

North of 60 Mining News - The mining newspaper for Alaska and Canada's North

Exploring Alaska's golden mining future

When it comes to value, old money beats "new oil" – for now Mining Explorers 2021 - January 27, 2022



By [Shane Lasley](#)
Data Mine North



While copper has the potential to be a major contributor to Alaska's economic future, this "new oil" of the low-carbon economy will be hard-pressed to beat out the old money being produced at current and coming gold mines across the Last Frontier.

This is due in large part to [Kinross Gold](#) Corp.'s new "Kinross Alaska" strategy that is leveraging the underutilized 14-million-metric-ton-per-year mill and storage capacity at Fort Knox to process higher-grade ore mined from projects within a roughly 300-mile radius of the Interior Alaska gold operation.

This new strategy, in combination with continuing to recover gold from the heap leach facility at Fort Knox, is expected to result in a significant new era of strong Kinross Alaska gold production moving forward.

"We have enhanced our production profile, ramping up from approximately 200,000 ounces per year to approximately 400,000 ounces per year," Kinross Alaska General Manager Jeremy Brans told Mining News.

In October, the company broke ground at Gil, the first Kinross Alaska satellite mine.

Located about nine miles east of the Fort Knox Mine, Gil is expected to deliver roughly 10 million metric tons of ore averaging 0.60 g/t (193,000 oz) gold to the Kinross Alaska mill over the next two years.

The shrunken environmental footprint and increased economics of Gil underscore the brilliance of the Kinross Alaska strategy and what it could mean for the future of gold mining across a large swath of the state.

Eliminating the need for a mill, heap leach facility, tailings ponds, or other infrastructure, Gil Mine could be

equated to a quarry. Even less, when you consider that Gil does not require the crushing and screening plants to size and classify sand and gravel.

As an operation that only needs to blast, dig, and load gold-rich rock into trucks for processing at the already established mill and tailings facilities – infrastructure pieces that take much longer to permit and build – means that Gil was elevated from concept to an active mine in just two years.

As a mine that lies a mere nine miles east of the Fort Knox mill on lands held by Kinross, the ore at Gil likely lies at the lower end of the grade threshold for projects developed under the Kinross Alaska strategy. As a rule of thumb, the further the ore must be shipped, the higher the gold grades must be.

Up next: Manh Choh

Manh Choh, the next project slated to deliver ore to the mill at Fort Knox, sets the bar for road-accessible gold deposits near the outer edge of the Kinross Alaska radius.

Located about 240 road miles southeast of Fort Knox, Manh Choh hosts 9.2 million metric tons of measured and indicated resources averaging 4.08 g/t (1.21 million oz) gold and 14.19 g/t (4.2 million oz) silver in two adjacent deposits on the project.

With the idea of processing Manh Choh ore through the Fort Knox mill, Kinross acquired a 70% joint venture interest in this project from [Contango ORE](#) Inc., which discovered and expanded the Peak deposits at Manh Choh.

Based on the current resource, Kinross expects to produce 1 million oz of gold-equivalent, which includes the value of both the gold and silver, from Manh Choh ore over 4.5 years of mining slated to begin in 2024.

In addition to Manh Choh, [Contango ORE](#) is exploring several projects within the Kinross Alaska radius:

- Eagle-Hona-Triple Z covers 170,000 acres of underexplored mining claims to the west and north of Manh Choh that are prospective for Peak-like skarn deposits, large intrusive-related gold systems, and porphyry copper-gold-silver-molybdenum mineralization.
- Shamrock is prospective for high-grade gold mineralization similar to [Northern Star Resources](#) Ltd.'s Pogo Mine about 50 miles to the northeast and intrusive-related gold deposits similar to the Fort Knox Mine about 90 road miles to the Northwest.
- Lucky Shot is a road-accessible mine project about 75 miles north of Anchorage that produced roughly 500,000 oz of gold from ore averaging more than 1 oz/t prior to World War II. According to a 2016 calculation, Lucky Shot hosts 206,500 metric tons of measured and indicated resources averaging 18.3 g/t (121,500 oz) gold; and 59 thousand metric tons of inferred resource averaging 18.5 g/t (35,150 oz) gold. As part of its 2021 acquisition, CORE has committed to invest \$10 million in exploration at Lucky Shot within three years.

