

IDAHO MINING AND EXPLORATION, 2007

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Mining and exploration activity in Idaho in 2007 continued its upswing as a result of favorable markets and higher commodity prices. Final USGS statistics of non-fuel mineral production value for the state in 2006 totaled \$797 million, a drop from the 2005 record production of \$ 906 million (Fig. 1). In spite of rising metal prices in the last half of the year, the 2007 production value (\$ 817 million is USGS preliminary estimate) will be affected by several development projects nearing completion in 2007, with most of the increased production not due until 2008-2009 time frame. Construction-related materials were just starting to note the impact of the housing market slowdown in the last part of 2007.

Molybdenum from the Thompson Creek mine is expected to contribute the most in value, particularly as prices for molybdenum oxide rose in 2007 to the \$25-\$30 per pound range, up from the \$ 25 per pound average in 2006 (but lower than in 2005). Silver and base metals from north Idaho's Silver Valley also increased in value as silver prices were in the \$13 - \$ 15 per troy ounce range for 2007. Hecla Mining Company, based in Coeur d'Alene, Idaho, announced record high revenues in 2007 for the 117-year old company, with earnings only behind 2006 levels. In addition to metals, the phosphate markets, both for fertilizer and elemental phosphorus, and aggregate markets were healthy in 2007. Those operations had excellent and busy years, accounting for an estimated 25% of Idaho's nonfuel mineral production value, but a much larger share of the total mining employment in the state.

Idaho's Division of Financial Management has noted the turnaround in Idaho's mining industry and the rise in jobs and general business activity at mining centers. In their January, 2008, Idaho Economic Forecast, the DFM noted the 5-year decrease in mining employment from 1997 (3,000 jobs) to 2002 (1,750 jobs), followed by a gradual expansion with employment in 2007 topping 2,700 well-paid jobs in Idaho mining. This does not include the 1,000 plus employees in the chemical processing plants associated with the phosphate industry of southeastern Idaho. In addition they noted the increased number of mine expansions and exploration activity, attributing it to overall U.S. economic development. Because many Idaho-produced mineral commodities are distributed in global markets, the state's mining industry may weather any Idaho or national downturn.

Metal Mining

2007 was another busy year for Idaho's Silver Valley, its miners, and the commercial and construction industry in Shoshone County. With high byproduct lead and copper prices, plus high silver prices, the rich Coeur d'Alene District quartz-siderite-sulfide veins looked mighty attractive to miners and investors alike. Since 1884, the district has produced over 1.193 billion ounces of silver and new reserves are in sight. In 2007, the district had two large operating mines and one more readying to open, plus new exploration plays.

Hecla Mining operated the Lucky Friday mine at Mullan. The company has been focusing on new development projects and mine expansion for the last couple of years, while producing 2.87 million ounces of silver in 2006 and 3.1 million ounces of silver in 2007 from

the Lucky Friday. Total cash costs at the mine in 2007 were a negative 75 cents per ounce after byproduct credits from mining the Gold Hunter ore body via the new 5900 and 4900 crosscuts off the Silver Shaft. Last year's mill upgrades improved zinc recoveries and allowed the greatest throughput in the operation's history. A pre-feasibility study was underway to look at a mine expansion, including a new internal shaft initially to the 6500 level, to access deeper ore reserves and resources which drilling has intersected down at the 8000 foot level. Approximately 120 million ounces of resource are indicated to date.

Some 45 diamond drill holes, totaling 24,000 feet, have explored the veins between the 4900 and 5900 levels. In addition to the deep resource, Hecla started surface drilling to explore the shallow "Gap" of 2500 vertical feet between the near-surface workings of the historic Gold Hunter mine and the deep ore body currently being mined. Hecla controls 25 square miles of property in the Silver Valley, and its exploration staff was in the process of compiling and digitizing the 100 years of mine records for the area to develop additional targets. There has been virtually no surface exploration in the district for the past 25 years.

U.S. Silver Corporation owns the Galena and Coeur mines which they purchased from Coeur d'Alene Mines in 2006; production in 2006 from the Galena mine was 1.3 million ounces of silver. In consideration of the high lead prices, U.S. Silver shifted mining production at the Galena to the lead-silver stopes and restarted the Coeur mill in September to produce lead-silver concentrates, while the Galena mill processes the Ag-Cu ores. The two mines are about a mile and a half apart and connected underground on the 3700 level; haulage between the two mines was improved. The company also signed a smelter deal with TeckCominco, and concentrate shipments started in October, 2007. Since then, the company has focused on improving mill output and repairing the Galena Shaft between the 2400 and 3200 levels. The new concrete-lined shaft should be operational in mid-2008 and will add hoisting capacity and flexibility to the operations.

