

Territory of Alaska  
Department of Mines

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T D M BULLETIN

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### MINING ACTIVITIES

FIRST DIVISION - The claim holders of the uranium property near William Henry Bay on Lynn Canal have taken a small drill to the prospect for testing of the radioactive material at depth.

SECOND DIVISION - The old Homestake Mining Co. gold lode property at Bluff has been optioned by the Clayton Exploration Co. of Minneapolis. C. R. Rasmussen, mining engineer, has been examining the property for the company. If the sampling results turn out as expected, they will have a crew on the property next spring to put it into operation.

THIRD DIVISION - Kenai Chrome Co. recently shipped 4,000 tons of chromite ore from its mine on the Kenai Peninsula in the Red Mountain area. A second shipment for this season is expected next month.

The exploratory drilling program at the Broad Pass Coal Co. site near Broad Pass on the Alaska Railroad has shown good results, according to the management.

### OIL NEWS

It is reported that oil indications have been encountered at the Houston drill site of the Anchorage Gas and Oil Development Co. The site is 30 miles due north of Anchorage. The depth is something less than 2000 feet.

### NEW MINING LAW

Public Law 167, approved July 23, 1955, was passed by the last session of Congress and makes the first important changes in Federal mining law to be enacted in many years. It accomplishes the following principal changes: (1) removes deposits of common varieties of sand, gravel, stone, pumice, cinders, etc., from under the mining laws so that they may no longer be staked as such, but must be leased; (2) prevents the use of unpatented claims for any purpose other than prospecting and mining or uses related thereto; (3) guarantees access by Federal agencies for management of timber or other surface resources on unpatented claims if such access does not interfere with legitimate mining operations; and, (4) provides a procedure for clearing up false or unsupported mining claims on Federal land. The new law does not affect claims located prior to July 23, 1955 except for possible limitation of rights which may result from hearings which must be duly publicized well in advance. Also the new law can not interfere with patented claims, regardless of date of patent.

With regard to sand and gravel, etc., a claim may still be located where some other valuable mineral occurs in or associated with said sand or gravel deposit. "Common varieties" as used in the Act does not include deposits of such materials which are valuable because the deposit has some property giving it distinct and special value.

On claims located after the Act, the U. S. has the right to use the surface thereof for the management and sale of the timber therefrom, provided that such surface use or access does not endanger nor interfere with the prospecting and mining, and provided that if the locator requires more timber for his mining operations than remains after removal of timber therefrom by the U.S., he shall be entitled free of charge to be supplied with timber as needed from the nearest timber which is ready for harvesting. On claims patented under the Act, the locator will receive full surface title as well as mineral title. In other words, locators will not receive surface rights on claims staked after July 23, 1955, until they have the claims patented.

Concerning the use and validity of claims located before the Act, where questionable claims exist in areas of interest to Federal agencies, hearings will be held after a process of notification of the claim holder, publishing in a local newspaper for 9 weeks, and allowing a further period for the claim holder to file a statement declaring his interest in the claims under question. If no statement is filed by the claim holder, the surface rights to his claims will be automatically forfeited. If a statement is filed, a hearing will be set at which time it will be determined whether the claimant has been properly working his claims and if the claims are valid. If not, he will lose the surface rights. In any event, the language of the law indicates that the claimant will not lose his subsurface or mineral rights.

The Forest Service and the Bureau of Land Management are losing no time in making preparations for the administration of the Act. The Forest Service has picked out four "guinea pig" areas in the Western States where they will develop standard operating procedures. In Alaska, they will give first priority to clearing up the old claims in the pulp areas in Tongass National Forest, and plan to start proceedings within the present fiscal year. In the remainder of Alaska, claims will probably be investigated by the Bureau of Land Management at the request of other Federal agencies who desire the surface rights determined in certain areas.

#### MINING EXTENSION COURSES

The University of Alaska has announced that their Mining Extension Courses will be given this winter in the following localities: Anchorage, Fort Richardson, Palmer, Seward, Kenai, Seldovia, Kodiak, Valdez, Haines, Skagway, Juneau, Ketchikan, Nome and Kotzebue. The courses are free to all interested persons, no educational prerequisites are necessary, and the courses are each of four weeks' duration, taught 5 nights each week. Geology, mineralogy, mining and prospecting methods are taught. Also, this year, special geochemical courses will be taught in Anchorage, Juneau and Ketchikan for active prospectors.

#### TAX POLICY DECLARATION

The U. S. Chamber of Commerce adopted the following policy declaration on mining taxation in 1953, and repeated the same in 1954 and 1955, for the guidance of government and industry.

"The attainment and maintenance of a sound domestic mining industry requires more ample recognition in the tax laws that mining is unique in that it exhausts its assets in the course of its operations; that exploration for and discovery and development of new mining deposits continually grow more difficult, more costly and financially more hazardous; and that a recovery of capital and return on

investment commensurate with the risks is essential to induce venture capital to enter this hazardous financial field.

