

**P U L A  
KAHAMA GOLD**



**PARTNERS**



**A Field Study and Mapping Survey**

# **PULA KAHAMA GOLD PARTNERSHIP REPORT**

**Pula Kahama Gold Partnership License: PL11437/2020  
Kahama District, Lake Victoria Goldfields  
Tanzania**

**NOVEMBER 2022**

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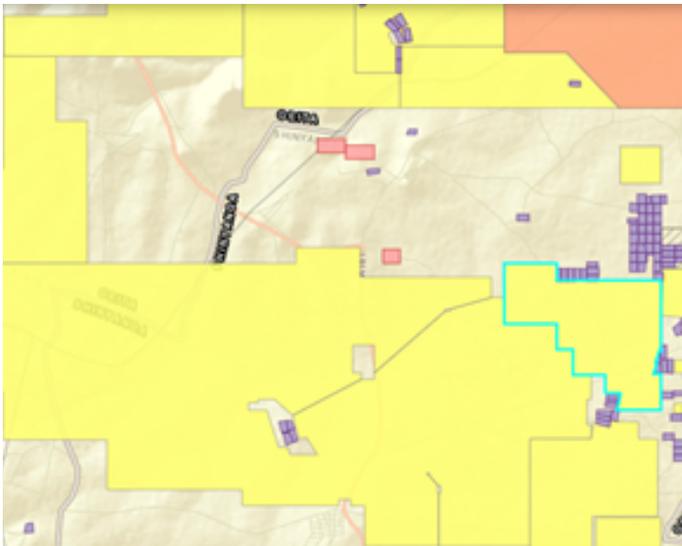


**Pula Kahama Gold Partnership**  
**Kahama Gold Field Study PL 11437/2020**

**INTRODUCTION**

Pula Kahama Gold Partnership (PKG), a subsidiary of the US-based Pula Group, LLC, was formed in 2021 to develop license PL 11437/2020 in 2021. The license is in the Kahama District of Tanzania, which is an area highly prospective for gold. The Kahama District is in the Lake Victoria Goldfield, which to date has nine (9) large scale mines estimated to hold 24.93 million ounces of gold.

Pula Kahama Gold Partnership (PKG) made the decision to develop PL 11437/2020 based on secondary data analysis of previous exploration activity in the license area. Another factor that influenced the decision to develop the license is its proximity to Barrick's Bulyanhulu Mine, which has approximately ~3.6 million ounces of gold, with a 10g/tAu average grade, at a market value of \$6.55 billion.



**Image 1:** PL11437, outlined in light blue, is:

- 8km south Barrick's Bulyanhulu (orange)
- abuts Barrick's newest acquisition - PL11617 (yellow)
- abuts artisanal operations, mining at ~6.95g/tonne

<sup>1</sup> The Field Study and Report were done by Yusuph Mmbaga, a geologist with more than 30 years of experience, which includes: gold exploration with the Tanzania State Mining Corporation in the Tanzania Archer Greenstone belt (1986-1989); Placer Dome International (Tanzania, 1991); AMRS Inc, (1996-1998); Midland Tanzania Limited (2003- 2004); I AM Gold Tanzania limited (2004- 2005); and Gallery Gold. Mmbaga is also experienced in the exploration and mining of copper, tungsten, mercury, and graphite, having worked in Zambia, Saudi Arabia, Portugal, Spain, and Oman. He earned a BSC (Hons) in geology from the University of Dar es Salaam (Tanzania) 1986 and holds a post graduate diploma in Mineral exploration from IT Delft (The Netherlands). He is a Member of the Geological Society of Tanzania.



PL11437 is 8km south of Bulyanhulu and, based on IP and magnetic survey data, has similar mineralization as well as a similar size. At Bulyanhulu, the area of underground mining has the surface area of ~10km, which is equivalent to the area with the greatest potential on PL11437. Bulyanhulu targets 2 reefs whereas, PL11437, based on IP and magnetic survey data, has the potential to host 6 reefs consisting of disseminated sulphides, which give the subsurface geophysics signature. Secondary data analysis of previous exploration by Mawarid Mining makes clear that they did not fully consider Induced Polarization (IP), magnetic, and geochemical soil data before executing the drilling program and, as a result, significantly underestimated the grade and tonnages on PL11437.

Mawarid established a conservative estimate of 200,000 ounces of gold at a grade of approximately 0.8g/tonne (estimated market value of \$364 million), based on a conceptual model and drilling program that is inconsistent with IP and magnetic survey data. After a desktop study, it was clear that unexplored zones PL11437 represented significant potential. Owing to this promising background information on the potential value of PL 11437, PKG took the next step in refining its conceptual model of the prospect. PKG commissioned a field study and mapping survey with metallurgical testing to advance the evaluation of the volume, location, depth and grade of gold, while engaging local government and community.

The field surveys, which took place from July 3-13, 2021 and October 27 - 31, 2021, showed the presence of gold deposits from artisanal sources at a grade as high as 6.95g/tAu in areas that were not previously explored. This grade is nearly ten times the grade found in Mawarid's previous exploration work. This finding increases the potential value of the license significantly. In addition to the hard rock gold deposits identified in the southeastern corner of the license, a 2 million m<sup>2</sup> bed with significant potential for alluvial gold on the license in the northern quadrant of the license<sup>2</sup>.

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<sup>2</sup>Estimated market value of \$51 million



Local government officials and village leaders have welcomed PKG to the area and are aware of PKG's commitment to equitable, ethical exploration. Based on the promising findings from mapping and field studies conducted in July and October 2021, the next recommended steps systematic, sequential exploration to refine the understanding of the location, depth, and grade of gold deposits, both hard rock and alluvial in order to determine more accurately the resource estimate.

