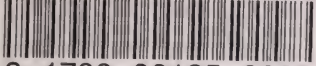


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First Annual Report

OF THE

State Inspector of Coal Mines

1913



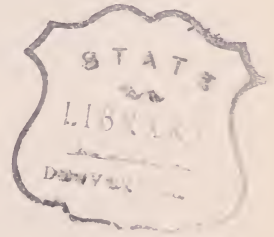
DENVER, COLORADO
THE SMITH-BROOKS PRINTING COMPANY, STATE PRINTERS
1914

First Annual Report

OF THE

State Inspector of
Coal Mines

1913



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PERSONNEL OF THE STATE COAL MINING DEPARTMENT

FIELD AND OFFICE

JAMES DALRYMPLE.....	Chief Inspector
FRANK N. OBERDING.....	Deputy Inspector
HENRY P. KING.....	Deputy Inspector
JAMES W. GRAHAM.....	Deputy Inspector
ADA R. TIBBITS.....	Chief Clerk
BIRDIE DORSEY.....	Assistant Clerk

EXAMINING BOARD FOR INSPECTORS

E. H. Weitzel	J. R. Jenkins
George T. Peart	David Griffiths
W. H. Adamson	

EXAMINING BOARD FOR MINE OFFICIALS

E. H. Weitzel	J. R. Jenkins
George T. Peart	W. H. Adamson
James Dalrymple	

LETTER OF TRANSMITTAL

Denver, Colo., September 9, 1914.

HON. ELIAS M. AMMONS,
Governor of Colorado.

Sir: I herewith have the honor to submit to you the first annual report of this department covering the year 1913, January 1st to December 31st, under the new law, which went into effect April 5, 1913.

The printing of this report has been delayed, owing to a shortage of funds. From the financial statement covering this department a surplus will be noted, but there was such a general demand for the vital sections of the mining law in various foreign languages that it was deemed more important to apply the surplus money for the translation of the law into eight of the most needed foreign languages. Therefore, as the surplus was not large enough to pay for these translations and also the annual report, the latter was held back until this date, as we now have again to our credit a sufficient surplus to defray the costs of the printing.

I beg to remain

Yours very respectfully,

JAMES DALRYMPLE,
State Inspector of Coal Mines.

STATEMENT SHOWING RECEIPTS AND DISBURSEMENTS FROM APRIL 1 TO DECEMBER 31, 1913

RECEIPTS

Tax collected on coal mined.....	\$21,211.01
From sale of copies of mining law.....	581.84
Total	\$21,792.85

DISBURSEMENTS

Salaries of chief and three deputy inspectors.....	\$ 6,622.45
Salaries of two clerks.....	1,658.31
Expenses (traveling) of chief and three deputy inspectors.....	2,545.64
Fees and expenses of Examining Board (two examinations)...	1,121.46
Office expenses:	
Advertising	82.84
Express	24.98
Instruments	121.10
Miscellaneous	91.20
Printing	970.90
Stamps	160.00
Stationery supplies	166.21
Telegraph	12.26
Telephone	11.18
Refund to the state.....	3,921.28
Total	17,509.81
Surplus	\$ 4,283.04

REMARKS: The above stated refund to the State of Colorado was the amount of money advanced to cover the expenses of the department for April, May, and June, until the tax on coal mined during this period became available.

SUMMARY OF THE COAL PRODUCTION OF COLORADO, 1913

Number of mines in operation.....	178
Number of new mines opened.....	16
Number of old mines reopened.....	7
Number of mines closed, 9; abandoned, 3; total.....	12
Tons of lignite coal produced.....	1,928,676
Tons of semi-bituminous coal produced.....	720,353
Tons of bituminous coal produced.....	6,567,256
Tons of anthracite coal produced.....	52,654
Total number of tons of coal produced.....	9,268,939
Decrease in 1913.....	1,740,009
Tons of run-of-mine coal produced.....	3,533,787
Tons of lump coal produced.....	3,576,203
Tons of slack coal produced.....	2,158,949
Per cent of slack.....	37.6
Tons of coal mined by hand.....	7,000,970
Tons of coal mined by machine.....	2,267,969
Average price paid per ton for the state.....	\$.55 2/3
Total number of machines used—air, 167; electric, 126.....	293
Tons of coal shipped out of the state.....	1,559,178
Tons of coal shipped into the state (1912, 297,000) in 1913.....	400,000
Average number of days worked for all producing mines.....	192
Number of men employed as miners.....	7,696
Total number of men employed in and about the mines.....	12,871
Daily production of each miner (average).....	6.26
Annual production of each miner (average).....	1,203
Total number of tons of coke produced.....	879,186
Total number of coke ovens in operation.....	2,137
Total number of men employed at coke ovens.....	620
Gallons of illuminating and miner's oil used, approximately.....	65,711
Number of kegs of black powder used, approximately.....	52,962
Number of pounds of permissible powder used, approximately.....	617,864
Amount of compensation paid for death and injury.....	\$ 33,593.63
Cost of development during the year.....	\$ 563,641.19
Number of men killed underground.....	104
Number of men killed on surface.....	6
Number of men injured.....	354
Number killed per 1,000 employed.....	8.6

Number injured per 1,000 employed.....	27.5
Number of tons produced for each life lost.....	84,263
Number of tons produced for each non-fatal accident.....	26,183
Number of widows left.....	51
Number of children left fatherless.....	108

The above amount of compensation does not represent a final total, as many companies reported numerous cases for compensation still pending settlement.

First Annual Report

of the

State Inspector of Coal Mines

1913

INTRODUCTION

The coal industry of Colorado for 1913, as compared with 1912, shows a decrease in production from the beginning of the year.

On March 31 the decrease was 241,965 tons; June 30 it went down to 167,204 tons; September 30 it climbed again to 184,692 tons, and December 31 to 1,748,009 tons.

During the last three months the production was 1,725,031 tons, as against 3,213,349 tons for the same period in 1912.

From the above figures it is evident that the strike declared September 23 is the principal cause of the great decrease in the production.

I regret very much to have to report that this department was not able to put into force all the important provisions required by the new mining law passed by the Nineteenth General Assembly, which provided for two more inspectors, the printing of the vital sections of the law in the necessary foreign languages, and the holding of examinations at Trinidad, Denver, and Grand Junction for the purpose of examining applicants for the positions of mine foremen, assistant mine foremen, firebosses, and mine examiners.

The two additional inspectors have not been employed, and the present deputy inspectors had to be laid off for two weeks each; the vital sections of the mining law have not been printed; only one of the three examinations for mine officials was held, because of shortage of funds, caused by the strike, and by the state failing to pay the salaries and expenses of this department until the tax on coal became available, as provided for in section 167 of the mining law. Thus this department has been hampered

to a great extent in carrying out the duties imposed upon it by law.

The large companies, and many of the small ones, are showing a commendable spirit in complying with the many provisions of the law. A few of the small companies are not complying with some of its provisions, because they are of the opinion that these provisions do not apply to their mines. However, I have written the Attorney General for an opinion on the provisions in question, and will act in accordance with the opinion rendered.

With a few minor exceptions, no difficulties have been experienced in collecting the tax placed on coal. All delinquent taxes have been placed with the Attorney General for collection.

In determining the average price paid per ton to the miner, the production of each county has been multiplied by the average price paid per ton in said county. This gives us the total production of the state and the amount paid for same. This amount divided by the production gives us the average price paid per ton, which is 55 $\frac{2}{3}$ cents.

In determining the average earnings of the miners, the total cost of development has been added to the total amount paid as tonnage. This, divided by the average number of miners employed, gives the average earnings for 1913. To the above figures should be added each miner's share of the total amount paid for dead work or deficient work.

There is no way to get these data, and I do not believe they would materially affect the annual earnings.

The distance traveled by the department during the year amounts to 44,370 miles, at a cost of \$1,291.10 railroad fares.

Oils allowed for illuminating purposes in the coal mines of Colorado are as follows:

A compound oil, composed of 70 per cent cottonseed and 30 per cent mineral, by the Continental Oil Company.

Two compound oils—70 and 30 per cent, and 60 and 40 per cent—by the Great Western Oil Company.

Two compound oils—70 and 30 per cent, and 60 and 40 per cent—by the Sun Flower State Oil Company.

The above oils have been tested and approved by the University of Colorado as complying with the law.

During the year 110 lives were lost in and about the coal mines—104 underground and six on the surface. Of the underground accidents, 47 per cent were due to falls of rock and coal, and 45 per cent of all fatal accidents are due to the same causes. From the reports on those accidents by the deputy inspectors, and from personal observations, it is very apparent that at least one-half of them could have been prevented by better discipline, stricter supervision, and the installation of proper safeguards.

In asking for these things, I realize that I am asking for a great deal, considering that examinations have not been held, as arranged for by the Board of Examiners, which would have been the means of weeding out incompetent mine officials, as well as of furnishing the state with a list of eligible employes.

Another cause has been the failure to supply every underground worker who does not understand the English language with a copy of the vital sections of the mining law in his own language. This has handicapped the worker to the extent that he does not know what his duties are, or what is expected of him by the mine foreman or other officials. He is able to make himself understood only by acts instead of words, thus making it very difficult to establish discipline.

The strained relations between employer and employe are responsible for a great many accidents, because such relations cause strikes, and when green men are shipped in to take the places of the strikers, many of the former depend almost entirely on the officials to protect them from danger. Such persons should not be allowed to work underground, unless constantly under the supervision of some practical person.

There is a great responsibility placed upon us all, especially on mine foremen and assistant mine foremen, in seeing that the law is carried out.

It is evident from the deputy inspectors' reports on fatal accidents, and from my own observations, that section 53 is not receiving the careful attention it should by the mine officials.

I therefore urge that the mine foremen and their assistants give more attention to the proper timbering of working places, not only instructing that timbering be done, but seeing that the instructions are complied with at once, or have the disobedient workmen withdrawn.

For the last three years there has been a steady increase in the number of lives lost per 1,000 employed, and a decrease in the number of tons produced for each life lost in the coal mines of our state; while the United States as a whole for the years 1910, 1911, and 1912 shows a material decrease in the number of lives lost per 1,000 employed, and a marked increase in the number of tons produced for each life lost. (See table 4.)

These facts give food for thought, and should stimulate the efforts of all parties connected with the industry to lessen this frightful loss of life, thereby putting us on a par with the United States as a whole.

After nine months' work under the new mining law, I am of the opinion that there are several sections that should be amended in time to present the amendments to the Twentieth General Assembly, and I suggest that this should be done by the same committee that amended it in 1913, with two additional members—one an owner and one a miner from the lignite fields.

Numerous and far-reaching improvements have been made in accordance with the requirements of the coal-mining law, and

the result is that the underground conditions at most of the mines have improved considerably, and that the men now work under conditions of greater safety, both as to health and limb. The mine officials have also awakened to the fact that this mining law demands greater efficiency of them, and they are, therefore, paying closer attention to the daily safe and sanitary upkeep of the mines under their surveillance; and, were it not for the fact that so many unskilled men are employed in the mines, the increased efficiency on the part of the mine officials would result in a decreased rate of loss of life. I am, however, very hopeful of the future. With the increased efforts of the operators in placing their mines on as safe and sanitary a basis as possible, with efficient mine officials constantly on guard, and with the men becoming trained to their work, the loss of life will be certain to be minimized.

In conclusion, I beg to state that in reviewing the work of this department, with its many responsibilities, I recall with pleasure not only the efficiency of my deputies, Mr. Frank N. Oberding, Mr. Henry King, and Mr. Jas. W. Graham, but their hearty co-operation and interest in everything concerning our work.

I sincerely thank them for their efficient aid in assisting this department in all its undertakings, and contributing to whatever success is ours.

(Signed) JAMES DALRYMPLE,
State Inspector of Coal Mines.

The following is a list of the prices paid per ton in the different coal-producing counties:

Archuleta .....	.67
Boulder .....	.50
Delta .....	.65
El Paso .....	.60
Fremont .....	.95
Garfield .....	.45
Gunnison .....	.50
Huerfano .....	.50
Jackson .....	.45
Jefferson .....	.50
Las Animas .....	.55
La Plata .....	.55
Mesa .....	.60
Montezuma	1.00
Pitkin .....	.40
Routt .....	.50
Weld .....	.50

The above prices give an average of $55 \frac{2}{3}$ cents per ton to the miner for all coal mined in the State of Colorado.

