Territory of Alaska
Department of Mines

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T D M BULLETIN

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MINING ACTIVITIES

FIRST DIVISION - Active uranium prospecting has continued almost unabated throughout the winter in the southern part of the Panhandle.

SECOND DIVISION - The U.S. Smelting Refining and Mining Co. expects to operate two dredges in the Nome area this year and will build a third. A new hull will be constructed on which the machinery from the dredge that capsized two years ago will be installed.

FOURTH DIVISION - A crew of men for U.S. Smelting Refining and Mining Co. have started work at Hog (Hogatza) River to freight a dredge to the dredging ground at Bear Creek from the Koyukuk River where its floating journey ended last fall. The dredge was freighted to Hog River from Livengood where it was purchased from the RFC. Company officials hope to have it digging by next fall. The company plans to start six dredges in the Fairbanks area in the spring with a seventh to start late in the summer. Ice cutting on the dredge ponds will start about March 15.

Ed Toussaint of Fort Yukon has purchased a new type 25 ton ball mill, and will fly it and other equipment into the Chandalar where he intends to mine a gold quartz vein near the head of Big Creek. The quartz veins of the Chandalar have long been known, but production from them has been insignificant. The mill is known as the Gyratory Ball Mill and was designed by Dr. Fahrenwald, formerly of the University of Idaho.

CANADIAN IMPORT DUTY ON RADIATION COUNTERS

As a result of Alaskan prospectors being charged duty on Geiger and scintillation counters when taking them across the boundary on prospecting trips, often paying duty on the same instruments on subsequent trips, the TDM made inquiry of the Canadian authorities. Pertinent parts of a reply by the Canadian Department of National Revenue (Customs and Excise) are as follows:

"....Geiger Counters are subject to the usual Customs duties on first importation. There is no provision however, for the refund of such charges when the counters are subsequently exported ..... If duty paid Geiger counters are exported under Customs supervision and export entries completed at that time showing a sufficient description of the counters in order that they could be readily identified at Customs on their return to Canada, also the other requirements of Tarriff Item 709 and of the relative regulations are complied with, the Geiger counters would be entitled to free entry under that item on subsequent re-importation."

The important point overlooked by most prospectors (and Customs agents) is the filling out of the required export entry form so that the equipment can be identified on subsequent trips. When this is not done, apparently Customs has been charging duty for each time the prospector re-enters Canada. Also, apparently some Customs agents have not told the prospectors that by filling out the proper form they can eliminate the necessity for paying duty more than once on the same instrument.

The form to be used appears in Memorandum Series D. No. 49 TMR 1 Third Revision (obtained from Dept. of Nat. Revenue - Ottawa). Canadian regulations and restrictions are to be followed when prospecting in that country, of course.

HELICOPTER SERVICE IN SE ALASKA

A helicopter will soon be available to the public in SE Alaska on a permanent basis for the first time. Alaska Coastal Airlines has purchased a new Hiller 12-C, and it is now enroute to Juneau. It is a new model, comparable to the older 12-B and Bell 47. Maximum capacity will be 2 passengers in addition to the pilot, or about 500 pounds of freight, depending on the altitude to be reached. It will be equipped with floats when needed, and will be available anywhere in SE Alaska that helicopter operation is practicable. The charter rate will be probably about $100 per hour, with freight lifts preferably contracted for by the pound, depending on several conditions. This is a service which has long been wished for in this section of high and rough country by prospectors, examining engineers, and geologists, as well as mining companies, and is most welcome.

ASSESSMENT WORK RECORDING RECOMMENDATION

At its annual meeting in Spokane last fall, the Northwest Mining Association endorsed the American Mining Congress policy, but made some additional recommendations for changes in the mining laws. Their recommendation on recording assessment work is as follows : "Failure to record assessment work should bring termination of a claim by forfeiture."

TDM is in full accord with this recommendation. As has been said many times, clarification of title is an important step in mine property developments, and lack of title clarification has held back promising deals innumerable times in Alaska. Compulsory recording of assessment work would definitely establish ownership, or lack of same, for each and every unpatented claim every year.

From TDM's central recording files established in 1953, we have already been able to furnish much valuable information on claim ownership to potential investors and operators which are interested in acquiring or leasing particular parcels of mining ground. But one large weakness of the central recording setup is that when assessment work affidavits are not recorded for certain claims, we do not know whether those claims are being held; and in the absence of current information, often it cannot be learned. Prospective operators will not move in on mining ground of uncertain status.

If the law on this matter is to be changed, it will apparently have to be done by Congress. According to the decision rendered in a court contest between two mineral claimants, (Betsch v. Umphrey, CCA Alaska 1921, 270 F. 45) location or forfeiture of claims comes under "primary disposal of the soil", and the Organic Act specifically prohibits Alaska from legislating on this subject. Compulsory recording of assessment work would be a definite forward step in the mineral development of Alaska.

Other recommendations by NWMA are: (1) Change the discovery provision of the general mining laws to provide a reasonable period of protection to those who in good faith seek a discovery. (2) Make assessment work cumulative for each $100 in excess of $100 per claim, but not in excess of five years after the work was performed. (3) Change the date for completing assessment work from July 1 to October 1. (4) Permit location of a 40-acre legal subdivision without extralateral right and without the need for a special survey for a patent. Other resolutions opposed the

general cession to states of any rights in public domain lands that would interfere with mineral locations, opposed the extension of the Leasing Act system to additional minerals, and viewed with alarm the increasing number of withdrawals of land, request ing better protection from same (hearings, etc.)

