

# State Department of Geology and Mineral Industries

702 Woodlark Building  
Portland, Oregon

Report by: Ray C. Treasher  
Date: July 28, 1943.

## BLACK BEAR COAL MINE

(see also Crater Coal Co., United  
Coal Co., Sunnyside Coal Co.)

Jacksonville area  
Jackson County

The Black Bear coal mine is the largest coal mine in the Rogue River Valley Coal Field. In 1943, the workings are more accessible<sup>than</sup> and coal could be obtained at less initial cost than from any other mine in the field. Two, and perhaps three, coal seams have been prospected and worked since the early 1900's with several hundred feet of tunnels and rooms. The coal is dirty. Ash varies from 21-33 percent and B.t.u.'s average 8200, "as received". Shale partings are common. The coal as mined consists of coal and bone in alternating layers. The coal has use as steam coal and for domestic use where heavy firing is not necessary. The mine needs some work done on it before it will be ready for production but it should provide an excellent source for emergency fuel at the moment.

Owners: Mary Woodward, and Dr. S. C. Peters, Medford, Oregon.

Location: W $\frac{1}{2}$  sec. 36, T. 37 S., R. 1 W., about six miles southwest of Medford, at an elevation of 2000 feet. Mileage record is as follows:

Medford, West 11th St., at S.P.R.R. crossing.....	0.0 miles
East on W. 11th to South Central Street.....	0.1
South on South Central to Riverside Street.....	0.5
South on Riverside to Barnett (Barnebury) road.....	0.1
Easterly on Barnett(Barnebury)road to Hillcrest road...	2.5
Southerly on Hillcrest road to Coal Mine road.....	0.8
Easterly on Coal Mine road to portal of main level....	2.3
	<u>6.3 miles</u>

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History: This property has been known as the United Coal Co., Sunnyside Coal Co., and as late as 1938 as the Crater Coal Co. At one time Southern Pacific Railways operated a slope here with the idea of using the coal for locomotive fuel. The coal was not satisfactory for that purpose. Parks & Swartley, (16:216) reported as follows:

"The Sunnyside Coal Mine is in sec. 36, T.37 S., R. 1 W., about 5 miles east-southeast of Medford. Two entries have been made; the entry to the northwest is an incline equipped with a boiler and steam hoist. It was not inspected, being full of water. The other is horizontal and accessible; it is at an elevation of 1960 feet, as measured by aneroid barometer, and extends S. 34° E. about 650 feet. In places the roof has caved, but the entry is nowhere caved shut. Nearly the entire length of this adit the coal bed extends from the floor to the roof without showing its entire thickness, which was found to be about 12 feet at one point where caving permitted measurement. At the face of the adit the coal seam is 8 feet 3 inches thick, and in a branch passage to the south it is 15 feet thick. The quantity of coal in the seam varies remarkably so that a section at one point may show much more coal than at another. The maximum amount of coal in the seam is about 75 percent and the minimum in the main entry is about 30 to 40 percent. The coal bed has a strike of N. 72° W. and a dip of 13° N.E. The coal is brittle and slacks to small fragments upon exposure to the weather.

"About 130 feet from the face of the adit, branch tunnels leave the main entry on both sides. Those extending to the northeast follow down the dip of the coal and are therefore full of water and inaccessible. On the other side one branch extends S. 84° W. about 500 feet; from this laterals extend northward to a parallel tunnel and other workings, whose extent was not determined. Following the main branch to the west, the coal seams in the coal-bearing bed become thinner and the shale bands thicker until at the face the bed contains only a little pure coal.

"There are several faults disclosed in these workings, but they are not important, as the displacement is only 1 to 4 feet.

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"J. S. Diller, of the U. S. Geological Survey, described explorations for coal, probably at this mine, in 1909, as follows:

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"The coal 6 miles east of Medford lies along the steeper slope, which rises from the edge of the valley, 600 feet above the town, to the bold front of the Cascade Range. Some years ago the Southern Pacific Company prospected a coal bed at this point and the size of the dump indicates that the trial drifts must have been about 100 feet in length. Since then R. P. Little has discovered a number of other coal beds a short distance farther up on the same hillside and opened two of them by slopes, tunnels, and drifts, aggregating nearly 900 feet in length. Drainage is affected by a lateral tunnel into an adjacent ravine. Considerable coal has been hauled to Medford and sold at \$8 per ton.

"The principal bed prospected is about 12 feet thick, and the striking feature at the entrance of the gentle slope is the large number of clay and sand partings with very little coal between them. The partings weathering whitish are strongly contrasted with the darker bands. As the slope is descended along the bed there appears a decided increase in the quantity and improvement in the quality of the coal toward the northeast. The bands of black lustrous coal, generally not over 6 to 8 inches thick, locally swell to more than a foot, and furnish the source of supply for the local demand. The intermediate shaly coal and coal shale is abundant and requires much picking to obtain satisfactory results. Several faults striking N. 40° E. and dipping 26° to 42° S.E. have been encountered in the tunnels. The direction of movement and the amount of displacement could not be definitely determined. No lavas were seen in the mine, but they appear higher up, covering the whole succession of coal beds. The decided improvement in the coal down the dip suggested that as the most favorable direction in which to prospect.

"Since the examination on which the foregoing statement is based was made, the Pacific Coal Company has purchased this mine and has developed the openings to the northeast along the dip of the coal bed for more than 1000 feet. The prediction that the coal would be found of better quality and in larger quantity has been confirmed. A few small faults

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have been encountered, but these are all of the normal type and easily overcome. The mine is now (1907) producing coal and supplies the local market. The development of this mine has greatly stimulated prospecting in other parts of the field.

"J. A. Holmes of the Geological Survey collected a sample of coal at this locality last summer (1907) and has kindly furnished the following results of an analysis in the laboratory of the Survey fuel-testing plant.

