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EDEN RIDGE COAL TO BE INVESTIGATED

By
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To Mrs. O. whose ability to make a dull article look interesting is greatly appreciated TSM

A new and important development in Oregon's mineral industry was announced this month by Pacific Power & Light Company, Portland, when it made public its plans to start immediate exploration of the Eden Ridge coal, southern Coos County, for possible use in an on-the-spot 100,000-kilowatt steam-electric generating plant. A companion investigation to the coal exploration is the possibility of developing additional power through a hydro plant utilizing a drop of 1600 feet in the South Fork of the Coquille River as it flows around Eden Ridge. Although largely unexplored, the Eden Ridge coal seams, which have been known for more than half a century, may contain a reserve of subbituminous grade coal running into many millions of tons.

Ed.

The Eden Ridge coal field is located in Tps. 32 and 33 S., R. 11 W., in southern Coos County, 11 miles south of Powers and 24 miles north of Agness (see map on page 68). The South Fork of the Coquille River cuts through the south end of Eden Ridge, a prominent physiographic feature east of Powers, to expose the coal beds. Access to the area is by good forest road from Powers that follows, in general, the Coquille River to Eden Valley at the drainage divide between the Coquille and the South Umpqua River.

The Eden Ridge coal seams have been investigated by geologists from time to time since 1912 when Lesher** first reported on the area. Other reports, principally by Campbell and Clark, 1916, and Daniels, 1920, have also been published. The coal lies in a series of gently dipping sandstones of middle Eocene age. Insufficient exploration has been done to date to determine the extent of the several seams which crop out at numerous places but Pacific Power & Light Company states that 50,000,000 tons of coal are indicated. Although Lesher reported that the coal had coking characteristics, samples taken earlier this year by the Department and analyzed by the U.S. Bureau of Mines, Division of Solid Fuels Technology at Seattle, were not of coking grade. The coal may have an average as high as 11,000 B.t.u.'s. It does not slack readily and samples mined years ago have been found in good condition on some of

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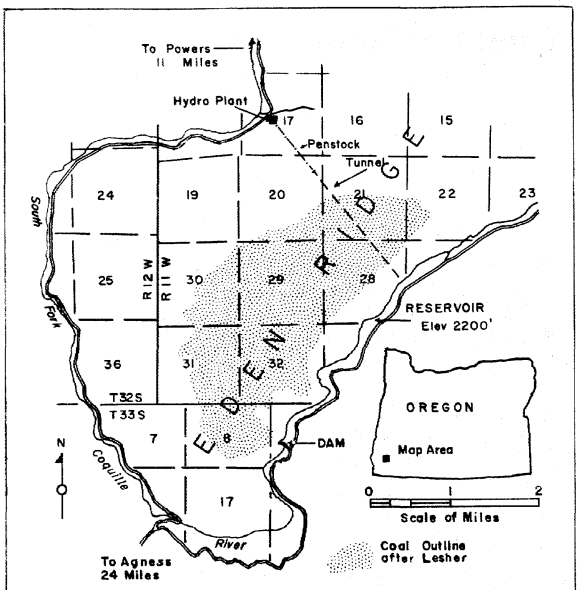
** See references at end of report.

the early mine dumps. The seams range in thicknesses from 4 to 8 feet. Outcrops of the various seams indicate a probable relationship as follows: The Peacock or Lockhart seam 6 feet thick is 50 feet above the 4- to 8-foot thick Carter seam, which is 400 feet above the 6-foot Anderson seam. There is a probability that there may be more seams below the Anderson but this is not certain.



INDEX MAP OF EDEN RIDGE
Coos County Oregon

Due to its relative inaccessibility the Eden Ridge coal has received little attention even though it is of higher rank than the Coos Bay coal. The decision to use Eden Ridge coal at the mine, rather than transporting it, overcomes the principal difficulty of its remote location.

Coal, unlike metallic minerals, may not be located under the federal mining laws but must be leased from the government. As reported in the November 1955 Ore.-Bin, Roy Rannells, Jim Carrol, and A. A. Robins initiated a small exploration program at Eden Ridge during the summer of 1955. Their permit was taken over by G. D. Rannells, Aurora, who asked the Department of Geology to examine the property. Several samples were taken by the Department in February and an examination of additional outcrops was made in April. Pacific has an agreement with the Rannells for prospecting and development under this permit, and under Pacific's permits, on approximately 5000 acres of land in the Siskiyou National Forest.

