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1915
THIRD ANNUAL REPORT
OF THE
STATE INSPECTOR OF
COAL MINES
COLORADO

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Accession No. 93832

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Third Annual Report

OF THE

State Inspector of
Coal Mines

1915



DENVER, COLORADO
THE SMITH-BROOKS PRINTING COMPANY, STATE PRINTERS
1916

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
A. E. THOMPSON.....	Deputy Inspector
ADA R. TIBBITS.....	Chief Clerk
BIRDIE DORSEY.....	Assistant Clerk

EXAMINING BOARD FOR INSPECTORS

E. H. Weitzel	D. W. Reese
George T. Peart	David Griffiths
W. H. Adamson	

EXAMINING BOARD FOR MINE OFFICIALS

E. H. Weitzel	D. W. Reese
George T. Peart	W. H. Adamson
James Dalrymple	

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LETTER OF TRANSMITTAL

Denver, Colorado, March 4, 1916.

To His Excellency,

GEORGE A. CARLSON,

Governor of the State of Colorado.

Sir: Herewith I have the honor of submitting to you in accordance with Section 37 of an Act entitled "Coal Mining Laws," the Third Annual Report of this Department. The period covered commences January 1st and ends December 31st, 1915.

Respectfully,

JAMES DALRYMPLE,

State Inspector of Coal Mines.

STATEMENT SHOWING RECEIPTS AND DISBURSEMENTS FROM JANUARY 1 to DECEMBER 31, 1915

RECEIPTS

Tax collected on coal mines.....	\$24,780.42
From sale of copies of the Coal Mining Law.....	767.40
Balance brought forward from 1914.....	16,287.85

Totals	\$41,835.67
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DISBURSEMENTS

Salary of chief inspector	\$ 3,000.00
Salaries of four deputy inspectors.....	7,611.66
Salary of chief clerk.....	1,500.00
Salary of assistant clerk.....	1,200.00
Expenses of chief and deputy inspectors.....	4,750.24
Office expenses—	
Printing	676.86
Stamps	360.00
Stationery supplies, file cases, etc.....	289.94
Instruments	173.71
Telephone service	31.45
Telegraph service	21.27
Express	4.19
Miscellaneous	107.19
Fees and expenses of examining board for mine officials...	1,968.05

Total	\$21,724.56
Surplus	\$20,111.11

FIELD EQUIPMENT

Seven Anemometers.
Five Speedometers.
Four Psychrometers.
Five Marsant Safety Lamps.
Five Koehler Safety Lamps.
One Aneroid Barometer.

SUMMARY OF THE COAL PRODUCTION OF COLORADO, 1915

Number of mines in operation.....	199
Number of new mines opened.....	5
*Number of mines closed, 11; abandoned, 1; total.....	12
Tons of lignite coal produced.....	1,866,061
Tons of semi-bituminous coal produced.....	661,961
Tons of bituminous coal produced.....	6,137,176
Tons of anthracite coal produced.....	50,199
Total number of tons of coal produced.....	8,715,397
Increase in 1915	513,974
Tons of run-of-mine coal produced.....	2,885,912
Tons of lump coal produced.....	2,976,625
Tons of nut coal produced.....	616,996
Tons of slack coal produced.....	2,235,864
Per cent of slack.....	38.5
Tons of coal mined by hand.....	6,233,143
Tons of coal mined by machine.....	2,482,254
Total number of machines used—air, 161; electric, 129.....	290
Tons of coal shipped out of state.....	1,409,643
Average number of days worked for all producing mines.....	166
Number of men employed as miners.....	7,174
Total number of men employed in and about the mines.....	12,563
Daily production of each miner (average).....	7.2
Annual production of each miner (average).....	1,215
Total number of tons of coke produced.....	671,454
Total number of coke ovens in operation.....	1,724
Total number of men employed at coke ovens.....	532
Number of kegs of black powder used.....	43,127
Number of pounds of permissible powder used.....	725,570
Cost of development during the year (approximately).....	\$ 555,944.09
Number of men killed underground.....	61
Number of men killed on surface	3
Total number of men killed.....	64
Number of men injured	712
Number killed per 1,000 employed.....	5.1
Number injured per 1,000 employed.....	56.7
Number of tons produced for each life lost.....	136,178
Number of tons produced for each non-fatal accident.....	12,241
Number of men employed for each fatal accident.....	196.30
Number of men employed for each non-fatal accident.....	16.24
Number of widows left	31
Number of children left fatherless.....	92

*NOTE—In enumerating mines opened and closed, these apply usually to very small country banks which come and go under different names in different localities, probably as a demand for a wagon load of coal prompts some enterprising miner or farmer to get a lease on some old mine and work it for a short time and then give it up or sub-lease it. This accounts for so many new names of mines that open and close during the course of each year.

