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IN THIS ISSUE

*Mining information office.

Prospects, Problems Aired at Alaska Miners' Association Convention

Featured speakers at the first annual Alaska Miners' Association conference in Anchorage October 29 and 30 sounded off on a variety of subjects, some sounding optomistic, some guarded, and some a mixture of both.

Norman Lutz, development manager of Bear Creek Mining, gave a rosy picture of the content of the Brooks Range, describing it as a veritable treasure trove of minerals, primarily copper. He said his company and others—principally Anaconda, Sunshine, and Noranda—have explored a belt about 70 miles long on the southern flank of the range that offers a potential production of $200-500 million annually. However, he pointed out two obstacles that must be overcome: transportation and the uncertainty of the land withdrawals. Lutz said that a railroad from the site to a deep-water port is being considered, and that it would be the mid-1980's before production could begin. A larger obstacle would be the proposed d-2 land withdrawals, he said. If approved, they would reduce the known mineral area by 40 percent. This, coupled with other proposed withdrawals, would close 70 percent of the mineral area to production, effectively land-locking the area and making production unfeasible.

Another speaker who offered a promising potential but threw in a snag was Jackie Stephens, regional manager of U.S. Borax. He said development of his company's proposed molybdenum mine, which could bring at least 1,500 jobs to the Ketchikan area, is largely contingent on U.S. Forest Service approval of a requested road into the claim.

U.S. Senator Ted Stevens also threw a cautionary note into the proceedings, citing a U.S. Geological Survey report that detailed a decline in Canadian mining due to a change in their tax structure. Stevens, a proponent of unsuccessful legislation that would have excluded Glacier Bay National Monument from the recent ban on mining in national parks and monuments, urged the miners to coalesce. "The miners have to organize, rally public support, and lobby," he said. "This meeting is an important step. By getting together and comparing experiences, the Alaska miners can work to get public support and strengthen your lobbying efforts."

U.S. Senator Mike Gravel took a similar tack in his speech before the miners. Recounting his recent role in the problems confronting the timber industry in Southeastern Alaska, in which he used his office to get the conflicting parties to meet with one another and hammer out a solution rather than tie up the industry in litigation, Gravel urged the miners to get together with, talk with, and listen to the viewpoints of adversaries. "If you look hard for areas where you can agree, you can build on those areas." The Senator asked, "Will the leadership of the mining community sit down and talk with the people they disagree with, or will they say 'To hell with them, we're going to sue?"

Also participating in the conference was a panel that discussed the place of mining in Alaska's future. Chaired by DGGS State Geologist Ross Schaff, the panel featured Jack Hession, the Alaska representative of the Sierra Club; Roland Reed, Assistant Secretary of the U.S. Department of Interior; Guy Martin, Commissioner of Natural Resources; Howard Banta, Assistant Director of the U.S. Forest Service; and Stan Dempsey, counsel of the American Mining Congress. Hession, in the role of Devil's Advocate, said that the d-2 land withdrawal conflict is overemphasized, and that the natural values in the d-2 lands are more important than the minerals in them. He pinpointed three areas of upcoming legislation: 1) OCS development, which is important in that it bears on access in the mining industry; 2) the proposed revision of the 1872 mining law, which will have a direct bearing on the mining industry; and 3) settlement of the d-2 lands question.

Reed, following Hession on the podium, stressed the importance of cost in mineral development, noting the expenditure of $25 million in the Ambler River area in the past decade. Switching to the subject of coal, Reed said Alaskan coals near deep-water ports should find ready markets, and that when developed, Alaskan coals will rival those of Wyoming and Montana. With a nod to Hession, Reed said that, although accessibility is a large problem, land, once mined, "Should be and will be reclaimed." He closed on an optomistic note, saying "Alaska is the most important single storehouse of minerals for the future," and that the "potential mineral future of Alaska is as great as the state itself."

Martin was next, and said the Hammond administration "was strongly in favor of a viable and successful mining industry in Alaska." He further qualified it by saying the industry must be part of a diversified natural resources program, and not a little sister to the oil industry. "Such a viable and successful mining industry," he said, "must be of benefit to all regions of the state, and must be present throughout the state, and not localized." The Commissioner closed by vowing "to do 10 times better next year in talking to this (the mining) community than I did this year." (Martin's complete panel text is on p. 13.)

Banta, noting the 80 million acres closed under the d-2 withdrawals, said that mining would be allowed in the d-2 areas if the Forest Service, not the Park Service, administer them. He added, "The policy of the Forest Service is pro-mining, and always has been." As an example, he noted the excellent potential for copper and nickel on Yakobi Island, in the Tongass National Forest.

Dempsey, the last speaker on the panel, stressed the need to educate the American public in expanding our mineral-producing capacity and to improve our recycling programs. "We need to produce more materials, and I can't think of a better place to start than Alaska. Now is the time for mineral development, and a more favorable time politically. Now is also the time," he said, "to perhaps develop higher grade deposits and cut the now-high unit costs." He cited four main reasons why more development is not going on today: 1) the uncertainty over the availability of land, 2) high costs, 3) the potential for environmental controversy, and 4) the present threat to revision of the 1872 mining law which, if massively revised, "would cause mining to dry up—and all our land problems would no longer be a problem." He ended on a positive note saying "the mining industry is getting its act together on environmental concern. John Q. Public demands both productivity and environmental conservation."

Mountain Named for Nick Begich

A 4,545-foot mountain 6 miles northwest of Whittier has been named Begich Peak in honor of the late Rep. Nick Begich, who disappeared on a flight from Anchorage to Juneau on the night of Oct. 16, 1972. The peak, located in the Chugach Mountains, is not far from Boggs Peak, named for Rep. Hale Boggs, (D-La.), Begich's co-passenger on the fateful flight. The move to name the peaks was initiated by Sen. Ted Stevens (R-Alaska) and recently approved by the U.S. Board on Geographic Names. The peak is located at 60°49'25" N., 148°48' 20" W. The plane containing the two legislators and their pilot has never been found.

DGGS Aeromagnetic Maps of Survey Pass, Hughes Quadrangles to go on Sale December 30

More aeromagnetic maps compiled from the 1975 flight season will go on sale at the DGGS Mining Information offices on Thursday, December 30. A previous sale of two other areas in the Brooks Range—the Ambler River and Shungnak quadrangles—was held in September.

Sale of the maps, scaled 1:63,360, will begin at 11 a.m. in Juneau (11th floor, State Office Bldg., Pouch M, 99811) and Ketchikan (205 State Office Bldg.; P.O. Box 2438, 99901), and at 9 a.m. in the Anchorage office (MacKay Annex, 323 E. 4th Ave.; 99501) and the College office (Physical Plant Bldg. of U. of A.; P.O. Box 80007, 99708).

The maps may be purchased or examined at any of these offices (p. 1). They cost $1.10 postpaid or $1.00 in person. Those maps to be offered for sale are:

Survey Pass	Hughes
A-1 thru A-6	A-1 thru A-6
B-1 thru B-6	
C-1 thru C-6	
D-1 thru D-6	

Sixteenth-century herbalist John Gerard came down with the ague and, following ancient custom, hung a walnut shell around his neck. He found it did no good whatsoever. *—from Esquire, July 1976—*

1976 Heading for Peak Claim Year

The 1976 prospecting season is about over, and the DGGS mining-information girls are already looking forward to well-earned vacations. Since January 1, they have processed 13,343 new claims and the assessment work for 17,242 existing claims (for a total of 30,585 active claims in the state). For the past 3-month period, the girls processed 8,107 new claims; they also filed assessment documents for 3,602 claims for September and October (see table). Pat Dieterich and Carole Stevenson say they will hardly notice this year's winter offering of cold and ice fog, since the heaviest activity for claim processing will probably come in December and January—"mainly because of the 90-day grace period between staking and recording and the gorgeous fall we had." They also noted that "this was an absolutely fantastic year for visitors." A total of 1,180 knowledge-thirsty miners and prospectors trekked up the DGGS College stairs.

District	New claims				Assessment claims (Sept., Oct.) total
	Aug.	Sept.	Oct.	Total	
Wrangell	145	0	0	145	0
Haines	7	0	0	7	0
Petersburg	1	22	0	23	0
Ketchikan	229	97	517	843	175
Sitka	1	36	0	37	94
Juneau	27	17	12	56	55
Skagway	0	0	0	0	0
Cape Nome	287	20	181	488	390
Kotzebue	179	556	6	741	78
Anchorage	10	2	5	17	0
Iliamna	0	1	0	1	25
Aleutian Is.	0	8	0	8	0
Bristol Bay	0	0	0	0	0
Kodiak	0	0	0	0	0
Homer	0	0	0	0	0
Seldovia	3	0	0	3	0
Seward	22	3	1	26	130
Valdez	0	28	0	28	0
Cordova	3	0	0	3	0
Kenai	0	0	0	0	0
Palmer	32	17	16	65	37
Talkeetna	12	137	276	425	87
Kvichak	0	0	0	0	0
Chitina (Glennallen)	9	1	10	20	120
Fairbanks	325	1,265	1,053	2,643	1,844
Bethel	0	0	0	0	216
Kuskokwim	0	0	0	0	0
Manley Hot Spr.	2	0	0	2	86
Nulato	0	0	0	0	45
Mt. McKinley	0	1	0	1	48
Nenana	173	138	214	525	58
Rampart	0	0	0	0	112
Ft. Gibbon	0	0	0	0	2
Barrow	561	1,313	126	2,000	0
Total	2,028	3,660	2,417	8,107	3,602

Miners on Native-Selected Lands Can Apply for Claim Ownership

(from a BLM news release, Oct. 28, 1976)

Persons holding unpatented mining claims on land selected by Native village or regional corporations may apply to the Bureau of Land Management (BLM) for patent or title by Dec. 18, 1976, BLM State Director Curtis V. McVee said today.