The hydroelectric phase of the proposed project involves the construction of a dam at the head of a series of rapids on the South Fork of the Coquille to create a long, narrow reservoir. Water from the reservoir would be diverted through a tunnel more than 2 miles in length to penstocks leading down to a power house located at the mouth of McCurdy Creek on the South Fork at a point 1650 feet lower in elevation and 12 miles downstream from the dam. The accompanying map shows the general relationship of the Eden Ridge coal beds to the proposed dam and the hydroelectric plant. Exact location of the steam-fired plant has not been settled and will depend on the results of the exploration and method to be used in mining. If the combined projects prove feasible Pacific estimates the cost of the coal and hydro plants might run between 30 and 50 million dollars and employ 2000 men at the height of the construction phase. When completed, the combined operation would be staffed with about 100 permanent employees.

The combination of steam and hydro generation is favorable in that base load power will be supplied by steam while the hydro plant, with a projected capacity of 67,500 kilowatts, will be used to carry the peak loads. The consideration of Eden Ridge coal by Pacific

points up a growing demand for electric energy, coupled with a steady decrease in suitable sources of hydroelectric power. Improvements in coal technology have brought coal back into the energy picture in areas noted for their cheap hydro power. The following which appeared in Trends, March 1, 1956, sums up the situation:

> "Back in 1939, it took 1.38 pounds of coal to generate one kilowatt hour of electricity. Since then the technology of generating electricity in steam plants has undergone a revolution. By 1946, the quantity of coal needed to produce 1 kilowatt hour was down to 1.29 pounds. Last year came further improvements, and the amount of coal per kwh dropped to 0.96 pound."

In addition to the 400,000 or more tons of coal which it is anticipated would be required annually by the steam plant, there is a good possibility that additional coal could be produced to bolster sagging fuel supplies in the area. Large-scale modern mining methods could conceivably place coal in a competitive position with either oil or natural gas. Another outlet for Eden Ridge coal might be in offshore shipments to Japan and other fuel-shy countries bordering the Pacific. A total of 20,157 tons of coal originating in the inter-mountain states was shipped from Portland and nearby ports during the past 12 months. Eden Ridge coal should be able, due to freight differentials, to enter this market since it compares closely in heating value and other physical and chemical characteristics with coal now being shipped overseas. Still another possibility in this development is the obtaining of by-products from the coal.

The investigations which Pacific Power & Light Company will make in the coming months will be followed with a great deal of interest by the people of Oregon for if the project proves feasible, a healthy new mineral industry will be established and a new source of electrical energy will be assured.

Bibliography

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Daniels, Joseph, The coking industry of the Pacific Northwest: Univ. of Wash. Eng. Exp.
1920 Sta. Bull. 9, p. 29, Aug. 1920.

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LAKEVIEW URANIUM NEWS

The Lakeview Mining Company shipped 400 tons of uranium ore from the Lucky Lass mine August 10 to Vitro Chemical Company of Salt Lake City. This is the second shipment of ore from Lake County. A test shipment of three carloads was sent to Vitro last fall from the Lucky Lass and White King properties.

Drilling is continuing at the Lucky Lass, and some mineralization has been found below the mine. The Company is continuing to find more ore in the vicinity of the White King mine. Three core drilling rigs have been working double shifts on exploration, and last month's drilling totaled more than 20,000 feet.

According to the Lake County Examiner, the Lakeview Mining Company is conducting an aerial survey program to locate areas of radioactivity, and is making this information available to prospectors and claim holders. By announcing the anomalous radioactive areas to the public, the Company hopes to spur localized ground exploration for uranium in southern Lake County. The location of the anomalies detected by airborne equipment is shown on maps which are posted each Friday morning about 9 o'clock in the Company's office window in the Marius Theater Building in Lakeview, Oregon. Information released has no bearing on land ownership or whether the ground is staked. It is pointed out that the presence of an anomalous radioactive area on the map shows where the instrument reacted more strongly and does not necessarily mean that ore-grade uranium will be found there.

