

# BEACON ROCK RESEARCH

# OCTOBER 4, 2012 INTRODUCTORY REPORT

# NORTH BAY RESOURCES INC.

(OTCQB: NBRI, \$0.06 PER SHARE)

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Disclosures 1, 2, 3

5956 N.W. 213th, Portland, Oregon 97229

 Price
 \$0.06

 52 Week Range
 \$0.05-\$0.19

 Potential Range
 \$0.13-\$0.28

 Fiscal year-end
 12/31

Shares O/S (mils) Shares Dil. (mils) Market Cap (mils) Ave. Daily Vol. Insider Ownership Inst'l Ownership 100.5 M \$0.25 121.0 M \$6.0 M \$0.20 101,202 16.2% \$0.15 9.5%





Loyalton bank employee Marion Lavezzola "exhibits gobs of gold from the Ruby Mine" Source: National Geographic, September, 1973

North Bay Resources Inc. (OTCQB: NBRI) is close to commencing gold production at its Ruby Mine, located in a northern extension of the historic California Mother Lode system northeast of Sacramento. The project is notable for the large gold nuggets that were mined from ancient buried riverbeds now exposed in the steep slopes near Downieville, Sierra County, California. C.L. Best was enjoying his greatest success in the Ruby's history when gold mines were closed in WWII to support the war effort. Many of these nuggets (in the photo to the left) appeared in the September 1973 issue of the National Geographic. North Bay is nearing completion of rehabilitating the mine tunnel and equipment and is working to close a financing. While mining gold placers is a challenge, certainly ones buried underground, North Bay has the potential to mine what could be the remnants of a source of the historic Mother Lode.

Corporate Officer Corporate Address Website Perry Leopold, President & CEO 2120 Bethel Road, Lansdale, PA 19446 www.northbayresources.com (215) 611-1100

# **Investment Thesis**

North Bay Resources Inc. (OTCQB: NBRI) is close to commencing gold production at its Ruby Mine, near Downieville, California, in a northern extension of the historic California Mother Lode. The project is fully permitted and benefits from the infrastructure build-out that occurred only 15 years ago and then placed on care and maintenance. The mill and equipment are generally in good working order and North Bay is now completing the final tunnel rehabilitation before reaching the most productive area that was being mined at the time the mine closed in 1942 (due to Limitation Order #208, curtailing non-essential industry to promote WWII production). The previous operator, Brush Creek Mining and Development Company, Inc. (Brush Creek), invested \$5 million in the mine during the 1990s, at a time when the price of gold was falling to \$250 per ounce, causing Brush Creek to fold and go out of business.

The Ruby Mine is an underground placer and lode mine, including past producing mines on the project, with total production of 250,000 ounces of gold since the 1850s. The most productive mining occurred near the time of the closure in 1942 by C.L. Best, the co-founder of Caterpillar Tractor. Best drifted into an ancestral Yuba River buried gravels, laid down about 400 million years ago. These ancient riverbeds were exposed in the bluffs, now high above the present day Yuba River. The mine produced 58,000 ounces from 1936 to 1942, ending in the richest gravels. The Ruby may be the largest producing channel mines in modern times, producing coarse and jewelersgrade gold and nuggets.

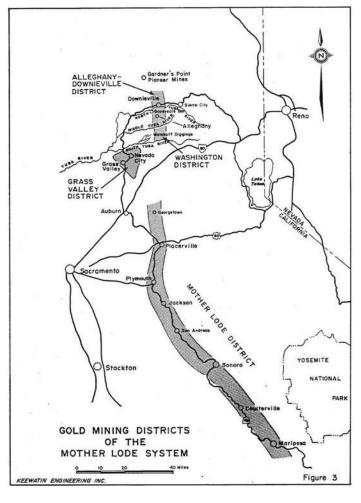
Replicas of Gold Nugget Specimens from the award winning C.L Best Collection Sierra County Courthouse lobby, Downieville, California Source: Analyst



The largest gold nugget reported to come from the Ruby weighed 201 ounces. Best removed the most interesting gold nuggets specimens of three ounces or larger from the Ruby Mine for his personal collection. A 123 nugget collection, totaling about one thousand ounces, for security reasons was donated to the Natural History Museum of Los Angeles County, where it is currently on display. This is important because North Bay will be commencing production in the area in the mine where these nuggets were produced at the time the mine closed.

The Ruby Mine covers about 1,755 acres consisting of 435 acres of patented claims and 1,320 acres of unpatented claims. The mill and mine equipment has been well maintained. The Ruby mine and mill complex includes a 1,000 vard per day placer wash plant and a 50-ton per day quartz mill. The Ruby Mine includes 6,000 feet of tracked haulage and the necessary equipment for underground mining. With only 600 feet of tunnel rehabilitation left to complete before reaching the Black Channel where Best was forced to stop mining in 1942, North Bay will have installed over 60,000 board feet of timber, and rehabilitated 5,000 feet of tunnel, including new ventilation. The tunnel will connect to the Lawry Shaft, with working hoist and head frame providing an escape way, natural ventilation, and another location for mining material. The property has an excellent road system, with good availability to timber and water, and power is available by PG&E on site.

> Ruby Mine located in the Alleghany-Downieville Gold District in the northern extension of the Mother Lode System Source: North Bay Resources



The Ruby Mine is nearing production and is North Bay's most important asset. North Bay has two other properties nearing production, including the placer gold-platinum Frasier River JV and the placer gold-silver Monte Cristo JV projects in British Columbia. North Bay owns a total of 150 mineral and placer claims covering 60,000 acres in British Columbia, Canada. North Bay also recently extended its option on the 650 acre underground placer Taber Mine, north of the Ruby Mine near La Porte, California.

North Bay has the potential to positively surprise investors by becoming an active, long-lived, low-cost operating gold mine in California. They also have the potential to increase and extend the life of mine, and commence operations at Taber as well as its other projects in British Columbia. Having successfully conducted a Project Generator business model, North Bay now is quickly advancing to junior producer status, with production from the Ruby Mine and other projects.

# North Bay Resources Inc. Company Description

North Bay Resources Inc. is a fully-reporting junior mining company, transitioning from a Project Generator business model to junior producer. North Bay also holds over 150 mineral and placer claims encompassing approximately 60,000 acres throughout British Columbia, Canada. The Ruby Mine, the company's most advanced asset, is owned 100% by North Bay's wholly owned subsidiary, Ruby Gold, Inc., and is free of royalties. The company intends on acquiring additional projects in the western U.S. North Bay recently extended its option to acquire the nearby property containing the past producing Taber Mine, which may possibly become their second operating gold mine in Sierra County, California.

