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

VOL. XXIII | April 1974 | No. 4

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

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IN THIS ISSUE

SEARCH FOR URANIUM RENEWED

by
Gilbert R. Eakins, DGGS Geologist

Uranium exploration is again "in". A uranium crisis is forecast, and it may be timely to remind Alaskan prospectors and exploration parties to be alert for evidence that could aid in locating uranium deposits.

We are all aware of the energy crunch and of the efforts to develop oil shale and to expand the use of coal, but help for the near future lies in nuclear-powered electrical generating plants. Forty-two nuclear power plants are operational in the United States, 56 are under construction, and 101 have been ordered. Nuclear power is presently supplying 4 percent of the country's electricity; by the year 2000, it will supply about 60 percent.

Historically, the interest in uranium exploration has been gauged by the number of feet drilled annually in search of new reserves. Since late in the 1940's over 750,000 holes have been drilled, totaling about 195 million feet (AEC, 1973, p. 8). The biggest single year was 1969, when almost 30 million feet were drilled.

After an initial uranium rush in the late 1940's and another in the late 1960's (with an intervening slump due to both oversupply and lack of Government support), the search is on again, more seriously than ever before. In the past few years, delays in the construction of nuclear power plants have resulted in a temporary oversupply of uranium ore. However, the stockpile will dwindle rapidly, and the supply requirement for fueling nuclear plants in the next decade will soar. This situation is not limited solely to the United States.

The Atomic Energy Commission (1973, p. 2) states "A large expansion of uranium exploration and production facilities involving substantial capital investment will

be needed." "Substantial," according to Williams (1973), means between $3 and $4 billion. It is predicted that the present reserves of $10/lb uranium ore will be exhausted by the mid-1980's. Although breeder reactors (nuclear plants that generate new fuel in the form of plutonium during their operation) are expected to reduce the demand for uranium, the AEC predicts that the annual probable uranium requirements will increase from 18,000 tons U_3O_8 in 1975 to 120,000 tons in 1990 and 150,000 tons in 2000. In other words, resources must be expanded 6.6 times the present level by the year 2000. (The current lag time between initial discovery of a uranium field and full production, allowing for plant construction and pilot tests, is generally 8 years.)