U.S. Silver also had an active exploration drilling program to delineate the silver-lead ores, especially on the 3400 level of the Galena mine. Multiple intercepts include one from hole 34-111 which had 5.6 feet (1.71 meters) true thickness grading 14.25 ounces silver per ton (489 g/t) and 21% lead. In the third quarter of 2007, the company reported the first positive cash flow from operating activities, and the new venture was optimistic that 2008 would see higher mill throughput and head grades as development work is finished.

Sterling Mining Company acquired the famous Sunshine mine after its closure in 2001 with the vision of bringing it back into production. The company has been working diligently to rehabilitate the mine and plant facilities. To access some of the upper reaches of the mine, the 5700-foot Sterling Tunnel was started on January 17, 2006, and was completed on April 27, 2007, with a connection to the Polaris-Silver Summit Drift on the east. The Silver Summit mine (ConSil) and hoist serves as the secondary escapeway for the Sunshine, and the hoist refurbishing was completed in September (Fig. 2). The Jewell Shaft on the Sunshine side was recommissioned to the 3100 level. First ore mined from upper Sunshine vein was sent to the mill bins on September 14, 2007. In December, the mine officially resumed production and concentrate shipments. In addition to extracting the shallow "Upper Country" ores off the Sterling Tunnel, miners will be stoping ores on the 2700 to 3100 levels that were in production prior to closure. Over 100 workers were employed by year's end. The Sunshine is noted for its high grade (+ 20 opt silver) tetrahedrite-rich veins. The company also celebrated its listing on the Toronto Stock Exchange.

New Jersey Mining Company permitted the Silver Strand mine last year. The small underground silver-gold mine is northeast of the city of Coeur d'Alene. The company constructed a new #3 portal and accompanying infrastructure during the year. New Jersey has a mill in Kellogg. They installed concentrate leach tanks, a paste tailings impoundment and electrowinning circuit during the year to serve future production from their Silver Strand and Golden Chest mines and other properties. Miners at the Golden Chest were driving a 600-meter-long ramp below the No. 3 level in order to access the Idaho vein.

In 2006, the Thompson Creek mine, a large open pit molybdenum mine near Challis, was sold to Blue Pearl Mining. The company renamed themselves Thompson Creek Metals, a publicly traded company which was listed on the New York Stock Exchange in November. They operate the mine, a roasting facility in Pennsylvania, and the Endako mine and other properties in British Columbia. Production in 2007 at Thompson Creek was 9.2 million pounds of molybdenum, down from the previous year due to the major Phase 6 pushback which required extensive waste stripping in order to extend mine life to 2012. According to statistics compiled by the Bureau of Land Management, Thompson Creek mined its 300 millionth pound of molybdenum in April, 2007. With molybdenum prices over \$30 per pound at year's end and the stripping complete, the company was looking forward to increasing production substantially in 2008 and beyond. Additional future expansion options were under consideration.

Reclamation work continued at several closed mines around Idaho. Hecla Mining and its employees won an environmental award from the Northwest Mining Association for their long-term effort and persistence at the Grouse Creek mine in central Idaho. Good progress was made on dewatering the tailings pond and treating drainage from waste rock dumps and the Sunbeam pit area.

Phosphate Industry

Southeastern Idaho's Caribou County is the location of three open pit phosphate mines that extract over 4 million tons annually of phosphate rock from the Permian Phosphoria Formation. The resource is in apatite-rich beds of the organic-rich shale of the Meade Peak Member. The phosphate rock is processed into either phosphoric acid fertilizers or elemental phosphorus at three plants that employ over 1,100 people, with several hundred additional workers at the mines. The industry is the economic mainstay of southeastern Idaho.

Monsanto mines over a million tons per year from their South Rasmussen Ridge mine and processes it at their elemental phosphorus plant in Soda Springs. The only U.S. producer of elemental phosphorus, the company consumes it internally for manufacturing their popular Roundup herbicide. A major project in 2007 was exploration drilling and permitting studies for the proposed Blackfoot Bridge mine. Exploration drilling and groundwater and geochemical modeling studies of the challenging site were ongoing. The Draft Environmental Impact Statement is scheduled to be completed in mid-2008.