North Bay holds about 58.8% interest in Ruby Gold, LLC. Ruby Gold, LLC is the special purpose entity that will own and operate the Ruby Gold Project under federal EB-5 Program guidelines once the company receives the expected \$7.5M in funding through the EB-5 Program. Remaining interests in Ruby Gold, LLC include ACG Consulting, LLC (ACG), an affiliate of Acer Capital Group that holds a 39.2% ownership interest in the Ruby Gold LLC, and The Northern California Regional Center, LLC (NCRC) which holds a 1.5% interest. The NCRC is a United States Citizenship and Immigration Services (USCIS) designated regional center under the EB-5 Pilot program, created by the U.S. Congress in 1990 through the passage of the Immigration and Nationality Act. In January of 2011, the NCRC organized a California Limited Partnership under the name Ruby Gold Foreign Investors, LP, to act as the legal vehicle through which foreign investors can make qualified investments in the Ruby Gold Project under federal EB-5 Program guidelines. North Bay is seeking to raise \$7.5 million through the EB-5 Program to bring the Ruby Mine into production and provide working capital for operating the mine. Tangiers, a subsidiary of Acer Capital Group, holds a 0.5% interest, which was obtained as a result of earlier financing efforts. Until the proposed \$7.5 million funding through the EB-5 Program is completed, North Bay's subsidiary Ruby Gold, Inc. retains 100% ownership of the Ruby Project.

#### The Ruby Project

Ruby Project Location

The Ruby Project is located between Downieville and Forest City, in the Alleghany-Downieville mining district, a northern extension of the historic Mother Lode system, in Sierra County, California. The Ruby Project is about 70 miles north of the city of Auburn. The towns of Grass Valley and Nevada City are about 24 miles north of Auburn, and by road 47 miles south of Downieville, on California State Highway 49. With a population of about 13,000, Grass Valley is the largest town in the vicinity of the Ruby Project and a likely source for labor and supplies. Grass Valley is the home of the former Empire Mine, one of the oldest, largest, deepest, longest and richest gold mines in California. Auburn is on Interstate 80, which is about 33 miles east of Sacramento, and 100 miles west of Reno, Nevada. The area around the Ruby Project has a long-established network of paved roads. The roads in the vicinity of the mine are well-maintained gravel roads.

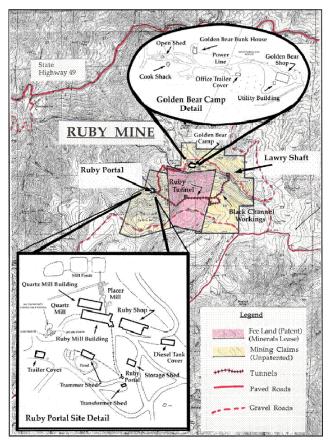
Regionally the Ruby Project is situated on the western slope of the Sierra Nevada Mountain range. The elevations range from 2,500 feet in canyons to 6,000 feet along ridges. The terrain in the vicinity of the project includes steeply sided plateaus with steep slopes deeply cut by streams and rivers. Vegetation consists of pine, cedar and fir trees, with brush and grass groundcover. The company reports stands of second growth pine and Douglas Fir sufficient to supply the mine. Rock Creek is a year-round stream and source of water to the project (also the site of Rock Creek City, a historic mining ghost town). The annual temperature at the project ranges from 10 to 100 degrees, with annual precipitation between 50 and 70 inches. Snow falls between January and March, and when in operation the project should operate year-round.

### Ruby Project Description

The Ruby Project covers 1.5 miles of strike length along the Eastern Melones Fault, the major north-south structure, and the controlling structure for many of the gold deposits of the Mother Lode. The Ruby Mine is located in the Tahoe National Forest, administered by the U.S. Forest Service. Ruby Gold, Inc. maintains a Plan of Operations effective through December 31, 2018. The Reclamation Permit has been renewed through April 2018, and a Reclamation Bond of \$171,000 is in place. The current Waste Discharge Order must be reviewed and re-approved by the Water Quality Control Board prior to recommencement of mining operations. The most recent mining has occurred at the Ruby Portal, at the Ruby Mill, and the Lawry Shaft.

The Ruby Project covers about 1,755 acres, consisting of subsurface mineral rights of two patented claims totaling 435 acres and 30 unpatented claims of about 1,320 acres. These claims cover both the Ruby and the Golden Bear (also known as the Carson Camp). These areas cover multiple former producing mines. The Ruby is the combination of the Ruby, the Bald Mountain Extension, and the Wisconsin. The Gold Bear includes the Ireland and Cincinnati. In total, these mines produced more than 250,000 ounces of gold since the 1850s.

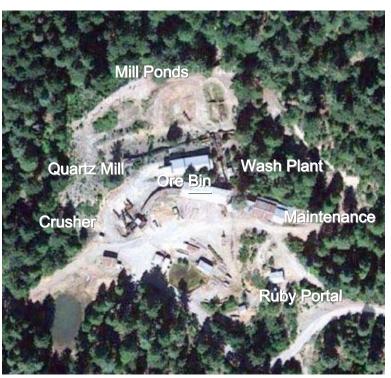
Ruby Project Complex south of Downieville Note Ruby Mill, Portal and Tunnel, Lawry Shaft And Gold Bear (Carson Camp) Source: North Bay Resources



# Ruby Project History

Gold was originally discovered in the Alleghany-Downieville district in 1849 in the early days of the California Gold Rush. The district has produced 2.35 million ounces of lode gold from vein deposits and 440,000 ounces from Tertiary-age channel deposits. The Alleghany-Downieville district is in the northern-most extension of the California Mother Lode, a north-northwesterly trend extending a distance of 160 miles and having produced over 125 million ounces of gold.

The history of the Ruby claim area dates from 1856 when placer miners followed gold occurrences upstream from the North Yuba River to the headwaters of Slug Canyon. This is where Tertiary-age gold bearing gravel deposits were discovered at the site of the nearby City of Six mine. By the 1860s, in addition to the City of Six, the Golden Bear and Guatemala produced a total of 96,000 ounces of gold from buried gold-bearing gravels. At this time mines were also operating in buried gravels two miles to the south in Forest City. By 1880, it became apparent that the buried gravels at Rock Creek on the Ruby Project and the mines at Forest City were on the same channel system. The Ruby Mine commenced mining the central portion of this system and produced 86,500 ounces of gold between 1880 and 1889.



