook alluvial mining in 2007 and hard-rock exploration started in the subsequent years.

During the past exploration years major exploration activities, including regional and detailed mapping, rock chipping, regional and detailed soil sampling, trenching, ground magnetic geophysical survey and over 32 Reverse-Circulation drill holes at four / prospective target areas (Segele, Wolleta, Gindibab, and Joru) were implemented by ETNO Mining. Drilling of 32 RC drilling boreholes was accomplished without support of detail geological mapping and geophysical studies necessary for correct location and orientation of boreholes.

During the period of ETNO's exploration work artisanal miners have become established at the property and have developed both hard-rock and alluvial activities. In particular one large pit has been established (and subsequently abandoned) at the Segele target.

This Competent Persons Report (CPR) summarizes the state of knowledge at the project and includes the results of validation of the exploration activity with respect to the 'hard-rock' or primary gold targets. Although Akobo Minerals is in the process of developing plans to exploit alluvial resources and small-scale hard rock mining, these are not the subject of this report. The scope of this report focuses only on the Chamo-Segele and Joru target areas, however it should be noted that the in some cases the drilling and trenching results at Woleta and Nechdingay are promising.

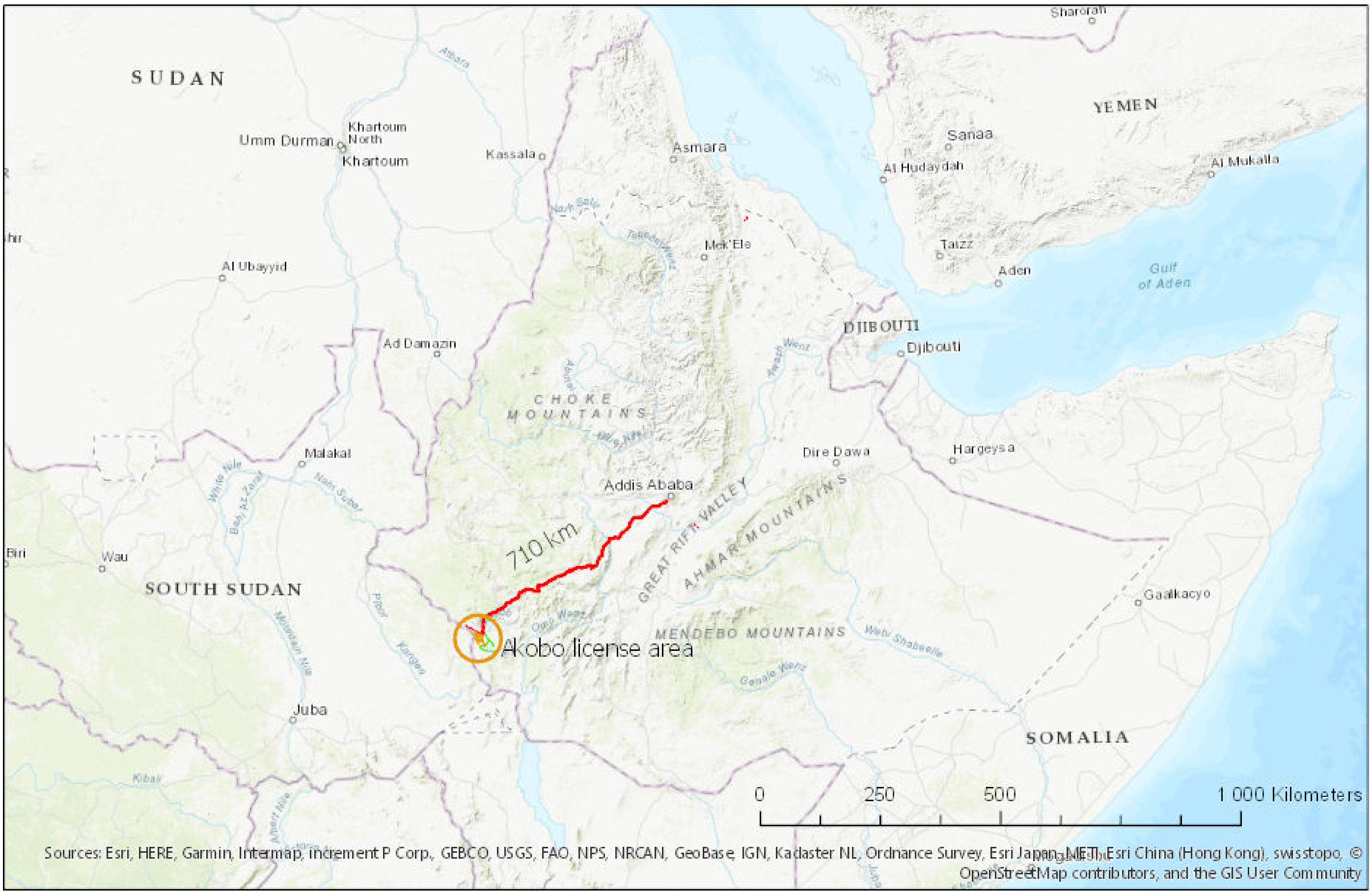



Figure 1: The Akobo license area is situated in the southwest of Ethiopia, close to the South Sudan border. Driving distance to camp is about 710 km and takes nearly 2 days. Roads are tarred except for the last 30 km of dirt tracks.

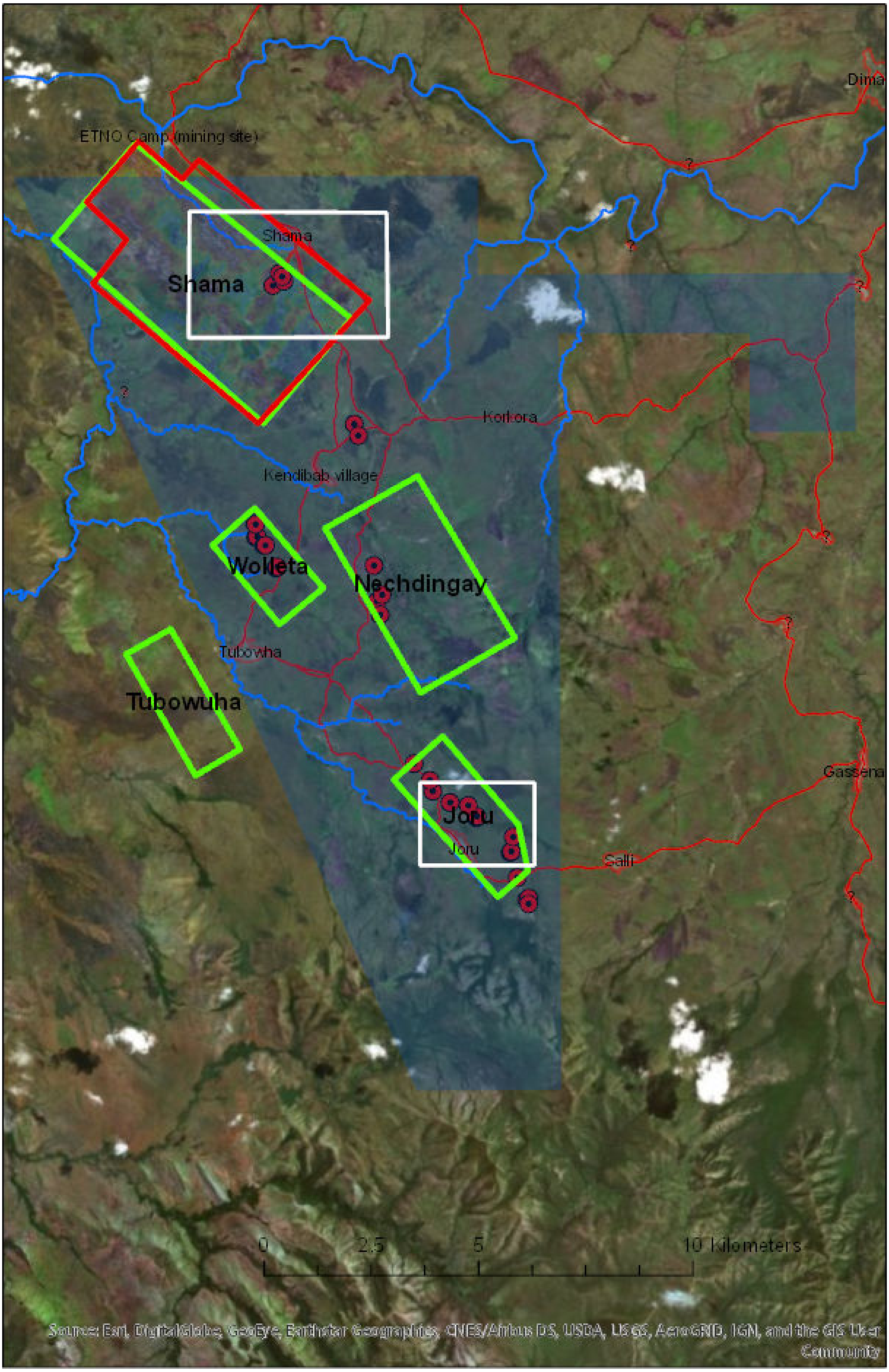



*Figure 1: The license area (blue) in 2018, showing sub-areas of geochemical surveys (green), ground magnetics (red), detailed geology (white), as well as tracks and artisanal miner's villages.*


*Figure 2: Miners at Segele asking advice from ETNO Mining geologist Alem (left), Segele area, Trench 3 (right)*

*Figure 3: Akobo River*

# 3: Reliance on Other Experts

From the start of the exploration program all activity was planned and executed under the supervision of geologists from ETNO Mining Plc, including Bezabh Tamene BSc and Alem Hailegebriel. From 2016 onwards Morten Often was engaged by Abyssinia Resource Development AS to oversee and direct the exploration activities. Matt Jackson (CP) was engaged from September 2018 in order to review all reports and data, and to create this report.

All though reasonable efforts have been made to verify and validate the work undertaken, the report relies on the validity of the numerous reports, datasets and maps completed by the ETNO Team and Morten Often.

No site visit or training has been provided by Matt Jackson.

## 4: Property Description and Location

The Akobo Project is located in the South-Western part of Ethiopia approximately 700km by road from the capital Addis Ababa and within 20km of the border with South Sudan.

The project has one Exploration Licence covering 182.33km$^2$ held in the name of ETNO Mining Plc which expired on 31 October 2018. The original exploration licence was issued in November 2010 and has been renewed 5 times since that date. A new one year licence is expected to be issued on the basis of the government accepting a work plan, budget and relinquishment of part of the licence area. The project is not subject to additional royalties or joint venture conditions other than those mandated by Ethiopian legislature. The Exploration licence can be converted to a mining licence upon submission of an environmental and social impact assessment and a feasibility study to the relevant ministries. Licence documentation has been reviewed but legal due diligence has not been conducted.

The Akobo Project has been divided into several prospects:

- Chamo-Segele. Which has previously been referred to as the Shama Area. Is the first of the two principle areas covered by exploration activities including soil sampling, trenching and reverse circulation drilling
- Joru. Is the second of the two principle areas covered by exploration activities including soil sampling, trenching and reverse circulation drilling
- Wolleta: Also includes Gindibab and has been explored by soil sampling and reverse circulation drilling.
- Nechdingay: Has been explored by soil sampling and reverse circulation drilling.

Table 1 shows latitude/longitude coordinates of the Akobo Mineral Exploration Licence for 2017/2018, and Figure 1 shows location map of the license area. It should be noted that, during 2019 ETNO Mining will may be required to relinquish part of the licence holding.

*Table 1: Geographic coordinates of the present Akobo Primary Gold Exploration Project License Area*

| Corner points | Easting | | | Northing | | |
|---|---|---|---|---|---|---|
| | DEG. | MIN. | SEC. | DEG. | MIN. | SEC. |
| 1 | 35 | 0 | 3.96 | 6 | 29 | 15.15 |
| 2 | 35 | 5 | 56.00 | 6 | 29 | 15.00 |
| 3 | 35 | 5 | 56.00 | 6 | 28 | 0.00 |
| 4 | 35 | 10 | 42.00 | 6 | 28 | 0.00 |
| 5 | 35 | 10 | 42.00 | 6 | 26 | 0.00 |
| 6 | 35 | 9 | 22.00 | 6 | 26 | 0.00 |
| 7 | 35 | 9 | 22.00 | 6 | 27 | 15.00 |
| 8 | 35 | 6 | 57.60 | 6 | 27 | 15.00 |
| 9 | 35 | 6 | 57.60 | 6 | 17 | 42.07 |
| 10 | 35 | 5 | 7.14 | 6 | 17 | 42.05 |

# 5: Accessibility, Climate, Local Resources, Infrastructure and Physiography

The project can be accessed from the Ethiopian capital Addis Ababa by a drive of 1 ½ - 2 days and the regional administrative centre of Dima is reachable in slightly less, situated at the end of the tarred main road. Most of the 700km distance to site is covered by good quality tarred roads and the remaining distance is only accessible by 4x4 vehicle. The Akobo license area is accessible all year by 4x4 vehicle, although during the rainy season the tracks on the south side of Akobo river become more challenging to use. The camp is accessible by most heavy goods vehicles. The main road north of the Akobo river is the main road from S Sudan to Ethiopia. The crossing near the camp is usable only in non-raining season.

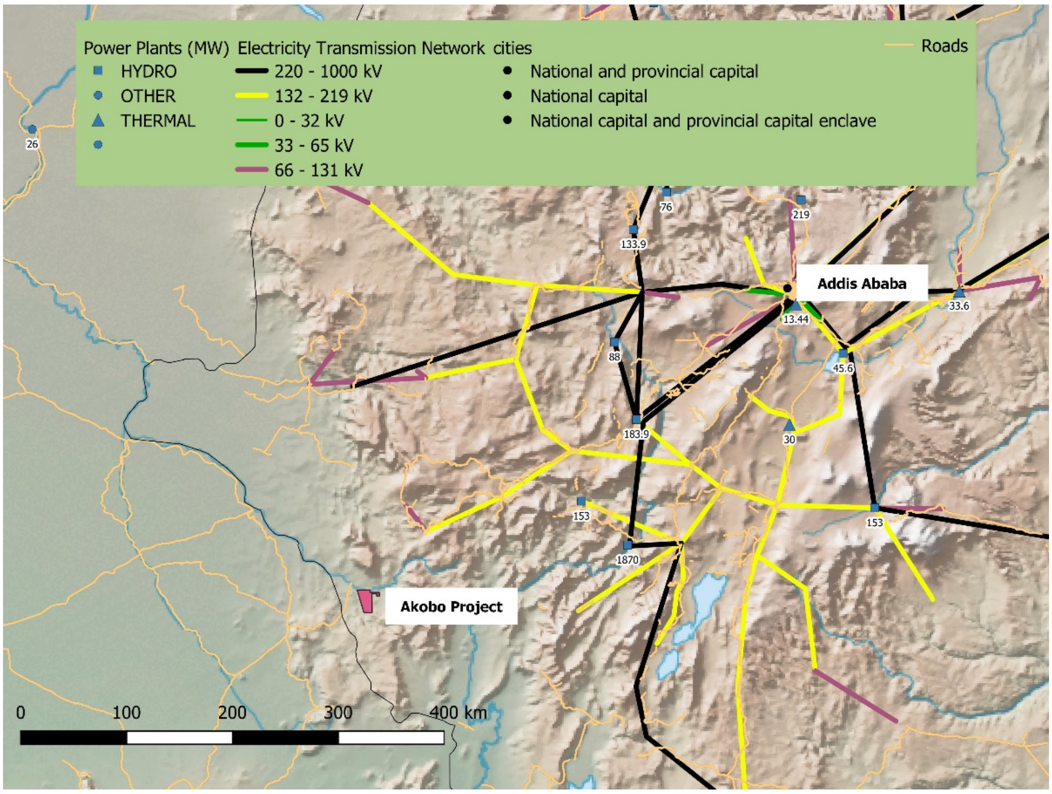
An airstrip was constructed at site by ETNO Mining in 2011 but is currently overgrown. It is expected that this airstrip can be rehabilitated with relatively little effort. The nearest serviceable airstrips are at Aman and Tum, 83km in the NE and 80km in the SE, respectively.

Prior to 2007, the Akobo area was very thinly populated with people of the Surma and Anouak people. Shortly after ETNO Mining began work at Akobo, the artisanal mining activities escalated rapidly and now there are about a dozen semi-permanent mining villages with an estimated population of 20-30 000 inhabitants, coming from all over Ethiopia. These villages are reasonably well organized with local administration and trade. A small amount of farming is present on the licence area to serve the needs of the mining villages.

Ethiopia is well served by electricity generation capacity. Three hydroelectric power plants are located within 300km with a total capacity of 2200MW, with many more power plants in the vicinity of the capital. Electric power lines are in process of being installed, and some of the villages in the project area are connected.  Shama, the village next to the ETNO camp is not yet connected, while Joru in the south is already connected. It is anticipated that the ETNO Mining camp will be connected to mains power within a short period, although the precise timing is impossible to predict

A low quality mobile telephone connection is available and internet capability is not yet in place.

*Figure 4: Map of South Western Ethiopia Including High Voltage Power Lines and Major Roads*



## 6: History

In Ethiopian oral history, the presence of gold in the Western Ethiopia has been known for hundreds of years. The Beni-Shangul area (200km North of Akobo) has been recognized as historic gold province since ancient times, long before Italian prospectors investigated the area during the Italian occupation of Ethiopia 1936-41, however records suggest that they were unaware of the gold mineralization in the Akobo area. Before that, a French-Norwegian mining company based in Addis Ababa during 1929-1933 operated the Yubdo platinum mine and had gold exploration expeditions in Beni-Shangul, Wollega and Maji, also without being aware of the gold potential of Akobo. The first investigations of Akobo gold mineralization were carried out by the Ethiopian Institute of Geological Surveys (EIGS, later renamed Geological Survey of Ethiopia, GSE) in the 1980s.

The first documented information regarding placer potential of Akobo River basin was by the Italian company, Companies Mineralia Ethiopia, (Comina) in 1939. A reconnaissance survey was undertaken by the Ethio-Canadian Omo River Project in 1973-74 covering an area of 8000 sq km. The survey, helicopter assisted and mostly air-photo-interpretation-based, had established the predominant structures and general geology. The merit of this survey was that it had succeeded in outlining varieties of structures that could be further pursued to test the potential of the area taken at manageable sizes. Later this work led to further studies by the Ethiopian Institute of Geological Surveys (1992-95) named The Akobo Precious and Base metal Exploration Project. The project was set out with the objectives to:

- Assess mineral potential of the 1500 sq km area;
- Estimate the earlier reported placer potential of Akobo River basin.

The earliest available documentation was a report of work conducted in 1998-1999 by Geodev Mineral and Water Resources Development PLC and AFREDS Mineral, Water and Energy Development PLC. These firms completed a regional geological -geochemical survey. This included geological mapping at 1:50,000 scale, collection of heavy minerals concentrates, and stream sediment sampling and rock chip sampling. This study defined for further follow up investigation two major prospecting areas referred to as:

- Wolleta-Korkora Prospecting Area of about 100km2
- Sholla -Gabissa Prospecting Area, of about 42km2.

No documentation of exploration work between 1999 and 2007 has been reviewed.

ETNO Mining acquired an exploration and placer mining license and started exploration late in the 2000’s. Subsequently further investment capital was sought by ETNO Mining, and as such Abyssinia Resource Development AS (ARD) was established in Norway. Investment from ARD initially only covered placer mining operations. ETNO Mining’s interest in primary gold exploration began in 2010 when a limited mapping and sampling program was carried out. The results of this program have not been covered in the exploration sections here due to the limited extent.

# 7: Geological Setting and Mineralization

## 7.1 Regional Geology

The metavolcano-sedimentary rock sequence of Akobo area is part of the southern extension of the Western Greenstone Belt of Ethiopia, which itself is part of the Arabian Nubian Shield (see Figure 6). Grenne (2003) is the most up-to-date study of the age and paleotectonic evolution of the region.

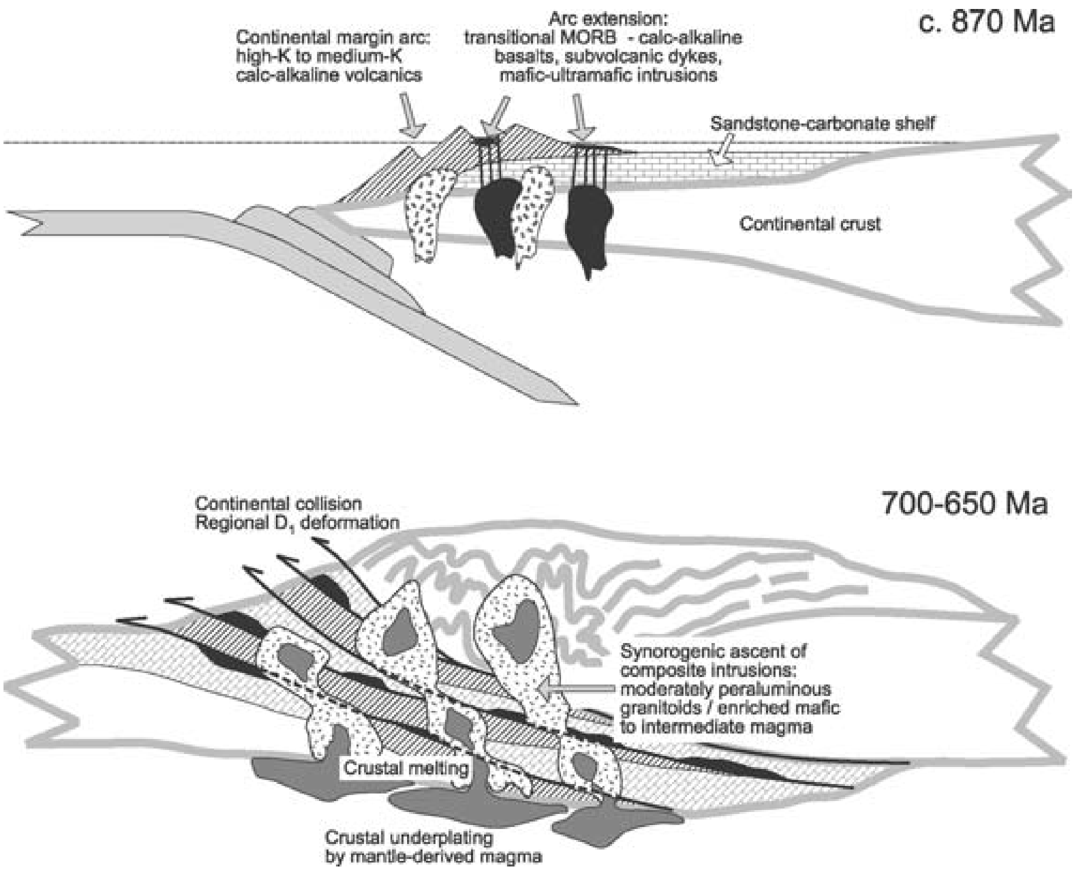



*Figure 5: Schematic palaeotectonic model for the East African Orogen of Western Ethiopia. Subduction polarity is unknown and is arbitrarily drawn in the figure (Grenne (2003).*

Most of Ethiopia is covered by Tertiary or Quaternary volcanic flood basalt sequences. The area of Western Ethiopia we are concerned with occurs within a window younger sedimentary cover which allows the underlying Precambrian basement to be observed (United Nations, 1971). This 100 by 300 kilometer inlier is a N-S trending mobile belt hosting: metavolcano-sedimentary sequences, zones of gneiss and migmatite and the ultramafic complexes that are the subject of this study.

The origin of the ultramafics of Western Ethiopia is the subject of some contradictory interpretation published literature. Using remote sensing, Berhe and Rothery (1986) linked the ultramafic complexes in Western Ethiopia with those further north and south in East Africa and identified the position of five N-S trending sutures in this part of East Africa. In his discussion of the tectonic consequences, Berhe (1990) considers that these sutures with remnant ophiolites represent the remnants of back arc basins, supra-subduction zones and sutures between two continental blocks. Berhe (1990) identified the Baraka – Yubdo - Sekerr suture as being juxtaposed against a similar suture from Eastern Sudan that may continue southward into Tanzania. Satellite interpretation has shown that the structure continues northwards to Baraka in NE Sudan and Eritrea (Berhe and Rothery, 1986). Conversely Grenne et al (2003) consider the ultramafics to be geochemically similar to sediment hosted dykes and metavolcanites, and hence likely to be solitary intrusions formed in response to arc extension.

The ultramafic complexes discussed here are located within the Western Ethiopian Shield (WES) which itself forms part of the greater East African Orogen (EAO). The deformational history of the EAO is divided into two phases: structures associated with collision and post accretionary structures (Abdelsalam and Stern, 1996). Of the collisional structures, two suture types are identified: arc-arc and arc-continental. The Baraka – Yubdo – Sekerr suture is the result of the accretion of two arc terranes (Abdelsalam and Stern, 1996). The deformation within this suture is characterized by north trending sinistral transpression. Arc-arc sutures in the EAO typically have nappes containing ophiolitic material associated with them, and these were steepened by upright folding during the final stages of collision (Abdelsalam and Stern, 1996). Another aspect of the post accretionary deformation is the development of northwest trending strike slip faults and shear zones (Belete et al., 2000; Abdelsalam  and Stern, 1996).