Given the assessment that PL11437 represents a viable project with vast potential, PKG has set the following objectives to further the development of the license to full production:

- Establish a more highly defined mineral resource and reserve estimate
- Establish techno-financial and ESG parameters for a modular approach to full production mine
- Establish ethical and sustainable exploration strategy
- Engage community and local government to reach a consensus on mine and local development
- Acquire Mining License (for which PKG is, per the 2010 Mining Code, the "entitled applicant")
- Execute the modular approach mine plan in stages until reaching full production

Based on secondary data analysis, the experience of the geological team in the area, and the field studies, PKG recognizes the potential for a full production mine on PL11437/2020. At present, PKG is developing an exploration program that aims to bring the prospecting license to full production.



## BACKGROUND

The following is background information on the prospecting license and investigations nearby, both historical and more recent. Prospecting License (PL 11437/2020) is approximately 18 km<sup>2</sup> in area and is defined by the following corner coordinates in Table 1. Corner beacons were placed in July 2021.



**Image 2:** Corner coordinates of PL11437/2020

Corner ID	Latitude	Longitude
1	-03deg ;19min; 55.00sec	32 deg; 29min; 55.00 sec
2	-03deg; 20min; 1.98 sec	32 deg; 29 min; 53.72 sec
3	-03deg; 20min; 8.00 sec	32 deg; 29 min; 52.00 sec
4	-03deg ;20min; 8.00 sec	32 deg ;30 min; 0.00 sec
5	-03deg; 20min; 50.00sec	32 deg; 30 min; 0.00 sec
6	-03deg ;20min; 50.00 sec	32 deg; 29 min; 9.00 sec
7	-03deg; 20min; 32.54 sec	32 deg; 29 min ;12.68 sec
8	-03deg; 20min; 32.00 sec	32 deg; 29 min; 13.00sec
9	-03deg; 20min; 32.00 sec	32 deg ;29 min ;12.79sec
10	-03deg; 20min; 31.00 sec	32 deg; 29 min ;13.00sec
11	-03deg; 20min; 31.00 sec	32 deg; 28 min; 55.00sec
12	-03deg; 20min; 30.89 sec	32 deg; 28 min; 55.00sec
13	-03deg; 20min; 30.86 sec	32 deg; 28 min; 55.97sec
14	-03deg; 20min ;22.07 sec	32 deg ;28 min; 55.97sec
15	-03deg; 20min; 22.08 sec	32 deg; 28min ;55.00sec
16	-03deg ;20min; 22.00 sec	32 deg; 28min; 55.00sec
17	-03deg ;20min; 22.00 sec	32 deg; 28min; 56.00sec
18	-03deg ;20min; 10.00sec	32 deg; 28min; 56.00sec
19	-03deg; 20min; 10.00sec	32 deg; 28min; 19.00sec
20	-03deg; 19min ;40.00sec	32 deg; 28min; 19.00 sec
21	-03deg; 19min; 40.00sec	32 deg; 28min ; 0.00 sec
22	-03deg; 19min; 10.00sec	32 deg; 28min; 0.00 sec
23	-03deg; 19min; 10.00sec	32 deg; 27min; 0.00 sec
24	-03deg; 18min; 0.00sec	32 deg; 27min; 0.00sec
25	-03deg; 18min; 0.00sec	32 deg; 28min ;0.00 sec
26	-03deg; 18min; 20.00sec	32 deg; 28min; 0.00 sec
27	-03deg; 18min; 20.00sec	32 deg ;30 min; 0.00 sec
28	-03deg; 19min; 40.00sec	32 deg; 30 min; 0.00 sec
29	-03deg; 19min; 40.78sec	32 deg; 29 min; 59.78 sec
30	-03deg; 19min; 40.00sec	32 deg; 29 min; 59.00 sec
31	-03deg; 19min; 55.00sec	32 deg; 29min ;54.00 sec

**Table 1: Corner** Coordinates of PL11437 (Latitude/ Longitude; Datum ARC 1960; Zone 36 South)



PL11437 is further defined as follows:

- **Physiography:** PL11437/2020 is generally flat, with some granite and granodiorite outcrops, forming the high ground. The low ground is overlain by black clay soil (i.e., black cotton soil or it alicize mbunga brownish-lateritic soil, and/or sandy soil).
- **Human Settlements:** Igwamanoni Primary School and most of Igwamanoni village is located within the northern area of the prospecting license. The population of Igwamanoni village is estimated to be 2,000 people. Subsistence farming, cattle grazing and artisan mining activities constitute the main sources of the villager income. In the southeastern portion of the license, settlements associated with Kalole village are present.
- **Geology:** PL11437/2020 is located within inner arc of Sukumaland Greenstone Belt in the Lake Victoria Goldfields (24.93 Million ounces). The area is underlain by basaltic rock floating as a raft within granite and granodiorite. It is in this geological setting that Bulyanhulu Gold Mine (Barrick), Tulawaka Gold Mine (STAMICO) and Buckreef Gold Mine (Tanzania Gold Corporation/STAMICO) are located.

PL11437/2020 is located in the most productive gold area in Tanzania, the Nyanzian greenstone belts (2700Ma). Nyanzian stratigraphy contains eight belts and the Sukumaland Greenstone Belt, in which PL11437 sits, constitute one of those belts. This belt is composed of quartz veins in shear zones and fractures in the Nyanzian host rocks (e.g., Bulyanhulu, Buckreef). Mineralization is mostly interpreted as epigenetic, although for some deposits a syngenetic origin is possible. About two thirds of the gold production has come from shear zone-controlled mineralization.



## Nyanzian Geology

Eight distinct belts of Nyanzian stratigraphy have been recognised within the Tanzania Craton (Borg & Shackleton, 1997) (Figure 1). They extend through south-east Uganda, south-west Kenya and north-west Tanzania, and are collectively termed the “Lake Victoria Goldfields”, of which the Sukumaland Greenstone Belt is one. These belts comprise typical greenstone belt assemblages of mafic and felsic volcanic, banded iron formation (BIF) and associated low-grade metasediments. They occur as irregularly shaped lenses surrounded by granitoids, and are characterised by intense folding and structural repetition. The northerly greenstone belts contain abundant high-K dacites and rhyolites (e.g., the Migori greenstone belt in Kenya) and this has been interpreted as an indication of the presence of underlying continental crust (Ichang’i & MacLean, 1991).

