

**page** STAX graphite shows high capacity in new battery tests

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Located at IBC Advanced Technologies' facility in Utah, the SuperLig®-One pilot plant has separated scandium from the suite of rare earth elements discovered at Ucore Rare Metals' Bokan Mountain - Dotson Ridge project in Southeast Alaska.

## SuperLig-One pilot plant recovers scandium from Bokan Mountain

Ucore Rare Metals Inc. May 24 reported that a SuperLig®-One rare earth elements separation pilot plant at its Bokan Mountain - Dotson Ridge project in Southeast Alaska has separated nearly pure scandium from other minerals found in the deposit. Scandium is a highly valued REE used in making advanced aluminum alloys. Scandium imparts added strength, increased corrosion resistance, greater heat tolerance, and improved weldability to aluminum alloys. Its electrical and heat-stabilizing qualities also make it desirable for use in the

production of solid oxide fuel cells. The separation of scandium marks the second stage of testing of the pilot plant. In the initial stage, the SuperLig-One plant created 99 percent pure REE by separating them from impurity metals in a pregnant leach solution derived from Bokan. In this second stage, more than 99 percent of the scandium was removed from the other REE in the pregnant leach solution; and the purity of the scandium recovered is greater than 99 percent. The purpose of



JIM MCKENZIE

this stage of the process is to completely remove scandium from the solution without removing any of the other REE, preserving the value of the rare earth-bearing solution as it advances to subsequent separation circuits. Ucore said the efficient separation of scandium early in the process distinguishes the molecular separation technology being used in the pilot test from less selective legacy technologies, such as solvent extraction and ion exchange. "Scandium is an increasingly high-profile and extremely high-value technology metal," said Ucore President and CEO Jim McKenzie. "Much like lithium, scandium is considered a clean-technology metal with enormous development potential." In the next stage of testing, the SuperLig®-One plant will separate light REE (lanthanum to neodymium, plus yttrium) from heavy rare earths (samarium to lutetium). In the final stage, heavy rare earths will be separated into individual critical REE. Upon completion of all four stages, the pilot plant is expected to produce terbium and europium that exceed 99 percent purity as well as dysprosium at 99.99 percent purity. The remaining solutions, containing heavy and light REE, will be retained for future separations. After confirmation testing of each stage of operation, the plant will undergo a continuous run of rare earth-bearing solution. SuperLig-One, which was designed and constructed by Utahbased IBC Advanced Technologies Inc., employs the highlyselective MRT process to isolate rare earth elements suspended in a solution. Ucore and IBC plan to jointly develop processes with the capability of separating a host of technology metals.

see NEWS NUGGETS page 10



With 541 million metric tons of measured and indicated resources averaging 2.2 grams per metric ton (39 million ounces) gold, the Donlin Gold deposit in southwestern Alaska is one of the largest undeveloped gold deposits in

## The \$6 billion question

Are Novagold, Barrick ready to pull the trigger on Donlin Gold development?

By SHANE LASLEY

Mining News

ovagold Resources Inc. and Barrick Gold Corp. - equal co-owners of the Donlin Gold project – have said they are unwilling to develop the 40-million-ounce gold deposit in a weak gold price environment. So, with Donlin entering the final phase of a five-year permitting process, are the partners ready to build a world-class gold mine in Southwest Alaska?

With gold prices up roughly 16 percent since the start of the year and showing resilience at around

US\$1,250 per ounce, the partners are sounding more optimistic now than they did this time last year.

In his opening statement at Novagold's annual shareholder meeting held May 13, Thomas Kaplan said he is privileged to "be able to be the chairman of a company that I believe is in the right place, at THOMAS KAPLAN the right time, with the greatest gold asset on the planet."



While Kaplan has never swayed from his longterm bullish position on gold or the value of Donlin, roughly a year ago the Novagold chairman warned that neither partner is willing to begin construction until "gold prices have resumed their uptrend in

The Donlin Gold permitting process is not expected to be complete until the end of 2017, providing Novagold and Barrick management with some time to weigh whether market conditions are right to invest the estimated US\$6.7 billion needed to develop the mine, an asset projected to produce roughly 30 million ounces of gold over an initial 27year mine life.

## Peak gold?

From a low of US\$250/oz. hit in 2000, gold went on a 12-year bull run, reaching new pinnacles each year through 2011. From that historic apex though, gold prices have fallen at a rate of about US\$175 per year - averaging US\$1,669/oz. in 2012,

US\$1,411/oz. in 2013, 1,266/oz. in 2014 and 1,166/oz. in 2015.

"I call that leg-one of the bull market; and my belief is that what we are experiencing now is a pullback within that bull market," Kaplan commented on what he believes is a longer term uptrend in the market.

For perspective, the Novagold chairman observed, "If a stock went from \$2.50 to \$19.00 and pulled back to \$10 or \$11 on its way beyond \$19 and perhaps to \$29 or \$39, nobody would be surprised."

In 2016, so far, the price of an ounce of gold has averaged US\$1,210, surging from US\$1,080 in January to a high of US\$1,294 in early May.

In a May 23 report, Citi Research hiked its predicted average gold price for the third quarter to US\$1,300/oz. The research arm of Citigroup anticipates the precious metal will average US\$1,255/oz. this year, which would be the first year-over-year gain since 2011.

Kaplan is reluctant to predict which way gold will go in the short term, but he believes the longer term trend points to gold more than doubling its US\$1,900/oz. high.

Kaplan's belief that gold will surge to multiples of its current price is not predicated on some apocalyptic economic or geopolitical scenario. Instead, his bullish outlook is based on market fundamentals.

"I believe that the reason to own gold – shedding, stripping away the emotional aspect of the reasons why people own gold – is just the fact that it is an industry in distress and in turmoil," he explained.

The crux of this turmoil is that miners are depleting their gold reserves faster than they can replace them, which is expected to result in lower production in the coming years.

Novagold is not alone in believing that a scarcity of gold will lead to lower production. In fact, Eugene King, European metals and mining analyst for Goldman Sachs, has predicted that peak gold was reached in 2015.

"The combination of very low concentrations of metals in the Earth's crust, and very few high-quality deposits, means some things are truly scarce," he

see DONLIN GOLD page 12