



KIRKLAND LAKE GOLD INC. 2010 TOXIC REDUCTION REPORT

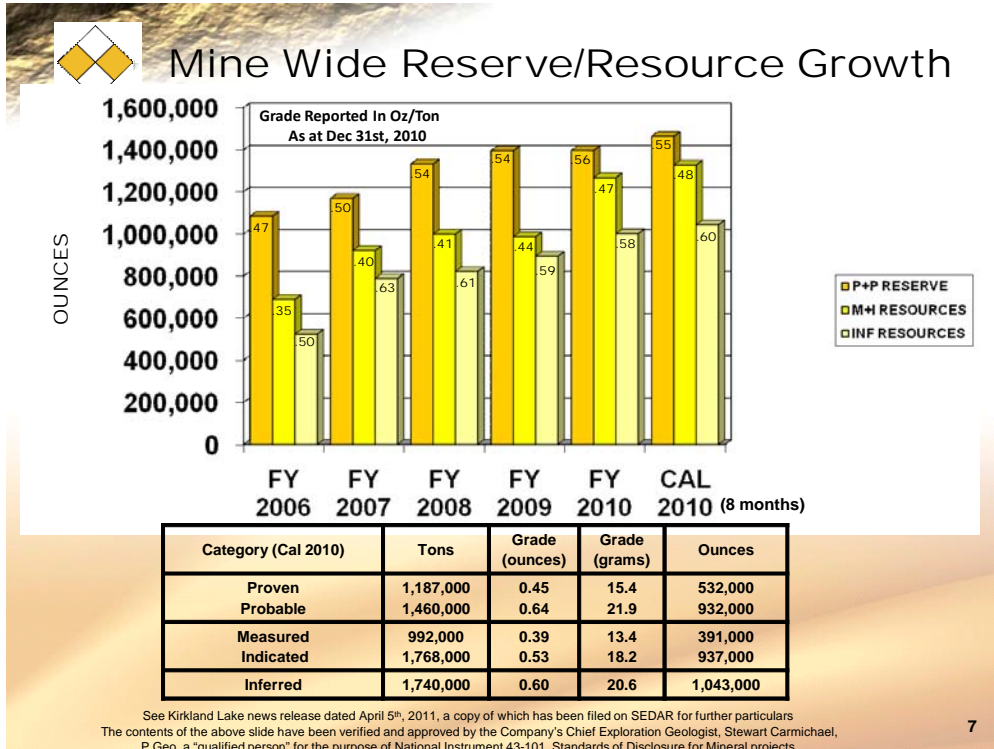
EXECUTIVE SUMMARY

The Macassa, Kirkland Minerals, Teck-Hughes, Lake Shore and Wright-Hargreaves properties are owned by Kirkland Lake Gold Inc. (KLGold). KLGold has formed a Joint Venture (J.V.) with Queenston Minerals Inc. for certain properties. All of the properties are located within the Town of Kirkland Lake, in the Township of Teck, District of Timiskaming.. The properties are located near the intersection of Highways 66 and 112, east of Highway 11.

Macassa Mines Ltd. was incorporated in 1926 and evolved through a succession of mergers to become a division of Lac Minerals Ltd. in 1982. The merger consolidated the properties of the Little Long Lac group into one entity, including the Macassa, Kirkland Minerals, Teck-Hughes and Lake Shore Properties.

Lac Minerals was acquired by Barrick Gold Corporation in August 1994. After a short period of operation by Barrick, the property was sold to Kinross in May 1995. In Sept. 2001, Foxpoint purchased the properties from Kinross Gold Corporation. Included in the purchase were the Macassa Mine, mill, paste plant etc., Lakeshore, Kirkland Minerals, Teck -Hughes and Wright-Hargreaves properties.

Foxpoint changed its name to Kirkland Lake Gold Inc. (KLGold) in October 2002. Net income reported by KLGold for the year ending April 30, 2011 was \$20.09 million with 81,860 ounces of gold produced over the year.



Per the above chart, the reserves and resources at the Macassa property have been steadily increasing.