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STRATIGRAPHIC HOLES TO BE DRILLED

Sunray Mid-Continent Oil Company, Los Angeles, has applied for a permit to drill five stratigraphic core holes near Scappoose, Columbia County, Oregon. Locations are as follows:

Core hole No. 1 - SW¼ sec. 12, T. 2 N., R. 2 W. Lessee is B. Cole, Portland, Oregon.
Core hole No. 2 - NW¼ sec. 12, T. 2 N., R. 2 W.
Core hole No. 3 - NW¼ sec. 12, T. 2 N., R. 2 W.
Core hole No. 4 - SE¼ sec. 2, T. 2 N., R. 2 W.
Core hole No. 5 - NE¼ sec. 11, T. 2 N., R. 2 W.
Holes 2 through 5 have Ralph Kapper, Mulino, Oregon, as the lessee.
Core hole No. 6 - SW¼ sec. 12, T. 2 N., R. 2 W. Lessee is C. M. Austin, Portland, Oregon.
Core hole No. 7 - SW¼ sec. 12, T. 2 N., R. 2 W. Lessee is B. Cole.
Core hole No. 8 - SE¼ sec. 11, T. 2 N., R. 2 W. C. M. Austin, lessee.

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THREE GEOLOGIC MAPS OF CENTRAL OREGON PUBLISHED

Preliminary geologic maps of the Aldrich Mountain, Mt. Vernon, and John Day quadrangles, Grant County, have been published by the U.S. Geological Survey as part of the Mineral Field Investigations Series. They show the geology of a 40-mile strip along the John Day River valley including the Aldrich and Strawberry mountains to the south. The maps are in black and white with the formations shown by letter symbols and the chromite-bearing rocks by shading. Author of the three maps is Thomas P. Thayer. The titles are as follows:

MF-49, "Preliminary geologic map of the Aldrich Mountain quadrangle, Oregon."
MF-50, "Preliminary geologic map of the Mt. Vernon quadrangle, Oregon."
MF-51, "Preliminary geologic map of the John Day quadrangle, Oregon."

These maps may be purchased for 50 cents each from the U.S. Geological Survey, Denver Federal Center, Denver, Colorado.

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VALUE OF OREGON'S MINERAL PRODUCTION FOR 1955

Oregon's mineral production for 1955 as given in an advance summary just released by the U.S. Bureau of Mines is valued at $31,895,335. The 1955 total value shows a decrease of about 7 percent as compared to 1954 rather than an increase as anticipated.

Nonmetallic minerals, used primarily for construction, comprised about 92 percent of the total value. Mercury and nickel production increased, but most other metals declined in 1955. Output of chromite decreased nearly 20 percent, but value of production declined only about 13 percent due to higher grade material received at the depot. Josephine County was top chromite producer while Curry County assumed second place.

Value of mineral production in Oregon in 1954 and 1955 by mineral commodities is tabulated below. A breakdown by counties is given on the following page.

Mineral Production in Oregon, 1954-1955 [1]

Mineral	1954		1955	
	Short tons (unless otherwise stated)	Value	Short tons (unless otherwise stated)	Value
Chromite, gross weight	6,655	$ 535,609	5,341	$ 463,514
Clays	334,413	377,201	250,608	275,916
Copper	5	2,950	4	2,984
Gold, fine ounces	6,520	228,200	1,708	59,780
Iron ore (limonite)	---	---	2,000	2/
Lead	5	1,370	3	894
Mercury, 76-pound flask	489	129,287	1,056	306,610
Nickel ore, nickel content	1,993	2/	4,181	2/
Pumice and pumicite	67,852	177,515	2/	2/
Sand and gravel, short tons	13,157,239	14,149,380	12,148,593	11,985,164
Silver, fine ounces	14,335	12,974	8,815	7,978
Stone	5,841,880	8,436,284	7,739,963	9,420,471
Tungsten, 60 percent WO_3 basis	2/	2/	1	2/
Undistributed: Carbon dioxide, cement, coal, diatomite, gem stones, and minerals whose value must be concealed for particular years (indicated in appropriate column by footnote reference 2)	---	9,444,218	---	10,504,356
Total		3/ 32,271,513		3/ 31,895,335

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
2/ Included with "Undistributed."
3/ Total has been adjusted to eliminate duplication in the value of clays and stone.

