STATE OF ALASKA
Department of Natural Resources
DIVISION OF MINES AND MINERALS

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MINES AND PETROLEUM BULLETIN

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PRELIMINARY ESTIMATE, MINERAL PRODUCTION IN ALASKA, 1967

MINERAL	1966 Quantity	1966 Value (thousands)	1967 (Preliminary) Quantity	1967 (Preliminary) Value (thousands)
Antimony ore and concentrate short tons, antimony content	8	w	w	w
Coal (bituminous)--Thousand short tons	927	$6,953	930*	930*
Gold (recoverable content of ores, etc) troy oz	27,325	956	26,000	910
Lead (recoverable content of ores, etc) short ton	14	4	w	w
Mercury------76 pound flasks	w	w	161	79
Natural Gas--Million cube feet	11,267	2,794	14,300	3,561
Petroleum (crude) thousand 42 gallon barrels	14,358	44,007	27,541	84,644
Sand and Gravel thousand short tons	17,457	21,793	22,426	27,683
Silver (recoverable content of or etc) thousand troy oz	7	9	8	12
Value of items that cannot be disclosed: Barite, Coal[1] Copper, Gem Stones, Lead[1] Mercury[2], Peat[1], Platinum group metals, Stone, Tin, and Uranium ore[2] and values indicated by symbol w----------	XX	6,167	XX	5,830
TOTAL	XX	82,683	XX	129,897

W- Withheld to avoid disclosing individual company confidential date
XX-Not Applicable
1 1967 (preliminary)
2 1966
* Above figures in cooperation with the US Bureau of Mines on authority of Division of Mines and Minerals alone.

MINING ACTIVITIES

CHANDLAR The Chandlar Gold Mining and Milling Company plans to construct a mill at Little Squaw Creek near Chandlar. Capacity of the mill will be about 10,00 tons per season. Production is planned to begain sometime in 1969. Mr. Frank Birch, owner and manager of the compnay, has reported ore reserves to be in the excess of 20 years.

The Chandlar district is an old mining district and is famous for the richness of its early day gold placers. Future exploration will undoubtedly yield new discoveries of importance.

OFFSHORE PROSPECTING The U.S. Bureau of Mines reseach ship "Virginia City" reported that gold has been found in samples from each of the 49 holes drilled in undersea placer deposits off the beaches of Nome. The grade of the samples was not stated. The purpose of the drilling is not to find minable gold but rather to improve seafloor sampling techniques. Global Marine conducted an exploration project in the Gastineau channel at Juneau. Latest reports state that the company performed sampling and made a seismic survey to determine thickness of channel sediments. The firm's officials have denied that gold has been found in marketable quantities.

PROSPECTING PERMIT FILING PERIOD SET A simultaneous filing period has been established for the filing of offshore prospecting permits on about 43,000 acres in the Goodnews Bay Area. The acreage was formerly covered by prospecting permits which recently were terminated.
The simultaneous filing period will begin Feb 1 at 10:00 A.M. and will continue until March 1 at 3 P.M. Applications, accompained by a $20 filing fee, should be made on form DL-174. Notice of the filing period is to be posted and will be mailed to all those on the Division of Lands mining mailing list. A date will be set later for the drawing to determine priorty. Additional information including the necessary forms may be obtain from Division of Land offices in Anchorage, Fairbanks, and Juneau, and by mail from the Anchorage office at 344 Sixth Ave.

NEW PUBLICATIONS The following Atlas was listed in the November issue of "New Publications of the Geological Survey". It may be ordered from the Superintendent of Documents, Government Printing Office, Washington D.C. 20402 or on an over-the-counter basis from authorized agents.

HA-294 "Flood of August 1967 at Fairbanks, Alaska", by J M Childers and J.P. Meckel. 1967, Vicinity of Lat 64° 50' long 147° 45'. Scale 1:24,000(1"=2000'); contour sheet 38 1/2 by 41 inches. $1.00

The following pamphlet was listed in "Selected U.S. Government Publications", Dec 15,1967 and may be ordered from the Superintendent of Documents, Government Printing Office, Washington D.C. 20402: The Prince William Sound, Alaska Earthquake etc:

8BB - $5.50 (cloth) Vol. II, Pt. A C 4. 19/2:10-3/v 2/pt.A.
9BB - $5.50 (cloth) Vol. I. etc. C 4/19/2:10-3/v 1.

