

State's mining sector incident rate less than half the national average

8 **Explorer re-examines Delta VMS** Hunter Dickinson may form junior to explore Interior Alaska project

9 Yukon project fires up investors String of gold discoveries at Rau turns spotlight on Atac Resources

Fire River Gold Corp. initiated a 28,000-meter drill program at its Nixon Fork Mine in July. Underground drilling is focused on expanding high-grade gold zones near the Crystal Portal and anticipated to be an early source of ore for the nearby mill. See Page 3.

PHOTO BY SHANE LASLEY

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ALASKA Junior blazes own trail at Nixon Fork

Fire River launches drill program, studies mill configurations in anticipation of 2011 production at Alaska high-grade gold mine

By SHANE LASLEY Mining News

IXON FORK – Flying more than 200 miles, or 320 kilometers, northwest from Anchorage, on a route that roughly parallels the legendary Iditarod trail, Fire River Gold Corp.'s Nixon Fork Mine looms on the horizon. The 4,000-foot airstrip and array of buildings resting atop a gold-veined ridge is an island of productivity in this vast expanse of Interior Alaska.

"You might look at the site and say, 'It would never be built today.' If this was just a hillside and trees and we were looking at flying in a bulldozer in pieces, you wouldn't justify it. But, the reality is, this project is so far down the path that its threshold to launch is very, very low," Fire River Vice President of Mining Richard Goodwin said during a during my August visit to Nixon Fork. "We've got an airstrip, camp, power, a mill on site, all the permitting is done, and also the underground development."

Goodwin, an engineer with some 25 years experience, estimates that it would cost some US\$150 million to establish the facilities that are in place at Nixon Fork. This would equate to around the value, at today's price, of the entire 148,000 of gold recovered since Nevada Goldfields Inc. began mining at Nixon Fork in 1995.

Fire River acquired the entire package for US\$3 million, giving the young junior an enormous lead to becoming a producing miner.

Though everything is in place to begin production at Nixon Fork, Fire River is not blindly jumping into production. Instead, the junior is carefully studying every facet of the project before deciding how to proceed.

Spending the past year sorting through the facilities, equipment and geological data left behind by the previous operators, Fire River's team of geologists and engineers are now looking ahead to reopening the highgrade gold mine.

"We are very much at a crossroads right now. We spent all of our time up to this point looking backwards - looking at what's been done, looking at what data exists - and we are just on the path now where we are breaking our own trail. The most significant part of that is we started our own drill program," Goodwin explained.

Geologically driven

Though it pains him as an engineer to admit it, Goodwin concedes Nixon Fork "is

The complexity of the deposit partially explains the disparity of the gold recoveries experienced by the two previous operators of the mine.

Though Nevada Goldfields Inc. averaged around 1.4 oz/t while operating Nixon Fork from 1995-1998, St. Andrew Goldfields Ltd., which purchased the mine in 2003, only averaged about 0.56 g/t during its nine months of production in 2007.

Due to these lower than expected grades, the Toronto-based miner shuttered operations and completed 9,381 meters of drilling in order to better define its targets at Nixon Fork. The company was contending with financial difficulties in 2008 and new management decided to pull the plug on the project.

The stockpiles remaining from St. Andrew's mining has provided Fire River with clues as to why the former Nixon Fork operator milled the lower grades.

"They used a contract miner that basically got paid to get tons to the surface. There is a whole lot of limestone and marble sitting in that ore pile, so it didn't run 30 grams (per ton) it ran about 18," Fire River Manager of Geology Larry Hillesland explained. "You need to have a very good control; the stuff that comes up and runs through that mill needs to be good. "

The company believes the key to turning a profit at Nixon Fork is to stay in the highgrade zones, feeding the mill ore averaging around an ounce of gold per metric ton.

"Our cut-off grade is going to be 15 to 20 grams (of gold per metric ton) and the head grade will be over an ounce, in all likelyhood, for this mine," Hillesland explained.

Drill program tests understanding

Armed with the geological knowledge gained from re-evaluating more than 10,000 meters of historical core, Fire River's geological team launched a 28,000-meter drill campaign that is both delineating near mine resources for immediate mining and investigating promising new prospects on the property.

"We have been very encouraged by the impressive grades in our re-evaluation work and this drill program will allow us to test and demonstrate our understanding of the ore body," Goodwin said.

The underground rig is primarily focused on expanding the 3300 zone at depth. This ore body, located near the Crystal Portal and mill, was the primary target of St. Andrew's drilling and is anticipated to be a source of early high-grade ore.



Fire River Gold Corp. estimates it would cost about US\$150 million to bring on line the facilities already in place at its Nixon Fork Mine in Alaska. The junior anticipates beginning production at the high-grade gold mine in 2011.

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a geologically driven mine." The property hosts a skarn deposit with complex geology. Fire River knows that understanding the rock types and structure is paramount to demonstrating the continuity of the highgrade gold mineralization that will make the mine profitable.

The underground program also is investigating several other zones in the vicinity of the mill, including the 3100 and 3500 zones.

To ensure that the junior stays in pay dirt

see FIRE RIVER page 19

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ALASKA **Alaska miners lead nation in safety**

Resource extraction industry boasts lowest incident rate in state, only execs safer across U.S.; Fort Knox workers lead mine safety

By SHANE LASLEY

Mining News

Assive earthmoving equipment, explosives, enormous mills pulverizing rock into dust, chemicals, metal-liquefying furnaces and extreme weather conditions - mining in Alaska is fraught with peril. Yet, according to the Alaska Department of Labor and Workforce Development, only the state's oil fields provide a safer workplace than Alaska mines.

According to a state report on occupational injuries, 1.8 percent of miners in Alaska were injured in 2008, compared to the statewide average of 4.9 percent of employees across all industries.

When it comes to safety, Alaska miners also outshined their peers across the nation. According to a U.S. Department of Labor survey, the injury rate for the natural resources and mining sector in Alaska is 1.9 percent, less than half of the 3.9 percent national average for this group.

Statistics kept by the U.S. Department of Labor, which breaks down the nation's work force into 13 industrial sectors, indicates that Alaska is a particularly dangerous place to work. Workers in the 49th state sustained a larger percentage of injuries and illnesses in all of the categories except for resource extraction and mining.

Trades with similar skill sets as mining experienced a much higher incident rate. Across the nation 4.6 percent of construction workers were injured or ill in 2008 and during the same period 7.1 percent of Alaska workers in this sector were hurt, more than three times the rate of Alaska miners.

Bankers and executives are the only

Bankers and executives are the only occupations in the U.S. that lauded a better safety record than Alaska miners. About 1.4 percent of workers involved in financial activities were injured. **Professional and business services** came in at 1.8 percent.

occupations in the United States that lauded a better safety record than Alaska miners. About 1.4 percent of workers involved in financial activities were injured. Professional and business services came in at 1.8 percent.

Oversight, awareness play role

Due to the inherent risks of working in mines, the U.S. industry has drawn stringent government oversight. Starting in the late 1800s, the federal government began enacting legislation specifically targeting safety in the nation's mines. Evolving from this initial legislation, the U.S. Mining Safety and Health Administration was formed in 1977 as a watchdog of safety in mines. Today, U.S. mines rank among the safest in the world.

"I think MSHA is due some credit for the citations we write and the standards we set on the industry," said Bob Wood of MSHA's Anchorage office.

Modern mining companies have implemented innovative tools and programs to increase safety awareness among workers, which is helping to drive a culture of safety among miners.

While government oversight and industrial attentiveness helps explain the safety record of U.S. mines, it does not account for the much lower-than-average incident rate in Alaska mines. Regulators and industry insiders contend that the state's large-scale, modern mines play a role in the lower statistic.

"Our big mines up here do have good safety programs – they take safety very seriously," Wood said.

Fort Knox leads safety

The 500 or so workers at Kinross Gold Corp.'s Fort Knox Mine north of Fairbanks, are doing their part to drive down the injury rate of Alaska miners. In August, employees at the Interior Alaska gold mine logged 3.5 million hours without a lost-time accident.

To put the achievement in perspective, consider that for one employee to accomplish the feat, he or she would need to work 40 hours a week, 50 weeks a year, for 1,750 years without suffering a single injury that would cause him or her to miss work for more than 24 hours. A sprained ankle, a pulled back muscle or a smashed finger could all be considered a lost-time injury.

In fact, according to records kept by the U.S. Mining Safety and Health Administration, the last time a Kinross employee experienced a lost-time incident at the Fort Knox Mine was in December 2006 when a welder twisted his knee while maintaining a motor grader.

Fort Knox General Manager Lauren Roberts credits the commitment of the mine's employees to maintaining the highest safety standards and the hard work they've put in to achieve the nearly four-year run without an incident.

"We all recognize that safety is the bedrock foundation of a well-run, efficient and productive work environment. I am proud to be part of such a conscientious team," Roberts said.

Managers at the mine told Mining News that the safety success at Fort Knox is no accident.

How they do it

Fort Knox spokeswoman Lorna Shaw said the employees and management have implemented various tools to develop a culture of safety at the gold mine.

"They do have an outstanding safety program up there," MSHA's Wood told Mining News.

One of the primary tools used at Fort

Knox is a program known as SOS, or "See it; own it; solve it." The premise behind SOS is that the program focuses on employee involvement in identifying and solving unsafe conditions and behaviors at the mine site.

"SOS is a program run by hourly employees and it focuses on the behavior of employees. People's behavior and actions are what cause accidents. Our employees have the courage to address unwanted behavior and as a result, our accident rate has gone down," Fort Knox Mine Health and Safety Manager Bob Sweeden said.

SOS is only one of the programs that assisted the Fort Knox team to achieve 3.5 million hours without a lost-time incident.

"The safety process at Fort Knox revolves around culture, and SOS is just one of the tools we've employed to build that culture," Sweeden said. "Culture by design is better than culture by default."

Fort Knox management utilizes the Safety Training Observation Program, or STOP, developed by DuPont.

According to DuPont, STOP for Supervision teaches managers, supervisors and team leaders how to observe people as they work. By talking with people to acknowledge safe acts and correct unsafe acts, workers are encouraged to follow safe work practices.

Sweeden said each manager performs monthly STOP audits by observing employees' or contractors' work and then providing positive or negative feedback, depending on the observation.

In addition to safety programs, management and hourly employees conduct weekly planned inspections.

"Everything is examined, from housekeeping, to broken tools, to proper guarding or adequate signage," Shaw explained. "The idea is to take an indepth look at a different area each week to ensure that the mine is operating as safely as possible and that any hazardous conditions are corrected."

She said safety comes down to individual decisions by employees to do things right.

"We can provide the tools, the training, and help shape the culture, but ultimately, every employee is responsible for safety," Shaw observed.



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A little gold might be a good idea

Some analysts say recent run-up in prices may be just the beginning as European, U.S. economies grapple with unwieldy debt burdens

By CURT FREEMAN For Mining News

As we near the end of September and the metals market remains robust, the mining industry is breathing a sigh of relief as we remember the market meltdown of early September 2008. Although nobody is suggesting that the larger economy is in any way out of the woods yet, the worldwide demand for metals and metal products continues to expand.