Value of mineral production in Oregon by counties, 1954-1955

County	1954	1955	Minerals produced in 1955, in order of value
Baker	1/	1/	Cement, stone, sand and gravel, clay, gold, copper, silver
Benton	$209,176	$169,034	Sand and gravel, stone, clay
Clackamas	5,312,221	5,485,348	Cement, sand and gravel, stone, clay, coal
Clatsop	124,464	138,233	Stone, sand and gravel
Columbia	200,996	324,333	Sand and gravel, stone, iron ore (limonite)
Coos	240,848	661,200	Stone, sand and gravel, coal
Crook	124,448	331,561	Stone, sand and gravel, mercury
Curry	1/	132,674	Chromite, stone, sand and gravel
Deschutes	907,049	980,180	Diatomite, pumice, sand and gravel, stone
Douglas	2,088,283	2,823,527	Nickel, sand and gravel, mercury, stone, chromite, gold, silver
Gilliam	-	1/	Stone
Grant	260,129	164,032	Chromite, sand and gravel, gold, silver, copper, lead
Harney	22,655	48,730	Sand and gravel, pumice, stone
Hood River	44,700	43,500	Stone, sand and gravel
Jackson	2,958,186	3,220,052	Cement, stone, sand and gravel, clay, carbon dioxide, gold, tungsten, chromite, silver
Jefferson	1/	183,867	Mercury, stone, sand and gravel
Josephine	609,059	890,216	Sand and gravel, stone, chromite, gold, clay, silver
Klamath	166,303	504,100	Stone, sand and gravel, clay
Lake	115,104	76,620	Sand and gravel, stone
Lane	2,302,427	2,710,655	Sand and gravel, stone
Lincoln	371,204	608,840	Stone, sand and gravel
Linn	526,434	583,445	Sand and gravel, stone, clay
Malheur	1/	1,041,027	Stone, sand and gravel, mercury, clay
Marion	540,083	526,116	Sand and gravel, stone, clay
Marrow	1/	139,137	Stone, sand and gravel
Multnomah	2,503,456	2,884,972	Sand and gravel, stone, clay
Polk	465,782	385,783	Stone, sand and gravel, clay
Sherman	80,235	1,276,500	Sand and gravel, stone
Tillamook	204,838	180,606	Stone, sand and gravel, clay
Umatilla	550,737	622,948	Stone, sand and gravel
Union	178,115	335,801	Sand and gravel, stone, clay
Wallowa	189,031	258,028	Stone, sand and gravel
Wasco	505,634	314,945	do
Washington	753,033	1,369,757	Stone, sand and gravel, clay
Wheeler	1/	21,106	Sand and gravel, gold, silver
Yamhill	289,123	200,247	Sand and gravel, stone, clay
Undistributed 2/	10,651,235	3,390,557	
Totals	3/ 32,271,593	3/ 31,895,335	

1/ Included with "Undistributed" to avoid disclosure of individual output.
2/ Includes value of sand and gravel, stone, gem stones, and chromite production that cannot be assigned to specific counties.
3/ The total has been adjusted to eliminate duplication in value of clays and stone.

LAND DETERMINATIONS ANNOUNCED

The U.S. Forest Service has notified the Department that it is examining two areas in Baker County for determination of surface rights under Public Law 167. One area which includes most of T. 11 S., Rs. 36 and 37 E., lies in the northwestern part of the county. The other embraces land lying in Tps. 6 S. and 7 S., Rs. 45, 46, 47 E., and a small portion of T. 6 S., R. 48 E., in northeastern Baker County.

The Bureau of Land Management is continuing its examination of Tps. 38 and 39 S., Rs. 5 and 6 W., in Josephine County. Determination of rights in the Deadman Creek area of Douglas County, Tps. 29 and 30 S., R. 2 W., may be started within 30 days.

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CHROME MINING NEWS

George Tulare and Jack Binder and Sons of Gold Hill are leasing the Shady Cove mine and the Sordy Group on Chrome Ridge, Josephine County. At present they are mining a body of high-grade chrome ore at the Shady Cove in sec. 11, T. 36 S., R. 9 W. Other claims in the Sordy Group are located in secs. 2, 11, and 14 of the same township. According to Tulare, plans are being made for a drilling program.