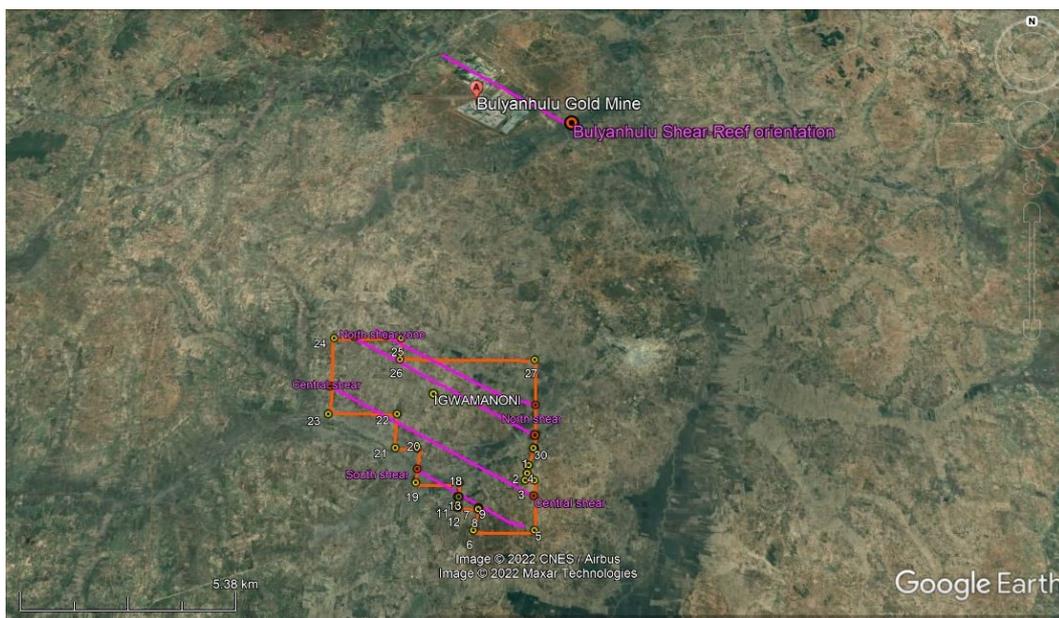
In contrast, the lower part of the stratigraphy of the southerly greenstone belts, located in northern Tanzania (e.g. the Sukumaland and Nzega greenstone belts), is dominated by tholeiitic basalts and lacks granite-derived sediments. Mapping of these greenstone belts (e.g., Migori, Sukumaland and Nzega terranes) was largely undertaken prior to the 1950’s, and systematic studies of their geochemistry and geodynamics are lacking. The limited data available suggest that the individual belts have distinct lithostratigraphic successions and have experienced different tectonothermal histories (Borg & Shackleton, 1997).

Ichang’i & MacLean (1991) studied the volcanic rocks within the Migori greenstone belt of southwest Kenya. They established two distinct submarine volcanic facies comprising proximal facies of flows, sills and breccias separated laterally by a region of intercalated tuffs and sediments, and interpreted that they originated from different volcanic centres. Based on litho-geochemistry, the bimodal distribution of the volcanic rocks at the two centres was inferred to be the result of the eruption of a distinct mafic tholeiitic and felsic calc-alkaline magma series, rather than mafic and felsic modes within a single series. The subaerial eruption of high-K dacites and the emplacement of geochemically related granitic plutons succeeded this. The southerly greenstone belts, in Tanzania, are dominated by tholeiitic and calc-alkaline volcanic rocks, but lack the extensive high-K units observed in Kenya.



## Geology of Bulyanhulu Mine (8km of PL11437)

PL11437 is 8km south of Bulyanhulu and, based on IP and magnetic survey data, has similar mineralization as well as a similar size. At Bulyanhulu, the area of underground mining has the surface area of ~10km<sup>2</sup>, which is equivalent to the area with the greatest potential on PL11437. Bulyanhulu targets 2 reefs whereas, PL11437, based on IP and magnetic survey data, has the potential to host 6 reefs consisting of disseminated sulphides, which give the subsurface geophysics signature. This is primarily evidenced by desktop analysis and secondary data analysis of IP, magnetic survey data, and geochemical data. The subsurface geophysics characteristics i.e. IP chargeability displayed at PL11437/ 2020 resemble that reported at Bulyanhulu and the graphitic argillite intersected on some of drillholes drilled by Mawarid Mining Tanzania Ltd are similar to those reported on reef one at Bulyanhulu Gold Mine.



**Image 3:** Bulyanhulu's reef strikes NW-SE as does the shear zone for PL11437

Bulyanhulu is an underground, narrow vein, trackless mine with a conventional gravity, flotation and carbon-in-leach (CIL) processing plant that has been in production since 2001. Mineral reserves are accessed via a surface vertical shaft and an internal ramp system.



The Bulyanhulu deposit is a long, steeply dipping orebody which extends over a 4km strike length and to a depth of 2,000m below surface. The ore zones vary from less than 1m to 5m thick.

Bulyanhulu is a structurally controlled, shear-hosted, Archaean Greenstone type gold deposit comprising a sequence of mafic and basaltic volcanics overlain by a laterally extensive sequence of argillaceous sediments (i.e., mudstones and shales). Within the mine area, lithological units generally strike at 315-320° and dip at 80-85° in a north-easterly direction.

Reef horizons are generally conformable with stratigraphy. The main orebody, Reef 1 (accounting for 75% of Bulyanhulu reserves by ounces), is hosted within an argillaceous unit situated between the footwall mafic and hanging- wall felsic units. The unit (which is commonly graphitic) is thickest (25m) in the southeast corner of the property and pinches out in the north-west.

Mineralisation is hosted within a series of steeply dipping north-westerly striking quartz reefs (zones), characterised by the presence of sub-continuous lenses and veins of distinctive black quartz concentrated in narrow shear zones. Gold generally appears as free grains on the margins of chalcopyrite and locked within pyrite grains. Free gold occurs in addition to the gold-silver alloy, electrum. Reef 1 consists of a series of black quartz-sulphide veins situated within a distinct shear zone along the contact between the footwall basalts and hanging wall felsic units.