"Analysis of Coal Obtained Near Medford, Oregon.

(F. M. Stanton, chemist in charge)

	As received	Air dried
Laboratory No.....	5346	5346
Loss of moisture on air drying		2.00
Moisture.....	11.30	9.49
Volatile matter.....	23.39	23.87
Fixed carbon.....	31.89	32.54
Ash.....	33.42	34.10
Sulphur.....	1.16	1.18
Calories.....	4,183	4,268
British thermal units.....	7,529	7,683

"The sample taken is a complete section of the coal bed exposed and represents what has to be removed in working the coal. It contains not only the good coal but all the shaly partings. The high percentage of ash indicates that the bed contains much that would have to be thrown away in mining. The ash is about four times as great as that of the bed mined at Libbey in the Coos Bay region."

The adit mentioned by Parks & Swartley apparently is the adit marked "A" on Plate lll. Diller's discussion as quoted by Parks & Swartley apparently concerns the Southern Pacific slope.

Yancey and Geer (40:15-16) sampled the adit marked "Main Level" on Plate lll, and reported as follows:

"The Black Bear mine, owned by the Crater Coal Co., is in the Rogue River Valley field, Jackson County, 5- $\frac{1}{2}$  miles southeast of Medford in the W $\frac{1}{2}$  sec. 36, T. 37 S., R. 1 W., at an elevation of 2050 feet.

"The mine develops an unnamed bed, which strikes n. 50° W. and dips 15° N.E. The upper portion of the bed was measured and sampled at the face of a room advanced 50 feet up the dip from a point in the drift 800 feet southeast of the portal, by E. K. Nixon, J. E. Morrison, H. F. Yancey, and M. R. Geer, May 11,

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1939, as described below.

Section of upper bench of unnamed bed in Black Bear Mine.

Laboratory No.	B-40115
Roof, sandstone underlain by 16 inches of bone and coal:	ft. in.
Coal.....	6
Shale, brown, form .....	a 1- $\frac{1}{2}$
Bone .....	a 1
Coal .....	a 4
Bone .....	a 2- $\frac{1}{2}$
Coal .....	a 1- $\frac{1}{2}$
Bone .....	a 2 $\frac{1}{2}$
Coal.....	a 6- $\frac{1}{2}$
Bone .....	a 4
Shale, brown, .....	a 2
Coal, bone streaks .....	a 2- $\frac{1}{2}$
Bone .....	a $\frac{1}{2}$
Coal .....	a $\frac{1}{2}$
Bone .....	a $\frac{3}{4}$
Coal, bright .....	a 4- $\frac{1}{2}$
Bone and shale .....	a 5- $\frac{1}{2}$
Coal .....	a 3- $\frac{1}{2}$
Bone .....	a $\frac{1}{2}$
Coal .....	a 5
Bone, soft, .....	a 1- $\frac{3}{4}$
Bone, hard, .....	a 2- $\frac{1}{2}$
Shale, gray, .....	a $\frac{1}{2}$
Coal .....	a 5 $\frac{1}{2}$
Bone .....	a 3- $\frac{1}{2}$
Shale, light gray .....	a $\frac{1}{2}$
Shale, dark gray .....	a 1- $\frac{1}{2}$
Coal, bony .....	a 3- $\frac{1}{2}$
Shale and bone .....	a 2
Clay, light (center parting) .....	a 3
Floor, main, sandstone, overlain by 6-foot lower bench of bone, shale, and coal	
Thickness of bench .....	6 6- $\frac{1}{2}$
Thickness in sample .....	3 5- $\frac{3}{4}$

a Not included in sample.

"The lower portion of the bed is 6 feet thick and is similar in character to the upper bench but contains a smaller proportion of coal.

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"Adrift driven about 900 feet in a southeasterly direction in the lower part of the bed and one small room in the upper portion of the bed were the extent of the mine workings at the time of sampling. Operation of the mine had been suspended.

"A small tippie on the property is provided with 3/4 inch bar and 3/16-inch square-hole stationary screens to separate the coal into lump, nut, and slack sizes."

Copy of a letter submitted by A. S. Cummins, president of Copco, dated July 1, 1942, presumably from Southern Pacific indicates as follows in part:

"The prospecting by SP Co., under Mr. [E. T.] Dumble' direction was done between 1898 and 1902, and again, a small amount of work in 1905. No work is recorded----- since 1905.

"The vein on which the S. P. Co. worked is reported to have been 11 feet thick and a vein 175 feet above was reported to be 14 feet thick. The coal in both veins is similar in quality.

"Our investigations of the coal at Medford included the running of a slope 500 feet in length to prove the actual character of the coal. We found that while the vein was of considerable thickness, it was so interbedded with clay that it was of no value to us for locomotive fuel.-----

"Our last examination was in January, 1907, and the report made ----- that while it may be used for domestic uses or under stationary boilers or furnaces where heavy firing is not necessary, it will answer as fuel. It is also suggested that it could be used as a basis for producer gas-----."

A sample was cut near the face of the Main level by Ray C. Treasher, geologist for G. & M. I., in September 1942. The measured section was:

Coal and bone .....	3.8 feet
Shale (excluded).....	0.7
Coal and bone.....	0.8
Shale (excluded).....	0.3
Coal and bone.....	1.7

The sample was shipped to the U. S. Bureau of Mines in Seattle where float-and-sink determinations were made. Results are discussed under "Quality".

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A sketch map (Brunton-Pace-Aneroid) traverse was made of the area by Treasher in July 1943, showing at least ten openings. They are shown on Plate III.

