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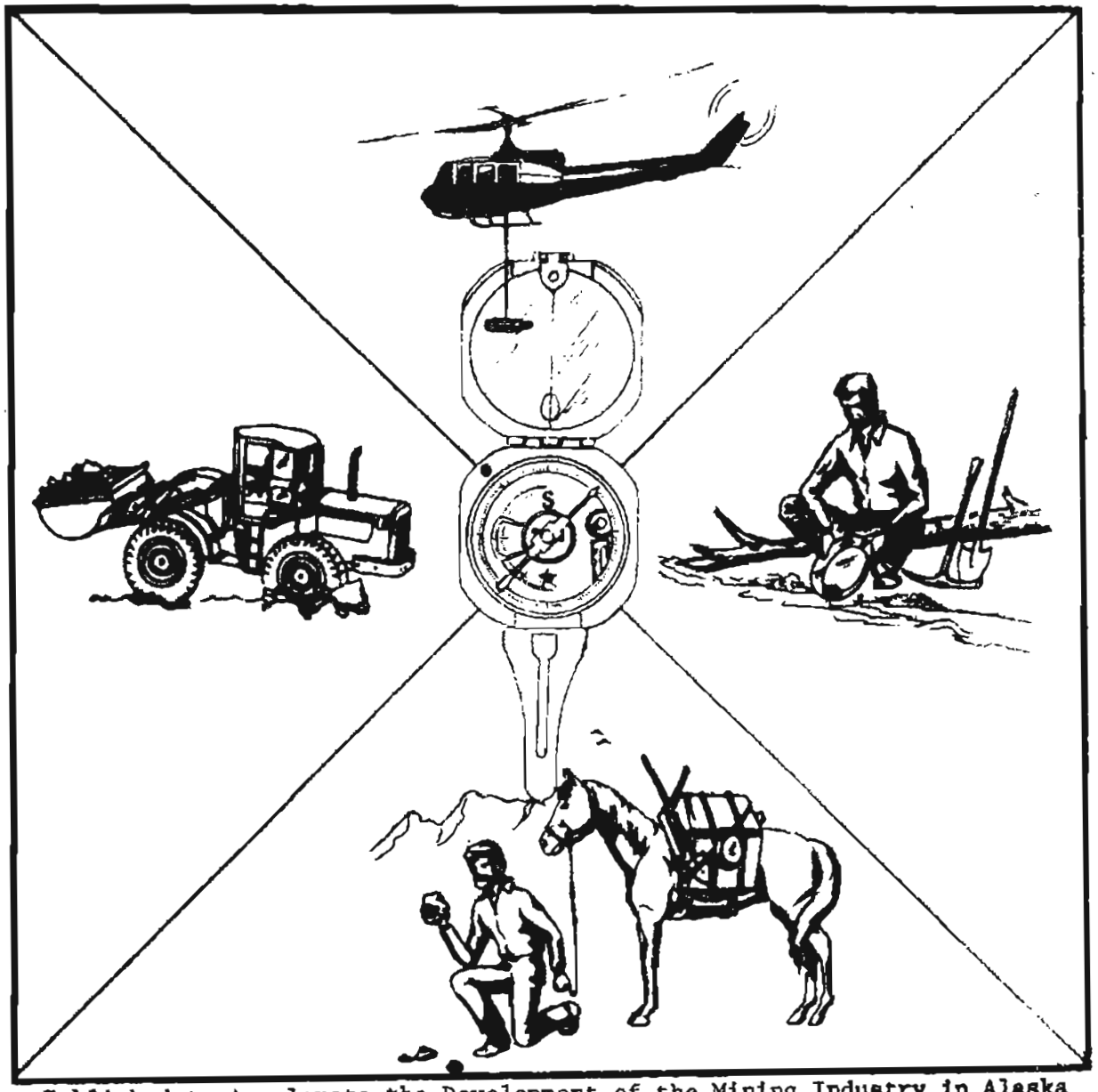


Published to Accelerate the Development of the Mining Industry in Alaska

William A. Egan - Governor

Charles F. Herbert - Commissioner James A. Williams - Director

PROPOSED WITHDRAWAL CLASSIFICATION

We described the proposed 24.5 million acre Brooks Range land classification in our last Bulletin, but we neglected to say that 3.2 million acres of it is planned to be withdrawn from mining. We write on the subject again this month to be sure that all our readers are fully aware of the proposed closure to mineral entry and to urge them to express their opinions to the U. S. Bureau of Land Management with letters and/or testimony. A BLM map of the proposal is included with this Bulletin.