The reef extends for approximately 3km from east to west. The black quartz veins contain coarse pyrite (the primary sulphide), chalcopyrite and pyrrhotite. Reef 0 (accounting for 5% of Bulyanhulu's reserves by ounces) consists of a narrow, multi-reef quartz vein shear zone (< 1m in width) and is a narrow multi-reef structure composed of Reef 0a and Reef 0b, which splays off Reef 1 to the north-west. Reef 2 (accounting for 19% of Bulyanhulu's reserves by ounces) occurs 500m north and parallel to Reef 1 and consists of a series of five narrow, high grade, discontinuous ore shoots averaging less than 1m in width. Combined shaft capacity is 5,000-5,500tpd although ore production is capped by the process plant at 3,000tpd (c 1.1Mtpa) from which two saleable products are derived – doré bars (from the gravity and CIL circuits) and copper concentrate. Gold recovery is c 92.6%, while copper recovery is c 95.7% and silver recovery 78.1%.



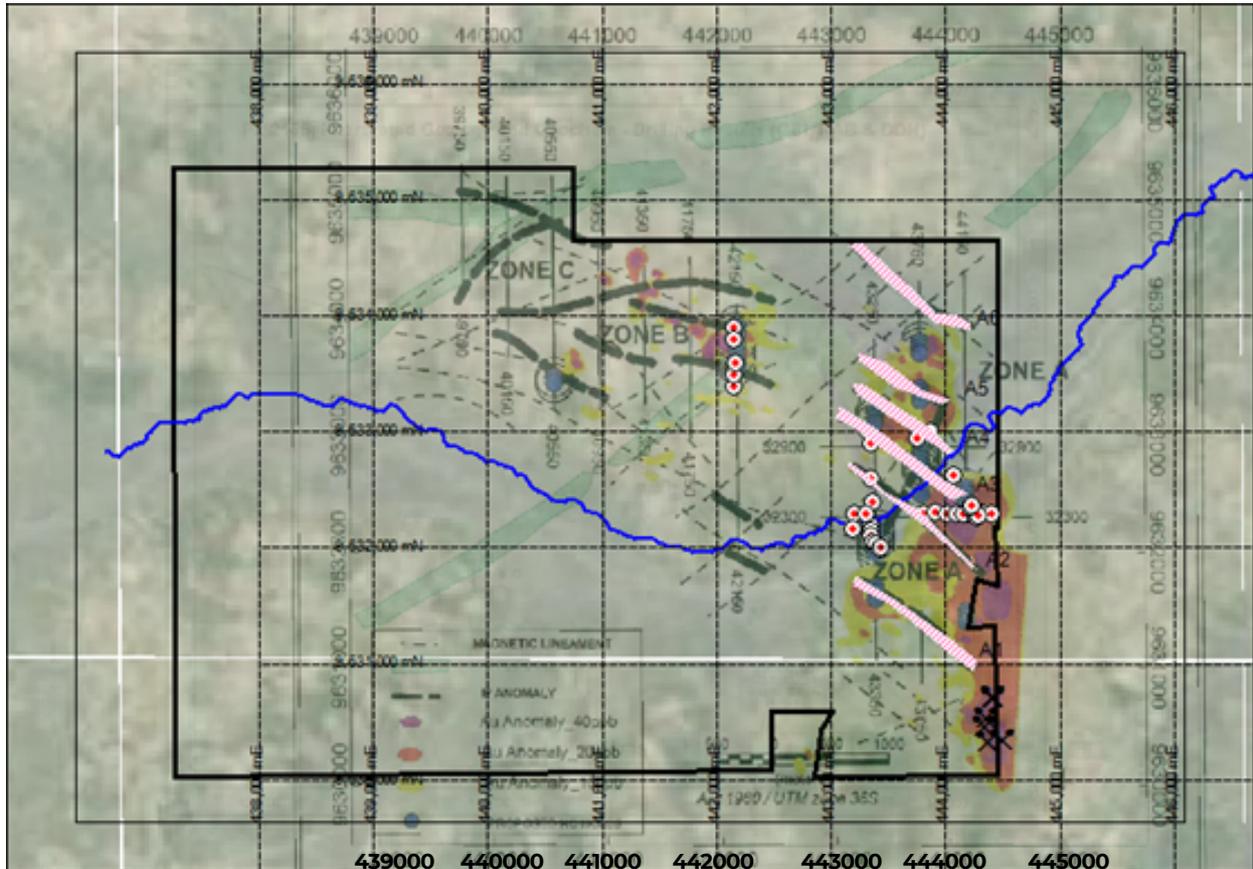
The Bulyanhulu concentrate is a low-grade copper (13-16% Cu), high grade gold (200-240g/t Au) and silver (150-200g/t) concentrate that requires processing in a copper smelter with a gold refining circuit.

## **PREVIOUS FINDINGS AND WORK**

Exploration and artisan mining activities have occurred in the area for over a decade with promising indicators. Yet, there are clear exploration gaps that suggest with further study the value and viability of the project would increase significantly. TANCAN, Barrick, and Mawarid Mining are the primary corporate entities that have conducted exploration in the general area, along with artisanal miners.

The following exploration activities have been conducted:

- Geochemical soil analysis by Barrick & TANCAN, ~2008 (PL11437 and surrounding area)
- Induced polarization (IP) by Mawarid Mining, ~2013
- Magnetic survey by Mawarid Mining, ~2013
- RC drilling with metallurgical analysis by Mawarid Mining, ~2013
- DD drilling with metallurgical analysis by Mawarid Mining, ~2013



**Image 4:** Geophysical anomalies (6 chargeable bodies) overlain on soil geochemistry. Note that Mawarid drill holes (red dots) do not consistently overlap with areas that have strong readings for potential gold.