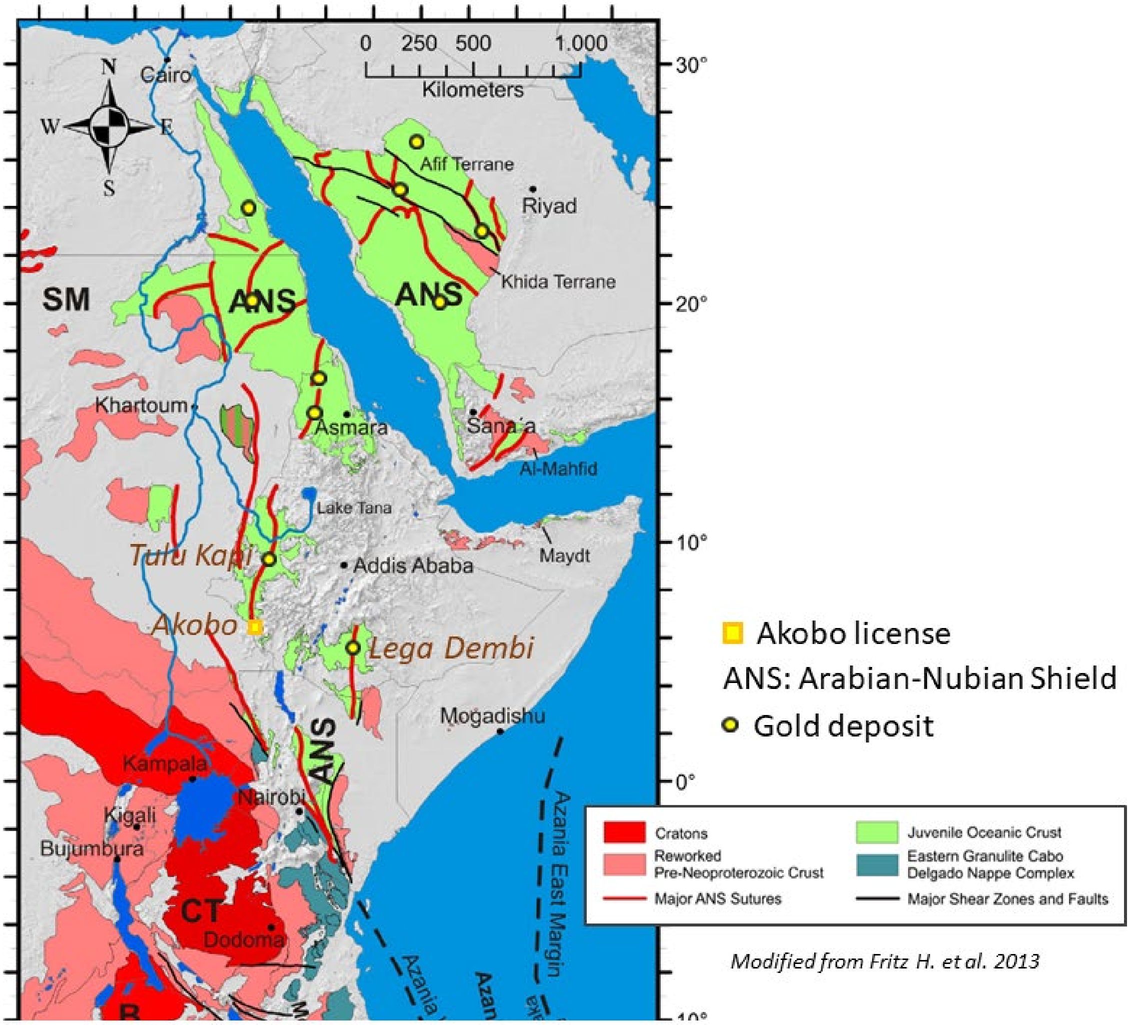



*Figure 6: Gold in the Arabian Nubian Sheild - A large underexplored Precambrian terrane (modified after, Fritz et al 2013).*

The Western Ethiopian Shield (WES) records a history of crustal formation and deformation within the EAO lasting around 500Ma (Johnson et al., 2004). The shield is divided into three lithotectonic domains: the Baro, Geba and Birbir domains (Johnson et al., 2004; Ayalew et al., 1990; Allen and Tadesse, 2003). These domains strike NNE-SSW with the Birbir domain in the centre, this trend is parallel to the trend of the EAO.

The Akobo Gold Exploration Project is located within the “Surma Shear Zone” of the Akobo Greenstone Belt. The “Surma Shear Zone” is a NNW trending structural domain characterized by folded and sheared, Neoproterozoic mafic schist, gneisses, ultramafic bodies, metasedimentary schists, marble and gneisses, that were intruded by late gabbros and granitoids.

Akobo is an extensive placer gold region characterized by a Precambrian belt of metamorphic rocks. These rocks constitute the southernmost part of the West Ethiopian Precambrian Greenstone Belt, a southern extension of the Arabian-Nubian Shield, known for many gold deposits, ancient and modern. The Arabian-Nubian Shield represents a large, under-explored area of Precambrian terrane, and the Akobo area in the far south especially so.

Large and small bodies of ultramafic rocks characterize the Akobo area. Similar rocks occur along the belt to the north, e.g. at Yubdo, Tulu Kapi, Tulu Dimtu, Baruda etc. Gold is broadly associated with these areas of higher concentration of ultramafic bodies, and has been produced from placer deposits in these western areas of Ethiopia since ancient times.

## 7.2 Akobo Project Structural geology

The Akobo area has a regional trend and foliation NW-SE dipping, moderately to steeply to the NE. This deviates slightly from the dominantly N to NNE trend observed further north, for example in the Yubdo-Tulu Kapi region. Previous work has ascribed this to a major, crustal scale shear zone, the Surma Shear. The Surma Shear has by some been regarded as a secondary structure, parallel to the Didesa Shear in the Abay (Blue Nile) area, Wollega region. However, it is not clear whether the directional change in the Akobo area is a secondary feature or a flex of the main trend and shear structure of the West Ethiopian Greenstone Belt.

The Surma Shear is described to be sinistral. This is also observed in field in Akobo. The sinistral shear movement produces secondary E-W shearing, extensional crenulation cleavage, with local dilation creating hydrothermal pathways and possible concentration of mineralization. The pronounced E-W trending Chamo Break, as the sharp boundary between the NNW-SSE trending mafic assemblage and the granodiorite cutting across the entire northernmost part of the map, is interpreted as such a shear zone. The bonanza gold mineralization at Segele just south of Chamo village is another, possibly third order and closely related to the Chamo Break. The dominating direction in the Segele gold system is E-W, dipping 20-40 degrees N.

Foliation measurements collected from the trench walls indicate very complex directions of the rock units. This results due to the very complex and irregular shearing and multistage deformation activities that have affected the area.

Rock units have been disconnected and dislocated and formed various size lenses of rock of various types mixed together. Like the rock units show this pinch and swell character, the gold mineralized pockets have formed and behave in the same way.

At Joru, the main foliation trend is NNW-SSE with a gentle dip towards east. Detailed structural mapping of the central Joru area shows micro folded layers of quartz-feldspar schist with boudinaged quartz veins. Gently dipping foliated zones of the quartz-feldspar schist exhibits 350˚ northwest trending hinge line, and dips about 35˚ to the east, but also in places to west, possibly indicating an anticlinal folding structure. The quartz veins are mostly dipping to the west, crosscutting the main foliation plane. Mineralization and alteration are possibly intensified around the interpreted axis lines.

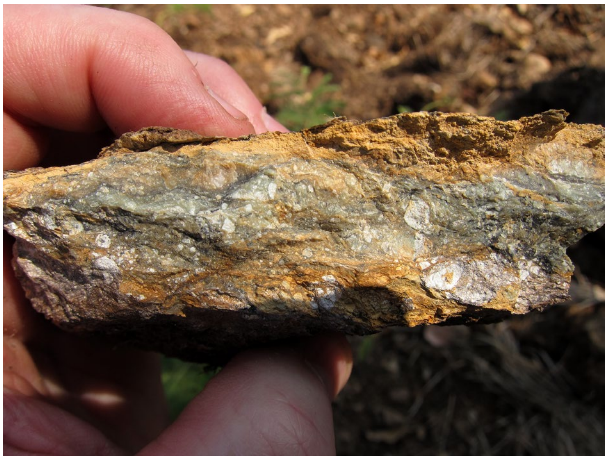


*Figure 7: The Chamo Break breccia*

## 7.3 Detailed Geology of the Chamo-Segele Prospect

The Segele Prospect is mostly dominated by metagabbro, serpentinite (carbonate and silica-rich), a chloritic unit with coarse magnetite crystals, a strongly sheared talc-chlorite-tremolite-carbonate unit; and fine grained, magnetite bearing carbonate-talc-unit with minor mafic and felsic dykes. All rock units are mostly strongly sheared with swell and pinch structures, but locally appear undeformed. Carbonate, talc, muscovite, magnetite alteration is mostly associated with the gold bearing, altered zone and interpreted as ore proximal alteration. It grades into carbonate-silica altered ultramafic unit with tiny layers of chlorite-magnetite as black, enveloping shell. Gold mineralization is mostly associated with the carbonate-talc-magnetite zone. Structurally the area experienced multistage ductile-brittle deformation episode which makes the rock sequences and mineralized zones very complex, with discontinuous and irregular shapes over very short distances and depth, by creating boudinaged lenses.

### 7.3.1 Metagabbro unit

A medium grained, grey colour, slightly massive, strongly jointed and boudinaged unit. It is intermixed with the surrounding rock units in various sizes and covers significant part of the surveyed area.

### 7.3.2 Metagranitoid unit

The metagranitoid/metagranodiorite unit is pink to dark grey, coarse grained, slightly massive in the north but with increasing foliation intensity towards Southeast and at contact zones. It outcrops at the northern end of trench SETR02.

### 7.3.3 Amphibole unit

This is dark green, fine to medium grained amphibole rich rock with minor biotite and epidote minerals. Northwesterly trending, mostly following the general foliation, sandwiched between the granitoid and metagabbro. It commonly outcrops in flat lying areas as rock fragments rather than in-situ outcrop. It is strongly jointed and affected by strong deformation. Roughly centimetre to meter sized aplitic dykes deformed together with the amphibole unit forming kink micro structures are common. Disseminated silicification alteration is recorded, in places forms silica/feldspar veinlets.

### 7.3.4 Serpentinite unit

Light greenish grey fresh colour, often with brownish-yellow colour resulting from carbonate alteration and weathering products. Massive and resistant with a fractured texture, rough surface ridge forming topography due to high silica content. Forming swell and pinch structures all over the entire Joru-Chamo shear zone; part of the Surma shear zone. A high degree of silicification and carbonatization has strongly affected parts of the serpentinite primary mineralogical composition. This plays a major role in accommodating the stress-strain conditions during shearing. Narrow talc-chlorite-tremolite layers are common along contacts with the metagabbro unit.

### 7.3.5 Talc-chlorite-magnetite unit

Dark in colour, relatively massive texture, fine to medium grained, black chlorite rich with coarse magnetite crystals. Very thin layers but continuous along shear zone. A minor talc-schist associated with chlorite unit forms characteristic marker layer of mineralized zone with slightly massive, weakly-mineralized serpentinite unit following shearing.

### 7.3.6 Talc-chlorite-tremolite- unit

Fine to medium grained, greenish-grey colour, strongly sheared and foliated unit, composed of talc-chlorite-tremolite layers bounding relatively competent surrounding rock units. It is closely related to the gold-bearing talc-carbonate zone. In places, coarse grained greenish grey coloured asbestos bearing rock fragments were recorded associated with this unit. Strong deformation/shearing activity and development of intense foliation were noticed.

### 7.3.7 Talc-carbonate-magnetite unit

Completely altered, brownish colour, strongly jointed and fractured, weakly gold mineralized ultramafic unit at the trench sections. It is extremely irregular and discontinuous laterally as well as vertically. Talc, carbonate and fine to medium grained magnetic minerals are the dominant and easily recognizable minerals at the site. In places muscovite and kaolin alteration zones were observed. Gold panning and laboratory assay results showed that gold mineralization is related to this alteration zone.

### 7.3.8 Alteration

Talc alteration, carbonatization and silicification/minor quartz veinlets are the most common alteration processes observed near to the gold bearing mineralized zones.  Minor feldspar, muscovite and fuchsite alteration mineral indications were observed associated with carbonate and talc zone. Gold mineralization is mostly associated with carbonate and talc alteration zones.

### 7.3.9 Mineralization

The host rock for the gold anomaly at Chamo-Segele is the altered ultramafics, controlled by northwest-southeast shear movement which created local dilational zones oriented in east-west direction which favoured precipitation of gold at narrow zones and pockets of intense shearing affecting the mafic-ultramafic body.

Black coloured fracture fill material (possibly chromium-oxide) was noticed in the silica rich serpentinite unit, coarse magnetite crystals are observed related to the black, chloritic layers, and medium grained magnetite recorded associated with talc-carbonate gold bearing zones. Gold mineralization of the area seems closely related to talc-carbonate-magnetite zones.

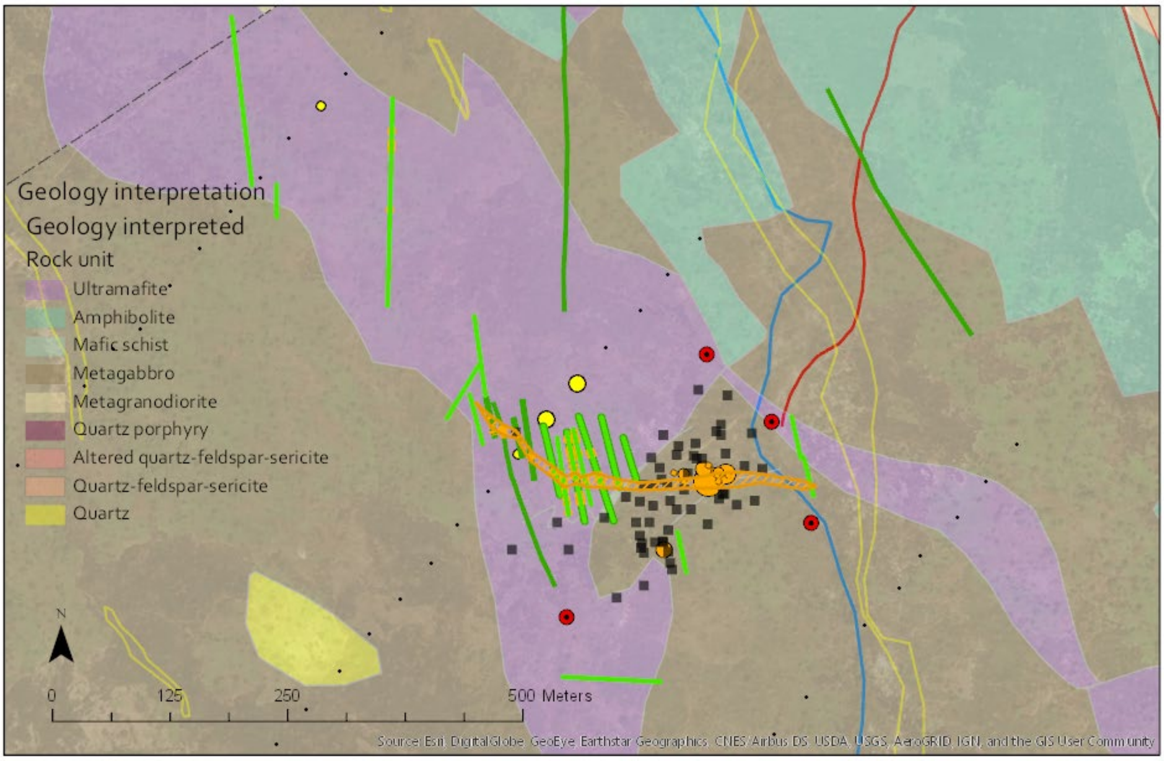



*Figure 8: Segele area. Green lines: Trenches; Black squares: logged pits; Orange circles: gold produced in pits; Red circles: RC drill holes; Orange hatched zone: mapped/interpreted gold zone outcropping.*

## 7.4 Detailed Geology of the Joru Area

The main lithologies that constitute the Joru area are: Quartz-feldspar unit; quartz-feldspar-biotite unit with quartz porphyries; metagranitoid unit; mafic-ultramafic unit; and minor mafic schists. The quartz-feldspar unit and quartz-feldspar-biotite with quartz porphyry unit cover almost the entire area; the rest cover very small area. Alteration and mineralization zones are closely related to the quartz-feldspar unit and situated at the central part of the mapped area. Alluvial deposits along the river banks and thick soil cover at the flat areas hinder the mapping activity at the southern and eastern parts of the mapped area. Artisanal mining activity has occurred in the weathered zone, leaving piles of waste material and crushed quartz vein fragments covering significant areas. Structurally, all rock units trend northwest-southeast direction, following the regional structural trend of the Surma shear zone.

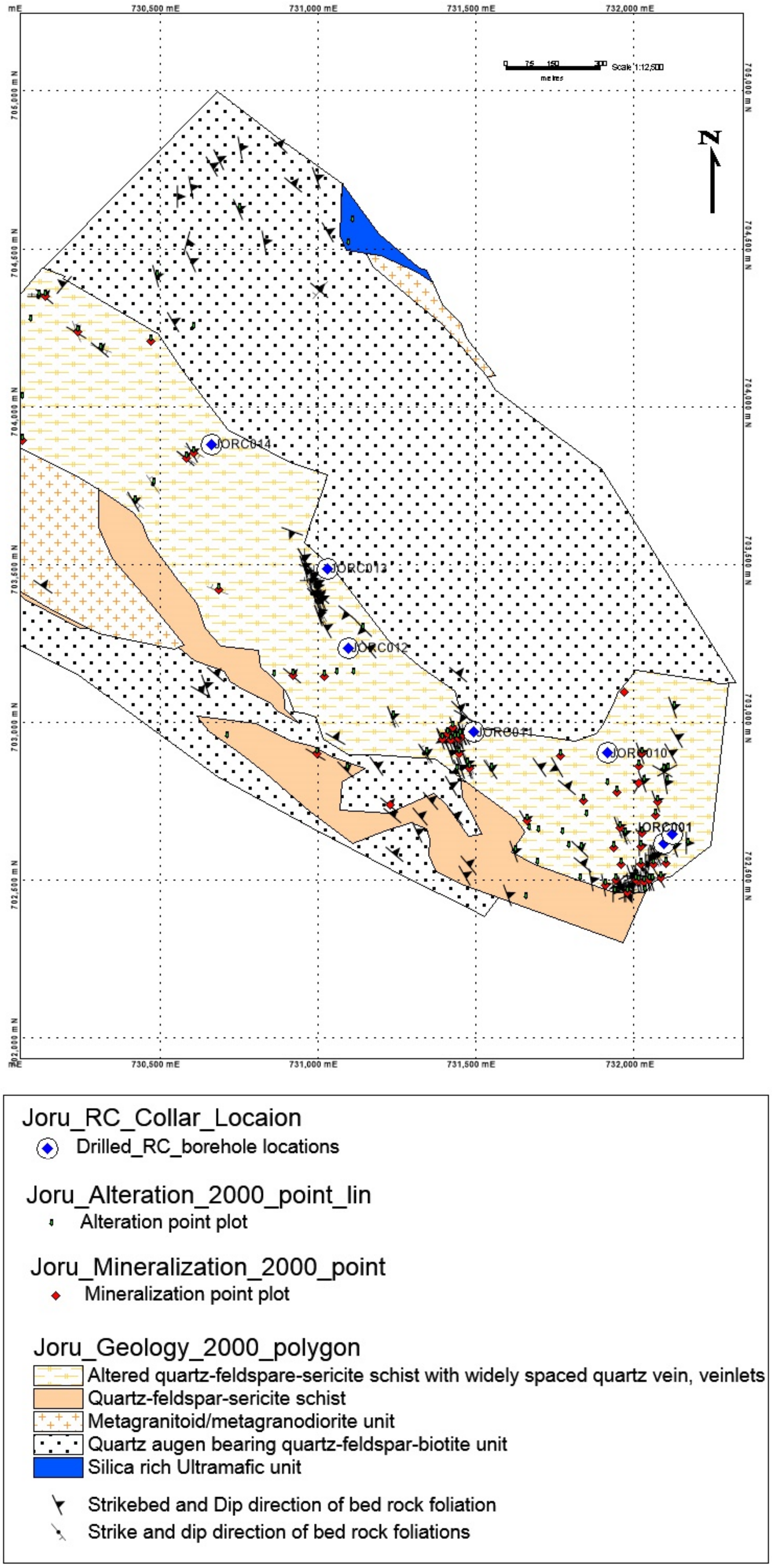



*Figure 9: Detailed Geology of the Central Joru Area*

## 7.4.1 Quartz-feldspar±sericite unit

This formation is coarse to medium grained, showing a fresh off-white colour, with light brown weathering colour and highly jointed unit. Quartz, feldspar and minor sericite are the main constituents of the rock unit. It is often sheared, and possibly has a metagranitoid protolith and is more altered at the south-eastern part. It covers the central part of the Joru area, bounded by coarse quartz porphyry quartz-feldspar-biotite unit to the east, metagranitoid/metagranodiorite to the northwest, and again the augen bearing quartz-feldspar-biotite unit to the southwest. It has a very close relationship with alteration and gold mineralization zones. Widely spaced quartz veins, quartz vein stringers and veinlets characterize this rock unit. Kaolinite and sericite alterations were recorded. Shearing in the area has created strongly sheared and boudinaged quartz veins and tension gash veins. Mineralization appears to be controlled by structures created by multiphase deformation. It is strongly sheared and crosscut both by concordant and discordant quartz vein stringers, veinlets and meter scale thick veins. Alteration intensity of the unit increases from northwest to southeast. Artisanal miners produce gold from this zone along the strike, from the quartz-carbonate veins, most intensely in the south-eastern continuity. Oxidized vugs after sulphide are observed on the altered surface of this unit. Fresh pyrite, arsenopyrite, chalcopyrite and galena are observed at the southeastern part. This zone seems to characterize the auriferous zone of the Joru prospect.

### 7.4.2 Quartz-feldspar-biotite unit with augen quartz

Grey colour, coarse grained, massive and highly jointed unit. Spatially and compositionally closely related to the quartz-feldspar unit, but differs because of it’s coarse grained, rough weathering surface due to the coarse quartz grains present in it. It seems to have a granitic intrusive origin, possibly a quartz porphyry, and covers most of the mapped area. It is situated in the eastern and south-eastern part of the map area.

### 7.4.3 Metagranitoid unit

Pink to light grey colour, coarse to medium grained, composed of quartz, feldspar, and biotite. Massive, slightly jointed, leaving sandy soil after weathering.

### 7.4.4 Ultramafic unit

Coarse to medium grained, greenish-grey colour, sheared and foliated unit. It is highly altered by carbonate alteration.

### 7.4.5 Chlorite-biotite schist

Fine grained, light greenish colour, composed mainly of chlorite and biotite. Strongly sheared with strong schistosity. It is located at the eastern end of the altered zone.

### 7.4.6 Alteration

Silicification, quartz veining, carbonatization, kaolinization and sericitization are the main proximal alteration minerals to the gold bearing zone. Meter size quartz-veins, centimeter to millimeter size quartz vein stringers and veinlets are the host rocks of the gold mineralization in the area. As veining increases, gold contents also increase.

### 7.4.7 Mineralization

Fresh and oxidized sulphide mineralization were recorded associated with quartz veins and altered host rock/quartz-feldspar schist. Pyrite, chalcopyrite, arsenopyrite and galena are the main sulphides observed.

## 7.5 Project Mineralisation Summary

The alluvial and diluval gold occurrences are found all over the Akobo river basin; primary gold and nickel occurrences in ultramafic rocks along the major Surma shear zone in the Chamo-Joru area; artisanal gold workings from weathered bedrock; and the primary gold quartz stockwork mineralization at Joru, are good indications that the Akobo greenstone belt of southwestern Ethiopia has potential for discovery of economic gold mineralizations. The area is dominated by mafic-ultramafic intrusive rocks, metagranitoids and minor volcano-sedimentary units.

In the Segele area the artisanal shafts, some as deep as 40 m, provide 3D info, showing that shearing surrounds virtually undeformed blocks of country rock of all sizes, fist size to car size to house size. This pattern probably extends also to the km size ultramafic bodies elsewhere in Akobo. In places with good exposure, like in the creeks, such undeformed blocks can be seen to be rotated in ductile, sinistral shearing. These shear zones consistently show an E-W trend dipping moderately N, forming a combined zone, Segele Gold Shear. This structure is probably closely related to the larger Chamo Break.

The host rock of the detailed investigated samples from the main gold producing zone is a metapyroxenite, pervasively altered by carbonatization, hydration and silicification into a coarse grained, massive, carbonate rich amphibolite, superficially resembling gabbro. The artisanal miners claim that high-grade gold is mostly produced from the sheared, schistose areas between the massive parts. These mineralized schist zones are typically cm to some dm in width. The WNW extension of the Segele zone, as followed in the trenches, is a talc-carbonate zone in the main high-Mg ultramafic.

Three types of bedrock gold mineralization have been identified, so far:

1. Chamo-Segele: High-grade gold mineralization in pervasively altered and partially sheared ultramafic rock and metagabbro. The Segele pit area, south of Shama village.
2. Joru: Extensive stockwork of smaller quartz veins (cm-dm) in quartzofeldspathic host rock. Occurring north of Joru village.
3. Wolleta and Nechdingay: Outcropping quartz veins of considerable size (meter-tens of meters. Typically occurring in the Wolleta area within the ETNO Mining license area. These target areas are not covered in this report.

# 8: Deposit Types

At the current stage of exploration and study, it is impossible to confidently assign deposit types to these mineral occurrences. The mineralisation at both primary study areas are highly likely to be assigned as orogenic gold deposits, any further classification is elusive at present. Although both are considered to be orogenic gold, the work so far has indicated that the deposit types for Chamo-Segele and Joru are very different. This section compares the mineralisation, alteration and structure of Chamo-Segele and Joru with other, better studied deposits which can be considered to be analgoues.

## 8.1 Chamo-Segele Deposit Type

Ultramafic hosted gold (+/- Platinum-group element) deposits are widely known in industry and academia but not commonly mined or reported. One notably analogue for the mineralisation at Segele is the Pahtavaara deposit in Arctic Finnland. Pahtavaara and Segele share the fact that free-gold mineralisation is hosted by ultramafics altered to carbonate/talc. Furthermore both deposits appear likely to be Paleoproterozoic in age and contain both coarse grained and fine grained gold mineralisation (Wolfe, 2018). At The hydrothermal alteration and the Au-bearing structures and veins associated are a result of a prolonged period of ductile deformation and later brittle-ductile deformation related to a belt scale thrusting event, a feature which seems likely to be present at Segele. One key difference between Pahtaavara and Segele is that although both are hosted by high-magnesian ultramafics, the Segele host is priciptally intrusive and Pahtaavara is extriusive (komatiites). Nevertheless, it is conceivable that the same ore deposit model may apply to both occurrences. The Pahataava deposit has been mined intermittently and production peaked during 1997 at almost 37,000oz. The current inferred mineral resource (after mining depletion) is 605,000oz at 2.4g/t (using a cut-off of 1g/t).


*Figure 10: Mineralisation and structure from of the Pahtaavara Deposit. A: Free gold in drill core. B/C: Polyphase structures and veining.*

## 8.2 Joru Deposit Type

The Tulu Kapi deposit (around 1000km North of Akobo) also occurs in the Western Ethiopian Shield and satellite lineament interpretation suggest that Joru exists alongstrike in the same tectonic zone. The principle similarity between the two occurrences is that both occur in stacked quartz-carbonate veins, veinlets and stockworks. The host-rock for Tulu Kapi is principally coarse-grained syenite whereas such host-rocks have not been observed at Joru. Nevertheless, both deposits appear to have a strong structural control and both occur adjacent to (but not within) large crustal-scale shear zones. The Tulu Kapi project has a completed Definitive Feasibility Study (2015) and indicates and inferred mineral resources of 1.72 million ounces at 2.65g/t.