TABLE 1

SHOWING BY COMPANIES NUMBER OF MEN EMPLOYED, NUMBER
KILLED, AND NUMBER INJURED PER 1,000 EMPLOYED

Name of Company	No. Men Employed	No. Men Killed	No. Men Injured	No. Killed per 1,000 Employed	No. Injured per 1,000 Employed
Alliance Coal Co.....	85	2	5	23.5	60
Amador Fuel Co.....	5	1	..	200	..
American Fuel Co.....	553	1	5	1.8	9
Baldy Coal Co.....	9	1	..	111	..
Big Four Coal Co.....	95	..	7	..	71.6
Big Six Coal Co.....	49	..	3	..	61
Black Canon Fuel Co.....	34	1	..	29.5	..
Book Cliff Railroad Co.....	13	..	10	..	77
Calumet Fuel Co.....	74	..	2	..	27
Carbonado Coal Co.....	23	..	1	..	43.5
Carbon Coal & Coke Co.....	259	..	9	..	34.7
Cedar Hill Coal & Coke Co.....	229	3	8	13.1	35
Colorado Central Coal Mining Co.....	31	..	3	..	97
Colorado Fuel & Iron Co.....	4,827	20	86	4.1	18.6
Consolidated Coal & Coke Co.....	130	1	5	7.7	38.5
Coryell Mine Leasing Co.....	48	37	2	770.8	42
Eaton Coal Co.....	2	1	..	500	..
El Paso County Land & Fuel Co.....	83	..	7	..	84.3
Fox Coal Co.....	83	..	3	..	36
Frederick Coal Co.....	58	..	4	..	69
Fruth & Autrey Co.....	73	..	3	..	41.1
Gordon Coal Co.....	38	..	1	..	26.3
Grand Junction Mining & Fuel Co....	87	..	1	..	11.5
Huerfano Coal Co.....	132	..	4	..	30.3
Juanita Coal Co.....	70	1	..	14.3	..
Leyden Coal Co.....	219	1	9	4.6	45.6
Littell Coal Mining Co.....	39	..	1	..	25.6
Loma Fuel Co.....	11	..	1	..	91
Louisville Coal & Land Co.....	51	..	5	..	98
Matchless Coal Co.....	75	..	5	..	66.6
McLaughlin Bros.....	38	..	2	..	52.6

TABLE 1—Concluded

SHOWING BY COMPANIES NUMBER OF MEN EMPLOYED, NUMBER
KILLED, AND NUMBER INJURED PER 1,000 EMPLOYED

Name of Company	No. Men Employed	No. Men Killed	No. Men Injured	No. Killed per 1,000 Employed	No. Injured per 1,000 Employed
Minnequa Coal Co.....	65	..	9	..	123
Moffat Coal Co.....	189	..	8	..	42.3
Monument Valley Coal Co.....	44	1	..	22.7	..
National Fuel Co.....	504	5	40	9.9	80
New Maitland Coal Co.....	17	..	1	..	59
Northern Colorado Coal Co.....	66	..	1	..	15.1
Oakdale Coal Co.....	189	2	8	10.6	42.3
Phoenix Coal Co.....	10	..	1	..	100
Pike's Peak Fuel Co.....	140	1	6	7.1	42.9
Porter Fuel Co.....	40	..	5	..	125
Rapson Coal Mining Co.....	126	..	2	..	15.9
Rocky Mountain Fuel Co.....	1,256	9	36	7.1	28.4
Royal Coal & Coke Co.....	24	..	1	..	41.7
Royal Fuel Co.....	51	3	1	58.8	19.6
Routt County Fuel Co.....	90	2	1	22.2	11.1
Rugby Fuel Co.....	51	..	2	..	39.2
Santa Fe Coal Co.....	45	..	1	..	26.3
South Canon Coal Co.....	66	1	5	15.2	75.8
Southern Colorado Coal Co.....	63	..	1	..	15.8
Sunnyside Coal Co.....	52	..	1	..	19.2
Thomas Coal Co.....	12	1	1	88.3	88.3
Union Coal & Coke Co.....	79	1	4	12.7	50.6
Utah Fuel Co.....	173	3	17	17.3	98.3
Victor-American Fuel Co.....	1,407	10	22	7.1	15.6
Walsenburg Fuel Co.....	55	..	2	..	26.4
Wootton Land & Fuel Co.....	135	1	2	7.4	14.8
State of Colorado.....	12,871	110	354	8.6+	27.5+

TABLE 2

TONNAGE BY COMPANIES PER FATAL AND NON-FATAL ACCIDENT
FOR THE YEAR 1913

Name of Company	Tons Produced per Fatal Accident Chargeable to Mines	Tons Produced per Non-Fatal Accident in and Around Mines
Alliance Coal Co.....	36,471	15,883
American Fuel Co.....	80,127	16,025
Baldy Coal Co.....	7,893	....
Big Four Coal Co.....	....	8,306
Big Six Coal Co.....	....	9,885
Black Canon Coal Co.....	20,703	....
Book Cliff Railroad Co.....	....	13,403
Carbonado Coal Co.....	....	15,121
Carbon Coal & Coke Co.....	....	32,758
Calumet Fuel Co.....	....	33,076
Cedar Hill Coal & Coke Co.....	58,979	22,116
Colorado Central Coal Mining Co.....	....	1,382
Colorado Fuel & Iron Co.....	167,062	34,850
Consolidated Coal & Coke Co.....	122,273	24,455
Coryell Mine Leasing Co.....	2,057	38,048
Eaton Coal & Fuel Co.....	None	None
El Paso Land & Fuel Co.....	....	13,984
Fox Coal Co.....	....	19,567
Frederick Coal Co.....	....	15,295
Fruth & Autrey Co.....	....	9,585
Gordon Coal Co.....	....	12,943
Grand Junction Mining & Fuel Co.....	....	89,521
Huerfano Coal Co.....	....	55,971
Juanita Coal Co.....	69,662	....
Leyden Coal Co.....	155,320	17,258
Littell Coal & Mining Co.....	35,996	35,996
Loma Fuel Co.....	....	7,451
Louisville Coal & Land Co.....	....	8,855
McLaughlin Bros.....	....	5,672
Minnequa Coal Co.....	....	6,330
Moffat Coal Co.....	....	18,940
Monument Valley Coal Co.....	12,686	....

TABLE 2—Concluded

TONNAGE BY COMPANIES PER FATAL AND NON-FATAL ACCIDENT
FOR THE YEAR 1913

Name of Company	Tons Produced per Fatal Accident Chargeable to Mines	Tons Produced per Non-Fatal Accident in and Around Mines
National Fuel Co.....	70,753	8,844
Northern Colorado Coal Co.....	....	66,675
New Maitland Coal Co.....	....	8,288
Oakdale Coal Co.....	89,506	22,376
Phoenix Coal Co.....	....	2,221
Pike's Peak Fuel Co.....	131,263	21,877
Porter Fuel Co.....	....	6,217
Rapson Coal Mining Co.....	....	43,227
Rocky Mountain Fuel Co.....	98,847	24,712
Royal Coal & Coke Co.....	....	12,342
Royal Fuel Co.....	11,782	35,350
Routt County Fuel Co.....	43,559	87,098
Rugby Fuel Co.....	....	13,655
Santa Fe Coal Co.....	....	1,480
South Canon Coal Co.....	34,620	6,924
Southern Colorado Coal Co.....	....	41,241
Sunnyside Coal Co.....	....	26,150
Thomas Coal Co.....	5,435	....
Union Coal & Coke Co.....	74,788	18,697
Utah Fuel Co.....	111,696	13,141
Victor-American Fuel Co.....	143,951	52,346
Walsenburg Fuel Co.....	....	17,261
Wootton Land & Fuel Co.....	92,834	46,417
State of Colorado.....	84,263	26,183

TABLE 3

NUMBER OF FATAL ACCIDENTS IN 1913

Chargeable to operation of coal mines.....	110
Underground	104
Surface	6
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Total ..	110

NUMBER OF FATAL ACCIDENTS—CAUSES AND PERCENTAGES

Causes	Number of Accidents	Per Cent
Falls of rock and coal.....	49	45.0
Mine cars and motors.....	6	5.4
Dust explosions.....	37	33.4
Suffocation from marsh gas.....	2	1.8
Miscellaneous	12	10.8
Machinery and railroad cars.....	4	3.6
<hr/>		<hr/>
Total	110	100.0
Number of widows left.....	51	
Number of children left.....	108	
Number of single men killed.....	59	

Accidents under "Miscellaneous" include: premature blasts, electricity, shafts, mules, etc.

TABLE 4

SHOWING NUMBER KILLED PER 1,000 EMPLOYED, PER 1,000,000 SHORT TONS MINED, AND PRODUCTION PER LIFE LOST; SHORT TONS IN AND ABOUT COAL MINES OF UNITED STATES FOR YEARS 1910, 1911, AND 1912

Year	Per 1,000 Employed	Per 1,000,000 Mined	Production per Death— Short Tons
1910	3.92	5.66	177,000
1911	3.73	5.48	183,000
1912	3.15	4.29	233,000

(The above table is taken from Bulletin 69, issued by J. A. Holmes, director of the Bureau of Mines.)

COMPARATIVE TABLE FOR THE STATE OF COLORADO

Year	Per 1,000 Employed	Per 1,000,000 Mined	Production per Death— Short Tons
1911	6.35	8.92	122,860.20
1912	7.055	8.90	112,417.84
1913	8.60	11.86	84,263.00+

TABLE 5

ARCHULETA COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	No. of Days Worked	Average No. of Men Employed	Total No. of Tons Produced
Talman	Pagosa Lumber Co.	Pagosa Junction	4 ft	Drift	Bituminous	234	4.6	3,711
Number of mines operated 1								
							4.6	3,711

TABLE 6

BOULDER COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	No. of Days Worked	Average No. of Men Employed	Total No. of Tons Produced
Simpson	Rocky Mountain Fuel Co.....	Lafayette	6 to 14 ft.	Shaft	Lignite	96	93.5	118,192
Standard	Rocky Mountain Fuel Co.....	Lafayette	4 to 6 ft.	Shaft	Lignite	268.7	104.5	107,907
Vulcan	Rocky Mountain Fuel Co.....	Lafayette	8 ft.	Shaft	Lignite	231	30.7	39,535
Mitchell	Rocky Mountain Fuel Co.....	Lafayette	6 to 12 ft.	Shaft	Lignite	261	38	51,937
Rex No. 1.....	Rocky Mountain Fuel Co.....	Louisville	6 ft.	Shaft	Lignite	195.5	74.5	85,719
Rex No. 2.....	Rocky Mountain Fuel Co.....	Louisville	6 ft.	Shaft	Lignite	304	22.2	9,486
Hecla	Rocky Mountain Fuel Co.....	Louisville	6 ft.	Shaft	Lignite	228	53.3	46,202
Gorham	Rocky Mountain Fuel Co.....	Gorham	5 ft.	Slope	Lignite	189	90.6	44,578
Industrial	Rocky Mountain Fuel Co.....	Superior	6½ ft.	Shaft	Lignite	230.6	85	89,866
Monarch No. 1.....	National Fuel Co.....	Downer	5 to 7 ft.	Shaft	Lignite	262.5	80.1	56,467
Monarch No. 2.....	National Fuel Co.....	Broomfield	4½ to 9 ft.	Shaft	Lignite	210	63.4	57,502
Fox	Fox Coal Mining Co.....	Gorham	8 ft.	Shaft	Lignite	228	82.5	72,840
Matchless	Great Matchless Fuel Co.....	Louisville	4 ft. 7 in.	Shaft	Lignite	215	75.5	35,151
Strathmore	P. K. Harmon.....	Lafayette	8 ft.	Shaft	Lignite	174	39.1	32,790
Sunnyside	Big Six Coal Co.....	Louisville	4½ ft.	Shaft	Lignite	223	49.4	29,657

Centennial	Big Four Coal & Coke Co.....	Louisville	Shaft	Lignite	175	47.7	28,321
Nonpareil	Brooks-Harrison Fuel Co.....	Louisville	Shaft	Lignite	287	21.5	21,054
Capitol	American Fuel Co.....	Lafayette	Shaft	Lignite	42	112	16,169
Senator	American Fuel Co.....	Lafayette	Shaft	Lignite	12	37	1,088
Summit	Electric Coal Co. (electric).....	Lafayette	Shaft	Lignite	111.4	21.5	10,074
Mile High	Mile High Coal Co.....	Lafayette	Shaft	Lignite	275	4.7	4,361
<hr/>							<hr/>
Number of mines operated					200.8	1,206.7	959,010

Number of mines operated 21

TABLE 7

DELTA COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	No. of Days Worked	Average No. of Men Employed	Total No. of Tons Produced
King	Juanita Coal & Coke Co.....	Bowie	8 to 10 ft.	Slope	Bituminous	165.5	70	69,662
Cedaredge	Surface Creek Co-operative Coal Co. Cedaredge		7 to 8 ft.	Slope	Bituminous	255	4.6	3,343
Farmer	Paonia Coal Co.....	Paonia	7 to 9 ft.	Drift	Bituminous	132	5.9	2,749
Black Diamond	Farmers' Progressive Coal Co.....	Paonia	6 and 8 ft.	Drift	Bituminous	131	4	4,195
Bennett	Hotchkiss Fuel & Supply Co.....	Hotchkiss	7 ft.	Drift	Bituminous	75	1.2	333
Converse	Frank Converse.....	Paonia	6½ ft.	Drift	Bituminous	151.8	2	504
Number of mines operated						151.7	87.7	80,786