"Although it is full steam ahead for the Manh Choh project based on the latest Kinross guidance, the Lucky Shot project represents an exciting opportunity to add significant additional value for Contango shareholders and marks a new focus for the company," said [Contango ORE](#) President and CEO Rick Van Nieuwenhuyse.

Fort Knox neighborhood

In addition to Gil and Manh Choh, the Kinross Alaska strategy brings numerous gold projects along Alaska's highway, rail, and river systems into play. This includes several in the Fairbanks Mining District, where Fort Knox is located.

Due to its size, grade, and location, the most obvious is [Freegold Ventures](#) Ltd.'s Golden Summit project adjacent to the north side of the Fort Knox property.

According to a 2016 calculation, Golden Summit hosts 61.5 million metric tons of indicated resource averaging 0.69 g/t ton (1.36 million oz) gold; and 71.5 million metric tons of inferred resource averaging 0.69 g/t (1.58 million oz) gold.

While this is roughly the same grade as the ore fed into the mill at Fort Knox over the past 25 years, Kinross Alaska would likely be looking for higher grades from third-party projects, even next-door neighbors like Golden Summit.

Fortunately for Freegold and potentially Kinross Alaska, a much higher-grade component to Golden Summit has emerged at the Cleary Hill area just northeast of the Dolphin deposit that hosts the resource.

A historic mine at Cleary Hill produced 281,000 oz of gold from ore averaging 1.3 oz per ton before the operation was shuttered during World War II.

Over the past two years, Freegold has focused on making a connection between Cleary Hill and Dolphin – tapping bonanza-grade gold at the former and very wide sections of higher-than-resource-grade mineralization at the latter.

Highlight from the bonanza-grade and bulk tonnage gold tapped at Golden Summit include:

- GSDL2001 cut 188 meters averaging 3.69 g/t gold, including two meters of 169.5 g/t gold.
- GSDL2005, drilled about 100 meters north of GSDL2001, cut 573 meters averaging 1.21 g/t gold, including three meters of 131.5 g/t gold.
- GS2017, drilled about 500 meters east of GSDL2001, cut 219.8 meters averaging 1.61 g/t gold, including 1.7 meters of 588 g/t gold.

In addition to a 40,000-meter drill program aimed at upgrading and expanding resources, the 2021 program at Golden Summit included environmental baseline, metallurgical, and cultural resource studies needed for a prefeasibility study for a mine at this exciting project just north of the Kinross Alaska mill.

Other companies advancing gold projects in the Fairbanks Mining District neighborhood include:

- Avidian Gold Corp., which is exploring Amanita on the south border of the Fort Knox property and Amanita NE near the Gil Mine. Avidian has identified mill-grade ore within a mineralized trend that extends northeast from onto the Fort Knox property.
- Millrock Resources Inc. and [Felix Gold](#) Ltd. partnership, which has accumulated two large projects – Treasure Creek and Ester Dome – and several smaller claim blocks in the district. Situated about 13 miles west of Fort Knox, Treasure Creek hosts numerous prospects with interesting drill intersections reported by prior workers. Ester Dome, which is about five miles south of Treasure Creek, is home to the past-producing

Grant gold mine.

Parks Highway prospects

Avidian and the Millrock-Pedro Gold partnership each also hold a project just off the Parks Highway south of Fairbanks with the potential to deliver ore to the Kinross Alaska mill.

Though much further from Fort Knox than Amanita, Avidian's more advanced Golden Zone property along the Alaska Railroad about 200 miles south of Fairbanks may be a more compelling project for Kinross Alaska.

Only 10 miles west of the Parks Highway, the Golden Zone property hosts numerous gold targets along a 15,000-meter-long trend. Breccia Pipe, the most advanced of these, hosts 4.19 million metric tons of indicated resource averaging 1.99 g/t (267,400 oz) gold and 10.4 g/t (1.4 million oz) silver.

Looking to expand upon this resource and to explore other promising targets across the property, Avidian drilled 27 holes during the 2021 season at Golden Zone.

When it comes to projects along Alaska's rail system that could deliver ore to the Fort Knox mill, Millrock's Liberty Bell project about 70 miles south of Fairbanks is one that might fit the bill.