J.R. Simplot Company operated the Don Fertilizer Plant at Pocatello. The plant feed is ore slurry from the 87-mile long pipeline across mountains and valleys to the Smoky Canyon mine near the Wyoming border. 2007 was an excellent year for Simplot's phosphate operations, with the complex just two days short of a new record production level. They mined over 2.5 million tons from Panels B and C and started backfilling. The mine

purchased a new D11 bulldozer. In late October, the Final Environmental Impact Statement was released to expand to Panels F and G. The needed 1300-acre expansion would add 14 years of mine life but has been controversial due to access across private property and roadless areas. In order to work around the private land, the agencies allowed a preferred alternative of building a more difficult road on the U.S. Forest Service land.

Selenium has been and continues to be the difficult and critical environmental issue in the phosphate industry. The element is naturally enriched in the Phosphoria Formation, particularly within the waste shale horizon that separates the ore zones. A particularly troublesome issue has been related to old cross-canyon fill waste dumps, such as the Pole Canyon dump at the Smoky Canyon mine. Simplot completed a \$ 3 million CERCLA project to divert the creek around the waste dump and install an infiltration basin above it to eliminate contact of the surface water with seleniferous material. Newer parts of the mine are backfilled to minimize external dumps.

Agrium, a Canadian company, had a good year in 2007 as fertilizer prices and markets were good. They operated the phosphoric acid fertilizer plant at Conda using ore shipped by rail from the Dry Valley mine which was acquired from FMC in 2005. They mined about 2 million tons in 2007, mostly from the C pit, and backfilled and reclaimed the B pit. They started pre-stripping from the D pit to the south. Washington Group is the contract miner.

Other Industrial Minerals

Idaho, the Gem State, has a variety of smaller industrial mineral operations, mostly located in southern Idaho. Many had good years due to the general economic growth conditions. Among the prettier commodities mined are opal, jasper, museum-quality zeolite specimens, and of course star garnet. The Panhandle National Forest operates a public garnet dig near Fernwood. They scored a big success with the newly revamped facility which keeps the public out of the creek but provides better sluices to let garnet seekers prospect the stockpiled material. They sold 4275 mining permits in 2007, twice the previous number.

Emerald Creek Garnet, a subsidiary of WGI Heavy Minerals, mines industrial garnets from the St. Maries River floodplain at their operation near Fernwood in Benewah County. The company was rebuilding its operations and looking at new screening technology to improve recovery of finer grain sizes present in the downstream portions of the lease. The operation has 50 employees and markets were steady in 2007. High pressure waterjets are a principal use of the garnets. The company also finished an oxbow creation project on the St. Maries floodplain.

Aggregate production was up substantially in 2006 in many areas of the state, particularly the Coeur d'Alene/Rathdrum Prairie, Boise Valley, and Idaho Falls area. At least until the last part of 2007, housing construction was still a major market. The state's diverse geology has created some areas with plentiful gravel resources and some areas where crushed basalt is the only material available.

Dimension stone production was at full capacity at the L & W Stone's Three Rivers quarry west of Challis in Custer County. The variegated purple to gold-colored rock can be ordered in large slabs, tumbled pavers or specially cut shapes. Around 35,000 tons are mined seasonally. The smaller, nearby Ramshorn quarry produces a few hundred tons of flagstone annually. Idaho's signature Oakley Stone is a micaceous quartzite quarried on Middle

Mountain south of Oakley. Four producers were operating; Northern Stone Supply, the largest, reported a good year, but by the fourth quarter they did see impacts of the slowdown in the housing market.

Ash Grove Cement operated Idaho's only cement plant at Inkom. It employs about 70 people. The state also has several small limestone producers.

Hess Pumice in Malad reported a good year as the pumice markets were steady. Approximately 10% of their lightweight aggregate production goes to the Owens-Corning cultured stone plant that was built next door a couple of years ago. However, the soft housing market caused that plant to shut down in mid-2007, and some 30 persons were laid off by Owens-Corning. Hess produces pumice for a variety of uses, including stonewashing jeans. In a somewhat ironic twist, Hess is increasing sales of its pumice in Europe as the centuries-old, Italian pumice quarries on Lipari Island were shutdown. The island was designated a World Heritage site because of its unique volcanic activity.

