



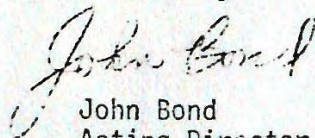
STATE OF IDAHO
BUREAU OF MINES AND GEOLOGY
MOSCOW, IDAHO 83443

IDAHO-1974

MINING AND EXPLORATION ACTIVITY

The accompanying pages briefly review 1974 mineral resource activities in Idaho as indicated by news releases, corporate reports to stock holders and correspondence from various mining and exploration companies. As such this review may better serve as a measure of the tenor of activity in Idaho during the year rather than a comprehensive summary.

The Idaho Bureau of Mines and Geology appreciates the figures on total production provided by the U.S. Bureau of Mines, the written comments and releases submitted by the companies active in Idaho and the Federal and State input on petroleum and geothermal activity.


John Bond
Acting Director

ABSTRACT

IDAHO-1974

MINING AND EXPLORATION ACTIVITY

Mineral activity in Idaho has been pursued with cautious optimism during 1974. Demands and prices for most mineral commodities have increased this year; the U.S. Bureau of Mines estimates the overall value of Idaho's mineral production should surpass last year's \$136,081,000. by some forty per cent. This optimism has been counter-balanced in some areas and in some commodities by the restrictive effects of federal policies and programs.

The long productive Coeur d'Alene Mining District shows signs of invigoration as the nation demands added production resulting in the prospects of five dollar silver, forty cent zinc, two bit lead and one hundred eighty dollar gold. Motive of the district's new look is the Asarco-Coeur d'Alene Mines "Coeur" silver mine; this ten million dollar investment will have a 450-ton-per-day mill with an anticipated 1976 mine output rate of over two million ounces of silver. As such, it should be the nation's fourth largest silver producing mine. The Hecla Mining Company-Gelconda Mining Corporation's underground exploration program on the Alice Consolidated Inc.'s property is indicative of the mood of the area.

Phosphate production in southeastern Idaho is expanding at a rate which is limited primarily by federal leasing policies. A regional environmental impact statement being prepared principally by the U.S. Geological Survey, the U.S. Bureau of Land Management and the U.S. Forest Service will undoubtedly be a key-stone in the future development of phosphate deposits beyond the extension of existing pits. An eighteen to twenty-four month "moratorium" on expansion south-east of the Snake Plane in the phosphate region will inhibit immediate and extensive commitments or expenditures to meet phosphate needs; currently, developmental and processing ventures such as that proposed by National Steel Corporation-Southwire Corporation-Earth Sciences Inc., northeast of Soda Springs must await governmental action.

Scattered about Idaho are indications that past exploration and evaluation efforts are paying off. Earth Resources Company and Canadian Superior Oil (U.S.) Ltd. have committed in excess of twelve million dollars to the development of an open pit silver and gold mine in the Delamar District of Owyhee County. Production by 1976 should increase Idaho's silver production by about 10%. The Copper Cliffs mine in the Cuprum District is completing its second full year of production with an annual copper production in the one and one-half million pound range and annual silver production over thirty thousand ounces. Mill expansion is underway there and the mine has progressed into the open pit stage. The molybdenum prospects of the Thompson Creek area near Challis have received extensive coring and tunneling as developmental activities by Tuscarora Mining Corporation and Cyprus Mines Corporation take on a serious nature. Indications are that nearly one million dollars has been spent by Ethyl Corporation on development of kyanite deposits near Kooskia in Idaho County.

Idaho experienced its first major commitments this year in a new mineral resource area--that of geothermal potential. Currently on state land, 269,457 acres in 723 different sections are under application for leasing by thirteen different lessees; about 50,000 acres represent areas in conflict from duplicate application. At the same time, 1,123,516 acres of federal land have been filed upon for geothermal exploration with about 50,000 of these acres in conflict. One permit for geothermal drilling in the state has been issued by the Department of Water Resources. In the same light, three permits were issued this year for deep, petroleum drilling by the Department of Lands; as per its history, Idaho still shows no significant hydrocarbon production.