He said lands containing unpatented valid mining claims are subject to selection by the Native corporations under terms of the Alaska Native Claims Settlement Act. Miners holding these claims can protect their possessory interest by filing a mineral patent application prior to Dec. 18, 1976, or prior to transferral of the land from federal ownership to the Native village or regional corporation.

McVee said that if it is not possible for a miner to complete the mineral survey requirements for patent application by Dec. 18, he may file a mineral survey application that states on its face it is filed for the purpose of proceeding to patent. This will be accepted as a mineral patent application.

Mineral patent applications will be denied if filed after Dec. 18, 1976, for lands conveyed to any village or regional corporation. After land has been transferred to a village or regional corporation it is private land and not subject to BLM jurisdiction. Litigation of mining rights would come before State courts rather than being adjudicated by BLM, McVee said.

He said a valid mining claim constitutes a valid existing right to mine on public land. A valid mining claim requires discovery of a mineral deposit so valuable that a prudent man would be justified in spending time and money to develop a mine.

BLM Organic Act Now Law

(from The Land, a BLM newsletter, Oct. 1976)

President Ford has signed into law a bill that grants the Bureau of Land Management the authority to manage some 473 million acres of public land in the U.S., nearly two-thirds of which are in Alaska.

Known as the Federal Land Policy and Management Act of 1976 or the "Organic Act," the law establishes a policy of continued federal stewardship and sets guidelines for the administration and management of these lands and their resources by BLM.

Some sections of the law also apply to National Forest lands administered by the Forest Service of the U.S. Department of Agriculture.

Since creation of the BLM in 1946, successive Presidents have sought a law that would replace the more than 3,000 public land laws applying to the public domain, some dating back to the post-Revolutionary War period. Many of these antiquated laws have now been replaced by the new Act.

BLM Director Curt Berklund said, "We realize the immense responsibility this law gives us along with the tools to carry out this mandate. This legislation has been sorely needed, but we want to move very deliberately with the fullest public involvement in putting it into practice.

"We are taking a close look at this new mandate to determine which sections can be implemented immediately as well as those that will require extensive development of regulations. Full implementation of this Act will be an involved process," Berklund said.

The new law is lengthy and comprehensive, but some of its provisions are:

1. Broad management authority under the principles of multiple use and sustained yield.
2. Authorizes the inventory and identification of public lands and provides authority for marking and mapping these lands.
3. Calls for comprehensive land use planning.
4. Authorizes the use of land and water conservation fund money to acquire land for proper management of public recreation lands.
5. Authorizes cash payment to equalize values when public lands are exchanged for private land, provided the cash payment does not exceed 25 percent of the total value of the federal lands involved.
6. Provides for enforcement of public land laws and regulations by federal personnel or by appropriate local officials who have entered into contracts with the Secretary of the Interior.
7. Provides for distribution of funds collected for grazing fees with 50 percent of all money collected earmarked for range improvement.
8. Authorizes the use of helicopters and administering the Wild Free-Roaming Horse and Burro Act.
9. Authorizes loans to state and local governments against their share of anticipated mineral revenues to relieve impacts of mineral development.
10. Requires persons holding mining claims under the General Mining Law of 1872 to record those claims with the Bureau of Land Management.
11. Authorizes the Bureau of Land Management to carry out wilderness studies on public lands with such studies to be completed within 15 years.

Nothing in the Act modifies, revokes, or changes any provision of the Alaska Native Claims Settlement Act of 1971.

DGGS Hires New Personnel

There are several new employees in the DGGS Anchorage office. Since last summer, five faces have joined the ranks of the Geological Survey. James R. Riehle, a 33-year-old geological engineer, has a Ph.D. in geology from Northwestern ('70). Before coming to Alaska, Jim taught geology at the State University of New York. A bachelor, the native of Minnesota likes hunting and fishing.

Another new employee is Mark Howland, 24, who is a geological assistant. A cheechako, Mark recently arrived here after receiving his M.S. in geology from Stanford. Also a bachelor, the new hydrologist is interested in hiking, piano, and various round-ball sports.

Karen S. Emmel is another new geological assistant. She has lived in Alaska 6 years, having previously worked in the USGS Anchorage office as an inquiries specialist. Karen has a B.S. from Penn State ('67) in Earth Science Education and an M.S. from the University of Florida ('69) in teaching. Her hobbies include skiing, knitting, painting, and sewing. Her husband, Jim, is a biology teacher at Service-Henshew High School in Anchorage.

Kate Gray is the clerk-typist in charge of keeping the books straight. A pert 22-year-old, Kate previously worked 4 years for the state at the Department of Health and Social Services. She grew up in Anchorage, and graduated from Diamond High School in 1972. Her interests are fishing, knitting, and sewing. She was recently accepted in the U.S. Navy Reserve.

The newest face belongs to Patti L. Coonrod, 21, another clerk-typist. She too was raised in Anchorage, graduating from Diamond. Unlike Kate, though, she is married; her husband, Don, is a partner in a masonry firm. She is the mother of two—Connie, 2, and Christopher, 6 months. Her interests include cross-country skiing, swimming, and camping.

In a related note, two employees received promotions. Wyatt G. Gilbert was named Mining Geologist IV and DGGS secretary Nola Bragg was promoted to administrative assistant, a job she says she's "been doing for the past 4 years anyway."

DGGS Issues Call for Short Manuscripts

DGGS will again publish a volume of short scientific notes on new aspects of Alaskan geology in an annual geologic report—this one entitled "Short Notes on Alaska Geology - 1977." No more than six double-spaced manuscript pages (1,800 words) including references, figures, maps, and tables will be accepted for publication. Contributors are generally limited to one authorship (or coauthorship) per report. All figures, maps, and tables must be black and white (and camera ready), and suitable for reduction to a maximum size of 8-1/2" x 11" (including margins) when submitted. Two copies of the manuscript, typed double-spaced including references and figure caption, together with two clearly legible copies or prints of all illustrations, should be submitted to Editor, DGGS, College (p. 1). All material will be reviewed by the DGGS staff before being accepted for publication. Contributors should keep original copies of all material submitted, and while being reviewed it should not be submitted elsewhere for publication. Deadline for submitting material for the next "Short Notes" report is April 15, 1977.

When wine, women, and song become too much for you, give up singing. —*The Mining Record*

Nome Gold Mining May be Discontinued

(from Alaska Industry, Nov. 1976)

Steadily declining world gold prices forced the Alaska Gold Company to take another look at its operations in Nome, and company officials were not ruling out the possibility of a shutdown this year.

Falling gold prices also deferred plans for putting a third dredge into operation at Nome. Alaska Gold, a subsidiary of UV Industries, reactivated a long-idle dredge at Nome two years ago when gold prices were nearing $200 an ounce. A second dredge was started up this fall. But since that time the price has plummeted to about $110, and market experts predict it will go even lower. Many analysts blame the falling price on the International Monetary Fund's dumping of the metal on world markets.

Besides the declining world price, Alaska Gold has been plagued by a series of disasters in its Nome operation: sinking of a barge carrying critical supplies, a utility plant fire, and replacement of an entire bucket line. These factors combined to drive up the cost of the Nome dredging while the gold itself was steadily devaluing. The 28,000 ounces of gold gleaned from the dredges has been stockpiled, pending another increase in price.

A company report to stockholders announced in early October the mining at Nome may be halted, because "at the current price of gold, operations are not profitable." However, crews at Nome were carrying on with their winter maintenance schedules, awaiting definite word on the 1977 season.

Alaska Gold officials said that if operations are shut down next year, the dredges could be reactivated quickly because the equipment is in place. An estimated 1.2 million ounces in gold reserves lie on company property at Nome.

Royalty Board Supports Sale

(from Fairbanks News-Miner, Nov. 23, 1976)

After a day-long briefing, the state's Royalty Oil and Gas Board Monday unanimously approved the royalty gas sale contract proposed by Gov. Jay Hammond.

The contracts will now be transmitted to the legislature for consideration during the next session.

Meeting in Juneau, the board approved the proposed contracts after hearing briefings from administration officials and the purchasers, as well as accepting public testimony.

