MANDINGOLD MINING SARL

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REPORT ON GEOLOGICAL EXPLORATION:

ANNUAL REPORT-2022

Namarana Exploration Project

PR 706/15: 42 km^2 Concession

Concession area: 42 sq. km
Locality: Namarana
Region: Koulikoro
Country: Mali

Prepared by: Supreme Minerals Corporation

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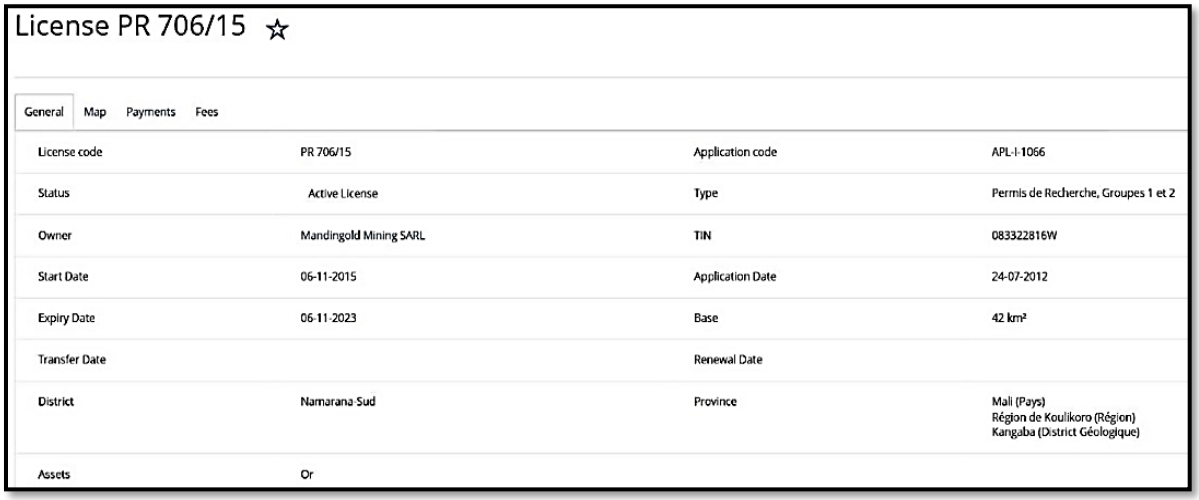
NAMARANA GOLD PROJECT
(PR 706/15)

1. INTRODUCTION

1.1 Location

MANDINGOLD has been engaged in conducting exploration to identify potential areas with gold deposits within the Namarana 42 sq. km concession (PR 706/15), located near Namarana Village, Koulikoro region, Mali. This concession was granted on 06-11-2015 and is valid till 06-11-2023. An application for Mining Lease is currently pending for approval. Namarana is about 110 km towards south west of Bamako. The nearest town is Kouremale, located on the Mali-Guinea border.

Figure 1. Extract from the Mali cadaster portal showing the concession details


License PR 706/15 ☆

General | Map | Payments | Fees

License code	PR 706/15	Application code	APL-I-1066
Status	Active License	Type	Permis de Recherche, Groupes 1 et 2
Owner	Mandingold Mining SARL	TIN	083322816W
Start Date	06-11-2015	Application Date	24-07-2012
Expiry Date	06-11-2023	Base	42 km²
Transfer Date		Renewal Date	
District	Namarana-Sud	Province	Mali (Pays) Région de Koulikoro (Région) Kangaba (District Géologique)
Assets	Or		

Figure 2. Extract from the Mali cadaster portal showing the outline of the concession.

1.2 Health, Safety and Environment

No safety incidents were reported during the year. Personal Protective Equipment (PPE) were provided to all team members during the fieldwork. Workers and geologists were supplied with enough water to stay hydrated and one medical aid kit was taken to the field daily. Safety talks occurred regularly before the start of work. Overall, adequate precautions were implemented to ensure the safety of everyone involved.

1.3 Summary of Exploration during the Year

A brief summary of the exploration carried out during the year 2022 is provided in table-1.

Table 1. Summary of exploration carried out during the year 2022.