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GROUND-WATER GEOLOGY OF TUALATIN VALLEY DESCRIBED

"Preliminary report on the ground-water resources of the Tualatin Valley, Oregon," by D. H. Hart and R. C. Newcomb has been prepared by the Geological Survey in cooperation with the Oregon State Engineer. The report shows the relation of ground water to the presence or absence of certain rock formations, and presents data on more than 1000 wells and springs in the area. It also includes a geologic map showing formations and structure of the Tualatin Valley. The report is on file at the Ground Water Branch of the Geological Survey in the Lloyd Building, Portland, and at the office of the State Engineer in Salem.

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RESULTS OF COPPER INVESTIGATION IN JOSEPHINE COUNTY PUBLISHED

"Preliminary investigation of the Takilma-Waldo copper district, Josephine County, Oregon," by R. J. Hundhausen has been published by the Bureau of Mines as Report of Investigations 5187. The studies were made between 1950 and 1954 through funds provided on a cooperative basis by the Bureau of Mines and the California-Oregon Power Company, Medford, Oregon. The geology of the district was previously described in other reports (U.S. Geol. Survey Bull. 846-B, 1933, and Oregon Dept. Geol. and Min. Industries Bull. 40, 1949).

The Takilma-Waldo copper deposits were mined principally during periods of high metal prices. Total production up to 1933 is estimated to be about $1,700,000. Since 1933 the mines have been largely inactive and most were found to be caved and inaccessible. Because it was not economically feasible to reopen the mines, surface sampling was done according to a grid system in which 3,600 holes 3 feet deep and 6 inches in diameter were drilled. Samples showing more than 0.1 percent copper in spectrographic analysis were assayed by chemical methods. Results when plotted on a map revealed seven anomalies having relatively distinct boundaries. Four were over mine workings and three in unexplored areas.

The largest anomaly was found above the Queen of Bronze mine workings, and this area was explored by diamond drilling to test the value of the surface sampling technique. Five of the six drill holes were barren and one penetrated 78.5 feet of copper-bearing rock averaging 0.77 percent copper. The results indicated that weathering and ground water have probably concentrated the copper near the surface and that caution must be used in interpreting the results of surface sampling.

Report of Investigations 5187 is available free of charge from Publications Distribution Section, U.S. Bureau of Mines, 4800 Forbes Street, Pittsburgh 13, Pennsylvania.

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URANIUM MILL ASSURED IN SPOKANE AREA

Dawn Mining Company, operating subsidiary of Newmont Mining Corporation at the Midnight uranium mine on the Spokane Indian Reservation, concluded a contract with the Atomic Energy Commission for construction and operation of a uranium processing plant at Ford, Washington, on the eastern border of the reservation about 40 miles northwest of Spokane. Announcement of the contract was made by the AEC's Grand Junction operations office. Preliminary work on the 400-ton mill is already underway, with completion scheduled in about 12 months. Uranium concentrate products will be sold to the AEC under terms of the contract.

The Midnight deposit, found in the fall of 1954, and the original commercial discovery on the Reservation is now estimated to have reserves of as much as 700,000 tons of ore worth more than $20,000,000. Northwest Uranium Mines, Inc., also has indicated reserves of approximately 400,000 tons averaging 0.15 percent uranium oxide on its holdings a few miles south of the Midnight property. Daybreak Uranium and Big Smoke Uranium have reserves of undisclosed size in the same general area in the southern part of the reservation.

(The Wallace Miner, August 16, 1956.)

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SELENIUM ADDED TO DMEA ASSISTANCE LIST

The Defense Minerals Exploration Administration announces that selenium has been made eligible for financial assistance in exploration projects, with Government participation set at 75 percent of the authorized costs of a project. The addition of selenium brings to 34 the number of minerals on the eligible list for financial aid. The major use of selenium is in power rectifiers and rectifiers for radio and television receivers. It has a number of specialized applications in military end use items.

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PURCHASE PROGRAM BILL APPROVED

Senate Bill 3982, allowing Government purchase of domestic tungsten, asbestos, fluorspar, and columbium-tantalum, was approved by the President July 19, 1956, and became Public Law 733, 84th Congress. American Mining Congress reports that General Services Administration has been authorized to accept July offerings of tungsten from domestic producers. Regulations governing the purchase programs for tungsten and the other minerals are under preparation by GSA and are expected to be announced shortly.

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