**Ruby Mine Complex Source: Google** 

In the early 1900s attention turned from drift mining to lode gold from quartz in the hard rock. This included a shaft sunk at the Carson Mine, near the City of Six Mine, and the Cincinnati and Ireland mines. In the 1920s and 1930s, about 2,000 feet of development was carried out on the Carson vein, while the Cincinnati vein was developed from the Golden Bear workings.

In 1934 C.L. Best acquired and reopened the Ruby Mine and mined the Black Channel. Altogether, the mine produced 58,000 ounces of gold until the mine was closed in 1942 to support of the war effort. As noted above, C.L. Best held out the best gold nuggets for his personal collection, which was later donated to the Natural History Museum of Los Angeles County. In cooperation with Sierra County, the museum made casts of the collection and produced replicas for display in the lobby of the Sierra County Courthouse in Downieville, California.

C.L. Best passed away in 1951 and the mine was leased to the Ruby Development Company in 1959, which acquired the property in 1966 and worked the gravels of the Black channel from the Lawry shaft until the mid-1970s. In the 1970s the Ruby Mine was leased to Alhambra Mines, and the Golden Lion Mining Corp. rehabilitated the Carson mine, which drove a decline to the Cincinnati channel following gold being discovered in quartz in the Cincinnati vein.

The Brush Creek Mining and Development Company, Inc. (Brush Creek) acquired the Ruby Project in 1990. By June 30, 1997, Brush Creek had invested a total of \$4,554,575, including \$2,251,714 of development costs and \$1,975,525 of mining equipment. Brush Creek constructed a new wash plant and quartz mill, waste water treatment system, and modified structures and ore bins at the mill site. Brush Creek also installed a hoist and constructed a sixty-foot steel head frame over the Lawry Shaft, as well as a 210 foot vertical shaft for access and mine safety. Underground work included a complete underground ventilation and electrical system at the Lawry Shaft, including rehabilitating and re-timbering one quarter mile of tunnel plus underground tunnels for diesel loaders. By 1995, falling gold prices led to the suspension of mining, and the mine was put on care and maintenance. Brush Creek resumed activities in 1998, driving a development tunnel south of the Lawry Shaft workings, before forfeiting and returning the project to the Ruby Development Company.

Despite the significant amount of effort, Brush Creek accomplished only modest production. From December of 1992 to July of 1993, Brush Creek mined 7,300 tons, recovering 200 ounces of gold. In 1994, they mined 400 tons from the Lawry channel, at an average grade of 0.2 ounces per ton. While certainly not reflecting the effort by Brush Creek, the production was not believed to be representative of the opportunity.

#### Gold Targeted in Tertiary-age Channels

The Ruby Mine currently has no known estimates of proven gold reserves. They do have the benefit of data accumulated from earlier underground mining, showing 250,000 ounces produced since the 1850s. Geological assessment work was carried out by Gary Clifton, P.Geo, in 2010. He incorporated information from Brush Creek and Alhambra Mines and identified 3.03 miles of unmined channel and 0.95 miles of partially mined channel, or about 4 miles total of known channels targeted for producing gold.

Channel	Mined	Patially Mined	Unmined	Total
Bald Mountain	7,500			7,500
Deep Rock Creek	5,500		2,000	7,500
Cincinnati		1,500	4,500	6,000
Black and Pilot	2,000	3,500	3,250	8,750
Mt. Vernon			3,000	3,000
Bald Mountain Extension	2,750		3,250	6,000
(Hawkeye Channel)				
Total feet	17,750	5,000	16,000	38,750
Total miles	3.36	0.95	3.03	7.34

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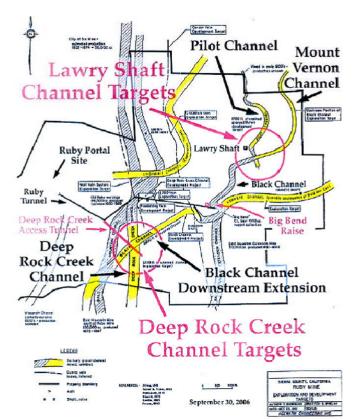
Based on extensive research and available resource maps, historic data, and a modest sampling program, Mr. Clifton concluded that the potential was for the gravels to contain an average of 0.164 ounces of gold per cubic yard (27 cubic feet). The average width of the channels is about 200 feet. The mineable area of the ancient riverbeds is expected to be six feet, which includes the boulders and gravels as well as the surface to the underlying bedrock, which may have collected gold in cracks or other vacant spaces. He assumed that partially mined areas had half the potential of unmined channels. Based on these assumptions, he calculated the potential of 134,844 ounces of gold to be recovered from these five channels. The calculations are shown below.

Partially mined channels	(200 x 6 x 5,000 x 0.164 x 0.5)/27.0	=	18,222 ounces
Unmined channels	(200 x 6 x 16,000 x 0.164 x 1.0)/27.0	=	116,622 ounces
Total (inferred) unmined ounces			134,844 ounces

The gold potential at the Ruby Mine is based on historical data and research of other placer gold deposits. There are unique challenges to estimate potential ounces in placers compared to hard rock deposits. Statistical data from assayed drill core may be commonly relied upon for industry accepted resource estimates for hard rock deposits. Because gold in placers may be transported and deposited according to the flow of rivers over time, it is difficult to make definitive resource estimates based on drill results. In the case of placer deposits, the preferred method for making estimations is through bulk mining, which historic activity at the Ruby Mine may provide the best source of data.

While the estimate may prove helpful to understand the life of the operation, recoveries will depend upon the skill of miners and mine geologists in locating and mining the most profitable pay streaks in ancient river bottoms. North Bay believes that gold bearing gravels are "relatively abundant, easily identified and present in existing workings ready to be exploited." The company plans to maintain rigorous record keeping and complete seismic studies to completely identify and understand the timing of gold deposition in the ancient buried riverbeds. This is to guide mine development of channels and optimize operations. In addition to potential additional channels, lode deposits in quartz are known to exist and have not been tested.

> **Ruby Project Channel Targets Source: North Bay Resources**



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# Summary of Regional and Local Geology

The Ruby Project is in the Alleghany-Downieville gold mining district which forms the northern continuation of the historic Mother Lode system, a regional north-northwesterly trend extending a distance of 160 miles. Most of the gold mines in the Mother Lode system are located on the Melones fault, a regional structure extending from Mariposa County in the south to Plumas County in the north. The company reports that at the latitude of the Alleghany-Downieville district, the Melones fault is up to 4 miles wide. The Ruby Project is intersected by the fault over a strike length of one and a half miles.

