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# 1990

*Annual Review*

## Idaho

V.S. Gilleman and E.H. Bennett,  
Idaho Geological Survey

Exploration for precious metals increased in Idaho during 1990 to its highest level since the 1930s. Several companies pursued base metals and a number of firms explored for industrial minerals. The number of exploration projects in Idaho increased from 82 in 1989 to 99 in 1990.

Activity was spread across the state. Six of last year's prospects moved into development and a number of new projects started. Beartrack, the largest gold discovery in the state's history, continued to draw companies to the Salmon area.

Exploration for disseminated gold deposits increased in the southwestern and southeastern parts of the state on both sides of the Snake River Plain. The Stibnite, Yellowpine and Big Creek areas of Valley County received attention as did several deposits near Elk City and Florence.

### Coeur d'Alene district and north Idaho

In 1990, underground exploration in the Sunshine Mine was especially productive. Company geologists discovered a new vein called the Silver Line vein, 670 m (2200 ft) north of the Jewel Shaft. Hecla Mining planned on drilling again this winter from the surface at the Snowstorm Mine, east of the Lucky Friday mine at Mullan.

Asarco finished the American Silver drive from the 1036 m (3400 ft) level of the Coeur Mine and was evaluating results of drilling in the Wire Silver Vein area. Low silver prices forced Callahan Mining to defer further exploration at the Caladay project. The company has invested more than \$30 million in this program.

Cominco drilled two additional holes at the polymetallic Buckhorn Mine on Scout Mountain and another hole at its Brush Creek prospect east of Avery. At the latter, the target is a Sullivan-type deposit in high grade metamorphic rocks. Gold Fields completed a drilling program in the peat bogs at Florence. The company is evaluating the old placer camp for lode gold deposits.

Newmont Gold has substantial holdings near Golden, including the New York Mine. This year's program also included drilling and road construction in the Fall Creek and the Little Leggett

Creek areas, Shoshone Silver, Kennecott Exploration, NJB Mines and Cominco also conducted exploration projects in north Idaho.

### Salmon area

In April, FMC Gold purchased Meridian Minerals, a subsidiary of Burlington Resources. Included was the Beartrack gold deposit near Leesburg in Lemhi County. Beartrack is the largest gold discovery in the state's history. Indicated geologic reserves are 41 Mt (45 million st), containing 31 to 65.3 t (1 to 2.1 million oz) of gold. The draft Environmental Impact Statement was released in October 1990, and construction could begin in June 1991.

American Gold Resources (AGR) and FMC (replacing Meridian) continued to explore the 69-km<sup>2</sup> (17,000-acre) Arnett Creek property adjacent to Beartrack. In 1990, the joint venture started exploring near the Little Chief mine. The partnership drilled 96 reverse circulation holes totaling 10,670 m (35,000 ft) and opened up some of the old underground workings. AGR is involved with Asarco on a large claim block south of Arnett Creek.

Placer Dome US picked up 202 km<sup>2</sup> (50,000 acres) of AGR's Leesburg package. Placer Dome ran surface geophysics and geochemical surveys before a modest reverse circulation drilling program.

Formation Capital was joined by Teck Resources in a joint venture to explore the 20-km<sup>2</sup> (5000-acre) Morning Glory property adjacent to Beartrack. Formation also acquired the King Solomon, Wallace Creek and Silverton mines located 7 km (4.5 miles) east of Beartrack.

Gold Fields replaced Corona Gold as the project partner with Formation on the Bobcat-Redrock property. Gold Fields did surface mapping and an aeromagnetic survey on the Wallace Creek claims between Salmon and Leesburg and drilled about 45 reverse circulation holes in the area. Hecla Mining continued exploration on its Bowman joint venture near Williams Pass.

At Kinney Creek, Placer Dome and Broken Hill Proprietary drilled seven holes. Montana-based ECM leased the Pine Creek property to Gwalia USA, an Australian firm, which mapped, sampled and trenched the property.

Golden Chest obtained a 100% interest in the Freeman Creek property (23 claims) located about 16 km (10 miles) north of Salmon. The property was explored by FMC Gold and Bond Gold

over a four-year period. Reserves are estimated at 622 kg (20,000 oz) of gold that are amenable to heap leaching.