In summary, the net effect in Idaho of increasing demand and prices on mineral commodities has been to increase production, to add to reserves by making known mineralized areas more economically suitable for mining and to improve the return on exploratory and developmental expenditures. Except in areas currently under production, governmental policies and programs will probably have as much effect on Idaho's future mineral picture as the resources themselves.

INTRODUCTION

Two major mining areas continue to dominate activity in Idaho; these are the Coeur d'Alene District of northern Idaho and the Phosphate Region of southeastern Idaho. In the latter area Federal restrictions on new mining is a major concern to the operators as their comments will show in the first part of this report. The middle portion of the report covers Local Areas of Activity elsewhere throughout the state awaiting mineral exploration and development. The report concludes with a summary of Geothermal and Petroleum Activity.

Coeur d'Alene District

American Smelting And Refining Company--Construction of the Coeur surface plant started about mid-year and is continuing. A connection was made with the Galena mine workings, and raises are being driven to prepare the mine for production.

After completion of development work and construction of a 450-ton-per-day mill by mid-1976, the new mine is expected to start producing 2.2 million ounces of silver per year.

The Coeur project has been under exploration and development by Asarco over the past 10 years at a cost to date of \$10 million. Known reserves plus those that Asarco can reasonably be assured of developing should be sufficient to permit the mine to operate for 10 years.

Sunshine Mining Company--Long range exploration work in the Sunshine mine has been successful in discovering potential new ore sources. A silver vein discovered near the #12 shaft on the 3700-foot level is being explored and developed by drifting and diamond drilling 1,100 feet lower on the 4800-foot level. Drift work to date has opened a 100 foot ore length on the 4800-foot level which averages about five feet in width.

Diamond drilling of a vein in the Big Creek Apex-Snowstorm area, which is presently being mined on the 4000-foot level, showed ore of commercial quality below the 4800-foot level.

Hecla--West Independence Project was continued during 1974 at the Star-Morning area, in the northeasterly part of the district. The Morning No. 6 Tunnel affords access for the Alice Consolidate and South Morning exploration projects. Hecla is the operator of both projects. In the former, an exploration heading has been driven westerly a distance of 2,377 feet from the tunnel largely within the Alice consolidated property.

In the South Morning Project, there is a similar program of westerly drifting from the Morning No. 6 Tunnel.

Exploration and mining activities in the Coeur d'Alene District have been hampered in recent years by shortages of skilled mining personnel. To alleviate this condition, Hecla, as a complement to its regular apprentice mine training program, has initiated a formal mine training course, in which unskilled applicants are afforded an average of ten weeks of supervised training in basic mining skills, including operation in a training stope. In addition to Hecla's program, Wallace High School conducts a mine vocational training course, the only such course to be offered in a secondary high school program in the United States.

Golconda Mining Corporation--Golconda Mining Corporation's activities during 1974 consisted mainly of doing geologic field work in connection with assessment work requirements.

Cities Service Minerals Corporation--Cities Service conducted some drilling on the Copper Hill Property north of Turray, Shoshone County. The company is also actively engaged in geological and geochemical reconnaissance as well as property examination in south-central and southwestern parts of Idaho in addition to the Belt Province in the northern part.

Horanda Exploration, Inc.--Horanda is presently engaged in evaluating the Atlas Mines property southeast of Tullan. The first phase of surface and underground drilling has been completed and the data are currently being studied by project geologists. Plans at this time call for continuing the underground work on this large property with extensive mine workings.

In addition to the Atlas Project, Horanda personnel are also involved in reconnaissance work and property examinations in Idaho. For the future, Horanda indicates it will be very active in Idaho on both district and regional levels.