The central finding from the secondary data analysis is that, based on GPR-IP data, six (6) chargeable bodies were identified crossing three (3) delineated shear zones running NW-SE, suggesting quartz veins associated with disseminated sulphides embedded in Andesitic Basalt. Shear zone trending NW/SE coincides with IP chargeability anomaly. The magnetic data reveals NE/SW trending lineament (in places coincides with dolerite dykes). There does not appear to be a single mineralized structure but multiple reefs. These multiple reefs have potential for high-grade gold while the areas between the reefs may contain bifurcating auriferous quartz veinlets which could generate low grade gold mineralization envelope at the edge of shear zone.

## TANCAN and Barrick Exploration Ltd. (2008)

A soil geochemistry survey, done by TANCAN and Barrick Exploration Ltd, included an area covered by PL11437/2020. This survey delineated a geochemical soil anomaly, with a strong gold anomaly signature in the eastern area of the license. The patches with gold anomaly signatures display a northwest to southeast trend, cover approximately 10 sq km. in land mass. In 2021, Barrick was able to acquire the license that immediately abuts the western boundary of PL11437/2020.

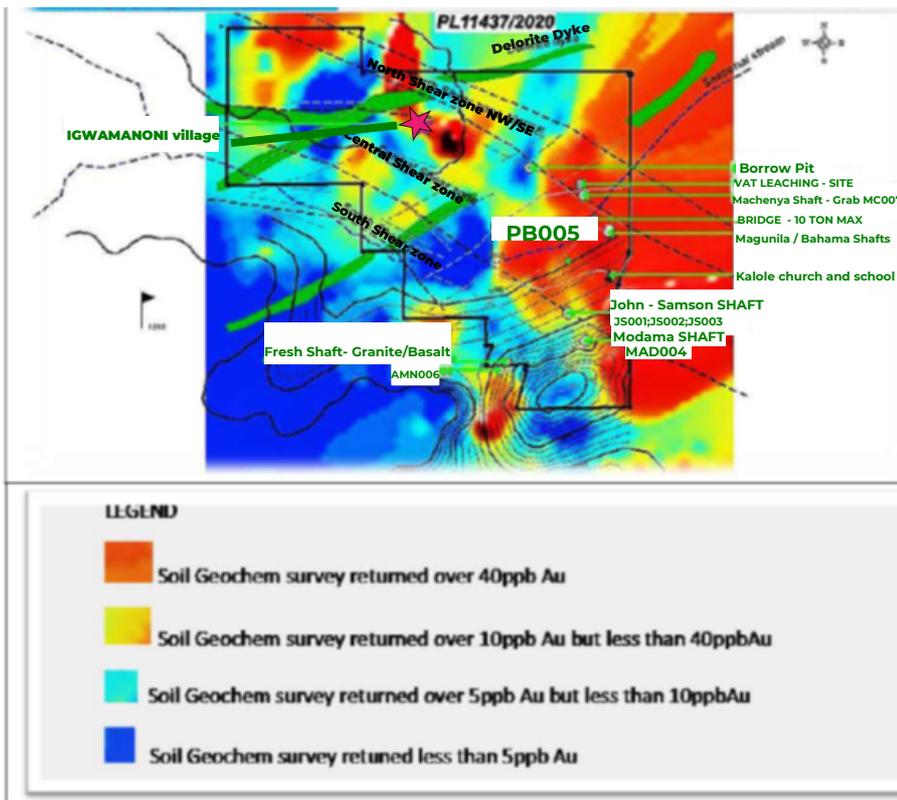
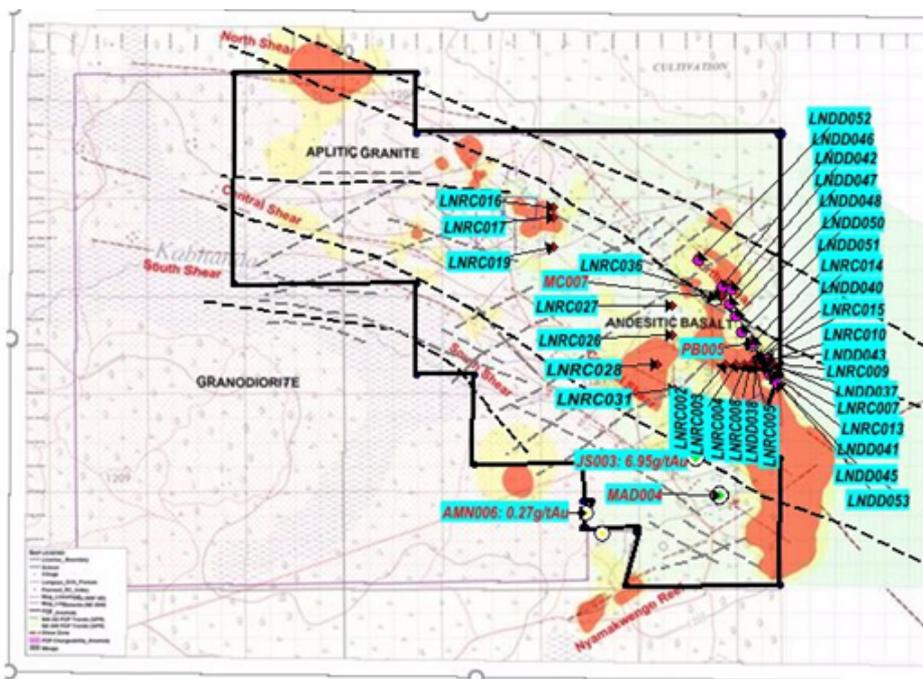


Image 5: Map from the geochemical survey results

## Mawarid Mining Tanzania Ltd (2013)

Data collected from artisanal pits, magnetometer readings and IP surveys conducted by Mawarid mining detailed a shear zone that trends from northwest to southeast.