Hammond announced last week that contracts to sell the state's one-eighth royalty gas share have been negotiated with Tennessee Gas Transmission Co. (Tenneco), El Paso, and Southern Natural Gas Co.

The three companies have agreed to support the state's gas pipeline routing position before the Federal Power Commission.

Guy Martin, Commissioner of Natural Resources, said the Royalty board's approval came after hearing brief-

ings on gas line route alternatives, the contracts themselves, and Prudhoe Bay production.

"The ball is now in the legislators' courts," Martin said Monday. "They last year had a committee that recommended this sort of action be taken. Now we've completed it and tossed it back to them."

Martin and Hammond plan to present the contracts to the legislature as soon as the session opens, and are asking for speedy action.

Timing is important, Martin said, because the gas line routing question probably will be decided next year. If the legislature approves the contracts, the companies involved could take a more active role. If it turns down the contracts, however, Martin said the state will need to pursue other alternatives.

Comparative Study: Canadian-U.S. Resources Program

(from a U.S. Geological Survey publication, May 1975)

The following are excerpts from the Comparative Study of Canadian-United States Resource Programs which was authorized by Congress on the initiative of Alaska's Senator Ted Stevens. The study deals only with the mineral industry in both nations and does not consider resource programs affecting oil and gas, coal, oil shale, or nuclear fuels.—Ed. note.

The objective of this study is to define the similarities and differences between resource programs in Canada and the United States and to assess specifically how Canadian resource programs stimulate exploration and development in the mineral industry.

General Geological Comparison

The general distribution of rock units is similar in Canada and the United States; the major variation is the amount of each major unit exposed for prospecting. The overall geologic similarity of the two nations strongly supports the belief that the ultimate resource potential of Canada and the United States may be similar.

Canada has large surface exposures of very old rocks which compose the Precambrian Shield and in which a large percentage of Canada's mines occur. A similar amount of mineralization probably exists in the United States, but much of the United States' shield area is overlain by thick accumulations of younger rocks. The overlying younger rocks, which are themselves the hosts for major ore deposits, make exploration for deposits in the underlying Precambrian Shield difficult and make exploitation expensive or impossible using present technology. Conversely, sparcity of the younger covering rocks in Canada reduces the potential for mineral resources in such rocks to only one-third that of the United States.

Mineral Deposit Types

Certain types of deposits are characteristically of high grade and low tonnage, whereas others are of low grade and very high tonnage and usually have a larger amount of contained metal. Therefore, in assessing the resource endowment of a nation, it is more important to consider the types of deposits than the absolute numbers of deposits.

Particularly important in assessing the resource endowment of Canada and the United States are the porphyry copper deposits which supply most of the copper and rhenium and a significant part of the molybdenum, gold, and silver produced in the United States. This type of deposit is found in the western mountainous region of the U.S. and in a few places in the northeast. Similar porphyry deposits occur in the continuation of the mountainous region into Canada and Alaska. The known deposits in the conterminous U.S. have a median of 340 million metric tons of ore at a grade of 0.57 percent copper, whereas the Canadian deposits have a median of 180 million metric tons of ore at a grade of 0.47 percent copper. The lower tonnage estimates of the Canadian porphyries may represent incomplete knowledge of the deposits; some deposits may be found to have larger tonnages as more drilling completely defines the extent of these deposits.

The lower grades of the Canadian and Alaska porphyry copper deposits, as compared with those in the conterminous United States, can be attributed to climatic conditions and recent glaciations in Canada and Alaska and have not favored secondary enrichment blankets of high-grade ore. The lack of a high-grade enrichment zone on Canadian porphyry copper deposits is unfavorable economically because the higher grades due to secondary enrichment can often be mined early with a rapid payout.

According to Eimon (1974), there are 47 known porphyry copper deposits in the conterminous United States and 35 in Canada. Hollister et al. (1974) list an additional 14 porphyry copper deposits known in Canada and another 22 for Alaska. Evidence based on the general geologic similarities of the two nations, the number of known deposits, and occurrence models for the number of deposits to be found indicates that the ultimate resource endowment, with respect to porphyry copper, is not significantly different for Canada and the United States.

A large percentage of the total number of deposits found in Canada are in the Precambrian Shield and are of the massive sulfide type. These deposits are commonly polymetallic and contain copper, lead, zinc, and precious metals. Massive sulfide deposits in Canada are normally of high grade, containing approximately 2.3 percent copper, but of small median tonnage, about 2.3 million metric tons. Because of the low tonnage, the contained metal in this type of deposit is approximately 52,000 metric tons, less than one-tenth the median amount of contained metal in porphyry coppers. The production of lead, zinc, and precious metals from massive sulfide deposits is, however, significant.

The limited exposures of Precambrian Shield in the United States have made exploration for massive sulfide deposits very difficult. As a result, very few such deposits are known in the United States, although the resource endowment, on the basis of geologic extrapolation, is comparable with that of Canada.

In Canada, nickel and cobalt are two of the most important metals produced in terms of dollar value. Most of the nickel and cobalt comes from the Sudbury district, and this district, as a result, has a very large impact on any resource endowment study of Canada. Conversely, only small deposits of nickel and cobalt are known in the United States and they are unlikely to have a significant impact on the total resource endowment of the United States. Geologically, it appears that the Sudbury district may be unique, as similar districts are not known anywhere else in the world, and as a result, expectations for finding similar deposits in the United States are very small.

Unit Regional Value of Mineral Production

Although similarity in geologic framework and ore-deposit types between Canada and the United States indicates that, with certain exceptions, the resource endowment of both nations is similar, production of these resources is largely a function of intensity of exploration and, more specifically, intensity of development.

Thus, in areas that should have about the same resource endowment, the past history of mineral production provides a basis for comparison of (1) the intensity and effectiveness of exploration and development and (2) the impact of resource programs on exploration and development of mineral resources.

Washington, Oregon, California, Idaho, Wyoming, Colorado, and Texas all have produced less than 10 short tons of copper per square mile. A comparison of unit regional value for copper indicates that, given the proper economic framework, Alaska, British Columbia, and Yukon could have copper production at least equal to that of Nevada and New Mexico—about 30 short tons per square mile—and that the production, although unlikely, could eventually approach that of Arizona or Utah—more than 100 short tons per square mile.

Canadian-United States Resource Programs

Resource programs within Canada are formulated and directed both by the Federal Government and by the Provincial Governments. Many programs have attacked the broad problem of how to stimulate the development of the mineral industry as a whole, primarily by tax incentives and liberal stock market financing regulations. The more specific problems that relate to regional development and individual mining projects have been approached through Federal-Provincial mineral agreements, subsidies, bounties, and infrastructure development.

The tax incentives granted for mineral exploration, development, and production have been the cornerstone of the development of the mineral industry in Canada. In the past, Canadian Federal corporate income tax legislation has provided substantial direct encouragement to the Canadian mineral industry. The major Canadian tax provisions affecting the mineral industry (a) and recent changes (b) are:

1a. The Canadian tax code formerly allowed a 3-year tax holiday on new mines after production began.

1b. Under the provisions of the amended Income Tax Act of 1970, the exemption from income tax for the first 3 years of operation of new mining ventures terminated at the end of 1973. However, initial capital expenditures in new mining operations on building, machinery, equipment, and certain community and transportation facilities may be deducted from income, before taxes, as rapidly as possible. Consequently, new mining ventures are not liable for any Canadian Federal income tax until initial capital expenditures have been recovered. When an existing mine is undergoing major expansion, capital expenditures on building, machinery, and equipment also may be deducted immediately.

2a. Canadian tax law provides for a 33.33 percent depletion allowance for all mines. The depletion allowance is taken against net income after development and exploration expenses have been deducted.

2b. Under the provision of the Income Tax Act of 1970, the automatic percentage depletion allowance will continue to apply until the end of 1976. Beginning in 1977, the automatic percentage depletion allowance will be replaced by an earned depletion allowance. The rate at which the earned depletion allowance may be deducted annually will remain at one-third of the taxable income. However, the total amount of the allowance that may be deducted will be limited to the base or pool that is earned through eligible expenditures. The depletion base will amount to 1 dollar for every 3 of expenditures on exploration and development activities, on certain assets acquired for a new mine or major expansion, and on facilities acquired to process, up to the prime metal state, ores that were previously exported from Canada. Depletion may be earned on eligible expenditures between November 7, 1969, and the end of 1976, and accumulated for deduction after 1976.

3a. Bona-fide prospectors and the persons who either employ them or provide the financial backing for their prospecting activities have been exempt from tax on amounts received from the sale of all or any part of an interest in a mining property acquired as a result of the prospector's efforts, other than rents, royalties, or similar payments received. If the consideration for the interest is shares of the capital stock of a corporation rather than cash, any revenue derived from the subsequent sale of these shares is also exempt, unless the owner disposes of them during or after carrying on a campaign to sell shares

of the corporation to the public.

