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OREGON'S MINERAL INDUSTRY IN 1958

By
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The value of minerals produced in the State in 1958 was within a fraction of one percent of the all-time high reached in 1957 - despite a general business recession during the year. A preliminary estimate by the U. S. Bureau of Mines of the value of Oregon's mineral production is $42,118,000. Generally speaking, the Bureau bases its valuation figures on minerals as they leave the pit or mine. The value of the same minerals at point of use in the State or shipping point for out-of-State movement would be several times the above amount. If mineral production were reported in the same manner as other commodities in the State the value would be in the neighborhood of $100,000,000.

Chrome mining came to an abrupt halt in May; Harvey Aluminum Company energized its two potlines at The Dalles in August; cutbacks in zirconium production were announced by Wah Chang Corporation in September; the first pound of uranium "yellow cake" was produced by Lakeview Mining Company in December; and Government support for quicksilver terminated December 31. The diversified nature of the State's mineral and metallurgical industry survived these gains and losses and came out with the second highest total in the past 108 years. Exploration for oil and gas continued at about the same level as last year with seven major companies and several groups in the field. Drilling was done on seven tests during the year.

Industrial Minerals

Cement, lime, and limestone

Continuing a steep upward trend begun in 1954, the production of cement in Oregon increased approximately 17 percent over last year to an all-time high. Total production from the State's three cement plants amounts to approximately 3,700,000 barrels annually. Nearly $4,000,000 was earned by the 720 men employed during 1958. The great increase over 1957 figures reflected the plant improvements made last year at both the Lime and Dallas plants of

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Oregon Portland Cement Company. Ideal Cement Company continued in full production at its Gold Hill plant to which limestone is trucked from a company-operated quarry near Wilderville in Josephine County. Chemical Lime Company fired up its two rotary kilns at Wingville near Baker late in 1957 and produced burnt and hydrated lime. High-grade limestone for the plant comes from a company-owned quarry about 8 miles away. Crushed limestone was quarried near Enterprise in Wallowa County by Greeley Lime Company for the manufacture of calcium carbide by Pacific Carbide & Alloys Company at its plant in North Portland. Greeley subcontracted the quarrying to National Industrial Products Company and the trucking to railhead to Misander Brothers. National also produced various sizes of crushed limestone from its own quarry near Durkee in Baker County for heavy chemical and metallurgical industries in the Pacific Northwest. A nearby deposit of hot spring travertine owned by National was drilled during the year to determine grade and tonnage. The easily ground travertine represents a new product for the agricultural market. Union Carbide Metals Company produced calcium carbide at its plant in North Portland. Dewitt's Polk County Lime Company quarried and crushed agricultural limestone at its quarry near Dallas in Polk County. The adjacent quarry operated by Oregon Portland Cement Company shipped low-grade limestone to the cement plant at Oswego and sold some agricultural stone also. The Department published a tabulation of all known limestone deposits in the State together with index maps showing their location in the April and May 1958 issues of The Ore.-Bin.

Silica

Late in the year, Roy and G. D. Rannells shipped 1000 tons of silica from the newly discovered deposit on Quartz Mountain northeast of Tiller in Douglas County to the Hanna Nickel Smelter at Riddle for test purposes. Bristol Silica Company quarried and processed silica from a quarry near Rogue River in Jackson County. Bristol has been the only silica producer in the State for the past 20 years. In addition to supplying high-grade silica for metallurgical purposes the company produces poultry grit and other specialty products.

