



CARBON IN PULP (CIP) PLANT

Business Plan

PROJECT OBJECTIVE

Establish a 15 Metric Ton per hour Carbon In Pulp Plant (CIP) in the Lwamgasa town of Geita Region, Tanzania on a Build, Own, Operate basis.

ISRA GOLD TANZANIA

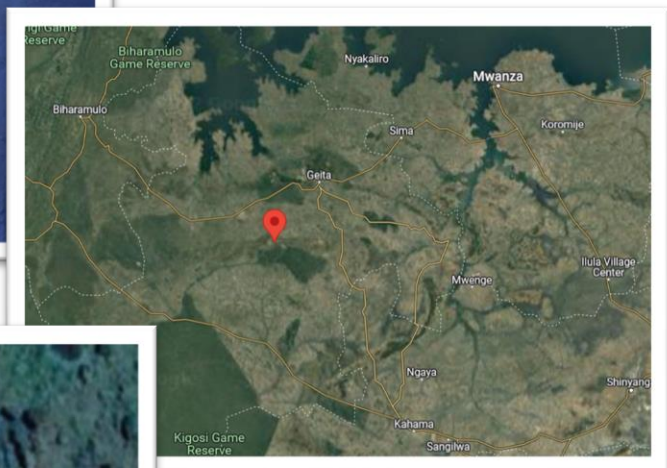
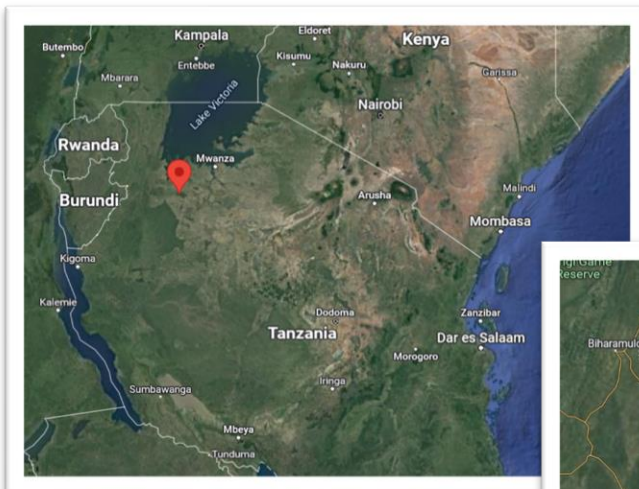
March 2022

CARBON IN PULP (CIP) PLANT

LOCATION: Lwamgasa, Geita Region, Tanzania

Project Outline:

1. Project Overview
2. Confirm Project Design
3. Contractor
4. Secure Project Assets:
 - a. Land
 - b. CIP Plant Equipment
 - c. Truck
5. Secure production material
6. Plant Implementation & Schedule
7. SWOT Analysis
8. Financials



1. PROJECT OVERVIEW

ISRA Gold Tanzania Limited is duly incorporated company under the laws of the Republic of Tanzania and is a wholly owned subsidiary of ISRA International DMCC in the United Arab Emirates. The company has been incorporated following the 1-year pilot company ISRA786 Ltd which has gathered all necessary country information and has successfully produced and exported Au from Tanzania to the UAE. ISRA Gold Tanzania limited is head officed in Mwanza, the second largest city in Tanzania and has multiple subsidiary companies handling the company's assets, mining licences and gold dealership licences.

The potential to secure the raw material required to produce Au in large quantities (circa 50,000MT – 100,000MT) motivated this market opportunity and business plan. The raw material required to produce gold is the waste material produced after the VAT leaching process and has an Au retention of approximately 0.5PPM (particles per million). This waste material is not viable for VAT leaching processes used by local miners as the efficiency of the VAT leaching process does not allow economical leaching of any quantity of Au below 1PPM. This opportunity allows ISRA Gold Tanzania Limited to secure the waste tailings at significantly reduced cost.