3b.Under the provision of the Income Tax Act of 1970, prospectors and their financial backers are no longer exempt from income tax on receipts from the sale of a mining property, but receipts in the form of shares will be classified as a capital gain upon sale of the shares. Only half of any capital gain is subject to income tax. The tax liability of the prospector upon the sale of the shares may further be reduced through purchase of a forward-averaging annuity contract. Individual taxpayers (including prospectors and grubstakers) may invest the proceeds in the form of cash from the sale of resource properties after January 1, 1973, in an income-averaging-annuity.

Further investigation is needed to separate the effects of taxes and price changes, but conclusions are that tax law variations, rather than differences in commodity price changes, are responsible for shifts of exploration from one political region to another. When the same commodity or commodities are being sought, opposite shifts in regional exploration activity have occurred. In these cases, differences in tax policy may explain preferences for exploration in one province, territory, state, or nation over another. Mineral producers have sought higher and more stable returns on new investments by pursuing mining activities in political regions where the tax climate is more favorable and by diversifying into product areas that are not as adversely affected by tax laws. Current decreases in exploration effort will have an effect on future mine openings, mineral production, and employment because fewer discoveries will be available for later development.

DGGS Issues New Documents

Did you know the Border Ranges fault could be a plate boundary? Recent discoveries of sodic amphibole-bearing rocks in the Valdez C-2 quadrangle supporting this theory are reported by Paul Metz of the UA Mineral Industry Research Lab in DGGS's most recent document, Geologic Report 51, "Short Notes on Alaska Geology - 1976." The 35-page document, an assortment of this and other recent geologic findings in the state, is available for $2.00. (For an opportunity to be included in next year's issue, see *DGGS Issues Call*, p. 5.) Also available are several other reports:

- Information circular 20, "Aeromagnetic maps of Alaska quadrangles" (updated), 4 p. Free.
- Information circular 21, "List of open-file reports" (updated), 10 p. Free.
- Information circular 22, "Progress and prospects in marine mining," by C.N. Conwell, 5 p. Free.
- "Preconstruction terrain evaluation for the Trans-Alaska Pipeline project," by Raymond A. Kreig and R.D. Reger (from Geomorphology and Engineering, D.R. Coates, ed., Dowden, Hutchison and Ross, Inc., Stroudsburg, PA, 1976), 22 p. Free.
- "Canada's northern neighbor has long mining history," by C.N. Conwell (from *Western Miner*, Oct. 1976), 4 p. Free.

Two open-file reports are also available now. They may be examined at any DGGS mining-information office (p. 1) or purchased through Petroleum Publications, Inc., 409 W. Northern Lights Blvd., Anchorage 99503. The reports are:

- AOF-29, "Geology of the western Clearwater Mountains," by T.E. Smith (map—scale 1:63,360). $2.90 postpaid, $2.50 over the counter.
- AOF-101, "General geology and geochemistry of the Healy D-5 and D-6 quadrangles, Alaska," by W.G. Gilbert and T.K. Bundtzen (6 p. text, 2 plates—scale 1:63,360). $3.70 postpaid, $3.30 over the counter.

In addition, five "individual" reports, written by various members of the DGGS staff, have been made available for public inspection. These are reports with preliminary data and printed in limited numbers. They are not for sale. The reports will be made available at all four DGGS mining-information offices on Friday, December 17 at 11 a.m. in the Juneau and Ketchikan offices and at 9 a.m. in the Anchorage and College offices (addresses on p. 1). The reports, which may be copied at any DGGS office at the requestor's expense, are:

- "Geological reconnaissance, Cape Chiniak," 40 p.
- "Geologic resource evaluation of two areas in the central Alaska Range" (Kantishna-Teklanika and Savage-Sushana Rivers areas), 19 p., 10 pl.
- "Geologic factors bearing on development at Icy Bay," 118 p., 1 pl.
- "Preliminary evaluation of geologic factors bearing on development at five sites in upper Resurrection Bay," 91 p., 2 pl.

Lastly, there is an open-file report that will be released to the public on December 17. It is AOF-103, "Reconnaissance geologic compilation map of the Ambler River quadrangle, Alaska," by G.H. Pessel. Scaled 1:200,000, the map may be examined after 11 a.m. in Southeastern and 9 a.m. in Anchorage and College. For those of you wishing to purchase it, the report will be available through Petroleum Publications for $5.40 postpaid and $5.00 over the counter.

A Faint Fanfare...for the U.S. Geological Survey, the U.S. Soil Conservation Service, and the New Jersey Department of Environmental Protection, which, in a 76-page joint report that took months to prepare, cost $20,000, and involved the work of 30 employes, concluded that a July 1975 flood in Mercer County, New Jersey was caused by "intense rainfall."—*National Observer*

DNR Reorganizes

Commissioner of Natural Resources Guy Martin recently announced a reorganization in the Department of Natural Resources which has the "principal purpose of improving the State's management of subsurface resources, including oil, gas, and hard minerals." The new structure, which was approved in the budget passed by the last legislature, consists basically of an expanded organization within the State Division of Lands.

The Director of the Division of Lands will assume the additional administrative title of Assistant Commissioner, and will have the responsibility of coordinating the activities and providing common support services for two divisions carrying out land and resource management responsibilities under existing state law. Dr. Michael C.T. Smith, present director of the Division of Lands, will continue in this position.

The most important addition is a new Division of Minerals and Energy Management, which will have as its first director Mr. O.K. "Easy" Gilbreth, formerly Director of the Division of Oil and Gas. The new division will have management responsibilities for all subsurface resources, including hard minerals and all energy resources such as oil and gas, coal, uranium, and geothermal. The Division of Oil and Gas, which has exercised some subsurface management responsibilities in the past but has had no statutory authority to do so, will relinquish management responsibilities to the new division and restrict its activities to the regulatory and conservation measures authorized by statute. This existing division is being renamed appropriately the Division of Oil and Gas Conservation. Mr. Hoyle Hamilton has been named Director of this division.

A second division within the Division of Lands structure will be responsible for management of surface resources, including lands, waters and forests. It will be called the Division of Land Management. No director for this division has been named, although Mr. George Hollett will immediately begin service as the Deputy Director of this division.

"The idea of two divisions within a large one is unique," said Martin, "but the growing responsibilities of the State in resource management, particularly oil and gas, make a stronger management structure essential." Martin continued, "Broad review of the new structure has been favorable, and officials of the Department will be conducting briefings to facilitate public understanding of the reorganization. I believe it will provide not only the best management structure for state oil and gas since Statehood, but will also result in more efficient and expeditious administration of state lands, including those activities leading to greater land availability, and the prompt disposition of issues related to land management."

Very few new positions are involved in the reorganization, and those that were funded by the last legislature are primarily in oil and gas management.

--FORUM--

The Bulletin occasionally prints viewpoints found in editorials and letters to the editor of various publications. Readers with differing opinions are urged to send their rebuttals to us. However, we ask that you keep them brief.--Ed. note.

National Paralysis on Energy

By Philip H. Abelson
(from Science, Oct. 15, 1976)

Three years after a third and highly successful oil embargo the United States continues to behave as if future supplies of oil were assured for decades. Almost every relevant segment of society has reached high levels of effectiveness in stalling or stopping development of new energy sources. Public interest groups, environmentalists, the courts, Congress, some of the Administration, and even the oil companies are diligent in finding and expounding reasons for inaction.

The public shuns the small automobiles, and its consumption of both gasoline and electricity is at record levels. Domestic production of oil is down 12 percent from 1973 and now meets less than 60 percent of consumption. Production and reserves of natural gas have decreased steadily. During the past 3 years the United States has become much more dependent on the abundant reserves of the Arabian peninsula. This dependence will increase greatly during the next decade; reserves elsewhere are limited and production from them will be leveling or declining.

Part of the difficulty in gearing up to meet future energy needs is that few people seem to grasp the magnitude of the problem. The domestic oil and gas that we are now enjoying were discovered and developed relatively inexpensively and they have been produced with only localized environmental impact. Unless our people are prepared to pay a much higher price for energy in monetary terms and to some extent in environmental factors, they must be prepared to face a drastic change in their standards of living.

Those who campaign for strong negative positions toward various energy sources rarely seem to consider the total problem. They seldom devote comparable positive effort to conservation or to the development of alternative energy sources. The net result of their activity is almost totally negative.

The situation is exemplified by a recent incident related to me by a friend. He was approached at his home by a young man seeking signatures to a petition aimed at nuclear power plants. My friend queried the petitioner about the use of other fuels. Both agreed as to the necessity of reducing imports of oil. The young man, when questioned about coal, denounced pollution arising from burning it. My friend then asked, "If we stop nuclear power, where will we get our electricity?" The reply was, "Oh, they'll take care of

that." Thereupon the young man took his petition elsewhere.

Presumably the "they" that the young man was referring to was the federal government. But the power of the government, while great in some directions, is limited in others. It can smother the country in red tape. It can levy taxes. It can have at its disposal as much money as it wants merely by running the printing presses. But Congress itself cannot produce one gallon of gasoline. While Congress could in principle provide the funds or guarantees necessary to get a program on synthetic fuel rolling, it has refused to do so. Instead, we face an absurd situation in which 35 committees and subcommittees maneuver for a piece of the energy action, often making conflicting decisions. The Administration is not much better. Half a dozen agencies impinge, usually negatively, on the Energy Research and Development Administration.