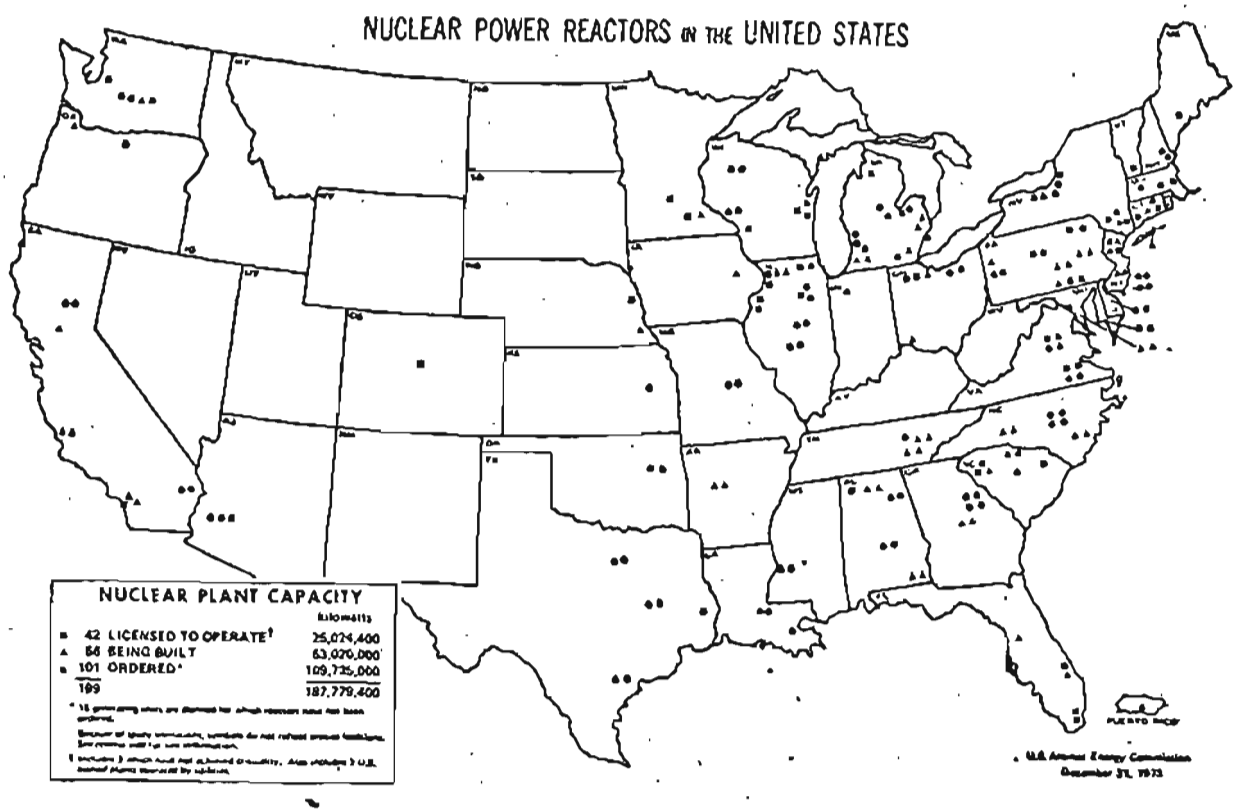
The recent price of uranium has been a little over $6/lb U_3O_8, but future reserves are calculated at a cost of $10 to $15/lb, and there is no way of predicting what price it may eventually reach.

Many books and articles have been published to aid the uranium prospector in choosing the most geologically favorable areas, and new data and discoveries are still being reported that open up new possibilities. Even so, the Alaskan uranium prospector will encounter problems that have been largely ignored by the writers: the effects of an arctic climate; permafrost; tectonically unstable regions and deformed strata; and the leaching of outcrops in humid environments.

Over 99 percent of the known U.S. uranium reserves are in sedimentary rocks, principally in either Mesozoic sandstones such as those in the Colorado Plateau region or in the Tertiary Sediments as in the Texas Gulf coastal area and the intermontane basins of Wyoming. Most exploration is directed toward this type of deposit. Favorable host rocks are arkosic and tuffaceous sandstones of nonmarine origin. One of the reductants---carbonaceous material, pyrite, or H_2S---are critical for the precipitation of uranium from the water carrying uranium in solution through the sandstones. Granitic rocks and tuffaceous beds within the present or past drainage area are believed to be the source of the uranium.

Situations like this exist in Alaska, but they present special problems. Drilling in some areas will be handicapped by large regions of swamp and muskeg. Also, there is an almost complete lack of drill holes and data on the interior basins. However, enterprising explorers, using radiometric and geochemical methods, are expected to change this situation.

The other class of uranium deposits is the vein type. Formed by hydrothermal mineralizing fluids, veins are associated with high- and medium-temperature deposits,



which frequently carry copper, silver, cobalt, tin, and other metals. Acidic (light-colored) granitic rocks are the most favorable environment for these deposits. The geology of many ore districts and the intrusive rocks in Alaska are suitable for vein-type uranium deposits. The Ross Adams mine at Bokan Mountain on Prince of Wales Island has produced high-grade uranium, and showings have been found at numerous other locations (see Eakins, 1969). A third major source of uranium is the quartz conglomerates of Precambrian age in Canada and Africa. This class of deposit has not been found in the United States and the chances for locating one in Alaska appear less likely than for the other types, but it should be kept in mind.