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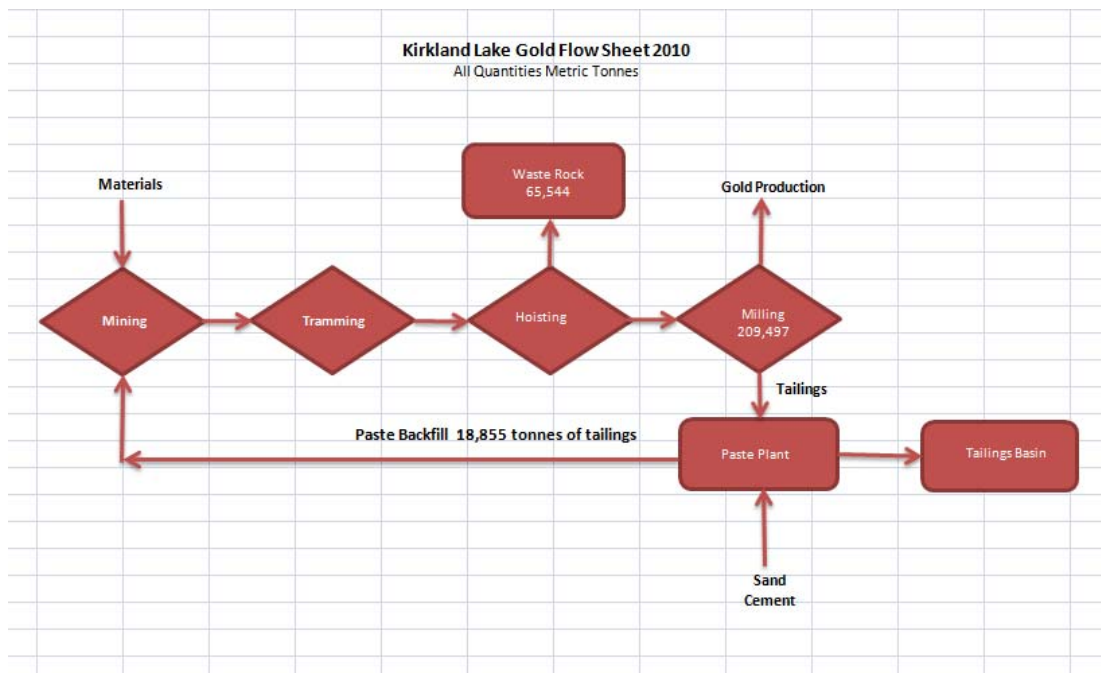


1.0 INTRODUCTION AND FACILITY INFORMATION

Company Name: Kirkland Lake Gold Inc.
Facility Name: Macassa Mine
Address of Facility: 1350 Government Road West
 PO Box 370
 Kirkland Lake, ON
 P2N 3J1
Number of Employees: 720
UTM Coordinates: 48.14630, -80.06070
NPRI Identification Number: 1568
NAICS Code: 212220
Gold and Silver Ore Mining

2.0 DESCRIPTION OF PROCESSES

The following flow sheet describes the operations carried out at Kirkland Lake Gold.



3.0 MINING

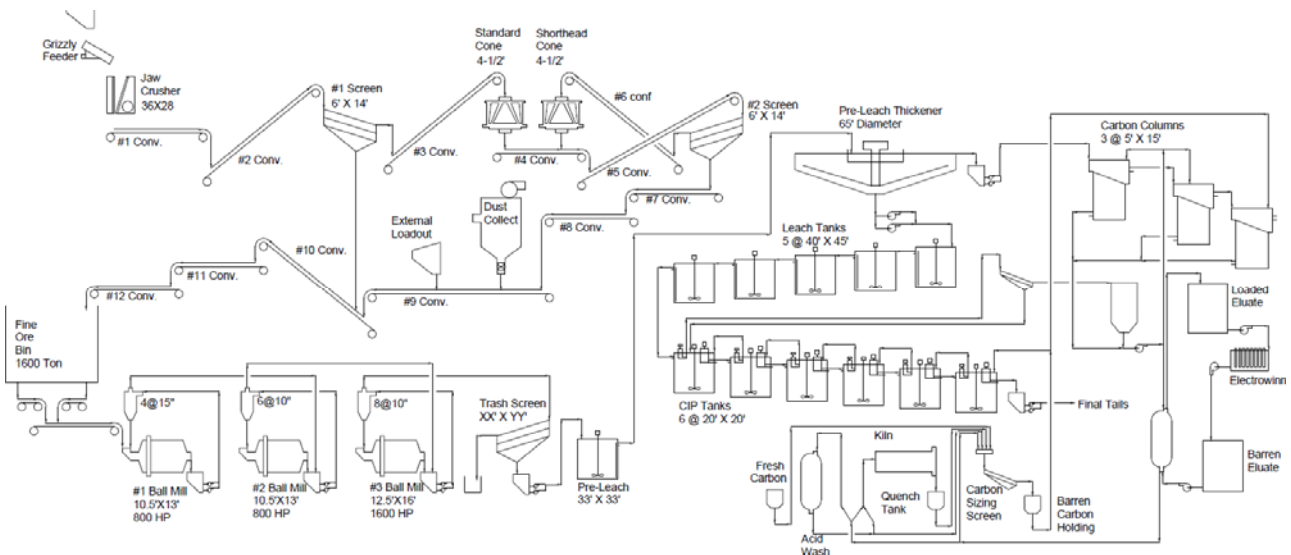
All mining occurs at the Macassa Mine. In 2010, Kirkland Lake Gold was mining from 31 faces with 24 being actively mined and 7 in development. 16 were in the higher grade South Mine Complex. All ore is hoisted from the No. 3 shaft. Mining occurs at levels deeper than 2500 feet below grade.