The primary mineralization at the Ruby Project is gold. Concentrations of placer gold have been associated with quartz gold deposits, which may or may not have been the source. Not unexpectedly, some quartz deposits have been discovered in the bedrocks while mining placer channels. Quartz veins may extend to thousands of feet in depth. The Ruby includes gold in veins of quartz; for example, the Wolf vein produced 1,625 ounces of gold, and is located near the Bald Mountain channel.

The primary target mineralization is in gold-bearing Tertiary-age channels such as the mined Bald Mountain channel and the unmined Bald Mountain Extension channels. These have been the best producers in the Alleghany-Downieville district. Younger channels which included eroded, older channels, include the Black channel (in the vicinity of the Big Bend in the Ruby Mine) and the Deep Rock Creek channel, which may include redeposited stretches of the Bald Mountain channel. It was near the Big Bend raise that a significant portion of the specimens for the C.L. Best collection were located.

The Ruby Portal is on the west side of the Melones Fault, characterized by long stretches of serpentinite, a brittle rock prone to fracturing. North Bay has taken great care to retimber or install new support to reinforce the roof and ribs of the tunnel. At the 4900 vein, the tunnel will cross over to the eastern side of the Melones Fault. The rock type on this side of the fault is slate, which is more competent and self-supporting. At this point, the pace of work is likely to increase. At present, North Bay has about 600 feet to go to reach the 4900 vein, at which time it will have installed over 60,000 board feet of timber and 5,000 feet of new ventilation duct.

#### Ruby Project Plant, Equipment, and Infrastructure

We found on our visit to the Ruby Mine and Mill that the equipment appeared to be in workable condition. Clearly, some maintenance and repair remains, but the company reports that no additional material equipment will need to be acquired in order to commence production. Most of the equipment at site was purchased between 1990 and 1995. The company reports that the wash plant and mill facilities have been confirmed to be in good working order.

The equipment includes a 1,000 yard per day placer wash plant, 50 ton per day quartz mill, 6,000 feet of tracked haulage with electric and diesel trammers, and ore cars and flat cars. The operation appears to have a full complement of heavy and light trucks necessary to operate the mine. The Lawry Shaft, located nearly 2 miles from the Ruby Portal, includes a functioning hoist and is expected to provide natural ventilation. The mine and mill complex include a number of surface buildings, including a lumber mill, machine shops and offices. Electric power at the Lawry headframe is provided by PG&E along with a 150 kW diesel generator, providing back up power. The Ruby Mill is powered by a 250 kW and 55 kW diesel generator fed by a 4,500 gallon diesel tank. The project includes an excellent system of roads maintained by the county.



Lawry Shaft Source: Analyst

# **Ruby Project Production Plans**

North Bay is completing the rehabilitation of the Ruby Project. The current infrastructure and permitting may allow the Ruby Mine to resume production almost immediately. The company is working toward closing a \$7.5 million funding under the federal EB-5 Program, providing completion of the acquisition of the Ruby Project and necessary working capital. The company is targeting initially processing 250 cubic yards per day. At an average grade of 0.164 ounces per cubic yard, they expect to recover approximately 1,000 ounces of gold per month in the first year, with the potential to increase production thereafter to 2,000 ounces per month by the end of the second year. There are several areas identified for mining, and we would expect that the mine team will rapidly gain experience mining the channels, which should lead to increasing throughput.

# **Underground Placer Mining**

The first of two phases of mining will commence in the Lawry Shaft area in the Mount Vernon channel and the Pilot channel. This area will utilize air-powered slushers and trackless loaders. It is expected that the Deep Rock Creek area may commence mining activity soon after mining at the Lawry Shaft area begins; this will include the Deep Rock Creek channel and the downstream extension of the Black channel. As the company makes rapid progress toward the 4900 vein, with additional mine maintenance, we suspect that mining in both of these areas may commence and operate near simultaneously. We see the opportunity to have existing infrastructure available to mine two areas maximize safety and provide significant flexibility to optimize the overall operation.



Gary Clifton, P.Geo, Ruby Mine Tunnel (boulders, rock fragments, rounded cobles) Gold is in the sand that binds the rocks and within the cracks in the basement rocks Source: North Bay Resources

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The Ruby Mine is unlike open pit bulk mining or underground hard rock mines. The gold contained in the buried gravels of ancient rivers lends itself to a specialized style of mining for this boutique mine. Miners will tunnel beneath these riverbeds, targeting the deepest parts of channels, which are more likely to hold the highest concentrations of placer gold. While these ancient rivers may have been wide, the gold is trapped and concentrated in low lying areas. Locating and mining these areas efficiently may prove to be very much an art, as they seek to maximize mining concentrations of gold while avoiding uneconomic grades and handling waste. North Bay estimates that its cost of production per ounce of gold should range between \$450 to \$500 per ounce based on the consistency of grades and gold content of areas mined.



Rehabilitated Ruby Mine Tunnel (looking toward portal) Note New Timbers and Ventilation Duct Source: Analyst

Data acquired should lead to a better understanding of the potential scope of mineralized areas. The knowledge gained from ongoing mining, in conjunction with seismic studies, should be instrumental to increase production and extend the life of operations. The company reports that much could be learned from the seismic studies, which may require a modest investment of only \$100,000 and take only a month to permit.

# Gold in Quartz

It will be interesting to monitor the increasing potential of mining gold from quartz veins as mining gold placers continues. Gold placers may be near the source or associated with quartz veins. Ongoing mining and inspection of mined or partially mined channels may provide an excellent starting point for a modern exploration program for gold in undeveloped quartz veins. North Bay has the ability to process gold in quartz at the Ruby Mill, and considers the gold production component from quartz to be important to extending the life of mine beyond ten years.

North Bay reports earlier miners observing "lines of coarse gold" when working the underground channels of the Ruby Mine. These concentrations of visible gold have been found in other productive mines in the Alleghany-Downieville district, including the Sixteen-to-One, Oriental, Rainbow and Plumbago, which were discovered while mining placer channels. The quartz veins may be rich in gold and extend thousands of feet. The Sixteen-to-One, to the south of the Ruby Mine, is on care and maintenance, and is well known for production of "quartz-in-gold" prized by jewelers. The Sixteen-to-One extends to a depth of 3,000 feet. North Bay has drawn the comparison with the size of gold nuggets from the Ruby Mine as a potential continuation of the Sixteen-to-One, as it is also situated on the Melones fault.

# **Summary of the Placer Gold Recovery Process**

North Bay's placer gold wash plant and quartz mill are both gravity separation circuits that do not require chemicals or other exotic processes. While both processes are simple and rely upon proven gravity methods of recovering gold, the process requires diligence and attention by operators to maximize recoveries.