Development: Starting at the highest elevation of 2050 feet: "A" Level. Reported by Parks & Swartley as being 650 feet long with an opening down the dip to the N. E., and a cross lateral up the dip to the west. From the lateral was a crosscut to a parallel lateral. It is suggested that the lateral and it's parallel lateral, should come out at the caved adits marked "H" and "J" on plate III.

Main Level. This level is open throughout its length of 970 feet. There is evidence of old workings, such as rooms and side drifts, but these are inaccessible. Size of the dump indicates that this is the largest of the workings.

Shaft "F". Caved

Adit "M" Caved

Adit "I" Caved

Adit "E" Caved. Coal is exposed in the creek bed nearby.

S.P. slope Reported variously as being developed from 500-1000 feet. Details of the work are not known. Workings are waterfilled.

Small Caved adit.

Geology: The country rock is sandstone of the Umpqua formation of upper Eocene age. Wells (39) describes the formation as being 8000 feet thick.

"It is predominately a medium-grained sandstone, though shaly and conglomerate layers are present.---The sandstone contains much volcanic material,-- and some of it could properly be called tuff. --- Lenses of thin platy coal several

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feet thick are also found. --- ~~the~~ rocks strike northwestward and dip at low angles to the northeast."

At the mine, the prevailing strike is N. 50° W., and the dip is 15° N.E. Minor faulting was noted by Diller (quoted by Parks and Swartley 16:216). The faults strike N. 40° E., and dip 26° -42° S.E., with no determination of the displacement.

A fault cuts off the coal at the present face in the Main Level. The fault strikes N. 30° E., and dips 70° N.W. It appears to be a normal fault with the adit on the down-throw side, but the evidence is very meager.

Three coal seams are indicated. The upper one was opened by the "A" level and is reported as 8 ½ feet thick. The middle one is opened by the Main Level and is reported at 13 ½ feet thick. It is 30 feet below the upper seam. The lower seam is opened by the S.P. incline and is reported as 4-12 feet thick. It is stratigraphically about 70 feet below the middle bed.

The three coal seams are characterized by alternating layers of coal and bone so that ordinary screening leaves a high percentage of bone in the coal. This is evidenced by the fairly uniform figure of 33 percent ash.



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Quality:

Sample No.	Moisture	Volatile Matter	Fixed Carbon	Ash	Sulfur	Hydrogen	Carbon	Nitrogen	Oxygen	Air dry loss percent	B.t.u.
As received	9.1	30.0	31.8	29.1	1.5	4.8	47.9	0.9	15.8	4.1	85,60
As received	11.3	23.4	31.9	33.4	1.2						75,29
*	6.3	31.2	40.6	21.2							
	7.2	29.7	34.8	28.3							
	3.7	20.1	30.3	45.9	0.76						
	5.6	22.3	35.7	36.4							
	6.9	32.9	42.9	17.3							
	5.9	27.2	36.9	29.8							

Wancey & Geer (40:21)  
Parks & Swartley (16:216)  
\*Letter Submitted by A. S. Cummins.

Float-and-sink tests performed by the U. S. Bureau of Mines at Seattle are recorded in a letter from G. W. Evans to David Eccles, dated September 14, 1942:

Weight for float-and-sink 63 pounds

Float.....1.70.....43.6 percent  
Sink.....1.70.....56.4 percent

Float 43.6 % of which 33.4 % is ash material  
Sink 56.4 % of which 71.2 % is ash material  
100 % of which 54.7 % is ash material

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No data were given on the screen-size of the material tested but in previous tests (Yancey & Geer (40: 31-34) various sizings were made from 3 inch to minus 20-mesh. The sample reported by Evans contains a higher percentage of ash than the previous sample. Yancey & Geer (40:34) conclude that because of the excessive amount of reject necessary to produce a 20 percent ash coal, the commercial float-and-sink, under peace-time conditions is not warranted.

Low temperature carbonization, to produce a solid fuel char and liquid and gaseous by-products, performed on Black Bear coal (Yancey & Geer 40:27-30) indicate that a high amount of char is produced, the highest of any of the Oregon coals tested. While the corresponding amount of gas was not high, it did have the highest B.t.u. value of any of the coals.

The Black Bear coal is non-coking (Yancey & Geer 40:28)

## Summary of Quality:

B.t.u. value of coal, about 8200, "as received"

Ash, "as received", about 30 percent.

Float-and-sink process could produce a 20% ash fuel but is not considered economic under peace-time conditions.

Char and by-products: High amount of char (solid, smokeless fuel) produced by low temperature carbonization. Moderate amount of gas and liquid, but the gas has a high B.t.u. value.

Non-coking.

Mining: Although the mine is more open than any in the district, some work will be necessary before serious production may be effected. All levels, except the Main Level, are caved at the portal and have been unopened for years. Undoubtedly

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the gangways are caved so that it would be uneconomical to re-open any of these. The S. P. slope is filled with water to the collar. The owner pumped down 87 feet on the slope and the bottom was nowhere in sight.

The Main Level is open for the entire 970 feet. The ground is not "heavy" but the roof tends to spall off in slabs, particularly during the rainy months. At present, several small caves have occurred, and these will soon block the gangway unless cleaned out and the roof supported. Timber and lagging are old, somewhat rotted, and of small size. Most of the timbering should be replaced and where the roof is badly caved, some gobbing should be done above the lagging to protect it.

Coal is<sup>r</sup> the gangway is badly weathered. It is difficult to determine visually the quality of the coal without excessive digging. Presumably, the old slopes, inclines, and rooms mark the areas of better coal. It is reported that the locality of Yancey and Geer's sample (Yancey & Geer 40:15-16) represents better coal.

No large amount of coal exists above the gangway, but production from up-the-dip would be less expensive during early operation. Prospecting down-the-dip should be followed to prove additional reserves. Pump equipment would be essential for this work.

