STATE OF ALASKA
Department of Natural Resources
Division of Geological Survey
MINES BULLETIN

VOL. XXIII | JULY 1974 | NO. 6

P. O. Box 80007 | College, Alaska 99701

Published to Accelerate the Development of the Mining Industry in Alaska

William A. Egan - Governor | Charles F. Herbert - Commissioner

Donald C. Hartman - State Geologist

IN THIS ISSUE

FAIRBANKS MINING INFORMATION OFFICE HOURS TEMPORARILY SHORTENED

Visitor access to the Fairbanks Mining Information Office, located in the Physical Plant Building on the U. of A. campus, has been restricted to 10 a.m. to noon and 1 to 3 p.m. for the rest of the summer. This step was primarily caused by the huge backlog of unprocessed mining claims. (See article below.)

In another development, alert Mines Bulletin readers may have noticed the absence of our June issue. Because of a shortage in office personnel, we found it necessary to cancel the month of June. The Mines Bulletin staff sincerely hopes that this action did not unduly restrict any planned activities.

A SHORT INTERVIEW WITH A NICE LADY

Mrs. Mildred E. Brown is a mining-information specialist. She works in the College office of the Division of Geological & Geophysical Survey (us). She is pretty, stylish, and vivacious. (I secretly love her.)

STAFF: Halloo. Anybody over here?

BROWN: Eh? You'll have to shout louder, Sonny. Paper absorbs noise, you know.

STAFF: Ah, there you are---behind the shorter stack of uncaught-up-with mining claims. (After several ribald pleasantries, the interview begins.) Mildred, there are three more mining-information specialists that work for the State. Are all four jobs identical?

BROWN: Theirs are, for the most part. But I am the only one of the four who receives and processes mining documents---this includes new claims, assessments, deeds, prospecting sites, and so forth---from all 36 recording districts in the state. I plot all new claims on USGS quadrangle maps and then record them in a Kardex file. (I look at a wall of such files, awed.) This file includes all claims, active and expired, filed since 1953. The other three girls---in Juneau, Anchorage, and Ketchikan---do not process all this; that joy is mine alone. They do

receive and file copies of all the Kardexed mining documents, however. All have duplicates of all this (she points finger at bank of files and involuntarily shudders) except for Jerry Zartman, down in Ketchikan, who handles only the seven Southeastern quadrangles.

STAFF: That sounds like a lot of work all right. Still, I notice you're always the first one in in the morning and the last one out at night. Why is that?

BROWN: Simple eagerness. (Mrs. Brown seems to go into a coughing fit at this point. I pause.) Actually, I do other little things. Like answer personal inquiries, plus those by mail and phone.

STAFF: Ever get any strange requests?

BROWN: Well, one guy wanted a copy of all the mining claims in Alaska.

STAFF: Did he get them?

BROWN: No, but he sure got an answer.

STAFF: Yes, I notice you deal quite a bit with the public. When is your usual busy season?

BROWN: Mostly in the summer. We get troops of miners in from the Bush. Plus, of course, all the tourists who want to pan for gold by the side of the road. And, there are those I simply call "the others" since they defy description. Some of the people who come in here to research are real nice gentlemen, however. Plus, I get lots of "Dear Mrs. Brown" letters from fans all over the world. The latest is a running correspondence from a miner over in Bethel.---three letters last week. All in all, though, the job is lots of fun. (Mrs. Brown seems to have another one of those fits. I fear she may be smoking too much.) Yes, all in all, very interesting people.

STAFF: In the 5-1/2 years you've been here your job has made you into an Alaskan geographer of sorts. Did you like geography in school?

BROWN: No. Not at all. But now, if you ask for some remote spot, I may not be able to find it, but I'll give it a heck of a try.

STAFF: I see you do other things.

BROWN: Well, I also keep copies of old and unpublished Division reports---property examinations, miscellaneous mining reports, stuff like that. And I maintain a file of USGS open-file reports. I also update new claims information for the "Minfile;" this goes to Anchorage and is computerized, and the claims are subsequently categorized as "active" or "inactive." In my spare time (she has another strange seizure at this point), I type from rough drafts and from Dictabelt recording devices.