The U.S. Geological Survey, on behalf of the Atomic Energy Commission, had a uranium program in Alaska during the first uranium boom. This consisted largely of sampling the heavy fractions of stream and placer deposits for radioactive minerals and testing many of the existing mines. The results of this program have been published by the U.S. Geological Survey and the A.E.C. The Alaska State Division of Geological and Geophysical Surveys has published three reports since 1969 on uranium studies in Alaska and currently has a contract with the AEC to make a statewide study of Alaska's uranium potential.

Exploration companies are again eyeing Alaska's uranium possibilities and some expect to do exploration work this season. Others have plans for incorporating uranium exploration into their field programs for other metals; the additional cost to a conventional program is relatively small, and the benefits may be large. It has been shown that radioactivity can be a guide to other types of ore deposits besides uranium or thorium.

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GOLD $200? SILVER $10?

(from The Mining Record, March 6, 1974)

Noting that half of all the gold mined in the history of the world is held in central banks because it is recognized as the only pure money, C.V. Myers said in his latest advisory letter that there is not a scrap of common sense to support the continuing restrictions on the use of gold. A realistic price for gold would be about $200 an ounce and the price for silver can be expected to appreciate at least to a 20-to-1 ratio with gold, or $10 an ounce. Myers further predicted rebuilding of the U.S. Navy to keep up with the Russians will require scores of millions of ounces of silver - more than our government has left, says Mining Hi-Lites.

E. George Schaefer's latest market letter noted that both gold and silver established new highs last week and concluded with "There is no fever like gold and silver fever and we haven't seen anything yet."

Richard Russell in his "Dow Theory Letters" says, "Right now 99 per cent of America does not know a thing about gold. But the tide is large and it is coming in, spurred on by the furies of ignorance and inflation."

STREAKERS SIGHTED IN BUSH!

"Streaking," or the current fad of running around wearing nought but what you were born with, has penetrated the Far North. Reliable sources have informed the Mines Bulletin editorial staff of three streakers seen near Talkeetna. The streakers were sighted as they emerged from the woods and ran across (continued on back page)

HELP!

Regretfully, we at the Mines Bulletin are running out of Small Miner articles to reprint. These have been immensely popular with our readers, and we have gotten a good response from them. There is a ray of hope, however. We recently heard from the Small Miner himself, Arden Larson, and he expressed an interest in the Mines Bulletin reader: he wants to hear from you, and he wants to know what subjects you want him to write about. His address is: Arden Larson, President, Multi-Metals, Inc., Ilse Route, Canon City, Colorado 81212. Tell him what your interests are. Tell him your problems. Ask him any questions you may have. So don't hesitate to contact him. (But if you put the touch on him, don't tell him where you got the address.)

THE SMALL MINER---THE MINING LEASE

by Arden L. Larson, Multi-Metals, Inc.
(Reprinted from The Mining Record, Sept. 26, 1973)

I have been asked by quite a few of you small miners just what is a good lease or a standard royalty. I can not really answer that in a couple of words. As each person is unique, so is each mine. There are no two circumstances exactly alike. I will outline a lease for you and discuss various points as I go along.

The foremost requirement of any lease that I am involved in is that it is fair. Both sides must agree to all points and above all, they must understand the other guy's reason for wanting his special requirements. A lease is sort of like a marriage, you share the good and the bad equally. You all know that a mining operation is no bed of roses, so write your lease to reflect that feeling. Also we all know how profitable a high-grade mine can be, so write the lease so the owner can share in the good fortune of Mother Nature.

A lease usually starts out by telling you when it is effective, who the parties involved are, their addresses and then it is basically a list of what each party is going to do. This list is conveniently divided into the lessee and lessor side.

The lessor side of the list is rather short as they are generally the inactive party. Basically the lessor guarantees that he is the legal owner of the property and that it is free and clear of all liens, encumbrances, leases, and claims of all third parties.