TABLE 8

EL PASO COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	No. of Days Worked	Average No. of Men Employed	Total No. of Tons Produced
Pikeview	Pike's Peak Fuel Co.	Colorado Springs	7 to 12 ft.	Shaft	Lignite	289	140	131,263
El Paso	El Paso County Land & Fuel Co.	Colorado Springs	7 to 9 ft.	Slope	Lignite	300	82.5	97,878
Rapson No. 2	Rapson Coal Mining Co.	Colorado Springs	7 ft.	Shaft	Lignite	259.5	72.1	58,073
Curtis	Curtis Coal Mining Co.	Colorado Springs	9 to 12 ft.	Shaft	Lignite	97	55.8	14,486
Patterson	Patterson & Son	Colorado Springs	18 ft.	Slope	Lignite	196	21.1	13,659
Danville	Tudor Coal Co.	Colorado Springs	8 to 20 ft.	Slope	Lignite	233	12.8	10,007
Thomas	Thomas Coal Co.	Colorado Springs	7 ft.	Slope	Lignite	168.2	12.2	5,435
Franceville	Thomas E. David	Colorado Springs	5 ft.	Slope	Lignite	220	3	1,000
Number of mines operated							399.5	131,861

TABLE 10

GARFIELD COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average No. of Men Employed	Total Number Tons Produced
Midland	Rocky Mountain Fuel Co.	Sunlight	.....7 ft. to 11 ft.	Slope	Bituminous	154.5	44.4	50,403
Vulcan	Coryell Mine Leasing Co.	Newcastle	.....6 ft. to 14 ft.	Drift	Bituminous	253	17.8	76,096
South Canon	South Canon Coal Co.	South Canon	.....18 ft.	Drift	Bituminous	263	65.7	34,620
Harvey Gap	P. C. Coryell	Newcastle	.....8 ft. to 10 ft.	Drift	Bituminous	278	4.1	884
Carbonera	Gilson Asphaltum Co.	Mack	.5 ft. 9 in. to 8 ft. 6 in.	Drift	Bituminous	237	8	6,024
Number of mines operated.....						237.1	179	168,027

TABLE 11

GUNNISON COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number Tons Produced
Somerset	Utah Fuel Co.	Somerset	.....24 ft.	Slope	Bituminous	237.5	172.7	223,393
Crested Butte	Colorado Fuel & Iron Co.	Crested Butte	.....8 to 16 ft.	Drift	Bituminous	201.9	198.6	124,114
Floresta	Colorado Fuel & Iron Co.	Floresta	.....1 ft. 9 in. to 3 ft. 2 in.	Slope	Anthracite	167.8	119.6	40,536
Porter	Littell Coal & Mining Co.	Crested Butte	.....8 and 15 ft.	Drift	Bituminous	217	38.6	35,996
Horace	Pueblo Fuel & Mining Co.	Crested Butte	.....3 ft. 8 in.	Slope	Anthracite	212	27.6	12,118
Kubler	Rocky Mountain Fuel Co.	Baldwin	.....6 ft. 6 in.	Slope	Semi-bituminous	168	36.8	24,040
Alpine	Rocky Mountain Fuel Co.	Baldwin	.....6 ft. 8 in.	Slope	Semi-bituminous	58	71.8	6,360
Baldwin-Star	Baldwin Fuel Co.	Baldwin	.....7 ft.	Drift	Bituminous	130	8.1	4,343
Bulkley	Crested Butte Fuel Co.	Crested Butte	.....6 ft.	Slope	Bituminous	87.2	15.2	4,350
New Baldwin	La Plante & Son.	Gunnison	.....5 ft.	Slope	Bituminous	99	4	774
Number of mines operated.....						164.1	693	476,025

TABLE 12

HUERFANO COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Beds Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number Tons Produced
Rouse	Colorado Fuel & Iron Co.	Rouse	.....6 ft.	Slope	Bituminous	260	237.9	222,961
Robinson	Colorado Fuel & Iron Co.	Walsen	.....5 ft. 8 in.	Slope	Bituminous	216	192.1	142,033
Lester	Colorado Fuel & Iron Co.	Lester	.....6 ft. 8 in.	Slope	Bituminous	268.4	183.7	132,064
Walsen	Colorado Fuel & Iron Co.	Walsen	.....5 ft. 8 in.	Slope	Bituminous	217.3	170.2	102,333
Cameron	Colorado Fuel & Iron Co.	Farr	.....4 to 4 ft. 6 in.	Slope	Bituminous	273.7	142.2	91,635
Pietou	Colorado Fuel & Iron Co.	Pietou	.....4 ft. 3 in.	Slope	Bituminous	196.2	133.2	85,011
Ideal	Colorado Fuel & Iron Co.	Ideal	.....3 ft. 10 in.	Slope	Bituminous	260.5	100.2	71,114
McNally	Colorado Fuel & Iron Co.	Walsenburg	.....5 ft. 6 in.	Shaft	Bituminous	161.6	62.8	17,563
Oakdale	Oakdale Coal Co.	Oakview	.....7 to 14 ft	Slope	Bituminous	270	188.8	187,012
Ravenwood	Victor-American Fuel Co.	Ravenwood	.....3 ft.	Slope	Bituminous	282	118.9	63,197
Maitland	Victor-American Fuel Co.	Maitland	.....3 ft. 6 in.	Slope	Bituminous	184	84.6	40,355
Reliance	Alliance Coal Co.	La Veta	.....7 to 14 ft.	Slope	Bituminous	273.6	85	79,413
Pryor	Union Coal & Coke Co.	Pryor	.....4 and 6 ft.	Slope	Bituminous	180.5	78.9	71,788
Tioga	Minnequa Coal Co.	Tioga	.....6 ft. 6 in.	Slope	Bituminous	206	64.9	50,637
Big Four	Big Four Coal & Coke Co.	Tioga	.....7 to 9 ft.	Slope	Bituminous	158	54.1	42,755

TABLE 12—Concluded

HUERFANO COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Rockland	Walsenburg Fuel Co.	Walsenburg	.....6 ft.	Shaft	Bituminous	169.5	55.5	34,522
Pinon	Rocky Mountain Fuel Co.	McGuire	.....4 ft. 6 in.	Shaft	Bituminous	117	65.6	34,060
Toltec	Fruth & Autrey	Walsenburg	.....3½ to 4½ ft.	Slope	Bituminous	226.6	73.4	28,763
Rugby	Rugby Fuel Co.	Rugby	.....4 ft.	Slope	Bituminous	186.6	51.4	27,310
Sunnyside	Sunnyside Coal Mining Co.	Strong	.....7 ft. 6 in.	Slope	Bituminous	102.4	51.6	26,150
Caddell	Black Canon Fuel Co.	Walsenburg	.....3 ft. 2 in.	Slope	Bituminous	155.4	41	20,703
Gordon	Gordon Coal Co.	Walsenburg	.....5 ft. 3 in.	Slope	Bituminous	148.5	37.5	12,943
Carbonado	Carbonado Coal Mining Co.	Walsenburg	.....4 and 3 ft.	Drift	Bituminous	208.3	22.8	15,122
Larimore	Monument Valley Coal Co.	Strong	.....6 ft.	Slope	Bituminous	101	44	12,686
Black Canon	New Maitland Coal Co.	Walsenburg	.....3 ft. 6 in.	Slope	Bituminous	165	16.5	8,288
Loma	Loma Fuel Co.	Walsenburg	.....2 ft. 10 in.	Slope	Bituminous	212	11.4	7,451
Turner	Turner Coal Co.	Strong	.....8 ft.	Slope	Bituminous	55	33.3	6,000
Breen	Breen Coal Mining Co.	Walsenburg	.....5 ft. 6 in.	Slope	Bituminous	33	22.5	3,236
Mutual	Mutual Coal Co.	Walsenburg	.....7 ft.	Shaft	Bituminous	95	24	2,891
Bunker Hill	Bunker Hill Coal Co.	Rouse	.....5 ft.	Shaft and Drift	Bituminous	15	25	1,216
Number of mines operated.....						179	2,455.9	1,644,212

TABLE 13

JACKSON COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number Tons Produced
Coalmont	Northern Colorado Coal Co.....	Coalmont	65 ft.	Slope	Sub-bituminous	171	65.7	62,905
Number of mines operated..... 1								

TABLE 14

JEFFERSON COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number Tons Produced
Leyden No. 2.....	Leyden Coal Co.....	Leyden	6 to 9 ft.	Shaft	Lignite	237.7	184.6	130,236
Leyden No. 3.....	Leyden Coal Co.....	Leyden	6 to 9 ft.	Shaft	Lignite	163	31.5	25,084
White Ash	Rooney White Ash Coal Co.....	Morrison	11 ft.	Shaft	Lignite	25	4	31
Number of mines operated..... 3								
						141.9	223.1	155,351

TABLE 15

LA PLATA COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Perin's Peak	Calumet Fuel Co.	Perin's	5 ft.	Drift	Bituminous	256.8	73.7	66,152
Hesperus	Porter Fuel Co.	Durango	5 ft. 6 in.	Drift	Semi-bituminous	189.1	40	31,086
San Juan	Carbon Coal & Coke Co.	Durango	3 ft. 6 in.	Slope and Drift	Bituminous	309	31.9	25,780
City	Royal Coal & Coke Co.	Durango	2 ft. 6 in.	Tunnel	Bituminous	289	23.5	12,342
O. K.	O. K. Coal Co.	Durango	5 ft. 8 in.	Drift	Bituminous	196	3.9	4,286
Peerless	San Juan Development & In't Co.	Durango	.....	Slope	Bituminous	51	3	807
Number of mines operated.....						215	176	140,453

TABLE 16

LAS ANIMAS COUNTY, 1913

Name of Mine	Name of Operator	Post-office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Frederick	Colorado Fuel & Iron Co.	Valdez	4½ to 5 ft.	Drift	Bituminous	306	307	333,887
Primero	Colorado Fuel & Iron Co.	Primero	3 ft. 2 in. to 6 ft.	Drift	Bituminous	306.5	354.8	280,201
Berwind	Colorado Fuel & Iron Co.	Berwind	3 ft. 3 in. to 5 ft. 7 in.	Drift	Bituminous	304	338	245,914
Sopris	Colorado Fuel & Iron Co.	Sopris	2 to 5 ft.	Drift and Slope	Bituminous	306	265.5	180,825
Morley	Colorado Fuel & Iron Co.	Morley	4½ to 5 ft.	Drift	Bituminous	284	262.1	171,894
Starkville	Colorado Fuel & Iron Co.	Starkville	4 ft. 6 in.	Drift	Bituminous	202	297.1	166,698
Tabasco	Colorado Fuel & Iron Co.	Tabasco	5 to 7 ft. 6 in.	Slope	Bituminous	202.5	150.5	134,253
Tercio	Colorado Fuel & Iron Co.	Tercio	5 to 7 ft.	Drift	Bituminous	235.5	129.2	107,491
Delagua	Victor-American Fuel Co.	Delagua	5 to 6 ft. 6 in.	Slope	Bituminous	299.6	565.8	524,578
Hastings	Victor-American Fuel Co.	Hastings	5½ to 6 ft.	Slope	Bituminous	312	138.7	154,328
Bowen	Victor-American Fuel Co.	Bowen	5 ft. 6 in.	Drift	Bituminous	256	140.7	148,033
Gray Creek	Victor-American Fuel Co.	Gray Creek	3 ft. 6 in.	Drift	Bituminous	305	129.7	92,791
Toller	Cedar Hill Coal & Coke Co.	Tollerburg	6 ft.	Shaft	Bituminous	290.8	99.9	107,373
Greenville	Cedar Hill Coal & Coke Co.	Ludlow	6 ft.	Slope	Bituminous	174.8	65.5	47,661

TABLE 16—Concluded

LAS ANIMAS COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Black Diamond	Cedar Hill Coal & Coke Co.	Cedarhurst	.....3 ft. 6 in.	Slope	Bituminous	161.6	63.9	21,902
Cokedale No. 1	Carbon Coal & Coke Co.	Cokedale	.....3 to 6 ft.	Slope and Drift	Bituminous	314.6	116.5	147,590
Cokedale No. 2	Carbon Coal & Coke Co.	Cokedale	.....3 to 6 ft.	Slope	Bituminous	204.2	110.6	121,451
Piedmont	Rocky Mountain Fuel Co.	Piedmont	.....3½ and 6½ ft.	Slope	Bituminous	225	139	127,860
Majestic	Rocky Mountain Fuel Co.	Majestic	.....5½ to 7 ft.	Drift	Bituminous	285	33.8	33,773
Forbes No. 9	Chicosa Fuel Co.	Forbes	.....3½ to 7 ft.	Drift	Bituminous	306.5	143.6	125,114
Thor	National Fuel Co.	Bowen	.....5 ft.	Drift	Bituminous	213	129.7	69,405
Beacon	National Fuel Co.	Beacon	3 ft. 7 in. to 4 ft. 8 in.	Slope	Bituminous	90	95.1	24,660
Wootton-Turner	Wootton Land & Fuel Co.	Wootton	.....4 ft. 6 in.	Drift	Bituminous	300	134.7	92,834
Ludlow	Huerfano Coal Co.	Ludlow	.....4 to 6 ft.	Drift	Bituminous	162	63.5	45,739
Brodhead No. 9	Southern Colorado Coal Co.	Brodhead	.....4 ft.	Slope	Bituminous	213	62.6	41,241
Primrose	Primrose Coal Co.	Rugby	.....3½ and 7 ft.	Slope	Bituminous	262	71.1	37,936
Kenneth	Temple Fuel Co.	Tabasco	.....4 ft.	Drift	Bituminous	224.3	46.3	35,624
Royal	Royal Fuel Co.	Aguilar	.....6 ft. 6 in.	Shaft	Bituminous	235	51.4	35,350
Rapson No. 1	Rapson Coal Mining Co.	Rapson	.....3 to 4 ft.	Slope	Bituminous	185	53.5	28,380