The mined gravel mucked from the mine is transported to the Ruby Mill and dumped into the ore bin above the gold washing plant. The wash plant is a closed-circuit system which recycles water and rejects non-gold bearing gravels for the waste pile. Gravels are fed onto a trommel, or scrubber, to thoroughly wash the gravel. The trommel rotates twelve times per minute.

**Ruby Mine Portal Source: Analyst** 

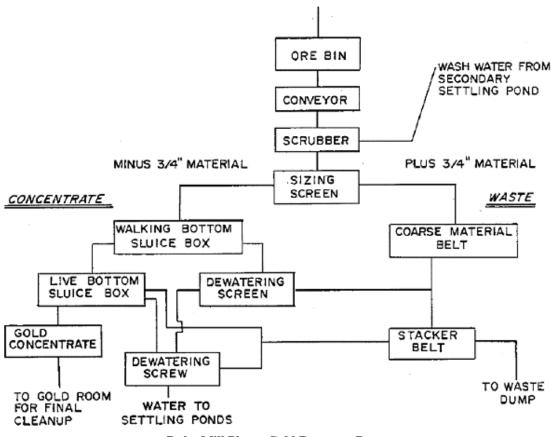


The washed gravel and larger gold nuggets are discharged through slots, while material over three quarters of an inch in size is rejected and stacked for transport. The remaining fines fall onto a "walking bottom sluice box," a belt that traps high specific gravity material, like gold, while washing all lighter material off. The riffle bed cycles every 20 minutes, depositing gold bearing material into the "live bottom sluice box." This is a cam-operated jigging action to concentrate and separate gold and other high specific gravity material.

The lighter material is washed off the end of the belt, and over a one eighth inch vibrating dewatering screen and into the dewatering sand screw that delivers remaining non-gold bearing material to the waste dump, while straining water that flows to a series of settling ponds and later returned to the washing circuit.

Ore Car Dumping into Bin Source: Analyst





Ruby Mill Placer Gold Recovery Process Source: North Bay Resources

#### The Taber Mine Acquisition

In November of 2011, North Bay agreed to an exclusive option to lease or acquire the Taber Mine in the Gibsonville mining district. The mine, near La Porte, in Sierra County, California, is 27 miles from Quincy, California to the north. Due to the mountainous terrain, while only 25 to 30 miles from the Ruby Project, by road the Taber Mine is a distance of 78 miles. The Taber Mine is an underground placer mine which covers about 650 acres of unpatented mining claims similar to the Ruby Project, and is located on the Melones fault in a northern extension of the historic Mother Lode system.

The Taber property is crossed by two channels of the Tertiary-age North Fork of the Yuba River. The Front channel exposed at surface was mined by hydraulic open cut methods and the buried Back channel was accessed by the Union and Bellevue underground mines. The Front and Back channels converge at the Taber tunnel. The Back channel has an estimated 4,000 feet of unmined channel on the Taber property. The channels run east to west and downstream from the Melones fault, with other channels coming in from the north. The property is fully-permitted, and can be placed into production once the Taber tunnel has been rehabilitated and permits have been renewed.

In the 1990s the Sunshine Mining Company explored the Taber property and reopened the Bellevue Mine to the west of the Taber. Work was discontinued due to falling metal prices. North Bay reports that a 100 ton per day mill is in place on the Taber property, and at a historic grade of 0.45 ounces per ton, has the potential to produce more than 1,000 ounces of gold per month. They report that the Taber Mine is estimated to contain 86,667 ounces of gold, and like the Ruby Project, may be expanded by reopening and completing seismic studies. We see synergies with commencement of production at the Ruby Mine and believe the Taber Mine presents an attractive opportunity for North Bay to expand activities in California.



Ruby Mill Ore Bin Source: Analyst

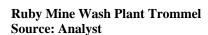
# **Other Projects**

North Bay owns a total of 150 mineral and patent claims covering 60,000 acres in British Columbia, Canada. North Bay's most advanced projects in British Columbia nearing production include the placer gold-platinum Frasier River JV and the placer gold-silver Monte Cristo JV projects in British Columbia. We find the inclusion of Pete Wright, by reputation and experience, in both the Frasier River JV and Monte Cristo JV, to be a significant advantage to bring these projects on line and to optimize operations.

# The Frasier River JV Project, British Columbia

The Fraser River JV project is located near Lytton in south-central British Columbia, Canada, and covers approximately 4.5 kilometers of placer claims along the Fraser River. Sampling by North Bay's JV partners (Devlin's Bench Mining Ltd and P. Wright Contracting Ltd) resulted in assays as high as 5.68 grams per tonne gold and 0.427 grams per tonne platinum, with average assays of 2.303 g/t gold and 0.096 g/t platinum from seven samples. These samples were all unconcentrated, consisting only of raw in-place bank material collected within 0.3 meters from the surface. North Bay notes that metal values in placer deposits often increase substantially with an increase in depth towards bedrock. In this case, the bedrock is estimated to be approximately 75 meters below the surface. North Bay reports that these results are significantly higher than the assays achieved by the Company in 2009 from an area further north of the current work area, leading them to believe that the Fraser River project may be mined profitably for many years.

Permits have been approved and issued, and P. Wright Contracting Ltd has begun mobilizing heavy excavation equipment and a portable custom-built gold recovery plant for deployment at the Fraser River project. P. Wright Contracting Ltd is a Barkerville, BC-based mining contractor, working in the mining sector for 20 years in British Columbia and the Yukon with contracts for Ministry of Mines reclamation projects in the Cariboo Mining District, in addition to working for most other government related agencies.





Devlin's Bench Mining Ltd is based in Barkerville, BC, and operates several placer gold mines throughout the Cariboo Mining District of British Columbia, including Conklin Gulch, Antler Creek, Devlin's Bench, Grouse, and Williams Creek. P. Wright Contracting Ltd is 100% owned by Pete Wright and is a sister company to Devlin's Bench Mining Ltd, also owned 100% owned by Wright.

The Monte Cristo JV Project, British Columbia

The Monte Cristo JV project is in the Lillooet River Valley near Harrison Lake, British Columbia. North Bay reported assay values from the black sand concentrate that returned as high as 114 grams (3.66 ounces) per tonne gold and 65 grams (2.09 ounces) per tonne silver. The early work on the Monte Cristo project was designed to determine the presence of submicron size metals with potential for concentrating on site to improve the grade. In February, the team found an abundance of visible gold with some as large as one millimeter. They determined that through the use of a Keen concentrator, they may reduce the volume of material 20 to 1000 times, significantly upgrading the concentrate. North Bay anticipates that metal values may increase at depth toward the bedrock, estimated at 100 feet below the surface.