# 9: Exploration

## 9.1 Introduction to Exploration Work (2007-2018)

Work completed by ETNO at Akobo includes: Reconnaissance soil sampling, detailed trenching, pitting, reverse circulation drilling, detailed geological and structural mapping, alteration mapping, study of mineralization (Table 2). Initial work during 2011 and 2012 focussed on reconnaissance level soil sampling at 50 x 400m and geological mapping covering five targets. In subsequent years ETNO has prioritised the Chamo-Segele and Joru areas for detailed study with trenching, pitting and detailed mapping. Reverse Circulation drilling was performed at four prospects. Minor works were conducted on the nickel bearing ultramafic lenses to understand the distribution and the nature of nickel mineralization by outcrop chip sampling (not covered here). Geophysics was only employed at the Chamo-Segele Project area, where a ground magnetic survey was completed.

| Prospect | Field Season Start Year | Geological Mapping Scale | Soil Sampling | Pan Concentrate Samples | Geophysics | | Trenches | | Pits | | | Reverse Circulation Drilling | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Samples Analysed | Samples analysed | Type | Quantity | Line kilometers | Samples analysed | Number | Cumulative Depth | Samples Analysed | Holes / meters | Samples Analysed |
| **Chamo-Segele** | 2011 | 1:10,000 | 1032 | | | | 1.470 | 147 | | | | | |
| | 2012 | | | | Ground Magnetic | 15.6 km² | 0.500 | 120 | | | | | |
| | 2013 | | | | | | | | | | | | |
| | 2014 | 1:25,000 | | | | | | | | | | | |
| | 2015 | | 412 | | | | | | | | | 4/595 | 595 |
| | 2016 | 1:2,000 | | | | | | | 37 | | | | |
| | 2017 | | | | | | 2.280 | | 30 | 22 | 123 | | |
| | 2018 | | | | | | | | | | | | |
| **Wolleta** | 2011 | 1:2,500 | 182 | | | | | | | | | | |
| | 2012 | | | | | | 0.245 | 152 | | | | | |
| | 2013 | | | | | | | | | | | | |
| | 2014 | 1:25,000 | | | | | | | | | | | |
| | 2015 | | 103 | | | | | | | | | 8/725 | 725 |
| | 2016 | | | | | | | | | | | | |
| | 2017 | | | | | | | | | | | | |
| | 2018 | | | | | | | | | | | | |
| **Nechdingay-Gindibaba** | 2011 | 1:10,000 | 569 | | | | | | | | | | |
| | 2012 | 1:5,000 | | | | | | | | | | | |
| | 2013 | | | | | | | | | | | | |
| | 2014 | | | | | | 0.096 | | | | | | |
| | 2015 | 1:25,000 | 226 | | | | | 48 | | | | 6/353 | 353 |
| | 2016 | | | | | | | | | | | | |
| | 2017 | | | | | | | | | | | | |
| **Joru** | 2011 | 1:5,000 | 201 | | | | | | | | | | |
| | 2012 | | | | | | 2.300 | 1231 | | | | | |
| | 2013 | | | | | | 0.227 | 227 | 2 | 9.5 | | | |
| | 2014 | 1:25,000 | | | | | 0.098 | | | | | | |
| | 2015 | | 214 | | | | | 43 | | | | 14/1375 | 1375 |
| | 2016 | 1:2,000 | | | | | | | | | | | |
| | 2017 | 1:1000 | | | | | 0.360 | 54 | | | | | |
| | 2018 | | | | | | | | | | | | |
| **TOTAL** | | | **2939** | | | | **7.576** | **2022** | **69** | **31.5** | **123** | **32/3048** | **3048** |

*Table 2: Summary of Exploration Work completed. For locations see Figure 1.*

## 9.2 Exploration Survey Methods

### 9.2.1 Ground Magnetic Survey

22 km$^2$ are covered with ground magnetics measurements using a GSM-19 (overhauser) magnetometer at a line spacing of 100m. As the survey location was close to the equator it was not considered that measurements of dirurnal variation were necessary. The data presented here is the analytical signal of the total magnetic field.

### 9.2.2 Detailed geological mapping

During 2014-2015, the exploration work carried out included trench, rock chip, crush and loam sampling of quartz veins, alteration and shear zones, as well as, 1: 25,000 scale geological mapping. This allowed for the follow up prospecting of the target areas covered in this report. These are target areas were prioritized on the basis of geological environment, type and abundance of ore minerals and gold in crush and loam samples.

- Chamo-Segele
- Wolleta,
- Upper Gindibab,
- Joru,

During 2015-2016, a total of 14.1 km$^2$ areas was covered by detailed geological, structural, mineralization and alteration mapping at Shama-Segele area and 4 km$^2$ at Joru target area. In the same program a total of 19 rock samples were collected from the Shama-Segele and Joru prospect areas and 11 rock chip samples from Segele pits/shaft area. Two additional samples were taken from the Segele pits for thin section and microscopic study. Samples were also collected from all major rock units present in the mapped area and analysed for gold and associated metals mineralization and whole rock petrographic study.

During 2017-2018 program the Chamo-Segele and Joru prospects were targeted with 1:1000 and 1:2000 scale detailed geological mapping including structural, mineralization and alteration data are collected from trenches.

### 9.2.3 Rock Chip Sampling

Rock chip samples were taken to support geological mapping and targeting. A total of 81 samples were taken but only 36 were analysed by fire assay at ALS (Gauteng). The sampling methods, sample sizes and QAQC protocols are unknown and hence it is only suitable to use these samples for qualitative assessment of the presence of ore.

### 9.2.4 Soil Geochemistry

During the soil sampling programmes up to four teams were set up. Soil samples were taken from B or C horizon at depths of 15-150 cm, 2-3 kg per sample. Each team was led by a geologist; with 8 to 10 daily laborers employed for digging sampling pits and to carry samples. Each team was assigned to complete sampling of one or two profile lines every day. Each team was accompanied by two armed soldiers paid for by Etno Mining for security purposes. Samples were collected at 100 meter intervals along an azimuth of NE-SW/050. Locations were assessed using a Garmin Oregon 50 model handheld GPS. At each sampling location the digital readout on the GPS was observed and the sampler instructed where to collect the sample when he has reached the 100 m point. The GPS operator and the sampler then proceed along the profile line to the next sample site. At each sample site location in UTM and sample type and other essential geological data are noted.

Part of the exploration area in the south western part of Joru could not be covered by soil sampling program due to security problems. In addition large areas covered by alluvial deposits and subjected to intensive artisan placer gold mining activities were exempted from soil sampling. Figure 10shows areas covered by the regional soil sampling program.

For details of the program size and numbers of samples, see Table 6.

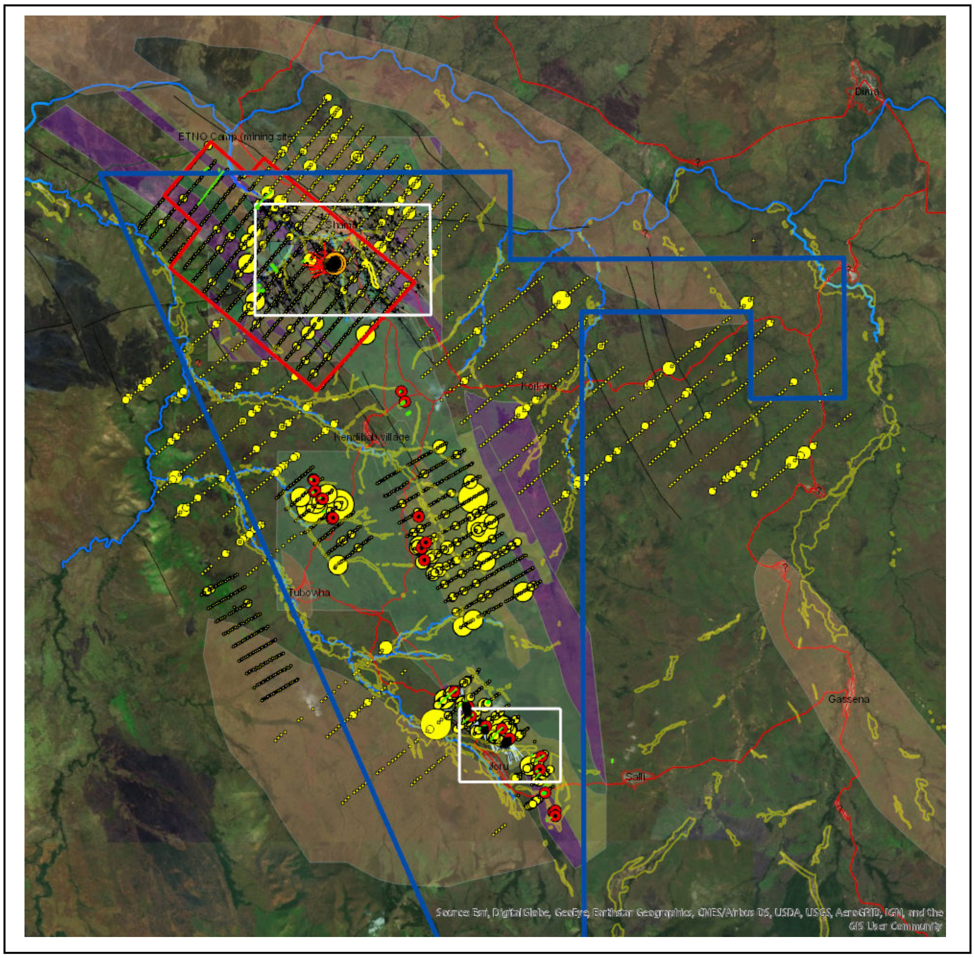



*Figure 11:Soil geochemistry Au, the 2014 survey with the denser line spacing. Blue line outlines the 2017 license area. Red dots are RC holes.*

## 9.2.5 Trench Logging and Sampling

Trenches were created an excavator (CAT M318) and all trenches were sampled and panned. About 10 kg of crushed material was taken from the trench floor at every meter interval and panned at the Akobo River. One meter channel samples were taken, sent to laboratory and analysed for gold (further details in Chapter 11). All data was collected on paper and entered into an excel database later, the information included; panning results; gold grain counts, trench logging of alteration, mineralization, structures and geological mapping; cross-sections and survey data of all trenches were carried out.

Eight trenches with the total length of over 2000 meters were excavated in Shama area in the 2010-2013 field seasons. The first trench was 1000m long, having average depth of one meter and was expected to expose important zone of primary gold mineralization for further evaluation. The second trench with the length of 500 meters is located one kilometer south of the first trench and was designed to cross a highly silicified, magnetite enriched alteration zone containing two old trenches presumed to be dug by Italian company during the Italian occupation of Ethiopia (1935-1941). The remaining six trenches each about 100 meters in length are excavated three in Segele area and three north of trench number one in Shama area. In the 2016-2017 season, a total of 24 new trenches were excavated using excavator at the Segele gold mineralization zone totalling 2580m

During 2017-2018, seven trenches were excavated with a total length of 1093m at Chamo-Segele area as a continuation and expansion program from the 2016-2017 trenching programs.

At Joru, during the 2010-2013 field seasons, eight trenches were excavated. The trenches were targeted with the objective of identifying the soure of Au in soil anomalies. Most of the excavated trenches traverse the soil Au anomalous zone. All together close to 2300m of trenches were dug and channel sampled, every two meters, in places every one meter, in other places. A total of 1231 channel samples were collected (or more details see Chapter 11). The excavated trenches range in length from 40m to over 600m. In the 2016-2017 season three trenches were excavated at central Joru area totalling 360m (JOTR017, JOTR018 and JOTR019).

At Wolleta during 2010-2013, five trenches totalling 250m in length were excavated. The excavated trenches were each 40m to 65m in length and all but one trench was sampled (See Chapter 11).

*Figure 12: Example trenches*

### 9.2.6 Artisanal Pits Logging and Sampling

The overwhelming majority of investigations of artisanal pits were at Chamo Segele during the 2016 – 2017 field seasons, with two pits investigated at Joru during 2013. At Chamo Segele, more than 30 artisanal pits were logged and sampled every meter across the Segele gold mineralization zone at a roughly 20m x 20m pit spacing, using iron-framed escalator/ pulley system, moving down to the bottom of each pit. Each pit was logged in vertical sections, which showed petrology, alteration, mineralization contrast down depth of each pit. 664 samples were collected from the pits and prepared for geochemical analysis however only 123 of these were sent for analysis. Section maps of all these pits were prepared and documented.

### 9.2.7 Mineralogical investigations

Detailed mineralogical investigation at Segele artisanal primary gold workings was conducted. Two mineralized samples were analysed at the Geological Survey of Norway (NGU) under reflected/transmitted light and scanning electron microscopy.

## 9.3 Reconnaissance Surveys

### 9.3.1 Geochemical Soil Assay Results

This section covers only the analysis of gold from the samples which were sent to Mekele (Etihopia) for analysis. Geographically, these samples do not cover the main target areas. Assay values of the majority of samples were below background (Table 3). Only a few samples showed a gold value above background scattered all over the sampled area and could be considered to have. West Joru and east of Nechdingay area showed better concentration of Au values.

*Table 3: Summary Statistics for the regional Soil sampling gold Assay results (Analysed at Mekele Ethiopia)*

| No | Range of Au analytical value in ppm | Number of Samples |
|---|---|---|
| 1 | 0.101-0.582 | 4 |
| 2 | 0.021-0.100 | 70 |
| 3 | 0.015-0.02 | 78 |
| 4 | **<0.01499** | 1829 |

It must be noted that significant uncertainty surrounds the sample preparation and analytical methods used to analyse the samples at Mekele (Ethiopia) and no details regarding the accreditation of the laboratory are available (Chapter 11). Of particular significance is that an aqua regia digest was used to dissolve the soil samples. Aqua regia is a partial digest and although it is in common use for soil sampling programmes, it is well known to be suitable for digesting relatively fresh refractory minerals such as garnet and spinel. Therefore this program would have not identified soil anomalies where the gold is hosted by such refractories, however, any gold which was hosted by highly altered and weathered minerals would have shown up. Given that the gold mineralisation in some places is hosted by ultramafics, it is possible that spinels could have hosted the gold and hence no be identified in this program. The anomalies found here could be as a result of gold which is complexed with organic molecules or within minerals that have been largely destroyed by alteration and or weathering.

The analysis of field duplicates in this program shows a good level of repeatability as such it is possible that the contamination, grouping and segregation error may be low enough to allow for reanalysis of either coarse rejects of pulps. If Akobo Minerals has access to coarse rejects or retained pulps, it is recommended to request that these be reanalysed by fire assay at an ISO accredited assay laboratory.

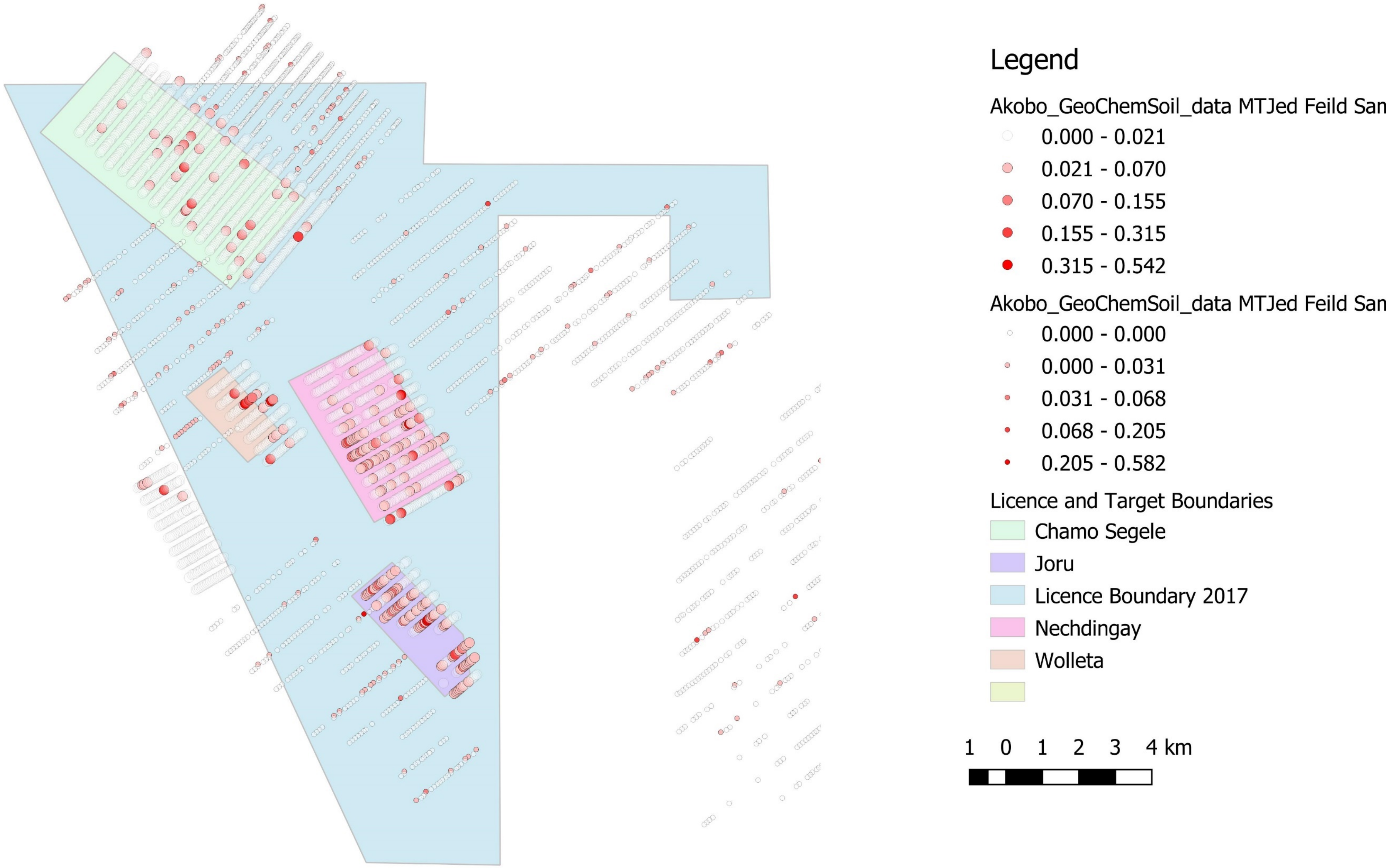



*Figure 13: Au-in-soil values from the regional sampling programs. Large Circles: Analysed at ALS (Gauteng). Small Circles: Analysed at Mekele (Ethiopia).*

## 9.3.2 Geological Mapping Results

Over the period of exploration, reconnaissance exploration mapping has been conducted alongside and supported by soil geochemical surveys, the scale of mapping is believed to be 1:25,000 (Figure 12)

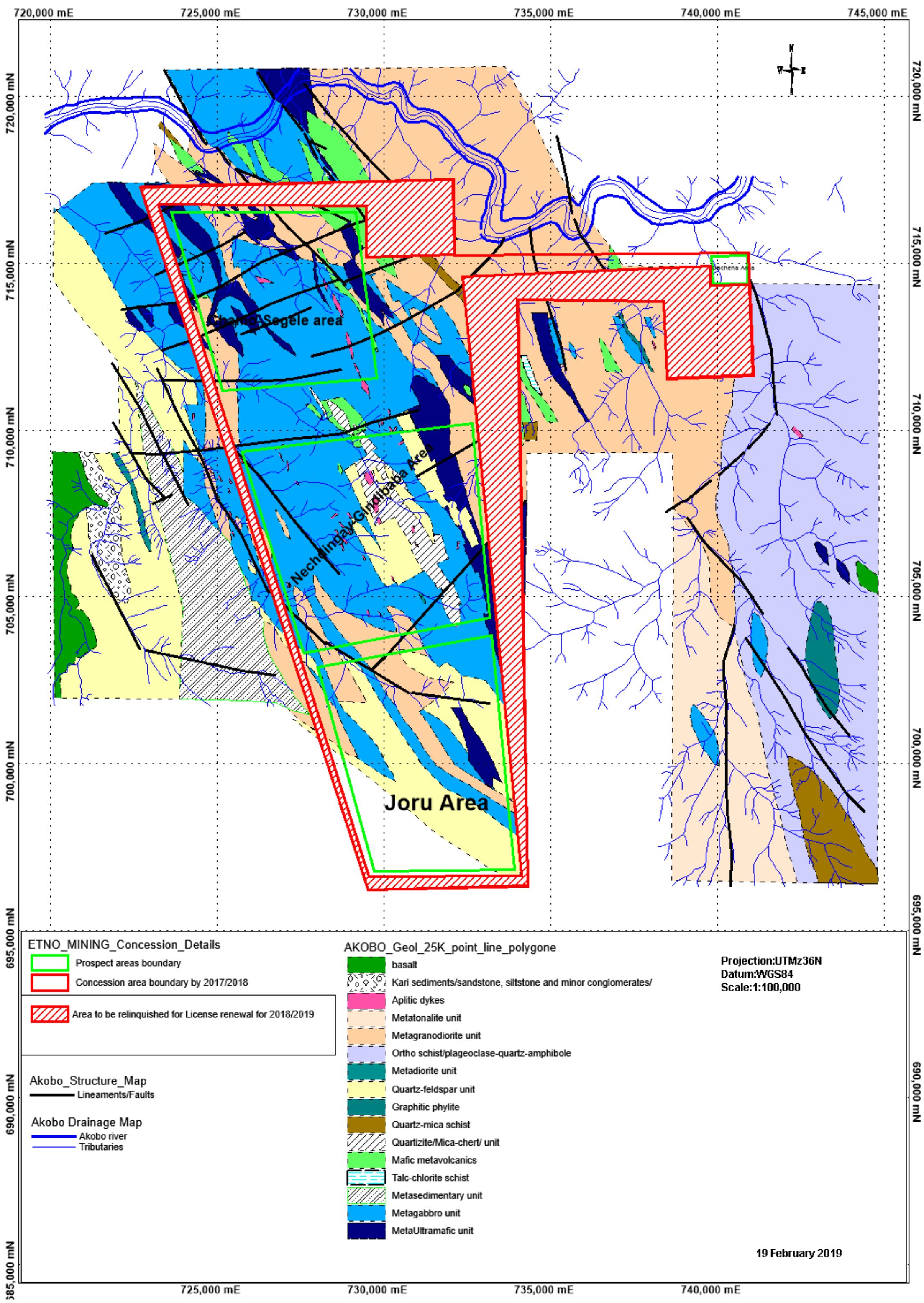


*Figure 14: Map showing modified regional Geological Map.*

### 9.3.3 Magnetic Survey Results

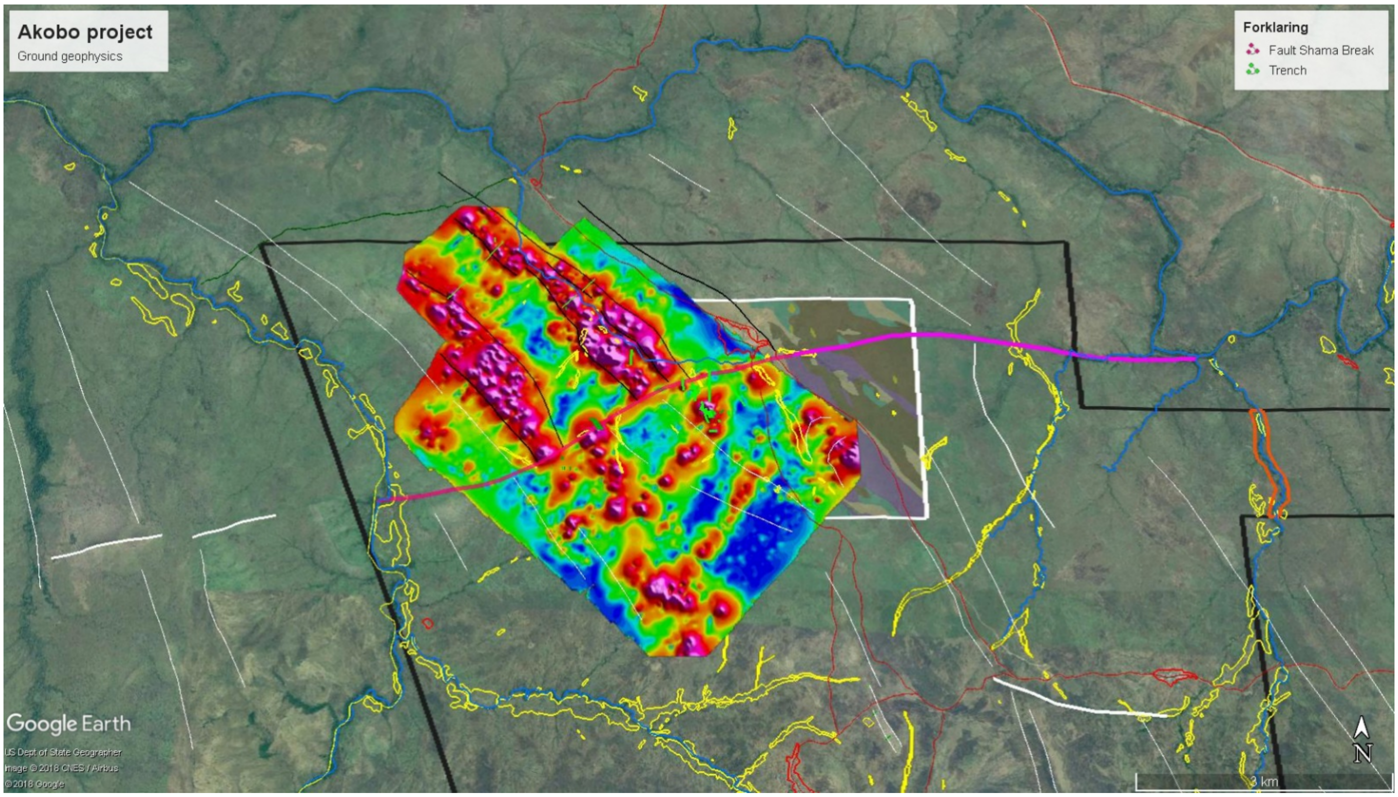



*Figure 2: Ground magnetic analytical signal of the total magnetic field. Showing clearly the magnetic serpentinites. Segele Gold deposit, associated with the ultramafics, is situated in the center of the image, where a number of trenches are shown as green lines.*

## 9.4 Chamo-Segele Exploration Results and Discussion

The present knowledge of the Segele mineralization is based on detailed geological mapping; soil sampling, mapping and logging of 67 artisanal pits; 30 trenches totaling 3233 m; microscopy and Scanning Electron Microscope analyses of 7 samples/thin sections; systematic sampling and chemical analyses of 138 samples from 13 pits; 2 of which intersects the main gold zone; in addition to information collected from the artisanal miners.