In a 24-page BLM brochure or booklet on the proposal published separately from the map, the only mention of closure to mining is on page 20 where it says, "With some exceptions, the area of the proposed classification will be open to mining and mineral location. The exceptions are important scenic and recreational lakes." The brochure does not provide the details found on the map. The map shows a large area of 2.6 million acres proposed to be closed to mining as well as the proposed closure of 16 areas adjacent to lakes totalling another 600,000 acres. Incidentally, this is an average of more than 37,000 acres near each lake.

On page 10, the BLM brochure says that the Brooks Range "....has not been prospected as intensively as other Alaskan areas" and "Individual prospectors and prospecting companies have found some large deposits of minerals, but the absence of overland transportation makes development of the deposits uneconomical at this time." Historically there has been a lack of overland transportation until mineral deposits were developed. Witness the construction of nearly 200 miles of railroad by Kennecott to their mine near McCarthy, Alaska at the turn of the century. Today concentrates of metallic ores are being economically air lifted from remote areas in Alaska.

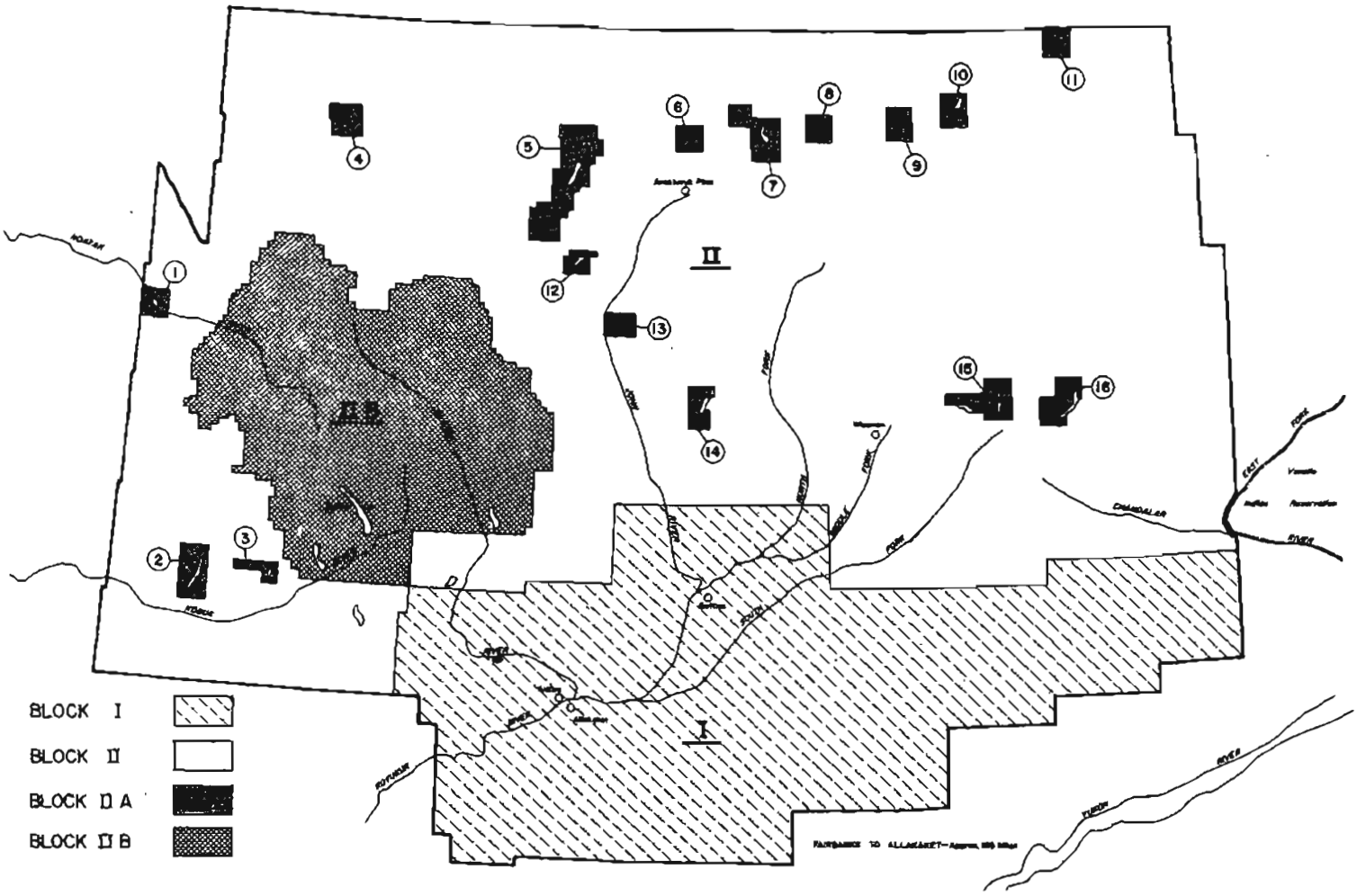
Though the brochure does not mention it, the map shows that Block IIB is closed to State selection and acquisition of lands under the provisions of the Statehood Act. The map says Block IIA is open to State selection, but the brochure says open to "conditional selection" without defining "conditional". It should be remembered that the State also has capabilities and personnel to administer and manage lands.