Midnite Mines, Inc. carried out a program consisting of geological mapping, soil and stream sediment sampling in the Lookout Pass area of the Coeur d'Alene District, in Shoshone County, Idaho and in the adjacent Mineral County of Montana. The work was done in the vicinity of Roland Peak and Bullion Pass. The objective of the work in addition to doing assessment work in the area was to supplement the geochemical maps prepared by Garland Gott's staff of the USGS, since the area in question was covered by the USGS only as a sporadic sampling program.

Mishards sills appear to be responsible for the increased copper mineralization in the area and thus the anomalies did not warrant further investigation.

Phosphate Region

National Steel Corp. - Southwire Co. - Earth Sciences Inc.--Over 2.5 million tons of phosphate rock will be mined annually at a 3000 acre site 35 miles north-east of Soda Springs and approximately 20 miles west of Afton, Wyoming. The beneficiation plant will be built nine miles north of Soda Springs. The company has an option on 1200 acres for this facility. Estimated construction and machinery costs are at \$50 million.

Officials could not give a start date for construction because of the current government moratorium preventing new mines on federal property. Mining plans and internally developed environmental impact assessments already are underway. They will be in the hands of the proper government agencies about the first of the year. Earth Science reports it is doubtful if any mining permits will be issued prior to the completion of a government task force land use study now being made for the Caribou National Forest. This could delay any start for another twenty four months.

J. R. Simplot Company--The greatest interest for the Simplot Company in Idaho is what is happening in the phosphate fields of southeastern Idaho on Federal lease lands. Presently there is a "task force" in the area composed of Federal people of many areas of interest. Until this study and report is completed, and hearings held, no new operations will be permitted on Federal leases, only extensions of existing pits.

This could create some serious problems for industry while this study is being conducted, especially if there is a delay in the present estimated completion date of 18 to 24 months. Simplot Company indicates that the fertilizer industry is booming at this time and production is having difficulty keeping up with demand; the company recently completed construction doubling the capacity of the ammonia plant at Pocatello.

The Simplot Company's exploration department, located at Boise, reports it has been very active in exploration in Idaho and the entire West.

International Minerals & Chemical Corporation--IMC this year began a reevaluation of its Idaho phosphate reserves in Caribou Country, about 25 miles from Soda Springs, Idaho. Activity this summer was confined to drilling for an updated geological and engineering evaluation. In support of this new activity an office was opened in Soda Springs, Idaho.

In response to a request for information on the general exploration climate in Idaho IMC reported--It looks forward to being a responsible member of the mining community in the state of Idaho and is continuing its work with extensive and unusual protection of the various environmental values in the mine area. IMC has, for example, at its expense prepared an environmental impact statement complete with water sampling and a review of the sensitive flora and fauna present in the mine site. Its greatest concern right now is that the company is experiencing unusual delays in receiving approval from the federal government to begin mining its phosphate reserves. Development will be delayed for possibly two years with the result that production from this deposit will be 4 to 5 years away. IMC feels that this two-year time period for a massive environmental impact statement is excessive and probably unnecessary especially in view of the serious nationwide and worldwide fertilizer shortage. It is IMC's view that it can and will operate an environmentally sound mining operation.

Monsanto Industrial Chemicals Co.--Monsanto Company's Soda Springs elemental phosphorus operation continued at full capacity during 1974 except for some electric power curtailment increasing in the latter part of the year. The over one million tons per year of phosphate ore needed for this operation was supplied from the Henry Mine located 16 miles northeast of the plant. Approximately a quarter of a million tons of silica flux, to meet the plants needs, was quarried in Monsanto's quartzite quarry approximately two and one-half miles northwest of the plant by Washington Construction Company.

Reclamation of mined land continued on a planned basis, both at the Henry Mine which is now active, and at the closed Ballard Mine. A considerable experimental re-vegetation program in cooperation with the U. S. Forest Service is continuing at the Ballard Mine and to some extent at the Henry Mine.