The exploration of the Segele area during 2016-20017 defined a more than 300m long and 1 to 6m wide, continuous gold mineralized zone as a result of the trenching and panning of trench samples. In addition to this, a gold zone was discovered in trenches about 320m further northwest, following the NW_SE shear zone. The gold zone defined by trenching includes the gold zone exploited by the artisanal miners. However, this gold mineralisation has been identified by recognition of geology, alteration and mineralisation and not by assays of samples taken from trenches.

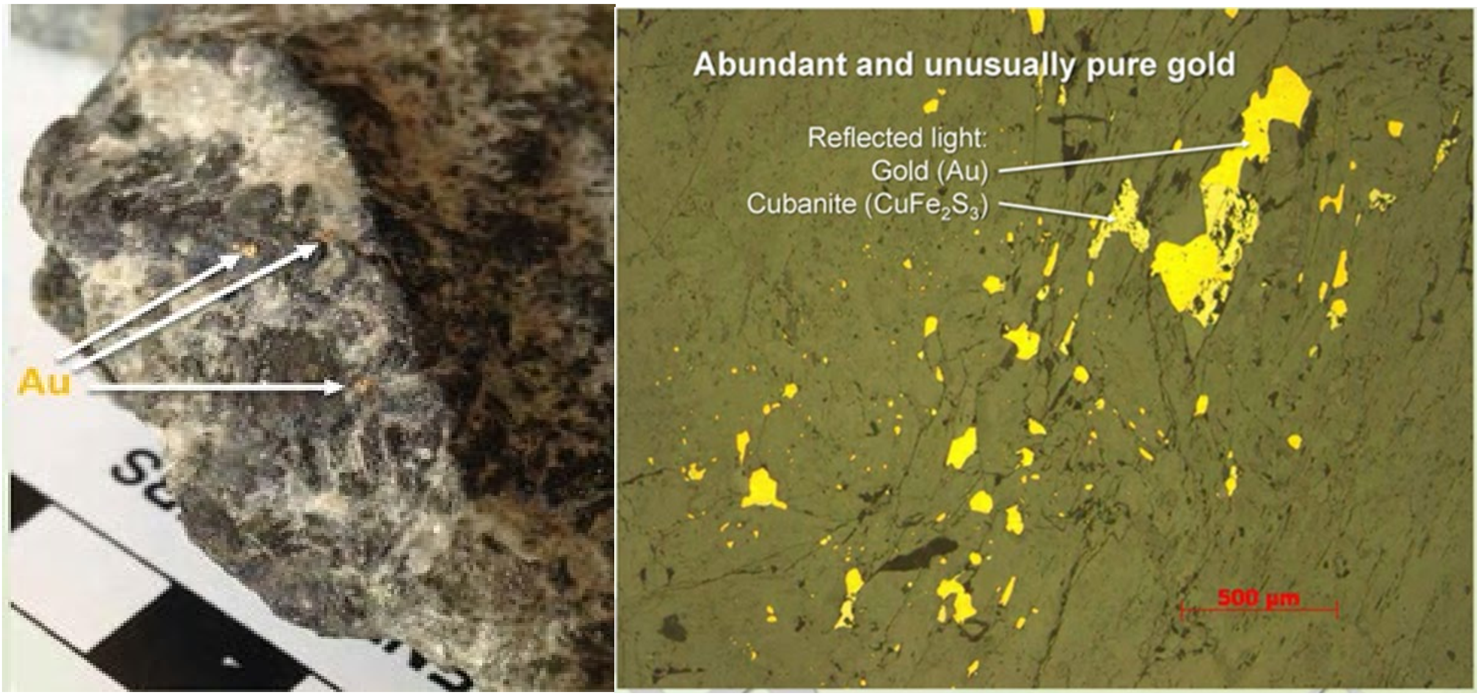



*Figure 15: Left: Hand Specimen showing visible gold in mineralisation from Segele. Right: Gold and Cubanite as seen in reflected light.*

Mineralogical investigation suggests that the Segele pits are very rich in gold that is coarse to fine grained and highly unevenly distributed (figure 17). The gold is unusually pure, with no silver or other metals. Platinum group minerals (PGM) are present in interesting amounts but not directly associated with the gold. The mineralization is present in hydrothermally altered, ultramafic rock. There is very little sulphides in the mineralization, but where found it is generally Cubanite ($CuFe_2S_3$) and pyrrhotite.. The gold seem to be introduced with the hydrothermal alteration of the ultramafic pyroxenite, where the mineral pyroxene was altered to amphibole by hydrous solutions carrying gold. The pyroxenite(s) acted as chemical traps, fixing and concentrating gold. The gold originates most probably from the considerable volumes of mafic rocks, metavolcanics(?) in the area, and perhaps not primarily from the ultramafic rocks themselves. Preliminary analysis of grain distribution shows that 2/3 of the gold content occur as macro grains(>0,1mm). Only about 10 out of 257 grains (within a measured area) are larger than 0,1mm. In other words: There is a large number of very small grains, which are probably not exploited by artisanal miners, but they constitute only a minor fraction of the total gold content.

Of the 92 channel samples taken from the trenches at Segele, the highest assay value returned was 244ppb which is well below any ore-grade cut-off that could be considered at the site. However, the target area has been subjected to very intense artisanal mining activity and five rock-chip samples returned ore grades (2.19, 3.68, 4.35, 11.65, 32.1 and 61.2g/t). A total of over 3000m of trenching was completed at the site of which only 92 one-meter channel samples were taken, furthermore geological logging suggests that the gold mineralisation (as subject to artisanal mining) was intersected. Furthermore, gold grains were observed in hand specimen and thin section. Maps of all work completed are provided (Figure 28 and Figure 29).

Soil sampling in the Chamo Segele region shows numerous samples which returned Au values above background.  In particular an  elevated gold anomaly is present up to 2km NW of the Segele workings, this anomaly shares a similar trend to the mineralisation observed near the artisanal workings.

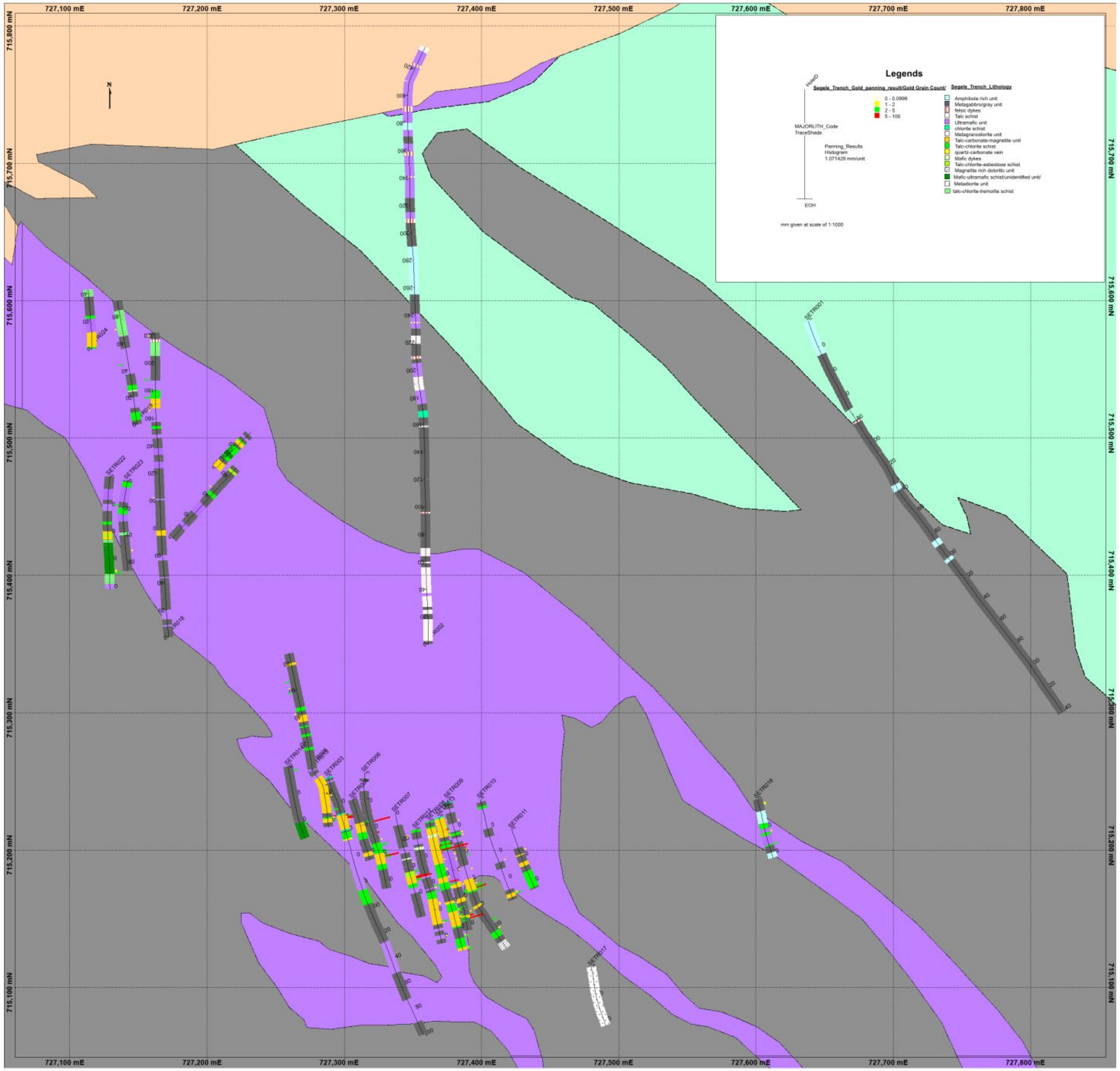



*Figure 16: Detailed geological trench logs of Chamo-Segele area*

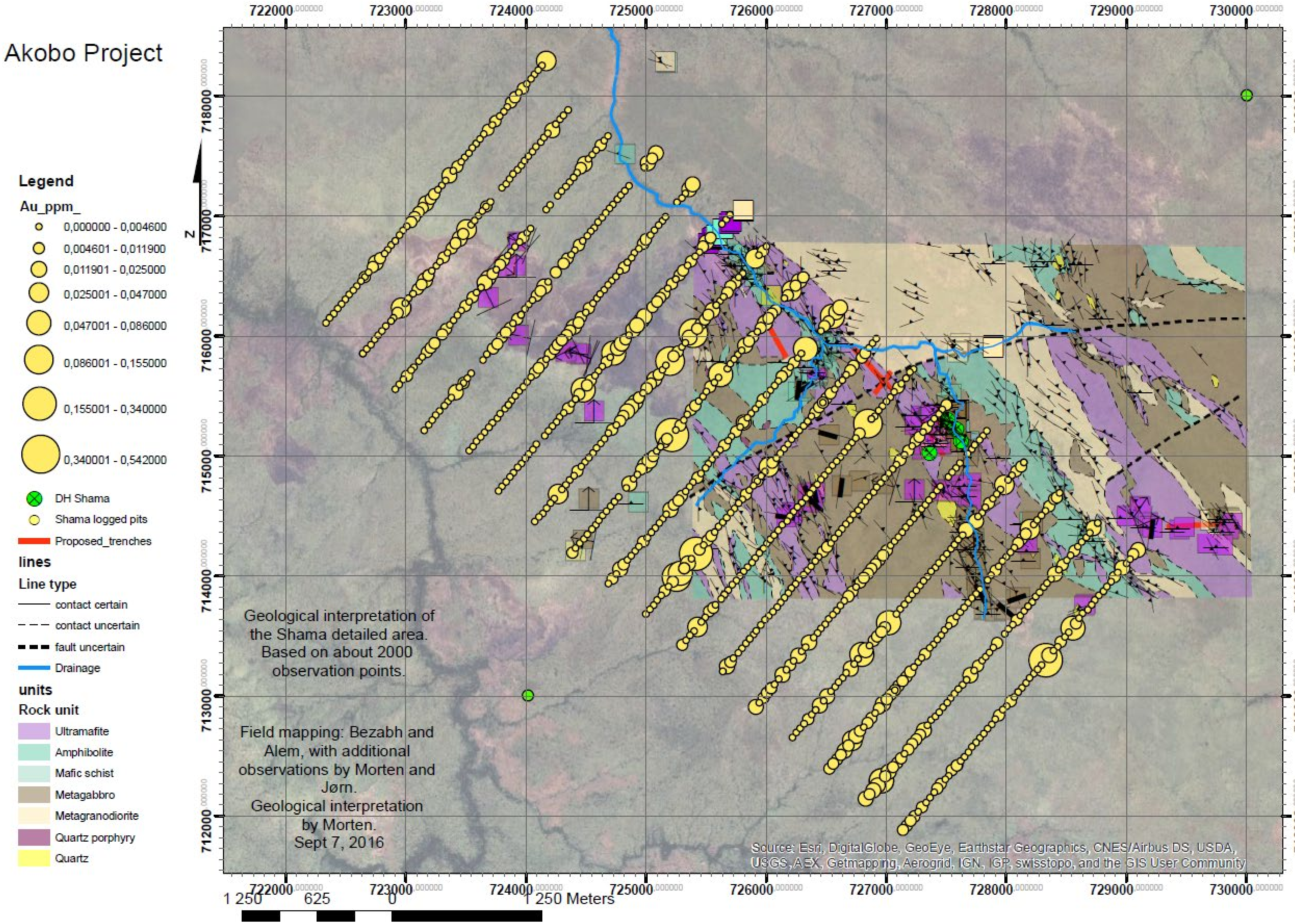



*Figure 17: The Chammo Segele target showing the results of the gold-in-soil survey.*

## 9.5 Joru Exploration Results

The Joru target area is a has been explored by wide spaced geological and structural mapping, soil surveying (50 x 400m), trenching covering a potential strike length of 3km (2300m total trench length). No geophysics, detailed structural mapping or mineralogy has been performed at the project.

Of the 15 trenches sampled at the Joru target, eleven have returned significant intervals above 1g/t (Table 4) and many intersections of well over 4g/t have been discovered. Most trenches have intersected multiple significant intervals, of the eleven successful trenches, there are 29 significant intervals above 1g/t. The soil sampling program have identified elevated Au-in-soil levels also covering a large amount of the 3km strike length of the target. Although it is impossible to correlate the mineralisation from one trench to another, the trenching certainly confirms the presence of mineralisation over most of the target length of 3km.

Most of the highest grade and longest intersections are found in three trenches within a narrow zone of approximately 300m length (see Table 4 and Figure 32, trenches JOTR012, JOTR017 and JOTR018). There are a total of 14 intersections in this narrow zone which have a weighted average grade of 5.8 g/t Au (ranges from 0.5 to 18.6g/t) and the widths of the intersections range from 1 to 7m. There is a great deal of uncertainty surrounding the structure of this target and as such it is impossible to assess what the possible true width of the mineralisation might be, especially given that trenches 12 and 17 might have been sited oblique to the mineralisation.

*Table 4: Channel sampling significant intervals greater than 1g/t. Shaded: Intersection grade above 4g/t. *: Mineralised interval not fully sampled (recommended additional sampling either side of the interval). A: Trench 12 is an extension of trench 17.*

| Trench | Grade (g/t) | Intersection Length (m) |
|---|---|---|
| JOTR001 | 1.3 | 2 |
| JOTR002 | 1.3 | 2 |
| | 1.1 | 4 |
| | 2.2 | 2 |
| JOTR004 | 1.3 | 1 |
| | 1.4 | 2 |
| JOTR005 | 1.1 | 2 |
| JOTR013 | 9.6 | 1 |
| | 1.9 | 1 |
| JOTR014 | 3.0 | 5 |
| JOTR015 | 2.2 | 1 |
| | 1.8 | 1 |
| JOTR016 | 1.6 | 4 |
| | 1.1 | 2 |
| JOTR012[a] | 6.5 | 4 |
| | 3.2 | 6 |
| JOTR017[a] | 1.4 | 1 |
| | 2.1 | 2 |
| | 10.9 | 2 |
| | 7.5 | 1 |
| | 6.7 | 1* |
| | 12.0 | 1* |
| | 6.4 | 1* |
| JOTR018 | 1.1 | 1* |
| | 4.5 | 7 |
| | 18.6 | 2 |
| | 1.0 | 1 |
| | 4.4 | 2 |

**JOTR018** was located 100m south of the JOTR012 mineralized zone.  A mineralized zone is present from 24-64m with some discontinuity at the center, indicated by the panning results. More than 150 gold grains were counted in a one meter section sample.

**JOTR019** was dug 100m north of the same JOTR012 mineralized zone, to check the continuation of the mineralized zone. Here quartz vein intensity decreased, but artisanal mining is high and the waste material more abundant. A gold zone was found at 26-38m interval of the trench section.

*Figure 18: Joru quartz stockwork (left), Artisanal activity in Joru (right)*

**JOTR002-** is in the southeastern part of joru target area. It was excavated at the top of Small ridge locally called Sali vein with a total of 50m. Sampling started from 8m to Northeast direction. All samples taken from this trench showed gold mineralization, of **0.18-2.3 ppm** gold with average gold grade of **0.607 ppm/42m.** This trench result indicates there is near surface gold mineralization at Joru area.

**JOTR016**- was located at 73370mE, 700887mN and altitude of 838m near to JOTR002. it is 48m long across the interpreted mineralization zone. Quartz vein stringered quartz-feldspar schist is the dominant host rock along the trench. All samples collected from the trench sent to laboratory for chemical analysis. Except few samples returned positive gold values along the trench starting from **0.03-1.51 ppm gold**. Generally, the trench returned average gold grade of **0.34 g/t/44m.** This is an indication of low grade high tonnage mineralization in the area. See figure for location.

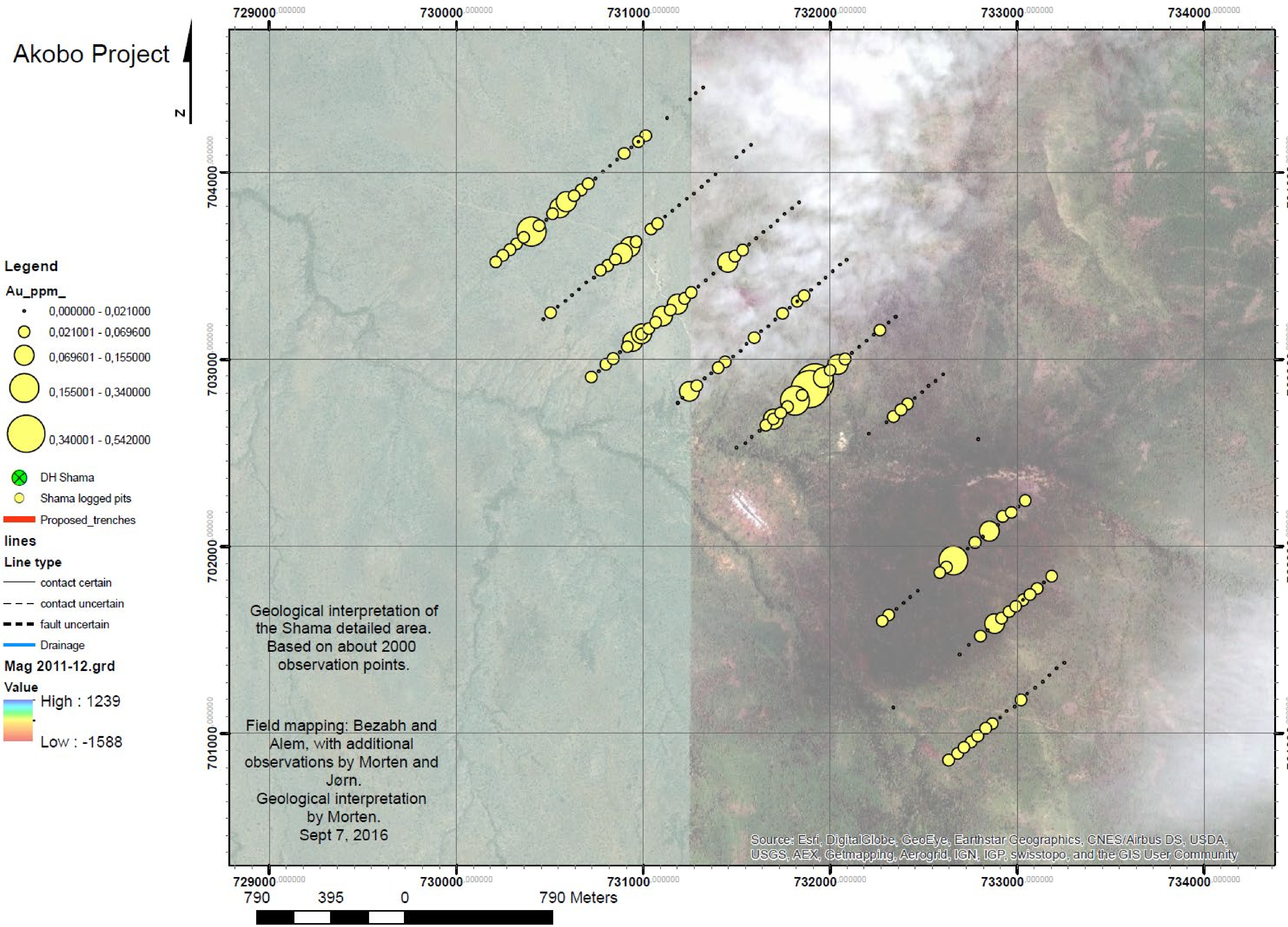



*Figure 19: The Joru target showing the results of the gold-in-soil survey.*

# 10: Drilling

## 10.1 Introduction

A total of 32 reverse circulation holes were drilled during the 2014-2015 field season, totalling 3015m. The drilling concentrated on 4 areas based on previous geological mapping, soil geochemistry and trenching; Joru, Wolleta, Nechdingay and Chamo-Segele.

## 10.2 Drilling Results

### 10.2.1 Chamo-Segele Target Area

Four reverse circulation borehole were completed conducted, with total depth of 595m. The objective was to intersect and test the recently discovered artisan primary gold site and examine the relationship between the east-west running fault structure and the gold mineralization. Due to the high density of artisan mining pits in the area it was not possible to locate the boreholes close to the mineralized zone as planned. The boreholes were sited several tens of meters away from the planned sites and drill deep holes of up to 150m depth to cross the mineralized zone. See map for the planned drill site (Figure 22).

No significant intervals were intersected at in the drilling at the Segele project.

**SERC001**- was projected to intersect the high grade gold mineralized body exploited by the artisanal mining at the depth of about 100m. However, the highest grade intersected was 0.4g/t at 97m depth. The borehole crossed talc-chlorite schist, silicified sheared gabbro, mafic/amphibolite schist, sheared gabbro and gabbro-diorite units. Sulphides pyrite, chalcopyrite and arsenopyrites and magneted were documented. Silicification inplaces quartz veinlets, sericite, and minor carbonitization alteration associated with sheared zones were recorded.

**SERC002**- was planned to test southern extension of mineralized zone. It was located 150m southwest of SERC001. The drill hole encountered sheared, silicified metagabbro, mafic/ amphibole schist, talc-chlorite schist and quartz-diorite unit. Sulphide mineralization such as pyrite, chalcopyrite, arsenopyrite were observed almost in every meter checked by panning but no visible gold was found. All samples gave gold value below detection limit.

**SERC003**- was planned to test the northern extension of the mineralized body located 100m north of SERC001. The drill hole was collared on sheared and altered talc-chlorite schist. The main lithological units encountered are mafic schist, sheared gabbro and mafic-ultramafic unit. Silicification, chloritization and sericitization alteration are documented associated with sheared and fructured gabbro and gabbro diorite. Sulphide mineralization was very common. The maximum gold grade obtained was -0.33 g/t, at the depth of 75m and above the rest are below detection limit.

**SERC004**- was targeted to determine whether the east-west running fault structure is mineralized or not. It was located south west of SERC001 about 110m southeast of the mining pits and targeted to intersect the fault and artisanal mining pits. The Drill hole crossed massive gabbro, mafic-ultramafic unit, mafic/ amphibolite schist and sheared gabbro. Chlorite, silica, Carbonate and sericite alteration are observed. Almost all samples showed gold values below the detection limit, except for a few samples above detection limit.

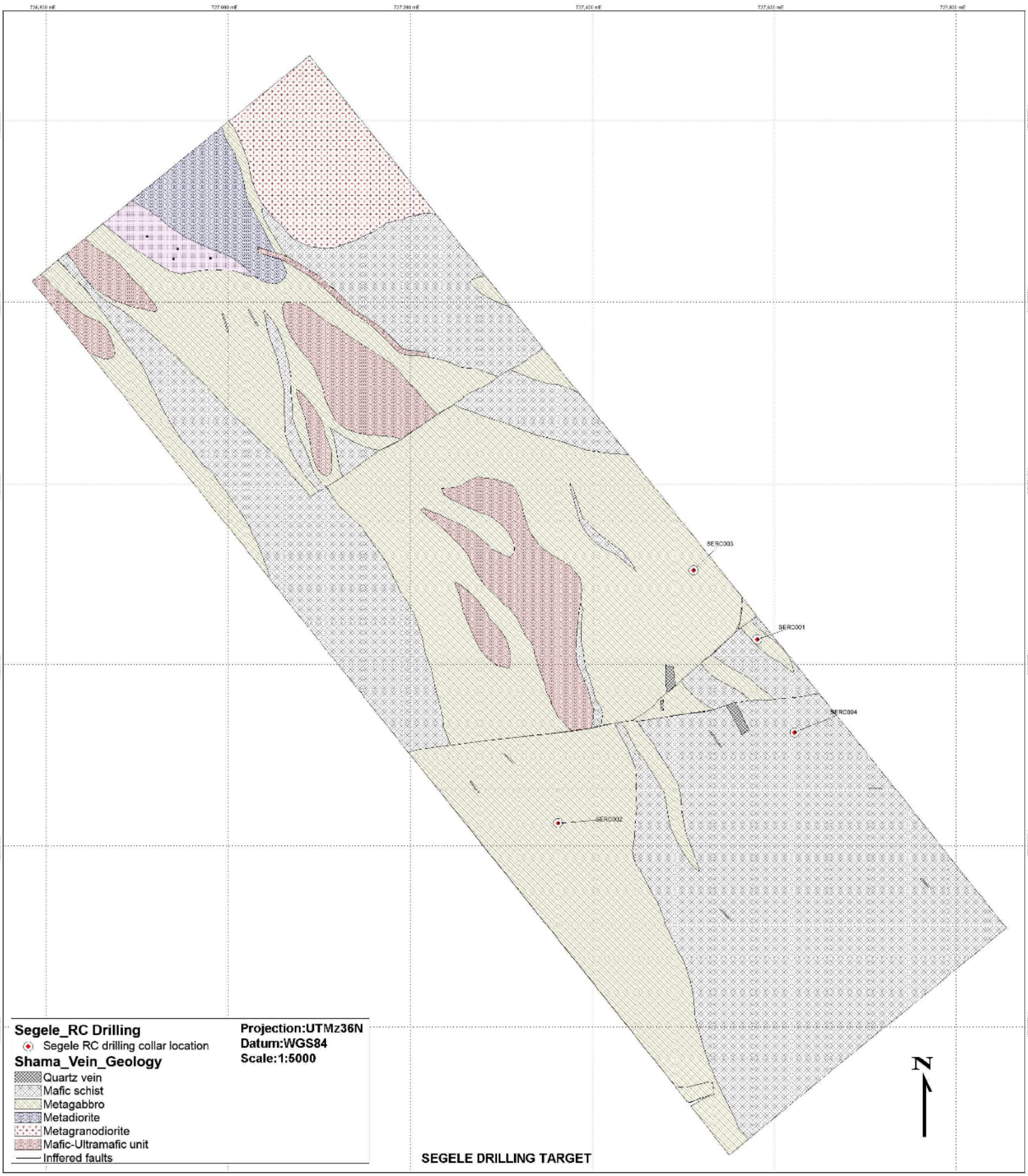



*Figure 20: Map showing the geology RC drilled holes at Chamo-Segele area*

### 10.2.2 Joru Target Area

A total of 14 holes were drilled totalling 1375m of RC drilling along the 4km long Joru target (1km further SE than the trenching and soil sampling program). The holes were generally intended to be oriented perpendicular to the target mineralization observed in trenching. It was tested by 14 bore holes targeting important gold mineralized zones based on results of rock chip and trench samples. 1375 samples were collected, and details of sampling and analysis methods are provided in Chapter 11.