Sl. No.	ACTIVITY	QUANTUM
1	Soil sampling	2,730 samples
2	Auger drilling	35 bore holes (1,134 m) in laterite areas and 182 bore holes (3,202 m) in Alluvial Gold Project area
3	Core drilling	3 Bore holes (605 m)
4	Geochemical sample preparation and analysis	2,730 soil samples, 1,204 Auger samples
5	Review of the soil sample data	Desk top review followed by field verification
6	Pitting for Alluvial Gold Project	198 Pits in the Alluvial Gold Project area
7	Review of Auger bore hole sample data of Alluvial Gold Project	Desk top review followed by field verification
8	Review of RC bore hole sample data	Desk top review followed by field verification
9	Geotechnical and litho-structural logging of DC borehole and core photography core photography	All three DC bore holes
10	Mapping of ASM activities within and around the concession	As required

2. SUMMARY OF EXPLORATION

2.1 Field geological mapping

Geologically the concession forms the northern extension of the Siguiri basin of the Paleoproterozoic Birimian belt. This area is constituted by a thick sequence of metasediments, mostly phyllite and carbonaceous phyllite with thin bands of greywacke and quartz wacke. Metavolcanics are rarely observed. These are overlain to the north by the Neoproterozoic cover sediments of the Taoudeni basin. Geomorphologically the concession forms a nearly flat terrain with extensive laterite capping whereas the Taoudeni sequence occurs as a major plateau to the north. The area is part of the drainage basin of the Kokoro river, a major tributary of Senegal river. Balanko, a tributary of Kokoro flows across the concession. Artisanal mining pits and shafts are noticed at a few places within the concession.

2.2 Mapping of Quartz veins

During the months of May and June, 2022, a program was conducted to map the quartz veins within the concession. This led to the identification of 19 outcrops with quartz veins (figure 3). In some places, quartz veins were found in broken fragments, scattered across the surface.

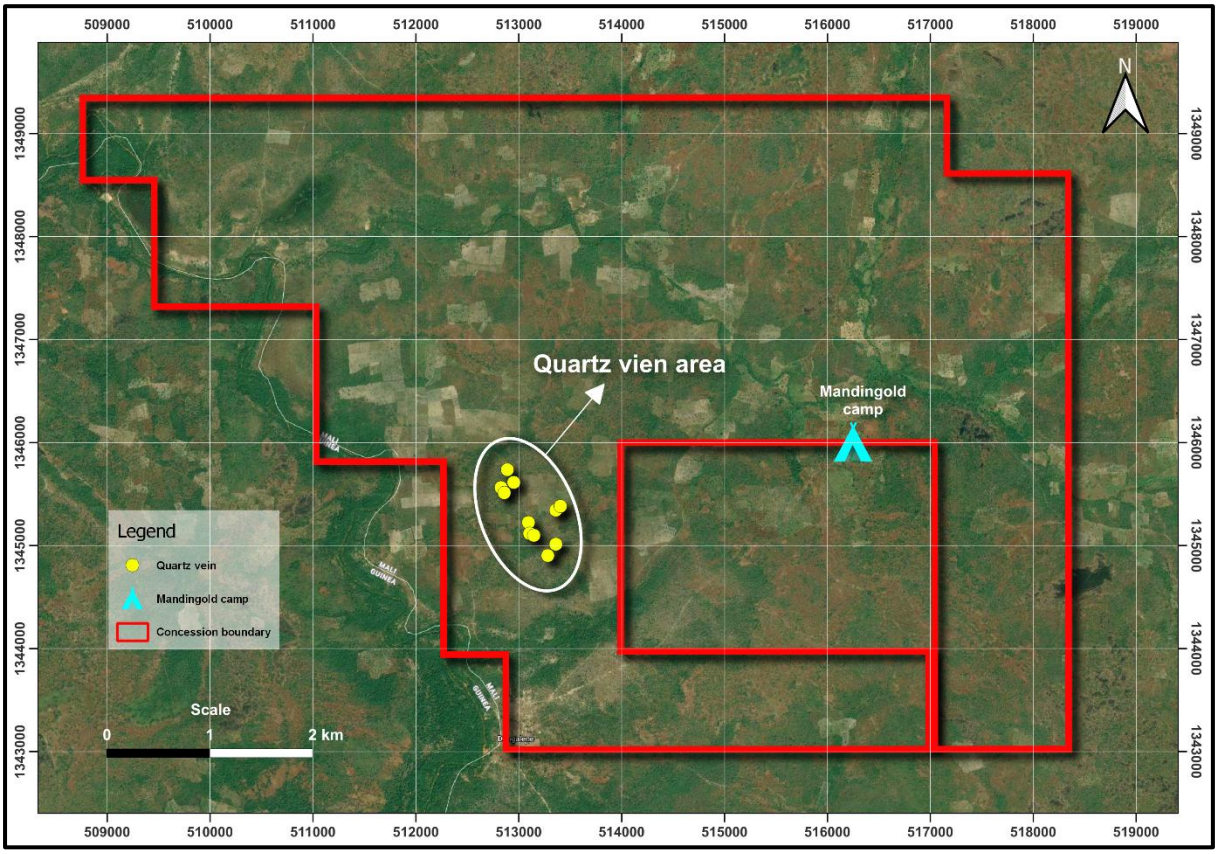


Figure 3. Map showing the locations of major quartz veins within the concession.