Bunkers, screens, and some sort of washing equipment should be installed, as well as a ventilating system for the area beyond the ventilator drill hole (see plate 111).

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Recommendations:

1. The Black Bear mine offers good possibilities as a source of emergency fuel during the war period. If developed to a point of efficient mining, the mine should be a source of steam and domestic coal during peace time.

2. Work should be concentrated on the Main Level at first. Timbers should be replaced, strengthened, and new timber and lagging installed at critical points. The coal vein should be cleaned out at intervals of 100 feet to determine the best place to begin work. Inclines and rooms should be started up-the-dip, to provide production while coal is explored down-the-dip. Some means of ventilating the mine should be installed.

3. Bunkers, screens, and washing equipment should be constructed at the dump of the Main Level.

4. Later, the S.P. slope should be unwatered and the coal possibilities of this vein explored.

5. In any event, a competent mine foreman who knows coal mining, should be employed, to direct the work, on the ground.

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References:

Diller 09

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Letter: submitted by A. S. Cummins, president Copco.

Letter: George W. Evans to David Eccles.

Treasher, Ray C., field examinations Sept. 5, 1942  
July 22, 1943

Plates 1 General layout of area

Plate 11 Detail of Main Level

Plate 111 Brunton-Pace-Aneroid survey of coal workings.

26 25  
35 36

571'

corner

o o Tower 1/34

o o Tower 8/35

o o Tower 7/33

o o Tower 6/33

6  
cor. 2

?  
cor.

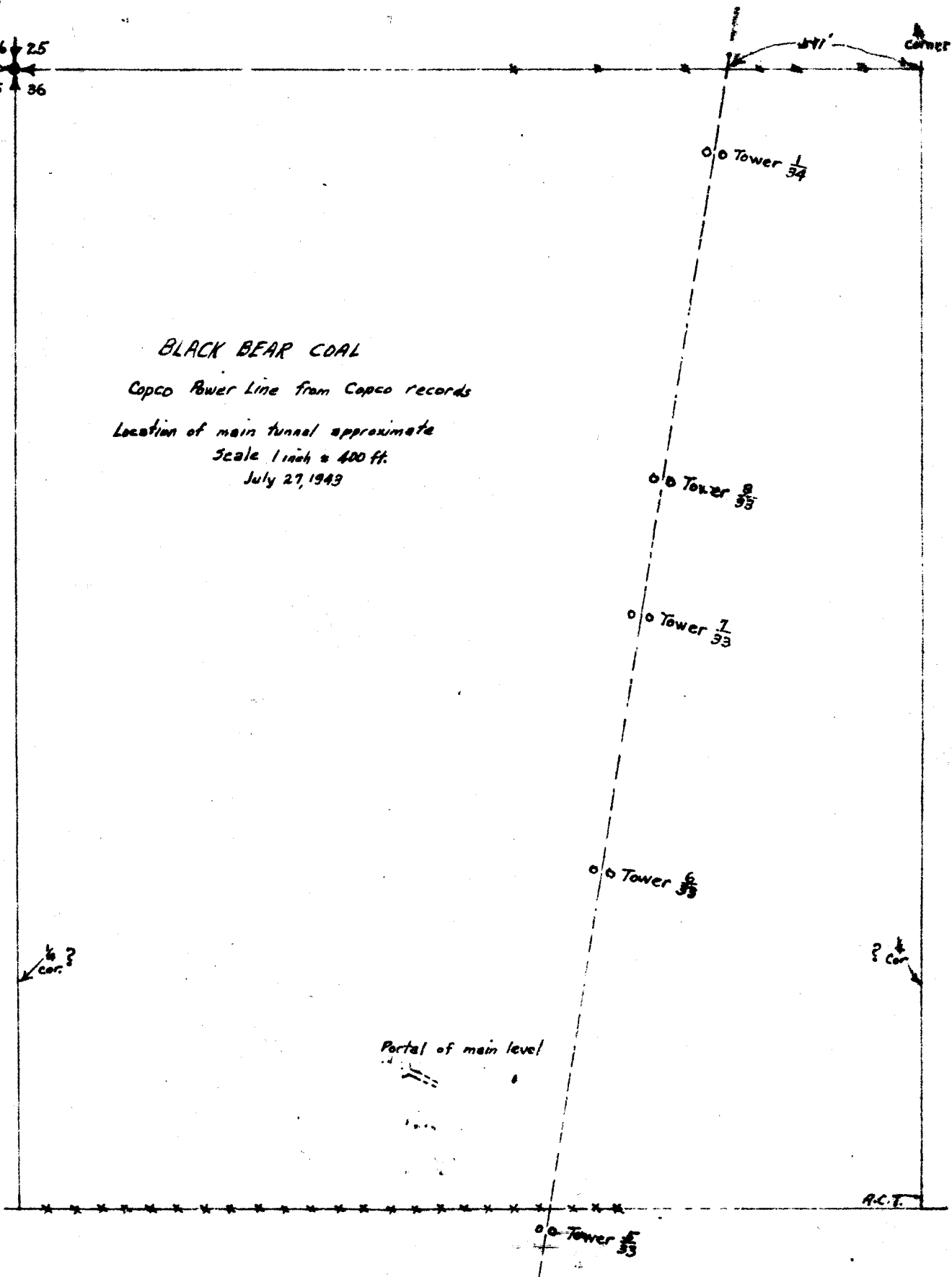
### BLACK BEAR COAL

Copco Power Line from Copco records  
Location of main tunnel approximate  
Scale 1 inch = 400 ft.  
July 27, 1943

Portal of main level

A.C.T.

o o Tower 5/33



(1934)

REPORT ON PROPOSED COAL AND SHALE  
DEVELOPMENT - JACKSON COUNTY, Ore

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As the purpose of this report is intended primarily to set forth the possibilities of the development of a coal supply for relief families and, in conjunction with that work, to determine a supply of shale suitable for surfacing of roads and airport runways; the information will stress the probably costs of such operations and touch only briefly on the geologic phase.