STAFF: You're taking a leave of absence this summer. Plan to stay home and play with the kids?

BROWN: Lord, no.

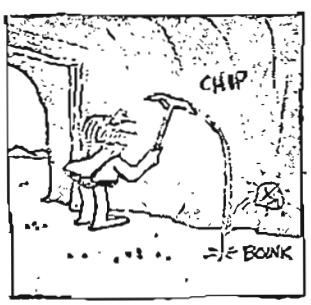
STAFF: Then why the leave of absence?

BROWN: We're expecting a very busy year. That's why I'm cutting out. I'm getting too old for this work and I want to leave the job to a younger, more vigorous girl like Carole Stevenson. No, really, I want to spend a summer in my garden, and sunbathing, and with my husband.

STAFF: Do you have any advice for Carole before you leave her to solo on all this paperwork?

BROWN: Hang in there, Baby.

B.C.



THE IMPORTANCE OF MINERAL DEPOSITS IN LAND PLANNING

by Ernest R. Artim
(from the Washington Geologic Newsletter)

The Colorado Open Mining Land Reclamation Act is the first state legislation that recognizes the problem of the loss of mineral resources. The act, which was effective July 1, 1973, requires that planning agencies and the governing bodies recognize and protect commercial mineral deposits in areas with a population greater than 65,000. By July 1974, the Colorado State Geological Survey will have completed an inventory of all recognized commercial mineral deposits. Planning commissions must then prepare master plans, which are subject to public hearings prior to approval, by July 1, 1974. Upon approval of the master plans, the governing body is then prohibited from any action or lack of action that would "permit the use of any area containing a commercial mineral deposit in a manner that would interfere with the present or future extraction of such deposit."

It might have been better to go beyond "commercial mineral deposits" and include any potential commercial minerals, construction minerals, or energy sources. A potential deposit is not economical at present; however, the deposit may become economical if the demand and market price increase.

The loss of minerals, including construction minerals and energy sources, is staggering. In California, the monetary losses amount to nearly $1/2 billion each year; Washington's estimated losses are $100 million each year.

A house can be relocated, a building lost in an earthquake can be rebuilt, a ship lost at sea can be replaced, or a forest destroyed by fire will grow again; but a mineral deposit cannot be relocated, rebuilt, replaced, nor will it grow again. Once lost to an uncorrectable land use, the deposits are truly lost.

Some of the counties in Washington, realizing the importance that minerals play in development, growth, and maintenance, have begun to delineate and evaluate potential mineral deposits for possible future use.

(Ed. note: Thanks is extended to Ernest N. Patty, former President of the University of Alaska and first Dean of the U. of A. School of Mines, for bringing this feature to our attention.)

ALASKA D-2 MINERALS TO BE LOCKED UP?

by Glenn Ritt, Griffin-Larrabbee News Bureau
(from Fairbanks Daily News-Miner, April 11, 1974)

WASHINGTON (NMS) - Alaska's commissioner of economic development, her voice rising to an angry pitch, says the federal government wants to "lock up" her state's mineral wealth and then "throw away the key."

Irene E. Ryan warned here recently that if the Interior Department succeeds in withdrawing 83.3 million acres of Alaska land - the majority for parks and refuges - the nation's mineral industry will be "crippled, if not completely eliminated" in 10 years.

Interior Secretary Rogers C.B. Morton is not quite as emotional. But, at a recent Senate Appropriations subcommittee hearing, he stated confidently that his department's D-2 proposal will "not curtail or lock up any substantial" part of Alaska's mineral wealth.

He told several senators that his department "did everything in our power" to exclude known mineral resources from national parks and refuges proposed under the controversial land plan.

Between those two poles is a giant question mark. Exactly who is right, and how is Congress - which ultimately must approve a land withdrawal plan - to know?