The oil companies are beset with threats of divestiture. This, added to environmental problems and the near certainty of financial loss, has virtually killed the shale oil program. Liquids from coal are far distant, will be very costly, and are not readily compatible with existing refineries and distribution systems. On the other hand, the oil companies can make a profit without enormous capital investments merely by using existing facilities to process domestic and imported oil. Under the present circumstances they have little incentive to take initiative.

During the past 3 years we have experienced the paralyzing power of negative thinking. Sooner or later, the dominant national mood must shift to a more positive attitude if the nation is once again to function effectively.

Soviet Mineral Industry Reviewed by Interior's Bureau of Mines

(from Dept. of Interior news release, Sept. 28, 1976)

High output and relatively low consumption of mineral commodities have made the U.S.S.R. the most mineral self-sufficient of the world's leading industrial nations, according to a review of the Soviet mineral industry by the Interior Department's Bureau of Mines.

The Bureau's analysis, published in the 1976 Mining Annual Review (London), says Soviet mineral policy is based on the principle of maximum self-sufficiency at any price. State-owned and State-operated enterprises using low-wage labor, plus relatively low consumption are responsible for the U.S.S.R.'s high degree of self-sufficiency in mineral raw materials, the article says.

According to the Bureau's review, the Soviet Union is the world's leading producer of petroleum, raw steel, iron ore, manganese ore, chromium, potassium salts, phosphates, and cement. It is second in gold, platinum-group metals, aluminum, natural gas, and fluorite, and is among the leaders in copper, nickel, lead, zinc, tungsten, molybdenum, mercury, and native sulfur.

Despite impressive mineral production gains reported in the Soviet press, the article says there have also been consistent reports of failures to reach planned goals of quantity and quality for mineral commodities. Moreover, it adds, mineral industry expansion in the U.S.S.R. is mainly due to increased labor and capital, rather than advancing technology.

"In the Soviet economy," the article explains, "the selling price of a given commodity may be set at any reasonable level to yield the desired overall results; thus some mineral ventures in the Soviet Union might well be uneconomic by Western standards."

Each year inefficiency costs the Soviet mineral economy immense losses, according to the Bureau of Mines, and in many sectors of the economy more fuels and metals are consumed than would be needed if modern technology were used. The Bureau points out that Soviet machines are generally lower in quality and productivity, but higher in weight, than machines typical of updated technology. As a result of low technology in the Soviet iron and steel industry, it says, only about 45 percent of the total raw steel production is efficiently used and the rest is remelted or lost.

New System to Monitor Earthquakes

(from Anchorage Times, Nov. 6, 1976)

A new earthquake monitoring system has been developed to provide almost instant analysis of earthquake activity along the 800-mile trans-Alaska pipeline once it goes into operation.

Conceived by Dr. Douglas J. Nyman, Alyeska Pipeline Service Co. seismic engineer, the system will sense the occurrence of an earthquake along the line, determine how severe it is and fix the approximate location of its epicenter—all within seconds.

The system will estimate the levels of shaking at points on the line and within minutes provide information so the operators can determine whether to shut down the line, where to go to inspect for damage and what type of damage to look for.

According to an article on the system in Alyeska Reports, a quarterly magazine published by the pipeline company, the system is being built around a series of strong-motion accelerographs which measure ground motion in their own immediate area. The sensor assemblies are mounted at 11 points along the line on protected concrete foundations in bedrock or otherwise stable soils. Each is linked to an electronics panel containing a micro-computer which, in turn, is tied in to a master computer system at the Valdez Terminal.

During an earthquake the small computers at each site will evaluate the severity of the ground motion and weigh the likely impact of the quake on the pipeline system in the affected area.

The ground motion data will also be stored on magnetic tapes at each site and retrieved manually for later scientific analysis at Alyeska's engineering center.

Because the monitoring instruments are located in remote places and exposed to extreme environmental conditions, a self-checking capability has been built into the system. Once commanded from Valdez to check themselves out, instruments will stimulate an earthquake, processing alarms and data as if the earthquake were real.

The 800-mile pipeline route has been divided into five basic seismic zones with earthquake design levels established for each zone. Design magnitudes range from a mild 5.5 on the Richter scale on the North Slope to extreme quake levels of 8 and 8.5 on the Richter scale in the Alaska Range and near Valdez.

U.S. Mineral Policy Development Discussed by Mines Chief

(from Dept. of Interior news release, Nov. 4, 1976)

The United States will probably not have a "wholly comprehensive mineral policy in the foreseeable future," according to the Director of the Interior Department's Bureau of Mines.

Speaking at the November 4 meeting of the Ohio Aggregate Association in Columbus, Ohio, Dr. Thomas V. Falkie said that despite the changes throughout government that appear likely in the coming year, a number of social, economic, and political factors—including the complexities of Federal policy formulation, a public misunderstanding of the functions and needs of the mineral industries, and widespread resistance to mineral development—will prevent the immediate creation of a national mineral policy. The result will be an increasing dependence on imports, and a continued rise in the cost of minerals to the American consumer, he explained.

Dr. Falkie outlined some of the "general precepts that should be considered in the formulation of mineral policy, both from the standpoint of bolstering the industry and contributing to the overall economy." They include attractive investment conditions, favorable foreign trade policies, fair mining law and mineral leasing arrangements, multiple use of Federal lands, informed legislation and regulation, prudent defense considerations, and the need for government-sponsored research.

"The nongovernmental mineral community must make its own contributions to research and development, of course," Dr. Falkie said, "but the specialized efforts of government agencies such as the Bureau of Mines should not be allowed to wither away." Both public and private research and development programs can "do much to influence the course of mineral policy in this country," he added.

Dr. Falkie stressed that developments arising in the coming months will influence both the Nation's mineral industry and its economy. "We will do well, all of us, to observe these developments closely, and to do what we can to promote policies that will ensure a strong, vigorous, and independent minerals policy," he concluded.

Search for Petroleum in Gulf of Alaska Begins

(from USGS news release, Sept. 2, 1976)

Drilling began on the first exploratory well on the Alaska Outer Continental Shelf in the Gulf of Alaska on Sept. 1. The well is located about 11 miles (18 kilometers) off the southern shore of Alaska, 34 miles (54 km) southwest of Cape Yakataga. Water depth at the well site is 540 feet. The well will probably be drilled to a depth of 17,000 feet, which will require about 130 days of operating time.

The exploratory well is in Block 106, leased to Shell Oil Company, Houston, Texas. Shell and its partners were the successful bidders for that block in Federal OCS Lease Sale 39 held in Anchorage on April 13, 1976. This winning bid was $61,800,000. In that sale, the Department of the Interior accepted high bonus bids totaling nearly $560 million for 77 tracts comprising a total of 437,253 acres (177,163 hectares) in the northern Gulf of Alaska.

Shell Oil Company and partners have contracted the SEDCO 706 to drill the well and any additional exploratory wells that may be required. The SEDCO is a self-propelled, twin-hulled, semi-submersible drilling vessel built by Kaiser Steel Corporation in Oakland, California. As the SEDCO 706 is equipped to drill in water as deep as 1,000 feet (300 meters) and to operate under extreme environmental conditions, it is well suited to operating in harsh Alaskan weather.

Interior's Horton: Miners are not Content

(from All-Alaska Weekly, Oct. 8, 1976)

When the Interior Department Task Force on Mineral Lands Availability got together with Alaskan miners in Anchorage this week, they gathered data that could bring about an entirely new management system in regards to mineral exploration and development in Alaska.

These facts will be considered by Interior Secretary Thomas Kleppe:

—65 per cent of the federally owned land in Alaska is withdrawn, desegregated or otherwise restricted from mineral exploration and development.

—In 1968 only 17 per cent of the land was inaccessible for mineral development, but between 1968 and 1974, the amount has tripled either by Congressional or executive action.

"This is the first time anyone's sat down to total it up and investigate," said Assistant Secretary for Land and Water Resources Jack Horton who chaired the meetings in Anchorage.

—When 345 million acres of land were withdrawn for

native land selections, state land selections, and for national parks, no consideration was given to the interests of the mining industry.

On 80 per cent of the land "we have just the scantiest idea of the mineral value beneath the surface," Horton said.

A representative of the Alaska Miners Association testified that the withdrawal of federal land in Alaska is a "utopia for land planners," and that it appears that the major goal of the federal government is to go on increasing the portion of federal lands restricted to mining.

"It has never been determined how much federal land should be available to support domestic mineral production," Horton said. "The jury is still out on the d-2 lands. Congress will decide what happens there."

Horton said that the overwhelming Congressional vote against mining in national parks recently was "incredible." Senators Ted Stevens, Mike Gravel and Congressman Don Young fought for the exemption of parks in Alaska, but to no avail.