Block IIB in the central Brooks Range is approximately 50 to 70 miles in diameter and constitutes most of the area covered by the USGS Survey Pass quadrangle. It includes 87 entire townships and parts of 24 others. Except for the use of helicopters, the area is accessible mainly by float plane via Walker Lake. This 13-mile-long lake is in the south-central part of the area about 637 feet above sea level. The airline distance from Fairbanks to Walker Lake is approximately 250 miles. Light planes might be able to land at a few other smaller lakes and ponds near the Noatak and Alatna Rivers, but there are no roads or trails in the area.

Area IIB contains some of the most spectacular scenery in northern Alaska, although it now can be appreciated only by those who can afford to fly to it. The area includes some of the highest peaks of the Brooks Range, among which are the Arrigetch Peaks (7190 feet), Oyukak Mountain (7310 feet), and Mount Igikpak (8510 feet). These are the sites of several of the last remaining valley glaciers in northern Alaska, but none of the glaciers is much more than one square mile in area. The continental divide extends northwestward across the area, passing through the Arrigetch Peaks. The northeastern part of the area is drained by the Alatna River, which carries water to the Koyukuk River and then to the Bering Sea. The southwestern part is drained by the Noatak and Kobuk Rivers, which flow to the Arctic Ocean.

No one will deny the scenic beauty of area IIB, but it is so large and so poorly known geologically that it cannot be ruled out as a possible site of mineral deposits of economic interest. Granite is known to underlie a belt approximately 40 x 20 miles in the vicinity of the Arrigetch Peaks (Chadwick, 1960, p. 4). The base of the granite, perhaps an

PROPOSED
CENTRAL BROOKS RANGE CLASSIFICATION



BLOCK I

6,000,000 acres

OPEN TO ALL LAND DISPOSAL LAWS AND RESOURSE USES EXCEPT:

- Homestead Act of 1862
- Trade and Manufacturing Sites
- Headquarters Sites

BLOCK II A

600,000 acres

CLOSED TO MINING AND LAND ACTIONS THAT RESULT IN TITLE TRANSFER. OPEN TO SELECTION BY THE STATE OF ALASKA.

BLOCK II B

2,600,000 acres

CLOSED TO MINING AND LAND ACTIONS THAT RESULT IN TITLE TRANSFER. CLOSED TO SELECTION BY THE STATE OF ALASKA.

BLOCK II

18,500,000 acres

OPEN TO ALL LAND DISPOSAL LAWS AND RESOURSE USES EXCEPT:

- Homestead Act of 1862
- Trade and Manufacturing Sites
- Headquarters Sites
- Homesites
- Native Allotments
- Unplanned Townsites

BLOCK II A CONSISTS OF THE FOLLOWING SIXTEEN TRACTS:

Tract	1	Lake Matcharak	Tract	9	Itkillik Lake
Tract	2	Lake Selby	Tract	10	Galbraith Lake
Tract	3	Lake Minakakosa	Tract	11	Elusive Lake
Tract	4	Kurupa Lake	Tract	12	Loon Lake
Tract	5	Chandler Lake	Tract	13	Pamichtuk Lake
Tract	6	Netvakruak Lake	Tract	14	Wild Lake
Tract	7	Shainin Lake	Tract	15	Big Lake–Twin Lakes
Tract	8	Nanushuk Lake	Tract	16	Chandalar Lake

APPROX. SCALE

10 5 0 10 Miles 20 30 Miles

overthrust fault, is exposed in the deeply incised valley of Awlinyak Creek. Near the western end of the granite belt, placer gold has been found in the bed of Lucky Six Creek about 10 miles north of Mount Igikpak. The field relations suggest the possibility that gold mineralization accompanies granite emplacement. A little pyrite also has been reported near the perimeters of the granite, raising the possibility that other minerals of economic interest may be associated with it.