Third Annual Report of the State Inspector of Coal Mines 1915

INTRODUCTION

A general progress in the coal industry of Colorado for the year 1915 is noticeable. The production amounted to 8,715,397 short tons, an increase of 513,974 tons over the preceding year. However, the normal standard production of 10,000,000 tons annually has not been reached. The long spell of very mild weather which prevailed during the fall and early winter; the continued hostilities in Mexico, depriving us of considerable markets in the South, and the trade lost through industrial troubles and which so far has only been partially recovered, may be held responsible for the failure to climb back to the normal mark.

The Mexican situation settled and peaceful business conditions resumed, together with the present great foreign demand for Pennsylvania anthracite coal at increased prices, necessitating the shipping of bituminous coal from the Illinois field to take its place in the east, and a more complete recovery of our lost markets through the late industrial troubles will create a good demand for the Colorado product, and, consequently, the outlook for 1916 is very encouraging.

In May, when A. E. Thompson was appointed Deputy Inspector, the state was divided into four Inspection Districts, numbered one, two, three and four. Las Animas and Huerfano Counties composed Districts one and two. All south of the Primrose Mines in District one; all north of them in District two. District three is composed of Boulder, Weld, Jackson, Jefferson, El Paso, Routt and Moffat counties. District four is composed of Fremont, La Plata, Garfield, Mesa, Delta, Gunnison, Montezuma, Archuleta, Rio Blanco, Pitkin and Montrose Counties.

Names of Deputy Inspectors and their Districts:

H. P. King, District One.

F. N. Oberding, District Two.

Jas. W. Graham, District Three.

A. E. Thompson, District Four.

Examinations for mine officials were held in Glenwood Springs, Grand Junction, Gunnison, Canon City, Walsenburg, Trinidad, Colorado Springs, Denver and Steamboat Springs. Four hundred and fifty-two applicants took the examinations; three hundred and seventy-nine were successful in obtaining certificates for the following positions:

- (a) Mine Examiner and Foreman.
- (b) First Class Mine Foreman.
- (c) Assistant First Class Mine Foreman.
- (d) Fire Bosses.
- (e) Second Class Mine Foreman.
- (f) Assistant Second Class Mine Foreman.
- (g) Foreman for one particular mine only.

The cost of the examinations, not including salary or expenses of chairman, stationery, stamps, etc., was \$1,957.25.

The following letter was issued to the operators under date of December 30, 1915:

To the Operators of Colorado:

Sirs: On and after March 1, 1916, all coal mines will have to be examined in the morning, prior to other employes entering, by a Certified Fire Boss or other person eligible to act as Fire Boss.

Open lights are strictly prohibited in making this examination; an electric light may be used in conjunction with the safety lamp.

All coal mines which generate sufficient gas to enable its detection in an approved safety lamp must employ a Certified First Class Mine Foreman, and when an assistant is necessary, he must hold a First Class Foreman's or Assistant Foreman's Certificate. Those holding Second Class Certificates can only be employed as Foremen or Assistant Foremen in non-gaseous mines. All Assistant Foremen can act in their respective capacities as Foreman in case of emergency or in the absence of the Foreman.

Those holding Examiners' and Foremen's or First Class Foremen's or First Class Assistant Foremen's Certificates are eligible for Fire Boss. First Class Assistant Foremen are eligible as Second Class Foremen.

All Mine Officials' Certificates, including Shot-firers, must be posted in the office at the mine to enable the State Inspectors to determine the eligibility of the officials.

The intent of this letter is for greater safety to life and property, and I sincerely hope that it will meet with your approval.

Yours truly,

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

LIGNITE RULES

1. No shot or shots for blasting purposes shall be fired in this mine during regular working hours, except at the following specified times, to-wit:

Between 7 a. m. and 7:30 a. m., and

Between 11:30 a. m. and 12 noon.

2. Permission to fire any shot in this mine must first be obtained from the Mine Foreman or an Assistant Mine Foreman, or from a duly appointed and acting Shot Examiner, who, before granting any such permission, will examine the shot and determine if, in his opinion, it may be safely fired.

3. No person shall act as a Shot Examiner in this mine unless he be appointed, in writing, to act as such by the undersigned Mine Foreman, and unless he also hold a certificate of competency issued to him either by the Chief Inspector or by a Deputy Inspector. In the event, however, there is no Certified Shot Examiner at the mine, or if the employment of additional Shot Examiners becomes necessary or convenient, the Mine Foreman may examine any applicant for such position, and upon becoming satisfied as to his qualifications, may appoint and employ any such applicant to act as a Shot Examiner until the next visit of the Chief or a Deputy Inspector.

4. In cases of urgent necessity, permission may be obtained from the undersigned Mine Foreman to fire a shot or shots during regular working hours at other than the times above specified, but no such shot shall be fired except with the permission of the undersigned.

5. No employe shall take into or have in his possession in the mine, more powder than is sufficient for his use for one day, and all such powder shall be carried into the mine by him in a can having a screw or drop top.

6. Employes shall use copper needles and tamping bars having a copper tip of not less than four inches, exclusively.

7. If explosive gas is known to exist, or if its presence is either suspected, or is detected at the roof, in any working place, no shot shall be fired therein until said gas has been removed by lawful means of ventilation.