To process the waste material, ISRA Gold Tanzania Limited shall commission a specific processing plant called Carbon in Pulp Plant (CIP) which is capable of extracting the remaining Au from the Vat leaching waste material. The favourable economies of scale obtained by CIP is due to its ability to process large quantities of material per hour. Typically, a 10 metric ton (MT) per hour CIP Plant is able to run continuously for 24 hours a day thereby processing 240 metric tons of material per day.

The VAT Leaching Waste material of circa 50,000MT secured by ISRA Gold Tanzania has been tested in an approved laboratory and would produce approximately 1,159.20 grams of Au every 7 days. Additionally, the quantity of VAT Leaching waste tailings available on site (circa 50,000MT) should conservatively yield approximately 34.50kg of Au (est. USD2,139,000.00). Thus, the yield quantity of Au versus the cost of processing justifies the project hereby intended.

2. PROJECT DESIGN

The design of the CIP Plant has been tailored to accommodate local laws and licensing with all safety and security aspects in place. The plant will be linked to the electricity national grid but will also have a backup generator in the event of power outages. The site itself is sized at around 2.5 acres but will be extended by a further 2.5 acres of land at the rear which allows further development of the site to include ancillary Au Processing services.

All major specialist components of the CIP Plant (*like bearings, couplings etc*) shall be sourced from either Kenya, UAE or China. Although, some local distributors may hold sufficient stock quantities in Dar es Salaam (Republic of Tanzania) to allow local sourcing. All other components shall be manufactured on site, using raw materials secured locally, by an Engineer with a team of builders / tradesmen who has experience in constructing and assembling CIP Plants.

The intended vision of the plant is to improve the existing Plant to include:

a CIP Plant, a VAT leaching plant, a Chemical Store & Carbon Chamber, Staff Accommodation, Administrative Offices, Security Office, Electrical and Surveillance Control Office and sufficient lighting to allow 24-hour continual operation. The construction of outbuildings on site will be traditional brick and mortar buildings making the plant very secure.

3. CONTRACTOR

The contractor engaged on a full-time basis to construct and assemble the CIP plant is fully qualified to tertiary level, has been operational / experienced in the manufacturing of CIP Plants since 2016 and has constructed several CIP Plants in Tanzania, Zimbabwe and DRC.

The company's executive management inspected one of the CIP plants built by the Contractor and were satisfied by the build quality and the feedback received from miners who commissioned CIP Plants from the contractor.

4. PROJECT ASSETS:

a. Land

The land identified for this project is situated in a town called Niyarugusu in the Geita region of Tanzania. The land has an existing Gold Processing Plant and is sized at 2.5 acres. Niyarugusu is one of the oldest mining towns in Tanzania with many large VAT Leaching Plants each holding in excess of 50,000MT of VAT leaching waste material.

The site is positioned within close proximity and is neighboured to other VAT Leaching plants which also hold circa 50,000MT+ Vat leaching waste material which has been identified for future acquisition. The site already has the necessary gold Processing Permit issued by the Tanzanian Ministry of Mines and consent from the Village Chairman has already been obtained allowing the land acquisition to proceed unencumbered through the Lwamgasa District Council after being surveyed.

For security reasons, the site is currently fenced to prevent any land disputes with neighbouring land owners and any wild animals venturing onto the site.

b. Production Material

The production material to be used is currently on site and has been produced as a waste product of the VAT Leaching Plant currently on site. It is estimated that the Plant has circa 50,000MT+ of waste material on site with further production material available on neighbouring VAT leaching plants. This future production material on neighbouring sites can be transported by way of soil pumps through 6" PVC Poly Pipes from the Neighbour's VAT Leaching Plant to this project site, making it very efficient.

It is also envisioned to introduce the processing of ores on site as the potential to secure high PPM material (circa 4-6 PMM) from local miners has been well received by the local miners. This acquisition of high PPM production material shall increase the project financial viability tenfold and shall form part of the medium-term goal of acquiring a Mining Licence in the locality.

c. **CIP Plant Equipment**

The CIP Plant will have a processing capacity of 15MT per hour or 360MT per day with all major components (*like bearings, couplings etc*) secured from abroad or potentially through suppliers who are head officed in Dar es Salaam and who may have stock readily available in Tanzania. All minor components shall be manufactured on site from locally sourced material.