The drilling at the Joru target has intercepted similar low grade mineralization as seen in the matching trenching program (see Table 5). Of the 14 holes drilled all but 5 holes returns intercepts above 1g/t, there were a total of 9 intercepts between 1 and 2g/t and two intercepts above 2g/t.

The highest intercepts were found to be in holes JORC12 and JORC13, which were 2.0 over 1m and 3.1 over 2m respectively. These higher grade intercepts were not found in the same high grade zone identified by trenching, but 500 and 1000m further NW.

*Table 5: Significant intercepts from the JORU RC drilling campaign. No upper cut-off used.*

| Hole | Weighted Average Au (g/t) | Intersection Length (m) | Drilling Depth From (m) | Included intercepts |
|---|---|---|---|---|
| **JORC001** | 0.5 | 1 | 0 | |
| **JORC001** | 1.3 | 2 | 4 | |
| **JORC001** | 1.4 | 4 | 8 | Including: 2.5g/t over 2m, from 8m |
| **JORC001** | 0.6 | 2 | 44 | |
| **JORC001** | 1.1 | 2 | 80 | |
| **JORC002** | 0.7 | 2 | 1 | |
| **JORC002** | 1.5 | 1 | 81 | |
| **JORC003** | 0.22g/t max | | | |
| **JORC004** | 0.13g/t max | | | |
| **JORC005** | 0.16g/t max | | | |
| **JORC006** | 0.7 | 1 | 25 | |
| **JORC007** | 0.33g/t max | | | |
| **JORC008** | 1.3 | 2 | 40 | Including: 2.2g/t over 1m, from 40m |
| **JORC008** | 0.4 | 1 | 59 | |
| **JORC008** | 0.3 | 2 | 70 | |
| **JORC008** | 0.4 | 2 | 94 | |
| **JORC009** | 0.4g/t max | | | |
| **JORC010** | 2.1 | 3 | 23 | Including: 2.7g/t over 2m, from 24m |
| **JORC010** | 0.7 | 1 | 73 | |
| **JORC010** | 0.4 | 1 | 85 | |
| **JORC010** | 1.2 | 3 | 143 | Including: 3.1g/t over 1m, from 143m |
| **JORC011** | 0.25g/t max | | | |
| **JORC012** | 1.6 | 1 | 11 | |
| **JORC012** | 0.6 | 1 | 15 | |
| **JORC012** | 2.0 | 1 | 17 | |
| **JORC013** | 3.1 | 2 | 37 | Including: 4.8g/t over 1m, from 38m |
| **JORC014** | 0.4 | 1 | 30 | |
| **JORC014** | 1.0 | 2 | 45 | |

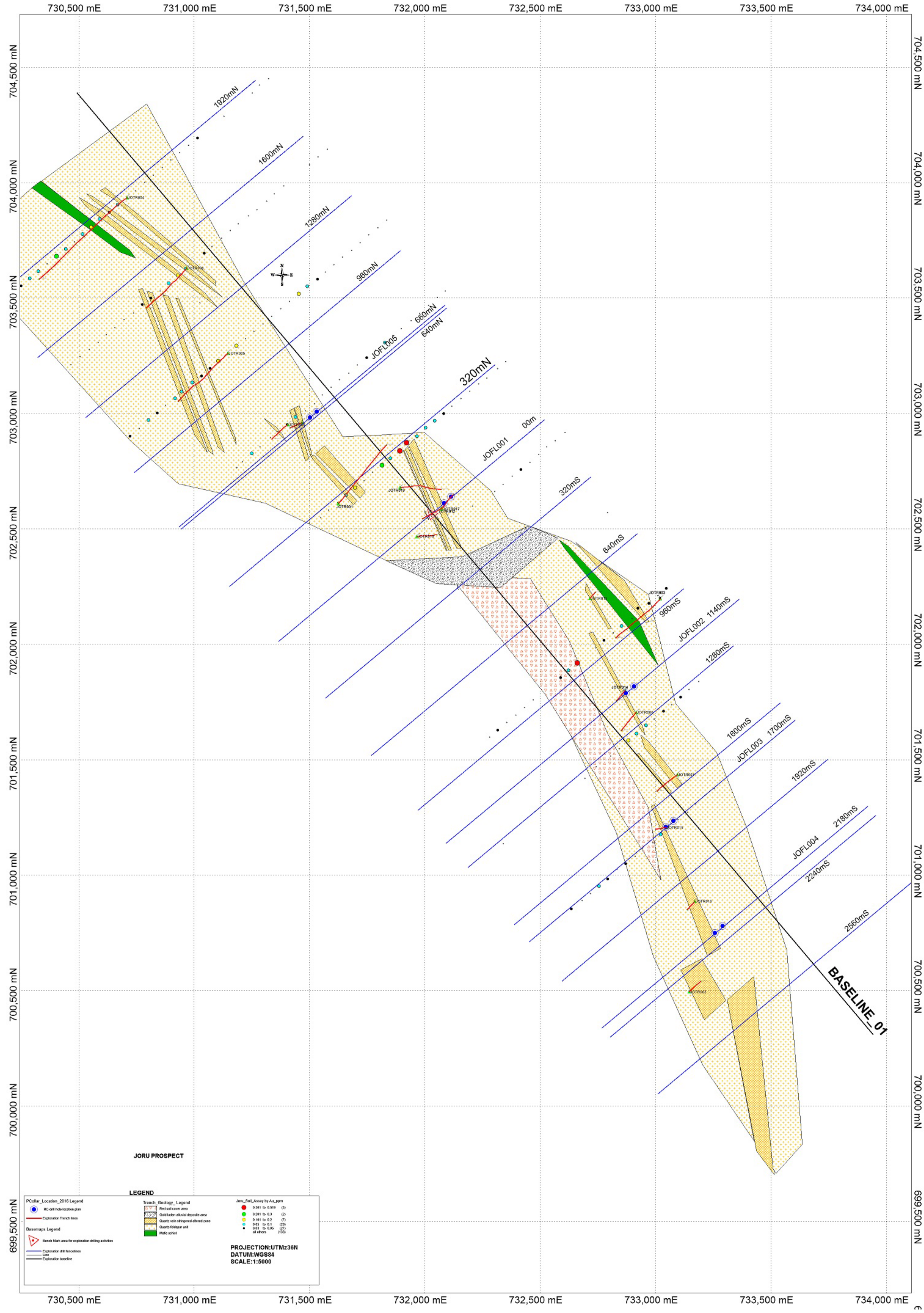



*Figure 21: Plan map of RC driling at Joru target area*

**JORC001**- was targeted along trench JOTR012 in the central part of the area aiming to intersect the gold mineralization found in trench samples.  Disseminated sulphides, quartz vein stringers and vein let zones were observed in the drill chips hosted by quartz-feldspathic - sericite schist. This lithologic unit also shows different intensity of silicification, sericitization and carbonatization.

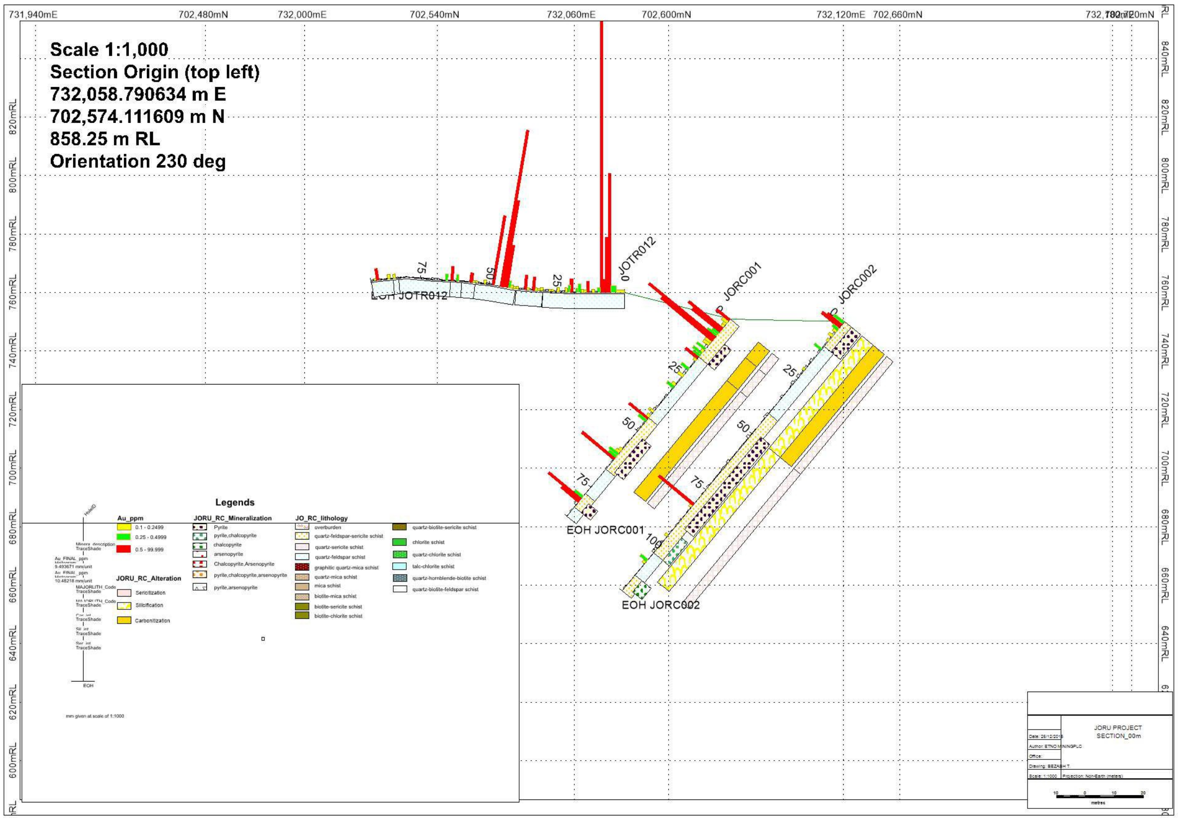


*Figure 22: RC drill section for JORC001, JORC002 and JOTR012*

**JORC002**- it is located 40m step back from JORC001, targeting weathered mineralized zone at 100m depth. Sulphide mineralization, silicifiation, kaolinite alteration are observed in the drill chips of quartz-feldspar schist. Three narrow low grade gold mineralized quartz vein stringer were reported.

**JORC003-** was planned along trench JOTR014 where trench results indicated 1.06 g/t@16m. The host rock assemblages are quartz-sericite schist, biotite schist, quartz-hornblede-biotite and chlorite schist. Sulphide mineralization is observed within the quartz-hornblende-biotite and chlorite schist. The overall assay results showed low gold mineralization comparing with to the trench result.

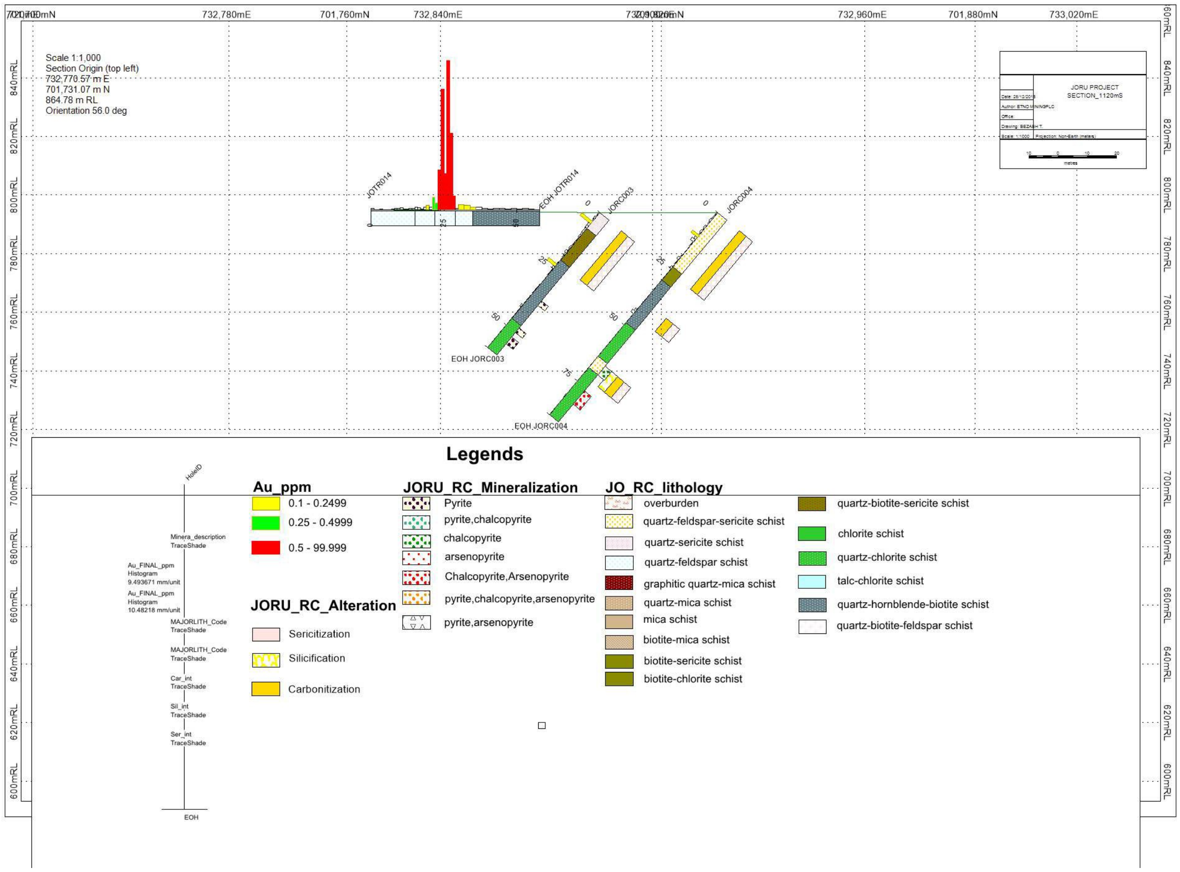



*Figure 23: RC drill section for JORC003, JORC004 and JOTR014*

**JORC004-** is located 40m step back from JORC003. It was projected to intersect the mineralized zone at greater depth. The lithologies encountered are quartz- sericite, biotite-sericite schist, and quartz-hornblende-biotite and quartz-chlorite schist. Carbonate, sericite and minor silicification alteration are recorded from the drill chips.

**JORC005**- encountered quartz-biotite-chlorite schist, quartz-feldspar schist and quartz-chlorite schist. All rock types are found to be affected by hydrothermal alterations such as carbonate, sericite and minor silicification alteration. Sulphide mineralization is observed in quartz-feldspar schist and mafic schist.

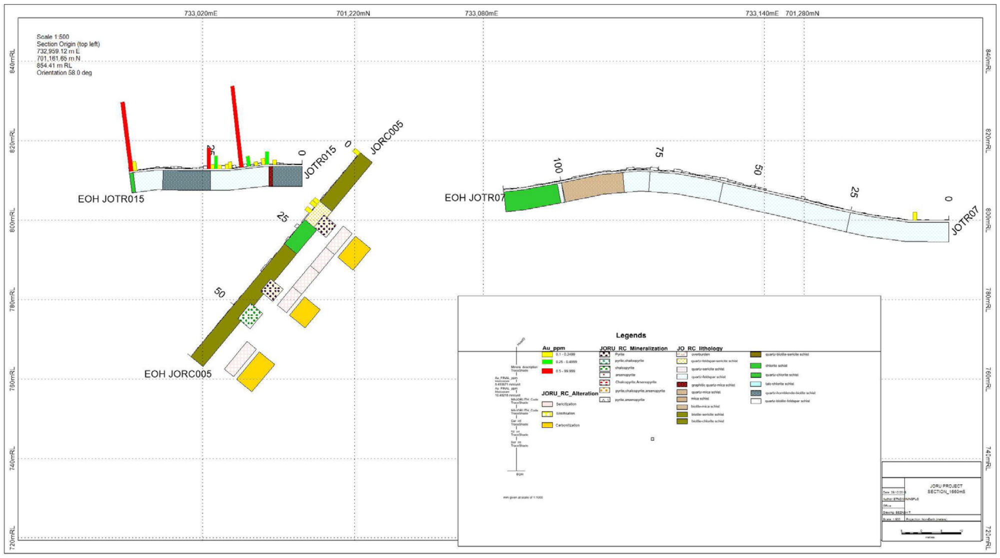



*Figure 24: RC drill section for JORC005, JOTR015 and JOTR007*

**JORC006**- was projected to cross the highly exploited artisan mining site of quartz-vein stringers and altered zone. The drillhole intersected mica schist, quartz-sericite-feldspar schist followed by quartz-chlorite/mafic schist. Silicification, sericitization and carbonitization are the dominant alterations. Pyrite and chalcoprite mineralization are observed within the altered section. Although artisanal mining activity has continued in the area assay result returned low Au value of 0.26 g/t over 7m.

**JORC007-** was located 40m step-back from JORC006 and planned to test the expected mineralized zone at greater depth. The same lithologies, alteration and mineralization as in JORC 006 were encountered. Gold grade is low, only one meter showed 0.33 g/t.

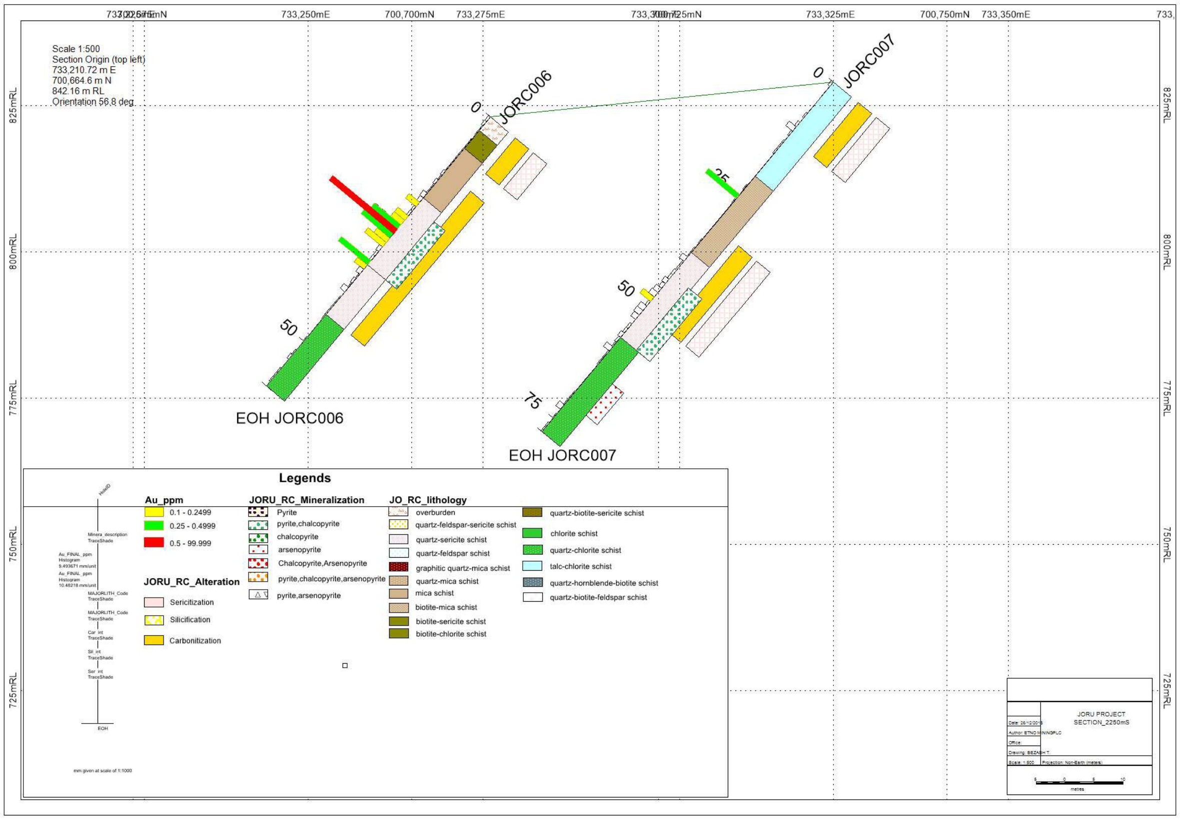



*Figure 25: RC drill section for JORC006, JORC007*

**JORC008**- was situated at the southeastern end of the mineralized zone. Quartz- chlorite, quartz-feldspar-sericite schist, quartz-sericite schist and quartz-feldspar schist are litholgical units crossed by the borehole. Sericitization and minor silicification are commonly of observed. Pyrite, arsenopyrite and chalcopyrite mineralization is associated with the altered units. Assay results showed three low grade gold mineralization zones .

**JORC009**- was targeted to test southeastern block displaced by East-West running (Sali-Joru) lineament and projected along JOTR003 where widely spaced low grade gold mineralization was recorded. Boudinaged quartz-veins are observed at surface. Drillhole went through altered quartz-feldspar schist, quartz-chlorite schist and biotite-hornblende schist. Sulphide mineralization is commonly associated with altered quartz-feldspar schist, hornblende-biotite schist and mafic schist. Quart vien stringers, carbonate and sericite alteration of the host rocks are phenomena associated with and good indication for gold mineralization.

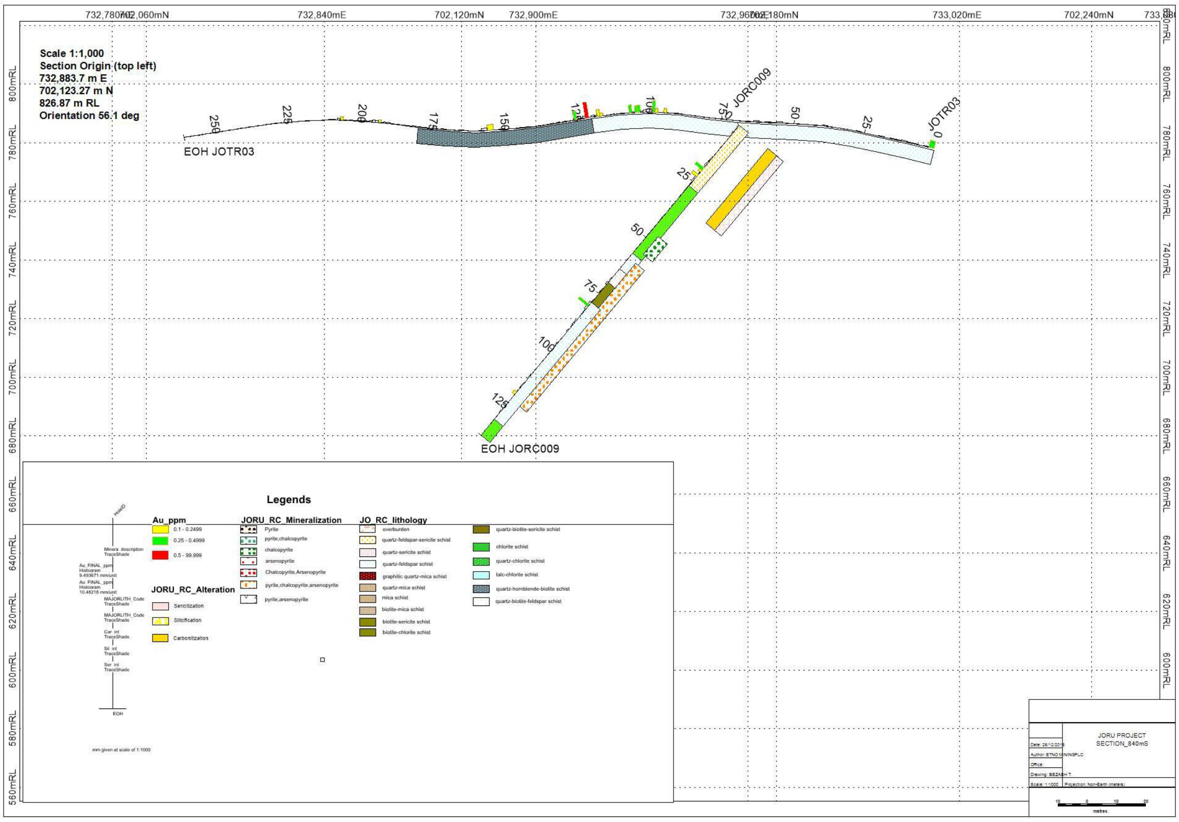



*Figure 26: RC drill section for JORC009 and JOTR003*

**JORC010**- was planned to test the scattered trench results and the high gold value in soil as well as to confirm the strike continuity of the trench results. It encountered quartz-feldspar-sericite schist and quartz-feldspar schist, with silicification and sericite alteration and minor quartz vein stringers. Sulphide mineralizations are observed at the last few meters. It was drilled to 149m and is the deepest borehole in the target area.

**JORC011**- was collared at the most important artisanal mining site along trench JOTR011. Altered quartz-feldspar unit is the major rock unit recorded from the chip samples. Kaolin, sericite, silica and carbonate alterations have significantly affected the host rock, associated with minor sulphides.

**JORC012**- was drilled at the side of the small northwestern hill, along JOTR005, targeting the gold bearing quartzvein stringer zone observed in trenches and chips samples. Two zones of intense alteration were identified, associated with quartz-feldspar schist which is the dominant rock type in the hole except for a few meters of mafic schist at the end of the borehole. Silicification, carbonitizatin, sericitization alterations and quartz vein stringers are observed. Pyrite, chalcopyrite and arsenopyrite are the most dominant sulphide minerals in the section.