Moreover, how are the questions to be answered within five years - the time period Congress now has to act under the Alaska Native Claims Settlement Act?

Most of the information needed just doesn't exist now. Exploration of ore deposits in Alaska has been restricted by economics that require any deposit mined to be of generally higher value than one recovered in the smaller states.

However, as the U.S. Geologic Survey notes, foreign nationalization of U.S. interests, the threat of blackmail by foreign producers, the growing worldwide competition for minerals and resulting price rises, combine to make Alaska a potential mining hotbed.

Environmentalists fear that these world trends may manage to sweep their concerns for Alaska out of lawmakers' consciousness.

Moreover, Alaska's congressional delegation believes that the longer it takes Congress to come with grips with the D-2 land issue, the better it will be - since minerals will become increasingly more valuable and so will much of the 83 million acres.

The U.S. Geologic Survey, a part of the Interior Department, recently released a 70-page report, requested by Sen. Ted Stevens, highlighting a plan to study the mineral content of the 83 million acres proposed for federal withdrawal.

The USGS said it would cost $22.5 million over four years to get the necessary answer for Congress.

However, William A. Vogeley, acting deputy assistant secretary for Interior, said there has been no decision by his department or the all-important Office of Management and Budget (OMB) to request these funds at this time.

"Whether such requests will be made," he wrote Stevens, is dependent on what he called "overall fiscal consideration and future policy and priorities."

The USGS report did hint at what may lie below much of the 83 million acres, and in several instances, its guesses appear to run counter to the general assessment made by Morton at the Senate Appropriations panel.

"Assuming that the 83 million acres withdrawn contains the same relative abundance of minerals as the balance of Alaska, the potential loss in mineral productivity (by the withdrawals) over the next 100-125 years may be $30 to $40 billion," the report said.

The USGS noted that the potential for Alaskan mineral production can be estimated by comparing the 83 million acres to similar type areas in Canada and the western U.S.

It said that the average mineral production in the 11 Western states through 1970 totaled about $120,000 per square mile. "At today's prices the value probably would be closer to $300,000 per square mile," the report noted.

Even then, the USGS continued, the estimate of $300,000 per square mile for the 83 million acres "may be somewhat conservative" when considering that "several of the proposed withdrawals lie within known metallogenic belts highly favorable" for developing copper, gold, silver, molybenum, lead and zinc.

The survey did acknowledge, however, that its initial evaluation is "the type of analysis done (only) during the first phase" of mineral resource study and much still must be done to verify its apparently rosy first impression.

Below are excerpts from the USGS's lengthy analysis:

-Gates of the Arctic National Park: $4.4 million needed for mineral surveying; southcentral Brooks Range has a "high potential" for copper, lead, zinc, silver, gold and antimony; low potentials for the northern Arctic foothills, southern Arctic foothills and northcentral Brooks Range.

-Kobuk Valley National Monument: $1.6 million needed for surveying; "high potential" for copper, lead, zinc and gold.

-Cape Krusenstern National Monument: $170,000 needed for mineral surveying; "some potential" for copper; borders a "possible petroleum province of moderate potential."

-Aniakchak Caldera National Monument: $308,000 needed for surveying; generally "there is very little information available to adequately evaluate the mineral resource potential"; indications of potential petroleum and geothermal resources; deposits of

gold, silver, copper and zinc may occur.

-Katmai National Park: $1 million needed; known geothermal potential associated with numerous active or recently active volcanoes; "high potential" for metallic and nonmetallic mineral resources.

-Harding Icefield-Kenai Fjords National Monument: $355,000 needed; fuel resources "considered low"; only "moderate" potential for metallic minerals.

-Lake Clark National Park: $1.15 million needed; no coal; possibility of oil; "long range" geothermal potential; "northern part of the proposal...is one of the most highly mineralized areas in the southern Alaska range."

-Mount McKinley National Park additions: $1.4 million needed; low potential for cost; none for geothermal use; "the silver and antimony potentials of this district (northern addition) are probably the highest in the state."