### West-central Idaho

Kennecott drilled in the Moore Creek drainage that joins Logan Creek above the confluence with Big Creek. The company improved roads and constructed a log bridge across Logan Creek to avoid impacting tribal fisheries. Kennecott reported encouraging results from the six core holes drilled on this bulk-tonnage gold target at the old Moscow Mine.

Placer Dome drilled about 10 holes and built 1.8 km (1.1 miles) of road in the Quartz Creek (Red Mountain) area near Yellowpine.

Independence Mining (formerly Freeport-McMoRan Gold) drilled 12 holes on Logan Creek and Smith Creek near the old Independence Mine. The drill roads will be reclaimed next year.

### East-central Idaho

US Antimony began development of the Yellowjacket open-pit mine in Lemhi County. The company plans to build a flotation mill and to mine about 227 t/d (250 stpd).

Grouse Creek Mining, a subsidiary of CoCa Mines, continued permitting for the Grouse Creek Mine at Jordan Creek on the Yankee Fork in Custer County. The property contains 2.9 Mt (3.2 million st) of 2.8 g/t (0.082 oz per st) gold at the old Sunbeam Mine and 4.4 Mt (4.9 million st) of 1.5 g/t (0.044 oz per st) gold at Grouse Creek. In 1990, Grouse Creek drilled 34 holes into the Grouse-South deposit and did geotechnical work on the waste dump and plant sites. Annual production is projected at 2.3 t (75,000 oz) of gold and 10.9 t/a (350,000 oz per year) of silver during the first three years.

WestGold mapped, sampled and prepared drill sites at Estes Mountain, across the valley from the Sunbeam Mine.

Sunshine Mining drilled eight to 10 holes at the Buckskin Mine on Valley Creek west of Stanley, and four more holes in Washington Basin. Umont Mining and Cyprus Minerals also drilled prospects, and development work was done at the Last Chance Mine and the Greyhound Mine.

### South-central Idaho

Idaho Gold completed its first full year of operation at the Champagne Mine. The company has reserves for one more year of production, and was exploring in the St. Louis and Poison

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Gulch areas for additional ore. Westmont Mining was active at the DSA polymetallic prospect located near the headwaters of the North Fork of the Lost River. The company finished detailed mapping and soil sampling, and drilled eight diamond drill holes totaling 1220 m (4000 ft).

Plexus Resources took over Sovereign Exploration. It drilled 18 reverse circulation holes on the Navarre property near Mackay and trenched and ran ground geophysics.

Hecla Mining continued exploration activity at Muldoon Canyon (near the Eagle Bird Mine) in Blaine County. Manville drilled six core holes on the Pioneer Project near the old Paymaster Mine in the Lava Creek District.

Further west, Atlanta Gold signed an agreement with Newmont Exploration in December to explore its gold property near Atlanta in Elmore County. According to a feasibility study, the property contains 31 t (1 million oz) of near-surface gold amenable to bioleaching and cyanidation.

Newmont is the operator on a first-phase drilling program totaling 4570 m (15,000 ft) in early 1991. Newmont drilled about 30 reverse circulation holes and did surface mapping and sampling at Rocky Bar, under a Gexa-Newmont agreement.

### Boise basin

Pegasus Gold entered into a joint venture with Cactus West on the Century claims by the Gold Hill Mine near Quartzburg. In addition to surface work, Pegasus drilled eight holes and Cactus West 4 holes. Independence Mining mapped, sampled, and drilled 10 holes in the Alder Creek drainage above Placerville.

Frontino mapped, sampled and prepared new drill sites on the Ophir Creek property. Rhino Resources put down six core holes at the Giant Mine on Shaw Mountain. APC Mining opened an old adit near its placer mine on Buckskin Creek.

### Southeast Idaho

Noranda completed permitting the Black Pine mine. In June, however, Pegasus purchased the 42 km<sup>2</sup> (10,500-acre) property for \$6.4 million. The project has minable reserves of 7 Mt (7.7 million st) of oxide ore grading 14.9 g/t (0.042 oz per st) gold and 8.1 million tons of low-grade reserves averaging

0.5 g/t (0.014 oz per st) gold. Production is scheduled for mid-1991.