Figure 4. Field photograph showing the quartz vein outcrops

Figure 5. Field photograph showing the fragmentary outcrops of quartz veins.

2.3 Soil Sampling

The area was divided in to 4 smaller blocks. Among these, the NNES block was taken up for soil sampling in April 2022. This was followed by the NSWS and NSES blocks. A total of 1,047 soil samples were collected from the south-western and south-eastern blocks with a grid of 100 m x 100 m. Furthermore, 100 soil samples were resampled from the northern part of the concession. Altogether, a total of 2,730 samples were collected from the NNES, NSWS and NSES blocks, as indicated in the table 2.

Table 2. Table showing the details of soil sampling program.

Block	Total Number of samples
NNES	1,328 Soil samples (completed in February)
NSWS	121 Soil samples (In February)
	427 Soil samples (completed in March)
NSES	620 Soil samples (completed in March)
NNES	100 Soil samples resembled (Completed in April)

2.4 Soil sample preparation

Sample preparation was carried out at camp during the month of April 2022. A total of 2,730 soil samples were prepared and submitted to the lab for FAA and MEA analysis.

Figure 6. Sample preparation in the camp.

2.5 Auger Drilling

An Auger drilling program was carried out from 31st May 2022 to 10th June 2022. During this program a total of 35 bore holes were drilled for a total of 1,134 meters.