Empire	Empire Coal Mining Co.....	Agular .....	.....6 ft.	Slope	Bituminous	210	34.2	20,006
Southwestern	Southwestern Fuel Co.....	Agular .....	.....4 and 3 ft.	Slope	Bituminous	224	37.6	19,421
Bloom	Jeffreys Coal Mining Co.....	Trinidad .....	.....3 to 5 ft.	Drift	Bituminous	269	11.6	13,107
Santa Fe	Santa Fe Coal Co.....	Starkville .....	.....4 and 6 ft.	Drift	Bituminous	131	45	12,824
Amador	Amador Fuel Co.....	Agular .....	.....6 ft.	Drift	Bituminous	224	17	8,345
Baldy	Baldy Coal Co.....	Trinidad .....	.....5 to 6 ft.	Slope	Bituminous	210.5	8.7	7,893
Prospect	Prospect Coal Co.....	Trinidad.....	.....2 ft. 8 in.	Drift	Bituminous	269	7	5,349
Wiley	Johnstone Coal & Coke Co.....	Trinidad.....	.....3 ft. 6 in.	Drift	Bituminous	199	8.9	4,728
Jewel	Ideal Fuel Co.....	Agular .....	.....3½ ft.	Slope	Bituminous	123.9	16.2	4,032
Alta	Alta Fuel Co.....	Brodhead .....	.....4 ft. 6 in.	Drift	Bituminous	117	7.5	3,430
Star	Star Coal Mining Co.....	Cedarhurst .....	.....3 ft. 3 in.	Drift	Bituminous	25	15	914
Fisher's Peak	Fisher's Peak Coal Co.....	Trinidad .....	.....3 ft. 6 in.	Slope	Bituminous	126	2.6	455
Peerless	Globe Fuel Co.....	Agular	Slope	Bituminous	26	7	50
Number of mines operated.....						224.8	4,848.1	3,782,310

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TABLE 17

MESA COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Cameo	Grand Junction Mining & Fuel Co.	Cameo	.....6 ft.	Drift	Semi-bituminous	234	87	89,521
Book Cliff	Book Cliff Railroad Co.	Grand Junction	.....7 ft.	Drift	Semi-bituminous	133	13.1	13,403
Palisade	Palisade Coal & Supply Co.	Palisade	.....4 ft.	Drift	Semi-bituminous	133	13.6	7,248
Garfield	Garfield Coal Mining Co.	Grand Junction	.....8 ft.	Drift	Semi-bituminous	183	6.2	4,379
P. V.	Plateau Valley Coal Co.	Cameo	.....6 ft.	Drift	Semi-bituminous	155	6.5	4,331
Stokes	Stokes Coal Co.	Palisade	.....3 ft. 8 in. to 4 ft.	Drift	Semi-bituminous	210	9.1	4,100
Grandview	Grandview Coal Co.	Palisade	.....4 to 5 ft.	Drift	Semi-bituminous	181.5	3.8	3,043
Riverside	Levi Vaughn	Palisade	.....2½ to 3 ft.	Drift	Semi-bituminous	157	5	900
Winger	New Grand Mesa Coal Co.	Palisade	.....5 ft. 6 in.	Drift	Semi-bituminous	20	2	109
Number of mines operated.....						156.2	146.3	127,031

TABLE 18

MONTEZUMA COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Mancos	George S. Spencer.....	Mancos	2 ft. 6 in.	Drift	Lignite	190	5	150
Number of mines operated.....		1				190	5	150

TABLE 19

PITKIN COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Spring Gulch	Colorado Fuel & Iron Co.....	Spring Gulch.....	10 ft. 4 in.	Slope	Bituminous	274.9	70.5	53,216
Number of mines operated.....		1				274.9	70.5	53,216

TABLE 20

ROUTT COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Oak Hills No. 1.....	Moffat Coal Co.....	Oak Creek.....	.....8 ft.	Slope	Bituminous	181.5	87.1	51,458
Oak Hills No. 2.....	Moffat Coal Co.....	Oak Creek .....	.....10 ft.	Drift	Bituminous	236.5	101.7	99,989
Pinnacle	Route County Fuel Co.....	Oak Creek .....	.....10 to 14 ft.	Drift	Bituminous	174.5	89.7	87,098
Yampa Valley No. 1..	Yampa Valley Coal Co.....	Pallas .....	......5 to 10 ft.	Drift	Bituminous	132	42.2	30,395
Yampa Valley No. 2..	Yampa Valley Coal Co.....	Pallas .....	......5 to 10 ft.	Drift	Bituminous	100.5	17.5	21,110
Juniper	Juniper Coal Co.....	Oak Creek .....	......5 to 10 ft.	Slope	Bituminous	122	39.1	23,202
Electric	Route Electric Coal Co.....	Junction City .....	......5 ft.	Drift	Bituminous	95.3	37.6	18,987
Williams	Williams & Chaffee.....	Oak Creek .....	.....	Drift	Bituminous	66	2.6	327
Number of mines operated.....						138.5	417.5	332,566

TABLE 21

WELD COUNTY, 1913

Name of Mine	Name of Operator	Post-Office Address or Location of Mine	Thickness of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average Number of Men Employed	Total Number of Tons Produced
Puritan	National Fuel Co.	Erie	10 ft.	Shaft	Lignite	174	89.1	161,087
Parkdale	National Fuel Co.	Lafayette	6 ft.	Slope	Lignite	191	47.1	44,647
Golden Ash	Consolidated Coal & Coke Co.	Dacona	7 ft. 6 in.	Shaft	Lignite	211	130.4	122,273
Frederick Slope	Frederick Fuel Co.	Frederick	7 ft. 4 in.	Slope	Lignite	237.4	58.3	61,178
Firestone	Louisville Land & Coal Co.	Firestone	6 ft.	Shaft	Lignite	193.5	51.4	44,274
Shamrock	Shamrock Coal Co.	Erie	10 ft.	Shaft	Lignite	289	14.4	10,755
Evans	American Fuel Co.	Frederick	8 ft.	Shaft	Lignite	44	86.6	10,595
Ideal	Ideal Coal Co.	Erie	8 ft.	Slope	Lignite	278	14.3	9,610
Eureka	Eureka Coal Co.	Erie	8 ft. 6 in.	Shaft	Lignite	286	9	8,509
State	State Coal Co.	Erie	11 ft.	Shaft	Lignite	53.2	21	3,260
Phoenix	Alpha Coal Co.	Fort Lupton	6 ft.	Shaft	Lignite	176	10.5	2,221
Peerless	Peerless Coal Co.	Frederick		Shaft	Lignite	72	2.5	1,050
Number of mines operated.						184.6	531.6	419,399

TABLE 22

PRODUCTION OF COUNTIES BY MONTHS, 1913
(Annual reports grouped in the month of December)

Month	Archuleta	Boulder	Delta	El Paso	Fremont
Jan.		122,502	7,642	39,158	94,338
Feb.		95,048	5,083	34,807	62,318
Mar.		81,753	5,710	30,560	37,874
Apr.		55,858	3,454	23,096	41,461
May		43,440	3,480	20,055	53,451
June		36,722	3,083	18,391	35,989
July		48,251	2,812	18,388	47,344
Aug.		52,770	3,943	19,312	72,463
Sept.		85,719	7,244	19,692	54,478
Oct.		115,043	11,157	35,123	7,111
Nov.		111,201	12,980	35,707	11,018
Dec.	3,771	110,703	14,198	37,572	13,988
Totals	3,771	959,010	80,786	331,861	531,833

Month	Garfield	Gunnison	Huerfano	Jackson	Jefferson
Jan.	20,372	45,778	216,364	6,587	15,324
Feb.	13,381	31,903	166,423	5,985	15,371
Mar.	12,542	33,548	106,396	4,338	13,813
Apr.	12,768	31,369	133,039	4,495	11,212
May	13,661	37,889	162,179	2,869	9,287
June	14,836	33,976	130,690	2,831	9,062
July	12,335	50,022	147,194	3,042	8,749
Aug.	13,318	49,119	179,933	2,744	8,658
Sept.	15,209	49,933	132,661	3,929	12,921
Oct.	14,531	46,421	74,371	11,735	20,285
Nov.	11,427	32,213	90,493	6,684	14,843
Dec.	13,647	33,854	104,469	7,666	15,820
Totals	168,027	476,025	1,644,212	62,905	155,351

TABLE 22—Concluded

PRODUCTION OF COUNTIES BY MONTHS, 1913

Month	Las Animas	La Plata	Mesa	Montezuma	Pitkin
Jan.	430,891	14,153	17,805	....	3,948
Feb.	375,604	11,320	9,121	....	3,456
Mar.	364,421	11,282	9,145	....	3,776
Apr.	385,360	9,316	7,361	....	3,887
May	385,742	9,175	6,207	....	4,408
June	374,058	9,013	5,638	....	4,249
July	370,733	8,277	6,923	....	4,932
Aug.	389,180	9,463	6,477	....	4,084
Sept.	316,065	11,663	10,066	....	4,953
Oct.	121,405	15,525	15,583	....	6,492
Nov.	120,834	14,613	15,663	....	3,963
Dec.	148,047	16,653	17,045	150	5,068
Totals	3,782,340	140,453	127,034	150	53,216

Month	Routt	Weld	Total Production
Jan.	34,754	60,042	1,129,658
Feb.	26,369	46,672	902,861
Mar.	27,383	42,615	785,156
Apr.	33,941	21,784	778,401
May	39,229	15,107	806,179
June	30,558	8,603	717,689
July	29,997	10,919	769,918
Aug.	39,125	13,126	863,725
Sept.	28,186	37,589	700,311
Oct.	3,598	55,553	553,936
Nov.	11,540	56,508	549,737
Dec.	27,826	50,881	621,358
Totals	332,566	419,399	9,268,939

TABLE 23

SHOWING INCREASE AND DECREASE OF EACH COUNTY FOR THE
YEARS 1912 AND 1913

County	1912	1913	Increase	Decrease
Archuleta		3,771	3,771	.....
Boulder	1,053,091	959,010	.....	94,081
Delta	65,218	80,786	15,568	.....
El Paso	341,885	331,861	.....	10,024
Fremont	733,188	531,833	.....	201,255
Garfield	178,456	168,027	.....	10,429
Gunnison	559,127	476,025	.....	83,102
Huerfano	1,889,300	1,644,212	.....	245,088
Jackson	38,799	62,905	24,106	.....
Jefferson	83,442	155,351	71,909	.....
Las Animas	4,770,292	3,782,340	.....	987,952
La Plata	121,111	140,453	19,342	.....
Mesa	103,476	127,034	23,558	.....
Montezuma .....	.....	150	150	.....
Pitkin	74,182	53,216	.....	20,966
Routt	441,002	332,566	.....	108,436
Weld	489,379	419,399	.....	69,980
Estimated small mines not reporting	75,000	.....	.....	75,000
Totals	11,016,948	9,268,939		
Decrease in 1913.....				1,748,009

TABLE 24

COKE PRODUCTION IN 1913 BY COMPANIES AND COUNTIES

Companies	Total No. Ovens	Total Tonnage	Counties	Total No. Ovens	Total Tonnage
Colorado Fuel & Iron Co....	1,724	673,391	Gunnison.....	50	19,415
Carbon Coal & Coke Co.....	312	164,915	Las Animas..	2,065	850,001
Victor-American Fuel Co...	101	40,880	La Plata.....	22	9,770
Totals	2,137	879,186		2,137	879,186

LIST OF FATAL ACCIDENTS, SURFACE AND UNDERGROUND, WHICH OCCURRED IN THE COAL MINES OF COLORADO DURING THE YEAR 1913.