Lightweight aggregates

Oregon's two expanded-shale producers, Smithwick Concrete Products Company and Empire Building Materials Company, continued to enlarge their horizons in 1958. Smithwick, starting with a dozen sizes and shapes of concrete blocks 9 years ago, now produces 100 styles which find application in such diverse places as chimneys, walls, and ornamental pieces in window displays. Empire fabricated some 120-foot-long lightweight concrete pilings 20 inches square for the Commission of Public Docks. The pilings weigh 19 tons each and are pre-stressed to withstand the jar when driven. Empire is experimenting with an improved design for structural members to be used for floors and roofs, the demand for which is steadily increasing. The Company delivered five pre-stressed lightweight concrete beams 112 feet long, 6 feet high, by 2 feet thick, and weighing 85,000 pounds to a building in Eugene. Weight and load length restrictions for highway hauling will probably limit construction of beams much larger than this. Both Smithwick and Empire supply aggregate for monolithic pours, with some shipments going hundreds of miles. Expanded shale mixed with high-alumina cement has been found to withstand temperatures up to 2000° F. and Smithwick packages two-cubic-foot bags for use in brick plants, oil refineries, and fireboxes requiring an insulating refractory. Both companies reported increased business, due in part to general area growth and more importantly to a growing acceptance of lightweight aggregate as a prime construction material.

In central Oregon four companies were active in the production of pumice and volcanic cinders. Harney Concrete Tile Company quarried and sized an unusually hard pumice in Harney County for block aggregate and road metal for logging roads. In the Bend area, Cascade Pumice Corporation and Central Oregon Pumice Company produced pumice and scoria for block and monolithic aggregate. Cinder Hill Rock Quarry near Redmond quarried blocks of dark-red cinders for

garden rockeries and low retaining walls and crushed cinders for road metal. Leroy Grote, of the Cinder Hill Quarry, donated 2,000 yards of red cinders to the Portland Zoo Railway. The cinders are also used extensively for ballast on full scale roadbeds since they pack tightly and do not shift. Preliminary figures indicate that the value of pumice and cinders declined somewhat from the 1957 figure.

Building stone

Brightly colored volcanic tuffs were quarried and shaped for dimension stone and other uses by three operators in central Oregon. Pacific States Cut Stone Company at Willowdale in northern Jefferson County, Rainbow Rock Quarry near Pine Grove in Wasco County, and the Indian Candy Stone Quarry on the Warm Springs Indian Reservation in Wasco County were all active during the year. Natural Stone Company opened a quarry near Rome in Malheur County and cut a gray-white tuff with thin black banding. The Rocky Butte Quarry in Portland turned out a dark gray lava for fireplaces and patios, and Tuff Stone Company at Sublimity in Marion County sawed blocks of gray tuff for insulating walls. A quarry near Idanha in eastern Marion County was opened up by Harold Hills and Ted Geck who produced light-colored volcanic tuff blocks. At his quarry near Riddle in Douglas County, Melvin Parker installed a clipping machine to shape slabs of a blue-green fine-grained sandstone used for flagging and veneer. The Carver Quarry in Clackamas County produced rough blocks of gray andesite for walls and fireplaces. Northwestern Granite Quarry at Haines, Baker County, continued to produce a small amount of monumental granite.

Oregon's Mineral Industry at a Glance

	1957	1958
Chromite	$ 674,631	$ 375,030 -
Clays	265,556	300,000 +
Gold	118,335	57,750 -
Mercury	986,191	536,800 -
Sand and gravel	13,481,263	13,600,000 +
Silver	14,412	3,439 -
Stone	11,744,962	8,800,000 -
* Undistributed	16,153,541	19,445,000 +
Total	$42,820,000	$42,118,000 -

*Includes: Cement, diatomite, lime, uranium, and CO_2.

Sand and gravel, crushed stone

Production of sand and gravel and crushed stone continued at a high level to keep pace with the large road-building programs in progress throughout the State. Sand and gravel tonnages slightly exceeded the 1957 figures in preliminary estimates while crushed stone dropped about $2\frac{1}{2}$ million tons below the previous year. Decreased demand for rip-rap by the Army Engineers was cited as the principal cause for the decrease. Search for suitable quarry sites was intensified. Quarry sites once considered uneconomic by reason of their distance from point of use were being opened up as the result of improved loading and haulage equipment.