For example, the gold price hit US\$1,274.95 earlier this month, well above the previous record of US\$1,261 hit on June 28. Some believe gold is heading higher, much higher: Jeff Clark, senior editor of Casey's Gold and Resource Report was wondering about how high the price of gold might go and took a novel approach to predicting what might happen.

He analyzed the major surges in gold price in the last 10 years and found that the most recent surge, a 13.4 percent jump from late March to mid-May 2010, is the smallest of 12 price surges in the past 10 years and far behind the 35.5 percent jump in mid-March to mid-May 2006. The average of all surges in the gold price since 2001 is 23.5 percent. If we hit that average, gold would spike to \$1,428 in this current run-up. Crazy talk? How about this little show stopper: gold prices surged a whopping 128.5 percent from Oct. 8, 1979, to Jan. 21, 1980, while U.S. inflation blew past 10 percent without a backward glance.

Do the math, a 128 percent increase puts the gold price ...way up there. Really crazy talk? Perhaps, but with no end in sight for the debt crisis in Europe and the debt crisis in the U.S. getting worse, maybe buying a few ounces of gold would a good idea, just in case your next paycheck is paid with a wheelbarrow full of green paper.

Western Alaska

FIRE RIVER GOLD CORP.

announced additional results from previously unreleased drilling at its Nixon Fork gold project near McGrath. Significant results include hole N07U0083 ,which returned grades of 26 grams of gold per metric ton over 2.9 meters, including 64 g/t gold over 1.0 meter and hole N07U084, which returned grades of 32 g/t gold over 2.6 meters. The company also announced acceleration of its underground drilling program by addition of a companyowned drilling rig. The rig will concentrate on the 3300 zone and other prospective zones at the deposit. The company also announced that they have engaged SNOWDEN MINING INDUSTRY CONSULTANTS INC. to prepare a preliminary economic assessment to evaluate the economic viability of resuming underground commercial production. The study will present a preliminary mine plan for the project, including dilution and recovery analysis, stoping method selection, production and development forecasts, capital and operating cost estimations, revenue projection, and a financial model. This work is due for completion by mid-December.

The author

Curt Freeman, CPG #6901, is a well-known geologist who lives in Fairbanks. He prepared this column

pared this column **CURT FREEMAN** Sept. 20. Freeman can be reached by mail at P.O. Box 80268, Fairbanks, AK 99708. His work phone number at Avalon Development is (907) 457-5159 and his fax is (907) 455-8069. His email is avalon@alaska.net and his web site is www.avalonalaska.com.

CORP. announced additional drilling results from their Gil gold project near Fairbanks. Significant results in the North Gil zone include 35 feet grading 0.0418 ounces per ton of gold in hole GVR10-573, while results in the Sourdough zone include 25 feet grading 0.0508 oz/t gold in hole GVR10-560. During 2010 the partners have completed 5,431 feet of core drilling and 9,546 feet of reverse circulation drilling. Additional assays for 18 holes are pending. Following development of a three dimensional model, the partners intend to complete an updated resource estimate and develop preliminary mining plans for the deposit.

INTERNATIONAL TOWER HILL MINES LTD. announced additional drilling results from its 45,000-metre summer 2010 drilling campaign at its Livengood gold project. Drilling continued to expand the shallow, high-grade, northwest trending zone within the Core Zone. Hole MK-RC-405 returned 6.1 meters grading 18.2 g/t gold. This consistent trend of 6-plus g/t mineralization extends for nearly a half a kilometer within the larger but lower grade Core zone and is emerging as an attractive early mining target after commercial startup. This northwest-trending structural zone corresponds to a broad area of late quartz veining and suggests that other high-grade zones may exist within the larger lower grade zones. Drilling results from the recently discovered Olive zone continued to return promising results including hole MK-RC-391, which returned 45.7 meters grading 1.1 g/t gold and hole MK-RC 396 which returned 13.7 meters grading 2.1 g/t gold. Mineralization at the Olive zone is hosted in the same rock types as the main deposit but is not associated with a soil anomaly, opening up a large exploration area to the south of the main deposit that was previously thought to be unprospective. At present the company has six drilling rigs operating with a seventh planned. These rigs are conducting infill, expansion, district exploration and condemnation drilling on the deposit. The company also released a series of project enhancement options, which have been developed as a result of the previously released preliminary economic assessment. The first option involved a heap-leach-only production schedule that would provide cash flow for construction of a milling operation. This option had an initial capital cost of US\$638 million to produce 513,000 ounces of gold per year for seven years. The mine would operate at a rate of 100,000 tons per day

The average of all surges in the gold price since 2001 is 23.5 percent. If we hit that average, gold would spike to \$1,428 in this current run-up. Crazy talk? How about this little show stopper: gold prices surged a whopping 128.5 percent from Oct. 8, 1979, to Jan. 21, 1980, while U.S. inflation blew past 10 percent without a backward glance.

of ore mined and added to the heap leach at a stripping ratio of 1.1 to 1. Gold recovery was estimated at 71 percent. Operating costs came in at US\$486 per ounce with a net present value of US\$579 million and a 26.9 percent internal rate of return on investment using a gold price of US\$950/oz and a 5 percent discount rate. The other alternative to the base case was a large combined millheap leach project. This option had an initial capital cost of US\$1.027 billion to produce 833,000 ounces of gold per year for 12.6 years. The mine would operate at a rate of 135,000 tons per day of ore milled and added to the heap leach at a stripping ratio of 1.07 to 1. Gold recovery was estimated at 73 percent for the heap leach and 81 percent for the mill. Operating costs came in at US\$534/oz with a net present value of US\$1.113 billion and an 18.5 percent internal rate of return on investment using a gold price of US\$950 per ounce and a 5 percent discount rate.

RADIUS GOLD INC. provided an update on progress at its Sixty Mile project, which straddles the Yukon/Alaska border. Approximately 10 percent of the project's lands are on the Alaska side of

the border. To date, the company has completed soil sampling, auger drilling, excavator trenching and helicopter-borne magnetic-radiometric-electromagnetic geophysical surveys. Bedrock gold mineralization has been identified in two distinct geological settings: thrust or detachment fault controlled gold mineralization and epithermal gold mineralization in the Sixtymile graben. Work in the former setting has defined a northeasttrending tectonic mélange unit associated with a thrust or detachment fault zone within a package of schists and quartzites overlain by younger andesitic volcanic rocks. Gold is associated arsenic and limited trenching has returned significant grade-thickness results including 8 meters grading 1.1 g/t gold, 10 meters grading 1.6 g/t gold and 13 meters grading 1.6 g/t gold. In the epithermal setting, soil sampling has defined a strong gold-in-soil anomaly on the southeastern bank of the Sixty Mile river valley. The anomaly measures 800 meters by 300 meters, is open in all directions and is defined by strongly anomalous gold hosted in andesitic vol-

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NORTH OF 60 MINING

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canic rocks. Grab samples of the limited bedrock outcrops in the area have returned values from trace up to 5 g/t gold. The company plans to conduct drilling on both targets in September. The Sixty Mile gold district was discovered in 1892 and has produced in excess of 500,000 ounces of placer gold since that time.

Alaska Range

KISKA METALS CORPORATION reported that **KENNECOTT EXPLORATION COMPANY** will not exercise its rights to back in on the Whistler project, giving Kiska a 100 percent interest in the project with Kennecott retaining a 2 percent net smelter return production royalty on the property. Exploration at the project is ongoing with one rig working on the Island Mountain breccia prospect and the other on the main Whistler prospect. The company anticipates completion of a revised mineral resource estimate at Whistler following completion of the 2010

drilling program. TERYL RESOURCES CORP. announced acquisition of 11 state mining claims in the Kahiltna Terrane of the southern Alaska Range. Under terms of the deal Teryl will issue 100,000 treasury shares to the vendor in two installments in the first year, and will issue an additional 100,000 treasury shares and pay US\$10,000 in cash after two years. Teryl must also contribute US\$50,000 expenditures in the first year and US\$100,000 expenditures in the second year of the agreement.

Southeast Alaska

COEUR D'ALENE MINES CORP. announced new exploration results from its Kensington gold mine north of Juneau. On the Horrible vein system, which is located about 1,500 feet to the west of the main Kensington mine, mineralization remains open at depth and on-strike and is easily accessed from existing underground infrastructure. This year's program focused at the north end of a more than 14,000-foot long, northeast-trending mineralized belt that contains the recently Kimberly vein as well as the Jualin and several other gold-bear-



ing quartz veins located west of the operating mine. Significant results include 6.5 feet of 2.39 oz/t gold from core hole H10-016, 3.9 feet at 0.907 oz/t gold from core hole H10-029 and 3.5 feet of 1.069 oz/t gold from core hole H10-031. Many of the drill holes cut multiple quartz veins which are typical of the style of mineralization seen at the nearby Kensington ore body. Additional definition drilling is planned in this area.

CONSTANTINE METAL RESOURCES LTD. announced additional results from its 10 hole, 4,017 meter drilling program at its Palmer copperzinc-gold-silver volcanogenic massive sulfide project near Haines. Significant results include the RW Zone where Hole CMR10-38 intersected 10.15 meters grading 0.70 percent copper, 6.51 percent zinc, 1.02 percent lead, 0.39 g/t gold, and 89.7 g/t silver. This zone is immediately underlain by 13.65 meters grading 1.13 g/t gold and 148.0 g/t silver. In the South Wall Zone I, hole CMR10-40 intersected 20.8 meters grading 1.03 percent copper, 5.01 percent zinc, 0.14 g/t gold and 11.3 g/t silver, including 12.05 meters grading 1.41 percent copper, 6.13 percent zinc, 0.17 g/t gold and 14.4 g/t silver. In South Wall Zone III, hole CMR10-39 intersected 2.45 meters grading 1.10 percent copper, 4.52 percent zinc, 0.13 g/t gold and 24.8 g/t silver. South Wall mineralization has now been defined from surface to a vertical depth of 525 meters and over a strike length of 450 meters. The 2010

exploration program also included both surface and downhole electromagnetic geophysical surveys. Downhole surveys were completed on six of the 10 holes drilled in 2010. Surface-based electromagnetic surveys totaled approximately 37 line kilometers and covered areas along trend from the 4.12-million-metric-ton inferred resource, as well as the Mount Henry Clay prospect, an area of poor bedrock exposure that hosts numerous high-grade massive sulfide boulders.