Walking Bottom Sluice Box below Trommel Rick Frederking (left), Ruby Development Company Source: Analyst



#### **Financial Discussion**

As of June 30, 2012, North Bay had \$3.1 million in assets, consisting cash and and cash equivalents of \$110,388, and \$3.0 million in property and equipment. This was offset by current liabilities of \$2.9 million, primarily consisting of notes to the Ruby Development Company (RDC), convertible securities, and accrued expenses to a related party. North Bay acquired the Ruby Project from the RDC in July of 2011. North Bay issued a note to RDC in the amount of \$1,990,000 (as of June 30, 2012, the balance was \$1,857,245) at an interest rate of 3.0% due on December 31, 2012. As of June 30, 2012, the company had accumulated losses of \$11.9 million, most of which were non-cash writedowns. North Bay anticipates reporting losses over the next 12 months, and expects that it will need to raise capital over the next 12 months to remain in operation. North Bay is currently working to complete a \$7.5 million financing through the federal EB-5 Program. As of September 12, 2012, North Bay has 100,497,622 shares outstanding and 20,050,000 warrants outstanding.

The EB-5 Program authorized under the Immigration and Nationality Act of 1990

The federal EB-5 Program is authorized by the US Congress in the Immigration Act of 1990, and is intended to help stimulate the U.S. economy by creating new jobs in rural areas or areas of high unemployment. The statute defines a "targeted employment area" as a rural area or an area that has experienced high unemployment of at least 150 percent of the national average. The term "EB-5" is an acronym for "the fifth employment based visa preference category." As it implies, the source of the investment capital comes from overseas investors who wish to immigrate to the U.S. by investing in a commercial enterprise that will create at least 10 full-time jobs. The program is administered by the United States Citizenship and Immigration Services (USCIS), as provided under Section 610 of Public Law 102-395. Since its inception in 1990, the EB-5 Program has been the conduit through which over \$3 billion has been invested by foreign nationals in U.S. enterprises to create jobs throughout the US economy. On September 30, 2012, President Obama signed a three year extension of the federal EB-5 Program.

Operational funding for the Ruby project of up to \$7.5 million is to be provided through the federal EB-5 Program. It is expected that this funding will be non-dilutive, as no shares of North Bay stock will be issued to EB-5 investors. The EB-5 funding will be debt, which must be repaid from mining operations over five years and at an interest rate of no more than 6%. If North Bay has not generated enough revenue from claim sales and joint-ventures to meet their commitments, they plan to rely on their equity credit line established by way of a Securities Purchase Agreement with Tangiers, LP to cover acquisition costs.

North Bay, under an agreement with ACG Consulting, LLC (ACG) and the Northern California Regional Center, LLC (NCRC), is now formally associated with the NCRC, and USCIS has formally pre-approved the Ruby Mine as a qualified EB-5 project. NCRC is expected to provide full funding for North Bay's prospective mining projects in Northern California. An investor seeking an EB-5 green card through the Regional Center Investment Program must make the qualifying investment in the Ruby Mine of \$500,000 and be approved through the NCRC.

Each investor must independently petition USCIS for an EB-5 visa. The USCIS solely determines whether the investor qualifies for the EB-5 visa. USCIS's diligence includes a detailed review of the sources of the investor's funds, family history, and other representations of the head of household and his immediate family members under the age of 21. Each investor must further demonstrate that at least 10 or more full-time jobs will be created directly or indirectly as a result of the investment into the project.



Ruby Mill (wash plant and quartz mill) Source: Analyst

In August of 2012, the unemployment rate in Sierra County, and Plumas County to the north and Nevada County to the south was 11.1%, 12.8% and 8.9%, respectively. Unemployment rates typically dip in summer months. Both Sierra and Plumas Counties have had double digit unemployment rates since April of 2008, and both in recent years have periodically had unemployment rates in excess of 20%. At the time Brush Creek operated the Ruby Project, prior to the mine being placed on care and maintenance, the Ruby Mine was the largest employer in western Sierra County. NCRC was approved on April 22, 2010 by USCIS as a designated EB-5 Regional Center, and is currently approved to sponsor qualifying investments in such capacity within Northern California where the Ruby Mine is located. The applications and all supporting documentation required by USCIS were filed by NCRC in January, 2011, and in July of 2011, received approval for the Ruby Mine as a qualified EB-5 project.

Under an agreement dated July 28, 2010 with ACG, 80% of the net profits from the Ruby Project will be returned to the EB-5 investors, and 20% will be distributed to the owners of the Ruby Gold, LLC, until the first \$3,000,000 of the EB-5 Financing is returned to the EB-5 investors. At that point 70% of the net profits from the Ruby Project will be returned to the EB-5 investors and 30% will be distributed to Ruby Gold, LLC, until the entire EB-5 Financing is returned to the EB-5 investors. Upon returning 100% of the EB-5 Financing to EB-5 investors, all of the net profits will be distributed to the owners of Ruby Gold, LLC. The initial ownership interest in the Ruby Gold, LLC included 60% held by North Bay's Ruby Gold, Inc. and 40% by ACG. According to a loan covenant dated September 27, 2010 with Tangiers and the MOU dated October 14, 2010 with NCRC, the interests of Tangiers (0.75%) and NCRC (1.5%) are to be included in the net profit distributions to the owners of Ruby Gold, LLC.

# **Management Discussion**

North Bay has successfully implemented a Project Generator business model. They have successfully acquired the Ruby Project and are in good position to complete a financing necessary to provide adequate working capital to cover start-up. In addition, North Bay has benefited by a good working relation with the Ruby Development Company helpful to secure skilled labor familiar with the Ruby Project. North Bay has successfully completed a substantial amount of maintenance and repair, including the rehabilitation of a large portion of the Ruby Tunnel. It will be important to build on this success for North Bay to optimize and stabilize operations at the Ruby Project.

**Perry Leopold** serves as North Bay's President, CEO and Chairman of the Board. Mr. Leopold was engaged in this capacity in February of 2006. He is the architect who carried out North Bay's business model and incorporated state-of-the-art technology to assist in cost-efficient acquisition targeting, which has resulted in over 50 acquisitions of high-quality mining properties throughout British Columbia. Mr. Leopold is currently serving as President of Circular Logic, Inc, a registered Commodity Trading Advisor (CTA) and Commodity Pool Operator (CPO) firm specializing in commodity trading system development. He was educated at the University of Pennsylvania.

**Fred Michini** is North Bay's de facto Chief Financial Officer, and is a tax, financial, management accounting and litigation support specialist. Mr. Michini is also a Certified Public Accountant, has been Partner and Managing Partner of two regional accounting firms, and has served as an auditor for the U.S. General Accounting Office. Mr. Michini earned a B.S. from LaSalle University and a MBA from Temple University.