The Skajit limestone, which underlies a belt about 15 miles wide in the Wiseman quadrangle (Brosge and Reiser, 1960) extends west-southwestward to the vicinity of Walker Lake (Dutro and Payne, 1957). Near the Alatna River, the limestone belt is approximately 20 miles wide (Smith, 1913, p. 127). The apparent thickness there has been estimated at about 6,000 feet, although it may be accounted for, in part, by thrust faulting. To the east, copper has been found in this formation in the Wiseman quadrangle, and to the west, rocks in the Cosmos Hills which appear to be stratigraphically equivalent to the Skajit form the host rock for the well known copper deposit at Bornite. The copper deposit there is now known to be close to overthrust faults. Thus it is possible that other copper deposits exist in at least the southern part of area IIB. This is surely sufficient evidence that the area should not be closed to mining.

We also believe that withdrawing such large acreages adjacent to many of the lakes is not necessary. This is particularly true at Chandalar, Big, and Wild Lakes where mining is or has been done.

We are assured by BLM officials that they will be guided by public opinion in making their decisions on this matter. The booklet emphasizes that the "final decision for the wisest use of the natural resources will be influenced by YOU--THE PUBLIC". We are informed that letters received by them to date have all been in favor of the proposal, none against it or making alternate suggestions. The BLM earnestly requests constructive comments. Letters should be addressed to the District Manager, Bureau of Land Management, Box 1150, Fairbanks, Alaska 99707. If you have an opinion on the matter, please write soon.

Informational meetings on the proposal will be held in various Alaskan cities and villages. A formal public hearing will be held in Fairbanks. Times will be announced later.

NEW DIVISION PUBLICATIONS

The Alaska Division of Geological Survey, Department of Natural Resources, has released the seven publications described below. The reports are $1.00 each. They may be obtained by mail from the Division of Geological Survey, Box 5-300, College, Alaska 99701 and over the counter only at our mining information offices in Juneau (Goldstein Building), Ketchikan (National Bank of Alaska Building), and Anchorage (323 East 4th Avenue).

Geologic Report No. 39: GEOLOGY AND GEOCHEMISTRY OF THE COSMOS HILLS, AMBLER RIVER AND SHUNGNAK QUADRANGLES, ALASKA

This report shows that the most productive part of the old Shungnak gold-mining district was confined to a single complex geologic structure, the Cosmos Hills window. Rocks inside the window consist of pelitic, volcanic, and subordinate carbonate strata of probable Devonian age, which were intruded by granite of Cretaceous age. Granite emplacement was accompanied by folding, doming, metamorphism of the host rocks, and emplacement of gold-bearing quartz veins. It was followed by block faulting, overthrust faulting, emplacement and serpentinization of ultramafic rocks of probable Tertiary age, and more block faulting. The frame of the window now consists of parts of four distinct thrust sheets. The lowest contains dolomitic limestone and marble of Middle Devonian age, which has been correlated with the Skajit limestone of the Brooks Range. The next two sheets consist of weakly metamorphosed pelitic and mafic volcanic rocks. The uppermost sheet consists of metaconglomerate, metasandstone, phyllite, slate, and subordinate metabasalt of Cretaceous age, which have been correlated with the Bergman group of the Koyukuk basin. Hydrothermal

activity is known to have been widespread in the Cosmos Hills during serpentinization of ultramafic rocks, which were emplaced mainly along and near the uppermost overthrust fault. Copper sulfides appear to be most abundant near Bornite where dolomite breccia of the Skajit(?) limestone is close to overthrust faults. This suggests a relationship between overthrust faulting and copper mineralization. The source of the copper is believed to have been south or southwest of the map area. The report was written by C. E. Fritts, Geologist.