Bentonite

Central Oregon Bentonite Company core drilled its property in Jefferson County and stockpiled 500 tons of dried bentonite. A grinding mill was being installed at year's end. Crude bentonite was sold to ranchers and the Bureau of Land Management for sealing stock ponds.

Borax

Approximately 77,000 acres near Alvord Lake in eastern Harney County were leased by the U.S. Bureau of Land Management during the last half of 1958. Most of the leases were granted in T. 37 S., R. 33 E., but leases were also obtained for parts of 14 other townships in the vicinity. A brief history of the borax industry active in the 1900's at Alvord Lake appeared in the June 1958 Ore.-Bin.

Carbon dioxide

Gas-Ice Corporation produced dry ice from carbon dioxide obtained from wells south of Ashland in Jackson County. The Department began a State-wide inventory and study of carbon dioxide springs during the summer.

Perlite and vermiculite

Supreme Perlite Company popped raw perlite obtained from Arizona at its plant in North Portland. Vermiculite-Northwest Company exfoliated vermiculite at its Portland plant. Raw material was shipped from a deposit near Libby, Montana.

Metals

Uranium

Oregon became a full-fledged uranium producing State when on December 20, 1958, the first pound of "yellow cake" uranium concentrate was recovered from the filter press of Lakeview Mining Company's plant located just north of Lakeview. The 300-ton-per-day solvent extraction mill had started up November 29. Three weeks were required to build up the concentration of uranium in the circuit before the first production.

Ore for the mill comes from the White King mine which is about 15 miles northwest of Lakeview at an elevation of 6300 feet. A three-compartment shaft scheduled to be sunk to a depth of 700 feet was started in June and at year's end was progressing as planned. The new shaft will tap ore discovered by surface drilling and will connect with present underground workings now served by the No. 1 shaft. The deposit was discovered $3\frac{1}{2}$ years ago by two local prospectors who subsequently leased the property to Lakeview Mining. A detailed report on the mine and mill was published in the December 1958 Ore.-Bin

Thirty percent of the milling capacity of the Lakeview mill is reserved under terms of the AEC contract for the processing of ores from other properties which are amenable to treatment in the plant. Despite rather intensive exploration of the area surrounding the White King mine and the adjacent Lucky Lass mine, by the Lakeview Mining Company and others, no more deposits of commercial grade or size have turned up. The Department is making a detailed geological study of the area.

In Harney County, Timber Beast Mining Company secured a DMEA loan and carried on an exploration project during the year at its Steens Mountain property. Solar-X Corporation of Boise also explored its property on Steens Mountain. Minor work was also done in the Powell Butte and Bear Creek areas of Crook County.

Chromite

Production of chromite lump ore and concentrates came to an abrupt halt on May 19, 1958, when the General Services Administration announced closure of the Grants Pass chrome stockpile. First shipments to the stockpile were made in August 1951. Originally the program was to last only 5 years but subsequent revisions extended it until June 30, 1959, or until 200,000 long tons were received. More than 46,000 tons of ore and concentrates were shipped from Oregon mines in the $6\frac{1}{2}$-year period; the remainder came from California and Alaska. Value of the chromite produced in Oregon came to about $4,000,000. Nine chrome mills and 16 mines were active during the first few months of 1958. Several mines and mills had closed late in 1957 in recognition of the impending closure of the stockpile.

In March the Department of Geology and Mineral Industries and the Department of Planning and Development jointly authorized a study to determine the feasibility of establishing a ferrochrome plant to process local ores. If established the plant would provide a steady market for chrome which would then be converted into ferrochrome competitive with that made from foreign ores.

In September the California-Oregon Chrome Producers Association incorporated as a cooperative, with one of its prime objectives being to secure a ferrochrome plant for the area.