GRANDE PORTAGE RESOURCES LTD. announced a preliminary update from its diamond core drilling program at the Herbert Glacier prospect north of Juneau. A total of 1,296.3 meters of drilling has been completed in seven holes and a second drill rig has been approved for the project. Quartz veins and sulfidized shear zones have been encountered in every hole at predicted intervals for targeted mineralized zones. The Main or Number 1 vein has been traced on surface for more than 800 meters and has been known since about 1980 when it was discovered as it was exhumed from glacial cover. A parallel vein in the hanging wall of the Main Vein had originally been mapped, and this quartz vein also was intersected in each of the seven holes drilled to date. Mineralization consists of sulfides and visible free gold. This has now been named the "Ridge Vein" located about 100 meters north of the Main Vein. The Ridge vein is now believed to be at least 300 meters long. In addition, the Deep

Trench Vein was known previously only from a poorly exposed vein structure about 200 meters south of the Main Vein. It has been encountered as a complex vein in the deepest hole drilled at the prospect. This vein will be explored by additional drilling planned for 2010.

COPPER RIDGE EXPLORATIONS INC. announced that it has completed a five-hole 1,537 meter drill program at its Duke Island copper-nickel-platinumpalladium property in Southeast Alaska. Significant results include 0.294 percent copper and 0.075 percent nickel over 4.9 meters and 0.148 percent copper and 0.039 percent nickel over 13.4 meters in hole DK10-08. Despite drilling to depths of up to 468 meters, the targeted basal contact of the mineralized intrusion was not encountered. Drilling results suggest that zoning within the ultramafic complex is more complex than originally modeled and that what had been thought to be the basal contact, as interpreted through several geophysical techniques, was in fact rafts of partially assimilated sedimentary rocks. The combination of high sulfide content and graphite in these rafts produced strong electromagnetic conductors. The company believes that magmatic sulfide accumulations along basal contacts or within a feeder zone remain a unique and prospective exploration target due to the intrusion's high sulfide content, the magmatic or nettextured nature of the sulfide mineralization and nickel depletion of some of the intrusion's silicate mineral phases.

UCORE RARE METALS INC. announced that the UNITED STATES GEOLOGICAL SURVEY has increased its research involvement at the company's Bokan Mountain rare metal project. In 2009, the USGS awarded a research grant to further study the Bokan Mountain rare earth and uranium deposit. The USGS also sent a team of geoscientists to the project in 2010 to increase its understanding of the area's unique heavy rare earth mineralogy. The USGS intends to utilize the Dotson Ridge area to evaluate veintype and alternative rare earth element deposits associated with alkaline-peralkaline intrusive complexes. The USGS team examined multiple areas comprising the Bokan Complex, the Dotson Shear, Geoduck, Wennie, and Geiger zones.



Alaska Earth Sciences

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GUEST COLUMN Just kidding, the sky isn't falling

Land of plenty promises continued abundance for many more generations of Alaskans despite state's looming lack of political clout

By J.P. TANGEN For Mining News

Several readers of last month's column were struck by the struct were struck by the excessively cynical tone of my admonition that the last person out of Alaska should please turn out the lights. In retrospect, perhaps I was too rash because, in truth, Alaska will continue to be a fertile ground for all manner of relevant and critical activities for as far into the distant future as we are able to see.

For instance, although there may continue to be a diminishing military establishment here, even in the total absence of saber-rattling along the Pacific Rim, it seems likely that there will remain a requirement for a skeleton corps of people willing to jump out of perfectly good airborne airplanes. After all, even a voluntary armed force needs to have a place to threaten to send people. Fairbanks may not be Adak, but it is close enough for government work.

Likewise, the Fish and Feathers folks and the NOAA wind detectors will need to be able to congregate somewhere when discussing how exhaust fumes in Atlanta are causing an increasing number of walruses to sunbathe on our coastal beaches.

In addition, where would EPA be without remote Alaska villages to use for baseline evaluations of the disposition of honeypot content?

There has been such a demand for the opportunity for people to risk their lives on the flanks of Mt. McKinley that the National Park Service has actually had to start charging more money to help pay for the cost of plucking the ill-prepared off, and for other purposes, the mountain.

The recreational opportunities afforded by Alaska will still retain their appeal. Undoubtedly, folks will still want to see how many mosquitoes they can kill with a single blow while bicycling across the Arctic National Wildlife Reserve - at least until mosquitoes are declared endangered. Head net suppliers are probably safe for the time being.

People will always want to pay the big bucks for a few days to kill fish at Bob Gillam's lodge on Lake Clark, and that has to account for something.

Certainly recreational placer mining will continue to be available, as long as you don't use anything mechanical and are careful to return any gold found to its original location.

Alaska was once, in recent memory, in a

Mining & the law The author,



mining law in J.P. TANGEN Alaska since 1975. He can be reached at jpt@jptangen.com or visit his Web site at www.jptangen.com. His opinions do not necessarily reflect those of the publishers of Mining News and Petroleum News.

(Look to the lower left, next to Hawaii.) It was wrong for me to be so quick to forecast a bleak future. I have long wondered whether the best hope for Alaska was secession, not because I don't like being an

I have long wondered whether the best hope for Alaska was secession, not because I don't like being an American à la Joe Vogler, but because if we were to secede, obviously, it would be followed by a great civil war (but this time we would be the North). If we won, we would be entitled to foreign aid. If we lost, we would be entitled to reconstruction. In either case, we could expect better treatment from the landlord on the Potomac. -J.P. Tangen, guest columnist

American à la Joe Vogler, but because if we were to secede, obviously, it would be followed by a great civil war (but this time we would be the North). If we won, we would be entitled to foreign aid. If we lost, we would be entitled to reconstruction. In either case, we could expect better treatment from the landlord on the Potomac.

The optimistic truth is that Alaska is a land of plenty. Our oil, our gas, our coal, our metallic minerals, not to mention our fish and our trees are among the most prodigious in the world. Everyone wants what we have to share and those wants are not going to disappear soon or perhaps ever.

So we will be the supply source, one way or another, for generations yet unborn. The sky really isn't falling. I was just kidding.





I would like to introduce you to North of 60 Mining News, a monthly supplement to Anchorage-based Petroleum News. North of 60 Mining News covers the mining industry in the Arctic, focusing on Alaska and northern Canada. It is inserted in Petroleum News the fourth week of every month.

Mining News carries the latest news in the industry, as well as features on the most important projects and issues, such as new technology, environmental policy, aboriginal rights and mining legislation. It is the only newspaper that covers this far northern region in such depth, and our reporters frequently travel to see mining projects for themselves and to attend major mining conferences.

In addition to news and features, we publish regular columns by Fairbanks geologist Curt Freeman and Anchorage attorney J.P. Tangen, a specialist in mineral law. A subscription to the paper includes access to the online archive of thousands of mining and petroleum articles from past years.

fairly strong position politically to weather the economic storms that wreaked disaster on our fellow Americans, but we have now elected to create our own havoc. First the Alaskan Hulk was sent packing, and then his understudy was shown the door. The seniority and influence Uncle Ted and Miss Lisa represented was immeasurable. It was the Lipitor for our financial arteries. Upon Sen. Murkowski's announcement that she would conduct a write-in campaign against the Grand Old Tea Party candidate, she was immediately stripped of her leadership positions. Those positions included being the ranking member on the Senate Energy and Natural Resources Committee, which was huge, especially if the Democrats are ever routed. For those of us who think that development of energy and natural resources is important for Alaska, the loss of that specific leadership position is nationally monumental. One can only hope the successor can find Alaska on a map.

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Explorer seeks to unify Delta geology

Hunter Dickinson flies extensive geophysical survey over Interior Alaska VMS; may form junior to continue exploration at project

By SHANE LASLEY Mining News

Hunter Dickinson Inc. has set out to bring continuity to the disjointed picture that geologists have of the precious metals-rich Delta volcanogenic massive sulfide property in the eastern Alaska Range about 36 miles, or 58 kilometers southwest of Tok, Alaska.

Over the past 35 years, geologists representing a throng of mining companies have traversed the Delta project investigating the promising mineralization known to exist there. This exploration, which includes 23,711 meters of drilling, has discovered 40 mineral occurrences on the property, seven of which have had inferred resources calculated for them.

Re-examining and re-interpreting the disparate data was the first task for Hunter Dickinson's geological team.

The privately-held company decided the best way to unify and expand the historical data is to fly a 725-line-kilometer versatile time-domain electromagnetic survey over the entire 61-square-mile, or 158-square-kilometer, property.

The response the geophysical survey returns over areas of known mineralization will provide a signature Hunter Dickinson geologists can use to delineate targets for a drill program expected to start in 2011.

"We are in the process of flying an airborne VTEM survey over the entire project, including the new claims we staked. We have done some forward modeling with the



geophysics, and we feel pretty comfortable that the VTEM survey is going to give us some really good drill targets," Interim Delta Project Manager Lena Brommeland told Mining News during an August 20 interview.

Segmented geology

The VMS mineralization at Delta is nearly as segmented as its geological investigations. An inferred resource of 15.4 million metric tons grading 0.6 percent copper, 1.7 percent lead, 3.8 percent zinc, 62 g/t silver, and 1.7 g/t gold is distributed amongst seven deposits.

Four of the deposits in the resource -LP,

MID, DW and VAL – are considered to be four sections of what was once a 3,200meter-long sulfide sheet that has since been broken by faulting. According to an NI 43-101 report prepared for the project in 2006, these four zones, known as DW-LP, have the potential for significant expansion. While additional drilling would be needed to validate the concept, geologists believe this sulfide system could contain around 25 million metric tons with 0.6 percent copper, 2.2 percent lead, 1.9 percent lead, 5 percent zinc, 58 g/t silver and 2 g/t gold.

A fifth deposit, known as PP2, was originally thought to be a part of DW-LP sulfide sheet, but was later determined to be a deep-

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"We are very encouraged by what we have seen. There is opportunity there to establish some continuity in the high-grade resources that the project is known for. There is precious metal enhancement in the system, and we look forward to moving the project forward and developing those resources."
—Lena Brommeland, Interim Delta Project Manager, Hunter Dickinson Inc.

COURTESY HUNTER DICKINSO

er sulfide layer.. Not much is yet known about these lower strata of VMS mineralization.With gold grades that average 2.6 g/t, DDN and DDS contain significantly higher grades than the five other deposits included in the resource. These deposits, which are considered to be related, are open for expansion and have about 1,200 meters of untested area lying between them.

Trio and Supercub, two prospects not included in the resource, hold the promise for new high-grade discoveries at Delta

Originally thought to be massive sulfide outcrops, large boulders averaging 7.3 percent lead, 5.6 percent zinc, 113 g/t silver and 0.7 g/t gold led geologists to Trio. It was later determined that these stones and the surrounding region was part of a landslide area. The source of the sulfides has yet to be discovered.

Supercub, about 1,500 meters northwest of Trio, was also discovered with the help of massive sulfide boulders. These high-grade rocks, which average 25 percent combined copper, lead and zinc plus 200 g/t silver and 11.3 g/t gold, are believed to be transported by glacier from a location indicated by a geophysical anomaly. Only one hole, which did not cut massive sulfides, has been drilled in the prospective area.

New junior?

Hunter Dickinson optioned the Interior Alaska VMS property through a joint venture with Grayd Resource Corp. A key part of the venture was expanding the property to 61 square miles, or 158 square kilometers, by staking an additional 238 claims.