OIL AND GAS NEWS

Eleven applications for drilling permits were approved by the Division's Petroleum Branch as follows:

Permit No. 67-86. Union Oil Company of California #K-3, Trading Bay Unit, A.P.I. No. 50-133-20074. Surface location: 729' FSL and 130' FEL, Sec. 17, T9N, R13W, SM. Bottom hole location: 2200' FNL and 350' FWL, Sec. 20, T9N, R13W, SM. This is a development location on the King Salmon Platform in the McArthur River Field.

Permit No. 67-87. Union Oil Company of California #K-4 Trading Bay Unit, A.P.I. No. 50-133-20075. Surface location: 613' FSL and 130' FEL, Sec. 17, T9N, R13W, SM. Bottom hole location: 250' FSL and 700' FWL, Sec. 21, T9N, R13W, SM. This also is a development location on the King Salmon Platform in the McArthur River Field.

Permit No. 67-88. Union Oil Company of California #A-12 Trading Bay State, A.P.I. No. 50-133-20076. Surface location: 1620' FSL and 574' FEL, Sec. 4, T9N, R13W, SM. Bottom hole location: 2030' FNL and 2210' FWL, Sec. 4, T9N, R13W, SM. This is a development location on the Monopod Platform in the Trading Bay Field.

Permit No. 68-1. Standard Oil Company of California #13-2 Lewis River, A.P.I. No. 50-283-20011. 1980' FSL and 660' FWL, Sec. 2, T14N, R9W, SM. This is an Exploratory location about thirty miles west of Anchorage.

Permit No. 68-2. Union Oil Company of California #A-13 Trading Bay State, A.P.I. No. 50-133-20077. Surface location: 1604' FSL and 573' FEL, Sec. 4, T9N, R13W, SM. Bottom hole location: 955' FSL and 1415' FWL, Sec. 4, T9N, R13W, SM. This is a development location on the Monopod Platform in the Trading Bay Field.

Permit No. 68-3. Shell Oil Company #C-24-26 Middle Ground Shoal. A.P.I. No. 50-133-20078. Surface location: 541' FSL and 1591' FEL, Sec. 23, T8N, R13W, SM. Bottom hole location: 500' FSL and 1800' FWL, Sec. 26, T8N, R13W, SM. This is a development location on the "C" platform in the Middle Ground Shoal Field.

Permit No. 68-4. Mobil Oil Corporation #33-14 Granite Point State, A.P.I. No. 50-133-20079. Surface location: 2366' FNL and 1256' FWL, Sec. 13, TION, R12W, SM. Bottom hole location: 2115' FSL and 1529' FEL, Sec. 14, TION, R12W, SM. This is a development location on Mobil's platform in the Granite Point Field.

Permit No. 68-5. Mobil Oil Corporation #24-13 Granite Point State A.P.I. No. 50-133-20080. Surface location: 2392' FNL and 1376' FWL, Sec. 13, TION, R12W, SM. Bottom hole location: 660' FSL and 1980' FWL, Sec. 13, TION, R12W, SM. This is a development location on Mobil's platform in the Granite Point Field.

Permit No. 68-6. Pan American Petroleum Corporation #19 Granite Point State 18742, A.P.I. No. 50-133-20081. Surface location: 834' FNL and 676' FEL, Sec. 12, TION, R12W, SM. Bottom hole location: 1980' FNL and 660' FEL, Sec. 12, TION, R12W, SM. This is a development location on Pan American's Platform "A" in the Granite Point Field.

Permit No. 68-7. Pan American Petroleum Corporation #21 Granite Point State 18742, A.P.I. No. 50-133-20082. Surface location: 790' FNL and 600' FWL, Sec. 12, TION, R12W, SM. Bottom hole location: 800' FSL and 660' FEL, Sec. 12, TION, R12W, SM. This is a development location on Pan American's Platform "A" in the Granite Point Field.

Permit No. 68-8 Pan American Petroleum Corporation #23 Granite Point State 18742 A.P.I. No. 50-133-20083. Surface location: 834' FNL and 676'FEL, Sec. 12 T10N, R12W, SM. Bottom hole location: 1980' FSL and 1500' FWL, Sec 12, T10N, R12W, SM. This is a development location on Pan American's Platform "A" in the Granite Point Field.