- January 2—Perfecto Clark; Mexican; car-oiler on tippie; age, 17. Was killed by having his arm torn off; was caught in gear-wheel at the Delagna Mine, operated by the Victor-American Fuel Company in Las Animas County.
- January 3—James Batey; American; miner; age, 52; married; eight children. Was killed by a fall of coal at the South Canon Mine, operated by the South Canon Coal Company in Garfield County.
- January 3—Dan Molloy; Irish; miner; age 34; no record of marriage. Was killed by a fall of rock at the King Mine, operated by the Juanita Coal & Coke Company in Delta County.
- January 3—William Sneddon; Scotch; miner; age, 55; married; two children; and Andrew Sneddon; Scotch; miner; age, 16. Were killed by a fall of coal at the Reliance Mine, operated by the Alliance Coal Company in Huerfano County.
- January 8—George Batchiletti; Anstrian; miner; age, 52; single. Was killed by a fall of slate at the Matchless Mine, operated by the American Fuel Company in Boulder County.
- January 10—Joe Mohoro; Slavonian; night pumpman; age, 45; married; five children. Was electrocuted by coming in contact with live wire at the Royal Mine, operated by the Royal Fuel Company in Las Animas County.
- January 12—Daniel Henricks; American; machinist; age, 37; married; no children. Was killed by being caught in shaft belt at the Tercio Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- January 16—W. Green; colored; miner; age, 46; single. Was killed by a fall of coal at the Pike View Mine, operated by the Pike's Peak Fuel Company in El Paso County.
- January 22—Mike Staka; Austrian; driver; age, 30; single. Was killed by being crushed between car and roof at the Leyden Mine, operated by the Leyden Coal Company in Jefferson County.
- January 27—Francisco Estrella; Mexican; age, 39; married; one child. Was killed by a fall of rock at the Pinion Mine, operated by the Rocky Mountain Fuel Company in Huerfano County.

- January 30—Guadaloupe Hujano; Mexican; miner; age, 50; widower; one child. Was killed by a fall of rock at the Thor (Suffield) Mine, operated by the National Fuel Company in Las Animas County.
- February 13—Gus Ketroe; Greek; miner; age, 28; single. Was killed by a fall of rock at the Rex No. 1 Mine, operated by the Rocky Mountain Fuel Company.
- February 13—Frank Dusa; Slavonian; car-dumper; age, 32; single. Was killed by being crushed between a loaded car and a rib side at the Tercio Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- February 17—Mike Alaycheck; Russian; miner; age, 22; single. Was killed by a fall of slate at the Parkdale Mine, operated by the National Fuel Company in Weld County. Died February 21.
- February 18—James Micheli; Italian; miner; age, 35; single. Was killed by a fall of rock at the Larimore Mine, operated by the Monument Valley Coal Mining Company in Huerfano County.
- February 22—Doris Courtier; American; driver; age, 19; single. Was killed by being crushed between two loaded cars at the Pinnacle Mine, operated by the Routt County Fuel Company in Routt County.
- February 25—George Smith; colored; miner; age, 28; single. Was killed by a fall of rock at the Lester Mine, operated by the Colorado Fuel & Iron Company in Huerfano County.
- February 27—Floyd Lobdell; American; miner; age, 32; single. Was killed by a powder explosion at the Simpson Mine. The accident occurred on February 25, and he died on the 27th. The mine is operated by the Rocky Mountain Fuel Company in Boulder County.
- February 27—Venzazio Antoncich; Slavonian; miner; age, 47; single. Was killed by a fall of rock at the Amador Mine, operated by the Amador Fuel Company in Las Animas County.
- February 27—Nick Zacovich; Montenegrin; miner; age, 45; married; no children. Was killed by a fall of rock at the Tabasco Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- March 1—Jordan Todoroff; Bulgarian; miner; age, 45; married; two children. Was killed by a fall of top coal at the Puritan Mine, operated by the National Fuel Company in Weld County.
- March 2—Steve Foth; Slavonian; contractor; age, 35; widower; no children; and Louis Chesanon; Italian; contractor; age, 35; single. Were killed by being suffocated by marsh gas at the Toller Mine, operated by the Cedar Hill Coal & Coke Company in Las Animas County.

- March 7—Fidel Santisevan; Mexican; oiler and belt-tender at Washer; age, 23; married; two children. Was killed by being crushed between two gear-wheels at the Sopris Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- March 15—George Ristoff; named on pay-roll Georhe Stenanoff; Macedonian; miner; age, 22; married; children not known. Was killed by a fall of rock at the Monarch No. 1 Mine, operated by the National Fuel Company in Boulder County.
- March 15—Felix Martinez; Mexican; miner; age, 33; single. Was killed by being run over by a trip of empty cars at the Gray Creek Mine, operated by the Victor-American Fuel Company in Las Animas County.
- March 22—Fred A. Hunter; American; top-boss; age, 33; single. Was killed by car running over him at the Golden Ash Mine, operated by the Consolidated Coal & Coke Company in Weld County. Died March 24.
- March 27—J. W. Allison; American; miner; age, 22; single. Was killed by flying coal from blast at the Somerset Mine, operated by the Utah Fuel Company in Gunnison County.
- April 15—Narso Dami; Italian; miner; age, 37; married; five children. Was killed by a fall of roof at the Pinnacle Mine, operated by the Routt County Fuel Company in Routt County.
- April 15—Charles Lester Reome; American; jig-tender; age, 18; single. Was killed by being pulled around main shaft line working jig No. 2 at the Tabasco washery of the Tabasco Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- April 15—Jim Vatakes; Greek; miner; age, 28; single. Was killed by a fall of rock at the Ravenwood Mine, operated by the Victor-American Fuel Company in Huerfano County.
- April 22—Alegro Bomnoles; Mexican; miner; age, 28; married; three children. Was injured by a fall of rock at the Morley Mine, operated by the Colorado Fuel & Iron Company in Las Animas County. Died April 23.
- April 23—Gambosin Giovanni; Italian; miner; age, 19; single. Was killed by a fall of coal at the Berwind Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- May 1—Edward Burns; American; miner; age, 15. Was killed by a fall of rock at the Caddell Mine, operated by the Black Canon Fuel Company in Huerfano County.
- May 3—Mike Streenar; English; miner; age, 57; married; six children. Was killed by a fall of rock at the Williamsville Mine, operated by the Thomas Coal Company.
- May 7—Emelio Voi; Italian; miner; age, 27; single. Was killed by a fall of top coal at the Oakdale Mine, operated by the Oakdale Coal Company in Huerfano County.

- May 14—Thomas Gordon; Scotch; night pumpman; age, 68; married; one child. No accident. Death caused by natural causes at the Magnet Mine, operated by the Rocky Mountain Fuel Company in Fremont County.
- May 22—Frank Krashitz; Austrian; miner; age, 30; single. Was killed by being crushed between car and coal face at the Primero Mine, operated by Colorado Fuel & Iron Company in Las Animas County.
- May 27—Nikolas Kolar; Slavonian; miner; age, 52; married; two children. Was killed by a fall of rock at the Rouse Mine, operated by the Colorado Fuel & Iron Company in Huerfano County.
- June 2—August Larondelle; French; miner; age, 51; single. Injured by a fall of rock at the Royal Mine, operated by the Royal Fuel Company in Las Animas County. Died the following day.
- June 9—Louis Klum; Slavonian; miner; age, 33; married; no children. Was injured by a fall of rock at the Piedmont Mine, operated by the Rocky Mountain Fuel Company in Las Animas County. Died June 13.
- June 11—Giovanni Dimonte; Italian; miner; age, 26; married; not known to have children. Was injured by a fall of rock at the Primero Mine, operated by the Colorado Fuel & Iron Company in Las Animas County. Died June 19.
- June 18—George Yohannovich; Montenegrin; miner; age, 35; married; three children. Was killed by a fall of rock at the Royal Mine, operated by the Royal Fuel Company in Las Animas County.
- June 27—Luko Shifero; Austrian; miner; age, 31; single. Was killed by a fall of rock at the Delagua Mine, operated by the Victor-American Fuel Company in Las Animas County.
- July 9—Rosario Janne; Italian; scavenger; age, 47; married; six children. Was killed by being run over by a dump cart at the Delagua Mine, operated by the Victor-American Fuel Company in Las Animas County.
- July 22—Peter Beitler; German; miner; age, 25; single. Was killed by a fall of rock at the Crested Butte Mine, operated by the Colorado Fuel & Iron Company in Gunnison County.
- July 22—Lug Kseysekowski; Pole; miner; age, 39; married; no children. Was killed by a fall of rock at the Starkville Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- July 23—Frank Vorsick; Slavonian; miner; age, 28; married; no children. Was killed by a fall of rock at the Black Diamond Mine, operated by the Cedar Hill Coal & Coke Company in Las Animas County.

- July 16—John Fontandini; Italian; miner; age, 16. No accident. Died from cerebral hemorrhage at the Rouse Mine, operated by the Colorado Fuel & Iron Company.
- August 1—Lawrence Prepodnick; Slavonian; miner; age, 39; single. Was killed by a fall of coal at the Tercio Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- August 4—Fedigonia Luna; Mexican; miner; age, 24. Was injured by a fall of rock, July 25, at the Delagua Mine, operated by the Victor-American Fuel Company in Las Animas County. Died August 4.
- August 5—Peter Parage; Italian; miner; age, 33; married; two children. Was killed by a fall of coal and rock at the Starkville Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- August 7—Gio Gugliemo; Italian; miner; age, 47; married; children not known. Was killed by a fall of rock at the Rouse Mine, operated by the Colorado Fuel & Iron Company in Huerfano County.
- August 9—Jake Vicie; Slavonian; miner; age, 37; married; three children. Was killed by a fall of rock at the Ravenwood Mine, operated by the Victor-American Fuel Company in Huerfano County.
- August 18—John Russac; Greek; miner; age, 21; single. Was killed by being kicked by a mule at the Tabasco Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- August 18—Sostin Medina; Mexican; miner; age, 30; married; no children. Was killed by a fall of rock at the Gray Creek Mine, operated by the Victor-American Fuel Company in Las Animas County.
- September 10—Mike Demchyshak; Austrian; timberman; age, 31; married; one child. Was killed by a fall of rock at the Standard Mine, operated by the Rocky Mountain Fuel Company.
- September 10—Andrew Johnstone; American; tippelman; age, 17. Was injured by falling off the tippel at the Somerset Mine, operated by the Utah Fuel Company in Gunnison County. Died September 12.
- September 20—Bernardo Morgan; Italian; miner; age, 40; married; three children. Was killed by a fall of rock at the Wootton Mine, operated by the Wootton Land & Fuel Company in Las Animas County.
- September 22—Roger Payne; English; miner; age, 27; single. Was killed by a powder explosion at the Somerset Mine, operated by the Utah Fuel Company in Gunnison County.

- September 22—John Helwig; German; miner; age, 31; single. Was killed by being overcome by gas and falling into the shaft at a mine being opened by the Eaton Coal Company in Weld County.
- September 23—Paul Macura; Austrian; miner; age, 18. Was killed by being electrocuted at the Magnet Mine, operated by the Rocky Mountain Fuel Company in Fremont County.
- October 10—Pat Moore; Irish; miner; age, 53; married; no children. Was killed by falling against a rock wall at the Morley Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- October 10—Joe Nicolotta; Italian; miner; age, 38; married; no children. Was killed by a fall of rock at the Delagua Mine, operated by the Victor-American Fuel Company in Las Animas County.
- October 15—John Pulley; colored; miner; age, 50; married; no children. Was killed by a fall of rock and coal at the Primero Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- October 16—Crisanto di Vincenzi (James Gleese); Italian; miner; age, 45; single; and John Euriatti; Austrian; miner; age, 45; married; four children. Were killed by a fall of rock at the Midland Mine, operated by the Rocky Mountain Fuel Company in Garfield County.
- October 20—George Burke; American; driver; age, 38; married; two children. Was killed by being run over by a loaded car at the Monarch No. 2 Mine, operated by the National Fuel Company in Boulder County.
- November 6—Mike Billie; Slavonian; miner; age, 25; single. Was killed by a fall of rock at the Pryor Mine, operated by the Union Coal & Coke Company in Las Animas County.
- November 17—Juan Vigil; Mexican; miner; age, 51; married; nine children. Was killed by a fall of rock at the Morley Mine, operated by the Colorado Fuel & Iron Company in Las Animas County.
- November 27—John Garlic; Pole; miner; age, 36; married; three children. Was injured by a premature shot at the Oakdale Mine, operated by the Oakdale Coal Company in Huerfano County. Died at the Pueblo Hospital, November 28.
- December 1—Louis Zemboni; Austrian; miner; age, 26; single. Was killed by a fall of rock at the Baldy Mine, operated by the Baldy Coal Company in Las Animas County.
- December 16—Thirty-seven men were killed in a dust explosion at the Vulcan Mine, operated by the Coryell Mining Leasing Company in Garfield County. Names of killed follow:

Name	Nationality	Occupation	Age	Married	Children
Fred Cook	American	Miner	45	....	..
L. L. Crawford.....	American	Mine foreman	30	Yes	1
William Shearer	American	Miner	27	Yes	1
L. Fuchino	Italian	Trapper	45	Yes	4
Gale Obester	American	Miner	27	Yes	1
Arvid Johnson	Swede	Miner	40	Yes	1
E. H. Strang.....	American	Miner	27	No	..
George Smith	American	Driver	22	No	..
Frank McCann	Irish	Loader	32	....	..
Rafael Flossero	Italian	Loader	27	Widower	3
Dave Tallmadge	American	Miner	..	No	..
Ralph Wendall	American	Miner	35	Yes	2
Joe Monapelli	Italian	Miner	28	No	..
D. C. Nolan.....	American	Miner	35	Yes	2
A. Cispka	Bulgarian	Timberman	45	No	..
Stanley Kalonsky	Pole	Timberman	28	No	..
W. Bonto	American	Miner	50	Yes	3
D. D. Reed.....	American	Loader	35	Yes	4
Lester Starbuck	American	Loader	..	No	..
H. G. Woods.....	American	Loader	34	Yes	..
Addie Norton	American	Miner	..	Yes	..
Joe Farren	American	Miner	42	Yes	4
Wallace Baxter	American	Loader	..	No	..
Lee Bonto	American	Loader	21	No	..
Tony Monapella	Italian	Miner	35	Yes	1
Lou Walters	American	Fire boss	22	No	..
Vincenza Monapella	Italian	Miner	33	Yes	1
Ben E. Davis.....	American	Driver	25	No	..
Clint Crawford	American	Loader	..	No	..
Bert Barth	American	Miner	31	Yes	..
Frank Obester	American	Miner	22	No	..
John Otten	American	Miner	45	Yes	..
William Meese	English	Miner	50	Yes	4
Gabriel Monapelli	Italian	Miner	24	No	..
Joe La Blanch.....	American	Miner	32	Yes	5
Norman Murphey	American	Loader	19	No	..
Joe E. McLain.....	American	Shot-firer	28	No	..