The Vancouver B.C.-based company will hold a 60 percent interest in a limited liability company formed for the Delta joint venture by reimbursing Gravd for staking the additional claims, funding US\$3 million in exploration by the end of 2012. Following the initial earn-in, Hunter Dickinson has the option to acquire Grayd's 40 percent in the joint venture company. Mining News expects that Hunter Dickinson will form a publicly traded junior to carry out the continued exploration at Delta. The company took a similar approach when it optioned the Niblack project in Southeast Alaska, later forming Heatherdale Resources Ltd. to conduct an aggressive exploration campaign at the VMS deposit. Like the Niblack project, Brommeland sees Delta as promising precious metalsrich VMS with the potential to become a world-class deposit. "We are very encouraged by what we have seen. There is opportunity there to establish some continuity in the highgrade resources that the project is known for. There is precious metal enhancement in the system, and we look forward to moving the project forward and building on those resources," she said.

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Junior's shares climb with discoveries

Gold fever infects market after Atac Resources reports Carlin-type deposits, new gold district on northern edge of Tintina belt

By ROSE RAGSDALE For Mining News

N ow that the word is out about Atac Resources Ltd.'s impressive gold discoveries at the Rau Project in central Yukon Territory, the financial market is taking to the early-stage exploration effort with the enthusiasm of a bear in a beehive.

Atac recently reported impressive results from drilling and prospecting the Osiris and Isis targets on the Sten claim block near the eastern edge of the 185-kilometer-, or 115-mile-long Rau Project. Meanwhile, investors have fueled a run-up in Atac's stock price to about \$7 a share from just under \$2 in mid-August.

The Rau Project, located in the Mayo Mining District of central Yukon, about 55 kilometers, or 30 miles, northeast of Keno City, consists of 6,979 claims comprising the main Rau property and two satellite properties, the Stoked and the Mouse. Collectively, the claims cover about 1,400 square kilometers, or 540.5 square miles, including 3,855 claims that were staked in late 2009 and early 2010 to cover projected extensions of favorable geology to the east of the claims initially staked in 2006 to cover a strong gold and tungsten stream sediment anomaly. Atac holds a 100 percent interest in the Rau property with no underlying royalties.

A quiet discovery

In 2008, diamond drilling at Rau tested an area beneath the core of the geochemical anomaly, resulting in the discovery of sediment-hosted replacement-style gold mineralization which Atac dubbed the Tiger zone.

Though the discovery propelled Atac to the front of the pack among juniors looking for gold in the Yukon, most of the market's attention remained focused on Underworld Resources Inc.'s White Gold Project to the west. Kinross Gold Corp. acquired that 1.4million-ounce property in a friendly takeover of Underworld in June.

The drilling intersected thick sections of sulphide-rich material, but also some oxidized mineralization. Last year 8,749 meters of drilling at the Tiger zone successfully extended and more clearly defined the areas of oxide and sulphide mineralization, identifying three mineralized units that are stacked about 60 meters apart. The middle unit, known as the Discovery horizon, was the main focus of exploration activity in 2008 and 2009. Drilling in 2009 also identified a high grade core to the Tiger zone, which was not intersected during the 2008 drilling program. So far, the Discovery horizon contains the most significant gold intervals observed to date in the Tiger zone, tracing high-grade mineralization about 650 meters along strike, in sections 15-96 meters thick and averaging more than 3 g/t gold surrounded by lower grade material. The horizon remains open along strike in both directions and downdip to the northeast.



During a property tour in August, Atac Resources Inc. unveiled this colorful display of light-sensitive, realgar and orpiment-rich rock samples collected at the Osiris target on the Sten claim block in the eastern area of its 185-kilometer, or 115-mile-long, Rau Project in central Yukon Territory.

meters, respectively. This mineralization is characterized primarily by pyrite and quartz replacement within coarse hydrothermal dolomite and iron carbonate and is interpreted as occurring either stratigraphically or structurally below the Discovery horizon.

Atac said recognition of the East zone is significant because it demonstrates that gold can be hosted by different sulphide assemblages within diverse structural and stratigraphic settings.

Additional surface exploration in 2009 identified six new surface zones, which lie between 2.5 and 5 kilometers northwest of the Tiger zone. These zones are defined by strong soil geochemical anomalies and gold-bearing oxide talus samples that returned significant grades of gold, silver and lead.

Season of discoveries

In May, Atac started its 2010 drilling program at Rau, budgeting C\$12.5 million for at least 12,500 meters. Since then, spending at Rau has become a moving target with the company working to accomplish as much exploration as possible, including 18,000 meters of drilling, before tion, like that in the Carlin trend of northeastern Nevada, shows alteration assemblages and association with low-temperature arsenic sulphides, realgar and orpiment. Osiris and Isis host rocks are 150- to 250-meter-thick limestone debris flow and turbidite units which occur within basinal silty mudstones.

The "Carlin Unconformity," or Carlin trend, is a geologic feature that represents a

see ATAC RESOURCES page 10



New types of mineralization

Near the end of the 2009 drill season, a new type of mineralization was discovered northeast of the Tiger zone. The East zone was discovered in holes Rau-09-44 and Rau-09-61 where sulphide intercepts 90 meters apart averaged 3.71 g/t gold over 36.78 meters and 3.36 g/t gold over 23.06

winter sets in.

On July 8, Atac reported a significant silver-lead-zinc-indium discovery at the Ocelot target located in the western portion of the Rau property. The Ocelot target occurs along both sides of the regional structural corridor that hosts the Tiger zone's gold mineralization, 15 kilometers, or about 9 miles, to the southeast.

Three weeks later, the junior unveiled the Osiris discovery, reporting gold mineralization associated with realgar and orpiment grading 1.92-12.15 g/t gold; soil samples grading up to 17.5 g/t gold; 517 new claims staked to complete coverage of a 150-sq/km area of highly anomalous gold and pathfinder elements in stream sediments; and mobilization of a drill to test the Osiris target.

Carlin-type rocks

Atac geologists say Osiris mineraliza-

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NORTH OF 60 MINING

continued from page 9 ATAC RESOURCES

period of erosion or non-deposition likely associated with a collision between a tectonic crustal block called a terrane and the North American Plate.

The collision occurred between 250 million to 500 million years ago and induced higher crustal temperatures and pressures which produced numerous hot springs along the suture zone. Several episodes of subsurface magmatism are known to have occurred subsequent to the collision, associated with tectonic forces affecting the entire basin and range. During each of these episodes, and particularly during the Eocene epoch, hot springs brought dissolved minerals including gold and silver toward the surface, precipitating them out along fissures.

During a recent interview, Atac President Rob Carne said a narrow swath of land from Nevada north to Yukon was actually North America's beach-front real estate during that long ago era, with a subtropical climate and geologic features offshore similar to the Great Barrier Reef.

The Carlin trend, discovered in the 1870s, is one of the world's richest gold mining districts, having produced more than 70 million ounces by 2008 worth around US\$85 billion at 2010 prices. Its belt of gold deposits is about 8 kilometers, or 5 miles wide, and about 65 kilometers, or 40 miles, long, extending in a north-northwest direction.

At the Rau property, the resulting limestone karst "was the perfect reactive host rock" for heated fluids containing mostly gold and some silver mineralization," he said, adding that "the fluids were hot because the faults (at Rau) are so deep."

Over time, a narrow carbonate platform formed with

fairly crumpled rocks and some folding in the deposits, Carne said.

New gold district

In August, Carne said Atac suspected that the Rau property hosts district-style mineralization rather than a single intrusion.

Atac CEO Graham Downs said Sept. 1 the initial results from the first Osiris drill hole confirmed that belief.

"We have completed a 1,400sq/km detailed stream sediment sample survey, covering 160 kilometers of strike length. Initial results of that work are very encouraging and numerous targets for follow-up work in 2011 have already been identified," Downs said.

Atac said its first diamond

drill hole at the Osiris target intersected 9.26 grams per metric ton gold over 31.13 meters within a larger interval that averaged 4.65 g/t gold over 65.20 meters. An acceler-



The yard where drill core and rock samples are examined and stored at Atac Resources Inc.'s main exploration camp on the Rau property is clearly visible from the air. The remainder of the camp is scattered among terraced clearings on the forested slope above the core shack.

ated exploration program was initiated immediately to evaluate additional targets in the area.

On Sept. 16, the explorer reported seven drill holes completed with two more planned for the current season. Six of the drill holes tested a 300-meter section across the apex of a moderately plunging antiform that hosts the gold

mineralization in drill hole OS-10-01 within the Osiris limestone unit.

One drill hole has been completed at the Isis zone, which is located in the overlying Isis limestone about 900 meters west of Osiris, and within a separate structure. It exhibits many of the same geological features as the Osiris zone.

Atac also completed a 12-squarekilometer detailed soil sampling grid over the discovery area resulting in the expansion of the Osiris and Isis targets to 250-by-1000 meters and 200-by-700 meters, respectively. Two additional gold anomalies called the Conrad and Eaton showings have gold-bearing mineralization in outcrop associated with orpiment and realgar. At the Conrad Showing located about 2 kilometers, or 1.24 miles, east of the Isis zone, four representative rock samples collected from a 200-meter-long portion of the

anomaly graded 21.4, 21.9, 40.3 and 66.6 g/t gold, while a continuous channel sample taken across the width of a partially exposed portion of the zone assayed 14.89 g/t gold over 2.30 meters. The Eaton discovery is 400 meters to the southeast of the Conrad showing and is characterized by a large area of clay alteration and limited grab samples that grade from trace to 1.02 g/t gold. Both showings will be drill tested this fall.

A third anomaly called the Isis East zone was also identified. It is characterized by an area of gold and arsenic soil geochemical anomalies that lie in the Isis limestone unit, about 100 meters stratigraphically higher than the Osiris zone and within the same antiformal structure.

The explorer also reported very encouraging preliminary results from a regional stream sediment sample survey. One stream 4 kilometers, 2.5 miles, east of the Osiris zone and two streams located 10 and 20 kilometers, or 6 and 12.5 miles, west of the Osiris area have returned highly anomalous arsenic values. These new areas, plus any additional stream sediment anomalies, will be followed up with detailed prospecting and soil sample surveys in 2011.

No signs of placer mining have been detected on the property, Carne said.

The latest drill results from the Osiris horizon support Atac's contention that the target mineralization is distinctly different in character from that of the Tiger zone in that realgar and orpiment appear to be the primary gold-bearing minerals – rather than pyrite and arsenopyrite.

Market reaction

Shares of Atac Resources Ltd. extended market gains Sept. 8, rising C\$1.22, or 20 percent, to C\$7.22, before retreating to about C\$6.65 a share on Sept. 23. Since spring when the stock was trading for about 40 cents a share, investors have snapped up the shares like candy. Much of the gain has come since news of the Osiris discovery reached the markets in late August and early September.

Industry analysts are beginning to tout the project's potential to investors.

Macquarie Private Wealth Inc., for example, Sept. 16 said it initiated coverage of Atac largely because the junior's management has more than 150 years of collective exploration experience and Atac is starting to document a potential new sediment-hosted gold belt at the Rau project, its flagship asset.