DRILLING ACTIVITY

Operator	Well Names & Number	Type	Status
Atlantic Richdield Co.	Prudhoe Bay #1	E	Drilling
Humble Oil & Refining Co.	Tyonek Reserve "B"	E	Drilling
Marathon Oil Company	Beaver Creek #2	E	Gas Well-S.I.
Mobil Oil Corp.	Granite Point State #24-13	D	Location
Mobil Oil Corp.	Granite Point State #31-23	D	Drilling
Mobil Oil Corp.	Granite Point State #11-24	D	Drilling
Mobil Oil Corp.	Granite Point State #33-14	D	Location
Mobil Oil Corp.	Granite Point State #44-14	D	Comp. Oil Well
Mobil Oil Corp.	Granite Point State #44-11	D	Location
Pan American Petroleum Corp.	Albert Kaloa #1	E	Gas Well-S.I.
Pan American Petroleum Corp.	Granite Point State 18742 #9	D	Comp Oil Well
Pan American Petroleum Corp.	Granite Point State 18742 #11	D	Temp Susp.
Pan American Petroleum Corp.	Granite Point State 18742 #12	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #13	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #14	D	Temp Susp.
Pan American Petroleum Corp	Granite Point State 18742 #15	D	Comp Oil Well
Pan American Petroleum Corp.	Granite Point State 18742 #16	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #19	D	Drilling
Pan American Petroleum Corp.	Granite Point State 18742 #21	D	Location
Pan American Petroleum Corp.	Granite Point State 18742 #23	D	Location
Pan American Petroleum Corp.	MGS State 17595 #10	D	Comp Oil Well
Pan American Petroleum Corp.	MGS State 17595 #13	D	Comp Oil Well
Pan American Petroleum Corp.	South MGS Unit #4	D	Comp Oil Well
Pan American Petroleum Corp.	South MGS Unit #5	D	Drilling
Pan American Petroleum Corp.	South MGS Unit #7	D	Drilling
Pan American Petroleum Corp.	South MGS Unit #8 (was #9)	D	Temp Susp.
Shell Oil Company	MGS A-14-1	D	Drilling
Shell Oil Company	MGS C-23-26	D	Drilling
Shell Oil Company	MGS C-24-26	D	Location
Standard Oil Co. of Calif.	Lewis River Unit 13-2	E	Location
Texaco, Inc.	Swanson Lake #1	E	Drilling
Union Oil Co. of Calif.	Trading Bay State A-9	D	Comp Oil Well
Union Oil Co. of Calif.	Trading Bay State A-10	D	Comp Oil Well
Union Oil Co. of Calif.	Trading Bay State A-12	D	Location
Union Oil Co. of Calif.	Trading Bay State A-13	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit D-1	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit D-2	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-3	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit G-4	D	Comp Oil Well
Union Oil Co. of Calif.	Trading Bay Unit G-5	D	Location
Union Oil Co. of Calif.	Trading Bay Unit G-6	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit K-1	D	Drilling
Union Oil Co. of Calif.	Trading Bay Unit K-2	D	Comp Oil Well
Union Oil Co. of Calif.	Trading Bay Unit K-3	D	Location
Union Oil Co. of Calif	Trading Bay Unit K-4	D	Drilling

"E" indicates an exploratory well, and "D" a development well

PRODUCTION - December 1967 (Gas now all at pressure base of 14.65 psi)

Field	Zone	Prod. Wells	Oil Bbls	Gas, MCF
Swanson River Field	Hemlock	36	1,146,239	1,705,838
			74,951,420*	32,375,636*
	Injection Hemlock	9 (inj)		4,139,250
				86,115,166*
Middled Ground Shoal	Hemlock & Kenai	30	1,030,189	427,390
		(incl. 6 duals as 12 wells)	10,084,636*	4,391,861*
Kenai	Kenai	17		3,941,002
		(incl. 6 dual as 12 wells)		88,275,342*
Sterling	Kenai	1		21,549
				586,646 *
Trading Bay	Kenai& Hemlock	8	132,906	156,851
		(Incl. 2 duals as 4 wells)	728,696*	673,031*
Trading Bay (gas well)	Kenai	1 (dual: lower-oil upper-gas)		10,511
				47,268*
Granite Point	Kenai	17	1,349,566 (1)	829,728 (2)
		(Incl. 1 dual as 2 wells)	7,053,350*	4,889.550*
McArthur River	Hemlock	1	350,833 (3)	103,739
			748,815*	219,915*
Moquawkie	Kenai	1		8,748
				34, 399*
		State Total	4,009,733	7,202,966
		Average Per Day	129,346	232,354