Lobbyists for environmental and conservation groups strongly influenced the vote on the national park bill.

In Anchorage the Task Force heard testimony that since oil exploration began in the Kenai National Moose Range, the moose population has doubled.

"I can't say the exploration was responsible for the growth in moose population," said John McKeever from the Alaska Oil and Gas Association.

"But it didn't hurt the moose—that's the point," Horton said.

Sen. Ted Stevens requested that the Interior Department Task Force hold hearings in Alaska to review administrative policies and how the present withdrawal system affects the state.

The 40 million acres going to the Alaska native corporations will be selected within the next 18 months, returning 101 million acres to a less restrictive land use category—but not necessarily opening land for mineral exploration or development.

Horton summed up the hearings by saying, "The miners are not content."

"Too Much Federal Land Withdrawn"

The following article in the Washington Geologic Newsletter was written by Ted Livingston, Washington State Geologist—Ed. note.

I attended the Department of the Interior hearing in Salt Lake City on September 8 and 9, 1976. The purpose of the hearing was to provide input from the public into the study that is being made on land withdrawals by the Department of the Interior's Mineral Lands Availability Task Force. The objectives of the task force are to: (a) determine how much land has been withdrawn from mineral entry, (b) review present policy dealing with land withdrawals, and (c) investigate alternatives to the present policy.

Two full days of testimony included speakers representing industry, environmental groups, states, counties, cities, and individuals. The overwhelming consensus expressed was that too much federal land has been withdrawn from mineral entry. Speaker after speaker warned that we are looking down the gun barrel so far as mineral resources availability are concerned and that continued withdrawals will most certainly result in adverse economic consequences. There were many suggestions made about what should be done; simplistically summed up, the conclusions were: No more land should be withdrawn, and currently withdrawn areas (with some exceptions) should be opened to mineral entry.

There was very little acrimony displayed by those giving testimony, and none by the members of the task force. The members appeared honestly interested in defining the problems and looking for answers. So far as the hearings were concerned, they were interesting and informative—what will happen as a result of the hearings is another question. Just how much the Department of the Interior can do to cure the problems is questionable. So much of the land has been withdrawn by congressional action; I am sure there is little the Interior can do to change this. Also, the Forest Service was not represented at the hearings (I understand they were invited), so I doubt that we can hope to see much change in the Forest Service policy. The ball is now in the court of the task force—when they return it, we will know how we stand.

ERDA Announces Fiscal 1977 NURE Airborne Radiometric Reconnaissance Program

(from an ERDA news release, November 16, 1976)

The Grand Junction (Colorado) Office, Energy Research and Development Administration (ERDA), plans to perform some 150,000 line-miles of flying during the fiscal year 1977 National Uranium Resource Evaluation (NURE) airborne radiometric reconnaissance program.

The initial request for proposal (RFP) in August 1976 resulted in a contract being awarded (for Alaska) to LKB, Inc., of Philadelphia, to fly a rotary-wing aircraft survey in Alaska, including the quadrangles of Eagle, Big Delta, Mt. Hayes, Healy, Talkeetna Mountains, Talkeetna, Sleetmute, Bethel, Dillingham, Chignik, Mt. McKinley, McGrath, Circle, Charley River, Christian, Demarcation Point, Mt. Michelson, Barter Island, Flaxman Island, Philip Smith Mountain, Chandler Lake, Killik River, Howard Pass, Point Hope, DeLong Mountains, and Noatak.

The airborne surveys are part of the ERDA Grand Junction Office's on-going NURE program, which includes the development and compilation of geologic and other information to assess the magnitude and distribution of uranium resources in the United States, and to determine areas favorable for the occurrence of uranium.

DGGS to Issue Two Reports in Mid-January—One Concerning Imminent Off-Shore Lease Sale

As the M&G Bulletin went to press, the list of new DGGS documents available (p. 8) was augmented by the addition of two reports that are slated for release in mid-January. Special Report 8, "Salinity analysis of subsurface waters and their relation to the genetic source of hydrocarbons and the locality of fresh waters, Cook Inlet, Alaska," by D.L. McGee, will have about 13 pages of text and 5 cross sections with 2 maps. It will be available for inspection or purchase at any DGGS office starting about mid-January. The price has not yet been determined.

The other late-blooming report is an open-file report, AOF-104, "The physical parameters of potential reservoir and source rocks in the Kamishak-Iniskin-Tuxedni area, lower Cook Inlet, Alaska," by W.M. Lyle of DGGS and I.F. Palmer, J. Wills, and J. Bolm of the USGS. The report, which will be available from Petroleum Publications (p. 8), deals with the source rocks, reservoir rocks, potential reservoir rocks, and basin maturity of the rocks exposed on the shore of the west side of lower Cook Inlet. The Federal Government is tentatively planning on conducting a lease sale in this area in the lower Cook Inlet early next spring. Completion of the report is targeted for Jan. 12. The report will have about 30 pages of text, 14 plates, and 6 appendixes. The cost has not yet been determined.

Martin Calls for 'Viable and Successful' Mining Industry

The following is the text prepared by Commissioner Guy R. Martin for delivery at a panel discussing "The Future of Mining in Alaska" at the Alaska Miners' Convention (p. 1)—Ed. note.

Thank you for the opportunity to be here. This is an important opportunity to speak to the mining community of Alaska, and there is far more to say than can be expressed in a few minutes. Nonetheless, I would like to make several points which are intended to give this community a better feeling for the policy of the present State of Alaska Administration toward mining.

It is beyond doubt that a major component of the future of mining in Alaska is the policy of the State Administration. To put first things first, let me state unequivocably that the present policy of this Administration is strongly in favor of the development of a viable and successful mining industry in Alaska.

The next word is not "however." What I would like to do is to share briefly some of my own impressions of the major components of a successful and viable mining industry in Alaska. This list is not intended to be exhaustive, but to hit some important high points regarding the nature of a successful industry in Alaska.

First, a successful and viable mineral industry in Alaska will be accomplished when mining becomes a major part of a diversified development program in the State. This cannot be said of the mining industry now, nor can it be said of such areas as agriculture, forestry, or perhaps all of the resource development areas with the exception of oil and gas. If mining is to be successful and viable it must occupy a greater percentage of our development program and help to establish the balance necessary for sound resource development. The effect of such balance will be not only to provide a contribution to the economic future of the State, but to preserve and enhance a community which has had value for the State in the past and has the potential of supplying great value to the State in the future.

Second, a viable and successful mining industry in Alaska should be beneficially *present* in all regions of the State. By this, I mean that it is not enough to simply have a large-scale and successful mining venture in a single region of the State, with its benefits distributed State-wide through revenues. I think it is better and wiser in the long run for State policy to seek to establish mining in various regions of the State so that the benefits, and costs as they may occur, are understood and appreciated directly by the region where the mining activity takes place.

Third, a successful and viable mining industry must be composed of both large and small operators, and diversified across the wide range of activities associated with mining. It must be characterized by adequate competition to prevent large operators from controlling the market, government policy, transportation of other key factors for the industry overall.

Fourth and finally, a viable and successful mining industry in Alaska should not be dependent on or beholding to the State or Federal Governments. Even more importantly, it should not be encumbered by government any more than necessary to protect other legitimate interests. It is, of course, the other interests which supply much of the controversy in the mining area, but it is inescapable that other legitimate interests do exist and must be asserted as a counterbalance to proposals for mineral development.

Before continuing, let me add another note on a topic which I think is of equal importance to the ingredients of a successful and viable mining industry in Alaska. It is to tell you that I, Governor Hammond, and this Administration, do recognize and feel for ourselves the frustration presently being felt by the mining industry in the State of Alaska. While it is difficult to describe and more difficult still to fully understand, such frustration appears to stem from the failure of mining to get a fresh start at a time when minerals are clearly becoming vital to the Nation. At a time when mining should be coming into its own, and at a time when Alaska should stand at the forefront of such a movement, it is not happening and it is difficult to understand the reasons why this is so.

It is only evident that the frustration is widespread and generalized with causes that are difficult to identify—State or Federal Government policies, high costs and the prohibitive economics of mining, the lack of land availability, regulatory structures, the inadequacy of technical information, or perhaps just Guy Martin or the Sierra Club.

In a few short minutes it will certainly not be possible to discuss all possible causes for this frustration or to locate those which deserve special attention. Quite frankly, a large part of the frustration I personally sense stems from the fact that we spend too much time worrying about such things and treating the negative aspects of mining in Alaska. Conversely, we spend far too little time on affirmatively solving the problems that confront mining and advancing those good proposals that need all our efforts.

Let me touch on two issues which I think do stand out for early resolution as a part of the generalized frustration being felt by the mining community of Alaska. Let me discuss these issues briefly and relate them specifically to the way in which State policy has attempted to deal with them in the past and will deal with them in the future.