December 24—Anton Hall Jarakes (on pay-roll Anton Gallos); Greek; loader; age, 33; single. Was killed by a fall of rock at the Rex No. 1 Mine, operated by the Rocky Mountain Fuel Company in Boulder County.

REPORT ON THE EXPLOSION AT THE VULCAN MINE

December 31, 1913.

HON. ELIAS M. AMMONS,

Governor of Colorado.

Sir: I herewith submit my report on the explosion at the Vulcan Mine which occurred on December 16, 1913, and resulted in the death of thirty-seven persons.

This mine is situated in Garfield County, one and one-half miles east of Newcastle, on the Colorado Midland Railway, and is operated by the Coryell Mine Leasing Company. J. W. Cummings is general superintendent and Charles Meerdink local superintendent.

KIND OF OPENINGS, INCLINATION, NAME, AND SIZE OF SEAM

The mine has two openings—the upper and lower levels; both are tunnel openings. The explosion occurred in the lower level.

The seam being worked is known as the Allen, and, when normal, is about fourteen feet thick, and lies at an angle of about fifty degrees with the horizontal. The east and west entries are driven on the strike of the seam, and the rooms on the pitch.

On the west side Rooms 7 and 13 were driven to the surface. On the east side the upper and lower workings were connected by an upraise from the face of Room 31 in the lower level.

SYSTEM OF VENTILATION

The main fan was located on the surface at the top of Room 7 on the west side, and there was a booster fan at Room 12 on the east side.

The main fan up to three days before the explosion was run as an exhaust, and the booster as a force. Three days before the explosion they were reversed.

SYSTEM OF HAULAGE

An electric motor was used from the surface to the entrance of the west entry and into Room 23 on the east entry, the coal being delivered to those points by animal haulage.

METHOD OF WETTING MINE

A two-inch pipe from the surface, extending into the entries, with sufficient pressure to reach the highest point in the workings.

SYSTEM OF WORKING ROOMS, TOP COAL, AND PILLARS

In driving the rooms to their destination, only the lower half of the coal is taken. A manway is carried on each side of the room, and used for ventilation and traveling-way.

During this time only half the coal mined is taken from the chute, the remainder being left in the room to insure adequate ventilation, to keep the percentage of slack down to the minimum, and to give the miner the loose coal to stand upon while working at the face of the room. When the room reaches its destination, all the loose coal is drawn therefrom. Then a series of holes are drilled in the top coal, and are fired in rotational order toward the bottom of the room.

If the roof is still standing after this top coal has been loaded from the room, shots are fired into the pillar, and this continues as long as conditions will permit.

LIGHTS USED

Naked lights were used exclusively for general work, except the loaders employed at top coal chutes, who were supposed to have safety lamps.

REMARKS

Operations in the Newcastle district date back to 1885, and until the Vulcan Mine opened, some four years ago, everything was worked on the advancing system; that is, the rooms were advanced as rapidly as the development work would permit.

Under this system, nearly every mine opened had to be abandoned because of spontaneous combustion, which generally occurred in the outer rooms. When the Vulcan Mine opened, the owners decided that, to operate successfully, it was necessary to drive the entries to their destination before starting any rooms.

This was done, and the rooms were laid out in panels of five, with a fifty-foot pillar between the panels, so that, if fire should start in the inner panel, it could be shut off from the other panels by putting two fireproof stoppings, one on the entry and one on the air-course, directly in line with the fifty-foot pillar.

This plan, I believe, received the approval of all mining men familiar with this district.

The reversing of the air current three days before the explosion was done, apparently, to prevent the freezing of the water pipes in the main tunnel, which was the intake until the air current was reversed, when it became the return.

When top coal is shot down, the manways in the rooms are generally destroyed, thereby making it almost impossible to get into the rooms to wet down the coal.

I believe, however, that the top coal already in the chutes should have been wetted down, especially while coal was being loaded from those chutes, and that the west entry should have been kept thoroughly saturated, as recommended by Deputy Inspector Oberding on October 24, 1913.

If this had been done, the explosion might have been prevented, or restrained so that it would only have been a local explosion.

It is evident that the orders given, governing the kind of lamps to be used by loaders loading at top coal chutes, were not enforced. Had they been, they might not have proved effective, because of the fact that the driver who pulled the top coal was allowed to use a naked light. The mine was last inspected by F. N. Oberding, who reported: "Ventilation good. Coal from west Allen very dry and dusty. Otherwise the lower level is free from dust."

Recommendations made by Mr. Oberding:

- "1. That sections 150 and 151 be complied with.
2. That the West Allen entry be wetted down each day, to avoid accumulation of coal dust.
3. That manholes be made fifty feet apart in rock tunnel.
4. That section 146, relative to fireproof material, be complied with."

CAUSE AND NATURE OF EXPLOSION

While the mines in the Newcastle district are known to generate explosive gas, it is my opinion that gas took no part in this explosion. I believe the explosion originated in the west side of the mine, and was caused by flame and dust.

The dust may have been thrown in suspension by a fall of roof or a rush of coal from one of the rooms; the flame may have been an open light or a flame from the explosion of powder, and possibly from a fall of rock (the roof and floor of the Allen seam are very hard, producing fire very readily when struck by a pick or drill); and the floor immediately under the coal contains considerable sulphur, so that flame might have been produced by friction.

I believe the mine was fully equipped to take care of any reasonable condition that might arise, but part of the equipment was not used as often as necessary to obtain the best results.

CONCLUSION

In conclusion, I wish to say that, judging from the dusty condition of the mine the day after the explosion, and the testimony given at the inquest by the witnesses who were employed in the Vulcan Mine, I believe that section 145 of the mining law, relative to the wetting down of coal dust, was violated.

Yours truly,

JAMES DALRYMPLE,
State Inspector of Coal Mines.

MINE EXAMINERS HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name	Address	Name	Address
Ball, Joseph.....	Walsen	Morgan, W. L.....	Oakview
Balliot, Clyde Allen.....	Cokedale	Morgan, William.....	Sopris
Bell, J. W.....	Bowen	Nichol, Robert.....	Forbes
Burnham, George	Cokedale	Oliver, Albert E.....	Bowen
Cavanaugh, James	Hastings	Pitchard, D. O.....	Aguilar
Cockburn, Edmund	Berwind	Randack, J. F.....	Hastings
Curry, Robert	Walsenburg	Reese, David H.....	Hastings
Dalrymple, Robert	Rugby	Robinson, Alex H.....	Tercio
Davis, Abraham	Sopris	Ross, Robert.....	Bowen
Davis, Dan	Sopris	Sampson, John M.....	Primero
Dean, Samuel	Delagua	Scott, Robert T.....	Delagua
Douglas, Peter R.....	Segunda	Smith, Joseph.....	Trinidad
Easton, W. A.....	Valdez	Smith, George H.....	Berwind
Gibby, Thomas John....	Williamsburg	Sommerville, Mathew E.....	Maitland
Harrison, J. L.....	Primero	Thomas, David.....	Morley
Haske, Joseph.....	Primero	Thomas, J. P.....	Trinidad
Husband, R. S.....	Lafayette	Thomas, J. W.....	Chandler
Jennings, Robert E.....	Delagua	Warburton, Thomas.....	Primero
Jolly, Archie.....	Walsen	Wilson, James.....	Starkville
Kilpatrick, James.....	Tabasco	Williams, Morgan.....	Trinidad
McAllister, Robert.....	Trinidad	Williams, David.....	Hastings
McKenna, Miles.....	Berwind	Williams, Mathew.....	Berwind
McIntosh, Henry.....	Delagua	Wood, P. G.....	Trinidad
McBirnie, Alex M.....	Hastings	Young, J. B.....	Coal Creek

FIRST-CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name	Address	Name	Address
Atkin, David.....	Lester	Bickerton, Richard.....	Tollerburg
Allander, Alexander.....	Walsenburg	Bisch, Roy.....	Higgins
Andrews, Samuel.....	Morley	Bowen, G. F.....	Tabasco
Aters, J. W.....	Forbes	Britton, T. S.....	Oakview
Ayers, S. J.....	Wootton	Brown, Thomas.....	Lester
Beach, Ben.....	Coal Creek	Brown, Mark.....	Cokedale
Bertolina, Battista	Hastings	Bryden, Jas. W.....	Cokedale
Bevan, John	Delagua	Burns, John H.....	Sopris

FIRST-CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913—Concluded

Name	Address	Name	Address
Campbell, J. E.....	Pictou	Miller, David.....	Walsen
Caretta, Louis A.....	Aguilar	Miller, Frank Lewis.....	Trinidad
Chambers, Charles.....	Sopris	Morgan, Zacharia	Sopris
Davidson, John C.....	Tercio	Muir, David H.....	Walsen
Davis, William J.....	Williamsburg	Murray, W. F.....	Trinidad
Deldosse, John.....	Sopris	Neesham, W. T.....	Rugby
Douglas, John.....	Walsen	Nallon, Patrick	Pictou
Getchel, William S.....	Morley	O'Neil, James	Valdez
Godfrey, John	Williamsburg	O'Neil, James.....	Ludlow
Grant, Charles	Rockvale	O'Neil, Charles.....	Tobasco
Griffiths, David.....	Canon City	O'Neil, Robert.....	Aguilar
Gross, Peter.....	Starkville	Parker, G. B.....	Valdez
Haddow, John.....	Rouse	Poll, Ralph.....	Walsenburg
Hallas, Ernest.....	Delagua	Pritchard, James	Trinidad
Head, Ernest.....	Maitland	Pritchard, William.....	Trinidad
Hodge, Andrew.....	Cokedale	Roberts, Thomas.....	Primero
Hooper, Richard H.....	Pryor	Ryan, James.....	Pryor
Hoss, John.....	Walsenburg	Scott, Samuel.....	Sopris
Hoss, William H.....	Walsenburg	Shaw, John.....	Tabasco
Humble, Adam.....	Walsenburg	Shaw, William	Sopris
Jamieson, James F.....	Floresta	Snickerson, John	Starkville
Jolly, Thomas.....	Grey Creek	Templeman, John.....	Walsen
Jones, R. C.....	Oak Creek	Thomas, B. F.....	Pictou
Jones, F. D.....	Cokedale	Tyson, W. J.....	Ideal
Jones, W. K.....	Rockvale	Urfer, W. F.....	Primero
John, Harry	Rockvale	Valleyly, Patrick	Rugby
Johns, Thomas	Starkville	Wennberg, John.....	Hastings
Lewis, Mozart.....	Chandler	West, William.....	Delagua
Long, William H.....	Perins	Westwater, Peter.....	Canon City
MacLiver, John.....	Ravenwood	Williams, J. B.....	Canon City
Marshal, Alex.....	Farr	Williams, John C.....	Forbes
Mathews, James.....	Tioga	Williams, Edward T.....	Radiant
Mathias, Joseph	Williamsburg	Williams, J. S.....	Sopris
McCaskill, James	Rugby	Williams, Morgan	Cokedale
McGinnis, C. D.....	Morley	Wommer, C. J.....	Cokedale
McLaughlin, James E.....	Trinidad	Young, Andrew.....	Canon City
McLaughlin, Thomas	Rugby	Young, Robert.....	Walsenburg
McNally, James.....	Berwind	Zook, Ira D.....	Shumway
McQuade, John P.....	Walsenburg		