-Wrangell-St. Elias National Park: $1.4 million needed; coal potential "low"; petroleum potential poor; cites presence of copper, gold, silver, molybednum, nickel, platinum, antimony.

-Chukchi-Imruk National Reserve: $520,000 needed; limited amounts of coal; "offshore petroleum potential is considered large"; nothing exceptional regarding metals.

-Yukon Flats National Wildlife Refuge: $1.3 million needed; "moderate" potential for gold-antimony.

-Arctic National Wildlife Refuge additions: limited to no fuel resources; granite may indicate high mineral potential in eastern addition; in west, there could be a continuation of the southern Brooks Range copper belt.

-Koyukuk National Wildlife Refuge: $480,000 needed; no knowledge on fuel resources; no mineral deposits reported.

-Selawik National Wildlife Refuge: $305,000 needed; low fuel potential; low mineral potential in north and central parts; uplands along southern edge appear to have moderate to high mineral potentials.

-Coastal National Wildlife Refuges: fuel potential unknown; some potential for placer-gold and possibly silver, quicksilver and tungsten; $10,000 needed.

-Yukon Delta National Wildlife Refuge: $1.1 million needed; little chance of oil or coal; little chance of high mineral content.

-Togiak National Wildlife Refuge: $618,000 needed; little likelihood of mineable coal; may be some petroleum offshore; the proposed refuge is in a metal province containing known and potential deposits of mercury, antimony, gold, platinum, palladium, copper and silver.

-Noatak National Arctic Range: $1.4 million needed; fuel potential "low;" potential for copper and related minerals "high."

-Iliamna National Resource Range: $550,000 needed; no proven energy resources; may be small deposits of gold, silver, copper and iron.

SENATE APPROVES RIGHT OF PRIVATE OWNERSHIP OF GOLD

(from The Mining Record, June 5, 1974)

WASHINGTON - Prodded by Sen. Peter H. Dominick, R-Colo., the Senate last week once again voted for the right of private citizens to own gold.

The proposal, sponsored by Dominick and Sen. James Mclure, R-Idaho, was adopted by voice vote as an amendment to a bill increasing U.S. participation in the International Development Association.

If approved by the House and signed into law, the amendment would allow citizens to own gold beginning Sept. 1. However, the proposal faces opposition in the House Banking Committee and the White House.

Last year the Senate voted 68-23 to allow the private ownership of gold by Dec. 31, 1973. But the House substituted language which left up to the President when gold ownership should go into effect.

President Nixon hasn't indicated a willingness to order the legalization of gold ownership, despite a 1972 GOP platform call to restore private ownership of the metal "as soon as feasible."

Treasury officials and the Federal Reserve Board fear private ownership would result in a disruptive surge in gold prices in foreign markets and hurt the U.S. balance of payments.

Americans were prohibited from owning gold in 1934, when President Franklin Roosevelt and his New Deal advisers felt it would hamper the government's effort to control the money supply.

Dominick views Roosevelt's action as "clearly an expropriation of private property." He also notes that since 1934 several legal links between gold and the dollar have been eliminated and that the treasury stopped backing the dollar's international value with gold in 1971.

In addition to the libertarian argument against government restrictions on private ownership, Dominick and Mclure think their proposal could spur gold production in the West by increasing the demand and price of the metal.

The probable increase in the price of gold is why the proposal is strongly opposed by jewelry manufacturers, who along with artists buy some four million ounces of private gold annually through the treasury department's official licensing system.

MINES BULLETIN SCOOPS 'POST'

The Mines Bulletin, in continuing its ever-present policy of timely journalism, scooped yet another plum from its arch-rival publication, the Washington Post.* Informed sources relate that the prestigious eastern publication has not yet announced the birth of 7-lb, 3-oz. Ernest Nolan Austin, son of Mr. and Mrs. Jerry Austin, of Fairbanks.

Little Ernie is the first child of Sue Austin, former DGGS typist. Said Sue of her May 2 effort, "Now I can get back in shape for spring planting."