Nickel

Production of ferronickel at the Riddle smelter operated by Hanna Nickel Smelting Company was approximately 15 percent greater than in 1957. Ore for the smelter comes from the top of Nickel Mountain where a large open-pit mine is operated by Hanna Mining Company (formerly known as Hanna Coal & Ore Corporation). Hanna Nickel Smelting Company is now a wholly-owned subsidiary of Hanna Mining. This mine and smelter represent the only nickel production in the United States. The value of its production is a major item in Oregon's mineral picture and its employment, around 500, is an important factor in the area's economy.

The Nickel Corporation of America, which conducted an extensive trenching and sampling program in the Cave Junction area of Josephine County in the latter part of 1957, suspended activities in the spring of 1958. Pacific Nickel Corporation also curtailed its exploratory program in the Red Flat area of Curry County which was started last year. To further study the geology of the area, Pacific had colored stereographic aerial photographic transparencies made, probably the first of their kind to be used commercially in the State. The Department first examined and sampled the Red Flat area in 1946.

Mercury

In April the condenser tubes at the Horse Heaven mine in Jefferson County were broken up and run through the retort, signalling the end of one of the State's major quicksilver producers. The quicksilver deposit was discovered by A. J. Champion in 1933 and the first flask was produced in late 1934. Horse Heaven Mines, Inc., a subsidiary of Sun Oil Company, acquired the property in 1936 and operated it continuously until the plant was destroyed by fire in November 1944. A 20-ton rotary furnace was erected by Horse Heaven in December 1954 to furnace known reserves of ore and broken ore left underground when the plant burned. A total of 17,000 flasks was produced from the mine during its 14 years of operation.

The Bonanza Mine east of Sutherlin in Douglas County continued to operate during the year. A new drift was under development and some good grade ore was reported to have been cut. Production was somewhat below that of 1957, due in part to running development ore from the new drift through the furnace. Bonanza has a total recorded production of nearly 102,000 flasks which amounts to more than 35 percent of the State's total production.

The Bretz mine in southern Malheur County accounted for more than half of the State's estimated total production of 2,339 flasks in 1958. The Bretz, operated by Arentz-Comstock Mining Venture, employs a flotation circuit to upgrade its ore. During 1958 much of the mill feed came from low-grade dumps which, because of economic conditions, had been left by Bradley Mining Company when it operated the property from 1931 to 1944.

Several flasks of mercury were produced by Western Minerals, Inc., in a 20-ton Lacey rotary furnace at the Angel Peak mine in the Quartz Mountain area of southern Lake County. Ore from the Blue Ridge mine, operated by Mia Mines, Inc., in Crook County was concentrated in a small gravity mill and the metal recovered in a retort. Moneta Porcupine Mines, Ltd., explored the Elkhead mine in northern Douglas County with the aid of a DMEA loan. The Axehandle mine in Jefferson County was also explored, with DMEA assistance, by John D. Hoffman who acquired an interest in the property from International Engineering Company early in the year. Results of the exploration programs at both the Elkhead and Axehandle mines were reported to be disappointing. Werdenhoff Mining Company leased the Mother Lode property in Crook County and did considerable surface stripping.

Of considerable interest to mercury producers in the State was the announcement by Van Waters & Rogers Company, Portland, that it was buying and selling small lots of mercury, including fractional flasks of native quicksilver.

Bauxite

Harvey Aluminum Company's exploration of ferruginous bauxite deposits in the Salem Hills area of Marion County was reduced in 1958. Considerable interest in occurrences of bauxite in the northwestern part of the State was shown by several other companies during the year.

Iron

A token shipment of 5 tons of Scappoose limonite was sent to Japan for test purposes in 1958. Preliminary reports indicated that the ore was acceptable and a larger movement in 1959 is planned. Several iron and steel companies showed an interest in iron deposits in the State during the year. Direct reduction of iron ores, using local, low-grade coals, offers a possible method of treating Oregon ores since capital outlay is much less than that for conventional blast-furnace installations and no coking coal is required.