Geologists familiar with both Liberty Bell and Manh Choh say the mineralization at these two projects is nearly identical, an indication that ore from Liberty Bell might be well suited for the Kinross Alaska mill.

Exploration in the 1980s outlined 1.24 million tons of historical resource averaging 0.1 oz/t, or about 6 g/t gold.

Millrock says gold mineralization is widely distributed across the 15,200-acre Liberty Bell property.

Kinross took a preliminary look at Liberty Bell a couple of years ago but did not follow up with more extensive mineralization.

Both Golden Zone and Liberty Bell have the advantage of lying within 10 miles of the Alaska Railroad, which offers low-cost rail transport to within about 25 miles of the Kinross Alaska mill.

Exploring Goodpaster

While Kinross is implementing its Kinross Alaska strategy, [Northern Star Resources](#) Ltd. is expanding the gold production and reserves at its Pogo Gold Mine about 85 miles east of Fairbanks in the Goodpaster Mining District.

As of the end of March 2021, Pogo hosted 12.86 million metric tons of indicated resource averaging 9.5 g/t (3.95 million oz) gold, plus 10 million metric tons of inferred resource averaging 9.1 g/t (2.95 million oz) gold.

Northern Star's 2021 exploration included underground drilling focused largely on upgrading resources and building reserves within the current mining area; surface drilling to expand and upgrade resources at the Goodpaster deposit about 1,500 meters to the north of the underground mine development; and resource drilling at Central Gap, which lies between the mine and Goodpaster.

While drills focused on building resources and reserves, crews put the finishing touches on upgrades that include an expansion of the mill to 1.3 million metric tons per year; accelerated underground development to access more ore to feed into the 30% higher capacity mill; and improved infrastructure to support the company's growth vision for the mine.

With these upgrades complete, Northern Star forecasts Pogo will produce 220,000 to 250,000 oz of gold during fiscal year 2022, which got underway on July 1, and around 300,000 oz during FY2023.

Several companies are exploring for similar high-grade gold deposits around the Pogo property.

Some of the most exciting recent discoveries in the Goodpaster district have been made on [Tectonic Metals](#) Inc.'s Tibbs project about 22 miles (35 kilometers) southeast of the Pogo Mine.

Both Pogo-style high-grade gold and Fort Knox-style intrusion-hosted gold have been identified on Tibbs and adjacent Tibbs South properties.

While Tibbs has been long known to host Pogo-like gold mineralization in vertical veins, the flat-lying structures that have hosted the bulk of the ore at Pogo have been elusive, until this year.

In November, Tectonic announced the discovery of Pogo-style high-grade gold mineralization at West Trench, a prospect associated with low-angle faults within moderately dipping gneissic rocks west of the historically identified high-grade gold occurrences at Tibbs.

Rock samples collected during mapping and prospecting of this underexplored western area of the Tibbs project returned grades as high as 190.4 g/t gold, the first evidence of Pogo-style vein mineralization in the gneissic terrain at Tibbs.

"With the recognition of Pogo-style veining in the western gneissic rocks, Tibbs now exhibits all the key features of the Pogo geological model, with important evidence for the mineralizing fluid having passed through controlling high and low-angle structures within favorable host rocks," said [Tectonic Metals](#) President and CEO Tony Reda.

Other companies advancing gold projects in the Goodpaster Mining District include:

- Kenorland Minerals Ltd., which carried out roughly 4,000 meters of drilling last year to test three early-stage gold prospects – Bronk, Thor, and Spike – at its Healy gold project just south of Tibbs.
- Resolution Minerals Ltd., which is exploring 64North, a 160,000-acre project consisting of nine claim blocks surrounding the Pogo property project – West Pogo, Shaw, Eagle, LMS-X, South Pogo, East Pogo, North Pogo, Last Chance, and Divide – amassed by Millrock. Resolution, which carried out exploration at several 64North targets during 2021, had invested enough to earn a 42% interest in 64North by mid-2021.

Game-changing discoveries

In Southcentral Alaska, [Nova Minerals](#) Ltd. and [HighGold Mining](#) Inc. are rapidly expanding gold mineralization on two exciting gold projects – Estelle and Johnson Tract.