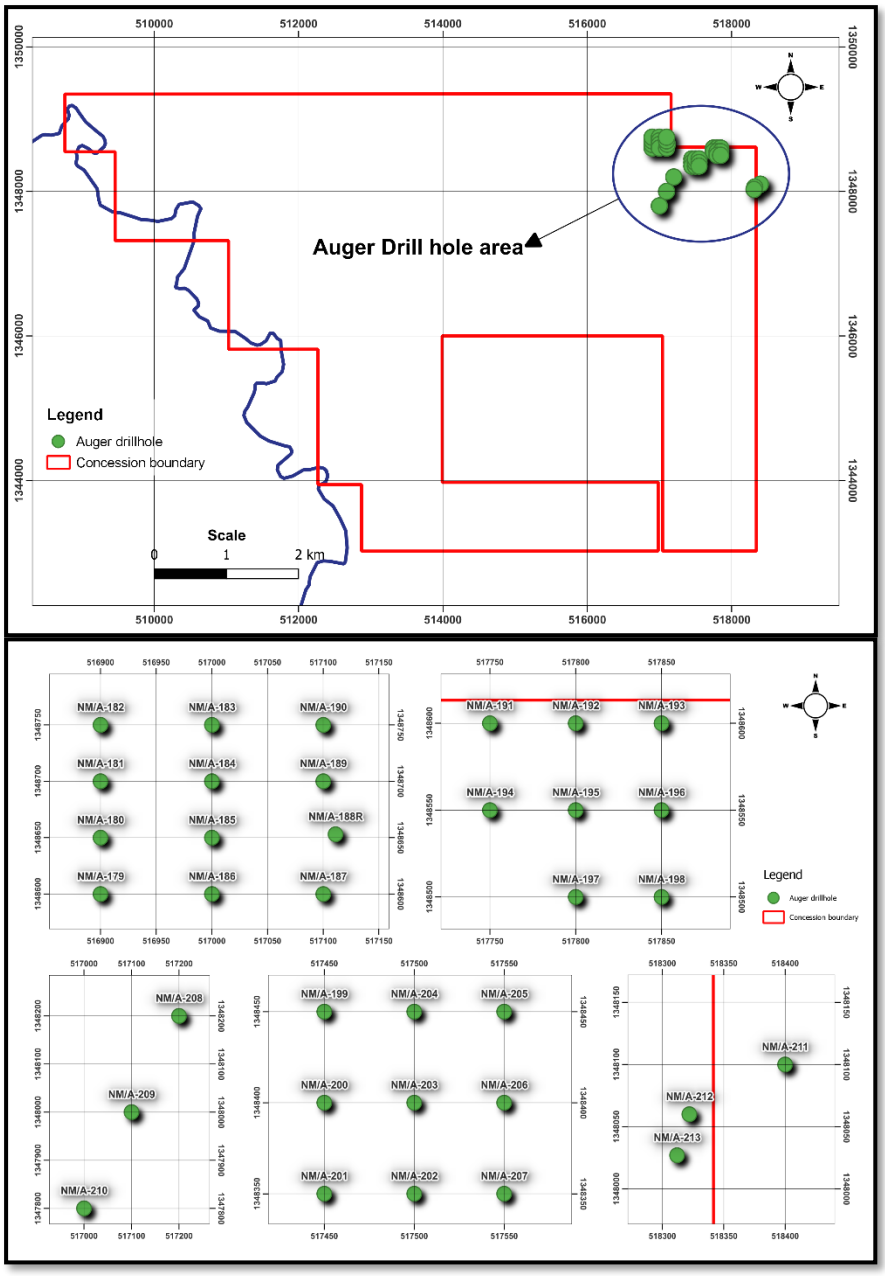


Figure 7. Map showing the collar locations of the Auger holes

Figure 8. Field photograph showing the auger drilling activities.

2.6 Auger sample preparation

A total of 1,204 Auger samples has been prepared. Blank and duplicate samples were inserted as per the scope of work. All prepared samples were packed and labeled with the unique sample code, and sent for the FAA and MEA analysis in Bureau Veritas laboratory, Bamako (Table-3).

Table 3. Auger sample details.

Total Drill Holes	Total Number of samples collected	Total number of samples prepared	Total (Blanks and Field Duplicates)
35 (Auger)	1,134	1,204	70

Figure 9. Preparation of Auger samples

Figure 10. Samples prepared and ready for dispatch

2.8 DC Drilling

A total of 3 DC-Drill holes (C-02 to C-04) for a total depth of 605.00 meters were completed in the 3rd quarter of 2022. All the core samples were duly labeled and checked by the on-site geologist. All the collected cores have been kept in a designated core storage area in the camp.

Table 4. Details of core drilling carried out in the concession.

HOLE ID	DATE OF COMMENCEMENT	DATE OF CLOSING	TOTAL METERAGE (M)
C-02	16-08-2022	26-08-2022	211.00
C-03	29-08-2022	09-09-2022	194.00
C-04	13-09-2022	20-09-2022	200.00
Total			**605.00**

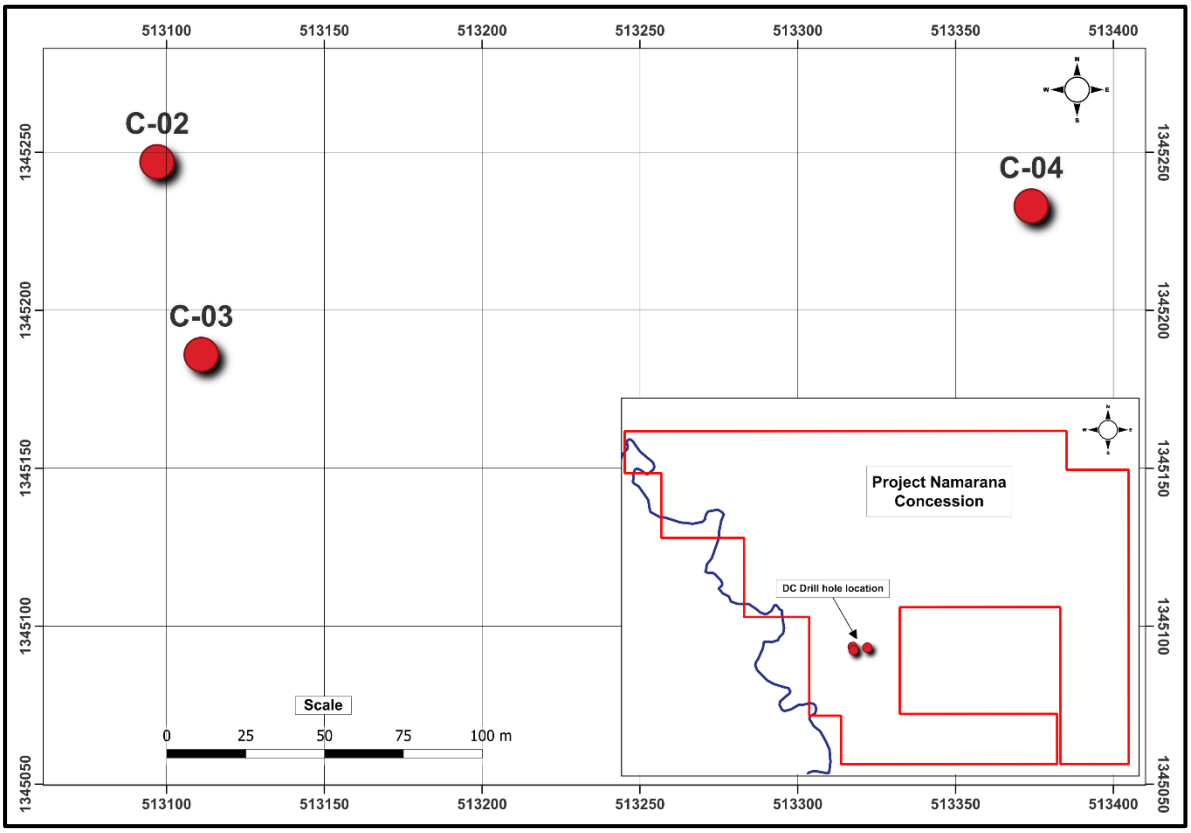


Figure 11. Map showing the location of DC boreholes.