Monsanto also reports on the mining climate, an increasingly important factor affecting Monsanto, and all the other phosphate operators in Idaho, is the vastly increased governmental activity in the southeastern Idaho phosphate area. A full scale Environmental Impact Statement is being prepared for the southeast Idaho phosphate region which will not be finished by the many federal agencies involved before late 1976. Until the completion of the environmental impact statement no new phosphate operations will be permitted on federal land in the 300 to 400 thousand acres involved. This already has held up several companies entry into the phosphate field. Apparently existing operations will be permitted to continue during the environmental impact statement preparation, however, approval by the U. S. G. S. of continuing mining plans for existing federal lease operations has been delayed and very stringent and restrictive requirements are being demanded. The very real connection between worldwide food

shortage and the availability of phosphate fertilizer and phosphorus compounds has apparently not reached the federal mind.

Illustrative of the increased activity of government in the phosphate mining area are the visits of Monsanto's mining operations (exclusive of processing plant) by 87 governmental people during one ten week period this summer.

Stauffer Chemical Company--Stauffer Chemical Company's phosphate mine is located in Wooley Valley, Caribou Country. All mining is done by open pit. During the past year, no exploration work was done; about 4,000 feet of development holes were drilled; the mine output was about 50 per cent higher than in 1973.

Local Areas of Activity

Earth Resource Company--In its annual report ERC reports approval of committing \$6.7 million in internally generated funds as a 52.5% share in development of a major silver and gold property in the Owyhee area of Idaho. Canadian Superior Oil (U.S.) Ltd., the joint venture partner, also has approved its share of the estimated total cost of \$12.7 million required to put the open pit mine into production by the fall of 1976.

ERC indicates that the property near Silver City is estimated to contain at least 26 million recoverable ounces of silver equivalent. At a planned initial output of 2.2 million ounces of silver and 13,400 ounces of gold a year, ERC expects to provide approximately 5% of the annual U.S. mine production of silver based on present domestic output.

"The venture is believed to be the first to undertake mining and production of disseminated silver and gold. Tests indicate that recovery rates will be approximately 92% for silver 95% for gold--and that at least 25% of the mine's total values will be received in gold."

Silver King Mines, Inc.--All work in Idaho has been at the Copper Cliff mining and milling operation near Cuprum south of the Seven Devils area. No exploratory work was done during the year and Silver King Mines does not plan any exploration in the district for a few years.

Mining and milling has been continuous except for a three week "shutdown" in June when milling operations were suspended to complete electrical and piping installations in connection with expanding the Copper Cliff plant capacity from 300 tpd to 800 tpd.

The company has shipped 1300 tons of concentrate containing 1,500,000 lbs. copper and 32,000 ounces of silver to the Outokumpu smelter in Finland. The Copper Cliffs mine has been converted to full open pit production. The mill expansion should be completed by the end of the year except for the tailings pond, which is scheduled for completion next summer.

Ethyl Corporation--Development of deposits of kyanite on Woodrat Mountain north of Kooekia in Idaho County may result in location of aluminum rolling mills in Idaho. It is reported that Ethyl Corp. has developed a new process which utilized kyanite in the production of aluminum and this deposit may now make an ore body. To date Ethyl Corp. had spent about \$900,000 on development of the kyanite deposits. Consolidation of all leases in the area under one operation is being proposed to make development economically sound; this would include C and B Mining claims and Sunshine Mining Company.

Clayton Silver Mines--Milling of low grade ore has been rather constant over the last several years, amounting to about 240 tons a day, 350 days a year. In the past, sales of metal (net smelter returns) about \$45,000 per month; now they amount to \$85,000 per month due to increase in the price of metals. "Costs are rapidly catching up, but the hare is away out in front of the hounds."

Clayton Silver Mines like many operators in the state report the outlook is good if the prices of metals stay near what they are today. Preparation begins this fall sinking a 400-foot offset shaft which will be located some 1,500 feet north of the main shaft and near the big north ore shoot. These levels are expected to develop between 250,000 and 300,000 tons of ore, from which some 1,000,000 ounces of silver, 12,000,000 lbs. of lead and 8,000,000 lbs. of zinc should be recoverable.