**JORC013**- is located near to the newly opened artisan working at the foot of the northwestern hill. A homogenous quartzo-feldspathic rock unit is observed throughout Except for different intensity of carbonate and sericite alteration observed at the top section, silicification dominates at depth. Sulphide mineralization is mostly associated with the altered zones.

**JORC014**- was located at the most north western section of Joru along trench JOTR004 where scattered gold anomalies were documented over the flat topography, with thick soil cover. The borehole was drilled to the depth of 60m with the same azimuth and inclination as the rest of the holes. Altered metagranodiorite and quartz-feldspar schist are the rock units hosting mineralization. There is minor alteration observed in the borehole.

## 11: Sample Preparation, Analyses, and Security

Sample collection and geochemical analyses at the Akobo project have been conducted in a variety of ways. For example soil samples have generally been collected and prepared in similar ways, however two different laboratories have been used for different programmes. Additionally, the content of QAQC samples has varied from one year to another. This section covers the key considerations for understanding the robustness of the methods used and comments on the consequent implications for error and bias. For a comprehensive list of the samples analysed see Table 2.

### 11.1 Sample Preparation and Analysis for Soil Sampling

The Soil samples were taken under the direct supervision of a geologist using an iron bar or shovel as necessary.). The samples were taken from a depth of between 10 and 180cm (average 50+/- 18cm) The regolith at Akobo is commonly much thinner than the textbook laterite profilem although in many areas, distinct layers are formed with a recognisable saprolite. Soil sampling thickness was variable and the materials sampled also varied. For example, samples from the metagranitoid, metaultramafic and amphibolites terrain are very shallow depth (approx 30 cm), most of the time the samples come from mixed with weathered bed rock materials saprock-saprolitic materials. Samples from the easily weathered and altered rock types, shear zones, mafic volcanics, metasedimetary areas which developed the easily recognised soil horizons, sampling was taken from the well sorted, fine grained zone (B-horizon), typically from a depth of 40cm. Majority samples of the akobo area were taken from the B-horizon soil type.

The sample material was put into plastic sample bags and sealed with masking tape and staples. One sample was taken at each site and the location recorded using a hand-held GPS. The target raw sample mass was 2kg. Field data was recorded on paper and transferred to an Excel database later. Because in many cases, the samples were wet on collection they were sieved and quartered at the Shama Camp to produce a 50 gram sub sample using a -80 mesh. Duplicate samples were initially taken but have now been discarded. No company standards were inserted but field duplicates were submitted to the laboratory.

Alongside the sampling details, notes were compiled regarding collection depth, moisture content, vegetation type, topography, colour and a lithological description where possible. These details are stored in the database.

During 2011 the soil samples were analysed at the ALS Chemex Gauteng (South Africa) with analysis utilizing Aqua Regia extraction with ICP-MS and ICP-AES finish analytical techniques for gold and all other elements (ALS code ME-MS41). No pulverisation was completed on the samples and no fire assay was used.

Although the lower detection limit for gold was 0.001 ppm, the laboratory has warned that analysis of gold by the method used at ALS Gauteng is semi quantitative unlike Fire Assay which would have been fully quantitative. The semi-quantitative nature is due to the fact that not all the mineral components would have been dissolved in by the aqua regia. There would have been some refractory minerals for example chromite which will have not been dissolved and these refractory minerals may or may not have contained gold. It is generally believed that the highly oxidizing lateritisation process would have destroyed the refractory properties of most of the minerals which comprise the soil, however there is no way to determine if this has occurred in this program. The low error seen from the field duplicate program suggests that the Au analyses are internally consistent but the degree of gold dissolution in aqua regia may change from one lithology to another.

Furthermore, the soil samples were not subject to pulverisation on receipt at the laboratory. Although the samples were sieved to a -80 mesh at the field site, it is well known that dried pulps are subject to segregation of light versus fine particles during transportation and storage. Therefore the pulverisation of the samples prior to acid leach is highly advisable for the purposes of homogenisation prior to splitting. Therefore it is possible that the soil samples from the campaign during 2012-2013 could have been subject to undetected bias. Furthermore, no company standards were added to the sample stream, so it is not possible to detect such bias if it exists.

The soil sampling results analysed at ALS Gauteng are suitable for identification of exploration anomalies within discrete regions but not for deterministic assessment of gold concentration.

During 2015, 1032 samples were analysed by Fire Assay and AAS finish at Ezana laboratory (Mekele, Ethiopia) for gold and silver only with detection limit 0.02 ppm for gold and 0.2 ppm for silver. The fire assay method is an excellent method of digestion for gold however, no details of procedures or internal quality control and quality assurance are available for the Ezana Laboratory. It is unknown whether any external or internal audits have been carried out at Ezana Laboratory or whether the laboratory is has acquired any form of ISO accreditation.

*Table 6: Summary of dates of soil sampling programmes, numbers of samples and laboratories used.*

| Target | Samples | Analysed | Duplicates | Date Collected | Date Reported | Laboratory | Start | End | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Wolleta** | 182 | 182 | 7 | 23/03/2012 | 27/09/2012 | ALS Gauteng | AKS101033 | AKS101214 | JB12206923 |
| **Tubowuha** | 210 | 210 | 8 | 24/04/2013 | 27/07/2013 | ALS Gauteng | AKS101985 | AKS102194 | JB13100741 |
| **Nech Gind** | 569 | 569 | 25 | 07/01/2012 | 26/09/2012 | ALS Gauteng | AKS101416 | AKS101984 | JB12206821/2/3/4 |
| **Joru** | 201 | 201 | 10 | 26/03/2012 | 12/09/2012 | ALS Gauteng | AKS101215 | AKS101415 | JB12186806 |
| **Chamo** | 1032 | 1032 | 44 | 30/12/2011 | 02/10/2012 | ALS Gauteng | AKS100001 | AKS101032 | JB12206825/6/7/8/9 and JB12206921/2 |
| **Regional** | 1978 | 1932 | 50 | 07/11/2014 | 24/11/2015 | Ezana (Mekele, Ethiopia) | AKS102195 | AKS104174 | 0276A and 0276B |
| **TOTALS** | 4172 | 3626 | 144 | | | | | | |

## 11.2 Sample Preparation and Analysis for Channel Samples from Trenches

Channel samples were taken from the trenches using an iron bar and shovel where necessary. In general the trenches were deep enough to reach fresh bedrock and samples were not taken from saprock or saprolite. Sample locations were taken using hand-held GPS and measuring tape, the locations were recorded on paper and later added into an excel database. Trench locations were marked using spray colours. Representative samples of a nominal 2-3kg were taken over a full 1 or 2 m length. The samples were not split in the field or field camp. All samples were taken under the direct supervision of a geologist and data was recorded and transferred to electronic format by the geologist. Samples were stored in plastic bags sealed with tape and staples.

A total of 2305 samples were analysed which included 269 QAQC samples. However, the vast majority of channel samples and QC samples were taken from the Joru target (see Table 7). All samples were analysed by ALS (Gauteng) except the samples taken at the Gindibab target (45 samples) which were analysed at Ezana (Ethiopia).

About 2940 channel samples of 10 kg each were collected and panned for gold to trace and identify mineralized zones. The Samples were taken from the finely crushed material by excavator at the time of trenching.

At ALS (Gauteng), the samples were weighed upon receipt and subjected to crushing with a jaw crusher to 70% passing 2mm. The crushed material was split using a jones-type riffle splitter to split off a 1000g sub-sample. The crushed sample was then pulverised to 85% passing 75 microns. Following riffle splitting, a 50g fire assay was performed using an ICP-AES finish. A 50g fire assay with gravimetric finish was used where the initial fire assay showed greater than 10g/t Au.

*Table 7: Summary of samples and QAQC samples taken from trenches and laboratories used.*

| Target | Total | Blanks | Pulp Duplicates | Coarse Duplicates | Standards | |
|---|---|---|---|---|---|---|
| **Gindibab** | 45 | 0 | 1 | 1 | 0 | Ezana (Ethiopia) |
| **Joru** | 2016 | 87 | 87 | 87 | 89 | ALS Gauteng |
| **Segele** | 92 | 0 | 0 | 0 | 0 | ALS Gauteng |
| **Wolleta** | 152 | 0 | 2 | 1 | 1 | ALS Gauteng |
| **Total** | 2305 | 87 | 90 | 89 | 90 | |

## 11.3 Sample Preparation and Analysis for Samples from Pits

A total of 123 pit samples were taken from the mineralized zone in Segele to accompany geological logging, the samples were of nominal mass of 2kg each, collected by a geologist with a geological hammer and packed in plastic bags. No standards, blanks or duplicates were sent by the company alongside the pit samples. Logging and sampling details were initially recorded on paper and subsequently entered into a geological database.

At ALS (Gauteng), the samples were weighed upon receipt and subjected to crushing with a jaw crusher to 70% passing 2mm. The crushed material was split using a jones-type riffle splitter to split off a 1000g sub-sample. The crushed sample was then pulverised to 85% passing 75 microns. Following riffle splitting, a 50g fire assay was performed using an ICP-AES finish. A 50g fire assay with gravimetric finish was used where the initial fire assay showed greater than 10g/t Au.

In addition, more than 30 pit samples were crushed and panned for gold for the purpose of correlating the gold zone traced by trenching with the main Segele gold zone.

## 11.4 Sample Preparation and Analysis for RC Drilling

During 2014-2015, Thirty two boreholes of 3000m of total depth were drilled and over 3000 reverse circulation cutting samples were collected and analysed for gold. The drill hole diameter was 140mm. The sample material was removed from the high pressure air using a cyclone leaving a raw sample of approximately 20-30kilograms. Some samples were retrieved wet. The samples were collected under the supervision of a geologist and split to a nominal 2-3 kg using a 3 level tiered Jones-type riffle splitter. The splitter was cleaned using compressed air after each sample. One sample was taken per meter of drilling and a small sub-sample of cuttings were retained for logging. Logging and sampling details were collected on paper and then entered into an Excel database later. A total of 316 QC samples were inserted into the sample stream, of which 149 were standards and 167 were pulp duplicates (see next section).

The samples were received by ALS (Addis Ababa) where they were weighed upon receipt and subjected to crushing with a jaw crusher to 70% passing 2mm. The crushed material was split using a jones-type riffle splitter to split off a 1000g sub-sample. The crushed sample was then pulverised to 85% passing 75 microns. Following riffle splitting the pulp was packaged and sent to ALS (Romania) for a 50g fire assay was performed using an ICP-AES finish. A 50g fire assay with gravimetric finish was used where the initial fire assay showed greater than 10g/t Au.

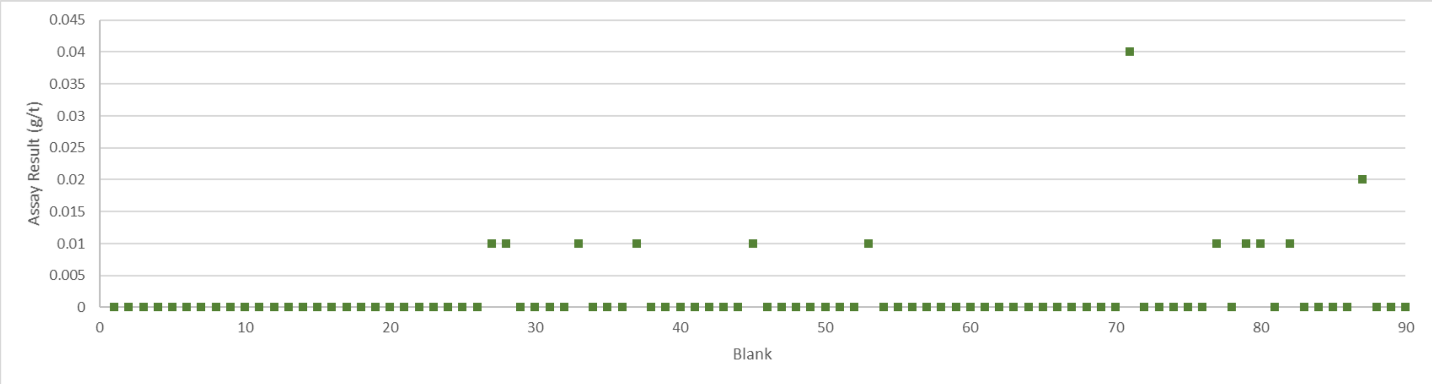
No field duplicate or coarse duplicates were retained by the field team. Such QC samples are considered to be essential for assessing the fundamental sampling error and grouping and segregation error that the samples are likely to have been subjected to. Reverse circulation drilling exposes the sample to very high pressure air which will inevitably cause segregation between the dense ore particles and lighter waste particles, such effects are known to be particularly severe when drilling below the water table (wet samples). In general it is not recommended to use reverse circulation drilling for gold exploration, but it can be acceptable where it is drilled with particular care and field duplicates are taken. Given that no field duplicates were taken in this program, it is recommended that the results of drilling be used for broad identification of mineralized zones (exploration) but not quantitative purposes (resource estimation). It is likely that the samples will have been subjected to bias and it is not possible to determine whether this will be positive or negative and it is recommended that where mineralisation is believed to have been encountered, the gold grade should be assessed further using diamond drilling with a combination of field, coarse and pulp duplicates.

## 11.5 Quality Control and Quality Assurance (QAQC)

### 11.5.1 Blanks

A total of 90 blanks were inserted into the sample stream for the trench sampling program. However, no blanks were used during the RC program reportedly due to cost concerns. The majority of assays returned results which were lower than detection limits (<0.01 g/t), however 10 analyses returned results of 0.01g/t and two samples were higher (0.02 and 0.04g/t). Such results are typical of the variation in background gold levels in much of the earths crust, therefore it is impossible to determine whether the highest assay grade originates from contamination or normal variation in the blank material. However, if the maximum contamination were the equivalent of the highest gold assay grade in the blank material (0.4g/t), then the significance of the contamination would be insignificant to the purposes of the program.

No information has been received regarding the use of blanks in the RC drilling program, it is strongly advised to use blanks in all future programs as it facilitates the detection of the most common form of bias in laboratory processes. Furthermore the mass of blank material should be recorded in the database alongside the assay grade.




*Figur: The results of the analysis of blank material (g/t)*

### 11.5.2 Standards

A total of 168 standards were introduced in the sample streams from both the RC drilling and trenching programs. The standards used were Certified Reference Materials from Geostats Pty Ltd (Perth, Australia). Three different standards were used with certified means of 1.1g/t, 7.2g/t and 47.2g/t gold.. Two cases of misattribution of a standard occurred, this is a relatively low rate of mistakes for a project of this size.

The analyses of the standards are shown in Figure 25, which shows control plots of all three CRMs. For the majority of the assays, the bias is not more than 2 standard deviations from the certified mean. There is as persistent bias present in each standard however the magnitude of such bias is not greater than would be explained by normal machine effect differences between the certification of the standard and the analytical method used by ALS. However, three analyses analyses were found to have been analysed outside of the 3 standard deviations, although this in itself is not a significant problem, inspection of the control plots suggests that there was a period when the bias became out of control (this occurred during the analysis of the Joru trench samples). This bias could have been caused by miscalibration of AAS equipment and/or poor cleaning of laboratory equipment. Nevertheless the control plots suggest that the bias was brought under control again after a short period. Such short periods of reduced performance are common for commercial assay labs and they illustrate the importance of company QAQC programs and real-time communication with commercial laboratory.

Figure

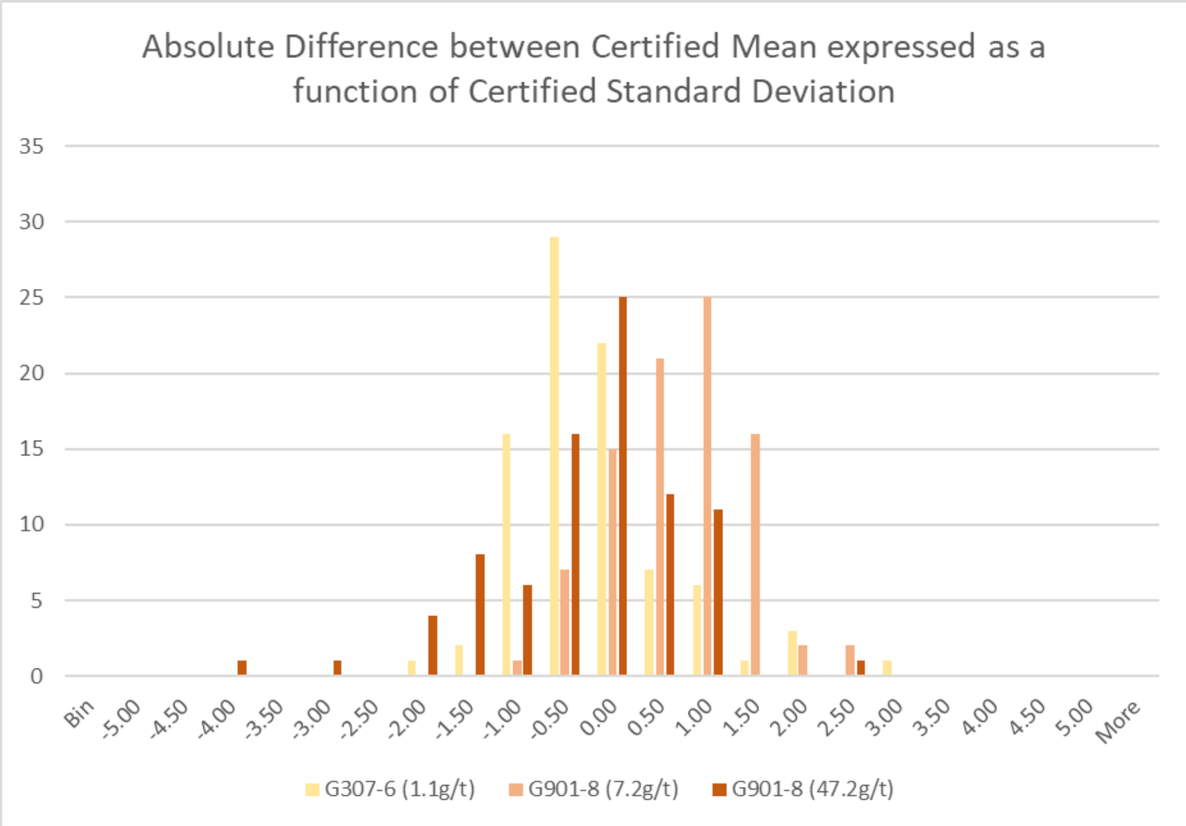



*Figure 27: Histograms of absilte difference between certified mean expressed as a function of certified standard deviation for all three CRMs used.*

For further exploration and resource definition it is recommended that a QAQC program using a greater range of standards is implemented. More standards of a lower assay value (between 3 and 10g/t) should be used.

CRM: G307-6

CRM: G901-8

CRM: 901-8


*Figure 28: Control plots of certified reference materials. Top: Assay Value, Middle: Absolute Difference, Bottom: Relative Difference. Two periods of increased bias identified with orange dashed lines.*

## 11.5.3 Duplicates

A total of 145 field duplicates were taken during the soil sampling programmes, of which 51 were assayed at the Ezana laboratory (Mekele Ethiopia), the remainder were assayed at the ALS laboratory in Gauteng (South Africa). The RMS error for the samples analysed at ALS Gauteng was found to be 4.3% which indicates that most of the soil samples had a good level of repeatability and a low inherent variability of the gold concentrations in the soils sampled. The RMS error from the field duplicates analysed at Ezana Ethiopia was much lower, however only eight field duplicates contained gold values above detection limits. Nevertheless, it is inferred that the Ezana soil sampling program can also be considered to have a good level of repeatability.

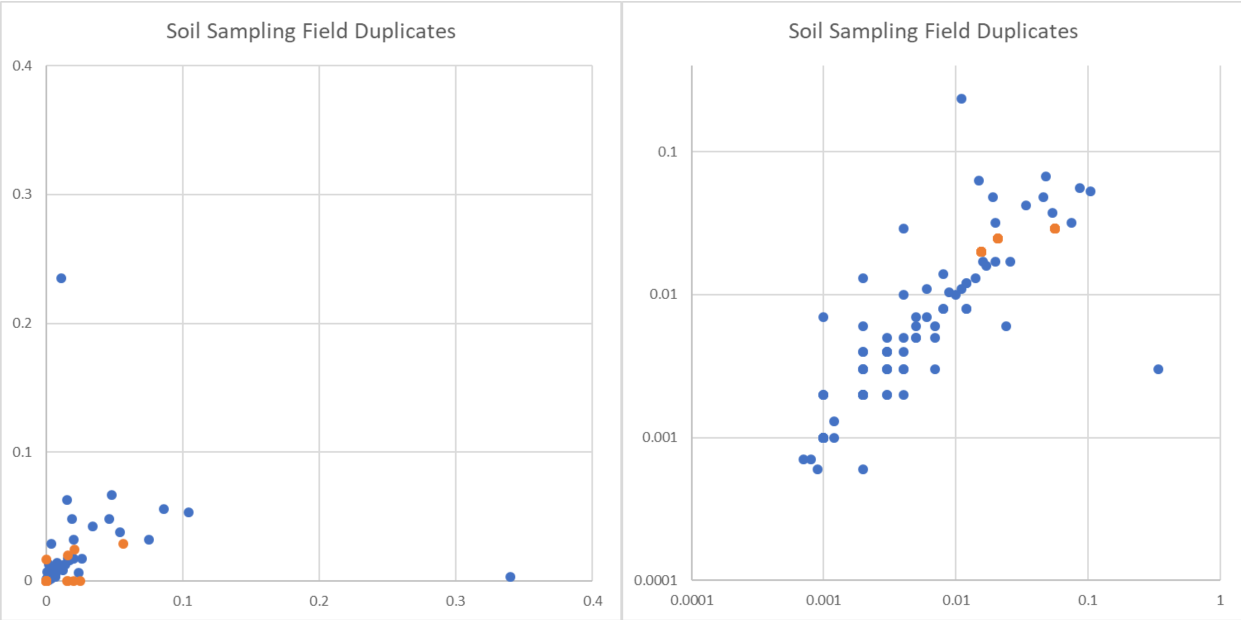



*Figure 29: Bivariate plots of field duplicates taken during the soil sampling programmes. Left: Normal. Right: Lognormal. Blue: Analysed at ALS Gauteng (South Africa), Orange: Analysed at Ezana Laboratory (Ethiopia).*

No coarse duplicates were taken in the RC drilling program reportedly due to cost constraints. In the trenching program 90 coarse duplicate pairs were taken and the RMS error was found to be 8.9% which is very low for a gold exploration program at this level of study, however, it is likely to be low because no coarse duplicates were taken in mineralised material. Given that the highest assay value in the coarse duplicate program was 0.8 g/t, it is impossible to assess the inherent heterogeneity of the orebody or the grouping and segregation error introduced by the sampling method. However, the repeatability at the low levels of gold encountered is found to be broadly acceptable.

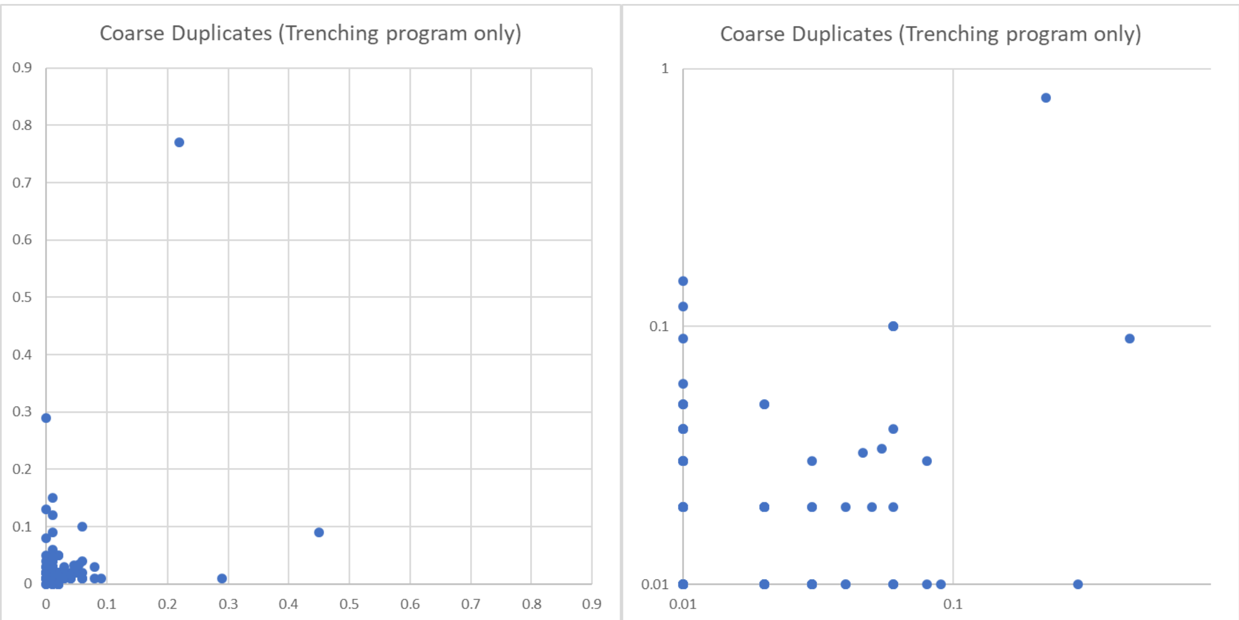



*Figure 30: Bivariate Plot of Coarse Duplicates from the Trenching Program. Left: Normal. Right: Lognormal.*

The lack of this important QC data means that the biggest potential source of error and bias (field sampling) cannot be evaluated. Therefore, it is not be possible to recommend the use of the trenching or RC drilling data for use in resource estimation because no assessment of Fundamental Sampling Error is possible. In future exploration programs, coarse duplicates should be taken alongside all sample types and they should be targeted primarily in mineralised material.

A total of 259 duplicate pairs of pulverised material were taken during both the RC drilling and trenching programmes. The RMS error of these duplicates was 10.3% which is considered to be acceptable. As such it is believed that the laboratory pulverising and splitting has been suitably conducted.