* Cumulative to January 1, 1968

(1) Correction in November Report 1,381,000
(2) Correction in November Report 928,352
(3) Correction in November Report 338,972

A LOOK AT THE RARE-EARTHS

By Paul L. Anderson
Laboratory Supervisor

The rare-earth group of elements consists of the 15 elements from atomic number 57 through 71 plus yttrium, atomic number 39, which all have similar chemical properties. The rare-earths seem to have an attraction to prospectors disproportionate to their present value. Probably this results because their name implies scarcity, a name which was applied before their true abundante was known. It is now known that, for example, the three more abundant rare-earth elements (cerium-neodymium-lanthanum) are more abundant, collectively, than either of the metals, copper or nickel. The demand for rare-earth elements is, of course, considerably less than that for copper or nickel.

The geologic sources for the rare-earth are basically two: bastnaesite mineral suit as occurs at Mount Pass, San Bernadino Country, Calif., and the monazite mineral suit (monazite-sand type deposit) as occurs in the Piedmont Province, especially of the North and South Carolina.

The current situation in the rare-earth industry is one of oversupply with the main problem being to find markets. The outlook is for that problem to become even more acute. The known reserves of rare-earth is very large.

In both types of rare-earth deposits the principal element is cerium. Typical analysis of commerical monazite and bastnaesite ores are:

	Monazite	Bastnaesite
Cerium oxide	29%	29%
Lanthanum oxide	17	28
Praseodymium oxide	4	2
Neodymium oxide	11	4
Samarium oxide	1	0.5
Europium oxide	0.001	0.3
Gadolinium oxide	0.5	0.3
Ytterbium oxide	0.9	0.3
Yttrium oxide	0.1	0.3
Total rare-earths about:	65%	65%
Thorium oxide	3.5%	0.1%

Other non-valuable oxides for the remainder.

It is from the above typical analyses of commertial ore that source material must be very rich in rare-earths to qualify as ore.

The Division of Mines and Mineral is equipped to analyze semi quantitatively for rare-earths, either by optical emission spectrography or by X-ray emission spectrography. What seems to be the most direct approach for analysis of samples submitted for rare-earth analysis is to simply analyze for cerium which is always the most abundant rare-earth element in either type of ore. If cerium is not present in rather large quantities, over about 1%, the sample does not contain rare-earths of potential economic interest. This will eliminate the necessity of analyzing individually for the more than 15 rare-earth elements, and yetwill completely characterize the sample realtive to its commerical potential. If more than 1% of cerium is found than a systematic analysis of the sample for the various rare-earth elements would be justified.

References:

Mineral Facts and Problems, 1965 Edition Bulletin 630, Bureau of Mines, U.S. Dept of Interior.
Rare Metals Handbook, Clofford A. Hanpel, Reinhold Publishing Co., N.Y., 1954

E. AND M. J. METAL MARKET PRICES

	January 22 1968	Month AGO	YeAR AGO
Copper, per lb.	Suspended*	Suspended*	36.2¢
Lead, Per lb	14¢	14¢	14¢
Zinc, per lb	13.5¢	13.5¢	15¢
Tin, per lb	148.5¢	155.1¢	153.71¢
Nickle, per lb	94.00¢	94.00¢	81-85¢
Platinum, per oz	$109-114	$109-112	$100
Mercury, per flask	$538-540	$505-515	$475-485
Antimony ore, per unit	$5.00-5.95	$5.00-5.95	$4.65-5.65
Beryllium powder, 98% (lb)	$54.-66	$54-66	$54-66
Chrome ore, long ton	$31-35	$31-35	$31-35
Molybdenum conc., per lb	$1.62	$1.62	$1.62
Titanium Ore, per ton	$21-24	$21-24	$21-24
Tungsten, per unit	$43.00	$43.00	$43.00
Silver, New York, per oz	$208.00¢	$178.59¢	129.3¢

*E. & M.J. Metals Week says the following: "With virtually all domestic copper production struck and with the pipelines now about empty, Metals Week feel that there is not a sufficient tonnage of producer copper being sold in the U. S. to calculate a meaningful weighted average. Foreign-produced and higher-priced copper would take on too great a weighting in the calculation, and consumers would be hit with an expected and unfair increase in their copper costs. Consequently, the E. & M.J. domestic average will be suspended until a representative tonnage of U. S. produced copper is again being sold."