"To meet the required national needs and to assure adequate continuance of the industry by the replacement of exhausted mineral assets, the tax laws should provide that all extractive industries be granted adequate depletion allowances; authorize current deduction of research, prospecting, exploration, and development costs or, at the election of the taxpayer, their deferment, as seems most appropriate in each case, without the now existing or any other hampering limitations; and to permit an adequate return, after taxes, and a recovery of capital to the stockholders through depletion on some appropriate basis."

### TITANIUM

Titanium, much publicized as the "wonder metal", has been of interest for a relatively short time. In 1948, only a little over two tons were produced. The Government program of guaranteed loans and rapid tax write-offs has increased production to around 5000 tons in 1954 and a predicted 8000 to 10,000 tons in 1955. The cost of titanium sponge (first refined product from the ore) has dropped with the increase of production and will drop still more under new processes being developed. The present cost is \$3.50 to \$3.95 per pound, which is quite an increase from the price paid for the ores of titanium. Ilmenite of 59.5% titanium oxide is presently quoted at \$20 per ton and 94% rutile concentrate at 9¢ per pound.

The metal titanium is particularly useful where strong light-weight metal is needed, where resistance to corrosion is necessary, and where high temperatures are involved. Titanium has a very high strength-to-weight ratio. It is somewhat heavier than aluminum, but much stronger. It appears that titanium alloys will be developed that will have the properties of high strength steel with a weight of only 60% of the weight of steel, but that the cost is likely always to be at least twice that of steel. Titanium's greatest future is probably in aircraft and other light weight vehicles, and portable equipment.

The chief titanium minerals are rutile ( $TiO_2$ ) and ilmenite ( $FeTiO_3$ ). Rutile is usually found in sand or placer deposits, but can also often be recognized as crystals in pegmatite dikes. It occurs as an accessory mineral in several igneous rocks. The crystals are usually prismatic and colored reddish-brown to red. A deep red light is usually transmitted through the more transparent crystals. Hardness is 6 to 6.5 and specific gravity 4.2 to 5.2.

Ilmenite is also a rock-forming mineral, occurring mainly in the basic igneous series where it is usually closely associated, or intergrown, with magnetite. It is frequently concentrated in these rocks by magmatic segregation to form commercial deposits. Ilmenite is usually black, sp. gr. is 4.3, hardness 5.5 to 6.00, and can be distinguished from magnetite by its lower magnetic attraction.

One test for titanium as quoted from Wilkerson's Determinative Mineralogy for the Alaska Prospector is as follows: "To test the mineral for titanium, grind it very finely. Mix the ground mineral with 2 to 3 times its volume of soda and fuse with oxidizing flame; be sure that it is fused on both sides. When the fusion has cooled sufficiently, place it carefully into a test tube. Then add a little dilute sulphuric acid. Heat it very little and then allow it to cool. Then add a very little water and then a few drops of hydrogen peroxide. The solution, if titanium is present, will turn a pale yellow to an orange-red color, depending upon the amount of titanium in the mineral."

As will be seen from the ore prices quoted earlier, it will be difficult to find a deposit of commercial possibilities in Alaska. None are now known. Although ilmenite is one of the most common minerals in Alaska, no concentrations of possible commercial grade and tonnage have yet been found. Probably the area of best possibilities is around Lituya Bay, located along the eastern part of the Gulf of Alaska. The tonnage would have to be huge and adjacent to deep-water shipping.

#### NEW MINERAL IDENTIFICATION KIT

The University of Alaska School of Mines has designed and now offers for sale a new mineral identification kit for prospectors. The kit will enable prospectors in the field to identify the important ore minerals of Alaska using blowpipe, bead, and chemical tests. Weighing eight pounds, it is designed to easily fit into most prospectors' packs, and contains an instruction book giving test procedures. The kit can be purchased for \$25 plus postage from the School of Mines, Box 4001, College, Alaska.

#### E. AND M. J. METAL MARKET PRICES

	<u>Sept. 29</u> <u>1955</u>	<u>Month</u> <u>Ago</u>	<u>Year</u> <u>Ago</u>
Copper, per lb.	43.7¢	40.6¢	29.7¢
Lead, per lb.	15¢	15¢	14-3/4¢
Zinc, per lb.	13¢	12-1/2¢	11-1/2¢
Tin, per lb.	96-1/4¢	96-1/4¢	93-5/8¢
Quicksilver, per flask	\$265-270	\$254-256	\$325-328
Silver, foreign, New York	90-3/4¢	90-3/4¢	85-1/4¢
Silver, domestic, per oz.	90-1/2¢	90-1/2¢	90-1/2¢
Platinum, per oz.	\$91-96	\$88-90	\$84-87
Nickel, per lb.	64-1/2¢	64-1/2¢	60¢
Molybdenum, per lb.	\$3	\$3	\$3
Tungsten ore, per unit	\$63	\$63	\$63
Titanium ore (ilmenite), per ton	\$20	\$20	\$18-20
Chrome Ore, (48%, 3 to 1 ratio) per ton	\$115	\$115	\$115