*Woodward and Bernstein, eat your hearts out.

THE SMALL MINER - THE ASSAYER'S LAB

by Arden L. Larson, President, Multi Metals Inc.
(from The Mining Record, October 17, 1973)

Most of you small miners have never been behind the scenes of your assayer. I thought perhaps you guys would like to know what happens to your samples when you take them in for assay. Perhaps some of this information will be of use in evaluating your assayer or in evaluating your method of sampling.

After taking your sample in the field, you walk through the front door of your assayer. There you are greeted by a pretty young lady or a crusty old assayer who wants to know what you want. You tell them that you want your sample assayed for whatever you want. You leave your name and address where to send the result and bill and that is the last you ever see of your sample. Eventually you receive a letter from your assayer telling you the values of your samples and the values that you owe him. Seems very simple, doesn't it? It isn't that easy.

After you leave your sample with the pretty young lady or the other guy, your sample is carefully recorded as to your number, the elements to be analysed, the lab number and any other pertinent facts. The lab number is assigned by the assayer in order to keep his records straight and report the right values for the right sample. Imagine how difficult it would be to use each different miners' numbers for the lab number. What would happen if two miners used the same number? That is why the lab has its own numbering system.

After your sample is thus logged in, it is dried if necessary, then crushed, split, and pulverized. This is called sample preparation and is the place where a great deal of care must be taken. The equipment must be cleaned between each sample prepared to avoid getting a few grains or pieces of one sample in the next one. The sample is crushed to minus one half inch size in order to split out a small sample that is representative of the entire sample that you brought in. A sample splitter is nothing more than a set of tiny chutes, every other one of them facing the same direction. The sample is poured on top of these chutes and half of it goes one way while the other half goes the other. If a sample contains a few particles of high value and many particles of waste, it is very difficult to get an equal number of the high value particles in each half. Fortunately, such splitting errors are few and far between for most types of samples. However, if the sample is to be assayed for molybdenum, it should be crushed quite fine before splitting, as the splitting errors with this metal is sometimes quite significant.

After your sample is split to about 100 grams in weight (four ounces), it is pulverized. There are two basic types of pulverizers used, a disc pulverizer and a shatter-box type. The disc pulverizer is nothing more than two plates, one stationary and the other turning. These plates grind the sample between them, the fineness of the sample being determined by the spacing between the plates. The shatter-box type of pulverizer consists of a bowl-like chamber with a hockey puck-like disc inside. This chamber is on an eccentric shaft which causes the puck to slide between the walls of the chamber rather rapidly. The longer that your sample is left in the chamber, the finer it is ground. Of the two types of pulverizers, the shatter-box type produces a better product with no large particles. The disc pulverizer has a tendency to produce a wide variety of sizes in passing the sample through it.

This may not seem important to you now, but it soon will. The next step is to take your pulverized sample, called a pulp, and weigh out the sample for assay. The pulp is supposed to be a thorough mixture of particles, each little bit representing your entire sample. Thus, a coarse particle of value could significantly influence the value of the assay because the assayer uses only a very small amount. This amount will range from fifteen grams for fire assay (about a half ounce) to as low as ten milligrams for some assays (a small pinch!). The significance of one grain of value in a pinch of sample is tremendous. To check your assayer on his sample preparation, take a bit of your pulp as supplied by your assayer and rub it between your fingers. If the pulp feels gritty, it isn't ground fine enough.

Thus, the real problem in assaying is to reduce the sample brought in the door by you to the point where a tiny bit of pulp accurately represents the values that are in your sample. The reason for doing this is to keep the cost of the chemicals necessary for assaying as well as time and handling at a minimum. Thus the assayer can keep the cost of his work down.

After the sample is prepared, it is weighed by very accurate scales. This is a place for error as one small change in a weigher's technique can alter the sample results quite significantly. After weighing, the sample is analyzed by one of several different techniques: fire assay, wet chemical assay, spectrographic analysis, or atomic absorption. These techniques are all sensitive to error by the assayer but not nearly as important as the preparation of the sample.