C. Gary Clifton, P.Geo, a consultant to North Bay, holds degrees in Geology and Geochemistry from Macquarie University in Sydney, Australia, with post-graduate studies in Geochemistry at UC Berkeley and Oregon State University. A Registered Professional Geologist, Mr. Clifton has almost 40 years of experience with several major mining and petroleum companies, and as an independent consultant in mining exploration and exploration management, mineral property evaluation, and mining geology. He has conducted and managed exploration and evaluation programs for a wide variety of mineral commodities in the United States, Australia, and the Middle East. Mr. Clifton is currently President of Western Resource Group LLC, and is a Qualified Person as defined by National Instrument 43-101.

# **Metal Discussion**

At the outset of 2012, our forecast for gold in 2012 ranged from \$1400 to \$1700 per ounce with the potential for some catalyst to push the upside to \$1800 to \$1900. This was a wider range than the prior year but reflected our belief that there was an opportunity for greater volatility in 2012. Gold prices met the upper limits of our higher expectations and have generally held near the upper end of our expected trading range for 2012. We also saw a potential for these higher levels to be met or exceeded toward the end of 2012, which we still believe is the case.

In the near term there remains significant potential for volatility, given significant movements to stimulate economies and increase liquidity by commercial banks, and offsetting reduction of velocity and increasing cash balances by consumers and businesses. While there seems to be a great deal of effort behind the scenes by the major central banks to manage their respective money supplies and maintain stability of their financial systems, it is somewhat reminiscent of price controls by OPEC in the 1970s. Eventually one party in the oligarchy breaks ranks and cuts their price to increase marginal profits. In this case, we believe we see very similar central bank behavior. With government economic stimulus and entitlements the fashion, we see a continual decline in the relative value of paper currencies to gold and possibly other tangible assets, until such time as new government bond issues fail to locate buyers or interest rates increase. Our forecast is only to this point.

We believe that the U.S. Federal Reserve's commitment to near zero interest rates through 2014 to be extremely positive for the price of gold and many other tangible assets. The Fed has committed to buying \$60 billion in treasuries monthly and appears as concerned about their own balance sheet as the U.S. Senate. We do not believe that inflation is properly being accounted for and that we may be in a position of negative real interest rates. Gold, oil and other precious metals and tangible assets tend to do very well during extended periods of negative real interest rates. From this perspective, given the extended horizon of deficit spending and higher debt levels with treasury purchases by the Fed, the extended investment horizon for gold is positive.

We do see near term weakness and reasons for higher levels of volatility. An immediate concern would be trouble in Europe and a weakening euro leading to a stronger U.S. Dollar (and relative decline in the price of gold). In addition, the U.S. Dollar may be bolstered by declining velocity of money, where consumers and business increase their liquidity and holdings of cash. While this may result in a decrease in gold prices in the near term, without the Fed reducing its balance sheet, it could be highly inflationary should the economy rebound and cash balances do not find productive uses.

#### **Considerations for Investment**

There are a number of considerations for investment in North Bay, many of these may or may not resonate with investors, but any may serve as catalysts to increase investor interest and market sentiment.

- The Ruby Project is fully permitted with infrastructure and equipment (mine, mill and roads) necessary to commence production.
- The Ruby Project is currently 100% owned by North Bay and there are no royalties on gold production.
- The mine plan at the Ruby Project will initially target the most productive area at the time of closure with the goal to produce 2,000 ounces per month by the end of the second year.
- The historic Ruby Mine has a unique mining history and a proven record for producing large gold nuggets.

- The Ruby Project is well located in the northern extension of the California Mother Lode system on the Melones fault, the controlling structural feature.
- North Bay has the opportunity to discover additional Tertiary-age channels including potentially goldmineralized quartz veins.
- The federal EB-5 Program was recently extended for an additional three years.
- The Ruby Mine is a past gold producer that was closed due to falling metal prices in the 1990s.
- The acquisition of the Taber Mine may provide synergies with the Ruby Mine in Sierra County.
- North Bay has other interesting near-term production projects in British Columbia.
- North Bay holds a substantial portfolio of early stage exploration projects in British Columbia.

# **Risks and Mitigations**

Companies in the resource industry may encounter a number of risks that may or may not be apparent or easy to identify. Below are several important risk factors which investors should be aware of when considering making an investment.

**Risks:** 

The Ruby Project, North Bay's most important asset, has no proven reserves. In addition, given the nature of placer gold deposits, investors in the mining industry may be unknowledgeable or skeptical of the potential economic value of placer gold deposits compared to hard rock mines.

**Mitigation:** The preferred method for assessing the potential of placer gold deposits is bulk sampling. The Ruby Project has a significant amount of data which has accumulated since production commenced in the 1850s. Gary Clifton, P.Geo has identified about 4 miles total of known channels targeted for producing gold. The Ruby Project is located in a gold district on the prolific Melones fault known for productive gold mining from Tertiary-age channel deposits associated with veins of quartz containing visible gold. Lastly, many junior producers derive value from gold production results and exploration potential as opposed to relative value comparison based on reserve totals alone.

**Risks:** 

There is financial risk in the potential that the federal EB-5 Program may not be funded in time to meet its obligations. There may be issues qualifying investors for the program that are outside of the company's control. North Bay anticipates that it will sustain net losses over the next year and is dependent upon completing financings. In addition, the EB-5 Program is unique in funding mining companies and investors may not be familiar with this manner of financing projects.

Mitigation: Since the inception of the EB-5 Program in 1990, the program has been a conduit of over \$3 billion in the U.S. to create jobs. The Ruby Project has been approved as a qualified investment for the EB-5 Program. North Bay believes the EB-5 Program is the best way to raise capital without diluting shareholders. It is also seen as a means to secure capital for other projects in Northern California, like the Taber Mine, which also may be non-dilutive. North Bay is prepared to rely on its credit line to meet its obligations secured by the Ruby Mine or seek an extension if necessary.

**Risks:** 

The price of the underlying metal may impact investor sentiment toward gold resource stocks and impact the profitability and partnership cash flows. The nominal price of gold is currently near an all time high raising concerns over the potential for increased volatility. Actions by competing central banks may impact currency exchange rates exacerbating the volatility of gold prices.

**Mitigation:** The real price of gold has yet to reach the historic record high attained in the late 1970s. A lengthy period of potential negative real interest rates is favorable for intangible assets such as gold. The U.S. Federal Reserve appears committed to low interest rates for the next couple of years possibly covering federal deficits and increasing national debt. In addition, China, Japan and the ECB also appear to be pursuing competitive easy money strategies.