Idaho Minerals, owned by Hess Pumice, saw steady sales of its perlite used for potting soil. A new perlite expander plant was built in Malad.

Bear River Zeolite mined and processed clinoptilolite from its quarry and plant near Preston in southeastern Idaho. The company, 75% owned by U.S. Antimony Corporation, was busy installing a Raymond mill and improving the facility. The operation has about 15 employees, and the facility was working seven days a week due to demand. Uses for the zeolite include filtration, water treatment and remediation.

Energy

Idaho has limited fossil fuel resources but abundant geothermal potential. U.S. Geothermal commissioned the state's first geothermal power plant, located at the Raft River site in southern Idaho. After a startup run, the plant began commercial power production on November 25, 2007. The binary cycle plant was designed and built by Ormat Nevada. In September, U.S. Geothermal signed a new 25-year, 13-MW full output power purchase agreement with Idaho Power. The Boise-based company is planning further exploration at Raft River and the Neal Hot Spring site in eastern Oregon.

Interest in oil and gas leasing in Idaho surprised many. The state's first oil and gas well since 1988 was being drilled on private land near Gray's Lake in southeastern Idaho. The two main areas of current interest are the Overthrust Belt in southeastern Idaho and the Tertiary basin sediments in the far western portion of the Snake River Plain.

Exploration

Mineral exploration activity in 2007 increased due to the high commodity prices. Gold and silver were the principal targets, but molybdenum and base metals as well as specialty commodities were also of interest due to the state's diverse geology. There seemed to be greater interest in reconnaissance exploration and new targeting concepts, and some new properties were drilled during the year (Fig. 3).

In the industrial minerals sector, i-minerals continued to explore the Helmar-Bovill clay mining area of Latah County. The company is evaluating two separate projects: the Kelly's Basin feldspar deposit and the primary and residual kaolin deposits. SRK of Denver is conducting a feasibility study of the feldspar resource which i-minerals previously drilled

and did metallurgical testing on. Over 5 million tons of feldspar are indicated and the study should be complete in 2008. The company was also testing a high purity quartz flotation separate. In 2007, i-minerals drilled 3,500 feet of core to evaluate the clay resource; a new discovery was the identification of halloysite nanotubes, which are used in plastics.

Silver and base metals were the targets on two new projects in north Idaho. In Bonner County, Shoshone Silver reopened its 100-tpd Lakeview mill to process stockpiled Ag-Pb ore from the Lakeview district. Upgrades were made to the water management process and ore handling operations. The company controls approximately 1,000 acres, including several historically producing mines, and it plans additional exploration.

In the Silver Valley, a big change was the return of surface exploration to the Coeur d'Alene District. Many areas of the Valley have lain dormant for at least two decades; surface work was in progress around the operating mines and elsewhere. Azteca Gold Corporation acquired a joint venture property from Silver Royal Apex and began drilling three deep core holes in October at Two Mile Gulch near Osburn. Quantech Consulting had done a Titan-24 distributed array geophysical survey of the area. Results from the combined magnetotellurics (MT) and IP/DC resistivity survey located three deep, chargeable targets for drill testing.

Azteca also optioned the Bunker Hill mine from the New Bunker Hill Mining Company. The purchase price, due when the option expires on March 20, 2008, is \$ 46 million. A major exploration effort was underway; historic production of the Bunker Hill was approximately 35 million tons of over 8% lead, 3.6% zinc, and 4.5 ounces silver per ton.

SNS Silver obtained the Crescent mine in January for a mere \$ 650,000 and started surface drilling in May. Their contractor, Atlas Faucett, has been restoring the Hooper tunnel to reach the Alhambra vein system. The mine has produced over 25 million ounces of silver.

Just north in the Murray District, New Jersey Mining has an aggressive exploration program, with some excellent prospects in the East Fork of Eagle Creek drainage. New Jersey picked up the Niagara property, which hosts 14 million tons of Troy-type Cu-Ag ore hosted in the Revett Quartzite. They also staked three telluride-bearing gold systems, the Gold Butte, Golden Reward, and Mineral Ridge prospects. The gold may be related to a buried alkaline intrusive. New Jersey did ground geophysics and surface work, along with permitting to be able to drill in 2008.