The first is the issue of *land allocation.* At the heart of this issue is what might be called the reverse effect of the Alaska Native Claims Settlement Act. As an individual who was at ground zero when the Act was passed, I think I can say that the principal objective of the Settlement Act was certainly to do justice to the land claims of Alaska's Natives. Among additional objectives, the one which must be at the top of the list is that of ending the period of uncertainty and unavailability regarding Alaskan lands. The reverse effect, of course, is that rather than resolving uncertainty and ending the land freeze, the effect of the Act and its shabby administration, has been to prolong the period during which Alaskans (including the mining community) must remain uncertain about their rights to the land in this State.

Unfortunately, too much of our mutual effort is expended in merely complaining about the situation. What we must do together is to work through the finalization of Native selections under that Act, seek a reduction of overselections of land by Native Corporations under the Act, foster the completion of the 17(d) (2) process, reestablishment of State selection rights, and release the Section 17(d) (1) lands to the people of the State and Nation.

A second policy area, and one which you will think unusual for me to raise in this context, is the matter of *attitude.* By attitude, I mean the way that we (all of us) feel and are perceived as feeling regarding the future of mining in Alaska. Ask yourself how individuals in Alaska not knowledgeable about mining, or how individuals outside of Alaska attempting to understand us, might interpret the attitude of Alaskans toward mining.

Is it not possible that they see us as negative and down, as having great internal disagreements, as being unable to work together to find common solutions, and as being polarized on the most important issues with respect to mining? Is it not possible that they see us unable to form a partnership, and is it not possible that by our attitude alone we are discouraging investors, miners, businessmen and others from feeling positive about the future of mining in Alaska. Do all of us (the State, the miners, and others) create an atmosphere of confidence, encouragement and stability for a viable future mining industry in Alaska? I suggest that in far too many cases we fail to meet this burden.

Let me put these ideas in the context of some specific issue areas where problems have arisen in the past or will arise in the future. Let me then give you some perspective on the way in which this State Administration has attempted to deal affirmatively with the issues which can drag us all down together.

Consider the "mining tax." Upon my arrival as Commissioner in March of 1975, I became acquainted with the mining tax legislation then proposed by the Administration. It was a bill already created by the time I arrived, and one which I quickly recognized as having problems which would likely lead to its final demise. I did not support this bill within the Administration, and was one of those who urged that it be withdrawn prior to the end of the legislative session. In the next year, the Administration worked cooperatively with the miners to attempt to structure a new bill, one which had greater balance and attractiveness in the long run. Looking around this room, I see a number of individuals who worked with the State in an affirmative effort to find a tax which was fair now and would be fair in the future.

Our theory was that it is better to act now to establish a fair tax than to await that time when a successful large-scale mining venture in the State distorts our perceptions of the ability to tax mining and have it preserved as a viable and successful industry in the State.

One need look no further than the efforts to tax oil and gas in Alaska within the context of a major success at Prudhoe Bay. Ask yourself, as our Administration did, if the mining industry would desire to have its taxes levied at a time when a major success (with the derivation of huge revenues by a successful mining venture) exists and has the capability to color the judgment of those imposing the tax.

I am aware that this was a highly controversial matter even among those here, but I think you should ask yourself if those among you who supported the tax last year may not have been looking further to the future than others.

Second, consider the example of the Borax Company proposal for a major new mining venture in Southeast Alaska. Looking to the future and taking a positive approach, Governor Hammond asked that a special

policy task force be created to deal with this issue, to facilitate the entry of Borax into the State and to understand the rules under which it would be expected to operate a successful and viable mining venture. A meeting held not long ago in Juneau was specifically intended to bring all State administrators interested in this matter together with the officials of the Borax Company. The meeting was held, was quite successful, and all left feeling that a positive beginning had been made.

The next day, two editorials appeared in State papers regarding this meeting. The first appeared in the newspaper for the town in which the meeting occurred and which had the opportunity to speak with those who attended the meeting. It lauded the gathering as a unique effort by government and industry to get together early to positively solve their problems rather than acting in isolation and battling over small issues to the detriment of the project. The second, in a newspaper which did not cover the meeting nor have the firsthand opportunity to speak to the participants, assailed the State for blatant obstructionism to the project. Perhaps this should all be written off as a "can't win" situation, but I want you to know the perspective the State took in holding that meeting was an attempt to take a positive attitude toward an issue which will certainly be an important one for Southeast Alaska. The newspapers may say what they like, and I will defend their right to do so, but you should be clear in your own minds what the attitude of the State was in holding such a meeting. Officials of the Borax Company are here, I see, and I am certain that they will confirm what I have said about the nature and result of our efforts.

Still another issue is the issue of 17(d) (2). It is controversial, and often seen as being near the core of the problems frustrating the mining industry in Alaska today. Yet, I cannot help but wonder if a substantially more positive attitude on the part of all of us would not be more productive than the present hostility to this issue overall. I have said many times and to the irritation of many, that the 17(d) (2) issue is here to stay. I repeat again today that it must be faced realistically, and soon.

Consider the fact that the present Federal Administration has reconfirmed as little as a few weeks ago that it intends to support a bill which it has presently submitted to Congress on this issue. That bill, in its creation of parks, goes so far beyond the Governor's proposal for creating areas closed to all mining that it is difficult to make fair comparisons. When a Federal Administration proposes such a bill and the Governor, the Land Use Planning Commission, and members of the Alaska Delegation have all proposed alternatives which are substantially more favorable toward the future of a successful and viable mining industry in Alaska, then I believe that no community (and especially the mining community) has the luxury of continuing to oppose an issue which will be resolved with or without them.

As a matter of attitude, the Hammond Administration clearly perceives that the issue must be addressed responsibly, and would like your help in doing so, rather than your continued opposition to the concept itself.

Finally, let me close by saying something about an issue which can bring greater success to all of us. It is the matter of communications, and it is perhaps an area where I should take some blame upon myself. It is one thing for me to urge an improvement in attitude and a greater sense of reality with respect to land allocation in Alaska, but it is hollow to assert such things without being willing to deal with them openly and continually through communications with the affected communities. I think that no public servant or special interest does as well as they should on this matter.

Let me close by simply pledging to you openly that I will increase my effort tenfold during the coming year to open the channels of communication for discussion on these key issues. I ask only that you do the same, and that we continue working together to end the period of frustration which now surrounds all of us.

Thank you.

The Importance of Choice

By William H. Dresher

(The following is the first installment of a speech given by Dr. Dresher, Director of the Arizona Bureau of Mines, at the Western Conference of the Council of State Governments, held last July in Salt Lake City.—Ed. note.)

I am both pleased and honored to have the opportunity to address you men and women of the Western Conference of The Council of State Governments today. Thank you not only for the opportunity to discuss with you a subject which is of the utmost importance to all of us—the accessability of public lands for mineral and energy development—but also for the opportunity to once again visit this fine city. It was just twenty years ago last month that I left the campus up on the side of the mountains under the white "U"—the University of Utah—with my Ph.D. degree under my arm and a youthful will to make this world a little better place for all of us.

In my student days here, I was particularly impressed with the newly installed computer and microwave control system of Utah Power and Light Company which enabled a person, sitting at a control panel here, at the Salt Lake Office, to make the calculation of the least expensive source of energy—a hydroelectric plant on the Bear River in Cache Valley to the north, a coal-fired plant at Huntington to the south, or an oil and natural gas-fired plant here in Salt Lake City. The choice was made in a twinkling of an eye and the command message

was beamed directly to the automatic control panels of the far-flung generating stations. Without further benefit of a human hand instantly another source of energy was brought into action as the previous one was phased out. Oh, for that ability to make a choice again! Last year, Utah Power and Light's electrical energy came mostly from coal-89 percent of it. The hydropower capacity was long ago usurped such that last year it contributed but 8 percent to the power lines. Oil was expensive and natural gas was so intermittent that plants using them collectively contributed only 3 percent to power the wheels of Utah's growing industry and to the comfort of her residents. And that coal on which Utah is now so dependent has moved in cost from $4.70 per ton in 1971 to just twice that—$9.42 per ton in 1975! Utah, unfortunately, has lost her ability to choose her power source. Choice is no longer available here or elsewhere in our nation—America's options are fast running out. Our energy options are dimishing and our raw materials options are certain to follow. Today, the most important thing we face as a nation is how to meet our country's present and future energy and raw material requirements. We must find an effective and permanent solution to these problems and it must be done quickly. The title of the Energy Research and Development Authority's latest report to the President is, "Creating Energy Choices for the Future." This is our stated national goal for energy and it must become our goal for raw materials also. The preservation of our option for choice is all important and yet, it seems that through legislative and administrative processes, we in America are fast running out on our options for choice!