The coal is that of a tertiary deposit some five miles in width and extending from Ager, California to Evans Creek in Oregon, about fifty miles long.

I have confined my investigations however to four developments of the coal bodies lying Easterly and Northerly from Medford within a distance of four miles, namely the Black Bear, the Sunnyside or Southern Pacific property, the Roxy Anne Coal Company, and the Cascade Coal Company.

The Black Bear property is located in Section 35, T. 37 S., R. 1 W. It is easily reached by good road. Coal has been developed in three tunnels and operations were apparently quite extensive, with some coking of coal, and sorting and screening for custom trade. About 1300 feet of tunnel was opened in the main adit. Tunnel mostly is now caved but surface outcrop indicates a body about 10 feet thick of rather shattered bedding, carrying considerable shale and a large amount of iron. As this property is most remote from Medford, it is not advisable to consider development.

The Roxy Anne Coal Company's operations were in Section 15, T. 37 S., R. 1 W., W.M. at an elevation of about 2290 feet. This property was controlled by a stock company but operations were carried on by a John Watson, who opened some 800 feet of tunnel and exposed one bed of 15 feet thickness of coal. There is a good quality of coal here, showing good heat value. Close banding indicates good pressure and the coal comparatively free from impurities. No marketing was done, due to an injunction served in 1918, since which time no operations have been carried on. As this property would have to be reached over a mile of undedicated road and heavy grade, it is not given consideration for present purposes.

The Sunnyside Coal Company carried on operations reputedly under direction of the Southern Pacific Railroad Company in the opening of a vein of coal exposed in the NW $\frac{1}{4}$  of sec. 23, T. 37 S., R. 1 W., W.M. for the purpose of determining a coal supply. Some 1600 feet of tunnel is said to have been run. This tunnel work is located at an elevation of 2170 and would be

accessible by a road of easy gradient and partially built, about 1 mile in length from the Prescott Camp of the C.C.C. The portal of one adit has been cleaned and water tapped from the workings. The vein exposed shows about six feet of vein formation at this point with about 18" of fair coal at the roof or back and the lower portion of vein showing bands of coal, shale, and pervious earth. The close banding in the formation gives favorable indications of a fair grade of coal at depth and consequent pressure. From information of those who formerly worked here, there is a band of two feet thickness of fair quality coal in these workings and said to be about the best grade for domestic purposes produced in the district.

As this property has possibilities of coal and the tunnel or shaft can be opened at moderate expense, I would recommend further investigation and opening of the tunnel. An estimate of costs for this is included in a later paragraph.

With regard to shale supply for surfacing material from this property, the over burden is too great for economic development.

On the Roxy Anne road about  $\frac{1}{2}$  mile above Prescott Camp however, an outcropping of a similar band of shale and sandstone is exposed and would well warrant surface trenching and pits to determine the possibilities for materials for Roxy Anne and adjacent roads. The opening of a quarry and installation of a crusher in the sand rock should receive consideration.

The Cascade Coal Company developed a vein in Section 4, T. 37 S., R. 1 W., in which vicinity they had mineral rights on some 1200 acres. Two adits were opened in the S.E.  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 4. One tunnel 1000 feet in length was not in the vein, but immediately to the North and adit was run on the vein about 1550 feet. Workings followed the dip of 7° for about 60 feet when a sump was made and then workings extended on water grade to provide drainage from this tunnel, and a reputed production of some 30,000 tons was made and marketed locally.

The workings have been drained at the portal, but due to the dip, are not accessible to depth because of water. Some work has been done on an adit on dip to the north but was discontinued because of water and small scale operations.

Exposures indicate a bedding thickness of about 7 feet between sandstone roof and slate floor, being banded coal, iron and clay, with seams of shale throughout.

A typical section of the interior seen furnished from old data shows as follows:

- 20 foot thickness green sandstone roof 5" to 8" coal and slate.
- 3" coal - thin iron band
- 2  $\frac{1}{2}$  ft. coal.
- Seam 2" fine clay
- 18" to 24" of coal.
- 11 ft. of black slate floor



This would indicate about 2½ feet of commercial coal, though it would have to be verified.

Surface samples indicate a high shale content and banding of other impurities.

It is probable that by sinking on the dip of the vein more northerly from the existing tunnel that a commercial grade of coal of greater thickness would be found within 200 foot depth. This would require the installation and operation of a 3" pump.

This new tunnel operation would be much less expensive than opening the old workings and would give immediate coal supply when found. The increasing depth would be more favorable to quality of coal, due to greater existent pressure. Shale for surfacing is most easily accessible for use at this property than any of the others, and for airport use would be the shortest haul, about five miles over good roads and highways. A considerable body of shale has practically no overburden. An investigation by cuts and pits by hand labor would be justified to determine yardage available for surfacing.

An estimate of such development on the Cascade property is herewith submitted. Wages based on WPA scale.

Timbering 10 sets and 50 ties.

Cutting, hauling, framing and setting timber	\$ 67.50	
Truck hire		\$5.00

Tunneling 100 ft. 6' x 6'

2 miners, 1 mucker, 1 hoist man	394.00	
Total Labor	\$461.60	

Equipment

1 Hoist, rental 2 months @ \$ 50.00	100.00
1 - 3" pump and engine, rental 2 months @ \$30.00	60.00
Engine fuel	60.00
Small tools, lamps, etc.	30.00
2 Mine cars @ \$25.00	50.00
300' 16# rails, 1800# @ 10¢	160.00
150' 3" pipe @ 40¢	60.00

Total Equipment	525.00
Total 148 hrs. labor	461.60

Total for 100' \$986.60

Estimated cost per ton for mining, hoisting and sorting coal is \$1.75 per ton, after this development and operating on a limited scale.