"Our primary focus in this report is ATAC's Osiris target, which we believe has many geological similarities to Nevada's Carlin Trend. For various reasons discussed, our confidence in Osiris is significantly greater than would normally be the case for a one-hole play, however, we must caution investors that Osiris remains an early stage play, and at this stage our analysis and valuation are inherently speculative," the Toronto-based money manager said in a statement.

Macquarie also noted that Atac is well-funded, with C\$30 million in cash.

Indeed, Atac has raised a total of C\$34 million in cash in two private offerings in less than a year; the latest was C\$22 million in August, primarily due to the Rau project discoveries. The junior currently has about 90.5 million shares outstanding, including large amounts held by Strategic Metals Ltd. (10.8 percent), The Rule Family Trust (9.3 percent) and several institutional investors, led by Tocqueville Asset Management LP (3.67 percent). ●



Atac Resources Inc. President Rob Carne

shows visitors drill core from the Tiger zone.

Osiris horizon and other promising discover-

ies at the Rau gold project in August.



10

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ALASKA **Corvus Gold hits the ground running**

Tower Hill protégé begins trading on TSX, NYSE; winds down C\$8M partner-funded Alaska exploration, heads to Nevada for winter

By SHANE LASLEY Mining News

hen Corvus Gold Inc.'s ticker symbol, KOR, first lit up on the Toronto Stock Exchange and New York Stock Exchange AMEX boards in late August, the junior explorer already had multimillion-dollar exploration campaigns under way on its promising exploration projects in Alaska.

The Vancouver B.C.-based junior, formed to explore International Tower Hill Ltd.'s non-Livengood projects, holds four exploration properties in Alaska and the North Bullfrog project in Nevada.

Under the terms of the transaction, Tower Hill held on to the Livengood gold project in Alaska and about C\$41 million in working capital, while Corvus got the five properties and about C\$3 million in cash.

The property spin-out allows Tower Hill to focus on developing a mine at its multimillion-ounce Livengood gold project and gives its shareholders the opportunity to enjoy the upside as Corvus applies its exploration expertise at the promising earlier-stage assets.

Tower Hill President and CEO Jeff Pontius will wear the hat of Corvus RUSSELL MYERS CEO and chairman. Russell Myers,

who served as vice president of exploration for Tower Hill, is the president of the new junior exploration company.

In the months leading up to the creation of Corvus, Tower Hill arranged more than C\$8 million in partner-funded exploration on the junior's Alaska properties for 2010. This gave the new company a jump on its objective of becoming a non-operator gold producer with significant carried interests and royalty exposure. Corvus also plans to expand its portfolio by seeking out and acquiring new prospects.

"Corvus, as a separate and independent company, will be able to focus on generating value from the company's current Alaska and Nevada exploration projects through the further exploration of those projects, as well as utilizing our extensive Alaska database to identify and acquire additional prospective projects," Pontius explained.

C\$6M grubstake at Chisna

The 163,460-acre, or 661.5-square-kilometer, Chisna project, a large copper-gold porphyry project in the Wrangellia Terrane of eastern Interior Alaska, was the primary focus of Corvus' summer program.

Ocean Park Ventures Corp. spent some US\$6 million in exploration at Chisna in 2010 as part of its option to earn a 51 percent stake in the copper-gold prospect by contributing US\$20 million in exploration expenditures over five years.

Corvus, which is the operator of the Chisna joint venture for the first two years, kicked off the 2010 exploration at the porphyry copper-gold project by flying an airborne geophysical survey, followed with a ground-based induced



This pad being constructed in late June at the Grubstake prospect is the site of the first hole drilled this year at Corvus Gold Corp.'s Chisna porphyry copper-gold project.

polarization survey and drill program.

The Grubstake copper-gold system (formerly referred to as Ahtell) was the primary target of some 5,000 meters of drilling completed at Chisna in 2010. This prospect, located on the southeast end of the land-package, hosts several gold-rich porphyry targets.

Surface mapping, geophysics and geochemical surveys completed by the JV partners has extensively expanded the zone of mineralization of Grubstake. Soil samples with values up to 13.6 grams per metric ton gold have been collected here.

Though assay results were still pending, Myers said that the drills cut promising geology at this porphyry copper-gold target.

"I think we have a couple of definite hits of what we were looking for at Grubstake," the Corvus president told Mining News. "We are pleased with the confirmation of the conceptual model we had at the beginning of summer."

The partners also drilled Pow, another porphyry center about 25 miles, or 40 kilometers, northwest of Grubstake. Fault-hosted mineralization at this prospect has returned surface samples with values as high as 13g/t gold and 9.2 percent copper.

"At Pow two of the holes were completed at their targets and we found some very interesting mineralization," Myers said.

A reconnaissance team led by Nadia Caira has turned up

a number of other targets across the 40-mile-, or 65-kilometer-, long belt of gold and copper mineralization at Chisna.

Caira, a geologist with more than 28 years of porphyry copper-gold exploration experience, is Ocean Park's senior technical adviser at Chisna. Though the partners have yet to compile all the data collected by the recon team, Myers believes the program will turn up several new drill targets.

"We had a really good team leader that Ocean Park provided this summer and we really advanced the multiple targets," the Corvus president said.

Promising mineralization near Pogo

West Pogo and LMS, two additional Alaska properties in the Corvus prospectus, are joint ventured to First Star Resources Inc. Both properties lie in the vicinity of Sumitomo Metal Mining Co. Ltd.'s Pogo Mine, a highgrade underground gold producer east of Fairbanks.

LMS, located about 25 miles, or 40 kilometers, southwest of Pogo contains narrow high-grade veins with free gold within lower grade graphitic quartzite breccias.

Based on drilling completed by AngloGold Ashanti, an NI 43-101-compliant inferred resource of 5.86 million metric tons averaging 0.89 g/t gold, or 167,000 ounces, at a cutoff grade of 0.3 g/t gold was calculated for the Camp Zone.

First Star's drill program targeted the Camp Zone in an effort to expand the existing resource and to identify the extent of the high-grade gold vein zones.

Just back from a Sept. 13 visit to LMS, Meyers told Mining News, "The first hole was completed and the second hole was in progress yesterday - they both hit really exciting mineralization."

The mineralization intersected in First Star's initial holes indicates that a structural model completed by Ed Hunter, a geologist with Fairbanks-based consulting firm Northern Associates, is accurately predicting the location of the highgrade gold-veining.

Hunter completed the geological model for Tower Hill in 2006, but due to the discoveries made at Livengood, the junior never returned to test his ideas.

"Ed had a model, and First Star fired a hole at the feeder vein system and hit it where it is supposed to be," the Corvus leader said. "For the first time we have successfully predicted the location of the cross-cutting vein mineralization and hit it."

First Star completed geological mapping at the West Pogo prospect – which lies about 2 miles, or 3 kilometers, west of Sumitomo's underground mine.

Myers said exploration by Tower Hill has encountered Pogo-style mineralization as well as other high-grade gold that lacks the geochemical signatures of the ore being mined at Pogo.

A forest fire that rolled through the West Pogo claims in 2007 has exposed the surface geology, which has greatly assisted the surface mapping completed this year by First Star this summer.



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NORTHWEST TERRITORIES

Diamonds rebound on broader markets

Revenue climbs as Canada's largest producing mines cash in on higher prices buoyed by new demand from Asia in global recovery

By ROSE RAGSDALE For Mining News

The diamond industry is poised for a turnaround due to recovery in the U.S. market and growth in Asian diamond markets such as China and India, according to a new comprehensive report by Global Industry Analysts Inc.

While Europe continues to have the world's leading markets for diamonds, rapidly growing Asian economies are expected to form a significant market group, the San Jose, Calif.-based market research publisher said Sept. 16.

The report also predicted that diamond prices are expected to rise in the near future and companies engaged in diamond mining in the southern and central Africa are expected to witness considerable growth in the post-recession period.

Diamond miner and retailer Harry Winston Diamond Corp. shares this view. The 40-percent owner of the Diavik Diamond Mine in Northwest Territories agrees that the industry is changing as demand for the jewels in the rapidly growing Asian markets is outpacing that in Western countries,

"We produced and sold more rough diamonds into a market that has paid higher prices for them," Harry Winston Chairman and CEO Robert Gannicott told analysts Sept. 1 on a conference call to discuss the integrated diamond company's much-improved second-quarter results.

The Toronto-based company is witnessing a recovery driven by increasing demand for diamond jewelry and luxury brands, especially in key developing markets such as China where consumer wealth is quickly growing, Gannicott said.



Diamond prices are rebounding on broadening demand for the sparkly stones, especially from expanding economies in Asia.

"It is not simply a recovery of the diamond world as it used to be, though, but rather a broadened demand, especially from expanding economies in Asia at the expense of still muted recovery in the U.S., and in the general diamond business, although not our own, in Europe as well," he said

Harry Winston shares jumped more than 17 percent, or C\$1.89 to C\$12.64 in midday trading Sept. 2 on the Toronto Stock Exchange, a day after the company reported it reversed a year-earlier loss.

Harry Winston said its second-quarter profit was US\$16.5 million, or US22 cents a share, improving from last year's second-quarter loss of US\$24.5 million, or

US32 cents a share, due to a significant jump in sales.

In 2009, the overall diamond market experienced considerable negative repercussions due to the global economic meltdown in which prices as well as demand for rough diamonds declined by about 25 percent. The diamond-mining sector in South Africa, one of the leading diamond producers worldwide, was among the worst affected during the year.

BHP Billiton, 80 percent owner of the Ekati Diamond Mine in Northwest Territories, said the diamond industry was one of the hardest hit mining sectors during the downturn, with prices for rough diamonds at Ekati dropping by 49 percent.

BHP's share of diamond production at Ekati fell to about 3.05 million carats in the year ended June 30 from 3.23 million carats a year earlier due to the mining of lower grade ore in the most recent 12-month period. However, the mining major posted a 72 percent leap in revenue from its diamond outputs during fiscal 2010 to US\$901 million (underlying EBIT of US\$465 million). That compares with US\$523 million (underlying EBIT of US\$59 million), a year earlier.

For the quarter ended July 31, Harry Winston posted a 62 percent jump in revenue to US\$153.7 million from US\$94.8 million in the year-earlier period, as rough diamond sales rose 89 percent to US\$86.8 million buoyed by a 62 percent increase in prices and a 17 percent increase in sales volume. Net earnings from operations climbed to US\$28.9 million, compared with comparable loss of US\$3.9 million.

Retail sales at Harry Winston's high-end diamond stores

see DIAMONDS page 13

continued from page 11 **CORVUS**

"Based on the mapping they did this year, they will put in a geophysical survey and plan on drilling that structure that is now fairly obvious at the surface," Myers said.

Six of 24 rock samples collected by Tower Hill in this burn area returned greater than 1 g/t gold, the best of which was 118.5 g/t gold.