The number of metric tonnes of ore that have been hoisted per year are shown below.

2006	119,580
2007	101,949
2006	100,986
2009	84,494
2010	209,496

4.0 MILLING

All ore hoisted from underground is trucked to the mill crushing facility. The milling circuit is shown in the following schematic. Gold is removed from the ore with a conventional carbon in pulp cyanidation circuit. Typical gold recoveries exceed 96 %.



5.0 TAILINGS AND TAILINGS DECANT WATER TREATMENT

The flow sheet for the tailings and decant water system is shown below in Figure 1. The CN in the tailings decant water flows into the Conditioning Pond. The Conditioning Pond has over 300 days retention. The water from the Conditioning Pond is pumped back to the mill where it is reused. Over the winter CN levels in the Conditioning Pond increase and over the spring natural degradation reduces the CN levels to less than 1 milligram per litre. The Conditioning Pond water is passed through the effluent treatment plant and discharged. The overall CN mass balance for the Macassa Mill is shown in the following flow chart (Figure 1). Due to bio oxidation and natural degradation, 99.5% of CN is destructed in the Conditioning Pond.

More than 99% of the metals inputted into the process from ore are deposited and remain in the Tailings Basin (Figure 2). A fraction of the metals dissolve in the tailings decant water. The Conditioning Pond effluent is passed through the Effluent Treatment Plant where a hydrated lime solution and coagulant is added. The solids formed are settled out in the settling ponds. The discharge from the settling and polishing ponds is discharged into Amikougami Creek. CN and metals discharges meet Federal and Provincial Standards.

Figure 1: CN mass balance

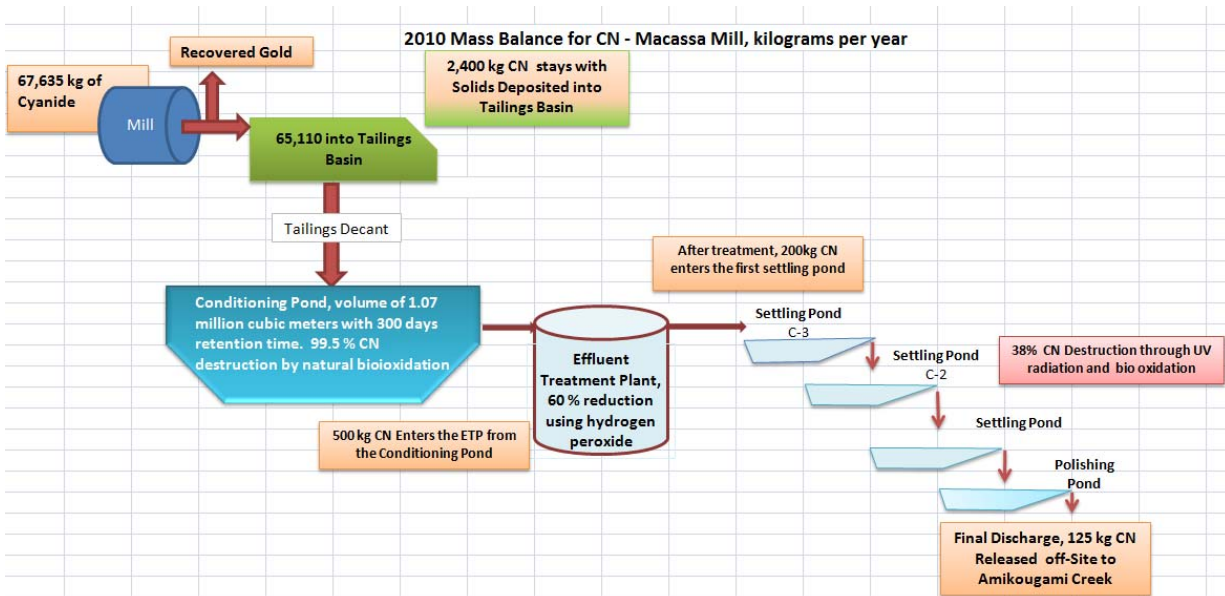


Figure 2: Metals Mass Balance