In a surprise move, Newmont Exploration entered a joint venture with Independence Mining on Caribou Mountain in Bonneville County. Newmont analyzed 1300 soil samples and performed some geophysics and surface mapping. The company permitted 15 drill holes and finished six, constructing 3.4 km (2.1 miles) of new road before environmental groups, led by the Greater Yellowstone Coalition, petitioned the Forest Service to stop the work.

Placer Dome drilled seven holes and built 610 m (2000 ft) of road on claims about 8 km (5 miles) northwest of Kilgore near Dubois. Gold Fields drilled six reverse circulation holes in South Heglar Canyon northeast of Sublett. The target was a sediment-hosted gold deposit.

Cordex Exploration drilled 22 holes in Valve House Draw and Box Canyon (Mink Creek) south of Pocatello. Atlas sampled claims staked last year in the Magpie Basin and Rock Creek areas in the South Hills, south of Twin Falls.

Gold Fields picked up the Cherry Creek property near Malad. Freeport built roads to some drill sites in this area in 1987-1988. Oglebay Norton drilled two holes looking for precious metals in the Wrights Creek area near its perlite mine north of Malad.

### Southwest Idaho

Nerco Minerals mined from three pits at its DeLamar gold-silver mine in Owyhee County. The company performed exploration work on Tennessee Mountain, War Eagle Mountain, Twin Peaks and the Milestone deposit. Nerco also performed permitting and development work at the Stone Cabin Mine on nearby Florida Mountain. The new mine is scheduled to come on line in 1991-1992 and will have at least a 10-year life.

Amex drilled six reverse circulation holes south of Jordan Valley on the north edge of South Mountain. The host rocks are well-altered rhyolite flow breccia. Asarco drilled two reverse circulation holes in the Jasper Basin area south of Pearl and returned the property to the owner.

Ican Minerals drilled four holes at the Idaho Almaden epithermal gold project northeast of Weiser, including two 213-m (700-ft) deep holes to test for a feeder at depth. The main zone in the deposit (76 m or 250 ft deep) contains 36 Mt (40

million st) of 0.9 g/t (0.025 oz per st) gold.

Gold Canyon Resources signed an agreement with Noranda for exploration at the Blue Dog prospect in Washington County. Several new holes were drilled early in 1990 by the former partners. Gold Canyon and Bradner Resources. The property has reported reserves of 2.7 Mt (3 million st) of 1.7 g/t (0.05 oz per st) gold. ♦

## Illinois

J.M. Masters, W.T. Frankie, R.E. Hughes,  
Illinois State Geological Survey

Construction aggregates, consisting of dolomite, limestone and sand and gravel remained the leading non-fuel minerals produced in Illinois. Aggregate producers had a good year, but the market was spotty. Producers in areas of high demand continue to explore for new reserves.

The Denny and Simpson and Rigsby-Barnard companies combined to form the Hardin County Materials Co. This gave them a strong market position in the southeasternmost Illinois and on the Ohio River. High-purity limestone and dolomite were being sought statewide that would be suitable for chemical grade CaCO<sub>3</sub>, whitening agents and desulfurization process.

The Illinois Association of Aggregate Producers, the Illinois Department of Transportation and the Illinois Mines and Mineral Resources Research Institute at Southern Illinois University are planning several research projects. These include the more efficient use of existing reserves, and ways to upgrade lesser quality materials.

Zoning continues to be a major problem, especially where producers try to economically supply major metropolitan areas. The "not in my backyard" attitude of some of the public in Illinois highlights industry's need for a more positive public relations program.

Ozark-Mahoning, a subsidiary of Atochem North America, is the main fluorspar producer in the Illinois-Kentucky Fluorspar District. It had three mines operating in Illinois in 1990: the Annabel Lee and Denton mines in the Harris Creek District and the No. 1 mine in the Cave-in-Rock District. The No. 1 has been deepened about 15 m (50 ft) by a decline from the Rosiclare to mine the