The expected build time shall be 30-40 days start to finish as the equipment will arrive on site ready assembled leaving a simple installation. All civil engineering required to ready the site shall require a lead time of only 2-3 weeks.

d. **Transportation**

To ensure logistical stability, the VAT Leaching Plant waste material shall be transported to the CIP plant using an onsite trench system which employs a water sluicing design. This makes the material easy to mobilise and minimises the time taken to truck the material from on site to the next and also saves on the cost of acquiring additional equipment like a conveyor belt system and bobcat.

5. **PRODUCTION MATERIAL**

Nyrugusu being a mining town of over 20 years has over 10 (ten) VAT leaching plants with approximately 80,000MT to 150,000 MT of waste material at each of them within close proximity to this project site. An experienced metallurgist and site manager will be employed to collect samples of the VAT Leaching waste production material available at other potential sites and to optimise the intended CIP plant for the specific type of VAT Leaching Plant waste material.

6. **PLANT IMPLEMENTATION & SCHEDULE**

The CIP Plant will be commissioned in May 2022 and will be fast tracked to ensure it is operational by the first or second week of June 2022. Many of the components are sourced from within Tanzania and shall arrive on site ready assembled only needing installation alongside other ready assembled components. All stores, accommodation and administrative offices will be refurbished to ensure the safety of all on site.

7. **SWOT Analysis**

7.1. Strengths

a) **ESTABLISHED TECHNOLOGY** - CIP Plants are an established technology and methodology with high efficiency and cost effectiveness. The Plant being newly commissioned will be optimised to ensure consistent production.

b) **PRODUCTION MATERIAL** – The production material required for CIP Plant has no benefit to local VAT Leaching Plant owners as it is considered a waste product from the VAT Leaching Process and therefore available in large quantities and not subject to price variation. The production material can therefore be purchased in bulk (Tzs.300-Tzs.400 / MT pending on PPM). The location of the proposed site has several VAT Leaching Plants with waste material in excess of 80,000MT each.

c) **CONSISTENCY OF Au SUPPLY** – As a registered Gold Dealer in Tanzania, ISRA GOLD Tanzania limited will enjoy a consistent supply of Au through the CIP Plant which operates 24 hours per day at a significantly reduced price.

7.2. Weaknesses

- **ELECTRICITY** - The entire plant will be dependent on electricity supply from the Tanzanian National Grid. It would therefore be imperative to invest in a backup generator with separate fuel store.

- **FLAMABLE / EXPLOSIVES** - The Fuel Store required for the backup generator poses a fire risk and would have to be cordoned and isolated to ensure the safety of the plant.

7.3. Opportunities

- **PLANT EXPANSION** – The land acquired total 2.5 acres in size. The possibility of expansion of the Plant to include all aspects of the business supply chain will only underpin the commercial viability of the business itself. The volumes of chemicals being consumed allows a separate **Chemical Supply Business** to be setup as the volume discounts would allow a significant saving that could be capitalised on with the local VAT Leaching Plant Owners / Miners. Additionally, the creation of an **Elution Plant** on site would allow the Elution Plant to be rented by local miners thereby reducing the business cost of Elution Plant rental of circa Tzs.1,500,000.00 per finishing process and would allow a further potential to secure finished gold from the local artisanal miners.

- **QUALITY of PRODUCTION MATERIAL** - With local miners requiring support to mobilise their mining operations, an opportunity exists to attain high PPM production material (Tailings) through support of Ball Mill Crushers. Thus, in exchange for the use of the Equipment the miner would be willing to sacrifice up to 30% of the tailings which would have in excess of 1.5PPM.

7.4. Threats

- **ELECTRICITY & CHEMICALS SUPPLY** – The plant shall be heavily dependent on Chemicals and electricity. Any disruption in the supply of these two things shall delay production capacity of the plant and result in loss.

8. FINANCIALS

The CIP Plant shall be funded by ISRA International DMCC through its subsidiary company ISRA Gold Tanzania Limited and ISRA786 Limited.