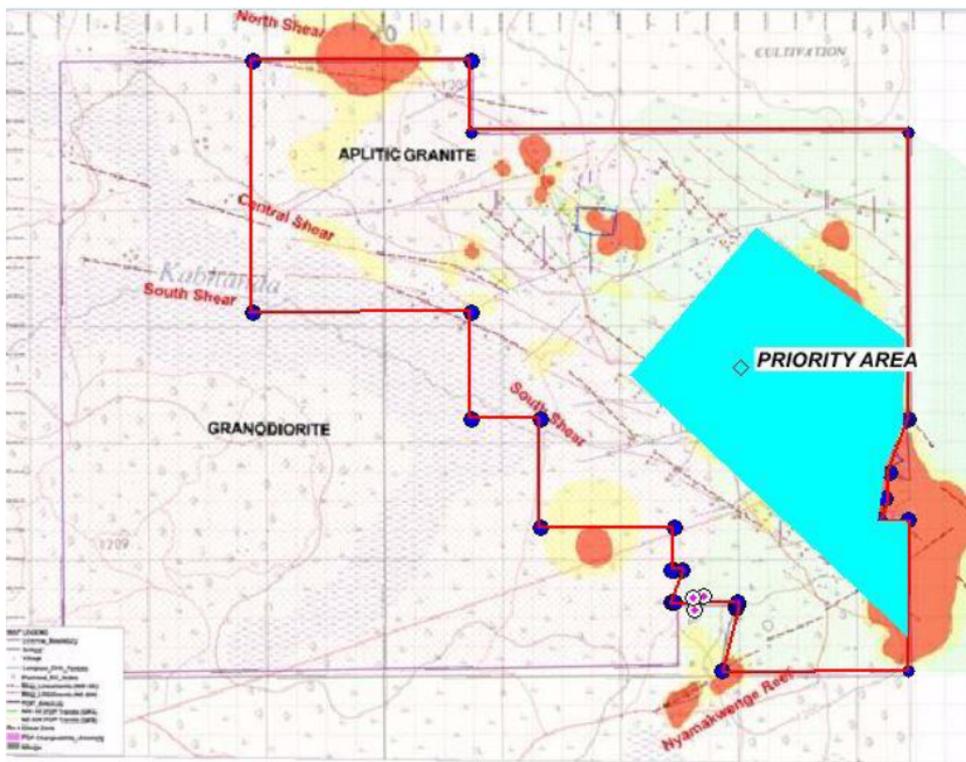
The shear zone is striking at approximately  $320^{\circ}$  -  $330^{\circ}$ , dipping steeply toward northeast. Hence the optimal drilling azimuth, which was not utilized by Mawarid, would have been  $230^{\circ}$  -  $240^{\circ}$ . The diamond drilling program used  $240^{\circ}$  Azimuth, but again, the drilling pattern was not focused enough to test adequately the geometry of mineralization against shear structures and IP anomalies. Mawarid's erroneously assumed there was a single mineralized structure that trended from NE to SW (perhaps due to an anticlinal limb). Based on the drilling program, a conservative estimate of 200,000 ounces of gold at a grade of approximately 0.8g/tonne was established. The alternative conceptual model, based on GPR-IP data, is that the 6 chargeable drill holes. bodies that cross the 3 delineated shear zones running NW-SE are quartz veins embedded in Andesitic Basalt. This model guides the current exploration strategy.



**Image 6:** Geophysical anomalies overlain on soil geochemistry do not coincide with Mawarid

## PGP Mapping and Fieldwork Conducted on PL11437

Based on the analysis of the secondary data and preliminary field visit in July 2021, in October 2021, a field crew headed by geologist Mr. Yusuf Karim conducted a site visit. PKG Directors Dr. Mary Stith and Ms. Christina Kessy also participated as part of the team that conducted the exercise. The following area was prioritized (approx. 10 km<sup>2</sup>) in order to examine the 3 delineated shear zones, further critique the conceptual model of Mawarid, cover area that was not fully explored by Mawarid, and assess the similarities between the mineralization of PL11437 and Bulyanhulu Mine.



**Image 7:** Priority area for July 2021 and Oct 2021 site visit



The specific aims of the filed visits were to:

- Assess the potential for higher grade gold
- Further develop conceptual site model – location, volume, depth and grade of gold deposits including alluvial sources
- Engage local government and community
- Place boundary markers
- Ground truth findings from the desktop analysis

In service of these objectives, the following activities were carried out:

1. Regolith mapping, which identified the following lithological units:
2. Mapping Subsurface Geology
3. Paleo Basin Mapping to assess the potential to host alluvial gold
4. Collection of Grab Samples
5. Testing of Grab Samples
6. Meetings with Regional and Local Government as well as Village Leaders

1. Regolith mapping, which identified the following lithological units:

- (i) Black cotton soil (Swahili: mbuga) is a black clay soil, which constitute the top part of the soil profile in low land
- (ii) Reddish- brown lateritic soil, with or/and without pisolith, which is the normally lateritic soil that is well developed on top of basaltic-bedrock. (Due to the variation of the water table, during wet season and dry season, the ferricrete or rather indurated laterite layer is formed. The ferricrete is made up of angular to sub-angular rock fragment of diversified origin and quartz as a framework, floating within reddish -brown clay cemented together by ferruginous material).
- (iii) Sandy soil. This consists mainly of quartz- sandy, and it is well developed on top of granitoids



## 2. Mapping Subsurface Geology

Based on information gathered from artisan's pits and shafts, the soil profile from top to bottom can be divided in sub units as follow:

### **A. Area overlain by Black Cotton Soil**

- (i) Black cotton soil, which appears to vary from 3 to over 10 meters deep
- (ii) Black cotton soil intercalated with calcrete or calcareous nodules or fragments
- (iii) Rubble/ Gravel layer- extending a few centimeters to a couple of meters, consists of sub angular to angular quartz pebbles, boulders and rock fragments of diversified origin floating within clayey sand material. This is the main target strata for those looking for alluvial gold
- (iv) Saprolite: Oxidized, weathered bedrock, that includes clay material. Some features of bedrock are well preserved

