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State Department of Geology and Mineral Industries

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EDEN RIDGE AND SQUAW BASIN COAL FIELDS.

Coal, in southeastern Coos County, has been known since the early 1900's. It was first discovered on the flanks of Eden Ridge, and later, in Squaw Basin to the southward. Active prospecting was done from 1907 to 1912. The area was withdrawn from location entry to await classification as to its mineral character. In 1920, the Coal Act permanently withdrew all coal lands from location privileges. Since then no work has been done in the field.

Location

The Eden Ridge and Squaw Basin coal fields are actually one field but usually are spoken of separately. They lie in southeastern Coos County. The Eden Ridge field is in T. 32 S., R. 11 W., and the Squaw Basin field is in T. 33 S., R. 11 W. Powers is the nearest community, about 12 miles to the northwest, and is the terminus of a branch of the Southern Pacific railroad.

Physiography

The coal fields lie within the Coast Range. The topography is characterized by deeply incised streams which have steep to precipitous walls. It would be classed as mature topography. Access, therefore, is difficult, and road construction is expensive.

The field is covered with a dense growth of timber and brush. Timber consists of fir, principally Douglas fir, and Port Orford cedar. Brush is salal and bracken fern. The vegetation is so dense that it is difficult to "see out" along any of the trails or ridges.

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Use of airplane photographs is made difficult by the heavy vegetal cover.

The area is drained by the South Fork of the Coquille River which heads beyond the northeast corner of T. 32 S., R. 11 W. It flows southwest along the flank of Eden Ridge, then cuts westward for a few miles, and heads northward through Powers to join the Middle Fork near Myrtle Point. The Squaw Creek tributary drains Squaw Basin from the south.

The south boundary is Panther Ridge which forms the boundary line between Coos and Curry counties. The west boundary is Rock Creek and the northward flowing portion of the South Fork. The north boundary is the lowest part of the north flank of Eden Ridge. The east boundary, for practical purposes, is the range line between R. 10 W., and R. 11 W.

Transportation

A Forest Service road extends south of Powers along the east bank of the South Fork of the Coquille River to a point where the river comes in from the east. The road continues to Agness, on the Rogue River, in Curry County. The only route out of Agness is by boat on the Rogue River.

A Forest Service road is being constructed eastward from the Powers-Agness road, leaving the road about one half mile south of the South Fork crossing. It crosses Squaw Creek near the east center of sec. 20, T. 33 S., R. 11 W., and continues northeastward. Its total length, at present is $1\frac{1}{4}$ miles. The road has been surveyed and partially cleared to connect with a logging road that deadends near the south line of sec. 27, T. 32 S., R. 11 W. The Coquille River trail closely parallels the proposed alignment. Air line

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distance to connect these roads is 4 miles, but construction would require between 8 and 10 miles of very heavy work.

The logging road that deadends in sec. 27, continues northeastward to a point where it connects with a logging railroad. The logging railroad skirts the extreme northern portion of the field, and has its terminus at Powers.

A Forest Service road approaches the field from the east, via Sawmill Gap at Mount Reuben, and Eden Guard Station. Some three miles of road is necessary to connect with the logging road mentioned in the previous paragraph. This road is a fair weather road only.

The Eugene-Coquille branch of the Southern Pacific railroad has taken over the Coos Bay Lumber Company's track from Coquille, through Myrtle Point, to Powers.

The coal field itself is inaccessible except by trail.

Previous Work

Lesher (14) surveyed the area for the United States Geological Survey in 1912. He identified several coal beds that underlie Eden Ridge and briefly commented on coal in Squaw Basin. Williams (14) discussed the coal of Squaw Basin. Lesher's and William's observations still apply to 1942 conditions. Lesher concluded that the field is handicapped by its inaccessibility.

Lesher (14:406) reported as follows:

"The coal in the Eden Ridge field is bituminous and in the Squaw Basin district is believed to have coking qualities. It commonly has a bright luster, though in places it is somewhat dull. There is a poor vertical cleavage, but no pronounced lamination parallel to the bedding. The coal does not slack or disintegrate on exposure to the air, and, though thoroughly wet in many of the outcrops of the field, it does not appear to be readily affected by the weather.

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These physical properties, together with the low moisture content, averaging 4 percent, the high heat value, about 12,000 British thermal units for coal with 10 percent or less ash, and the possible coking quality, warrant the classification of the Eden Ridge coal as bituminous."