Geologic Report No. 41: AN EXPERIMENT IN GEOBOTANICAL PROSPECTING FOR URANIUM BOKAN MOUNTAIN AREA SOUTHEASTERN ALASKA

This report covers an area on the Prince of Wales Island near Ketchikan in southeastern Alaska. The project was conducted at the Ross-Adams uranium mine to determine the usefulness of various sample types in uranium exploration in Alaska. The area was selected because the mine has produced high grade ore. Anomalous values were obtained from ashed plants. The analyses indicate the lodgepole pine is the most suitable plant for geobotanical prospecting in the area. The report contains 24 pages of text with illustrations, 10 pages of sample location maps, and 15 pages of analyses. The author is Gilbert R. Eakins, Mining Geologist.

Geologic Report No. 42: GEOLOGY AND GEOCHEMISTRY OF THE CHANDALAR AREA BROOKS RANGE, ALASKA

This report covers the Chandalar mining area near Chandalar Lake 200 miles north of Fairbanks. Stream sediment geochemical samples and bedrock samples were collected and a geological map prepared. The major rock types consist of schist of Devonian age and intruded mafic to intermediate rocks, greenstone, and greenschist. Known gold mineralization is confined to a north-northeast trending zone along the divide between Tobin Creek and Little Squaw Creek. Most of the veins are in phyllite in fault contact with schist or quartzite. The report contains 29 pages of text including illustrations, 10 pages of analyses and diagrams, and a pocket map. The author is E. R. Chipp, Mining Geologist.

Geochemical Report No. 20: GEOLOGY AND GEOCHEMISTRY AT KONTRASHIBUNA LAKE LAKE CLARK REGION SOUTHWESTERN ALASKA

This report covers an area around the perimeter of Kontrashibuna Lake. Stream sediment and soil samples were collected and a geological map prepared. Mineralized areas are known to exist in the Lake Clark region but almost no production has resulted. The investigation indicates several copper, lead, and zinc anomalies, four of which appear to be of sufficient magnitude to warrant additional work. The report contains 20 pages of text and illustrations, 14 pages of analyses and diagrams, one geochemical and one geological map. Gilbert R. Eakins, Mining Geologist, authored the report.

Geochemical Report No. 21: GEOCHEMICAL SURVEY AND GEOLOGICAL RECONNAISSANCE OF THE WHITE RIVER AREA, SOUTH-CENTRAL ALASKA

This report covers a geochemical survey and geological reconnaissance of parts of seven 15-minute quadrangles centered about 60 miles southeast of Nabesna. Granitic plutons and amygdaloidal basalt in the area are of interest for possible copper deposits. The work revealed minor chalcopyrite in fractured argillite, phyllite, and hornfels near two granite plutons. Minor native copper and copper sulfides were observed in several places. The geology is described and the geochemical sampling results are tabulated. The report consists of 18 pages of text, numerous tables, page-size maps, appendices, and four pocket maps. The author is Jeff Knaebel, Mining Engineer.

Geochemical Report No. 22: GEOLOGY AND GEOCHEMISTRY OF THE BELT CREEK-LIBBY RIVER AREA, SEWARD PENINSULA, ALASKA

This report covers the headwaters area of Belt Creek, Libby River, and the headwaters of the West Fork of the Niukluk River. Stream sediment geochemical samples were collected and a geological map prepared. The major rock types are schist, limestones, and dolomites, and include some recent lignitic beds. Although no sulfide minerals were observed, several anomalous zones were detected. The report contains 26 pages of text, 18 pages of analyses in the appendix, and a pocket map. The author is Roderick R. Asher, Chief Geologist for the Division.

Geochemical Report No. 23: GEOCHEMISTRY AND GEOLOGY, BOUNDARY AREA FORTYMILE DISTRICT EAGLE A-1 QUADRANGLE, ALASKA

This report covers the southeast part of the Eagle A-1 quadrangle and includes the settlement of Boundary on the road between Tetlin Junction, Alaska, and Dawson in the Yukon Territory, Canada. Stream sediment geochemical samples were taken and a geologic map prepared. The major rock types are the schists and gneisses that make up the bedrock in the upland area and the highly deformed Paleozoic sediments with conspicuous limestone units on the north side of the Yukon-Tanana uplift. Placer gold has been mined in this area since 1886, but no lode source has been found for the gold. An anomalous area indicating a lead-zinc deposit occurs between the mouth of Camp Creek and the head of Brophy Creek. The report contains 29 pages of text and figures, 5 pages of analyses, and two pocket maps. The author is Roderick R. Asher, Chief Geologist.