A good assayer will run checks on his work and will report his checks to you if you ask him. A wise miner will send in duplicate samples to check the accuracy of his assayer! Unfortunately, it is difficult for the miner to send in two identical samples, thus the checks will always vary a little bit.

Because the major problem in getting a reliable assay is reducing the sample down to a small size of representative material, I maintain that the job of reducing it down to size begins with the sampler. When you realize that a small pinch of material is all that will be assayed, it really makes you aware of the importance of sampling your material properly. After all, the quality of an assay can be no better than the quality of the sample. Many times an assayer will either make a mistake or get lax in his work because he does not realize the importance placed upon his results by his

client. More often, the client places the blame on the assayer for a bum sample when it is his own fault for not taking the care to make his sample mean something.

In an earlier article on sampling, I described a five-gallon bucket technique for sampling a dump. My sample of this dump was over twenty-five hundred pounds representing six thousand tons of material. I then ground this sample in my rod mill and sampled the sample in order to send in a smaller amount. I sent approximately one hundred grams in for assay where they went through the above procedure. The result that I received from this sampling encouraged me to lease the property and begin milling it. The results of the initial milling of this material virtually duplicated the initial sample. Thus, it is possible to reduce six thousand tons of ore down to one pinch of dust and have it be representative; however that problem begins with the sampler.

I have had some people tell me that since the assayer only needs four ounces of rock, they pick up only four ounces for a sample to send to them. That is obviously not the best method of sampling, is it? No matter how hard the assayer tried, his results still represent only four ounces of ore. The point is, make your samples mean something. It doesn't do you any good at all to pay for an assay that doesn't represent anything. As for you assayers, make sure that your work is reliable. Some of us small miners spend much time and money on the results of only a few well chosen samples.

I wish that all of you assayers were like one fellow that assayed a mill run of mine. His results came out with my tails from the mill higher grade than my heads. Well, that didn't seem right to him or me so he checked and rechecked his work. Still he came up with the same answer, so he stuck by it. After he was so persistent in his work, I checked my sampling and sure enough, I had taken my sample of the mill tails in a pan that had some babbit in it. Thus I had contaminated my own sample accidentally with lead. I told you guys that I'm not perfect!

Before I close this article on assaying I would like to report that at least one assayer is doing something special for the small miner; they are looking for a microchemist, about two feet high. So if we should see a microchemist working for our assayer, let us hope that he makes only small errors, expects small change, and reports the very largest of values for the small miner!

ALASKAN NEW BIBLIOGRAPHICAL ENTRIES FROM GEOLOGICAL SOCIETY OF AMERICA

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METALS MARKET

	June 21, 1974	Two Months Ago	Year Ago
Antimony ore, stu equivalent European ore	$30.5-31.5	$23.5-22.5	$13.40-14.00
Barite (drilling mud grade per ton)	$17.00-21.00	$17-21	$18-22
Beryllium ore stu.	$30.00	$30.00	--
Chrome ore per long ton	$37.00	$37.00	$24-27
Copper per lb. (MW-prod.)	85.97¢	68.57¢	60¢
Gold per oz.	$154.72	$169.30	$123.55
Lead per lb.	24.0¢	21.5¢	16.5¢
Mercury per 76# flask	$340.00	$283.00	$261.00
Molybdenum conc. per lb.	$1.87	$1.87	$1.72
Nickel per lb.	$1.62	$1.62	$1.53
Platinum per oz.	$195.00	$245.00	$150.00
Silver, New York, per oz.	480¢	550.0¢	269.5¢
Tin per lb.	460.75¢	467.00¢	218.75¢
Titanium ore per ton (Ilmenite)	$38.00	$38.00	$22-24
Tungsten per unit	$96.39	$57.52	$55.00
Zinc per lb.	34.76¢	34.82¢	20.25¢

State of Alaska
Department of Natural Resources
Division of Geological & Geophysical Surveys
P.O. Box 80007
College, Alaska 99701

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