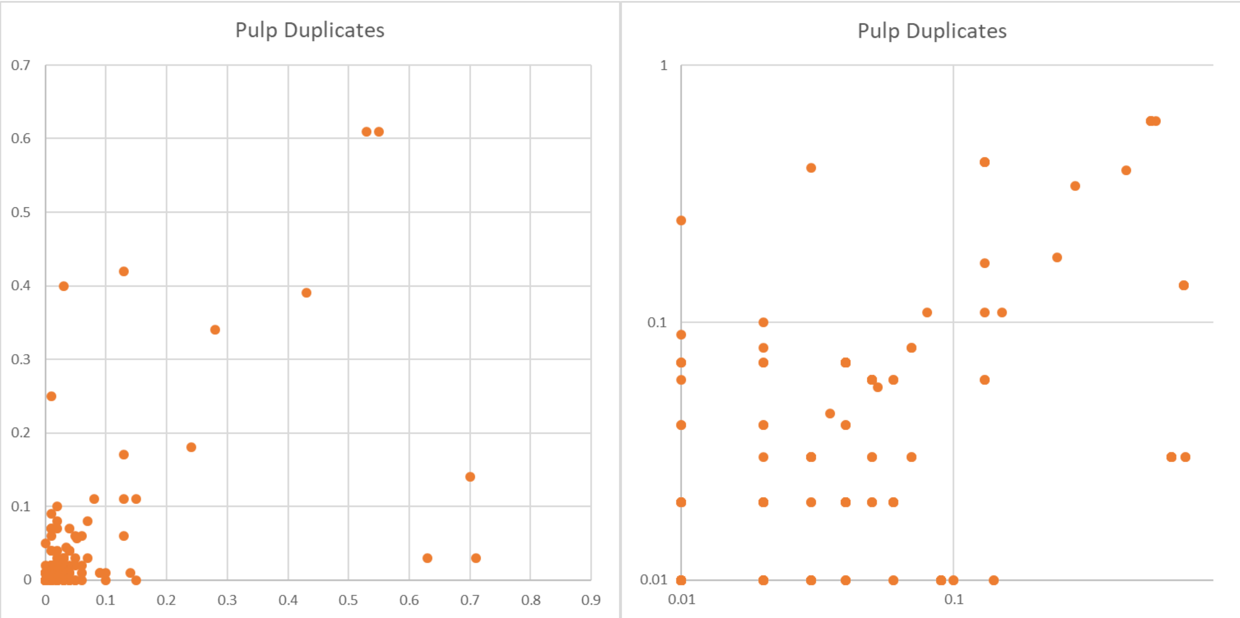



*Figure 31: Bivariate Plot of Pulp Duplicates from both the RC drilling and trenching programs. Left: Normal. Right: Lognormal.*

No program of inter-laboratory duplicates or blind intra-laboratory duplicates has been carried out.

### 11.5.4 Audits

No external or internal audits of QAQC have been carried out to the best of the authors knowledge.

### 11.5.5 Intra laboratory Pulp Repeats

No intra-laboratory pulp repeats have been taken.

### 11.5.6 Security

Full chain of custody was maintained for the samples from drill rig to analytical laboratory however no written details have been reviewed.

## 12: Data Verification

Individual analyses from selected significant intervals have been traced from the database back to the original laboratory certificates of analysis. No transcription errors have been detected. No independent samples have been taken as it was not considered necessary for this stage of exploration.

## 14: Mineral Resource Estimates

No mineral resource estimates have been completed.

## 15: Mineral Reserve Estimates

No mineral reserve estimates have been completed.

## 16: Mining Methods

Although Akobo Minerals has conducted some alluvial mining (not subject to this report). No formalised hard-rock mining has been conducted at the project.

At Segele, artisanal shafts and excavations in coarse-grained and sheared mafic-ultramafic rocks have combined to produce about 1000 kg gold from a pit of present surface size of about 15x20 m, reaching a depth of about 13 m. The main production period was from early 2015 until early 2016. The average gold content is thus ~100 ppm (g/t), but keep in mind that a considerable part of the pit volume was taken out following two cave-ins, without being processed, i.e. the gold grade of the actually produced material was significantly higher. The reader is cautioned that no independent verification of the size of production and grade is possible. However, it is indisputable that a very large number of artisanal miners have moved to the Segele area with the only purpose to exploiting this occurrence. Prior to the discovery of Segele by ETNO Mining, the population in the area was very small.

The artisanal mining is manual. Sinking shafts is done with hand held iron peckers, crushing by hand in steel mortars, and panning with wooden pans. Mercury/amalgamation is not in use, and the soil geochemistry ETNO has conducted supports this conclusion. Government control is good and all gold is collected locally by the government bank, paying market price.

## 17: Recovery Methods

## 18: Project Infrastructure

## 19: Market Studies and Contracts

## 20: Environmental Studies, Permitting, and Social or Community Impact

## 21: Capital and Operating Costs

## 22: Economic Analysis

## 23: Adjacent Properties

## 24: Other Relevant Data and Information

Exploration work planned at Joru area was interrupted due to the security situation following the incident of an armed robbery. During the 2017-2018 season, a militia provided guard services when we move to working site as well as in the camp. It is recommended that all further work is undertaken after formalised arrangements for security provision.

# 25: Interpretation and Conclusions

## 25.1 Chamo Segele Interpretation and Conclusions

Detailed trenching has mapped a gold zone extending >300m to the W of Segele Main Pit, supported also by additional data from artisanal pits, connecting with the Main Pit zone. However, there is a very high degree of uncertainty regarding the grades and the structural control of the mineralization. Artisanal activity, rock-chip sampling and soil sampling are very encouraging, but these sources of information are not enough alone to justify more detailed investigation. Analysis of samples from the trenching and drilling failed to identify gold mineralisation at ore grades.

It is possible that the failure of the trenching and drilling to intersect ore-grade mineralization is due to very high inherent variability (as supported by the mineralogy work). Such high inherent variability is very common in small gold targets and is often referred to as nugget effect. While the vast majority of gold deposits are subject to nugget effect, there is a variation in the severity of such an effect. Often such a high inherent variability is caused by most of the gold content being contained in a few large nuggets (>100µm) as opposed to numerous smaller nuggets (<100µm). It is inappropriate to assess such highly variable deposits using small exploration samples (2-3kg) because there is a low probability of intercepting those infrequent nuggets in small samples. Such deposits must be sampled, split and analyzed using specialist techniques more commonly used by metallurgists as opposed to geologists. For a review and example of the subject please read Dominy and Peterson (2005) and for the universally accepted theory see Gy (1992).

Because of the bulk sampling methods which are recommended to be employed at the Segele target, the method best suited for exploration here is in fact trial mining using formalized small-scale mining methods. If the results of the initial bulk sampling tests are successful, it is recommended that Akobo Minerals assesses the costs and opportunity to establish a limited scale mining operation (F-SSM). Akobo Minerals should assess the relative strengths, weaknesses, opportunities and threats of such an F-SSM operation against traditional resource estimation drilling.

Although the trenching program has identified a 300m mineralized zone, the results of magnetic surveys soil sampling has indicated that the zone may continue almost 2km further to the NW (Figure 30). If the bulk sampling of the trench mineralization is found to be ore grade. It would be of great exploration value to conduct an infill soil sampling program (20x100m) to test the se soil anomalies and possibly additional trenching in the area.

It is clear from the work described here and previous reports that gold is extremely widespread in the soils and sediments of this project. The objective of this study is to identify hard-rock gold anomalies however, some of the gold-in-soil anomalies may well be the result of accumulation of gold in terraces caused by alluvial processes. Therefore it is recommended that steps are taken to assess all possible sources of gold-in-soil by the use of pathfinder analysis and conduct carefull observation of regolith to identify terrace deposits.

Mineralogical study has been particularly valuable at the Segele, because the mineralization is atypical of many gold deposits. Further activity should concentrate on search for and sampling of hydrothermally altered parts of the ultramafites. These are probably structurally controlled by the regional shear zones creating dilational openings and pathways for the hydrothermal solutions to circulate.

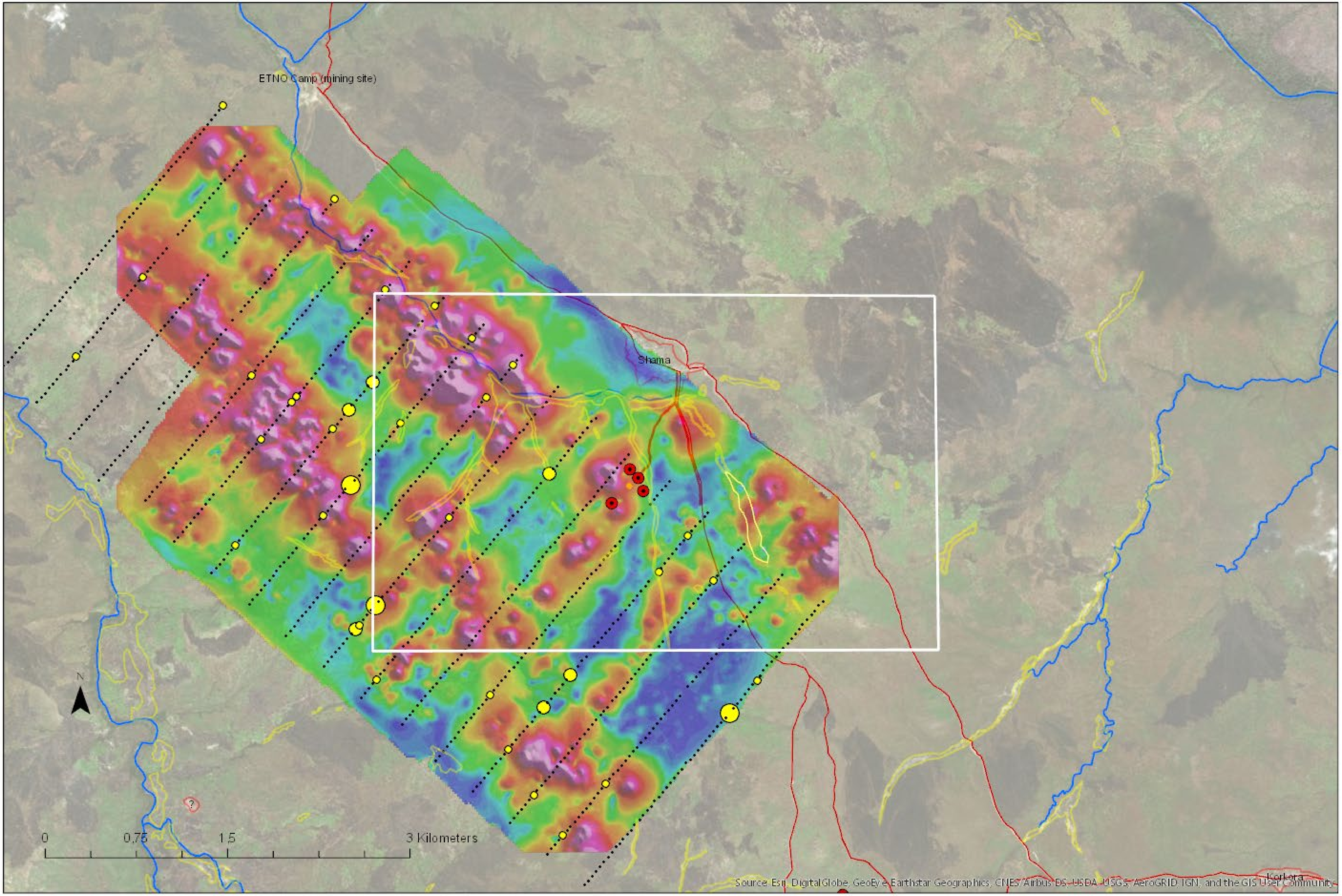



*Figure 32: The Chamo Segele target, true Colour composite overlain by Total Field Magnetics. Yellow: Gold-in-soil (Analysed at ALS). Red: RC drilling collars. Yellow: Artisanal workings as mapped from satillite imagery.*

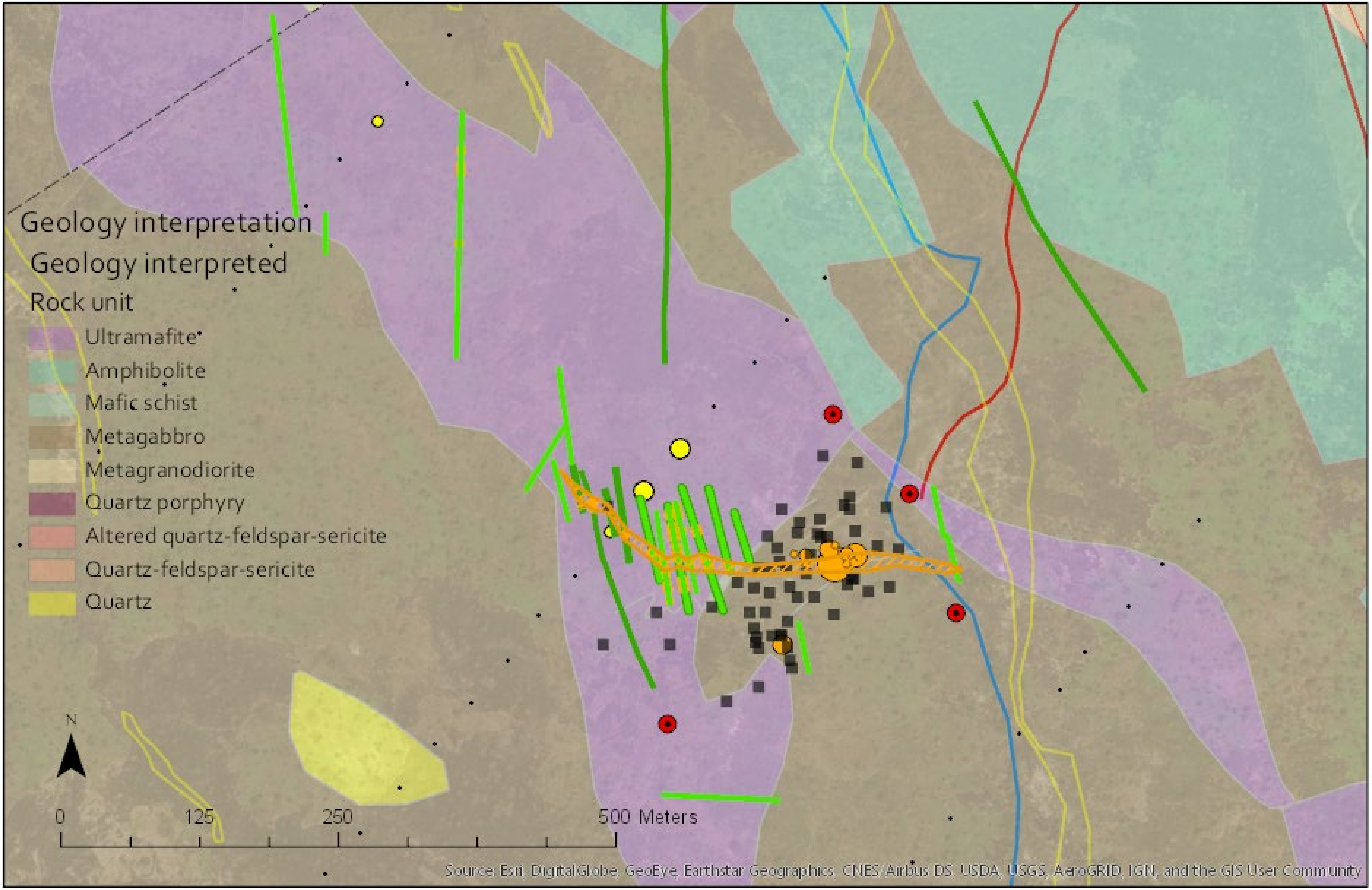



*Figure 33: The Chamo Segele target, true Colour composite. Yellow: Gold-in-soil (Analysed at ALS). Red: RC drilling collars. Yellow Circles: Artisanal workings as mapped from satillite imagery. Orange Circles: Gold in rock-chip samples. Green Lines: Trenches. Orange Hatched Polygon: Mineralised zone as mapped by geology, mineralisation and alteration.*

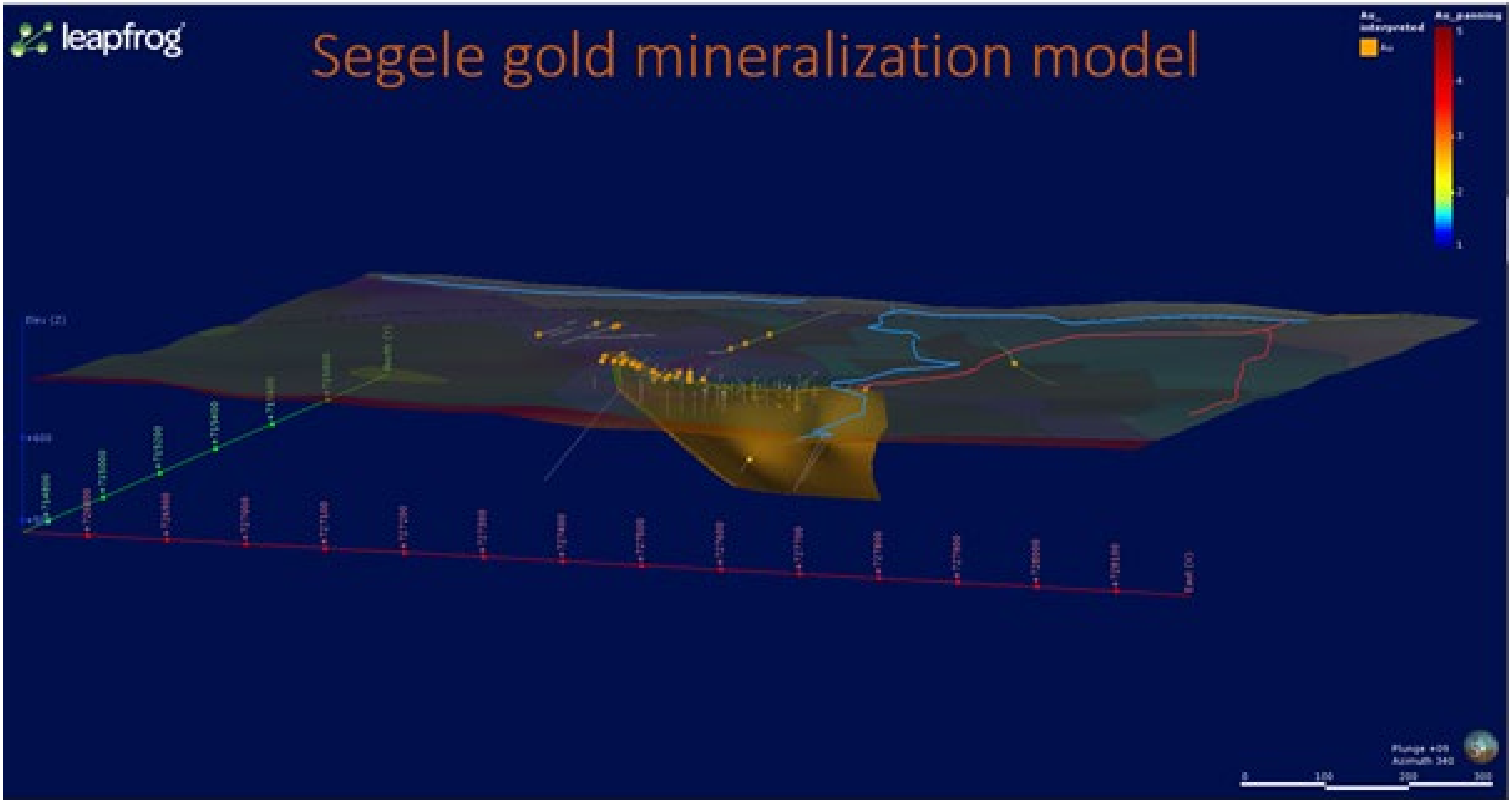



*Figure 34: 3D-model of Chamo-Segele target area gold mineralization based on geology, alteration and mineralisation (not assays). Logged trenches, pits and RC drill holes are shown, with gold zones. Model based on the combination of these datasets.*

## 25.2 Joru Interpretation and Conclusions

Exploration at the Joru project was carried out on profiles approximately 400m apart, this included soil sampling, trenching and RC drilling. Gold mineralisation intersected in the drilling and trenching broadly matches the locations of gold-in-soil anomalies however correlation between trenching and RC drilling is very difficult in most cases.

The use of RC drilling at this stage of exploration and this type of gold deposit is broadly unsuitable for two main reasons, representative sampling and structural analysis. When exploring for gold, extreme care must be taken to use sampling methods because the objective is to measure accurately and without bias the content of a very small amount of a dense material (gold) within much larger concentration of other minerals (quartz, feldspar etc). Whenever a large amount of energy is applied to a mixture such as gold mineralisation, the different density and shapes of the particles cause them to segregate. At Akobo, an extremely large amount of energy was supplied to the sample at the bottom of the drillhole as a result of the compressed air used in RC drilling, as such segregation of gold and gange minerals will have occurred. The segregation will mean that there will not be an equal chance of all mineral particles being sampled and the sample will be biased. It is worth noting that the RC drilling and sampling for gold mineralisation can be appropriate where extreme care will quality assurance is used, normally in late stage resource definition where the orebody is already well understood. Therefore the results of the RC drilling should be used to understand the broad presence of gold mineralisation as opposed to precise grades. It is worth noting that it is not possible to determine whether RC drilling as positively or negatively biased the sample.

Although the trenching identified a high grade zone in trenches (referred to as Joru Central), 12, 17 and 18 (weighted average grade of 5.8 g/t Au and ranges from 0.5 to 18.6g/t), such high grades were not intersected in the RC drilling from the same zone (max grade intersection 2.5g/t over 2m). In both trenches and drilling, these higher grade zones are accompanied by numerous lower grade intersections between 0.5 g/t and 1.5g/t. Assessment of both the intersection widths and the structural data from mapping and logging is complex and it is unlikely that the drilling and trenching has been perpendicular to the mineralisation. Most of the intersection widths at Joru Central are found to be between 1m and 2m, however, these intersections can be as wide as 4 and 7m in trenching. Intersection depth is from the low grade intersections in drilling was found to be two populations between 0-8m and also 44m and 80m (34 and 62m true depth). Given the limitations of the RC drilling method but the relatively robust trenching method it can be conluded that Joru Central is a low grade target with a possible high grade core that has been confirmed at depth to 60m true depth with a potential thickness of multiple meters. The limited about of structural study means that it is impossible to correlate the various zones at present.

Along the majority of the 4km strike length of the Joru target relatively low grades were encountered (between 1 and 2 g/t), except in trench JOTR013 where 9.6g/t over 1m was intersected. Furthermore, holes JORC008, JORC010 and JORC013 intersected some slightly higher grades. Notably hole JORC010 intersected 3.1g/t over 1m at a depth of 143m (110m true depth). Several trenches and holes have intersected numerous low grade intersections. As with the interpretation of Joru Central, it seems likely that there is excellent potential for a large low grade gold target (1-2g/t) consisting of multiple gold zones, some of these gold zones are likely to be high grade cores. The soil sampling survey suggests that these low grade target exists over the entire strike length (4km).

Given the current economic situation and the interpretation of the results described here, it is likely that the economic value of the Joru target lies mostly in the size and grade of the high grade cores. It is likely that the low grade regions are of value but the profitability and risk profile of the Akobo project is likely to depend on blending of high and low grade material in any resulting mine operation. Joru Central is one such high grade core and drilling in the wider area suggests the further cores probably exist. Akobo Minerals should be moving towards resource estimation on this target but before such activities are carried out, it is necessary to better understand the structural controls of the mineralisation in order to appropriately plan the drilling campaign, this further study requires both detailed structural study, ground magnetic surveys and in-fill soil sampling. Consideration should be given to electrical method geophysics. These three methods are relatively inexpensive and will greatly reduce the cost (and hence risk) of the later stages.

Upon completion of the structural study, Akobo Minerals should undertake a diamond drilling program of approximately 1000m with the objective of better assessing the grades of the mineralisation and providing more structural information. These holes should be aimed at principally testing possible high grade cores (as indicated in this study) and to a lesser amount assessing how widespread the low grade mineralisation. Trenches of a limited length (100-200m each) should be used mostly to test the extent of the low grade mineralisation. To optimize the use of drilling and trenching, the collars should be planned very carefully on the basis of the previous desk study.

During the drilling campaign, preliminary steps should be taken to understand the mineralogy and metallurgical modifying factors. It is recommended to undertake preliminary mineralogical study of the Joru Central high grade and low grade mineralisation. Thin section petrology and mineralogy should be used and coarse rejects from assays should be analysed by cyanide leach bottle roll under standard conditions to provide a preliminary understanding of potential challenges to metallurgy.