### **B. Area overlain by brown, lateritic soil**

- (i) Reddish brown lateritic soil- might vary from few meters to over ten meters, with or without ferruginous pisolith or from the top of the indurated-ferricrete layer, consisting of angular quartz fragments and various rock fragments floating within clay matrix cemented together by ferruginous matter
- (ii) Normally this layer is underlain with yellowish clayey material measuring a few centimeters to a couple of meters
- (iii) Rubble /Gravel layer measures few centimeters to few meters. This can host alluvial gold
- (iv) Saprolite: Weathered bedrock, with clay material. Some features of bedrock are well preserved
- (v) Bedrock- Basaltic rock. Reliable Structural data might be obtained from this unit

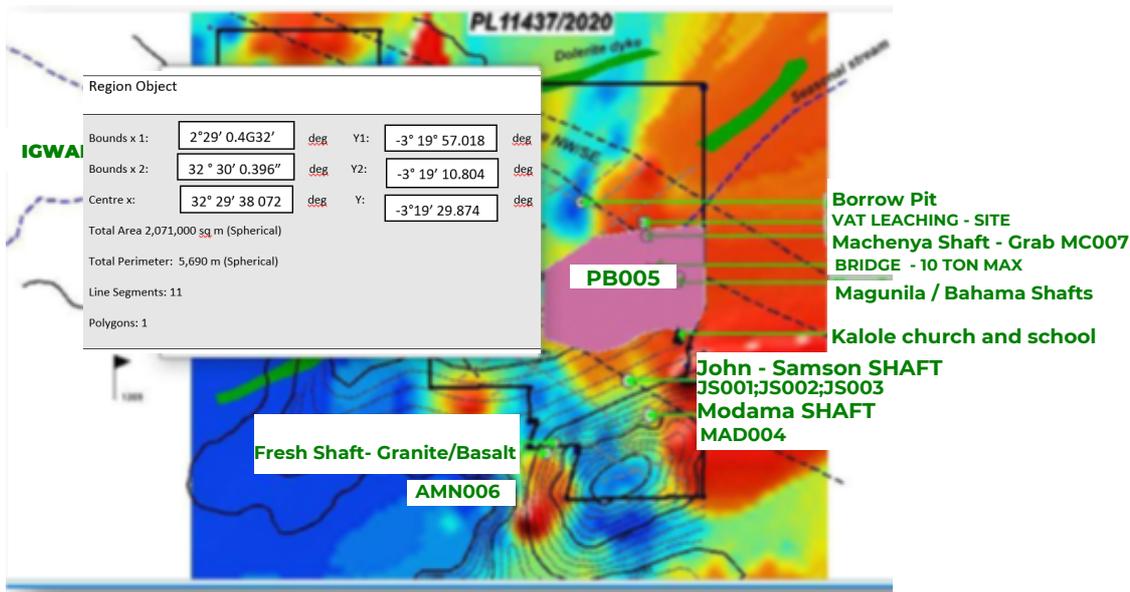


### **C. Area overlain by sandy soil**

- (i) Sandy soil measures few centimeters to a meter might develop on top of granite and granodiorite
- (ii) Followed by thin layer of rubble / gravel layer of Saprolite: Clay material made up of weathered feldspar is a typical feature of granitoid saprolite
- (iii) Granite- Granitoid bedrock

#### **3. Paleo Basin Mapping to assess the potential to host alluvial gold**

Artisanal miners have been mining gold within the vicinity of prospecting license number PL11437/2020 for decades. Their main target has been a shallow, poorly sorted auriferous rubble-gravel horizon, deposited at a depth ranging from 15m to 20m. The presence of closely spaced fresh and abandoned shafts and pits surrounded by piles of waste derived from the shaft, and screened angular to sub rounded gravel and quartz pebbles/ rubbles, is clear sign of mining and beneficiation activities which have been ongoing in this area, often illegally. These are primarily found around the village of Igwamanoni.



**Image 9:** Mapping of potential paybed based on findings from Oct field study

#### 4. Collection of Grab Samples

During the mapping exercise, seven grab samples were collected, and submitted to African Mineral Geosciences Center (AMGC) laboratory for analysis. Sampling was based on accessibility to artisanal shafts that were abandoned and active. Samples JS002 and JS003 were collected from a 20-25m active shaft and reflect the ore body and tailings respectively. JS002 was collected from a 20-25m deep shaft and corroborates the hypothesis that there is high grade gold on PL11437 and Mawarid's finding of 0.8/g tonne was underestimated.

#### 5. Testing of Grab Samples

The seven (7) grab samples were delivered to African Mineral Geosciences Center in Dar es Salaam, Tanzania for analysis. Sample JS003 corroborates the working hypothesis about high grade gold on the license (which was based on previous conversations with artisanal miners in the area).

JS003 further suggests that areas outside of the exploration zone of Mawarid Mining hold high grade gold deposits. Sample JS002 indicates that further beneficiation of tailings could yield economically viable returns. Samples JS001, MAD004, PB005, AMN006 and MC007 reflect barren rock that was discarded as waste from mined material. The assay results are presented below in Table 2.

The grab samples indicate gold deposits from artisanal sources at a grade as high as 6.95g/tAu in areas that were not previously explored. This grade is nearly ten times the grade found in Mawarid's previous exploration work.

AMGC- CHEMICAL LABORATORY REPORT -PL11437/2020				
Sample ID	Latitude	Longitude	g/t Au	Description
JS001	-03deg; 20min; 07.50sec	032deg; 29min; 32.10sec	< 0.01	Brown-stained quartz rock chips
JS002	- 03deg; 20min; 07.50sec	032deg; 29min; 32.10sec	<b>0.87</b>	Tailings
JS003	-03deg; 20min; 07.50sec	032deg; 29min; 32.10sec	<b>6.95</b>	Pulverized ore ready for beneficiation
MAD004	-03deg; 20min; 20.30sec	032deg; 29min; 40.00sec	< 0.01	Brown-stained rock fragment derived from approximately 15m deep shaft.
PB005	-03deg; 19min; 29.60sec	032deg; 29min; 50.90sec	< 0.01	Quartz pebble derived from artisan alluvial gravel-rubble leftover pile.
AMN006	-03deg; 20min; 33.10sec	032deg; 29min; 01.60sec	<b>0.27</b>	Quartz rock chips, derived from a pile of sorted left over located within a cluster artisan pits and shafts.
MC007	-03deg; 19min; 14.80sec	032deg; 29min; 38.60sec	< 0.01	Dark green chloritized rock chip, derived from Machenya Shaft

**Table 2:** Results from AMGC analysis of grab samples from PL11437



## 6. Meetings with Regional and Local Government and Village Leaders

Introductory meetings were convened with the Head of the Regional Mines Office, Head of the Village Council, Head of the District Council, and Head of the Women's Village Council. The interest and support for PKG was unanimous.