The list of things for the lessee to do is often rather long but necessary. First might be a promise to work the property in a good and miner-like manner in order to remove the greatest amount of ore with due regard to preservation of the property as a workable mine. This is only for the protection of the mine, after all if some mines had been worked properly in the past, they would still be producing and not lost to our natural resource cause.

The second item for the lessee is quite popular among certain people but has been in many leases before the newspapers ever heard of pollution. It is basically a promise to do your best not to unnecessarily destroy or damage your environment. My leases contain the following paragraph: Lessee agrees to take such reasonable steps as may be needed to prevent operations from unnecessarily: (a) causing or contributing to soil erosion or damaging any forage and timber growth thereon by fire or otherwise (b) polluting the waters of reservoirs, springs, streams, or wells (c) damaging crops, including forage timber, or improvements of a surface owner, and upon conclusion of operations, so far as can be reasonably done, to restore the surface to its former condition.

With all of the arm-waving, speech-making, etc. by some of our so-called environmentalists, isn't that requirement as far as it can be? We must live in harmony with our environment. I am as much or more so an environmentalist as some of these guys and so are you. We are also much more practical, we live in this environment. We must make our living from it, I believe that we know how to

take care of it. Let's do it.

The next requirement of the lessee would be a royalty payment. Some leases call for a minimum royalty or advance royalty. Generally I am against this for the small miner, unless there is absolute proof of ore and thus a profit. I would rather guarantee a minimum amount of work as this helps the property and that is our whole objective. My royalty schedules are complicated but quite fair. I do not use a fixed royalty very often. It is not quite fair to the parties involved.

Instead, I prefer a sliding scale royalty composed of three parts. First is a guaranteed minimum percentage of net smelter returns. I use five per cent as a standard. Then I have two additional royalties, one based upon the grade of the ore, and the second based upon the price of the principal metal involved. It is tedious to work out a royalty schedule like this as first you must work out the economics of numerous cases. Let's assume that you have a silver mine or want to lease one. You first have sampled the mine so you have some idea of ore grade and are assuming that you can mine this grade at the current price. Thus, work through your figures and see what happens if the price increases fifty cents per ounce. Maybe you can afford to pay an additional royalty of one per cent for each increase of ten cents per ounce above your base price. Then work through the figures to see what happens if the grade should increase, maybe you can afford another one per cent royalty increase for each five ounces above your average. Thus your final royalty would be determined by adding up the three components, the minimum the price factor, and the grade factor.

I believe that this kind of approach to leasing would enable a mine a better chance to get off of the ground. It enables the miner to get into the mine on a lower royalty than might otherwise be negotiated. If the miner has the good breaks, the owner shares in them. It would not be unreasonable to turn the tables and suspend all royalties during periods of low grade or low prices. If not suspend the royalties, reduce them. We must fully utilize our natural resources, to allow a mine to close because of temporary low prices is an unforgivable sin. Too often the cost of going back into that mine is prohibitive and thus we have lost that resource.

The rest of the lease is mostly good common business practice. The lessee has the right to install machinery or to remove it upon termination of lease. The lessee shall assume all responsibility for taxes, insurance, and the like. I include a clause to pay for the legal defense of the mine owner should he be sued for something that I do. The lessee shall pay for all work done by others such as labor and materials. Lessee agrees to keep accurate books of accounts to show ore mined, grade and origin.

I include a clause in my leases to allow for a renegotiation of anything should it it be desired. This allows both parties to be flexible should conditions change radically. I also include an option to renew clause as the lessee must be protected should he make a mine out of the property.

The final paragraph in my leases concerns the continuation of the lease should someone die or sell the lease or assign the lease to a corporation. There are too many good properties tied up in litigation. Had these mines been properly leased and the lessee protected, the royalties could be paid into an escrow account for the heirs to fight over. Thus the mine could have continued its existence, its resources utilized.