Figure 12. Core drilling activities in the field.

Figure 13. Core photographs.

2.9 Placer gold exploration

Exploration for Placer gold within the concession was initiated in the month of September 2021 and could not be completed due to heavy rainfall at that time. The work was resumed in the month of October 2021. All major river channels were mapped initially using Google Earth. A number of potential placer gold occurrence were delineated including the areas targeted by the Chinese and local miners along the Balanko river.

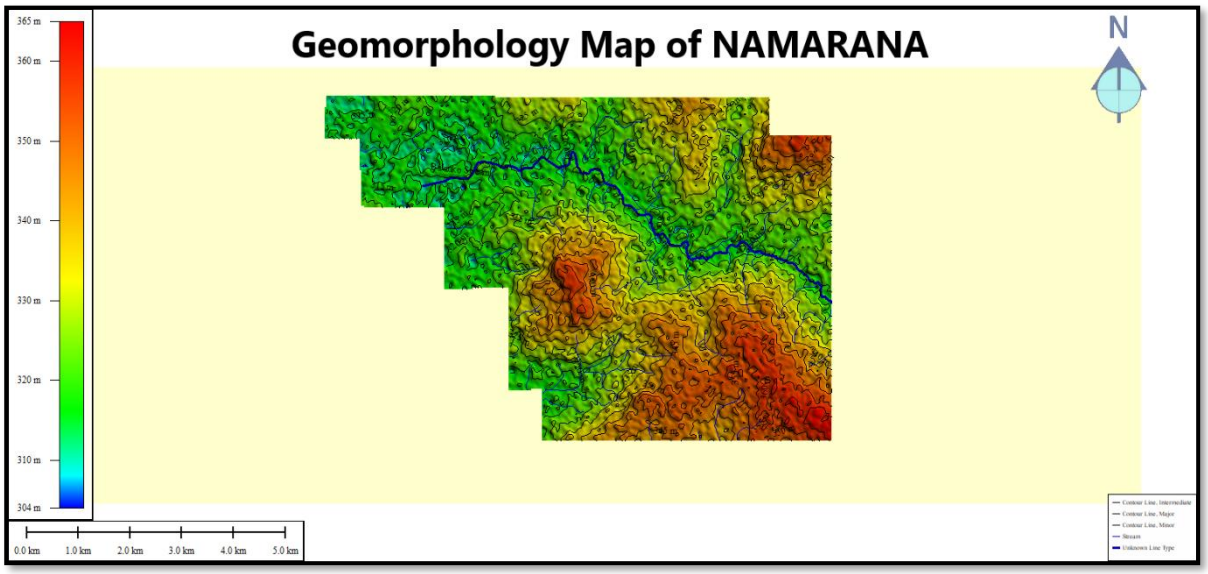


Figure 14. Terrain map of the concession.

Information like illicit workings catchment areas, river terraces and geometry of the meanders along the river channel etc., were taken into consideration. Study of the tailings left out by the illicit miners provided useful information on the nature of the host gravel beds and the size of the pebbles. Based on surface mapping, the most potential areas for placer mineralization have been demarcated as shown in the map (figure 15).

2.9.1 Pitting for Placer gold

Pitting was taken up within the target zones. Two types of pits were made. Shallow pits (1 m x 1 m x 1 m) and Deep pits (1 m x 1 m x 5 m). Pitting was carried out on 50 m X 50 m Grid pattern (Table 5).

