Territory of Alaska
Department of Mines

P. O. Box 1391
Juneau, Alaska

T D M BULLETIN

Vol. II

December - 1954

No. 12

MINING ACTIVITIES

FIRST DIVISION - Prospect drifting is continuing at the Funter Bay nickel-copper deposit. Bids have been requested for an additional 4000 feet of diamond drilling.

SECOND DIVISION - Senator Charles D. Jones of Nome is one of the incorporators of a new company known as the Uranium Corporation of Alaska. Other members of the new concern are Tom B. Reilly and Thomas Jones of Seward, and Elinor Hicks and Casimer Cechowski of Anchorage.

THIRD DIVISION - Prospecting activities are still being carried on in the Shirley Lake area, scene of one of the currently interesting radioactive possibilities. One of the Canadian Packsack diamond drills, described in our August Bulletin, is being used at Shirley Lake. Because of the widespread interest shown in this drill, TDM hopes to be able to report on its performance in a future issue. The drill is now handled by an Anchorage agency.

FOURTH DIVISION - The Livengood Placers property at Livengood has changed hands. It was last operated by Callahan Zinc-Lead Co. of New York under arrangements with RFC and Livengood Placers. Early last spring RFC called for bids on the property, and the Fairbanks Branch of the U.S.S.R. & M. Co. was found to be high bidder last month. Besides the placer ground, the six-cubic-foot dredge, stripping and thawing equipment, vehicles, shops, and camp buildings are included in the transaction. The company's plans for the property are not known.

Meetings are being continued by the DeCoursey Mountain Mining Co. on the question of the future of their quicksilver mine which was shut down by a disastrous fire.

RADIOACTIVITIES

The Nixon Fork country, northeast of McGrath, is the center of a new flurry of radioactive interest. Following the staking of a group of claims by two pilots, about 30 more people went into the area and staked about 35 claims. As with the Shirley Lake "rush" of the previous month, above-normal radioactivity was found, but high-grade samples have not yet been isolated. However, a U.S.G.S. Trace Elements report dated 1949 states that the area has possibilities and suggests that geochemical prospecting might be more successful there than radiometric traversing. The TDM again warned people not to get excited, and by all means for inexperienced persons not to go rushing off into the bush in the face of the approaching winter. Two good examples why people who are not in the prospecting business should not drop everything and run the minute they hear the word "Uranium!" are in the following paragraphs:

An individual that was prospecting and promoting in the Seward Peninsula district this past summer is known to have imported fifty pounds of radioactive

ore from the Colorado Plateau. It is not known at present what was done with this material. Fifty pounds of high-grade carnotite could contaminate, or "salt," a lot of country.

A uranium "story" that almost went to press in good faith in Fairbanks was only stopped when it was found that the teller is doing 60 days in Seattle for impersonating an Army major in a mining deal. His "story" was of radioactives in the Chandalar so hot they burned the backs and arms of the men who carried the samples.

OIL NEWS

The hearing on native Indian rights to potential oil lands in the Yakutat-Icy Bay area , which was to have been held in November, has been postponed. The Indians at Yakutat have protested the leasing of 130,000 acres in the area. A similar case known as the Tee-Hit-Ton case is now before the Supreme Court, and it is believed the Native group wishes to learn the outcome of that case before continuing their Yakutat claims.

Small progress was made by the Havenstrite drilling operation at Iniskin Bay after the earthquake difficulties reported last month. The project has now been shut down for the winter, but will definitely be resumed in the spring.

PROSPECTOR EDUCATION

Another criterion by which to judge the mounting interest in Alaskan prospecting and mining is the repeated increase each year of the number of people taking, or requesting, the University of Alaska's Mining Short Course and Mining Extension Courses. The number of applicants this year has broken records again. The Short Course is given on the University campus at College, and the Extension Courses are taught about the Territory in the various communities. Subjects covered are geology, mineralogy, ore deposits, methods of prospecting and mining, etc. Further information can be obtained from Dean Earl H. Beistline, School of Mines, College, Alaska, or from this office. The Extension Course scheduled for this winter is planned as follows:

	Instructor Leo Mark Anthony	Instructor Ed Barnes
October	Palmer	Ninilchik
November	Anchorage	Homer
December	Cordova	Dillingham
January	Petersburg	Anchorage
February	Ketchikan	Elmendorf AFB
March	Juneau	Whittier
April	Sitka	Seward

NEWS ITEM CORRECTIONS

During the month a news item concerning the TDM was printed at Kodiak and subsequently picked up by other papers in Alaska which had no basis and was incorrect. It quoted a TDM engineer as saying of a scheelite prospect he was examining, "The scheelite assays a very high merchandising quality and the prospects appear very promising." The engineer did not make this statement, nor has he yet

made a public statement on the prospect. He had only briefly visited the property, and sufficient evidence was not yet available to make a decision on its merits when the item was published. The TDM is as desirous as anyone for favorable publicity on Alaska's mineral resources, but at the same time, its engineers deal with proven or carefully estimated facts and do not want it to appear that they are engaged in promotional activities not based on these facts.