Over the past three years, [Nova Minerals](#) has advanced its Estelle project, which lies about 100 miles northwest of Anchorage, from a promising prospect to an advanced exploration project boasting 6.2 million

oz and growing.

The rapidly expanding Korbel deposit at the north end of Estelle hosts 6.1 million oz of this gold in 286 million metric tons of indicated resource and 583 million metric tons of inferred resource averaging 0.3 g/t gold.

Nova's 2021 drill program was carried out at the scale needed to expand and upgrade this enormous resource, while also testing another of the intriguing gold targets across the 125-square-mile Estelle property.

"This approach will maximize our ability to more rapidly monetize our world-class asset, bringing forward the production start time along with cash flow, and allow us to ramp up future operations in short order across the Korbel valley and the wider Estelle gold district," said [Nova Minerals](#) CEO Christopher Gerteisen.

Although advancing Korbel toward feasibility-level studies was the primary focus of Nova's 2021 program, the Aussie company also drilled RPM, an intriguing and higher-grade gold target toward the southern end of the Estelle property.

One hole drilled by a previous operator in 2012 cut 177.4 meters averaging 0.79 g/t gold from a depth of 4.3 meters at RPM, including 50.2 meters of 1.75 g/t gold.

Nova drilled six holes at RPM during 2021, including one hole that cut 373 meters averaging 3.8 g/t gold.

In October, Nova incorporated the results in a maiden inferred resource estimate for RPM North of 23.1 million averaging 2 g/t (1.5 million oz) gold.

This brought the total Estelle resource up to 6.2 million oz, and another major jump is expected with a new calculation for Korbel.

"I have no doubt we will be drilling and growing our total global resource inventory for many years to come," said [Nova Minerals](#) CEO Christopher Gerteisen.

The same can be said for [HighGold Mining](#), which cut game-changing bonanza gold and silver mineralization at its Johnson Tract project about 125 miles south of Estelle.

Owned by Cook Inlet Regional Inc., an Alaska Native regional corporation more commonly referred to as CIRI, Johnson Tract hosts a gold-rich polymetallic deposit that had flown under the radar for two decades until HighGold began exploring it in 2019.

Going into the 2021 season, the JT deposit at Johnson Tract hosted 2.14 million metric tons of indicated resource averaging 6.07 g/t (417,000 oz) gold, 5.8 g/t (397,000 oz) silver, 5.85% (275.3 million pounds) zinc, 0.71% (37.6 million lb) lead, and 0.57% (26.8 million lb) copper; plus 581,000 metric tons of inferred resource averaging 2.05 g/t (38,000 oz) gold, 6.67% (85.5 million lb) zinc, 0.33% (4.2 million lb) lead, and 0.54% (6.9 million lb) copper.

While the 16,418 meters of drilling carried out at Johnson Tract last year continued to hit impressive gold grades around this deposit, it was drilling at the DC prospect about 2.5 miles to the northeast that changed the game.

The pivotal hole, DC21-010, cut 6.4 meters averaging an amazing 577.9 g/t (18.58 oz/t) gold, 2,023 g/t (65

oz/t) silver, 2.15% zinc, and 0.3% copper down dip of hole DC83-001.

"Without a doubt, this is a game-changing drill hole that firmly establishes the DC prospect as a second center of high-grade mineralization and validates our conviction in the multi-deposit potential at Johnson Tract," said [HighGold Mining](#) President and CEO Darwin Green.

HighGold is incorporating the results from the more than 30,000 meters of drilling completed during the 2020 and 2021 exploration seasons into an updated mineral resource estimate slated for completion early this year.

Western Alaska gold

Donlin Gold LLC – a joint venture between [Novagold Resources](#) Inc. and [Barrick Gold](#) Corp. – drilled game-changing mineralization of its own last year.

Already hosting 504.81 million metric tons of proven and probable reserves averaging 2.09 g/t (33.9 million oz) gold, it takes some significant drill results to move the dial for the world-class Donlin Gold project in Southwest Alaska.

Drill intercepts with as much as 42.2 g/t gold over 5.74 meters, however, might just do it – especially when it is not alone.