He further reports that the beds contain all grades of coal from clean bituminous with ash as low as 10 percent, to bone with 60 percent ash. Lenses of coal, bony coal, and bone are from a fraction of an inch to several inches in thickness, and grade into one another. So great is the variability that no two sections of a bed agree exactly.

In the Eden Ridge field there are four coal beds. The key horizon is a heavy "blue conglomerate". Above this is the Meyers bed which has been opened by 2 prospects. Thickness of the coal ranges up to 9 feet. About 25 to 50 feet above the Meyers bed is the Anderson bed. The best outcrops are on the north side of the Ridge. It underlies five square miles of Eden Ridge, and one square mile south of the River. The Carter bed is 400 feet above the Anderson bed and underlies three square miles of Eden Ridge. It has been opened in 11 places, most of which are on the north side. Thickness ranges from 3' 7" to 8', and consists of coal layers, $\frac{1}{4}$ - $\frac{1}{2}$ " thick with carbonaceous shale and bone between. The Lockhart bed is 50 feet above the Carter bed. It has been opened in eight places, most of which are on the north side of the Ridge. Thickness is estimated to have a maximum of six feet. The coal ranges in thickness from a fraction of an inch to three inches.

Measured thicknesses, stratigraphic columns, and analyses are shown on the accompanying photographs, taken from Lesher's report.

Squaw Basin beds are assumed to be stratigraphically lower than the Eden Ridge beds. There may be two or even three beds. Thickness is reported as from five to eight feet. It is possible that these

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beds underlie Eden Ridge, and if so, the extent would be considerable. Coal is reported to outcrop south of Panther Ridge.

Williams (14:28-48) reports in more detail about the Squaw Basin coal. There were two principal workings. G. W. Donnell opened a vein on the East Branch, with five feet of coal exposed. Williams measured section is:

Roof of firm bluish shale		
Coal, brittle & shattered, some bone...	2 ft.	6 in.
Clay parting.....	0	3
Coal, firm & jointy, slightly bony.....	2	4

The coal is reported as being 10 feet thick. On the West Branch are the Association, or Seven-Foot workings. Williams' measured section is given as:

Shale capping		
Coal, brittle & shattered, little bone.....	3ft.	0 in.
Shale parting.....	0	3
Clean coal, less broken, more compact, and firm below.....	2	0

Coal is also reported south of Panther Ridge, near the head of Clay Hill Creek. T. W. Billings reported to Nixon and Treasurer that this coal was mined and taken to Blossom Bar on the Rogue River for use in mining operations there. He remembers the coal as being in thin seams with bone between the coal layers.

Summarizing the published data, there are four coal beds on Eden Ridge. Thickness of the coal veins may be as much as eight feet. Measured sections show that the coal occurs as narrow strata between bone and bony coal. Best outcroppings and the most prospecting is on the north side of Eden Ridge. Squaw Basin has two or three coal veins, variously reported as being up to 10 feet thick. Williams indicates that the coal layers are thicker than on Eden Ridge. Leshar found some of this coal to have coking qualities from field tests.

Nixon & Treasher Reconnaissance

The Eden Ridge and Squaw Basin coal areas were visited on October 5 & 6, 1942, to determine whether a detailed survey is feasible for the fall of 1942. They made one trip to the common section corner of secs. 8, 9, 16, 17, T. 33 S., R. 11 W., on the South Fork of the Coquille River to a coal bed recently reported by Rookard and Kellond. (Treasher 42) Later, it was found that this is identical with Leshar's locality # 13, on the Meyers bed. A trip was made up Squaw Creek to learn conditions in that area. Later, a trip was made into the area from the east, via Glendale, Mt. Reuben, and Eden Guard Station, and into Marial.

The area was found to be very inaccessible, with a lack of roads and trails. Topography is steep, and vegetation is heavy. Little information could be obtained about exact location of coal outcroppings. No accurate impression of the "lay of the land" was obtained, as the vegetation obscured vision at all points. Conditions are still much as pictured by Leshar in 1912.

It was decided that railhead at Powers was not a good railhead for the coal, as the coal would have to go out through Marshfield. Outlet via the Mt. Reuben road is not feasible as it would require nearly 50 miles over very hilly Forest Service road that would be difficult to get into good hauling condition.