Basically a good lease involves good common sense. It can be drawn up by two average people without the aid of a lawyer. However, it may be advisable to have an attorney to write the whole lease. I would be most willing to send any of you small miners a copy of one of my leases for an example. My address is: Arden L. Larson, President, Multi-Metals, Inc., Ilse Route, Canon City, Colorado 81212.

"THE STATUS OF MINING CLAIMS LOCATED ON NATIVE LANDS"--AN EXCERPT

by John W. Katz, Co-Counsel,
Joint Federal-State Land Use Planning Commission for Alaska

(Ed. note: The following is an excerpt from the 9-page Information Circular 19 of the same title, which is available on request from any DGGS office; the IC could not be reprinted in its entirety because of space limitations.)

Statutory Basis

The status of unpatented mining claims located on lands subsequently conveyed to Native village and regional corporations pursuant to the Alaska Native Claims Settlement Act (Public Law 92-203, 85 Stat. 688) is governed by Section 22(c) of this legislation. Section 22(c) provides:

> On any lands conveyed to Village and Regional Corporations, any person who prior to August 31, 1971, initiated a valid mining claim or location under the general mining laws and recorded notice of said location with the appropriate State or local office shall be protected in his possessory rights, if all requirements of the general mining laws are complied with, for a period of five years and may, if all requirements of the general mining laws are complied with, proceed to patent.

Implementing Regulations

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Section 2650.3-2 Mining claims.

(a) Possessory rights.--Pursuant to section 22(c) of the act, on any lands to be conveyed to village or regional corporations, any person who prior to August 31, 1971, initiated a valid mining claim or location, including millsites, under the general mining laws and recorded notice thereof with the appropriate State or local office, shall not be challenged by the United States as to his possessory rights, if all requirements of the general mining laws are met. However, the validity of any claim may be challenged by the United States or by the grantee or his successor in interest at any time.

(b) Patent requirements met.--An acceptable mineral patent application must be filed with the appropriate Bureau of Land Management office not later than December 18, 1976, on lands conveyed to village or regional corporations.

(1) Upon a showing that a mineral survey cannot be completed by December 18, 1976, the filing of an application for a mineral survey, which states on its face that it was filed for the purpose of proceeding to patent, will constitute an acceptable mineral patent application, provided all applicable requirements under the general mining laws have been met.

(2) The failure of an applicant to prosecute diligently his application for mineral patent to completion will result in the loss of benefits afforded by section 22(c) of the act.

(3) The appropriate office of the Bureau of Land Management shall give notice of the filing of an application under this section to the village or regional corporation which has selection rights in the land covered by the application.

(c) Patent requirements not met.--Any mineral patent application filed after December 18, 1976, on land conveyed to any village or regional corporation pursuant to this act, will be rejected for lack of departmental jurisdiction. After that date, patent applications may continue to be filed on land not conveyed to village or regional corporations until such land is conveyed.

Other Directly Relevant Regulations

The following regulations, while not germane to the interpretation of Section 22(c) of the Settlement Act, provide additional information which should be of interest to persons holding mining claims located on lands which are available for possible Native selection.

Section 2650.7 Publication.

In order to determine whether there are any adverse claimants to the land, the applicant (Native corporation) should publish notice of his (selection) application. If the applicant decides to avail himself of the privilege of publishing a notice to all adverse claimants and requests it, the authorized officer will prepare a notice for publication. The publication will be in accordance with the following procedure: (a) The applicant will have the notice published allowing all persons claiming the land adversely to file in the appropriate land office their objections to the issuance of any conveyance....(c) Any adverse claimant must serve on the applicant a copy of his objections and furnish evidence of service thereof to the appropriate land office.