Partner readies Terra for mining

The Terra project is centered on a 5mile-, or 8-kilometer-, long trend of highgrade gold vein occurrences which have returned numerous surface rock samples and drill intersection in excess of 50 g/t gold.

This property, located in the southwestern part of the Alaska Range, was optioned to Nevada-based American Mining Corp., a privately held mining company that can earn an initial 51 percent interest in Terra by spending US\$6 million on exploration over three years, including US\$1 million in 2010, and making cash payments of US\$300,000 and issuing 750,000 common shares over the same three-year period.

Corvus also will receive a sliding scale net smelter royalty of between 0.5 percent and 5 percent, depending upon the gold price, on all precious metal production from the property and a 1 percent NSR royalty on all base metal production. The royalty to Corvus is in addition to the current royalty payable to the underlying lessor.

Drilling by Tower Hill in 2006 and 2007 defined an estimated inferred resource of 428,000 metric tons averaging 12.20 g/t gold, or 168,000 contained ounces, and 23.11 g/t silver, or 318,000 contained ounces, at a cutoff of 5.0 g/t gold. In addition to the Ben's Vein, which hosts the resource, drilling at two other vein structures confirm the potential for significant resource additions on the property.

According to Corvus, the gold at Terra

occurs as coarse native gold and can be recovered by simple gravity methods, facilitating potentially rapid development of a small mining project. ing of 0.8

American Mining is currently in the process of creating Terra Mining Corp., a publically traded company focused on mining the high-grade gold at the Southwest Alaska property.

This year the company completed the preparatory work for a drilling and mining program to begin in 2011. Utilizing a small mill and gravity separator the company plans to begin production by 2012.

Nevada for the winter

Corvus intends to hold sole ownership of its North Bullfrog gold project, which is located about 9 miles, or 14 kilometers, north of Barrick Gold Corp.'s multimillionounce Bullfrog gold mine in Nevada.

"North Bullfrog is our main focus, since it is our 100 percent project," Myers explained. "We are trying to develop another low-grade, at-surface, heap-leachable urce."

North Bullfrog hosts an indicated resource of 2.02 million metric tons grading of 0.88 g/t gold and 0.45 g/t silver and an inferred resource of 0.95 Mt grading 0.78 g/t gold and 0.36 g/t silver, both at a cutoff grade of 0.5 g/t gold.

The project contains eight highly prospective gold targets consisting of two bulk-tonnage open pit target areas and multiple high-grade vein targets.

Narrowing down drill targets is expected to be greatly enhanced by geophysical data recently acquired from Barrick.

"Lac Minerals, which was purchased by Barrick, had flown geophysics over the whole North Bullfrog prospect area. We were able to negotiate an agreement with Barrick by which we would get all that data," Myers explained.

Corvus currently plans to spend about C\$1 million to complete 10,000 meters of drilling during a winter program at North Bullfrog, scheduled to begin in the fourth quarter. \bullet

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NUNAVUT **Greyhound glints with precious metals**

Aura Silver's 2010 exploration results add luster of potential gold, silver system to VMS prospects on property near Baker Lake

By ROSE RAGSDALE For Mining News

ne of the reasons that mining-friendly Nunavut is attracting considerable industry attention in 2010 is the ongoing exploration success of ventures like Aura Silver Resources Inc.'s Greyhound Project in the Kivalliq region of the territory, where relatively modest spending can deliver impressive results.

Aura Silver reported results in August and early September from surface sampling and drilling programs this summer that returned grades as high as 28.2 grams per metric ton gold and up to 5,380 g/t silver. The samples were taken as part of a brief mapping and sampling program in the western part of the Greyhound property.

The sampling southeast of Aura Lake enabled the company to extend the gold-rich occurrence previously identified in 2008 sampling for about 100 meters to the south. Most surprising was that three out of the four samples taken here contain high-grade gold (0.35 to 0.93 troy ounces per metric ton) and 20-69 g/t silver; the fourth sample contains 171 troy oz/t of silver with anomalous gold.

"These samples are of significant importance to the potential of Greyhound to host an ore deposit, particularly given that the property is hosted by strata that are very similar to those at Agnico-Eagle's Meadowbank gold mine," said Aura Silver President and CEO Robert Boaz.

Greyhound's proximity to Meadowbank is adding to its allure. The project lies just 40 kilometers, or 25 miles, north of Baker Lake and some 46 kilometers, or about 29 miles, south of the gold mine. Meadowbank, which produced first gold in February, contains proven and probable reserves of 3.7 million ounces of gold at an average grade of 3.5 g/t. An all-weather road to the mine from Baker Lake crosses the Greyhound property within 1 kilometer, or 0.62 mile, of the recent gold/silver zone discovery.

Aura Silver said its surface geology program included re-examining several prospects - both historic and those it previously identified - to determine more about the extent and geological relationships of various mineralized areas of Greyhound, a property comprised of 26 claims covering 25,333 hectares, or 62,573 acres. Many of the historic prospects to the west of Whitehills Lake were re-evaluated, as well as the silver prospect to the west of Aura Lake (West Aura) and the gold prospect at the southeast corner of Aura Lake (SE Aura).

The explorer also re-evaluated the potential for VMS mineralization in the area, based on additional mapping and existing drill results. Previously announced surface samples from north of Aura Lake contain up to 9.2 percent copper and 18.5 percent zinc, which have miner-



This boulder displays banded iron formation mineralization that is prospective for gold, silver and base metals at the Greyhound property in central Nunavut.

alogical and textural attributes similar to those from high-temperature VMS deposits. The 2010 drilling program demonstrated that these samples did not come from south of the occurrence but further mapping suggested an eastern source.

Aura Silver said this latter area was poorly prospected in prior field programs, but research of government files reveals a "high-grade copper-zinc" occurrence in that area.

"Our mapping reveals an extensive 2 km-long unit of highly altered sodium-depleted felsic volcanic rock in the area of this showing. This area has not been adequately examined by geophysical surveys but is clearly prospective for VMS occurrences," Boaz said.

Preliminary results from the first phase of Aura Silver's 2010 drill program, which was primarily oriented to test VTEM conductors with shallow 100- to 125meter holes as part of exploration for volcanic massive sulphide mineralization, revealed that many of the targets in the Aura Lake area (west central part of the property) are graphitic shale. However, preliminary assay data for Hole G-10-04, drilled under the original discovery of gold-rich float material on the southeast shore of Aura Lake, includes an interval of more than 18 meters of anomalous gold (up to 3.6 g/t over 0.59 meters).

Early signs of VMS potential

The economic potential of the Greyhound property was originally identified by Aura Silver geologists in 1998, who noted that it bore distinct geological and geochemical similarities to other productive volcanogenic massive sulphide camps in northern Ontario as well as VMS system characteristics similar to Hackett River in Nunavut. Two samples collected from sulfide-bearing frost heave in 1998 assayed 1,632 g/t and 3,400 g/t silver.

Aura Silver initiated the Greyhound Project in 2006 when it acquired 10 claims covering about 10,450 hectares, or 26,000 acres. Since then, the company has quietly amassed additional claims while employing strategic programs of mapping, geophysics, prospecting and sampling to explore the property.

In 2008, Aura Silver chief geologist and company director James Franklin completed an extensive analysis of geochemical data collected in early exploration at Greyhound and suggested that the area contains many elements of a classic, but relatively unexplored, VMS district, as well as many aspects of a gold bearing district with similarities to the Meadowbank deposit.

A high precision VTEM helicopter borne electromagnetic survey in October and November 2009 enabled Aura Silver to confirm drill targets for its 2010 drilling campaign.

Combining the evidence from the west and southeast Aura occurrences, company geologists say they now realize that the spatially related gold and silver showings are possibly also genetically related.

The possibility of a single gold-silver system enlarges both the economic prospectivity and metallurgical robustness of the Aura Lake precious metal targets. Similar sulfide-rich material was discovered up to 500 meters to the north of the SE Aura occurrence (assays pending.) Furthermore, extensive silicification and quartz sulfide veining was noted during soil sampling up to 3 kilometers south of this prospect. Here the system has intersected a strongly carbonatized, sulfidic and silicified iron formation, and the adjacent ultramafic rocks are intensely carbonatized and pyritized. The Dingo showing, which is 5 kilometers, or 3 miles, north-northeast of the South Aura lake area, is an extensive (200 meters-plus) quartz-vein system spatially associated with the margin of the major sub-volcanic intrusion that underpins all of the west Greyhound property.

Although mineralization is sparse relative to that of Southeast and West Aura in this system, the junior said its samples demonstrate further the association of gold and silver. To assess the gold potential of the identified 4-kilometer, or 2.5-mile-long corridor, Aura Silver conducted a soil survey collecting till, soil and gossanous material for analysis. More assays are pending.

During the six month period that ended June 30, Aura Silver spent about C\$725,000 on exploration at Greyhound, including C\$644,754 on drilling, C\$38,624 on drill permitting, C\$13,449 on geology, C\$16,741 on geophysical costs relating to interpretation of the VTEM survey and interpretation of geophysical data and \$15,698 on geochemical analysis.

Clearer geological picture

The recent results led Aura Silver's geologists to go back and re-examine their geological model for the Aura

see GREYHOUND page 14

continued from page 12 DIAMONDS

climbed 37 percent to US\$66.9 million on improved results in Europe, Asia and the United States

tial players in diamond production, witnessed consistent decline from a monopo-

United States as one of the largest global consumers of industrial diamonds. The listic 90 percent share in the past decade or country is also a major producer and so to about 60 percent since 2004 and even exporter of synthetic industrial diamonds. North America and Europe, mainly propelled by Russia make up a consolidated lion's share of more than 75 percent of the global market. Contingent upon a new wave of technological developments and the U.S. demand for industrial diamonds, GIA said the North American region is forecast to emerge as the fastest-growing market through 2015. The Canadian market, renowned for its superior-quality diamonds, is experiencing robust growth opportunities in the Northwest Territories, it added. Rough diamond production from Harry Winston's share of Diavik's output totaled 650,000 carats in the second quarter, compared with 570,000 carats a year earlier. Rio Tinto plc controls the remaining 60 percent interest in Diavik, which is Canada's largest diamond mine.

2008, before the financial crisis hit roughdiamond demand, "by a measurable margin." He also noted that price growth for smaller, cheaper stones in the market has been slowed by large volumes of production coming from Zimbabwe.

Sales rose 40 percent in Asia, a market that is growing in importance to the company's plans for growth. About half of Harry Winston's retail sales now come from Eastern Asia, Gannicott said.

Revenue from Russia and the Middle East also has improved.

In its report on the superhard materials market, GIA said India and China are emerging as the primary markets for diamond cutting and polishing. Improvements in quality, advancements in mining and cutting procedures and large work forces enabled countries such as China and India to take leading positions.

With a perspective on global production, Russia, Democratic Republic of Congo and Botswana emerged as the largest rough diamonds producers in volume. The market share of De Beers, one of the most influenless in the current market.

Meanwhile, the United States, which consumed about of half of the world's diamonds before the recession, is still struggling to regain retail confidence during a broader uncertain economic recovery, Gannicott said.