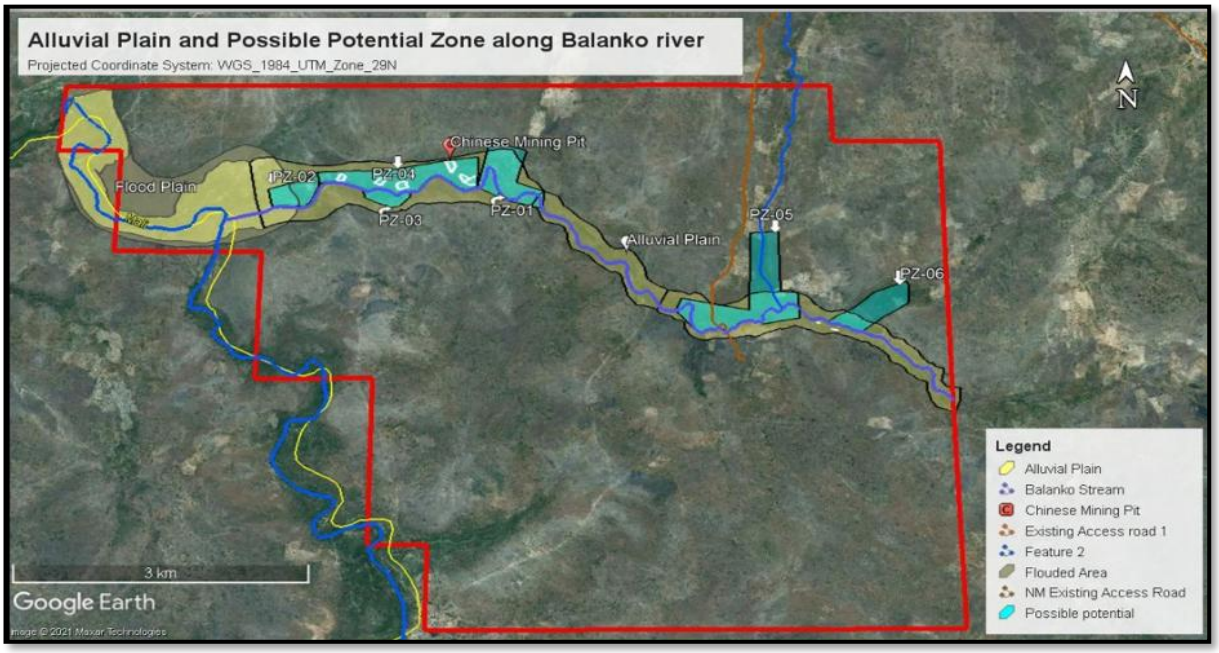


Figure 15. Map showing the areas with potential for placer gold.

Table 5. Table showing details of pits

Sr. No	Study Area	No of Pit Completed	Work Status
1	Zone 1	51	Completed
2	Zone 2	29	Completed
3	Zone 3	76	Completed
4	Zone 4	42	Stand by
Total		**198**	

2.9.2 Auger Drilling

After reviewing the outcome of the pitting, auger drilling was taken up within the grids of 100 m X 50 m and 50 m X 50 m. The Auger drilling was carried out to confirm the presence of gravel in the river channel and the banks. A total of 182 bore holes (3,202 m) were drilled (table 6). Auger samples were collected at 2 m interval. All collected samples were further crushed and washed in GK and panned to check the presence of gold, if any.

Table 6. Details of drilling carried out for Placer gold exploration

Sl. No.	Drilling Type	Drilling Phase	Number of holes proposed	Number of holes drilled	Total meterage
1	Auger Drilling Zone 01	Phase-01	51	50	896
2	Auger Drilling Zone 04	Phase-01	89	22	396
3	Auger Drilling Zone 03	Phase-01	44	42	762
4	Auger Drilling Zone 02	Phase-01	17	17	306
5	Auger Drilling Zone 01 NW-Block	Phase-02	14	14	248
6	Auger Drilling NE-Block	Phase-03	12	12	179
7	Auger Drilling Kokoro-Block	Phase-03	26	25	415
Total			**253**	**182**	**3,202**

Figure 16. Field photograph showing the Auger drilling in the ADP area.

2.9.3 Washing of Auger samples

Auger samples were crushed and washed using both gravitational and centrifugal processing. The Gold Kacha (GK) machine was used for gravity separation (figure 17). This was followed by panning.

Figure 17. Washing and gravity concentration of the auger samples using the Gold Kacha.

2.9.4 Microscopic Analysis

The washed heavy mineral concentrates were analyzed under the stereo zoom microscope and the number of gold grains observed were noted down.

Figure 18. Microscopic study of the gold bearing heavy mineral concentrates.

2.10 ASGM activity mapping

Artisanal and Small-Scale Gold Mining (ASGM) activity is rampant in the concession and surrounding areas. It was decided to map these activities to understand the geological and structural setting of these operations. During this exercise a few clusters of artisanal pits, shafts, adits etc., have been mapped (figure 19). The tailings of the ASM works consist of pebbles of phyllite, carbonaceous phyllite, greywacke, dolerite, dolomite, metabasalt and sandstone. The mined areas consist of shallow dark brown unconsolidated soil cover, a thick lateritic zone followed by saprolite. This is further followed downwards by phyllite and carbonaceous phyllite.