EDITORIAL ON ALASKAN PROBLEMS

The February issue of Mining World has an excellent page-length editorial on page 39 entitled "What's Happened to Alaskan Gold Mining and How Can it be Saved?" Everyone interested in Alaskan mining should read it. According to the editorial, the biggest handicap to Alaskan mining is the lack of sound and proper financing. One of its conclusions is that since the Export-Import Bank makes loans to miners in foreign countries, the same thing should be done for the Alaskan miner.

TIDELANDS LEGISLATION

Enactment of HR 7055, a bill introduced by Delegate Bartlett to provide for giving Alaska control of its tidelands, appears to be a long way in the future. Possible substitute legislation now under consideration is a measure that would affect three classes of tidelands: (1) tidelands within incorporated city limits, (2) those over known oil structures, and (3) industrial sites. The first class would be transferred to city ownership, the second class would be leased to oil companies, and the industrial sites could be sold or leased to those needing them for industrial purposes, including mining and milling. This function would be administered by the Bureau of Land Management, and Alaskan heads of agencies concerned have given approval of such a measure. It is thought that this legislation would stand a good chance of passing.

SELENIUM

Selenium being of sufficient strategic importance to have increased from $9 and $10.50 to $13.50 and $15.50 per pound a month ago and to have more than doubled in price in the past year, we thought we would give such information on it as we could find. Selenium is an element, but a rare one; and is usually thought of as a metal, but can also be classed as a nonmetal. It was discovered in 1817 by a Swedish chemist while studying flue dust from the lead chambers of a sulfuric acid works. Commercial uses for it began to develop on a substantial scale between World Wars I and II in the glass, ceramic, chemical, pigment, and rubber industries, and later in the stainless steel industry. Selenium rectifiers for converting alternating to direct current were used for many years, but only on a small scale compared with the period after 1947 when the miniature-type selenium rectifier for electronic circuits was developed. Now it appears that an important use for selenium has been found in the atomic energy program.

Adequate quantities of selenium were available to meet all requirements through World War II and up to just before the Korean War when the present shortage developed. Government controls were imposed in 1952 to enable defense needs to be met, and lifted again in 1953, but the shortage continues and will probably last for several years.

The ordinary stable form of selenium is a crystalline, grayish solid with semimetallic luster. It has a specific gravity of 4.47. It is chemically related to sulfur, with which it is commonly associated in nature. It is found native, like sulfur, and also in the selenides of copper, silver, lead, bismuth, and thallium. About 25 minerals contain selenium in varying percentages, but none of these species is considered a possible commercial source.

The most important commercial source at present is the anode mud or slime produced in the electrolytic refining of copper. The selenium content of blister-copper anodes handled by domestic refineries ranges from 0.01 to 0.07%, and the slimes usually contain from 4 to 25%. A number of different processes are used for recovering selenium from slimes, slags, and flue dust.

The selenium content of igneous rocks is about 0.09 part per million, and soils derived from seleniferous rocks usually contain 2 or 3 parts per million. Soils containing only 1 or 2 ppm commonly have plants growing in it that have a selenium content of 50 to 10,000 ppm. This leads to the interesting thought of possibly obtaining selenium by farming seleniferous vegetation.

Aside from the selenium minerals themselves, magmatic sulfide deposits represent the greatest known concentration of selenium in the earth's crust. The most favorable of this type of deposit is the pyritic copper deposit, of which Alaska has many. None of them have been investigated for a selenium to the best of our knowledge, but we have noted in one old report on a Prince William Sound copper prospect a large indicated selenium zone. Steps are being taken to verify this. If it is confirmed, other similar deposits would certainly bear investigating for the same thing.

Dana gives the following test for selenium: "On charcoal selenium fuses easily, giving off brown fumes with a peculiar disagreeable organic odor; the sublimate on charcoal is volatile, and when heated in reducing flame, gives a fine azure-blue flame. On plaster gives red to crimson volatile sublimate with characteristic odor." It is questionable, however, if one could get results from this test in the normally very small amounts in which selenium occurs..

E. AND M. J. METAL MARKET PRICES

	Feb. 23 1956	Month Ago	Year Ago
Copper, per lb.	45.0¢	43.7¢	32.7¢
Lead, per lb.	16¢	16¢	15¢
Zinc, per lb.	13-1/2¢	13-1/2¢	11-1/2¢
Tin, per lb.	$1.00	$1.03	91-1/4¢
Quicksilver, per flask	$268-271	$271-275	$322-324
Silver, foreign, New York	91-1/2¢	90¢	85-1/4¢
Silver, domestic, per oz.	90-1/2¢	90-1/2¢	90-1/2¢
Platinum, per oz.	$97-111	$97-117	$76-80
Nickel, per lb.	64-1/2¢	64-1/2¢	64-1/2¢
Molybdenum, per lb. in conc.	$1.10	$1.10	$1.05
Tungsten ore, per unit	$63.00	$63.00	$63.00
Titanium ore (Ilmenite) per ton	$26.25	$26.29	$18-20
*Chrome ore (48%, 3 to 1 ratio) per ton	$115	$115	$115
*GSA guaranteed stockpile price.	Not quoted by E&MJ		

The AEC has announced an increase in price of thorium metal from $25 per kilogram to $43.