Harry Winston is expected to continue its recovery in the third quarter. Rough diamond sales by volume will likely be even higher in the second half of the company's financial year, Gannicott said.

Likewise, diamond prices are expected to climb industry wide in the near future, and companies engaged in diamond mining in southern and central Africa are expected to witness considerable growth in the postrecession period, GIA said.

North America - the United States and Canada, however, represents the undisputed market leader, according to the researcher. The region's prospects continue to appear bright primarily due to dominance of the

Gannicott told analysts that prices for the type of stones produced from Diavik have surpassed the peak experienced in

In August, Harry Winston said it repurchased a 9 percent indirect interest in Diavik from Kinross Gold Corp. for US\$220 million in shares, cash and debt. Kinross has also decreased its stake in the Toronto-based diamond company to 8.5 per cent from 19.9 per cent.

Harry Winston had sold the stake in the mine during the depths of the recession when it needed cash.

Gannicott also said Diavik's owners are now studying possible changes to underground mining methods which have the potential to lower costs and could result in a future extension of the mine's resource estimate.

The miner also continues to seek acquisition opportunities in the diamond mining sector and sees "no better opportunity than owning more of Diavik itself, he added.

• BRITISH COLUMBIA

Explorers swarm Stewart-area prospects

Under-explored historic gold camp attracts many juniors seeking substantial mineral deposits in accessible, cost-effective region

By ROSE RAGSDALE For Mining News

Dozens of small explorers mounted exploration campaigns in 2010 in and around the historic Stewart Gold Camp in northwestern British Columbia, and as assays trickle in from samples and core sent to labs this spring and summer, many of them are reporting encouraging results.

The Stewart Gold Camp, located about 20 miles, or 35 kilometers, from the B.C./Alaska border, is an emerging, worldclass mining district that continues to offer discovery opportunities for major gold-copper and precious metal polymetallic deposits.

The Hazelton stratigraphy in the area hosts prominent historic deposits, including Granduc (Besshi-type volcanogenic massive sulphide), Premier Silbak (epigenetic, intrusive-related), and Eskay Creek (Kuroko-type precious metal VMS).

Recent attention has focused on immense gold-copper porphyry deposits in the region such as the Snowfield/Kerr-Sulphurets-Mitchell Project and on new VMS environments in proximity to the Stewart Highway corridor, including the Todd Creek, Decade, BA, Poly, and Surprise projects.

Strategic infrastructure such as the 335-

continued from page 13 GREYHOUND

Lake area, according to Franklin.

They now believe Greyhound exhibits potential for an extensive structurally-related gold-silver system. In addition to recent assay results, the theory is further supported by quartzfeldspar porphyry dykes, extensively carbonatized ultramafic rocks ("green carbonate") and intensively altered, sulfidic iron formation. All of these extend continuously from South Aura Lake for at least 3 kilometers, or nearly 2 miles, to the south.

"In addition, the newly discovered VMS target about 2 kilometers or 1.24 miles, east of Aura Lake requires follow-up geophysical work," Franklin said in the company's Sept. 7 statement. "The next phase of our program will focus on the 10-square-kilometer (3.86-square-mile) area that comprises the western 'core' of our Greyhound kilometer-, or 208-mile-long Northwest Transmission Line scheduled for construction startup this fall, and the ice-free Port of Stewart offer potentially substantial cost advantages for developing mineral deposits in the area.

Economists forecast potential near-term investment of C\$15 billion in up to a dozen existing mine projects in the Stewart area and the creation of 11,000 new jobs. Further, the participation of First Nation communities in exploration and mining development ensures sharing of the economic benefits by all stakeholders.

Scientists also note that evolution of the Stewart Gold Camp is being enhanced by environmental change as ice fields and glaciers retreat, significant new exploration targets are recognized and important discoveries are made.

Iron Cap signals new potential

Seabridge Gold Corp. ignited a new blaze of industry interest in the Stewart area in July when it confirmed the discovery of Iron Cap, a new large potentially bulk minable deposit at its giant KSM Project, which could substantially improve the project's economics.

The KSM project is one of the largest undeveloped gold projects in the world with proven and probable reserves totaling 30.2

Aura Silver also told investors in early September that it plans to test for deep mineralization by following up on the recent results with an induced polarization survey at Greyhound in September and October, along with

property."

gram. And investors appear to be intrigued.

additional soil sampling and prospect-

ing in preparation for a 2011 drill pro-

Aura Silver said Sept. 10 that it essentially doubled the size of a brokered private placement it announced Aug. 9 to up to C\$2 million and added another offering of up to C\$1 million in flow-through units. The junior said proceeds from the sale of the FT units, which can only be used for Canadian exploration, will help fund fall 2010 and spring 2011 exploration at Greyhound, work designed to determine the actual extent of the gold corridor on the property. \bullet million ounces of gold and 7 billion pounds of copper. Seabridge's drill program objectives in 2010 were to add 2-3 million ozs of gold reserves and explore Iron Cap, which it said had the potential to be KSM's fourth large deposit.

The junior reported wide intercepts of gold, copper and silver grades above the KSM average from new and historic drilling and said it would proceed with infill drilling at Iron Cap to establish new proven and probable reserves to be included in mine plans for the project. It also said the new deposit, located immediately adjacent to the Mitchell zone, is at least 900 meters in strike length, 400 meters wide and up to 350 meters thick.

"The Stewart Gold Camp offers a tremendous opportunity for an exploration company," Walter Henry, president and CEO of Frontline Gold Corp, in August. "The immediate economic implications are illustrated by Seabridge's 2010 discovery of the Iron Cap deposit immediately adjacent to the Mitchell Zone."

Newcomers tackle area prospects

Frontline, a Nova Scotia-based junior, optioned the Stewart and Poly gold projects in August. The 3,281-hectare, or 8,104-acre, Poly gold project and 28,000-hectare, or 69,160-acre, Stewart gold project are believed to host significant potential for gold-copper porphyries and precious metals-rich VMS deposits.

Frontline is entering the Stewart camp with ongoing gold exploration projects in West Africa, Turkey and Ontario along with the Jubilee zinc-lead project in Nova Scotia.

"Our strategic alliance with Geofine Exploration Consultants Ltd. provides Frontline with an exploration team well experienced in both the Stewart Gold Camp region and in the Red Lake region of northern Ontario where Frontline holds some land claims," said Henry.

Frontline planned to spend about C\$320,000 on VTEM Time Domain EM and magnetic surveys this fall, covering about 1,958 line-kilometers (305 line-kilometers on the Poly claims and 1,653 line-kilometers on Stewart Claims).

The VTEM airborne surveys are being conducted by Geotech Ltd. and are designed to follow up on outcropping precious and base-metal mineralized systems, including precious metal rich massive sulphides, copper gold veins and breccias, and porphyry gold-copper. In addition, significant EM anomalies associated with Eskay Creek-type precious metal VMS mineralization will be further examined to prioritize geophysical and diamond drill targets for the next phase of exploration.

Explorers report early successes

Jayden Resources Inc., formerly Pinnacle Mines Ltd., is one explorer working on an advanced-stage gold-silver deposit in the Stewart area, the Silver Coin gold-silver-zinc project.

As of July, Jayden had drilled 714 drill holes totaling about 85,844 meters in recent year on Silver Coin, which covers about 1,255 hectares, or 3,100 acres. A NI 43-101-compliant mineral resource estimate released Sept. 16 calculates measured and indicated resources at Silver Coin of nearly 27.2 million metric tons (grading 0.96 grams per metric ton) containing 835,700 ozs of gold using a cutoff grade of 0.30 g/t gold, and 5.2 million ozs of silver, and an inferred resource of 29.65Mt (grading 0.69 g/t) containing 655,200 ozs gold and 5.72 million ozs silver. The calculation also includes potentially recoverable zinc during processing of gold and silver ore in an inferred resource of 56.8 Mt zinc grading 0.19 percent for a total of 242.45 million lbs zinc.

Jayden said it planned to complete a 2,000- to 3,000-meter drill program at Silver Coin this fall and a new resource estimate based on assay results in early 2011.

Nanika Resources Inc is exploring several properties near Silver Coin where Nanika's Indi 9 to 12 claims are part of the eastern edge of the Silver Coin property. The four Indi claims are part of a joint venture agreement between Nanika, Jayden and Mountain Boy Minerals Ltd. The Indi 9 claim has NI 43-101-compliant measured and indicated resources of 692,000 metric tons containing 20,000 ozs gold at a cutoff of 0.30 g/t gold, 134,000 ozs silver, and 3,015 lbs zinc. Inferred resources on the Indi 9 claim were reported as 5.26 million metric tons containing 130,000 ozs gold at a cutoff of 0.30 g/t gold, and 1.274 million ozs silver, and 34,497 lbs. of zinc. Nanika also said its encouraging 2009 drill results on the Indi 9 claim were not included in the estimate.

Jayden also holds the Surprise Creek Project, which consists of 19 claims covering about 7,472 hectares, or 18,455 acres, located between Todd and Surprise creeks. In May, the company optioned the property to Great Bear Resources.

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Teck lauded for sustainability mining

Dow Jones names miner as global leader in sustainable development, impacts of company's practices felt at Red Dog, around the globe

By SHANE LASLEY Mining News

Teck Resources Ltd. won a place in the Dow Jones Sustainability World Index in September by ranking among the top 10 percent of it peers in the resource industry for its sustainability practices.

By focusing on five areas where it can have a positive impact – safety, environment, community engagement and development, value for its stakeholders and responsible stewardship of its products in society – Teck has risen through the ranks of the Dow Jones sustainability indices.



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Airport Business Park 2000 W. Int'l Airport Rd, #D-2 Anchorage, AK 99502 907-245-3123 "Children are our greatest resource, we can't allow that millions of them die every year, especially when zinc is part of the solution. I strongly encourage our industry to help solve the global problem of malnutrition by

donating to the Zinc Saves Kids campaign." —Teck CEO Don Lindsay

In 2009, the Vancouver B.C.-based miner earned a position on the DJSI North America ranking, placing in the top 20 percent of the resource industry in North America. This year's elevation to the World Index highlights the company's commitment to become a global leader in sustainable mining.

"The DJSI is an important tool for continuous improvement," Teck CEO Don Lindsay said. "We've analyzed our scores each year very carefully, identified areas for development, and really focused on improving them. As a company committed to ongoing development of our sustainable practices, it's a crucial way for us to benchmark and challenge ourselves every year."

Minimizing footprint

Mining, by its very nature, has the potential to significantly impact the environment. As part of its focus on sustainability, Teck is working to curtail its effects on the environment, while extracting the minerals needed in today's world.

"Our aim is to minimize our footprint, mitigate our impacts and after mining operations have ceased, leave behind land that will support productive uses for future generations," the company wrote in its sustainability report.

To achieve this standard Teck not only focuses on reclaiming the environment immediately impacted by its mining operations, but takes a global perspective.