We live in an industrial society. That society has brought to all of us the things we know best, all of the things we enjoy and all of the things we rely on. Our economy depends upon it, our welfare and our security depend upon it. Hopes of maintaining an industrial society and the lifestyle which we have achieved depend above all on continual availability to obtain the energy and material goods which feed that society. We cannot divorce ourselves from these needs, for they are your needs and my needs. Last year, you and I, and all other Americans, used an average of 40,000 pounds each—20 tons—of raw materials—stone, sand, copper, iron, aluminum, titanium, and many others. We, you and I, used an amount of energy, in the form of oil, coal, natural gas and uranium, equivalent to the work output of 300 strong men—300 slaves, if you will, working for each of us night and day. Excessive you might say? Excessive perhaps, but nevertheless, these are the materials and the energy goods which are the foundation of our standard of living—yours and mine—the "quality of life" which we are all trying to protect. Further, it has been the wise use of these material and energy supplies that has given us Americans unprecedented prosperity and world leadership—two achievements which the rest of the world is striving for.

Unprecedented quantities of minerals and mineral fuels will be needed to feed our society next year and for many years to come. While the energy prophets can point to an inexhaustable supply of energy from the sun, which may be harnessed sometime in the future, there is no foreseeable extraterrestrial source of raw materials. Our land is the only source available to us now and in the future. Uncertainties with foreign sources have clearly indicated a need for caution in over-reliance on foreign nations for energy and material supplies. At the time of the October, 1973 Arab Oil embargo, our nation was dependent on the Middle East for but 17 percent of its petroleum needs and on foreign sources as a whole for 32 percent. Even with conservation, we now prophesy that by 1980 we will be dependent on foreign nations for 50 percent of our petroleum needs. Will it be said during this year of 1976, the year commemorating our bicentennial of freedom from foreign domination, that we are forecasting our loss of freedom? The 1973 embargo was a hardship. A future embargo or drastic economic action could be a national catastrophy!

Even under the best of circumstances to meet even a portion of our needs from domestic sources is truly a Herculean effort! Long lead times are needed to explore for and to develop our domestic resources. In some cases, whole new technologies have to be developed and in other cases substitutes have to be used as certain mineral commodities become no longer available in economic quantities from our lands. Large amounts of capital have to be raised, mines and mills designed and built, and equipment ordered. Do you know that today you can't just go in to a showroom and buy a mining truck, or a power shovel, or a drilling rig? Yes, they will take your order but in many cases, they cannot promise delivery for another three to five years! And, how much will it cost, you might ask your salesperson? "I can't tell you precisely how much the cost will be" he will respond; "you will be quoted at the time of delivery!" Detailed planning, long lead times and high risks are the climate in which today's mining or petroleum company operates. While most businessmen expect to return their investment in ten years or so, a new mining or petroleum operation won't even be seeing its first production in that time. Twelve to fourteen years is an average time for the total process of exploration, development and construction to take place on such operations. This is why so many of us are concerned. We are concerned, that in our hustle to provide ourselves with what we consider to be a quality lifestyle that we will inadvertently reduce our capability to supply ourselves with the very basics of that quality of life. We are concerned that those who seek change and those who are empowered to make change do not understand how the materials and energy system operates. And, that in their ignorance, our economic and productive system will be damaged beyond repair.

It goes without saying, I suppose, that the acquisition of mineral raw materials and fuels must be done without destroying the environment of the society that needs and uses them. To do so would certainly be counter-productive to that society. In recent years, we have seen the recognition and development of an increasingly complex variety of issues that relate to the need to preserve the precarious balance between material and energy requirements and other natural resources. We must certainly insure that our nation's air, land and water resources are used most effectively and for the benefit of the maximum number of people. All of us, I am sure, support fundamentally the broad objectives of environmentalists and conservationists. After all, it is our world too that they are seeking to protect. But unfortunately, it is clearly evident that their efforts to date are endangering the very existence of the quality of life they aspire to protect. And in some cases, their efforts in one direction countermand efforts in other directions of national import. By illustration, I cite the gross movement of power plants from the burning of coal to the burning of natural gas—a movement which enhanced our environmental goals but it greatly dislocated the nation's energy goals; likewise, we can cite the air pollution control devices on automobiles which greatly decreased the gasoline mileage of the automobile. Clearly, a balance is in order, but the facts must be known before a balance can be struck.

We are constantly told that we must find the best use of our public lands—uses that will benefit the maximum number of people—"multiple use" is the favorite phase today. Yet, how many of these areas are being parceled out for a singular use with no realistic assessment of the full value of these lands to society? I wonder if any of you have stopped to think of the value derived from mining operations on public lands? Not the profits to the mining companies, but the value to the American people—people like you and me. Let's take a look at the Bingham copper mine which lies just west of this city. Dr. Ernest Ohle, a well-known exploration geologist here in Salt Lake City, pointed out in his Presidential Address to the Society of Economic Geologists last year that the copper mine in Bingham Canyon, with perhaps 12 square miles of disturbed area—just 7,500 acres—each year provides copper equivalent to that used in all of the 11 million cars bought in the United States in 1973 or all of the houses built in America in the past five years! What greater value could 7,500 acres contribute to our society? On a dollars and cents basis, consider that one acre of a 0.6 percent porphyry copper deposit 300 feet thick contains metal, at 70 cents per pound, worth $9,100,000! It is hard to think of any metalliferous mineral deposit which doesn't contain metal worth at least $200,000 per acre! What other usage, be it timber, agricultural crops or recreation which even over decades can possibly match this value to society? Further, many of the materials derived from these lands are useful forever for they are recyclable! Don't misunderstand me, not all land is even eligible for the consideration of a mining venture. In all of the U.S. only a little over 3 million acres, or 0.16 percent of the total land area of the nation, have been so chosen since 1930. Quite obviously, these acres are very unique and special acres. And while mining must necessarily disturb these acres for at least some period of time, this disturbance is only temporary for 40 percent of the acres so disturbed have already been reclaimed for additional beneficial use.

Our Gangue.....

By Frank Larson, DGGS editor

Care to donate, anyone? Our mining-information girls, Pat Dieterich and Carole Stevenson, have a full complement of fingers, and of late they have been working them to the bone. These poor drones (No, not *crones*) have processed more new claims—8,107—in the past 3 months than were processed for the entire years of 1974 and 1975 (p. 3). So, next time you're in the College office and see them slaving away, their little digits a-blur, Give 'em a hand. Or even a finger....And say goodbye to Pat, who is taking another job with the state, and hello to Mildred Brown, who tired of the quiet life of early retirement and returned to DGGS (again). If in Anchorage, say hello to Jim Riehle (p. 4). He has one of the new faces, and one of the most easily discernible: Not only is it high off the ground, but it is ugly as Sin....Now then, to the news of what could very well be the last Our Gangue column: ..It is much safer to work in an Alaskan coal mine than one in the Lower-48, apparently. The national fatality and disabling-injury rates for coal mines is 0.23 and 37.35 hours per million, respectively, according to the Bureau of Mines. Alaska's rates for 1976 are 0.00 and 0.00. Congratulations, Joe...Maple Leaf Gold, Inc. acquired the assets of the Hitt-Rivers joint venture and is developing gold claims near Fairbanks. In addition to the claims at Moose Creek, the firm has leased 19 unpatented claims at Mascot Creek and another 30 claims on creeks near Purcell Mountain.....If you haven't heard, President Ford recently put his "X" on a bill banning mineral extraction in certain national parks. Among the areas to be closed to new claims are Mount McKinley National Park and Glacier Bay National Monument.....Dresser Industries plans to construct a new dock, storage area, and barite mill in Seward. The facility, which will serve Interior operations, the Cook Inlet, and the Gulf of Alaska, will include a 400- by 70-foot dock to accommodate vessels up to 250 feet long. Construction is to start next year.....And lastly, the Defense Department has listed 32 minerals as "strategic and essential." Thirty-one of those minerals are in Alaska in commercial quantities.....Look at it this way, Jim: Who says sin has to be ugly?.....Cheers

Metals Market

	Nov. 12, 1976	Three Months Ago	Year Ago
Antimony ore, stu equivalent European ore	$ 23.50-25.00	$ 22.75-24.25	$ 17.00-18.50
Barite (drilling mud grade per ton)	$ 19-28	$ 17-28	$ 17-28
Beryllium ore, stu	$ 42.00	$ 40-42	$ 30.00
Chrome ore per long ton (Transvaal)	$ 38-48	$ 38-46	$ 37-52
Copper per lb. (MW-prod.)	$ 0.70	$ 0.75	$ 0.63
Gold per oz.	$135.60	$109.35	$139.60
Lead per lb.	$ 0.256	$ 0.25	$ 0.19
Mercury per 76-lb. flask	$134.00	$108-112	$117.00
Molybdenum conc. per lb.	$ 3.20	$ 2.90	$ 2.62
Nickel per lb. (cathode)	$ 2.41	$ 2.20	$ 2.20
Platinum per oz.	$172.00	$170-190	$148.00
Silver, New York, per oz.	$ 4.47	$ 4.31	$ 4.10
Tin per lb.	$ 4.05	$ 4.05	$ 3.02
Titanium ore per ton (Ilmenite)	$ 55.00	$ 55.00	$ 55.00
Tungsten per unit (GSA domestic)	$115.08	$100.98	$ 77.96
Zinc per lb.	$ 0.37	$ 0.39	$ 0.39

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