Highlights from drilling at Donlin during 2021 include:

- 92.02 meters averaging 7.8 g/t gold, including 5.18 meters of 33.7 g/t gold.
- 40.97 meters averaging 10.5 g/t gold, including 14.96 meters of 22.2 g/t gold.
- 24.44 meters averaging 14.6 g/t gold, including 6.5 meters of 33.5 g/t gold.
- 5.74 meters averaging 42.2 g/t gold, including 4.74 meters of 50.8 g/t gold.

The roughly 24,200-meter drill program that generated these impressive results is part of two years of optimization drilling in preparation for updating the feasibility study for this world-class gold mine project.

"This improved understanding is a necessary step towards optimizing the mine design and progressing the project up the value chain," said [Barrick Gold](#) President and CEO Mark Bristow.

This progress up the value chain includes an expected updated resource estimate for Donlin early this year, followed by an updated feasibility study for the world-class gold deposit.

As Novagold and Barrick advance Donlin up the value chain, Western Alaska Minerals Corp. (formerly [Western Alaska Copper](#) & Gold) is doing the same at its 35,520-acre Illinois Creek Mining District property about 130 miles to the north.

Western Alaska's Illinois Creek property is home to a historical mine that produced roughly 150,000 ounces of gold and 500,000 oz of silver during three years of mining between 1996 and 2002.

According to a calculation completed last year, Illinois Creek deposit hosts 8.7 million metric tons of

indicated resource averaging 0.9 grams per metric ton (253,000 oz) gold, 34.4 g/t (9.6 million oz) silver, and 0.21% (40 million pounds) copper; and 3.3 million metric tons of inferred resource averaging 0.99 g/t (104,000 oz) gold, 36.2 g/t (3.8 million oz) silver, and 0.21% (15 million lb) copper.

Western Alaska, which became publicly listed on the TSX Venture Exchange in November, carried out roughly 3,250 meters of drilling in 25 holes at Illinois Creek, including eight holes to expand the resource.

Most of last year's drilling, however, targeted Waterpump Creek, a carbonate replacement deposit about four miles northeast of the Illinois Creek open pit that hosts 166,000 tons of historical resource averaging 9.5 oz/t silver, 16.1% lead, and 5.5% zinc.

The best hole from the 2021 drilling, WPC21-09, cut 9.3 meters of 540 g/t silver, 23.5% zinc, and 16.1% lead.

"The mineralization is open to expansion at depth and will be a major focus of future exploration," said Western Alaska Minerals President and CEO Kit Marrs. "The CRD environment at Illinois Creek has the hallmarks of a large-scale system, and we look forward to systematically exploring and advancing the project."

Western Alaska's 2021 program also tested Last Hurrah, a silver enriched carbonate replacement prospect about 2,000 meters southwest of Waterpump; and Honker, a high-grade gold target about six miles north of the Illinois Creek deposit.

The Illinois Creek District property also hosts Round Top, a large porphyry copper deposit about 10 miles northeast of the past-producing mine; and TG North, a potentially larger but lower grade zinc-lead-silver carbonate replacement target associated with Round Top.

The nearby Yukon River could be used to transport concentrates from a mine at Round Top to global markets and potentially high-grade gold ore inland to the Kinross Alaska mill.



While neither company has made any indications that Illinois Creek ore is being considered under the Kinross Alaska strategy, Kinross officials have indicated that it is also looking for river-accessible assets within Fort Knox' 300-mile economic radius.

Not limited to just highway and rail accessible project means that the Kinross Alaska radius covers a Texas-sized swath of Alaska centered on the state's Golden Heart. This opens up the potential for an enormous number of gold projects that may not have otherwise been economically viable, meaning old money is likely to be an important facet of Alaska's mining sector well into the future.

CORRECTION (01-31-2022): The previous version of this article incorrectly identified [Felix Gold Ltd.](#)

Author Bio

Shane Lasley, Publisher

Over his more than 14 years of covering mining and mineral exploration, Shane has become renowned for his ability to report on the sector in a way that is technically sound enough to inform industry insiders while being easy to understand by a wider audience.

Email: publisher@miningnewsnorth.com

Phone: (907) 726-1095

<https://www.linkedin.com/in/shane-lasley-ab073b12/>

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North of 60 Mining News

P.O. Box 773026
Eagle River, AK 99577-3026
Ph: (907) 726-1095

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