AEROMAG SURVEY PROGRAM

Invitations to bid have been mailed to geophysical survey contractors for airborne magnetic survey contracts covering large areas along the eastern Alaska Range, on the Seward Peninsula, and in the Goodnews Bay region. Bids will be opened in Anchorage on February 2 for field work and mapping to be completed by next fall. The surveys will consist of close-spaced flight lines (3/4 mile apart) at low elevation (1000 feet above ground level where possible). The survey results will be shown as contours of magnetic intensity overprinted on topographic maps at a scale of 1 mile to the inch. These maps will be useful for interpreting geology and in locating mineralized areas associated with magnetic rocks both at the surface and under hundreds of feet of overburden. The maps will be available at low cost on a pre-announced date from the offices of the Division of Geological Survey. Contract administrator for the Division is Norman J. Veach, Exploration Geophysicist, in consultation with the U. S. Geological Survey. Though the present work is 100% State-financed, a matching-fund cooperative program with the USGS is planned for future years.

NEW USGS PUBLICATIONS

The U. S. Geological Survey is releasing in open file the following reports:

High-resolution seismic survey of a nearshore area, Nome, Alaska by A. R. Tagg and H. Gary Green.

Paleozoic and Precambrian rocks of Alaska and their role in its structural evolution, by Michael Churkin, Jr.

Copies are available for inspection in the Geological Survey Libraries, 1033 GSA Bldg., Washington, D.C. 20242; Bldg. 25 Federal Center, Denver, Colorado 80225; and 345 Middlefield Road, Menlo Park, California 94025; Brooks Bldg., College, Alaska 99701 and in offices of the Alaska Division of Geological Survey, 509 Goldstein Bldg., Juneau, Alaska 99801; 323 East 4th, Anchorage, Alaska 99504; and University Avenue, College, Alaska 99701. (Material from which copy can be made at private expense is available in the Alaska Mineral Resources Branch, USGS, 345 Middlefield Rd., Menlo Park, California 94025.

LAND FREEZE EXTENDED

As expected, when it became evident that Congress would not pass a Native land claims bill, the land freeze initiated by Secretary Udall (Public Land Order 4582) was extended. The "Expiration Date" is now set at 12 midnight, prevailing Alaska time, June 30, 1971, or 12 midnight "on the day legislation for the determination and protection of the rights of the native Aleuts, Eskimos, and Indians of Alaska shall become law, whichever shall occur first."

The extension, in the form of a modification of PLO 4582, was published in the Federal Register on December 11, 1970. The provision for staking claims remains the same; metallic mineral deposits may be staked, but nonmetallics may not.

The principle change is a clarification of when staking of claims for nonmetallic minerals may commence, relative to the "lifting" of the freeze. The modification spells out the State's prior right for 90 days to select lands released from a Federal withdrawal as provided in the Statehood Act. Then it states "Any public lands not selected by the State and not otherwise reserved shall at 12 (noon), prevailing Alaska time, on the first business day following the 90th day after the Expiration Date, become subject to appropriation....". In the writer's unofficial opinion, this means that if the land freeze should expire on June 30 at midnight, the earliest that claims for nonmetallics could be legally staked on lands not selected by the State during its 90-day preference period would be at noon on September 29.

MINING LAW

Alaska Mining Law Manual by Charles F. Herbert has been reprinted by the University of Alaska and may be purchased from the Mineral Industry Research Laboratory, University of Alaska, College, Alaska 99701. The price is $4.00.

METAL MARKET

	January 4, 1971	Month Ago	Year Ago
Antimony ore, stu equivalent European ore	$13.39-16.07	$14.29-16.98	$17.86-18.75
Barite (drilling mud grade per ton)	$12-16	$12-16	$12-16
Beryllium powder 98% per ton	$54-66	$54-66	$54-66
Chrome ore per long ton	$31-35	$31-35	$31-35
Copper per lb.	53.1¢	56.0¢	52.4¢
Gold per oz.	$37.70	$37.90	$35.27
Lead per lb.	13.5¢	14.5¢	16.3¢
Mercury per 76# flask	$350-375	$360-375	$490-498
Molybdenum conc. per lb.	$1.72	$1.72	$1.72
Nickel per lb.	$1.33	$1.33	$1.28
Platinum per oz.	$122-125	$120-122	$130-135
Silver, New York, per oz.	162.0¢	167.5¢	174.1¢
Tin per lb.	160.5¢	169.7¢	180.2¢
Titanium ore per ton	$30-35	$30-35	$20-21
Tungsten per unit	$55.00	$55.00	$43.00
Zinc per lb.	15.0¢	15.5¢	16.0¢