Gold

Gold production in the State declined 51 percent from 1957 due largely to decreased production at the Buffalo mine in Grant County. The Buffalo began driving a 1400-foot adit 230 feet below the lowest workings in the mine to intersect several ore-bearing veins. A flotation mill on the property is operated intermittently when sufficient ore has been accumulated.

The Warner mine in the Gold Hill district of Jackson County saw some production of high-grade ore. Frank Gelhaus also operated a small mill from time to time on the property. A small amount of mining was done by Earl Young at the Humdinger mine located about 25 miles south of Grants Pass, and the Reno mine in the Galice area was worked by Quentin Stone. R. C. Hanford leased the Daisy mine at the head of Jump-Off-Joe Creek in Josephine County and explored underground. Peridotite Metals, Ltd., leased the Braden Mine Extension in the Gold Hill area of Jackson County and was reported to have leased several other properties in the Waldo-Takilma area.

Placer mining during the winter months continued at about the same rate as it has for a number of years with principal activity centered in the Waldo-Takilma, Galice Creek, Wolf Creek, and Jump-Off-Joe Creek areas of southwestern Oregon.

Copper

Standard Milling Company operated the Standard mine near Prairie City in Grant County and a newly constructed 50-ton flotation mill. The concentrate contained a small amount of cobalt but this was not recoverable when shipped to the smelter. The Standard mine was discovered in the 1860's and was an important shipper of cobalt around the turn of the century. A historical summary of the mine appeared in the September 1956 Ore.-Bin.

Electro Process Products

Aluminum

Harvey Aluminum began operations at its 240-pot aluminum reduction plant at The Dalles on August 5th. The plant, located on the Columbia River 5 miles below The Dalles Dam, is rated at 100,000,000 pounds of primary metal annually. Alumina for the plant comes from Japan and is unloaded into rail cars at Portland. The plant will produce pigs, ingots, and billets for commercial outlets and for Harvey's own fabrication facilities.

Reynolds Metals Company operated its reduction works at Troutdale with one potline shut down from May through October due to a decreased demand for metal. Similar cutbacks were made at aluminum smelters all over the United States.

Reactive metals

The year 1958 saw a sharp change in the supply and demand picture for the "reactive metals" zirconium, titanium, and hafnium. Wah Chang Corporation began operating its zirconium plant near Albany on a reduced basis October 1, due in part to a curtailment in the demands for metal by the military. In June, Wah Chang ceased operations at the zirconium production facilities leased from the Atomic Energy Commission at the U.S. Bureau of Mines station in Albany upon expiration of a 2-year contract. Co-product hafnium from Wah Chang's zirconium purification plant was purified and processed into hafnium sponge by the U.S. Bureau of Mines until late in 1958 when a contract with the Atomic Energy Commission expired. Wah Chang stepped up activity in the separation and reduction of columbium-tantalum which had begun in 1957 on a trial basis. Columbite ore from Malaya was used as a raw material in the process. Oregon Metallurgical, also in Albany, continued to process zirconium and titanium sponge into ingots and castings. The company, which buys sponge from Wah Chang and other reduction works, announced a 2.5 million dollar plant expansion during the year.

Ferroalloys

National Metallurgical Corporation, which produces elemental silicon at its plant at Springfield, began construction of a new stationary hearth electric furnace which is scheduled to go on stream in June. Installation of the 4000 Kva furnace will cost about $500,000. Union Carbide Metals Company manufactured ferroalloys at its plant in North Portland.

Oil and Gas

Administration

The Department issued four new drilling permits and one deepening permit in 1958 as compared with seven new drilling permits issued in 1957. The total footage drilled during the year was 18,060 feet; this was a decrease of nearly 19 percent over the 6-year average from 1953 through 1958. Thirty-five trips were made to drilling sites last year by Department representatives, and field investigations were made on four reported oil seeps in western Oregon.