The second correction is of one of our own items. In our October issue we stated that the U. S. Bureau of Mines had reported that the DeCoursey Mountain Mining Company's Red Devil Mine was the leading American mercury producer. This was not necessarily true. The information was obtained from the August 26 issue of the E. and M.J. Metal Markets, but was misinterpreted by TDM. The E. and M.J. article gave a list of the eight leading American mercury producers as reported by the U.S.B.M., and as the Red Devil Mine was the top one on the list, we assumed that it was the top producer. We have since been informed that the positions on the list did not necessarily indicate the relative rank of the producers. Our apologies to the Bureau.

SUGGESTED PROSPECTING TOOL

It has been gnawing at our mind for some time that there exists a practical tool to remove the shallow cover of moss and soil that obscures the bedrock in Southeastern Alaska. Exposures are few and when, by coincidence, one of these exposures is found to be mineralized and to constitute a favorable prospect, it is almost certain that stripping of overburden will be necessary in order to expose the showing and to determine its length. Specifically, the suggestion we have in mind is this: a small, portable pump, such as the "pack-sack" types used by the U. S. Forest Service fire fighting units, is capable of delivering a volume of water with sufficient velocity to ground-sluice the overburden from a dozen average exposures while one man could clean one with a shovel. With the many adequate sources of water in the region, together with the generally hilly terrain, hydraulicking by means of small portable pumps and accessories such as hose (plastic?) and irrigation-type canvas dams would definitely appear to be worth a try. We don't know if it ever has been tried, nor do we know of units particularly designed for this purpose, but we aim to find out.

During the forthcoming month we hope to conduct a trial, using a pumping unit which seems to offer considerable promise, though it may have one more or less serious drawback. This piece of equipment is a popular 5 HP, one-man chain-saw, designed with removable and interchangeable saw and pump assemblies, both using the same gasoline-powered engine. If this should prove practical for small-scale sluicing jobs, it would seem to well fill the bill. Furthermore, it could "double in brass" when called upon to clear land, brush lines, cut timbers, etc. As for the drawback we mentioned, this pump is reportedly not designed to handle salt water. Our ideal unit would, of course, be so designed. Anyway, we intend to give it a field trial--using fresh water--and will pass the results on to you in a future issue.

The TDM will welcome opinions or suggestions from anyone with knowledge of small, easily transportable, pumping units that might be effectively adapted to this particular usage. Also, on the merits of light-weight pipe or hose, nozzles, or other pertinent accessories.

METAL PRICES

The following metal prices are taken from the weekly E. and M. J. Metal Markets reports of dates as indicated to show current prices as well as trends:

	Nov. 25, 1954	Month Ago	Year Ago
Copper, per lb.	29.7¢	29.7¢	29.6¢
Lead, per lb.	15¢	15¢	13-1/2¢
Zinc, per lb.	11-1/2¢	11-1/2¢	10¢
Tin, per lb.	90-7/8¢	92-1/3¢	86-1/4¢
Quicksilver, per flask	$318-322	$325-330	$185-187
Silver, per oz.	85-1/4¢	85-1/4¢	85-1/4¢
Platinum, per oz.	$77-84	$79-84	$91-93
Nickel, per lb.	64-1/2¢	60¢	60¢
Molybdenum, per lb.	$3	$3	$3
Tungsten ore, per unit	$63	$63	$63

Quicksilver has been dropping slowly for two or three weeks and the demand has moderated. Some authorities are blaming recent shipments of the metal from Yugoslavia and Mexico. The increased nickel price was quoted by the Canadian producers because of increased mining and treatment costs.

NEWS FROM THE AMERICAN MINING CONGRESS BULLETIN

MINERALS PURCHASE PROGRAMS: The General Services Administration has issued a summation of the quantities of metals and minerals procured through Sept. 30 under the Government's purchase programs for domestic tungsten, manganese, chrome, mica, beryl, asbestos, columbium, tantalum, and mercury. The summation does not include any metals or minerals resulting from Defense Minerals Exploration Administration programs.