Estimate for opening adit on the vein of Sunnyside property. 100' of Tunnel

Cleaning Tunnel 100' to face.

Labor \$105.00

	105.00 (carried over)
<u>Timbering</u>	
20 sets and laggins, and 50 ties	
Cutting, hauling, framing and setting timber	<u>\$120.00</u>
	\$225.00
Truck hire	\$10.00
<u>Equipment</u>	
1 - 1½" pump and engine, 1 mo. @ \$25.00	25.00
Fuel	15.00
2 - Tram cars @ \$25.00	50.00
150' - 1½" pipe @ 20¢	30.00
300' - 16# rails, 1600# @ 10¢	160.00
Small tools, lamps, etc.	25.00
	<u>\$315.00</u>
Total Equipment	
Labor	225.00
Total	<u>\$540.00</u>

Summation

Based on a study of the above conditions and costs, I would suggest that investigation of coal for use for relief and county purposes be directed to the opening of the Sunnyside tunnel to a depth of the present face, as it offers best assurance for a suitable fuel, and, at least cost. Also there is the possibility of cooperating with Prescott camp for their fuel supply.

In the matter of development of a shale pit for surfacing material I would recommend that four laborers be employed for three or four days, under proper direction, trenching and in pits to determine the area of shale at the Cascade property most suitable for power shovel operation.

Also similar investigation to be made of the sandstone and shale on the Roxy Anne road above the C.C.C. camp as a possible valuable source of road material and a chance of developing a coal outcrop on city or county property.

In conclusion I would mention the fact that a very serious effort and study has been made in past years on the coal deposits discussed above, particularly that of the Cascade Coal Company, for the purpose of determining the value of byproducts particularly. Authoritative tests have indicated a high value in Adraline, Phenolene and Anthracine dye materials besides the ammonia content, gas and coke that would prove a valuable asset to local industry. Any activity on these properties may go well toward a renewed and healthy interest in the possibility of extensive development, besides accomplishing the present purpose of coal and shale supply.

Although the use of coal from these properties for fuel has been rather unsatisfactory in many instances, due to excessive ash and some clunker, it is possible to select a good quality from the vein by sorting and as there is such a quality accessible, a sufficient supply should be available at reasonable cost with WPA labor project for all weather conditions.

Respectfully submitted  
/s/ Hugh C. Ingle  
Hugh C. Ingle-Mining

DEPARTMENT OF THE INTERIOR  
 BUREAU OF MINES

## A—DESCRIPTION OF MINE

- (1) State Oregon (2) County Jackson (3) Town Medford  
(Post office)
- (4) Mine sample of \_\_\_\_\_ (Material; for coal, give classification)  
 (5) Coal field Rogue River (6) District \_\_\_\_\_
- (7) Mine Black Bear Drift 2050 5 1/2 S.E.  
(a. Name) (b. Kind of opening; if shaft, give depth) (c. Height of opening above sea level) (d. Distance and direction from town)
- W 1/2 Sec 36, T 39 S R 1 W None Truck Mine  
(e. Sec., T., and R., if necessary) (f. Railroad connections) (g. Shipping point) (h. State if wagon mine or prospect, and give distance from shipping point)
- (8) Coal bed Unnamed 15° W N 50° W  
(a. Name) (b. Geologic system) (c. Formation) (d. Dip; degrees) (e. Strike, direction)
- (9) Mining system R & P (10) Undercutting Hand (11) Explosives Black & Stumping  
(Long wall, room and pillar, panels, etc.) (Hand or machine) (a. Used for coal) (b. Used for roof or floor)
- (12) Operator Crater Coal Co. Medford (13) Sales agent Same  
(Name and address) (Name and address)
- (14) Output per day 5 (15) Max. day's output 5 (16) Last year's output New  
(Average, gross, or net tons) (During last year) (Gross or net tons)
- (17) Output from advance workings; % 25 (18) Lifetime of mine 20 (19) Run of mine, % 0 (20) Is coal screened? Yes  
(At present) (Years estimated) (Of output shipped)
- (21) Type of screens Bar & Wire Stationary (22) Type of washer None (23) Percent coal washed 0
- (24) Maximum size washed \_\_\_\_\_ (25) Sizes produced \_\_\_\_\_ (26) Sizes produced \_\_\_\_\_  
(Washed coal) (Of coal not washed)
- (27) Is coal picked? \_\_\_\_\_ (28) Percent coal coked \_\_\_\_\_ (29) Sizes coked \_\_\_\_\_  
(State whether on belt or car) (At mine) (Screenings, crushed, washed, etc.)
- (30) Type and number of ovens \_\_\_\_\_ (31) Remarks Mine under development. Drift  
(Indicate after subject by mark (x) if additional information is given here)  
in lower bench of coal, room in upper bench  
(If this space is not sufficient, use back of card, making reference thereto)
- (32) Can Nos. \_\_\_\_\_  
(Give numbers of all samples forwarded)
- (33) Laboratory Nos. \_\_\_\_\_  
(Laboratory to fill in numbers immediately below corresponding can numbers)
- (34) Mine sampled at 1 points by H. F. Yancy & M. R. Geer Seattle on May 11, 1939  
(Number) (Collector) (Office) (Date)

NOTE.—FILL IN ONLY ONE FORM LIKE THIS FOR A MINE. MAIL TO LABORATORY WITH B CARDS

## BLACK BEAR MINE

The Black Bear Mine is located at an elevation of 2,000 ft. above sea level,  $5\frac{1}{2}$  miles southeast of Medford in the W.  $\frac{1}{2}$  of Sec. 36, T. 37 S., R. 1 W. The mine is operated by the Crater Coal Co. which is controlled by W. M. Awbrey, Medford.