**Risks:** 

Companies transitioning from one business model may have enhanced operating risk as they develop management teams and guide corporate culture to optimize operations, reduce risk and take advantage of available opportunities.

Mitigation: North Bay has executed a successful Project Generator business model. They have successfully acquired the Ruby Project and are in good position to complete a non-dilutive financing necessary to provide adequate working capital to cover start-up. In addition, North Bay has benefited by a good working relations with the Ruby Development Company helpful to secure skilled labor familiar with the Ruby Project. While early in building a team around the Ruby Project, the company appears off to a good start.

#### **Company Guidance and Our Model**

We would agree with North Bay's management that they are close to being able to commence processing material at the Ruby Mill. As management reports that rehabilitation of the Ruby Tunnel is approaching the 4900 vein, the company should soon begin mining and processing gold bearing material through the mill. The wash plant has a capacity of processing 1,000 yards per day and the quartz mill 50 tons per day. North Bay's plan is to process 250 tons per day to start at an estimated average grade of 0.163 opt to produce 1,000 ounces of gold per month (with the goal of increasing to 2,000 ounces per month by the end of the second year). This would seem a little more conservative, as we calculated the potential production at 1,241 ounces per month using their assumptions.

It may also be more realistic than we would have predicted, as the wash plant at 250 yards per day is significantly less than the stated potential wash plant capacity of 1,000 yards per month. They also do not include the quartz mill. On average, North Bay's plan appears very reasonable, but given the challenges of bringing a mine on line and identifying productive areas to mine and optimize operations, could be an ongoing challenge.

North Bay anticipates mining costs at \$450 to \$500 per ounce. Typically, smaller mines may not enjoy the benefits of scale that larger, low-grade mines may experience by processing large volumes of material. The Ruby Mine is also an underground mine that requires more specialized mining techniques. On the other hand, the Ruby Mine complex is well conceived and the processing of gold-bearing material is relatively simple, not requiring capital intensive or exotic processes. Should North Bay locate a sufficient number of areas to mine, and consistently processes an optimal amount of material through the mill, we believe that at production of 1,000 ounces per month mining costs of \$450 to \$500 per ounce may be achievable. At this rate of production, we anticipate a mine life of about 12 years based on the currently identified target resource.

North Bay currently owns 100% of the Ruby Mine with no other royalties. They are working toward completing funding through the EB-5 Program. This plan appears reasonable, though some issues, including locating investors, may be outside the North Bay's control. Assuming they close the \$7.5 million EB-5 financing, North Bay's Ruby Gold, Inc. share of ownership of the Ruby Mine will be reduced to about 58.8%. All loans on the project will be eliminated, and they should have sufficient working capital to cover the ramp up of operations.

Our model assumes gold at a price of \$1,500 per ounce, and production of 1,000 ounces per month, resulting in annual revenues of about \$18 million. Assuming mining costs of \$500 per ounce, and other corporate expenses of \$1.8 million annually, or \$20 per ton, the project on average may produce \$6.6 million per year. This would retire the EB-5 loan within the second year. At a gold price of \$1,300 or \$1,700 the annual income may be \$4.2 million to \$9.0 million, respectively, and breakeven at a gold price of about \$950 per ounce. Our calculations indicate that at a \$1,500 gold price, the present value of North Bay's share of the cash flow at a discount rate of 12% is about \$21.0 million, or \$0.21 per share. At a \$1,300 and \$1,700 gold price, the present value is \$13.3 to \$28.5 million, or \$0.13 to \$0.28 per share, respectively. Reiterating that the Ruby Mine is a high-grade small mine, mine optimization becomes increasingly important to maximize cash flow and minimize costs (or on the basis of ounces of production). Actual production may vary significantly, depending on the consistency of operations impacting cash flows and investor's sentiments.

We see the potential of increasing production to 2,000 ounces per month by the end of the second year to be very real. While constant production is a goal, and an expectation of investors, commencing production at a mine, optimizing, and increasing production is never a straight line. Investors may anticipate volatility, but with excess capacity at the wash plant and quartz mill, and potential to extract material from both the Ruby Tunnel and Lawry shaft, production may accelerate possibly increasing expected cash flow during a period of historic high gold prices. Should production increase and then stabilize, new investors should recognize and consider the importance of locating replacement resources to extend and maintain the remaining mine life. Our model considers only a base case, North Bay will need to hit on all cylinders, including production, exploration and expansion to achieve and sustain higher market valuations.

# **Conclusion and Opinion**

Historic mines, such as the Ruby Mine, with potential for high-grade production are hard not to like. The Ruby Development Company should be complimented in keeping the property, equipment and permits in good condition. The point at which the mine was at the time of closing by Best, plus the equipment and other development completed by Brush Creek, has preserved one of the very few opportunities in California to open a new mine. The mill appears to be in good working condition, the rehabilitation of the Ruby Tunnel is nearing a point to commence production, and the potential to complete the EB-5 financing appears good, but is subject to factors outside the company's control. Should the financing be delayed, we would expect the company to draw on their line of credit or seek an extension from the holder of the note. Should North Bay consider another course of financing, we may assume that the cash flow and value of the Ruby Mine on a share adjusted basis may be similar. In any event, within the range of gold prices included above, the value of the project as calculated is significantly above North Bay's current market valuation.

Should the financing close and production commence at the Ruby Project, we would expect an upward revaluation by the market as operations stabilize. Possibly more important, this may lead to exploration for undiscovered channels, plus exposure to gold in quartz veins at the Ruby Mine. Stabilized operations at the Ruby Project would allow North Bay to direct its attention to the nearby Taber Mine as a potential second mine in Sierra County. In addition, though not included as a focus of this report, we are intrigued by the potential of both of the potential near-term production opportunities in British Columbia. North Bay's current valuation does not appear to reflect the near-term upside of these opportunities.



**Analyst at Sierra County Courthouse Source: Analyst** 

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# Beacon Rock Research, LLC

October 4, 2012

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Buy	Immediate purchase is recommended. The security expected to outperform the market over the next 12 to 18 months.				
Hold	Holding the stock is recommended because the share price's appreciation potential is less than or equal to the market.				
Sell	The stock has reached the target price objective and/or conditions have changed sufficiently to alter the outlook for the stock.				
EQUITY RISK SYSTEM:					
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Moderate	The security has about the same volatility as the market and/or the company carries a level of leverage in line with its peer group.				
Low	The security is less volatile than the market and/or the company is less leveraged than its peer group.				

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