Section 2651.4(e)

Village or regional corporations are not required to select lands within an unpatented mining claim or millsite. Unpatented mining claims and millsites shall be deemed to be selected, unless they are excluded from the selection by metes and bounds or other suitable description and there is attached to the selection application a copy of the notice of location and any amendments thereto. If the village or regional corporation selection omits lands within an unpatented mining claim or millsite, this will not be construed as violating the requirements for compactness and contiguity. If, during the selection period, the excepted mining claims or millsites are declared invalid, or under the State of Alaska mining laws are determined to be abandoned, the selection will no longer be considered as compact and contiguous. The corporation shall be required to amend the selection, upon notice from the authorized office of the Bureau of Land Management, to include the lands formerly included in the mining claim or millsite. If a corporation fails to amend its selection to include such lands, the selection may be rejected.

Discussion

The language of Section 22(c) has posed certain interpretive problems since its enactment.

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The special privileges of the Section 22(c) inure to the benefit of mining claimants who have made a valid discovery of a valuable mineral deposit and who have recorded notice of their location on or before August 31, 1971. These mining claimants may continue in their possession for a period of 5 years

> commencing December 18, 1971, and ending December 18, 1976, if they comply with all the requirements of the mining laws. This means, in effect, that the mining claimants must do their annual assessment work. The claimants will not be disturbed in their possession by the United States for failure to have performed assessment work prior to December 18, 1971, but individuals asserting the benefit of this act may be challenged on the basis of not having initiated a valid mining claim or not having properly recorded a notice of their location. (Emphasis supplied.)

Thus, Section 22(c) is, in essence, a "forgiveness" clause in that it allowed claimants who made a valid discovery and recorded notice of their location on or before August 31, 1971 to reactivate claims otherwise subject to challenge for failure to comply with the assessment work requirement.

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Access Rights Across Native Lands

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At the outset, it should be noted that Section 17(b) (2) of the Act protects pre-existing rights of access:

> ...Provided, That any valid existing right recognized by this Act shall continue to have whatever right of access as is now provided for under existing law...

Thus, mining claimants must look to existing law to ascertain whether antecedent access rights have been created. One of the most important sources of such law is 43 U.S.C. § 923, which has been construed to constitute a Federal grant to the public rights-of-way for highway purposes where prior public use has been sufficient to establish a highway under State law or where the grant has been accepted by a positive act on the part of the appropriate governmental authorities. See Hamerly v Denton 359 P. 2 d 121 (Alaska, 1961). [In the recent case of United States v Dunn (No. 24,380, March 23, 1973), the Ninth Circuit Court of Appeals, apparently contradicting a long line of precedents, stated in a footnote that this provision does not authorize the present construction of highways across public lands but merely validates road use which existed at the date of the law's enactment in 1866. The future effect of this decision is not yet known]. Pursuant to this provision, many public rights-of-way have been created in mineralized areas, and by virtue of legislative action, certain section-line easements have been reserved for public use. (The scope and effect of the Legislature's acceptance of certain section-line easements, especially on unsurveyed lands, has yet to be completely settled.)

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In situtations where none of the sources of law previously referred to are deemed applicable, a mining claimant whose holdings are completely surrounded by Native owned lands will have the opportunity to obtain access through mechanisms provided in State law. Thus, both the Constitution of the State of Alaska (Article viii, Section 18) and the Alaska Statutes (Section 09.55.240) provide that proceedings in eminent domain may be instituted to obtain private ways of necessity essential for access to areas used for resource extraction.

State Selected and Tenatively Approved Lands

Under the Settlement Act, Native village corporations (but not regional corporations) are entitled to select up to three townships of State selected and tentatively approved lands if such lands fall within the 25 townships withdrawn around villages pursuant to Sections 11(a) (1) and (2). Because much of the land previously selected by or tentatively approved to the State has been open to mining activity under State law, and because this law differs in certain important respects from its Federal counterpart, some of the principles discussed in previous sections will not necessarily apply to mineral-related interests previously created pursuant to State law.