The mine is opened by a drift driven about 900 feet southeast in the lower portion of the bed. To date only two rooms have been started. The room in which the latest mining was done is in the upper portion of the bed. The bed appears to be about 16 feet thick and consists of interstratified bands of coal, shale, and bone, varying in thickness up to about 6 inches. The main floor of the bed was nowhere exposed, and the roof, which was exposed in only one place, is thought to be sandstone. Of the total thickness of 16' roughly half may be classified as coal, or bony coal.

The strike of the bed is north  $50^{\circ}$  west, and the dip is  $15^{\circ}$  to the west. Several small faults were noted near the portal, and the presence of a larger fault somewhere beyond the present face of the drift is reported.

Several other small mines have operated in this bed on adjacent properties, but none of these were operating at the time the sample was taken.

At the tippie coal is passed over a  $\frac{3}{4}$ " bar screen and a  $\frac{3}{16}$ " square hole screen to produce lump, nut, and slack. Coal is sprayed with water at the time of screening. It is reported that about 60% of the production passes over the  $\frac{3}{4}$ " screen.

# REPORT ON PROPOSED COAL AND SHALE DEVELOPMENT

## JACKSON COUNTY

As the purpose of this report is intended primarily to set forth the possibilities of the development of a coal supply for relief families and, in conjunction with that work, to determine a supply of shale suitable for surfacing of roads and airport runways; the information will stress the probable costs of such operations and touch only briefly on the geologic phase.

The coal is that of a tertiary deposit some five miles in width and extending from Ager, California to Evans Creek in Oregon, about fifty miles long.

I have confined my investigations however to four developments of the coal bodies lying Easterly and Northerly from Medford within a distance of four miles, namely the Black Bear, the Sunnyside or Southern Pacific property, the Roxy Anne Coal Company, and the Cascade Coal Company.

The Black Bear property is located in Section 35, Twp. 37 S. R. 1 W. It is easily reached by good road. Coal has been developed in three tunnels and operations were apparently quite extensive, with some coking of coal, and sorting and screening for custom trade. About 1300 feet of tunnel was opened in the main adit. Tunnel mostly is now caved but surface outcrop indicates a body about 10 feet thick of rather shattered bedding, carrying considerable shale and a large amount of iron. As this property is most remote from Medford, it is not advisable to consider development.

The Roxy Anne Coal Company's operations were in Section 15, T. 37 S. R. 1 W. W.M. at an elevation of about 2290 feet. This property was controlled by a stock company but operations were carried on by a John Watson, who opened some 800 feet of tunnel and exposed one bed of 15 feet thickness of coal. There is a good quality of coal here, showing good heat value. Close banding indicates good pressure and the coal comparatively free from impurities. No marketing was done, due to an injunction served in 1918, since which time no operations have been carried on. As this property would have to be reached over a mile of undedicated road and heavy grade, it is not given consideration for present purposes.

The Sunnyside Coal Company carried on operations reputedly under direction of the Southern Pacific Railroad Company in the opening of a vein of coal exposed in the N. W. 1/4 of Section 23, T. 37 S. R. 1 W. W.M. for the purpose of determining a coal supply. Some 1600 feet of tunnel is said to have been run. This tunnel work is

located at an elevation of 2170 and would be accessible by a road of easy gradient and partially built, about 1 mile in length from the Prescott Camp of the C.C.C. The portal of one adit has been cleaned and water tapped from the workings. The vein exposed shows about six feet of vein formation at this point with about 18" of fair coal at the roof or back and the lower portion of vein showing bands of coal, shale, and pervious earth. The close banding in the formation gives favorable indications of a fair grade of coal at depth and consequent pressure. From information of those who formerly worked here, there is a band of two foot thickness of fair quality coal in these workings and said to be about the best grade for domestic purposes produced in the district.

As this property has possibilities of coal and the tunnel or shaft can be opened at moderate expense, I would recommend further investigation and opening of the tunnel. An estimate of costs for this is included in a later paragraph.

With regard to shale supply for surfacing material from this property, the over burden is too great for economic development.

On the Roxy Anne road about 1/4 mile above Prescott Camp however, an outcropping of a similar band of shale and sandstone is exposed and would well warrant surface trenching and pits to determine the possibilities for materials for Roxy Anne and adjacent roads. The opening of a quarry and installation of a crusher in the sand rock should receive consideration.

The Cascade Coal Company developed a vein in Section 4, T. 37 S. R. 1 W. in which vicinity they had mineral rights on some 1200 acres. Two adits were opened in the S.E. 1/4 of the S.E. 1/4 of Section 4. One tunnel 1000 feet in length was not in the vein, but immediately to the North an adit was run on the vein about 1350 feet. Workings followed the dip of 7° for about 60 feet when a sump was made and then workings extended on water grade to provide drainage from this tunnel, and a reputed production of some 30,000 tons was made and marketed locally.

The workings have been drained at the portal, but due to the dip, are not accessible to depth because of water. Some work has been done on an adit on dip to the north but was discontinued because of water and small scale operations.

Exposures indicate a bedding thickness of about 7 feet between sandstone roof and slate floor, being banded coal, iron and clay, with seams of shale throughout.

A typical section of the interior seam furnished from old data shows as follows:

20 feet thickness green sandstone roof 5" to 8" coal and slate.

8" Coal - thin iron band.

2½ ft. coal.

Seam 2" fine clay.

18" to 24" of coal.

1 ft. of black slate floor.

This would indicate about 2½ feet of commercial coal, though it would have to be verified.

Surface samples indicate a high shale content and banding of other impurities.

It is probably that by sinking on the dip of the vein more northerly from the existing tunnel that a commercial grade of coal of greater thickness would be found within 200 feet depth. This would require the installation and operation of a 3" pump.