SECOND-CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913

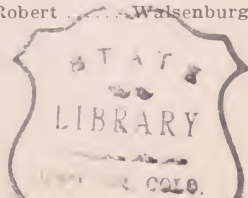
Name	Address	Name	Address
Barnes, Hal.....	Trinidad	Jones, Gwillyn	Dalagua
Barron, T. W.....	Valdez	Kaiser, Charles A.....	Farr
Bell, Richard T.....	Walsenburg	Lunney, Ambrose.....	Trinidad
Blythe, Thomas	Williamsburg	McDowell, James G.....	Ojo
Brennan, Martin	Walsenburg	McDermot, Frank.....	Ludlow
Brown, William N.....	Rugby	Mellinger, Irving.....	Rugby
Bubb, H. H.....	Cokedale	Miller, John.....	Pryor
Campbell, D. O.....	Berwind	Mitchell, Daniel.....	Walsen
Campbell, W. S.....	Walsenburg	Murray, James S.....	Walsenburg
Dalby, James R.....	Majestic	O'Neil, C. P.....	Tioga
Dalby, J. H.....	Majestic	Peet, Charles H.....	Walsenburg
Davis, T. P.....	Walsenburg	Roberts, Idris.....	Canon City
Douglas, L. R.....	Trinidad	Roberts, Thomas.....	Canon City
Dunlavey, F. S.....	Hastings	Smith, Harry	Aguilar
Evans, Richard.....	Coal Creek	Sherman, Edgar	Trinidad
Hanes, J. E.....	Hastings	Tomaselli, Frank	Wootton
Jeffreys, Albert G.....	Trinidad	Wagstaff, Eph.....	Bowen

FIRST-CLASS ASSISTANT MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name	Address	Name	Address
Arthur, Reese.....	Rockvale	Manifold, Leonard.....	Valdez
Cameron, P. G.....	Bowen	McKeown, Patrick	Walsenburg
Collier, Thomas Isaac....	Williamsburg	O'Donnell, John.....	Starkville
Cunningham, James.....	Bowen	Petty, Archie W.....	Tollerburg
Duffy, Peter.....	Rouse	Price, David.....	Oakview
Hansen, David L.....	Coal Creek	Ray, William.....	Rouse
Marshall, Robert A.....	Farr	Urquhart, D. A.....	Gray Creek

ASSISTANT SECOND-CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name	Address	Name	Address
Baione, Ettone.....	Oakview	Smirsich, John.....	Berwind
Lepenske, Joe.....	Walsenburg	Smith, L. O.....	Ideal
Lowe, Robert.....	Bowen	Tantrum, Thomas.....	Chandler
Robertson, Henry.....	Rouse	Templeman, Robert	Walsenburg



FIRE BOSSES HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name	Address	Name	Address
Anderson, James.....	Aguilar	Myers, E. H.....	Ideal
Boldini, Andrew.....	Wootton	McPhail, Thomas.....	Trinidad
Barfoot, Thomas.....	Starkville	McClusky, John.....	Starkville
Batter, Valentine.....	Tabasco	Neilson, John.....	Walsenburg
Boyd, Joé.....	Dalagua	Oss, Leo.....	Tollerburg
Burke, John.....	Walsen	Ray, William.....	Rouse
Cristel, Vigilio.....	Sopris	Reese, David.....	Tercio
Davis, Thomas.....	Sopris	Rice, John.....	Delagua
Davis, David.....	Starkville	Segna, Candido.....	Sopris
Davis, Thomas.....	Rockvale	Shaw, Herbert.....	Sopris
Durkin, James.....	Walsenburg	Smith, William.....	Ravenwood
Felthager, J. C.....	Walsen	Spallina, Frank.....	Delagua
Fromman, Sebastian.....	Morley	Struthers, Thomas.....	Wootton
Hamilton, Andrew K.....	Starkville	Turner, George H.....	Valdez
Juechek, Charles.....	Morley	Watson, Charles.....	Walsenburg
Jenkins, John.....	Pictou	Wylie, Jesse M.....	Oakview
Lloyd, Reese.....	Gray Creek	Zanotelli, Oliver.....	Sopris
Lloyd, W. P.....	Chandler		

SHOT-FIRERS HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name	Address	Name	Address
Arnold, Andy.....	Primero	Miller, Andrew.....	Lester
Blondo, Vincenzo.....	Valdez	Salovick, Jack.....	Delagua
Bleones, James.....	Ravenwood	Wertin, Joe.....	Tollerburg
Domino, Joe.....	Valdez		

Directory of Coal Mines

ARCHULETA COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	Gen'l Mgr. or Supt.	Local Supt.	Mode of Ventilation	Railroad Connections
Talian.....	Pagosa Lumber Co., Pagosa Springs.....	.....	O. S. Galbreath, Jr.	Wm. Gill	Nat.	D. & R. G. R. R.

BOULDER COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Gorham	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	Thos. Hilton	Fan	C. & S.
Hecla	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. C. Williams	Fan	C. & S.
Industrial	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	F. J. L. MacCormac	Fan	C. & S.
Mitchell	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. J. Thomas	Fan	B. & M. and U. P.
Rex No. 1.....	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	W. R. Atkin	Fan	C. & S.
Rex No. 2.....	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. C. Williams	Fan	C. & S.
Simpson	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	I. W. Griffiths	Fan	B. & M., C. & S., U. P.
Standard	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	D. M. Sultz	Fan	B. & M., C. & S., U. P.
Vulcan	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	Chas. Billington	Fan	C. & S.
Monarch No. 1.....	National Fuel Co., Denver.....	H. Van Mater	Joseph Watson	S. S. Barrett	Fan	C. & S.
Monarch No. 2.....	National Fuel Co., Denver.....	H. Van Mater	Joseph Watson	W. E. Oliver	Fan	C. & S.
Capitol	American Fuel Co., Denver.....	.....	.....	.....	Fan	B. & M.
Senator	American Fuel Co., Denver.....	.....	.....	.....	Fan	B. & M.
Centennial	Big Four Coal & Coke Co., Denver.....	L. B. Cannon	.....	F. H. McFadden	Fan	C. & S.
Electric	Electric Coal Co., Boulder.....	.....	.....	D. A. Kin	Fan	C. & S.
Fox	Fox Coal Mining Co., Denver.....	M. P. Fox	M. P. Fox	J. W. Schultz	Fan	C. & S.
Matchless	Great Matchless Fuel Co., Denver.....	M. P. Fox	M. P. Fox	R. S. Husband	Fan	C. & S.
Mile High	Mile High Coal Co., Lafayette.....	.....	.....	John O. Day	Nat.	.....

Nonpareil	Brooks-Harrison Fuel Co., Louisville.....	J. E. Brooks	J. E. Brooks	Fan	C. & S.
Strathmore	P. K. Harmon, Denver.....	P. K. Harmon	Henry Thomas	Fan	C. & S.
Sunnyside	Big Six Coal Co., Louisville.....	J. A. Carveth	F. N. Carveth	Fan	C. & S.

DELTA COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	Gen'l Mgr. or Supt.	Local Supt.	Mode of Ventilation	Railroad Connections
Bennett	Hotchkiss Fuel & Sup. Co., Hotchkiss.....		M. A. Bennett		Nat.	
Black Diamond	Farmers' Progressive Coal Co., Paonia.....	Chas. Cowan		Chas. Cowan	Nat.	D. & R. G.
Cedaredge	Surface Creek Co-op. C. Co., Cedaredge.....			Albert Bull	Nat.	
Converse	Frank Converse, Paonia.....			Frank Converse	Nat.	
Farmer	Paonia Coal Co., Paonia.....			P. B. Jenkins	Nat.	
King	Juanita Coal & Coke Co., Bowle.....	Alexander Bowle		Wallace D. Bowle	Fan	D. & R. G.

EL PASO COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	Gen'l Mgr. or Supt.	Local Supt.	Mode of Ventilation	Railroad Connections
Curtis	Curtis Coal Mining Co., Colo. Springs..	W. W. Curtis			Fan	A. T. & S. F.
Danville	Tudor Coal Co., Colorado Springs.....			W. D. Tudor	Fan	A. T. & S. F.
El Paso	El Paso Co. L. & F. Co., Colo. Springs..	J. E. Ulrich		Fred W. Price	Fan	A. T. & S. F., C. R. I. & P.
Franceville	Thos. E. David, Colorado Springs.....			Thos. E. David	Nat.	
Patterson	Alex. Patterson & Son, Colo. Springs.....		Alex. Patterson	George Patterson	Fan	
Pikeview	Pike's Peak Fuel Co., Colo. Springs.....	J. T. Milliken	H. McGarry	Geo. L. Crawford	Fan	D. & R. G.
Rapson No. 2	Rapson Coal Mining Co., Colo. Spgs..	W. W. Curtis		Ralph Wooden	Fan	C. R. I. & P.
Thomas	Thomas Coal Co., Colorado Springs.....			Thos. E. Thomas	Nat.	

FREMONT COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	Gen'l Mgr. or Supt.	Local Supt.	Mode of Ventilation	Railroad Connections
Coal Creek	Colorado Fuel & Iron Co., Denver.	J. F. Welborn	E. H. Weitzel	Ben Beach	Fan	A. T. & S. F.
Fremont	Colorado Fuel & Iron Co., Denver.	J. F. Welborn	E. H. Weitzel	W. J. Smith	Fan	D. & R. G.
Nonac	Colorado Fuel & Iron Co., Denver.	J. F. Welborn	E. H. Weitzel	Thos. J. Tynan	Fan	A. T. & S. F.
Rockvale	Colorado Fuel & Iron Co., Denver.	J. F. Welborn	E. H. Weitzel	Henry Johns	Fan	A. T. & S. F.
Chandler	Victor-American Fuel Co., Denver.	J. C. Osgood	W. J. Murray	C. W. Jones	Fan	D. & R. G.
Radiant	Victor-American Fuel Co., Denver.	J. C. Osgood	W. J. Murray	James Struthers	Fan	A. T. & S. F.
Brookside	Brookside Coal Co., Canon City.			John Lippis	Nat.	
Central	Colorado Central C. & M Co., Pueblo.			J. A. Littell	Nat.	A. T. & S. F.
Dubble Dick	Husband Coal Co., Coal Creek.			R. Husband	Nat.	
Emerald	Williamsburg S. C. Co., Williamsburg.			H. J. Smith	Fur.	A. T. & S. F.
Magnet	Rocky Mountain Fuel Co., Denver.	D. W. Brown	Geo. T. Peart		Fan	A. T. & S. F.
Royal Gorge	Royal Gorge C. & F. C. Co., Canon City.	Geo. G. Bettis		Ben Baumgartel	Fan	A. T. & S. F.
Smith-Tanner	Newlin Coal Co., Florence.			A. S. Bayless	Nat.	
Williamsburg Slope.	Donnelly Coal Co., Florence.			Henry Donnelly	Nat.	
Willie	Petry Coal Co., Florence.			Samuel Petry	Tun.	

GARFIELD COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	Gen'l Mgr. or Supt.	Local Supt.	Mode of Ventilation	Railroad Connections
Carbonera	Gilson Asphaltum Co., Watson, Utah.			Homer T. Ford	Nat.	Utah
Harvey Gap	P. C. Coryell, Newcastle.			V. Rapin	Nat.	
Mascot	Glenwood M. & P. Co., Glenwood Spgs.			Peter Gardner	Fan	C. M.
Midland	Rocky Mountain Fuel Co., Denver.	D. W. Brown		J. E. Smith	Fan	C. M.
South Canon	South Canon Coal Co., Denver.	W. B. Lewis		Evan Thomas	Fan	C. M.
Vulcan	Garfield Mine Leasing Co., Denver.	D. W. Brown		Thas. Meerdink	Fan	C. M.

GUNNISON COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Alpine	Rocky Mountain Fuel Co., Denver.	D. W. Brown	Geo. T. Peart	J. G. Featherstone	Fan	C. & S.
Kubler	Rocky Mountain Fuel Co., Denver.	D. W. Brown	Geo. T. Peart		Fan	C. & S.
Baldwin-Star	Baldwin Fuel Co., Denver.	Frank Bulkley		C. A. Patch	Nat.	D. & R. G.
Bulkley	Crested Butte Coal Co., Denver.	Frank Bulkley			Fan	D. & R. G.
Crested Butte	Colorado Fuel & Iron Co., Denver.	J. F. Welborn	E. H. Weitzel	John Arnott	Fan	D. & R. G.
Floresta	Colorado Fuel & Iron Co., Denver.	J. F. Welborn	E. H. Weitzel	J. D. Cribbs	Fan	D. & R. G.
Horace	Pueblo Fuel & Mining Co., Pueblo.			James Ralston	Fan	D. & R. G.
New Baldwin	La Plante & Sons, Gunnison.			D. La Plante	Nat.	D. & R. G.
Porter	Littell Coal & Mining Co., Pueblo.	A. H. Cowie,		W. R. Kerr	Fan	D. & R. G.
Somerset	Utah Fuel Co., Denver.	Vice-Pres.	W. C. Ferguson	R. Williams, Jr.	Fan	D. & R. G.