While most issues regarding State mining law are beyond the scope of this article, the following general information is provided. Section 6(g) of the Alaska Statehood Act specifically authorizes the State to execute conditional leases and to make conditional sales on tentatively approved lands. In turn, Section 14(g) of the Settlement Act mandates the protection of leases, including those issued pursuant to Section 6(g), contracts, permits, rights-of-way and certain other interests created on lands subsequently conveyed to Native corporations. The type of protection which is afforded to leases issued under Section 6(g) is indicated in the following excerpt from Section 14(g):

> ...a lease issued under Section 6(g) of the Alaska Statehood Act shall be treated for all purposes as though the patent has been issued to the State.

Implementing Section 14(g), Section 2650.4-3 of the regulations states that the State of Alaska will continue to administer leases, contracts, permits, rights-of-way, and easements after the conveyance of subject lands unless the responsible agency waives jurisdiction. However, pursuant to Section 2650.4-2, the appropriate Native corporation will become entitled to any benefits which now flow to the State from the interests just mentioned.

Conclusion

This article has dealt with certain questions arising out of the implementation of Section 22(c) of the Settlement Act. Space limitations have prevented an exhaustive discussion of these questions, and certain problems of lesser significance have not been discussed at all. Because of this, and because only the Department of the Interior, which administers the Settlement Act and the Federal mining laws, can provide definitive answers, persons confronted with the types of problems discussed above should make appropriate inquiries and take other steps to protect the interests which they assert. This is really the central message of this article. That is, mining claimants should not sit on their rights until it is too late to take constructive action. Rather, using the comparatively simple and inexpensive mechanisms now available, they should begin working with government agencies and Native corporations in an effort to find acceptable solutions.

HAVE YOU HEARD THIS ONE?

As Moses was laboring in bondage in the muddy flood plain of the Nile River, wondering how to make his daily quota of bricks without having access to any straw, the Lord appeared to him and said, "Moses, I have some good news for you and some bad news; which would you like to hear first?"

It having been a hard day, Moses said, "Oh, Lord, I would like to hear the good news first."

"Then hear:" said the Lord, "I shall devastate the land of your oppressors; I shall change water into blood, I shall turn day into night, I shall send locusts to ravage the land, I shall part the Red Sea, and I shall lead your people out of slavery and into the promised land."

"Oh, wonderful," said Moses. "And what, Lord, is the bad news?"

"Well, Moses," replied the Lord, "You will have to prepare the environmental impact statement."

METALS MARKET

	March 22, 1974	Month Ago	Year Ago
Antimony ore, stu equivalent European ore	$21.50-22.50	$18.9-19.9	$10.20-11.20
Barite (drilling mud grade per ton)	$17-21	$14-18	$18-22
Beryllium ore stu.	$30.00	$30-35	- -
Chrome ore per long ton	$37.00	$33.00	$24-27
Copper per lb.	68.57¢	68.57¢	60¢
Gold per oz.	$177.80	$163.3	$84.58
Lead per lb.	19¢	19¢	16¢
Mercury per 76# flask	$292.00	$295	$300.00
Molybdenum conc. per lb.	$1.87	$1.72	$1.72
Nickel per lb.	$1.62	$1.62	$1.53
Platinum per oz.	$225.0	$228.00	$138.94
Silver, New York, per oz.	553.8¢	591¢	225.9¢
Tin per lb.	381.25¢	375¢	203¢
Titanium ore per ton (Ilmenite)	$38.00	$38.00	$22-24
Tungsten per unit	$49.318	$44.60	$55.00
Zinc per lb.	32.294¢	31.8¢	19.2¢

STREAKERS SIGHTED (cont.)

the Fairbanks Highway. The streakers were described as a cow moose and her two calves.

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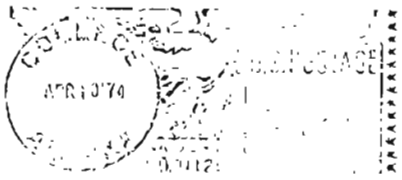

F I R S T C L A S S