This new tunnel operation would be much less expensive than opening the old workings and would give immediate coal supply when found. The increasing depth would be more favorable to quality of coal, due to greater existent pressure.

Shale for surfacing is most easily accessible for use at this property than any of the others, and for airport use would be the shortest haul, about five miles over good roads and highways. A considerable body of shale has practically no overburden. An investigation by cuts and pits by hand labor would be justified to determine yardage available for surfacing.

An estimate of such development on the Cascade property is herewith submitted. Wages based on W.P.A. scale.

<u>Timbering</u> 10 sets and 50 ties.		
Cutting, hauling, framing and setting timber	\$67.60	
Truck Hire		\$5.00
<u>Tunneling</u> 100 ft. 6' x 6'		
2 miners, 1 mucker, 1 hoist man	394.00	
Total Labor	\$461.60	
<u>Equipment</u>		
1 Hoist, rental 2 months @ \$50.00		100.00
1 - 3" pump and engine, rental 2 months @ \$30.00		60.00
Engine fuel		60.00
Small tools, lamps, etc.		30.00
2 Mine cars @ \$25.00		50.00
300' 16# rails, 1600# @ 10¢		160.00
150' 3" pipe @ 40¢		60.00
Total Equipment		\$525.00
Total 148 hrs. labor		461.60
Total for 100'		936.60

Estimated cost per ton for mining, hoisting and sorting coal is \$1.75 per ton, after this development and operating on a limited scale.

Estimate for opening adit on the vein of Sunnyside property.  
100' of Tunnel

Cleaning Tunnel 100' to face.  
 Labor

\$105.00

Timbering

20 sets and lagging, and 50 ties  
 Cutting, hauling, framing and setting  
 timber

120.00  
\$225.00

Truck hire

\$ 10.00

Equipment

1 - 1½" pump and engine, 1 mo. @ \$25.00

25.00

Fuel

15.00

2 - Tram cars @ \$25.00

50.00

150' - 1½" pipe @ 20¢

30.00

300' - 16# rails, 1600# @ 10¢

160.00

Small tools, lamps, etc.

25.00

Total Equipment

\$315.00

Labor

225.00

Total

\$540.00

Summation

Based on a study of the above conditions and costs, I would suggest that investigation of coal for use for relief and county purposes be directed to the opening of the Sunnyside tunnel to a depth of the present face, as it offers best assurance for a suitable fuel, and at least cost. Also there is the possibility of cooperating with Prescott camp for their fuel supply.

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Although the use of coal from these properties for fuel has been rather unsatisfactory in many instances, due to excessive ash and some clinker, it is possible to select a good quality from the vein by sorting and as there is such a quality accessible, a sufficient supply should be available at reasonable cost with W.P.A. labor and give an excellent hand labor project for all weather conditions.

Respectfully submitted,

HUGH C. INGLE

Mining Engineer

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION

RECORD NO..... M061163  
RECORD TYPE..... XIM  
COUNTRY/ORGANIZATION. USGS  
MAP CODE NO. OF REC..

REPORTER

NAME..... JOHNSON, MAUREEN G.  
UPDATED..... 81 01  
BY..... FERNS, MARK L.; (BROOKS, HOWARD C.)

NAME AND LOCATION

DEPOSIT NAME..... CRATER COAL CO.  
SYNONYM NAME..... BLACK BEAR, SUNNYSIDE , UNITED COAL CO, UNITED COAL CO

MINING DISTRICT/AREA/SUBDIST. JACKSONVILLE

COUNTRY CODE..... US  
COUNTRY NAME: UNITED STATES

STATE CODE..... OR  
STATE NAME: OREGON

COUNTY..... JACKSON  
DRAINAGE AREA..... 17 ROGUE RIVER  
PHYSIOGRAPHIC PRDV..... 13 WEST CASCADES  
LAND CLASSIFICATION..... 01

QUAD SCALE            QUAD NO OR NAME  
1: 62500            MEDFORD

LATITUDE            LONGITUDE  
42-18-36N            122-46-23W

UTM NORTHING        UTM EASTING        UTM ZONE NO  
4684006.5            518703.2            +10

TWP..... 37S  
RANGE..... 01W  
SECTION.. 36  
MERIDIAN. WILLAMETTE

LOCATION COMMENTS: H 142

SPECIAL FIELD 3 SEVERAL STRATA

ORE MATERIALS (MINERALS, ROCKS, ETC.):  
COAL

ANALYTICAL DATA

BTU..... 7529  
SULFUR..... 01.16  
ASH..... 33.42  
FIXED CARBON..... 31.89  
VOLATILES..... 23.39  
MOISTURE..... 11.30  
THICKNESS OF COAL. 001.0 FT

EXPLORATION AND DEVELOPMENT  
STATUS OF EXPLOR. OR DEV. 4

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:

BEDDED

FORM/SHAPE OF DEPOSIT:

SIZE/DIRECTIONAL DATA

SIZE OF DEPOSIT..... SMALL

STRIKE OF OREBODY..... N50W

DIP OF OREBODY..... 15NE

COMMENTS(DESCRIPTION OF DEPOSIT):

THREE SEAMS ARE INDICATED, 8, 12, AND 13 FT THICK RESPECTIVELY.

DESCRIPTION OF WORKINGS

UNDERGROUND

COMMENTS(DESCRIP. OF WORKINGS):

OVER 2000 FT IN 6 ADITS AND SHAFTS

PRODUCTION

YES

SMALL PRODUCTION

23 COA, SML SOME

1907

COAL (32C, 29 ASH)

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS..... ED

HOST ROCK TYPES..... SHALE, SAND STONE, CONGLOMERATE STONE, CONGLOMERATE