In the Salmon region, Formation Capital Corporation was waiting for a Record of Decision and Final Environmental Impact Statement from the Salmon-Challis National Forest on their proposed underground copper-cobalt-gold mine, referred to as the Idaho Cobalt Project. The new mine would be located adjacent to the patented claims of the old Blackbird mine in the Blackbird Mining District of Lemhi County. The Draft EIS was issued in February 2007, and a new feasibility study, done by Samuel Engineering, released in July. The updated proven and probable reserves are 2.64 million tons at 0.559% cobalt, 0.596% copper, and 0.014 opt gold, with significant inferred ore reserves and exploration potential. Ore horizons are stratiform and interpreted as Precambrian syngenetic deposits that have been remobilized and metamorphosed during the Cretaceous. Plans are for a 10-year mine life on the RAM deposit. The EIS work included studies of water quality and geochemical modeling plus land ownership and the full spectrum of other impacts. In preparation for construction once permits are issued, the company has worked on acquiring key personnel and ordering equipment.

DDR Copper, Inc., reopened the Pope Shenon mine just south of Salmon. Copper veins are hosted by altered Precambrian quartzites. The company also claims to have a porphyry target nearby. Vineyard Gulch Resources did trenching at their Johnson Gulch property near North Fork.

Journey Resources acquired 100% of the Musgrove Creek property from Wave Exploration. The property has a 43-101 compliant resource of 8 million tones of 1.22 g/t gold (about 300,000 ounces) and is open in at least 2 directions, based on prior work by Newmont and Atlas who discovered it. Before winter set in, Journey reopened the old roads and drilled five diamond drill holes that totaled 2,979 feet (908 m). Assay returns included two narrow zones of half-ounce gold grades as well as longer, low grade intercepts. The company is compiling the drill information into a GIS database. Journey also holds the Empire Cu-Zn skarn in the Mackay District in Custer County.

Thorium Energy, Inc., has been exploring and staking claims in the Lemhi Pass District of Idaho and Montana. The area is along the Continental Divide southeast of Salmon, principally in Lemhi County, Idaho. Lemhi Pass hosts one of the nation's largest thorium resources, located in veins that cut Proterozoic quartzites and siltites. The Utah-based company is most interested in the potential of thorium as a reactor fuel for energy production, but the veins also contain significant rare earth elements. Considerable past work was done by government and private industry (1950-1990), and the Idaho Geological Survey currently has an ongoing research project in the geologically complex area.

Gentor Resources, Inc., a small company based in Montana, was exploring the Ima mine, a tungsten-molybdenum property near Patterson in the Lemhi Range. The polymetallic veins overlie and cut a buried granite. The first four core holes, IMA-21, 22, 23A, and 24, totaled 7,539 feet and intersected significant molybdenum mineralization. Hole IMA-21 had a deep intercept from 1397.8 to 1624 feet (226.2 feet) that assayed 0.152% MoS₂ with tungsten and silver credits. Gentor reported that Hole IMA-23A intersected a 675-foot thick interval grading 0.144% MoS₂ with tungsten and quarter-ounce silver credits. Drilling is continuing into 2008 with two drill rigs. Most of the historic production focused on tungsten in the veins cutting the metasediments in levels above the drill intercepts. Amax and Inspiration, as well as the U.S. Bureau of Mines, drilled the property years ago.

In Southwestern Idaho, Mosquito Consolidated Gold Mines Limited drilled the large and deep Cumo molybdenum porphyry system located above Grimes Creek in Boise County (Fig. 4). They drilled six holes prior to winter shutdown; an objective was to confirm the Amax block model done in the 1980's. The Amax resource was approximately 1.4 billion tons at 0.09% MoS₂. Several distinct porphyries are cut by narrow quartz-molybdenite veins with traces of copper. Mosquito drilled six core holes totaling 12,700 feet before winter weather suspended the project. The company has recognized a silver-copper-molybdenum zoning pattern and intersected excellent grades in some holes. Hole 32-07 featured 610.8 meters grading 0.115% MoS₂, with some higher grade zones. The program will resume as weather permits in 2008.