"Teck's long-term goal is to reduce greenhouse gas emissions through energy efficiency improvements and the increased use of renewable energy," Teck Vice President of Corporate Affairs Marcia Smith told Mining News. "Teck is also actively working to protect biodiversity and conserve nature for future generations."

An example of this can be found at

Teck's Red Dog Mine in the northwestern-most reaches of Alaska. When scientists needed a location to study polar bears, the company made room for them at the Chuckchi Sea port facility it uses to export zinc and lead concentrates from the mine.

Red Dog Operations is also working with the National Ocean Atmospheric Administration to install a system at the mine that is part of a larger network of buoys, tidal stations and satellite measurements providing a continuous picture of the state of the ocean and Great Lakes.

Safety is core value

Safety is an important component to any mining company's sustainability. Teck considers safety one of its core values.

"Of all our core values, the safety and health of our workers and the communities in which we operate is of greatest importance. Our goal is to have everyone going home safe and healthy every day," Lindsay wrote.

During recent years, Teck has experienced a significant drop in accident frequency. In 2008 the lost time incident rate of the company's contractors and employees dropped 59 percent over the previous year.

Smith said Teck developed the Courageous Safety Leadership program, a process that challenges people's beliefs and values and puts into context how important personal commitment and leadership are in reducing incidents. The company not only applies this safety program to its field operations, but also to its executive office workspace as well.

In addition to Courageous Safety Leadership, Red Dog implements a behavioural-based system called Safe Start.

Sustainability at Red Dog

Red Dog is also an example of Teck's commitment to sustainable development opportunities in local communities.

NANA Regional Corp., the Alaska Native regional corporation that owns the zinc-rich land on which Red Dog is situated, has built a global enterprise boasting 2009 revenues of nearly US\$1.3 billion based in large part on its partnership with Teck at the zinc mine.

A total of US\$471 million in royalties has been paid to NANA since the agree-

ment was signed in 1982. Teck paid off its capital and operating costs at Red Dog in 2007, which triggered an increase in NANA's royalties to 25 percent of net profits from the zinc mine. NANA's interest is bumped up by 5 percent every five years.

Nearly 58 percent of the 550 full-time jobs at Red Dog are filled by NANA shareholders, many of whom have worked their way up to high-level positions at the mine. In addition to employees working directly for Teck, two NANA companies — NANA-Lynden, a joint venture that provides trucking, and NANA Management, which provides housekeeping for the mine — supply additional jobs for residents of the region.

"At Teck's Red Dog Operations, preference is given to NANA suppliers and US\$77 million was spent on locally acquired goods and services in 2009," Smith told Mining News. "In May of this year, we announced that Teck Alaska will be proceeding with development of the Aqqaluk Deposit at its Red Dog Mine. This development will increase the longevity of opportunities and benefits for the community."

Zinc saves kids

Zinc Saves Kids, an International Zinc Association initiative to battle zinc deficiency in children in low-income countries, is one of the largest global sustainability issues in which Teck has become involved. Money raised by this campaign funds UNICEF-supported zinc programs around the world.

In recognition of the importance of this cause, the Clinton Global Initiative – a group started by former President Clinton that includes world leaders and executives and has raised billions for social causes – recently endorsed IZA's zinc and nutrition initiatives.

It is estimated that 450,000 children under the age of five die annually due to zinc deficiency, and many who survive suffer lifelong repercussions from early childhood micronutrient deficiencies.

"Children are our greatest resource, we can't allow that millions of them die every year, especially when zinc is part of the solution," Lindsay said. "I strongly encourage our industry to help solve the global problem of malnutrition by donating to the Zinc Saves Kids campaign." ●





"Last fall, I visited a company called Kiska Metals Corp, which is exploring in Canada and Alaska. They are technically excellent, and as good as you can find exploring in that part of the world." **Brent Cook, Exploration Insights Newsletter. (04/02/10)**

"If you are a long time reader of 321gold and can remember back to when I wrote about Pebble many years ago, when I went to Toronto, I came across the next Pebble. The company is called Kiska Metals." **Bob Moriarty, 321gold.com (03/30/10)**





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continued from page 3 FIRE RIVER

when it begins mining, Fire River is drilling these small yet very high-grade ore bodies on a very tight spacing. To this end the company has added a second rig to the underground program.

The surface drill began its investigation at Whalen and North Star, two prospects about 1,500 meters south of the Crystal Mine. In preparation for drilling geologists re-logged core from seven holes drilled at Whalen in 2007. Hole N07007 returned assays of 15.5 meters averaging 12 g/t gold and included a one-meter intercept grading 85 g/t gold. An inferred resource of 14,000 metric tons averaging 32.4 g/t was calculated for the prospect in 2005.

The company also plans to begin its investigation of the Southern Cross zone from the surface. This prospect about 400 meters northeast of the 3300 zone could be mined from an extension of the underground development already in place.

Once winter weather descends on Nixon Fork, the surface rig will be reconfigured and moved underground.

The 9,400-meters of drilling completed

continued from page 14 STEWART GOLD CAMP

Great Bear, meanwhile, reported encountering multiple zones of high-grade silver-zinc-lead mineralization in exploration this summer on its BA VMS project in the Eskay Creek mining district near Stewart. The junior Sept. 9 said 11 of 16 holes successfully intersected silver mineralization with an average drill intersected width of 6.9 meters and a weighted average grade of 104 g/t silver. Seven of these holes intersected higher grade mineralization with an average drill indicated width of 5.2 meters and weighted average grade of 153 g/t silver.

Teuton Resources Corp., which is exploring the Clone gold project near Stewart, B.C. Sept. 13 said it encountered visible gold in four of the first five holes it drilled this season on the property. Exploration at Clone in 2009 returned drill results grading as high as 44.75 g/t gold over 12.80 meters. Teuton said a Kubota excavator has been flown to the site and preparations are underway for a planned bulk sampling program. Assay results from never incorporated into a resource estimate.commerciaHillesland said the bulk of an updatedThe 200resource, based on Fire River's re-loggingcircuit utiland re-assaying of the core, will be con-about an 8tained in the 3300 zone, which is near theCIL circuitCrystal Portal and mill facilities.around 90

the holes, which are pending, are expected to guide the bulk sampling program.

Pacific North West Capital Corp. Aug. 30 said it aimed to begin exploring the Rock and Roll gold-silver-polymetallic project in September and focus primarily on re-sampling the old drill core and geological mapping and prospecting that will target airborne conductors, geological targets, overburden sampling and MMI geochemical results. The field work will be supported by further compilation of data from the 1990-97 programs. The 2010 program will also include the completion of an updated NI 43-101 report with resource estimate. In 2009, PFN conducted a drilling program that consisted of a total of 540 meters of core drilling in five holes.

Juniors work periphery of big projects

A little farther north, Romios Gold Resources Inc. reported completion in August of a 3,000-plus-meter drill program on its Trek copper-gold property. Trek consists of 5 land tenures covering 2,693.27 hectares, or 6,654.98 acres, in the Galore Creek Area of the Liard Mining Division and is located within the large parcel of land

Evaluating recovery methods

Though Nixon Fork may be geologically driven, developing the most efficient mineplan and recovery system for the remote mine is keeping Fire River's engineers busy.

The first item on the agenda is to evaluate utilizing a carbon-in-leach circuit, delivered to Nixon Fork and about 60 percent installed by St. Andrew, to reprocess the tailings from past production. The tailing pond a few hundred meters down the hill from the mine, which contains about 150,000 metric tons of mill tailings with an average grade of 8.1 g/t, or nearly 40,000 troy ounces of gold, is a potential source for early production.

A preliminary economic estimate on reprocessing the tailings through the CIL circuit is expected by October. Fire River has indicated that if it does not choose to process the tailings first, they will likely supplement the ore being mined.

The second PEA will evaluate the economic viability of resuming underground commercial production.

The 200-ton-per-day gravity and flotation circuit utilized by past producers resulted in about an 83 percent recovery, adding in the CIL circuit is expected to up this rate to around 90 percent.

(approx. 118,912 hectares/293,838 acres) which encompasses the Galore Creek Project, a large, undeveloped, porphyry-related, copper-gold-silver deposit jointly held by NovaGold Resources Inc. and Teck Resources Ltd.

Romios' 2010 diamond drilling program was designed to further delineate the pervasive porphyry-style copper and gold mineralization on the Trek property and to assess the significance of airborne magnetic trends that parallel zones of known copper-goldsilver mineralization outlined by the junior's drill programs in 2008 and 2009.

In addition Romios has commissioned a Titan 24 deep imaging induced polarization survey over the North and Tangle zones on the Trek property in identifying and measuring porphyry ore bodies and extensions to known ore bodies to depths of at least 700 meters. Assay results are pending.

The Rock & Roll project hosts precious metals rich, VMS mineralization in a volcano-sedimentary host rock package. The mineralization shows similarities to the gold- and silver-rich mineralization of Barrick Gold's past-producing Eskay Creek mine. Mineralization on the Rock and Roll Property occurs in multiple stacked sulInstead of using the CIL circuit, Fire River is considering using the Merrill-Crowe Process, a separation technique that utilizes zinc to precipitate the gold, silver and copper out of the mixture.

Goodwin said the precipitate could be smelted onsite and the final product would be doré containing about 80 percent copper, 20 percent gold plus silver credits.

This process is expected to provide significant savings on the shipping of carbon and concentrate to and from the remote mine.

"That would probably increase the value of our final product and also would make us question doing away with flotation entirely," Goodwin explained.

The Merrill-Crowe Process is currently being employed at Coeur d'Alene Mines Corp.'s Palmarejo mine in Mexico.

The PEA to evaluate the milling options and underground mining is scheduled to be completed in December and Fire River hopes to be mining the high-grade gold at Nixon Fork in 2011.

"We have fabulous facilities all in place," and we have our permits all in place," Goodwin said. "What we are looking at is a realistic start of spring next year." •

phide lenses in two zones, the Black Dog and SRV zones, over a strike length of about 950 meters. A total of 14,000 or so meters of core drilling in 110 drill holes were completed on the property from 1991 to 1997. Only six drill holes tested the host stratigraphy outside of the known mineralization, but at least 5 kilometers of strike length of the prospective lithologies is present on the property.

Among other juniors working in the region:

TAD Mineral Exploration is seeking gold and silver on the Hazelton Property located 7 kilometers, or about 4 miles, northeast of Hazleton, B.C. and about 325 kilometers, or 200 miles, due east of Ketchikan, Alaska;

REC Minerals Corp. is pursuing surface exploration on its MC Dalhousie gold-silver-copper-zinc-lead property located a few miles north of Stewart, B.C.;

Bolero Resources Corp. is hunting for signs of copper and gold on the Red Chris "South" prospect adjacent to Imperial's Red Chris Project; and

American Creek Resources Ltd. is exploring for gold and silver on the Electrum Property near Stewart. \bullet





drill program at Nixon Fork targeted the

Whalen Zone, a high-grade gold prospect

by St. Andrew prior to selling the mine were

about 1,500 meters south of the mill

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