Ranchers--Ranchers efforts in Idaho during the past year have been limited to metallurgical studies on Yellow Pine mine, gold and antimony ores.

National Lead--Some activity has been carried out in the Bay Horse District.

The Hanna Mining Company--Hanna's (Coastal's) activities in Idaho, aside from general property examinations, consisted of maintenance and some environmental research at Blackbird mine, exploratory drifting of Iron Creek between Challis and Salmon, and drilling of the Keystone fluorspar deposit at Challis.

Newmont Mining Corporation--Activities in Idaho are, at present, limited to the investigation of a gold prospect in Cassia County; more than \$60,000 was spent on drilling at the site during 1974.

Tuscarora Mining Corporation--The Thompson Creek Project in Custer County near Clayton was in the early development stage during 1974. Activities included core drilling from both surface and from underground locations. The prospect is approaching feasibility evaluation.

Cyprus Mines Corporation--Cyprus has also been doing extensive exploratory work in Custer County in the vicinity of Thompson Creek.

Bear Creek Mining Company--Bear Creek Mining Company has been involved in the evaluation of a sulfide system in northern Idaho, and has undertaken several examinations and some minor reconnaissance exploration elsewhere in the state. The company's overall efforts in Idaho have been minimal and preliminary in nature.

Union Carbide Corporation--Union Carbide responds that it has carried out modest reconnaissance programs for ferroalloy metals within Idaho during the past year. Published announcements have also been made whereas the company has an agreement to explore property of Chilco Silver Mines in Kootenai and Bonner Counties.

Kerr-McGee Chemical Corporation--Kerr-McGee's mining activities in Idaho are very limited. The company has a limestone mine approximately three (3) miles north and four (4) miles east of Soda Springs. The present site has enough limestone for our future uses so exploration is restricted to drilling the present site only.

Exxon--The company conducted a drilling program in the MacKay area on an exploration project in the vicinity of Empire mine.

U.S. Steel Corp.--Reports indicate U.S. Steel has conducted some drilling in the Bonner--Boundary Counties area.

Companies which reported little or suspended activities in Idaho this year included Amax Exploration Inc., Callahan Mining Corp., Ozark-Mahoning Co., U.S. Borax, Occidental Minerals Corp. and Cominco American Inc.

Geothermal and Petroleum Activity

Government and industry sponsored studies of geothermal resources in Idaho expanded again this year. Areas currently receiving attention are the Island Park area of eastern Idaho, the Raft River - Brunau River - Big Springs area of southern Idaho and the Camas Prairie - Boise-Heiser area of westcentral Idaho. Other scattered and isolated areas are receiving local interest. Overall the studies are two types: high temperature for power generation and low temperature for alternate uses.

Leasing commenced this year on State Lands. The Department of Land reports that during the initial application period, 910 applications were received from 13 applicants. Of the 910 initial applications, 199 applications were in conflict on 92 different sections. On November 15, 1974, a public drawing was held to establish priority on these 92 conflict sections.

The 910 initial applications represent 803 different sections or 323,789 acres. However, one company withdrew 113 applications, 33 of which were among the conflicts. This left a total of 723 different sections still under application or 269,475 acres.

The following chart compares the results of the Federal government's initial application period with that of the State. The State has less than 10% as much land as the Federal government; they received a higher percentage of acreage request.

	STATE	FEDERAL
Initial Applications	910 - 113 = 797	530
Total Acres	269,475	1,123,516
Acres in Conflict	approximately 50,000	52,672

As far as Drilling Permits are concerned, the Department of Water Resources has issued one thus far; it does not have any applications for permits on file.

Deep drilling for petroleum has shown some renewed activity since 1972 with three permits granted that year; those were the first since 1969. Five permits were granted in 1973 and three to date in 1974. Receiving the most attention are the Paleozoic marine setting of the Cassia County area along Idaho's southern border and the Tertiary terrestrial basin areas near the western border of south Idaho. No commercial production has been found; indications are that no significant shows have been encountered.