Exploration

Geologic field investigations by oil companies operating in Oregon were continued at about the same level in 1958 as in the previous year with seven major oil companies conducting geologic field studies and several small groups making limited studies. One company made seismic surveys in northwestern Oregon this fall and another took gravity readings in central Oregon during the summer.

Drilling was done on seven oil tests in 1958. Miriam Oil Company abandoned its "Bliven No. 3" test in January 1958, and Sunray Mid-Continent, operator, abandoned "Bear Creek Unit No. 1" in August 1958. Two oil tests were being drilled and work suspended on four others at the start of 1959.

Oil and gas shows

Oil has never been found in commercial quantities in Oregon and any oil seen so far has been only traces in drill cuttings and cores or droplets of oil found by prospectors and gem hunters in geodes from north-central Oregon. Traces of oil have been confirmed in the following test holes:

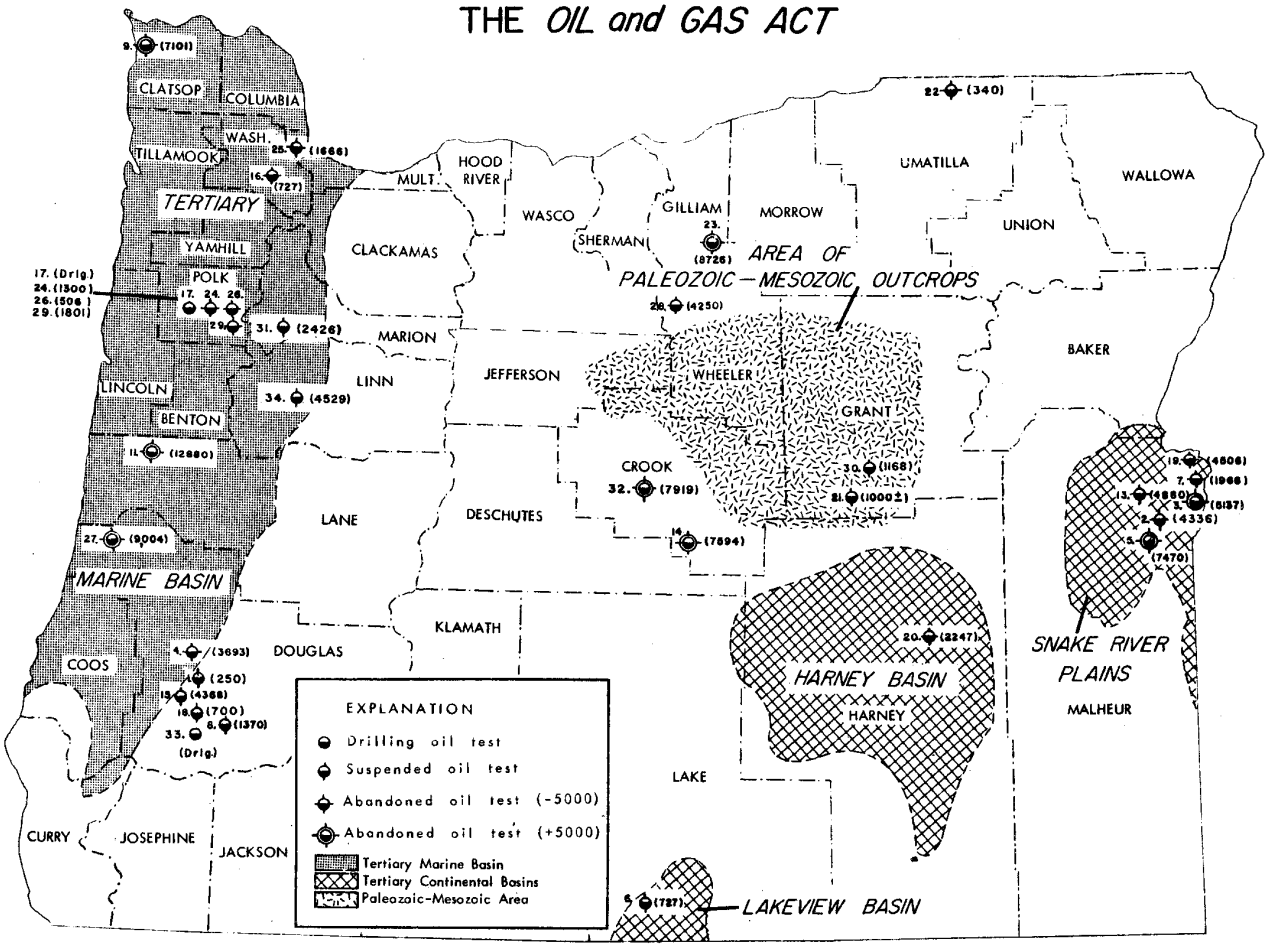
Columbia Oil Development Company*	Well No. 1	SW¼ sec. 4, T. 20 S., R. 44 E., Malheur County
Eastern Oregon Oil Company*	Well No. 1	Sec. 12, T. 20 S., R. 45 E., Malheur County