Outlet to state highway # 42, Dillard to Coquille, a few miles east of Remote seems the best possibility. (see forest service map) This would require connecting the deadended logging road that parallels the South Fork through southeastern T. 33 S., R. 11 W., with highway # 42. Such a road would be about 12 miles long. Nature of the terrain is not known at present. As nearly as could be determined

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such a road would not be difficult to construct. It would connect with present logging roads and contact highway # 42 in sec. 15, T. 30 S., R. 10 W., or sec. 18, T. 30 S., R. 9 W.

Coal is reported in Camas Valley by a Mr. Walsh. Unless this coal is inaccessible, it was decided that the occurrence should be considered further.

A trip was made to Marial to secure data on outcrops of coal on the south side of Panther Ridge. It was reported by T. W. Billings that coal was mined near the head of Clay Hill Creek and Tate Creek for use at Blossom Bar on the Rogue River. Billings was of the impression that the coal was in narrow seams with lots of bone. The coal was used in blacksmith forges.

The overall picture is not ~~not~~ encouraging. If it is found that outlet for the coal can be made to Highway # 42, there might be some justification for a reconnaissance survey of the Eden Ridge and Squaw Basin coal beds, but such a survey would be conducted during 1943 rather than attempt it in 1942. There is more justification for an early winter survey of the Camas Valley coal beds. The coal south of Panther Ridge is inaccessible.

Some justification for the Eden Ridge survey might be found in the fact that the "old timers" who know something about this coal are getting quite old, and may pass on to their Great Reward at any time. If their information and locations could be obtained it would refreshen the 1912 survey data, and make such data more usable at a time when the coal becomes of economic importance.

Mention might be made of the Eckley Coal Field as reported by Diller (03) in the Fort Orford geologic folio. Diller shows several

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coal outcropping around the margin of an Eocene sandstone remnant in an area southwest of Powers. There are no further data. Diller also shows the Shasta Costa field. Coal is reported as having been shipped from this field, to San Francisco in the 1880's. (T. W. Billings) This coal field might be used to supply the southwest coastal area.

References:

Diller (o3) Port Orford Geologic Folio.

Leshner (14) Leshner, C. E., The Eden Ridge coal field, Coos County, Oregon: U.S.G.S. Bull 541, pp. 399-418, (1912) 1914.

Williams (14) Williams, Ira A., An occurrence of coal in Squaw Basin: Oreg. Bur. Mines & Geology, vol. 1, no. 1, pp. 28-48, 1914.

Report by: Ray C. Treasher, Oct. 9, 1942.

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EDEN RIDGE COAL FIELD

Coos County
Powers Area

In the southernmost part of the county, about 35 miles south of Myrtle Point, is the structure called Eden Ridge, long known to be underlain by coal. It is mainly in T. 32 S., R. 11 W. So far as known, this field contains the only bituminous coal in the State.

The field is roughly elliptical in outline with the long axis lying in a northeasterly-southwesterly direction. There are three known beds called, beginning at the bottom horizon, Anderson, Carter, and Lockhart. The Carter is 400 feet stratigraphically above the Anderson, and the Lockhart is 50 feet above the Carter. A possible fourth and lower bed, the Meyers, has been found outcropping only south of the ridge. Leshar states that it might be coextensive with the Anderson bed. The strata in the field dip toward a central point, thus forming an elliptical basin.

The rocks containing the coal beds belong to the Coaledo formation of the Eocene, as at Coos Bay, and consist of sandstones and shales. A prominent horizon marker in the region is the blue conglomerate which underlies the known coal-bearing strata. It is about 40 feet thick and composed of small pebbles of altered volcanics, chiefly andesitic in character.

The coal has been determined as bituminous in grade, does not slack on exposure to the air, and when fairly clean has a heating value of over 11,000 B.t.u. Some of it is believed to possess coking qualities. Leshar (14:399) states that the coal beds contain material of all grades from clean bituminous coal, with ash as low as 10%, to bone, with 60% ash and carbonaceous shale. "The lenses of coal, bony coal, and bone are from a fraction of an inch to several inches in thickness and grade into one another both vertically and horizontally. The gradation from coal through bony coal and bone to carbonaceous shale is in most places almost imperceptible."

From the incomplete evidence at hand it appears that the high ash content of the coal as mined, due to the presence of bone and bony coal, would probably prohibit its commercial use unless the mined material could be cleaned to make a more acceptable product. Inaccessibility is an additional drawback. However, considering that there has been a very small amount of development work and that the clean coal possesses some excellent qualities, further investigations should be made in order to determine the commercial possibilities of the field.

U.S.G.S. Bull. 541, pp. 399-418, 1914, - reference.