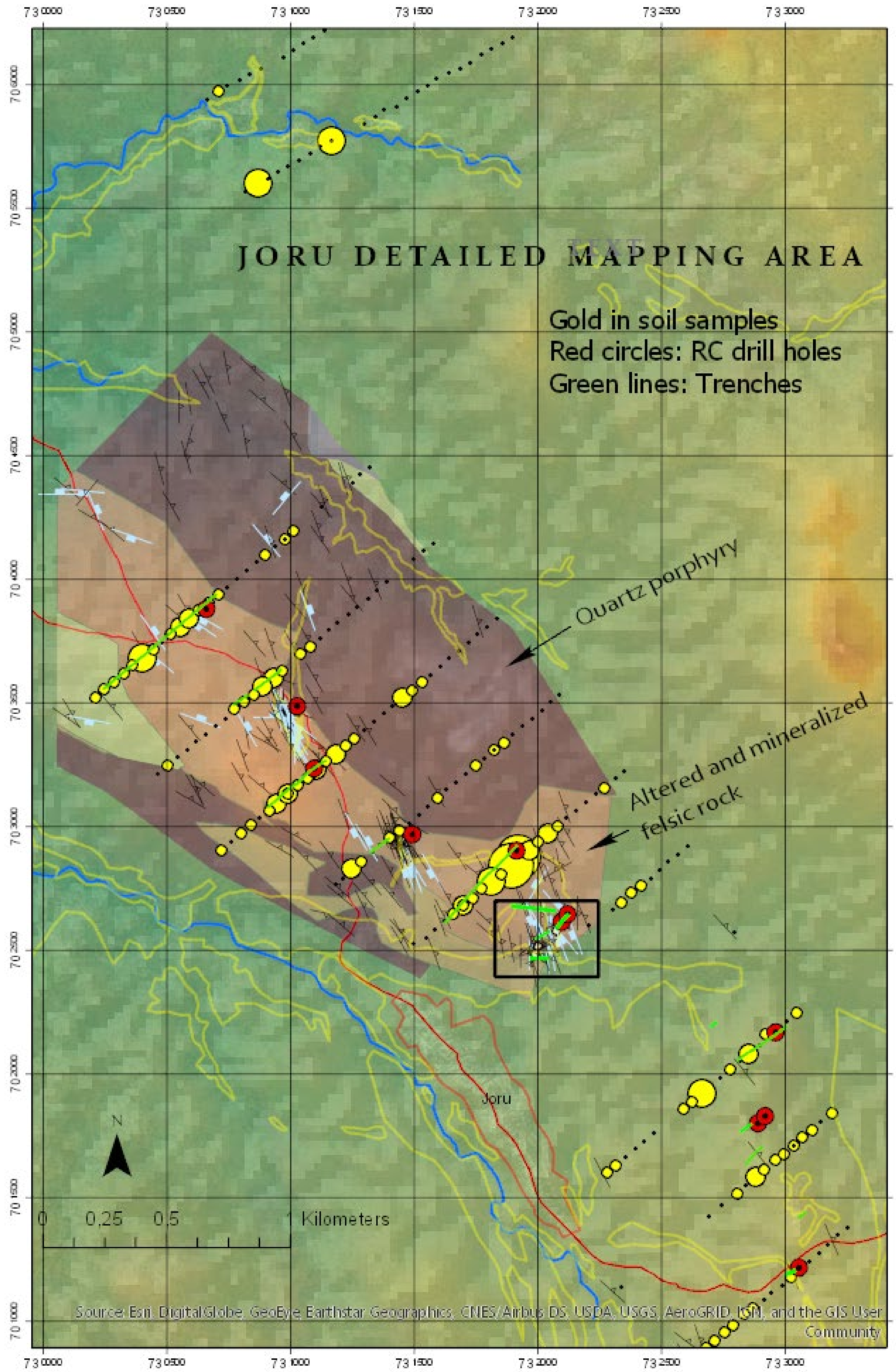



*Figure 35: The Joru target showing the results of the gold-in-soil survey*

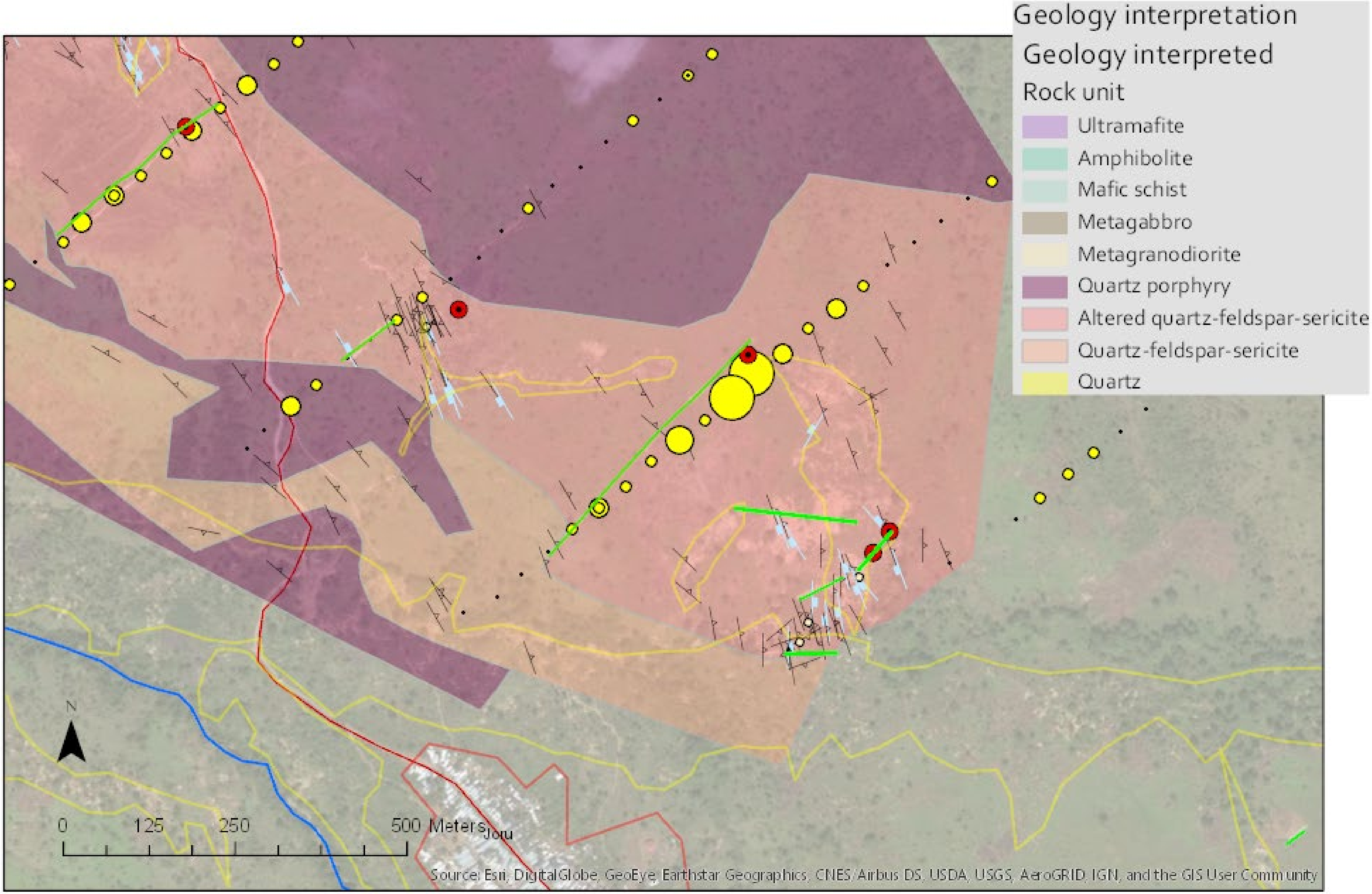



*Figure 36: Joru detailled mapping area*

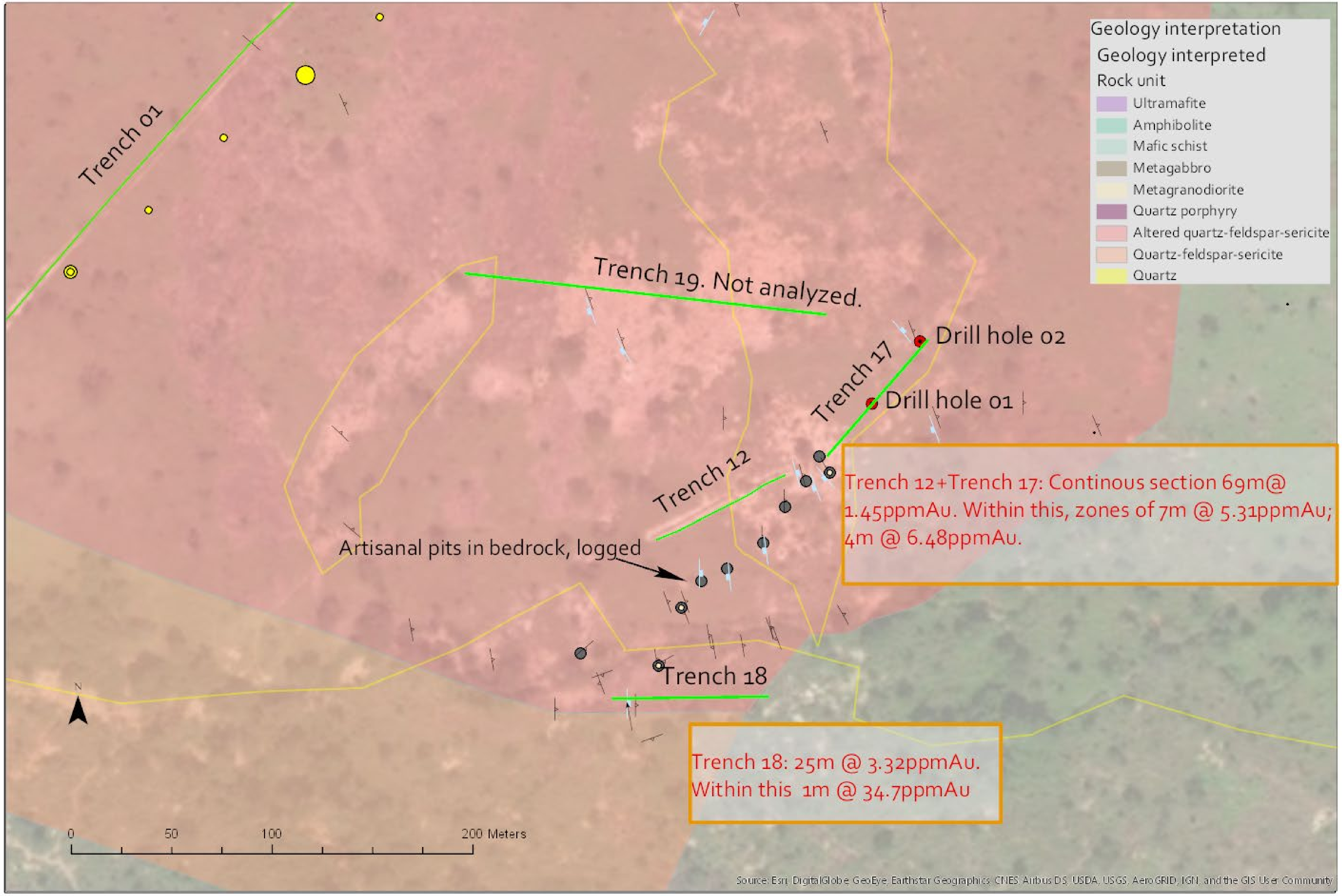



*Figure 37: Joru Central detailled mapping area, showing intersections and structure.*

## 25.3 Regional Targets Interpretation and Conclusions

The results of the regional soil sampling has identified numerous elevated Au-in-soil anomalies. However, no assessment of the effects of regolith type, terraces and soil development has been completed. Previous studies (GeoDev, 1999) have shown that there is extremely widespread presence of gold in stream sediment samples at the project. Additionally, the success of the soil sampling program at the Joru target indicates that soil geochemistry should be a key factor in exploration target generation.

In terrains such as those being studied, it would be common to find variation in the depth and state of development of the laterite. Even after strenuous efforts to maintain a consistent soil layer to sample, it is likely that the variation in laterite development from one location to another will have a considerable impact on the absolute gold grade at any one site. The degree weathering in different regolith terrains can be assessed using comparisons of compatible and incompatible elements, the results of this can be used to level data in different areas. A similar process can be used to level the data from samples digested by aqua regia (Mekele, Ethiopia) and fire assay (ALS Gauteng). The results of this levelling process can be used to allow reasoned comparison between all surveys using all data. As a result, it is possible that some regional targets may become more prospective than others.

The effect of alluvial processes on Au-in-soil anomalies can be elucidated using bivariate and multivariate assessment of the elements analysed by ICP-OES/AES. For example Au-in-soil anomalies that result from the weathering of hard-rock mineralisation (such as at Joru) will have a different geochemical signature to those which originate from the mixture of stream sediments with laterite. Such analysis of multi-element data will provide additional targetting information.

Given the wide spacing soil samples, drilling and trenching at the Akobo Project, it is possible that additional prospective targets similar to the Segele and/or Joru targets may be identified. Akobo Minerals should undertake a re-processing and re-interpretation of the mapping and soil data to assess the entire project area. Following the detailed structural analysis of Joru, it is likely that considerable advances in the understanding of mineralizing processes will occur. This reinterpretation can be used to create a targeting system for the entire project. This method has the potential to uncover valuable targets similar to those already identified.

Additionally, historic data (geodev) can be re-processed using drainage basin analysis to broadly identify drainage basins most prospective for hard-rock au mineralisation.

## 26: Recommendations

The Joru target is recommended to be the highest priority for additional studies. It is recommended to undertake the following study:

1. Detailed geological/structural/mineralisation study of the Joru Central area.
2. Soil geochemical orientation study at the Joru Central area (eg 10 x 50m spacing, approximately 200 smaples).
3. Soil geochemical in-fill sampling throughout the entire Joru Target (50 x 100m)
4. Ground geophysical survey on approximately (100m line spacing)
5. Assess the potential use of electrical methods (Induced Polarisation and/or resistivity).
6. 1000m diamond drilling program planned carefully based on the results of steps 1,2,3 and 4 with the objective of producing exploration target estimates for the high grade mineralisation.
7. 2-3 line kilometers of trenching (max 200m in length) to investigate the areal extent of the low grade mineralsation.
8. Upon confirmation of acceptable grades and suitable correlation of mineralisation between holes/trenches, it is recommended to undertake a resource estimation drilling program.

The Chamo Segele area should be the second priority. It is recommended to undertake a small-scale trial mining program which includes:

1. Options analysis of open pit versus underground development (by mining engineer).
2. Development of an open pit / pre-development drive with the objective of allowing bulk sampling, trial production and better understanding of the structure of the orebody.
3. Bulk sampling (minimum 100kg) at several sites which are believed to be prospective based on the basis of geology, alteration and structure. Bulk samples should be analysed at an accredited lab with the capability to perform bench-scale metallurgical testing of the following variables (See note.**A)**
    a. Screen Fire assay (essential).
    b. Screen testing
    c. Cyanide leach bottle roll tests.

**A**: Subject to available equipment and funding, in some cases it is more efficient to replace bulk sampling with trial production.

In order to provide further targets for exploration it is recommended to produce a prioritised target list as follows:

1. Re-process and re-interpret the regional Au-in-soil anomalies using levelling and multi-element analysis.
2. Perform a study of regolith using road cuttings, trenches etc in various parts of the study area with the objective of identifying the influence of terraces and regolith domains on soil surveys.
3. Perform drainage basin processing on stream sediment geochemical analyses.
4. For the Chamo Magnetic survey, assess a more diverse range of magnetic processing deliverables to identify more precise controls on mienralisation (eg Reduced to Pole, Vertical/Horizontal Derivatives etc).

In a more general sense, it is recommended that Akobo Minerals:

1. Undertake a formal community relations program in order to establish strong lines of communication with the local populous.
2. Complete safety risk assessment including:
    a. Review the use of artisanal pit exploration in light of recognized safety risks.

   b. Security threats

3. Appoint a dedicated database manager (part-time) and begin the process of using a specialized software for database management. The database manager would ideally be someone not first hand involved in the day-to-day collection of the geological information.
4. Obtain quotes for ground magnetic survey to cover the entire license area.
5. For all future drilling and trenching:
   a. It is essential that coarse duplicates are taken in the drilling program.
   b. Coarse duplicates should be targeted in mineralized material
   c. Record sample mass in the database in order to allow assessment of correlations between mass and assay grade.
   d. Restrict analysis of samples to one ISO accredited laboratory with an additional ISO accredited laboratory used for pulp-analysis.
   e. Record laboratory batch numbers and analysis dates in the master database.
   f. Use a Jones type riffle splitter cleaned with compressed air for splitting of future soil samples.
6. If possible, reanalyze all reconnaissance exploration soil samples (Mekele) by fire assay and for pathfinder elements.

# Appendix 1: JORC Table 1

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

| Criteria | Explanation | Commentary |
|---|---|---|
| Sampling techniques | Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.<br><br>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.<br><br>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information. | For soil samples, a raw target mass of 2kg was taken a variable sample depth between 10 to 180cm. These samples were sieved to -80mesh at a field camp to produce a 50gram split.<br><br>For channel samples from trenches. 1m chip samples were taken with the aim of evenly sampling all rocks within the channel. Each sample weighed between 2-3Kg and were split by the assay laboratory (no splitting in the field).<br><br>For reverse circulation drilling a raw sample mass of between 20-30kg per meter was extracted. This was split in the field using 3 level Jones-type riffle splitter to a nominal mass of 2-3kg. The splitter was cleaned using compressed air after each sample. Subsequent splitting was performed at the assay laboratory. |

| Criteria | Explanation | Commentary |
|---|---|---|
| Drilling techniques | Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc). | Only reverse circulation drilling was employed. |
| Drill sample recovery | Method of recording and assessing core and chip sample recoveries and results assessed.<br><br>Measures taken to maximise sample recovery and ensure representative nature of the samples.<br><br>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material. | The mass of raw samples from drilling was not recorded so assessment of RC recovery was not possible due to the practical problems associated with moving and weighing the mass of 20-30kg of material. No assessment of relationship between recovery and grade is possible. |

| Criteria | Explanation | Commentary |
|---|---|---|
| Logging | Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.<br><br>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.<br><br>The total length and percentage of the relevant intersections logged. | Full qualitative logging has been performed by geologists for all trenches and RC cuttings. |
| Sub-sampling techniques and sample preparation | If core, whether cut or sawn and whether quarter, half or all core taken.<br><br>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.<br><br>For all sample types, the nature, quality and appropriateness of the sample preparation technique.<br><br>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.<br><br>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.<br><br>Whether sample sizes are appropriate to the grain size of the material being sampled. | The only in-field splitting which occurred was that of the RC samples which were split using a 3-tier Jones-type riffle splitter. This splitter was cleaned using compressed air.<br><br>All further comminution and splitting was conducted at the assay laboratory using Jaw crushers, chrome-steel mills and Jones-type riffe splitters.<br><br>The different sampling programmes used different types and frequencies of duplicates. The results of which are presented and considered to be acceptable for advanced stage mineral exploration (but not resource definition).<br><br>It is possible that the analyses of Au grade from RC drilling has been biased. It is therefore recommended that the results be only interpreted on a qualitative basis. For example, barren, low grade, high grade. Core drilling of the Joru target to give a quantitative assessment of grade is recommended.<br><br>Given the extreme level of heterogeneity likely, the sample sizes used for assessment of Au grades at Chamo-Segele are too small and hence a reliable assessment of the Au grade has not been possible. |

| Criteria | Explanation | Commentary |
| --- | --- | --- |
| | | The sample sizes at Joru are believed to be broadly appropriate and consistent with industry best-practice. |
| Quality of assay data and laboratory tests | The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.<br><br>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.<br><br>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. | All assaying was performed at contractor laboratories. The majority of analyses were completed at ALS (either Gauteng or Romania). A small number of samples (mostly soil samples) were analysed at Mekele (Etihopia). The ALS laboratories are accredited to ISO9001 however accreditation details of Mekele are not available.<br><br>Standards, blanks and duplicates have been used at varying times during the programmes. However, in some cases blanks have not been used and in others field duplicates have not been used. Crucially, field duplicates were not used during the RC drilling program.<br><br>Where present, acceptable levels of accuracy and bias have been achieved. However, the lack of field duplicates in the RC drilling means that the data can only be used qualitative. For example, barren, low grade, high grade. |

| Criteria | Explanation | Commentary |
|---|---|---|
| Verification of sampling and assaying | The verification of significant intersections by either independent or alternative company personnel.<br><br>The use of twinned holes.<br><br>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.<br><br>Discuss any adjustment to assay data. | The competent person has independently verified the database. Inconsistencies are present and the some data is missing (eg some logging details and assay certificates). Nevertheless, the verification of significant intervals has been successful and it is believed that no transcription errors for Au analyses have been made.<br><br>No core drilling or twinning has been performed due to budget constraints.<br><br>No adjustments to assay data have been made. |
| Location of data points | Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.<br><br>Specification of the grid system used.<br><br>Quality and adequacy of topographic control. | Hand held GPS has been used for all location control. No topographic control has been performed. This is considered to be adequate for mineral exploration. |

| Criteria | Explanation | Commentary |
|---|---|---|
| Data spacing and distribution | Data spacing for reporting of Exploration Results.<br>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.<br>Whether sample compositing has been applied. | At Chamo-Segele drilling and trenching was not conducted on strict profiles, however RC holes were approximately 100m spacings. At Joru drillind and trenching was conducted along profiles of approximately 300m in spacing. However, trenching and drilling has not been completed on all profiles.<br>No sample compositing has been used. |
| Orientation of data in relation to geological structure | Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.<br>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material. | The structure of the mineralisation is uncertain and hence it is unlikely that drilling and trenching was conducted in an unbiased manner. |
| Sample security | The measures taken to ensure sample security. | No details of sample security have been provided. |
| Audits or reviews | The results of any audits or reviews of sampling techniques and data. | No audits or reviews have been carried out. |

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

| Criteria | Explanation | Commentary |
|---|---|---|
| Mineral tenement and land tenure status | Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.<br><br>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. | The mineral exploration licence expired on the 31st of October 2018 and a new licence has been applied for. It is understood that ETNO Mining will receive another 1 year exploration licence which can be reviewed each year upon submission of acceptable plans and budgets to the Ethiopian Authorities.<br><br>There are no known issues relating to third parties, however standard Ethiopian gold sales royalties will apply. |
| Exploration done by other parties | Acknowledgment and appraisal of exploration by other parties. | None known. |
| Geology | Deposit type, geological setting and style of mineralisation. | Orogenic gold deposit deposit types. Chamo-Segele is hosted by altered ultramafics and Joru is a quartz vein stockwork hosted by quartzo-feldspathic rocks. |
| Drill hole Information | A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:<br>• easting and northing of the drill hole collar<br>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar<br>• dip and azimuth of the hole<br>• down hole length and interception depth<br>• hole length.<br><br>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. | (see drill hole table below) |

| HOLE_ID | Easting | Northing | RL | Dip | Azimuth | EOH |
|---|---|---|---|---|---|---|
| SERC001 | 727,581 | 715228 | 634 | -60 | 230 | 145.00 |
| SERC002 | 727362 | 715025 | 642 | -50 | 270 | 150.00 |
| SERC003 | 727511 | 715303 | 635 | -50 | 230 | 150.00 |
| SERC004 | 727622 | 715125 | 636 | -50 | 300 | 150.00 |
| JORC001 | 732096 | 702615 | 751 | -50 | 230 | 88.00 |
| JORC002 | 732120 | 702646 | 750 | -50 | 230 | 120.00 |
| JORC003 | 732890 | 701801 | 794 | -50 | 230 | 60.00 |
| JORC004 | 732919 | 701830 | 794 | -50 | 230 | 90.00 |
| JORC005 | 733056 | 701217 | 817 | -50 | 230 | 67.00 |
| JORC006 | 733275 | 700709 | 823 | -50 | 230 | 60.00 |
| JORC007 | 733324 | 700741 | 829 | -50 | 230 | 78.00 |
| JORC008 | 733322 | 700605 | 845 | -50 | 230 | 100.00 |
| JORC009 | 732961 | 702168 | 786 | -50 | 230 | 138.00 |
| JORC010 | 731914 | 702903 | 765 | -50 | 230 | 149.00 |
| JORC011 | 731493 | 702969 | 754 | -50 | 230 | 97.00 |
| JORC012 | 731096 | 703235 | 799 | -50 | 230 | 130.00 |

| Criteria | Explanation | Commentary | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | JORC013 | 731027 | 703487 | 784 | -50 | 230 | 90.00 |
| | | JORC014 | 730660 | 703880 | 766 | -50 | 230 | 60.00 |
| | | GINRC001 | 729797 | 707669 | 758 | -50 | 270 | 48.00 |
| | | GINRC002 | 729866 | 707353 | 735 | -50 | 270 | 73.00 |
| | | GINRC003 | 729912 | 707819 | 735 | -50 | 270 | 55.00 |
| | | GINRC004 | 729719 | 708498 | 709 | -50 | 290 | 73.00 |
| | | GINRC005 | 729261 | 711802 | 704 | -50 | 230 | 52.00 |
| | | GINRC006 | 729356 | 711533 | 715 | -50 | 230 | 52.00 |
| | | WORC001 | 726958 | 709159 | | -50 | 240 | 59.00 |
| | | WORC002 | 726993 | 709178 | | -50 | 240 | 89.00 |
| | | WORC003 | 726939 | 709485 | | -50 | 320 | 59.00 |
| | | WORC004 | 726957 | 709459 | | -50 | 320 | 100.00 |
| | | WORC005 | 727431 | 708443 | | -50 | 230 | 90.00 |
| | | WORC006 | 727460 | 708470 | | -50 | 230 | 150.00 |
| | | WORC007 | 727150 | 708972 | | -50 | 270 | 90.00 |
| | | WORC008 | 727190 | 708971 | | -50 | 270 | 103.00 |
| Data aggregation methods | In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.<br>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.<br>The assumptions used for any reporting of metal equivalent values should be clearly stated. | All trench and drilling data is provided as weighted average intervals. The weighting is applied according to intersection length. No high or low grade cut-off was used. The minimum sampling width used was 1m. | | | | | | |

| Criteria | Explanation | Commentary |
|---|---|---|
| Relationship between mineralisation widths and intercept lengths | These relationships are particularly important in the reporting of Exploration Results.<br><br>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.<br><br>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). | The structure of the mineralisation is uncertain and hence it is unlikely that drilling and trenching was conducted in an unbiased manner. Only downhole and along trench lengths are reported. |
| Diagrams | Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. | See report. |
| Balanced reporting | Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. | No reporting of exploration results at Wollea or Nechdingay has been included although drilling and trenching has been conducted at both targets. This is not believed to be misleading as the results produced in both targets are considered to be upside. |
| Other substantive exploration data | Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances. | |
| Further work | The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). | |

| Criteria | Explanation | Commentary |
|---|---|---|
| | Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. | |

# Appendix 2: Competent Person's Consent Form

Pursuant to the requirements of ASX Listing Rules 5.6, 5.22 and 5.24 and
Clause 9 of the JORC Code 2012 Edition (Written Consent Statement)

**Report name**

The Akobo Gold Exploration Project, Western Ethiopia. Competent Persons Report

(Insert name or heading of Report to be publicly released) ('Report')

Akobo Minerals AB

(Insert name of company releasing the Report)

The Akobo Exploration Project

(Insert name of the deposit to which the Report refers)

If there is insufficient space, complete the following sheet and sign it in the same manner as this original sheet.

1st March 2019

(Date of Report)

# Appendix 3: Statement

I/We,

*Dr Matthew Thomas Jackson*

*(Insert full name(s))*

confirm that I am the Competent Person for the Report and:

I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).

I am a Competent Person as defined by the JORC Code 2012 Edition, having five years experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.

I am a Member or Fellow of The Australasian Institute of Mining and Metallurgy or the Australian Institute of Geoscientists or a 'Recognised Professional Organisation' (RPO) included in a list promulgated by ASX from time to time.

I have reviewed the Report to which this Consent Statement applies.

I am a consultant working for

*Bluestone Geophysical Surveys Ltd*

*(Insert company name)*

and have been engaged by

*Akobo Minerals AB*

*(Insert company name)*

to prepare the documentation for

*The Akobo Exploration Project*

*(Insert deposit name)*

on which the Report is based, for the period ended

*N/A*

*(Insert date of Resource/Reserve statement)*

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to Exploration Targets.

# Appendix 4: Consent

I consent to the release of the Report and this Consent Statement by the directors of:

*Akobo Minerals AB*

*(Insert reporting company name)*

Signature of Competent Person

29 March 2019

Date:

*Australsian Institute of Mining and Metallurgy*

Professional Membership:

992281

Membership Number:

Signature of Witness:

S Hutton
Fjordvangveien 84, 1459

Print Witness Name and Residence:
(eg town/suburb)

## Appendix 4: Version Control

| Version | Date | Changes |
|---|---|---|
| 1.0 | 1st March 2019 | |
| 1.1 | 29th March 2019 | Page numbers error rectified and minor formatting changes |
| | | |
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