Searchlight Minerals Corp. Clarkdale Slag Project Update

23.09.2022 | PR Newswire

This project update summarizes the results of the most recent testing of Searchlight Minerals (SRCH) Clarkdale Project located in Clarkdale, AZ. Searchlight Minerals is focused on developing and implementing a cost-effective process to recover the gold and other valuable metals contained in the copper smelter slag left there from the operation of the Clarkdale copper smelter which operated from 1915 to 1954. The smelter operation resulted in a +20 million ton waste product slag pile containing gold, silver, iron, and zinc.

Searchlights designated process testing and design company, Arrakis, Inc. and others have demonstrated the presence of gold in significant quantities and the ability to recover the gold by different commercial processes with variation in recoverable gold grades. The variability reported to date has been in large part a result of the different parties performing the tests and resulting different testing and analytical methods.

Early drilling and analytical work completed by third party reputable companies in 2005 based on 18 drill holes concluded that the pile contained the following quantities of metal.

Table 1

Slag Pile	Tons in Millions	Au (opt)	Au (gmt)	Ag (opt)	Ag (gmt)	Cu (%)	Zn (%)	Fe (%)
Combined	20.20	0.50	17.14	0.10	3.43	0.34	2.46	33.15

Analysis and testing by Arrakis and others since this estimate was completed have validated the data contained in this chart. The foremost technical issue delaying moving this project to production has been how to accurately analyze the raw slag and how to recover the gold on a consistent basis. While the raw slag remains difficult to accurately analyze via fire assay due to the refractory nature of the slag, all of the processes tested yield gold dorê beads on the process products allowing back calculated recovered gold grades.

Four processes have been evaluated in detail at bench and small pilot scale with the following results.

a. Pressure oxidation via autoclave - Oxidizes the slag under elevated pressure and temperature so that it may be subsequently recovered from solution by leaching - High capital and operating cost, moderate gold recovery. Does not recover iron and zinc.

   0.25 - 0.35 opt (8.57 - 12.00 gmt) gold recovered. This technology currently used by Barrick and Newmont in Nevada.

b. Pressure leaching via autoclave - Directly dissolves the gold into solution for subsequent recovery. Highest capital and operating cost, but high gold recovery. Does not recover iron and zinc. 0.35 - 0.45 opt (12.00 - 15.43 gmt) gold recovered.

c. High Temperature Melting followed by pressure oxidation leaching via autoclave - Highest capital and operating cost but recovers iron and zinc to pay for higher operating cost. Also has moderate to high gold recovery. 0.25 - 0.45 opt (8.57 - 15.43 gmt) gold recovered.

d. High Temperature Melting followed by fine grinding and cyanide leaching - Lowest capital and operating cost. Moderate gold recovery, but also recovers iron and zinc.

   0.25 - 0.30 opt (8.57 - 10.29 gmt) gold recovered.

Due to significant increases in the price of pig iron and zinc oxide, this most recent testing effort focused on option (c) and (d) with tests conducted at both the bench and pilot scale on Chain-of-Custody samples taken in December 2020 from the slag pile at Clarkdale. The samples were shipped to and received by Metcovery II in Menomonee Falls (a suburb of Milwaukee, WI). Subsequently a subset of the samples was heated to high temperature resulting in a 'glass' product containing the gold, a metal pig iron bar, and zinc oxide collected from the baghouse/air filter system.

The produced products were then shipped to Arrakis, Inc. in Englewood, CO where they were opened and processed under the observation of a PhD Metallurgical Engineering candidate at the Colorado School of Mines under the supervision of Dr. Yeonuk Choi at Queens University (formerly at Barrick gold as Director of Technology) in Toronto. Samples taken under Dr. Choi's direction were subsequently shipped COC to AuTec laboratory in Canada for independent third-party analysis.

The summary result of this testing in March 2021 was a back calculated head ore grade by analysis by Arrakis of 0.49 opt gold (16.80 gmt) and 0.12 - 1.64 opt gold (4.11 - 56.23 gmt) by AuTec. The problem with this testing was inconsistent recovery of the gold with some of the gold reporting to the glass (which is desired) and some reporting to the iron (which is not desired) although the gold in iron could be recovered by other methods. A subset of 3 of the Metcovery melts of the iron fire assayed with 7 replicates each, indicated an average grade of 0.728 opt Au (24.96 gmt) contained in the raw slag with an average grade of 2.183 opt Au (74.84 gmt) contained in the iron.