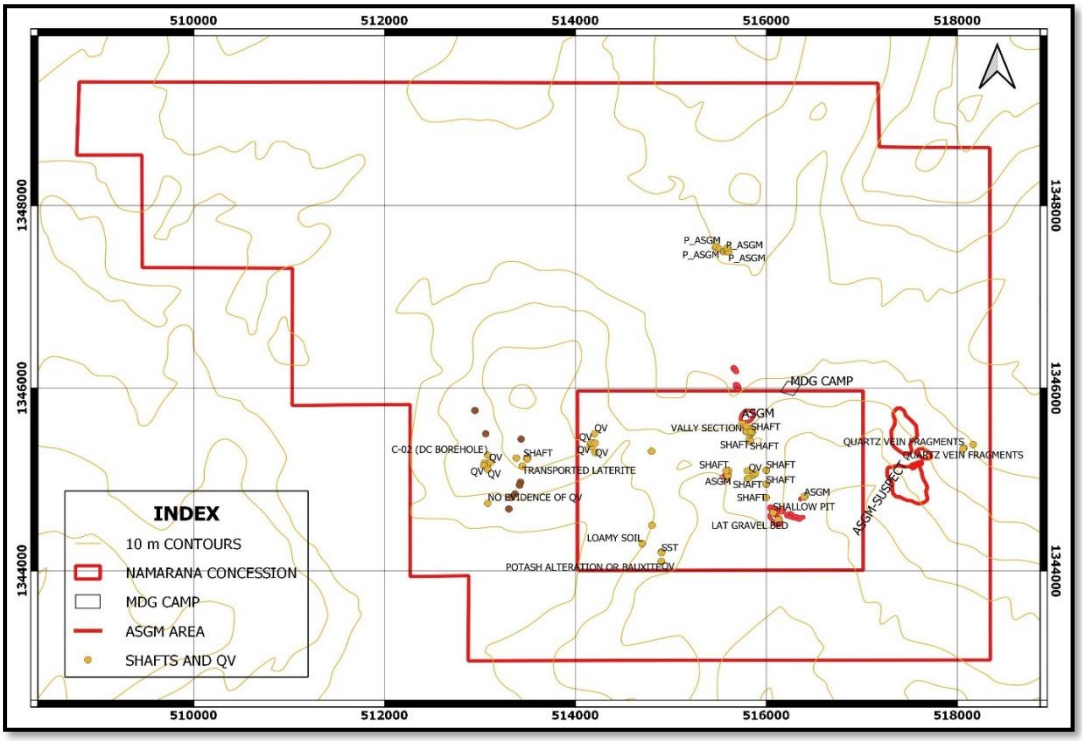


Figure 19. Map showing the major ASM activities within the concession.

Figure 20. Field photograph showing ASM activity in the vicinity of the concession.

Figure 21. Field photograph showing ASM activity in the vicinity of the concession.

2.11 Geotechnical logging

Geotechnical logging of the diamond holes C-02, C-03, and C-04 has been carried out in the month of December 2022. A total of 605 meters of core have been logged. Geotechnical logging has been carried out to measure mainly the parameters such as core recovery and RQD. During this exercise the weathering index, fracture index, rock strength index etc., have also been estimated. The template used for geotechnical logging is shown in figure 22.

BHID- ..... GEOTECHNICAL LOG

DATE OF COMMENCEMENT	
DATE OF COMPLETION	
AZIMUTH	
ANGLE	
FINAL DEPTH	
AVG RQD	
AVG REC%	

Prospect:	..... BLOCK		
Location (HHGPS)	Easting(UTM)	Northing(UTM)	RL(m)

CORE ORIENTATION	Length	Percentage
Oriented	0.00	0.00
Partially Oriented	0.00	0.00
Not Oriented	0.00	0.00

DATE / SHIFT	RUN NO.	FROM	TO	RUN LENGTH	RECOVERY	INITIAL % OF RECOVERY	% OF RECOVERY	STICK UP / CORE LOSS, IF ANY	LENGTH OF PIECES > 10 cm											TOTAL LENGTH OF PIECES >10cm	% OF RQD (INITIAL)	% OF RQD	WEATHERING INDEX	ROCK STRENGTH INDEX	DISCONTINUITY INDEX	RQD Remarks	ORIENTATION / DEVIATION SURVEY
14/12/2016	1	0.00	2.00	2.00	0.60	30.00	30.00	20.00												0.00	0.00	0.00	CW	R1		VERY POOR	NOT ORIENTED
DAY SHIFT	2	2.00	4.00	2.00	1.50	75.00	75.00	-20.00	11	23	13									47.00	23.50	23.50	CW	R2	HF	VERY POOR	NOT ORIENTED
	3	4.00	5.00	1.00	0.85	85.00	85.00		13											13.00	13.00	13.00	SW	R3	HF	VERY POOR	NOT ORIENTED

BOREHOLE CLOSED @ 136.00m ON 18-12-2016

Figure 22. Template for geotechnical logging

Figure 23. A view of the core logging activities.