*U.S. Geol. Survey Bull. 431, Gas and oil prospects near Vale, Oregon, and Payette, Idaho, p. 36.

Linn County Oil Development Company	Barr No. 1	NW¼ sec. 32, T. 11 S., R. 1 W., Linn County
Oil Developers, Inc.	Scott No. 1	SW¼ sec. 5, T. 27 S., R. 6 W., Douglas County
Standard Oil Company	Pexco-State No. 1	NE¼ sec. 36, T. 20 S., R. 20 E., Crook County

Inflammable gas has been found at many places in Oregon, but so far it has occurred in too small a quantity for commercial development. Gas production for Oregon is mentioned in U.S. Geological Survey Mineral Resources of the United States, 1909, Part II, for the years 1907, 1908, and 1909. This was no doubt the gas used in eastern Oregon by several ranchers for heat and light. This gas was produced from water wells and is reportedly still being used.

OIL TEST WELLS DRILLED UNDER THE *OIL and GAS ACT*



News items

The joint drilling of a deep test southeast of Prineville this summer by Sunray Mid-Continent Oil Company and Standard Oil Company caused some speculation in that area. Costs of drilling were shared by several other companies besides the two mentioned. The test near Prineville was drilled on a Federal Unit Lease Agreement; the first of its kind in Oregon. The Unit Lease Agreement covers nearly 140,000 acres. No new test holes have been started since abandonment of "Bear Creek Unit No. 1" in August. Sinclair Oil & Gas Company closed its Portland exploration

office in September 1958 after having operated in the State for nearly 5 years. Sinclair drilled Oregon's deepest well near Mapleton in Lane County during 1955; total depth was 12,880 feet. Reports of an oil strike at Linn County Oil Development Company's "Barr No. 1" near Lebanon in December caused considerable excitement. Results of tests, however, were negative and early in January 1959 the drilling was suspended.

			Total Depth
Abandonments declared official in 1958			
Big Red Uranium Company	Richartz No. 1	NW¼ sec. 24, T. 6 N., R. 34 E., Umatilla County	340 ft.
Miriam Oil Company	Bliven No. 3	SW¼ sec. 10, T. 8 S., R. 5 W., Polk County	1801
Oregon Petroleum Corporation	Clarno No. 1	SE¼ sec. 27, T. 7 S., R. 19 E., Wheeler County	4250
Seneca Oil, Gas & Development Company	Lemmons No. 1	NE¼ sec. 18, T. 17 S., R. 29 E., Grant County	246
Sunray Mid-Continent Oil Company - Standard Oil Company	Bear Creek Unit No. 1	SE¼ sec. 30, T. 17 S., R. 19 E., Crook County	7919
Records released from the confidential files in 1958			
Miriam Oil Company	Elliott No. 1	SW¼ sec. 9, T. 8 S., R. 5 W., Polk County	1080
Oroco Oil & Gas Company	Portland Co. No. 1	NW¼ sec. 18, T. 24 S., R. 33 E., Harney County	2247
Sinclair Oil & Gas Company	Federal-Mapleton No.1	SE¼ sec. 12, T. 16 S., R. 10 W., Lane County	12,880

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SURVEYED LOCATIONS OF OIL TESTS

Linn County Oil Development Company - "Barr No. 1." Located 258.9 feet south and 791.4 feet east from the northwest corner of sec. 32, T. 11 S., R. 1 W., WM, Linn County. Elevation 355 feet. Six months suspension granted January 12, 1959.