The most recent repeat testing at Metcovery in January 2022 was conducted in an attempt to move all of the gold into the glass thereby making it available for direct recovery by leaching while maintaining the recovery of pig iron. In seven separate melt tests the back calculated head grade of the raw slag ranged from 0.018 opt Au (0.62 gmt) to 0.187 opt Au (6.44 gmt) (with an average of 0.123 opt Au (4.24 gmt). As a point of reference, Barrick annual report 2nd Qtr. 2022 quotes an average grade processed in their autoclaves in Nevada at 0.065 opt Au (2.24 gmt).

Unfortunately, in these tests most of the gold still remained in the iron. The variation of gold grade in these tests is believed to be caused by a difference in operating conditions at Metcovery which Arrakis was not able to control due to constraints imposed by the geometry of the existing Metcovery equipment. However, the gold can be recovered by various methods from the iron and Arrakis has done this on a single bench test only.

In an attempt to confirm/determine the quantity of gold present in the sample used for this latest melt testing, raw slag samples were sent by Dr. Choi to three independent labs with three different chlorine-based processes. Dundee and PRO are ambient temperature chlorine leach processes and Platsol is a patented chlorine autoclave process. The results of this testing are shown in the table below.

Table 2

Chain of Custody Gold Content of Slag by Various Processes and Laboratories

Laboratory Conducting Test	Slag Head Au gmt	Slag Head Au opt	Au Extraction % In Test
Dundee Process #1	0.478	0.014	83.4 %
Dundee Process #2	0.478	0.014	71.4 %
PRO Process #1	11.7	0.344	63.0 %
Platsol™ Process	0.40	0.012	60.6 %

As shown in the Table 2, ambient chlorine technology effectively demonstrated a back calculated head ore grade of 0.344 opt Au (11.79 gmt) and the other two processes recovered only 0.014 opt Au (0.48 gmt). The process used by PRO involved chemistry and process conditions closest to those developed by Arrakis over the past few years.

While the results varied due to different testing and analytical techniques the fact remains that all of the testing at either bench or pilot scale by various methods and different test facilities has shown significant quantities of gold present in the slag and recoverable in varying amounts by different processes.

To finalize the optimum process design and move the project into the pilot stage at Clarkdale, Dr. Choi has agreed to come to the Arrakis test facility in Denver and work with Arrakis on a continuous test campaign to finalize the process and operating conditions. This plan was originally thwarted by the onset of Covid and travel restrictions between Canada and the US.

Once the optimum recovery method was determined and quantified, the next phase and path forward would be to engage an EPCM firm to finalize 'blueprint' design. The company chosen would undoubtedly require more testing to finalize materials of construction and exact process operating conditions.

The existing permitted Clarkdale pilot plant would be used in its entirety and become part of the circuit with newly installed process components. This will significantly reduce both capital cost and time frame required to begin production.

Martin Oring, Searchlight CEO, was quoted as saying 'The past few have been difficult due in large part to Covid limiting availability of equipment and travel restrictions for key players delaying test work. Additionally, the costs incurred in SEC filings and preserving the Clarkdale Site in a 'lights on' and permitted facility seriously impacted available funds and cash flow. In spite of this, management remains totally committed to moving the project forward to either 'proof of process' for sale of the asset or limited production status which should dramatically increase the project value. The pilot limited production phase is anticipated to produce significant gold production resulting in final 'proof of process' as well as positive cash flow. We will be seeking funding to complete this next pre-pilot production phase. We are in the process of completing a cost estimate and budget/timeline to rapidly move through this next phase. The exact financing structure has not yet been determined but all reasonable methods are being considered.

While we are somewhat disappointed in not achieving our desired recent test results, they remain within recoverable gold grades currently being cost effectively mined by others.

We are personally very happy that Dr. Choi will finally be able to come to Denver and assist with finalizing the pre-pilot test work that needs to be completed.

We will be hosting a conference call in the next few weeks to further discuss our plans and budget and answering questions posed by existing investors.'

Forward-Looking Statements

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Contact
Martin B. Oring, Chairman, President & Chief Executive Officer, 702-939-5247