2.12 Litho-structural logging

Litho-structural logging of holes C-02, C-03, and C-04 has been carried out in the month of December 2022. A total of 605 meters of core have been logged. The prominent lithological domains were marked in the core. Alpha angles (angle between the core axis and the foliations/bedding) were measured at various depth throughout the core. Special emphasis was given on marking the stringer quartz veins and presence of sulphides. The different stages of weathering from the surface up to the fresh rock were marked.

The template used for litho-structural logging is shown in figure 24.

BHID-					LITHO-STRUCTURAL LOG									
DATE OF COMMENCEMENT		Prospect:	Namarana					Core Orientation Details	From	To	Length (m)	Percentage		
DATE OF COMPLETION		Location(HHGPS) WGS84|UTM|29P	Easting	Northing	RL(m)			Oriented			0.00	0.00		
AZIMUTH								Partially Oriented			0.00	0.00		
ANGLE								Not Oriented			0.00	0.00		
FINAL DEPTH														
BHID	FROM	TO	LITHO	COLOR	WEATHERING	VEIN	SULPHIDES	STRUCTURE	ALTERATION	STRUCT-ALPHA (°)	ALPHA DEPTH	STRUCT-BETA (°)	BETA DEPTH	TYPE OF STRUCTURE (S0/S1/S2/L1/L2)
			GRWK	BLK	UW	STGQV								

Figure 24. Template for litho structural logging

One team comprising five geologists and two casual laborers were engaged in the logging exercise.

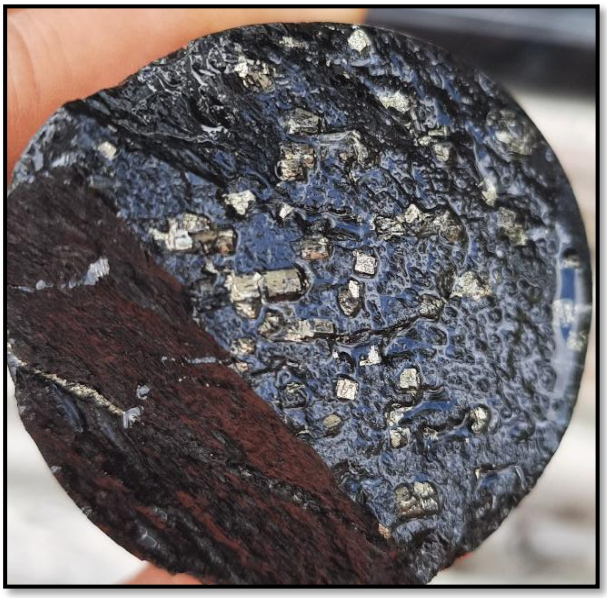


Figure 25. Photograph of a part of the core showing carbonaceous phyllite with pyrite.

3. SUMMARY

The major exploration activities carried out during the year 2022 are as below.

1. **Soil sampling**:
    a. A total of 2,730 soil samples were collected and analyzed from the concession during the year.
2. **Auger drilling:**
    a. A total of 35 Auger bore holes were drilled for a cumulative depth of 1,134 m in the laterite covered areas within the concession as part of the exploration for primary and oxide gold ore.
    b. A total of 182 bore holes were drilled for a cumulative depth of 3,202 m in the alluvial gold project area.
3. **Core drilling:**
    a. A total of 3 DC holes were drilled for a cumulative depth of 605 m.
4. **Geochemical sample preparation and analysis**:
    a. The total samples prepared and submitted to the laboratory include 2,730 soil samples and 1,204 Auger samples.
5. **Pitting for Alluvial Gold Project**:
    a. A total of 198 pits were made in the Alluvial Gold Project area within the concession.
6. **Review of Auger bore hole sample data of Alluvial Gold Project:**
    a. This included Desk Top analysis followed by field verification.
7. **Geotechnical and litho-structural logging:**
    a. All DC boreholes were logged using the protocols for Geotechnical logging and litho-structural logging. This was followed by core photography
8. **Mapping of ASM activities:**
    a. Mapping and documentation of all ASM activities within the concession to evaluate the host rock, depth of digging, type of laterite, structural control etc.

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