The GSA report shows purchases as follows: Tungsten - authorized program, 3 million short ton units of contained tungsten; procured 1,224,367 short ton units; Manganese - authorized program, 37 million long ton units; delivered 9,412,988 long ton units; Chrome - authorized program, 200,000 long tons of ores and concentrates; delivered 70,040 long tons; Mica - authorized program, 25,000 short tons of hand-cobbed mica or the equivalent; delivered 4,157 tons; Beryl - authorized program, 1500 short tons; delivered 457 short tons; Asbestos - authorized program, 1500 short tons of Crude No. 1 and/or No. 2; delivered 617 tons of Crude Nos. 1 and 2; Columbium-Tantalum - authorized program, 15 million pounds of contained combined columbium-tantalum pentoxide; delivered 5,326,144 pounds; and Mercury - authorized program, 125,000 flasks; delivered none.

RESPONSE TO QUESTION

With the exception of an enthusiastic editorial and local pushing by a Juneau Daily Empire reporter, there has been no response to our question of last month regarding the possibility of an annual prospectors' convention similar to those held in Canada.

IRON

With the gradual depletion of iron ore reserves in the United States and the movement of the steel industry toward the West Coast, the search for iron deposits in Alaska has increased tremendously during the past two years. The world production of iron ore runs from 150 to 250 million tons a year, and the steel production from 100 to 175 million tons, depending on economic conditions. The U. S. produces something over half of the world production of iron ore and steel. Iron ore, of course, is the basic source of the pig iron that is used in steel making. It is smelted with coke (from coking coal) and limestone and subjected to a blast of air which removes the oxygen and reduces it to the pure metal which is poured off into pigs.

There are four main varieties of iron ore: magnetite, hematite, limonite, and siderite. The first three are iron oxides and the latter is a carbonate. Magnetite and hematite are the most widely occurring ores and are the richest, but the possibilities of mining the other two should not be overlooked. Hematite has been the chief ore of the famous iron ranges of the Great Lakes region, but magnetite forms most of the known larger deposits of iron in Alaska. Magnetite is a heavy, hard, black mineral that is brittle and has an uneven fracture, but also often parts into octohedrons. It can be immediately distinguished from other minerals of similar appearance by the use of a magnet with the possible exception of chromite, which is also sometimes magnetic. However, magnetite gives a black streak, while that of chromite is brown. Hematite occurs in a variety of forms and colors from brown to black. It usually has a reddish streak and is hard, though sometimes soft and earthy. Hematite becomes magnetic on heating, though large masses of it in a natural state create a sufficiently large magnetic field to deflect a compass or dip needle.

Since iron ore is a low unit-price material, it must be found in large deposits that are favorable to cheap mining and transportation. There are two general types of deposits of magnetite known in Alaska that are of interest: contact deposits which tend to be the smaller of the two but high-grade, and the type in which magnetite is a constituent in a body of basic rock in sufficient concentration to be of interest. In considering the minimum size deposit to be of possible value to a mining company, it depends on the grade and location. In the high-grade classification, a deposit near salt water transportation would probably have to be sufficiently large to produce half a million tons of ore that would assay at least 50% iron. In the lower grade deposits, since some beneficiation or concentration is necessary to upgrade the material for shipping (thus increasing the production cost), a minimum-sized deposit would be in the neighborhood of several hundred million tons. Of further interest is the fact that this lower grade of deposits in Alaska, as typified by the deposits at Klukwan, Snettisham, Union Bay, Duke Island, etc., are high in titanium, averaging ten or twenty to one in iron: titanium oxide ratio. Titanium is a harmful impurity in blast-furnace smelting, and the smelters generally will not accept material running higher than 1.5% TiO_2. The TiO_2 content might be decreased by beneficiation, but more likely the treatment would be too expensive. Blending the Alaskan ores with non-titaniferous ores from other sources would be the more economical method. Electrical furnaces, however, will handle ore high in titanium.

Steel companies active in Alaska have expressed an interest in blast-furnace construction on the West Coast. This leads the TDM to the belief that they have in mind the possibility of blending our titaniferous ores with non-titaniferous ores from foreign sources. Also in the future is the probability of electrical smelting furnaces being built in Alaska in connection with the various proposed large hydro-electric developments.