V. V. Erntson - "Schermacher No. 1." Located 264.4 feet south and 345.3 feet west from the northeast corner of sec. 27, T. 9 S., R. 2 W., WM, Marion County. Elevation 322 feet Hole was abandoned on January 14, 1959. Total depth 2426 feet.

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WATER SUPPLY INFORMATION AVAILABLE

Information on quantity and quality of surface waters in the State has been issued recently by the Surface Water and Quality of Water branches of the U.S. Geological Survey. Data presented include measurements of streams, lakes, and reservoirs in various drainage areas, and temperatures and chemical analyses of some of these waters. The information is contained in Water Supply Papers 1293, 1318, 1344, 1430, and 1447, and may be obtained from Superintendent of Documents, Washington 25, D.C.

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1958 DMEA ACTIVITY IN OREGON

The Defense Minerals Exploration Administration had four contracts in force in the State during 1958, details of which are shown in the accompanying box. At year's end all of the contracts had been either completed or terminated before completion. The DMEA program, in existence since 1950, ended June 30, 1958.

Name	Commodity	Government participation	Total
International Engineering Co. Axehandle Mine Jefferson County, Oregon	Mercury	$ 7,815.00	$ 10,320.00
Orion Exploration & Development Log Cabin, Ridge, and Camp claims Crook County, Oregon	Mercury	9,075.00	12,100.00
Timber Beast Mining Co. Timber Beast claims Harney County, Oregon	Uranium	18,579.00	24,772.00
Moneta Porcupine Mines Elkhead Mine Douglas County, Oregon	Mercury	2,599.25	5,198.50

The Office of Minerals Exploration succeeded it when the President signed Public Law 85-701 on August 21, 1958. The law establishes a domestic minerals exploration loan program. The Secretary of the Interior may designate minerals (excluding organic fuels) which he deems necessary for the national interest and provide loans on a participating basis to private companies for exploration for such minerals. Government participation is limited to $250,000 for any one contract and the applicant is required to prove that funds for the exploration are not available from commercial sources on reasonable terms. Loans would be at the current Treasury interest rate plus two percent for administration, and repayment of any loan, with interest, is required through payment of royalties on minerals produced from the project. Congress appropriated $4 million for the agency's use in the current fiscal year, with the proviso that loans may not exceed 50 percent of the cost of a project. Inquiries to OME should be sent to South 157 Howard Street, Spokane 4, Washington. Mr. A.E. Weissenborn is executive officer for the organization.

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KLAMATH RIVER BASIN DESCRIBED

The U.S. Geological Survey has just released an open-file report entitled "Preliminary Report on the Ground-Water Resources of the Klamath River Basin, Oregon." Authors are R. C. Newcomb and D. H. Hart of the Survey's Ground-Water Division in Portland. The report discusses the geography, geology, and hydrologic conditions of this large basin, and tabulates records for wells, springs, and chemical quality of the water. Included are two maps (4 parts each); one map shows the location of the representative wells and springs and the other shows the distribution of the geologic formations, which range in age from pre-Tertiary to Recent.

This report is not for distribution, but may be consulted at the following places in Oregon: Geological Survey, 1001 N.E.Lloyd Blvd., Portland; State Engineer in Salem; Klamath County Agricultural Agent in Klamath Falls; this Department in Portland and its branch office in Grants Pass; and local public libraries.

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