## **FINDINGS**

The specific aims of the filed visits were to:

- Assess the potential for higher grade gold
- Further develop conceptual site model – location, volume, depth and grade of gold deposits including alluvial sources
- Engage local government and community
- Place boundary markers
- Ground truth findings from the desktop analysis

In service of these aims, the following activities were conducted:

- 1.Regolith mapping, which identified the following lithological units:
2. Mapping Subsurface Geology
- 3.Paleo Basin Mapping to assess the potential to host alluvial gold
- 4.Collection of Grab Samples
- 5.Testing of Grab samples
- 6.Meeting with local and regional Government and village leaders

The potential for higher grade gold was evidenced by sampling from artisanal shafts in areas that have yet to be previously explored, suggesting the potential for an increase in grade and tonnage. These findings further confirmed the proposed conceptual model based on GPR-IP data six chargeable bodies were identified crossing 3 delineated shear zones running NW-SE, suggesting quartz veins embedded in Andesitic Basalt.

Observations from the field work and mapping exercise were as follows:

- PL11437/2020 seems to have potential of hosting both, alluvial gold and quartz reef associated gold mineralization, similar to that found at Bulyanhulu gold mine
- The alluvial gold has been mined within paleo basin, located along the banks of seasonal stream trending approximately East West, right across the license area.



- The artisan miners have been targeting rubble-gravel horizon (pay bed), estimated to be intersected at 15 -20m in depth, however, in places, they have also mined hard rock auriferous quartz veins
- Shallow water table intersected at the site has been more of hindrance to miners who intends to carry out mine operations beyond depth of 15m, which is a limiting parameter for artisanal operations and require more sophisticated mining techniques
- The lateral extent and the thickness of the pay bed cannot be conclusively determined, however, based on the closely spaced artisan shafts, it is clear, the pay bed (rubble gravel horizon) has some predictable lateral extension and its thickness might vary from few centimeters to 2m, for estimation purposes the average thickness might be assumed to be 0.5m
- The pay bed could fairly be assumed to host gold at a grade of 0.5g/tAu. and the alluvial gold could be mined by open pit operation, followed by gravity method as the means of gold beneficiation. Normally carried out by screening off the quartz pebbles and other wastes, associated with gold, and there after separating the gold from other heavy minerals by using its remarkable huge density
- Based on field observations, and narratives from artisan miners, there is a significant chance of finding a substantial amount alluvial gold within the rubble-gravel horizon
- Recent field excursion has confirmed mineralization in the area that was not drill tested by Mawarid Mining. JS003 returned 6.95g/tAu from rock chips derived from an artisan pit, 15-20m depth
- Based on the July and October field study, PL11437/2020 has the potential of hosting alluvial gold in the paleo gullies, valleys, and basins. This has been a main target of artisan miners for decades. Pick and shovel mining, targeting rubble zones followed by manual panning and mercury amalgamation has been method of choice for mining and beneficiation, of late. However, VAT leaching, making use of cyanide has been adopted



Based on the observations, the following conclusions are warranted:

- Additional evidence pointing to a high potential for economically viable grade gold deposits at PL 11437 was gathered from samples taken from artisanal shafts and geophysical exploration
- In addition to gold deposits, evidence was gathered indicating the presence of alluvial gold
- PKG's conceptual site model continues to be applicable
- The local government and community are in favor of PKG's efforts to date, which further represent the social and political suitability of PL11437 for a long-term mine

Observation and findings justify the need for additional systematic exploration to refine knowledge of the resource in terms of volume, depth, grade and location.

## **NEXT STEPS**

The overarching goal is to develop a cost effective, ethical, and equitable exploration strategy to establish the techno-financial parameters and ESG requirements for a full modular production mine. In addition, the exploration strategy engages the local community in order to prepare the social context for developmental shifts associated with a long-term, stable mining project.

Significant progress was made in fulfilling the aims established during the mapping and field survey. Higher grades of underground gold were determined and the potential for alluvial mining was also established. PKG's conceptual model is well-grounded, logical, and will continue to guide further exploration work. The following findings have been developed to guide future testing:

- The mineralization and potential of PL11437/2020 is similar to that of Bulyanhulu Mine
- There is potential for economically viable alluvial mining
- The grade of underground gold found in the 6 reefs exceeds 0.8g/tAu and has potential for an economically viable underground deposit to support a full production modular mine



- The following next steps are proposed to guide the next step in the exploration strategy:
- Detailed mapping, making use of artisan pits, and historical data should be carried out over the entire license area
- A total of twenty exploratory pits (approximately 3-4 pits per the 6-reef area) should be made on the south; central and north shear zones. This is sufficient to ascertain the thickness of overburden, presence of rubble zone and to determine if the rubble zone does consist of gold and of what grade.
- Measure dip and strike from the saprolite and develop a drilling plan meant to determine resource

Ideally, this exploration work would commence before the rainy season in mid-March 2023. Estimates for this work are being gathered as the field team and timeline are being finalized.

Moreover, in keeping with the social and political sensitivities of its approach, PKG should use exploratory methodology and mine development that results in the minimum of environmental disturbance and a maximum of climate change adaptation. Once the above work is completed, PKG is confident that the value of PL11437/2020 will continue to increase and the development trajectory will be refined.