HUERFANO COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Cameron	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	C. A. Kaiser	Fan	C. & S.
Ideal	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	W. J. Tyson	Fan	C. & S.
Lester	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	W. G. Deck	Fan	D. & R. G.
McNally	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	T. P. Davis	Fan	C. & S.
Pictou	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	Wm. Manley	Fan	D. & R. G.
Robinson	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	W. S. Getchell	Fan	C. & S. and D. & R. G.
Rouse	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	W. G. Deck	Fan	D. & R. G.
Walsen	Colorado Fuel & Iron Co, Denver.....	J. F. Welborn	E. H. Weitzel	W. S. Getchell	Fan	C. & S. and D. & R. G.
Maitland	Victor-American Fuel Co, Denver.....	J. C. Osgood	W. J. Murray	.....	Fan	D. & R. G.
Ravenwood	Victor-American Fuel Co, Denver.....	J. C. Osgood	W. J. Murray	John Neish	Fan	C. & S.
Big Four	Big Four Coal & Coke Co, Denver....	L. B. Cannon	.....	Jas. Mathews	Fan	C. & S. and D. & R. G.
Black Canon	New Maitland Coal Co., Walsenburg.....	.....	.....	Samuel Dunford	Fur.	D. & R. G.
Breen	Breen Coal Mining Co., Walsenburg.....	.....	.....	M. Brennan	Fur.	C. & S. and D. & R. G.
Bunker Hill	Bunker Hill Coal Co., Rouse.....	.....	.....	.....	Fur.	C. & S. and D. & R. G.
Caddell	Black Canon Fuel Co., Denver.....	.....	John Q. Royce	Robt. Curry	Fan	C. & S. and D. & R. G.
Carbonado	Carbonado Coal Mining Co., Denver.....	J. B. Hutchison	.....	Robt. T. Bell	Fan	D. & R. G.
Gordon	Gordon Coal Co., Walsenburg.....	.....	.....	R. F. Poli	Fan	D. & R. G.
Larimore	Monument Valley Coal Co., Colo. Spgs.	E. D. Bowers	.....	D. H. Miller	Fan	D. & R. G.
Loma	Loma Fuel Co., Walsenburg.....	.....	.....	Joseph Ball	Fan	C. & S.
Mutual	Mutual Coal Co., Denver.....	.....	.....	.....	Fan	D. & R. G.
Oakdale	Oakdale Coal Co., Denver.....	Wm. E. Lewis	John D. Jones	W. L. Morgan	Fan	D. & R. G.
Pinon	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	James Hall	Fan	D. & R. G.

Pryor	Union Coal & Coke Co., Denver.....	J. W. Bowen	Chas. Beuchat	Fan	C. & S. and D. & R. G.
Reliance	Alliance Coal Co., Denver.....	D. A. Cannon	John McDowell	Fan	D. & R. G.
Rockland	Walsenburg Coal M. Co., Walsenburg.....	Geo. Fruth	P. J. Stone	Fan	C. & S. and D. & R. G.
Rugby	Rugby Fuel Co., Denver.....	Geo. D. Kimball	Thos. McLaughlin	Fan	C. & S. and D. & R. G.
Sunnyside	Sunnyside Coal Mining Co., Denver.....	W. F. Oakes	Lindsay Connors	Fan	C. & S. and D. & R. G.
Tloga	Minnequa Coal Co., Denver.....	E. F. McGowan	J. H. Vincent	Fan	C. & S. and D. & R. G.
Toltec	Fruth & Autrey, Walsenburg.....	Geo. Fruth	S. B. Smith	Fan	C. & S. and D. & R. G.
Turner	Turner Coal Co., Walsenburg.....		James Turner	Fur.	D. & R. G.

JACKSON COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Coalmont	Northern Colorado Coal & Coke Co., Laramie, Wyo.....	E. R. Miller	J. W. Siple	Wm. Waddell	Nat.	C. W. & E.

JEFFERSON COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Leyden No. 2.....	Leyden Coal Co., Denver.....	S. M. Perry	F. A. Perry	Fred Neumayer	Fan	D. & I. M.
Leyden No. 3.....	Leyden Coal Co., Denver.....	S. M. Perry	F. A. Perry	Fred Neumayer	Fan	D. & I. M.
White Ash	Rooney White Ash Coal Co., Morrison.....				Nat.	

LAS ANIMAS COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Berwind	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Chas. O'Neil	Fan	C. & S.
Frederick	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Chas. O'Neil	Fan	C. & W.
Morley	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Jas. Wilson	Fan	A. T. & S. F.
Primero	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Jos. Haske	Fan	C. & W.
Sopris	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Chas. Chambers	Fan	C. & S. & C. & W.
Starkville	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	.....	Fan	A. T. & S. F.
Tabasco	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Chas. O'Neil	Fan	C. & S.
Tercio	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	John Shaw	Fan	C. & W.
Delagua	Victor-American Fuel Co., Denver.....	J. C. Osgood	W. J. Murray	B. W. Shodgrass	Fan	C. & S. E.
Bowen	Victor-American Fuel Co., Denver.....	J. C. Osgood	W. J. Murray	.....	Fan	C. & S.
Gray Creek	Victor-American Fuel Co., Denver.....	J. C. Osgood	W. J. Murray	Thos. Jolly	Fan	C. & S.
Hastings	Victor-American Fuel Co., Denver.....	J. C. Osgood	W. J. Murray	Jas. Cameron	Fan	C. & S. E.
Black Diamond	Cedar Hill Coal & Coke Co., Denver.....	.....	D. M. Harrington	.....	.....	C. & S.
Greenville	Cedar Hill Coal & Coke Co., Denver.....	.....	D. M. Harrington	H. F. Tennant	Fan and Fur.	C. & S.
Toller	Cedar Hill Coal & Coke Co., Denver.....	.....	D. M. Harrington	H. F. Tennant	Fan	C. & S.
Majestic	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. I. Dalby	Fan	C. & S. & D. & R. G.
Piedmont	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	.....	Wm. Morgan	Fan	C. & S.
Beacon	National Fuel Co., Denver.....	H. Van Mater	Joseph Watson	.....	.....	C. & S. & D. & R. G.
Thor	National Fuel Co., Denver.....	H. Van Mater	Joseph Watson	.....	.....	C. & S.
Alta	Alta Fuel Co., Brodhead.....	.....	A. G. Brodhead	.....	.....	C. & S.
Amador	Amador Fuel Co., Aguilar.....	.....	.....	John Allan	Fur.	C. & S.

Baldy	Baldy Coal Co., Trinidad.	W. O. Sherman	Nat.	
Bloom	Jeffreys Coal Co., Trinidad.	Albert Jeffreys	Nat.	
Brodhead No. 9.....	Southern Colo. Coal Co., Colo. Springs.	E. S. Hartwell	Fan	C. & S.
Cokedale No. 1.....	Carbon Coal & Coke Co., Denver.		Fan	C. & S. & D. & R. G.
Cokedale No. 2.....	Carbon Coal & Coke Co., Denver.	D. D. Dodge	Fan	C. & S. & D. & R. G.
Empire	Empire Coal Mining Co., Denver.	J. W. Siple	Fan	C. & S. & D. & R. G.
Fisher's Peak	Fisher's Peak Coal Co., Trinidad.	R. Marsh	Fan	
Forbes No. 9.....	Chicosa Fuel Co., Denver.	R. Nichol	Fan	C. & S. & D. & R. G.
Jewel	Ideal Fuel Co., Aguilar.			C. & S.
Kenneth	Temple Fuel Co., Trinidad.	F. S. Wood	Fan	C. & S. & D. & R. G., C. & S.
Ludlow	Huerfano Coal Co., Denver.	S. S. Murphy	Fan	C. & S. & D. & R. G.
Peerless	Globe Fuel Co., Aguilar.	Frank McDermott	Fan	
Primrose	Primrose Coal Co., Pueblo.	H. Mallot	Fan	C. & S. & D. & R. G.
Prospect	Prospect Coal Co., Trinidad.	Jas. Pritchard	Fur.	
Rapson No. 1.....	Rapson Coal M. Co., Colorado Springs.	Irving Mellinger	Fan	C. & S. & D. & R. G.
Royal	Royal Fuel Co., Denver.	H. Van Mater	Fan	C. & S.
Santa Fe	Santa Fe Coal Co., Denver.	Thos. Tweeddale	Fan	A. T. & S. F.
Southwestern	Southwestern Fuel Co., Pueblo.		Fan	C. & S. & D. & R. G.
Star	Star Coal Mining Co., Cedarhurst.		Nat.	D. & R. G.
Wiley	Johnston Coal & Coke Co., Trinidad.		Fan	
Wootton-Turner	Wootton Land & Fuel Co., Wootton.	J. A. Owenby	Fur.	A. T. & S. F.

LA PLATA COUNTY

Names of Mines City	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Hesperus	Royal Leasing Co., Durango.		David Logan		Nat.	D. & R. G.
O. K.	Porter Fuel Co., Durango.		W. J. Gifford	W. I. Gifford	Fan	R. G. S.
Peerless	O. K. Coal Co., Durango.			W. W. Bay	Nat.	
Perrin's Peak	San Juan Dev. & Invt. Co., Durango.				Nat.	
San Juan	Calumet Fuel Co., Denver.		W. C. Ferguson	L. McCormick	Fan	R. G. S.
	Carbon Coal & Coke Co., Durango.			F. C. Gilbert	Fan	D. & R. G. & R. G. S.

MESA COUNTY

Names of Mines Book Cliff	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Cameo	Book Cliff R. R. Co., Grand Junction.		W. S. Phillips	T. E. Sanford	Nat.	B. C.
Garfield	Grand Junction M. & F. Co., Denver.			John McNeil, Jr.	Fan	D. & R. G. & C. M.
Grandview	Garfield Coal M. Co., Grand Junction.			A. E. Bayless	Nat.	D. & R. G. & C. M.
Palisade	Grandview Coal Co., Palisade.			F. F. De Rush	Fur.	Not direct.
P. V.	Palisade Coal & Supply Co., Palisade.			Henry Denman	Nat.	D. & R. G. & C. M.
Riverside	P. V. Coal Co., Palisade.			Adam Kerr	Nat.	D. & R. G. & C. M.
Stokes	Levi Vaughn, Palisade.			Levi Vaughn	Nat.	
Winger	Stokes Coal Co., Palisade.			W. D. Stokes	Nat.	D. & R. G. & C. M.
	New Grand Mesa Coal Co., Palisade.			S. C. Goodwin	Nat.	

MONTEZUMA COUNTY

Names of Mines Mancos	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
	Geo. S. Spencer, Mancos.			Geo. S. Spencer	Nat.	

PITKIN COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Marion	A. Marchetti, Lessee Spring Gulch.		A. Marchetti		Nat.	C. M.
Spring Gulch	Colorado Fuel & Iron Co., Denver	J. F. Welborn	E. H. Weltzel	A. H. Robinson	Fan	C. M.

ROUTT COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Electric	Routt Electric Coal Co., Denver		C. C. White		Nat.	D. & S. L.
Emerich	Lon Workman, Hayden		Lon Workman		Nat.	.....
Juniper	Hayden Bros. Coal Corp'n., Denver		C. P. O'Neill		Fan	D. & S. L.
Oak Hills No. 1.....	Moffat Coal Co., Denver	S. M. Perry	R. M. Perry		Fan	D. & S. L.
Oak Hills No. 2.....	Moffat Coal Co., Denver	S. M. Perry	R. M. Perry		Fan	D. & S. L.
Pinnacle	Routt County Fuel Co., Denver	E. L. Prentiss	Geo. Morrison		Fan	D. & S. L.
Williams	Williams & Chaffee, Junction City				Nat.	.....
Yampa Valley No. 1.	Yampa Valley Coal Co., Denver	John Connell	Geo. H. Brimble		Fan	D. & S. L.
Yampa Valley No. 2.	Yampa Valley Coal Co., Denver	John Connell	Geo. H. Brimble		Fur.	D. & S. L.

WELD COUNTY

Names of Mines	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Parkdale	National Fuel Co., Denver	H. Van Mater	Joseph Watson	Jas. Etchells	Fan	C. E. & Q.
Puritan	National Fuel Co., Denver	H. Van Mater	Joseph Watson	Thos. F. McGinn	Fan	U. P.
Eureka	Eureka Coal Co., Erie			Lewis A. Nixon	Fan	
Evans	Evans Fuel Co., Firestone			L. B. Domenico	Fan	U. P.
Firestone	Louisville Coal & Land Co., Firestone			D. Rotolo	Fan	U. P.
Frederick Slope	Frederick Coal Co., Denver	D. M. Simpson		Evan Jones	Fan	U. P.
Golden Ash	Consolidated Coal & Coke Co., Denver	C. L. Baum		C. W. Smith	Fan	U. P.
Grant	St. Vrain Coal Co., Frederick			E. Saunders	Fan	
Ideal	Ideal Coal Co., Erie			Phineas Woolley	Fan	
Last Dollar	Last Dollar Coal Co., Erie				Nat.	
Peerless	Peerless Coal Co., Frederick			Emil Debouter	Steam jet	
Phoenix	Alpha Coal Co., Fort Lupton				Nat.	D. L. & N. W.
Russell	Russell Coal Co., Denver	W. E. Russell		Edmond Cockburn	Fan	
Shamrock	Shamrock Coal Co., Erie			Thos. Morgan	Fan	
State	State Coal Co., Erie			D. L. Jones	Nat.	



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