Three precious metal properties in southwestern Idaho also had very active years. Freegold Ventures had a big project at the Idaho Almaden mine in Washington County east of Weiser. It is a classic hot spring system below a sinter cap. Freegold has a 100% interest via a lease from ICAN. Since the summer of 2006, Freegold has drilled 54,719 feet in 131 core and RC holes. Phase 1 (104 holes) expanded the known ½ to 2 ppm grade gold mineralization to update the resource base. Phase 2 drilling, done from September through

November, 2007, included 27 holes to look for along strike extensions of the gold and to test anomalous molybdenum assays discovered in certain zones. Results are being compiled into a new 43-101 compliant resource.

Atlanta Gold Corporation continued work on their controversial Atlanta project above the historic mining town of Atlanta in Elmore County. The area is environmentally sensitive due to its location above the Middle Fork of the Boise River. Permitting for a proposed open pit, heap leach mine began a few years ago but the proposal generated considerable opposition in Boise. One issue has been arsenic in drainage from the historic adits. The company did drill 33 core and RC holes to extend the Monarch Pit to the east but as gold prices rose, they shifted to more exploration work and were evaluating the underground potential at year's end.

Thunder Mountain Gold purchased the patented claims at South Mountain, Owyhee County, in September. The intriguing property boasts high grade polymetallic and replacement ores related to an intrusive complex and skarn. Historic production from the Laxey and Sonneman adits included ores grading 5-10% lead and zinc, with 7 ounces per ton silver and significant copper and gold. The district is also known for its ilvaite crystals. Minor sampling was done in addition to compilation of historic data; more work is planned in 2008.

State Activities

The Idaho Geological Survey has an active geologic mapping program through the USGS Statemap project. Maps are released as digital web maps (DWMs) on the IGS website (www.idahogeology.org). Current areas of mapping are dominantly in northern Idaho. One recent publication of mining interest is T-07-3, a technical report by Joseph Worthington on porphyry molybdenum deposits of Idaho and Montana. Like the maps, it can be downloaded as a pdf document. Minerals-related research on the Lemhi Pass thorium-rare earth deposits is underway by the IGS Boise Office. A number of mine histories and the Mines and Prospects database can also be accessed on the website.

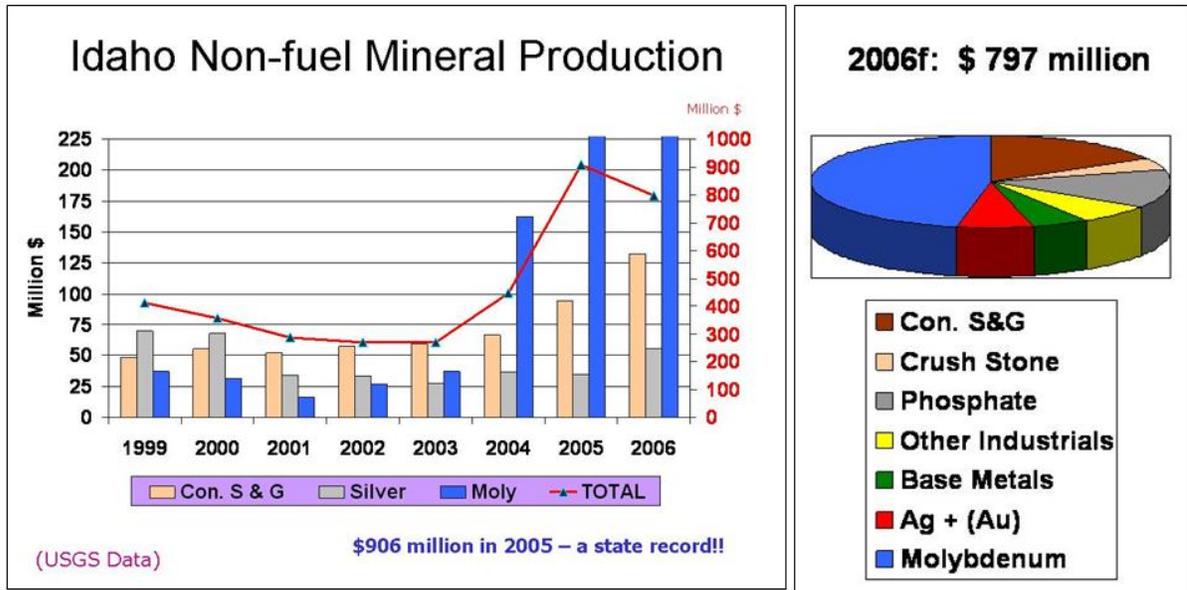


Figure 1. Idaho Non-fuel mineral production, 2006 and prior years.

Silver Summit Hoist Repair Sterling Mining Company



Figure 2. Silver Summit Hoist Rehabilitation.

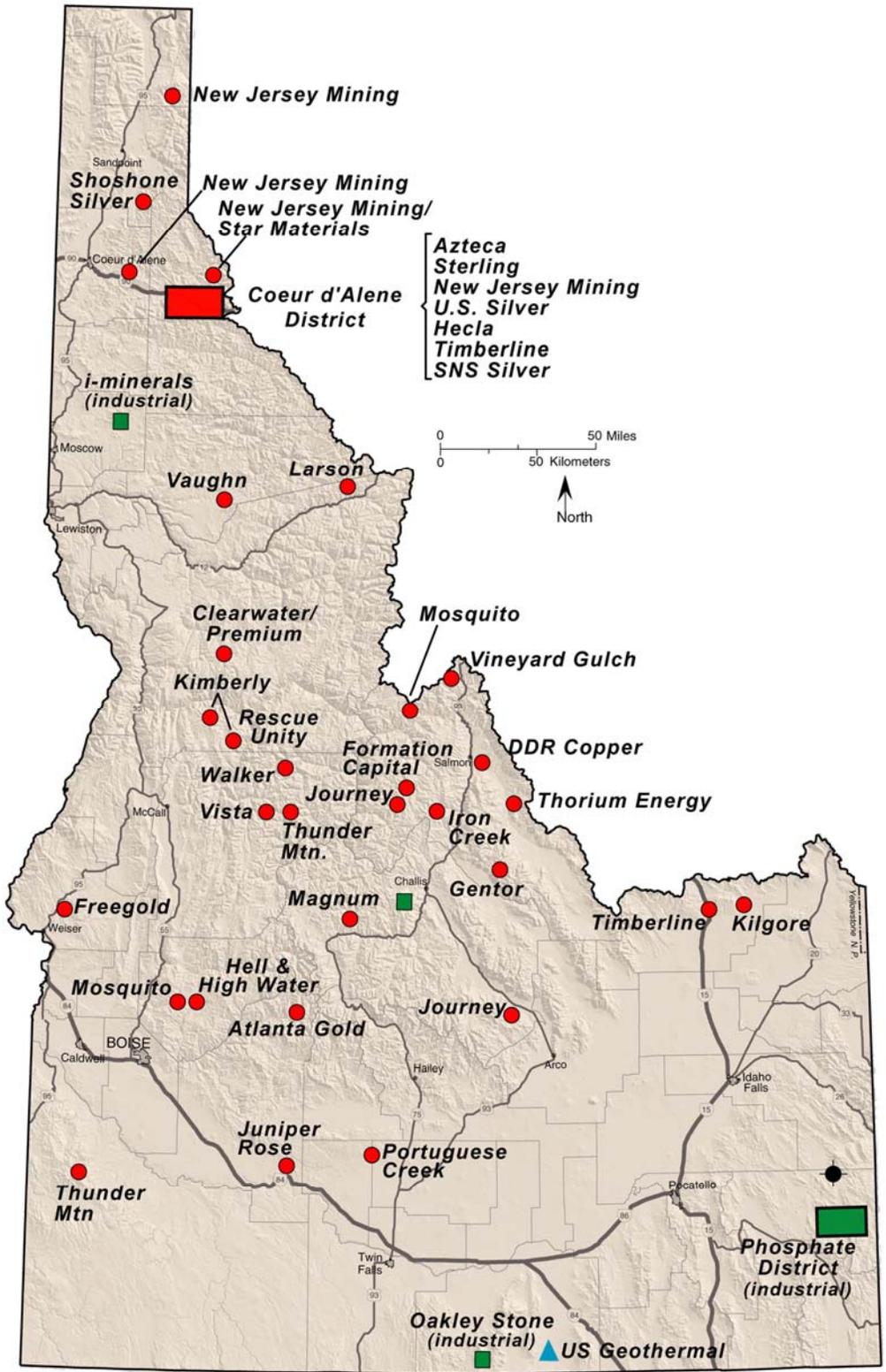


Figure 3. Exploration 2007 Map.



Figure 4. Drilling Hole C07-31 at the Cumo Property, Boise County, Idaho.