8. No shot shall be fired where the coal is not undermined or sheared six inches deeper than the hole.

9. No shot shall be over-charged, and the firing of dependent shots is expressly prohibited.

10. The rib shot or shots shall not be loaded until after the center or cutting shot has been fired.

11. All shots shall be fully tamped to the mouth of the hole with clay or other similar incombustible material, which will be delivered by the company to the working places. Tamping with any other material is expressly prohibited.

12. Fuse shall not be used to fire shots in this mine.

13. No person other than a Shot Examiner shall be permitted to remove powder from a missed shot; and where a shot has miss-fired, the miner shall either so indicate by making a mark at the entrance to his working place, or procure the immediate removal of the powder by a Shot Examiner.

.....Mine Foreman.
.....Mine.

In order to have a better understanding of the above rules and Sections 153-158 of the Mining Law, meetings were held with the Mine Officials at Lafayette, Louisville and Frederick, in December, 1915, and January, 1916. All present showed the proper spirit and a full compliance is expected from now on.

ELECTRIC LAMPS

Section 133 of the Mining Law provides that after October 1, 1913, only electric lamps shall be used in the coal mines of Colorado, except in places where explosive or noxious gases are generated. An approved safety lamp shall be supplied for each working place for testing purposes. Provided, that upon that date there shall have been produced and placed on sale a practicable and efficient electric lamp, which shall have been approved by the United States Bureau of Mines, as an electric lamp having such qualifications. This section of the law could not be complied with as provided, because there was no such lamp on the market having the approval of the United States Bureau of Mines. At the present time, however, there are two such lamps approved by the Bureau on the market; therefore, starting with January 1, 1917, this Department will recommend compliance with Section 133 of the Mining Law.

The Colorado Fuel and Iron Company is equipping the following mines with electric lamps as provided by law: Morley, Starkville, Sopris, Frederick, Primero, Berwind, Tabasco, Walsen and Crested Butte. Over two thousand lamps will be required to meet this demand. Sopris and Tabasco are already completely equipped. The others are only partly equipped, because of failure of the makers to supply the necessary number of lamps. The Victor-American Fuel Company has been using electric lamps at the Hastings mine four or five years. Several years ago the Cedar Hill Coal & Coke Company equipped the Toller mine with electric lamps and the Royal Fuel Company the Royal mine, and in the last year the Mutual Coal Company put them in at the Mutual mine and the Garfield Mine Leasing Company in the Garfield Vulcan mine.

IMPROVEMENT OF UNDERGROUND CONDITIONS

In most of our mines great improvements have been and are being made pertaining to greater safety and improving the sani-

tary conditions, such as manways, so that the employes can travel to and from their work without having to travel on the haulage ways, fireproof over-casts, fireproof stoppings built principally of concrete, insuring better and more reliable ventilation; larger entries insuring greater safety in handling cars and assisting ventilation; the present method of timbering at stated distances, regardless of the condition of the roof, is a great factor of safety compared with the old system of timbering done according to sound, because the change in the roof takes place before the change in the sound. By timbering, as stated above, the employe is protected, at least to some extent, against any change that may take place in the roof. Spragging the coal before starting to mine it is another great factor of safety to the miner, protecting him against falls by mining to well-defined slips, by sudden outbursts or by a sudden movement of the roof.

Complaints have been made by the loaders of machine-mined coal, charging machine men with removing timbers set by the loader and failing to put them back in place after finishing mining the places. This is an unfair, as well as a dangerous practice, and steps should be taken by the management to at once put a stop to it.

Where trap doors are necessary, many are now treated with Atlas Preservative, pronounced by the University of Boulder at 80% fireproof. This is a very cheap preparation, costing from 15 to 20 cents per hundred square feet if properly applied to the lumber before construction. I advise that all woodwork in and around the mines be treated with it or something equally as good. It appears to me as a good investment, for it almost eliminates the dangers from fire, and should materially reduce the rate of insurance on such buildings. While it is combustible, it will not support combustion. I have approved it as meeting the requirements of the law relative to fireproof buildings.

In general great improvement has been made in the supervision of the mines, resulting in better discipline and greater cooperation from the men. Where this does not exist, we find in every case that the Superintendent is one of those employes who either does not understand his business, or is so lazy or indifferent that he has no interest in anything except pay day, and that only occurs semi-monthly.

A competent, ambitious Mine Foreman, who has the interest of his company and the welfare of his men at heart and is working for promotion, will not work longer than is necessary under a Superintendent who is not interested; who is not responsible, but who is always interfering with the Foreman in the performance of his duties, by refusing to furnish the help or material necessary to keep the mine in good condition, but when anything happens underground interfering with the production in any way, or that is responsible for an accident, is the first to condemn the Foreman for such happening. Personally, I consider

it unfair to hold the Foreman responsible under such conditions. To remedy the above, I advise that the law be so amended as to place equal responsibility on the Foreman and Superintendent.

In some of the mining camps night schools have been started for the purpose of educating the employes. This is a step in the right direction and a very important one. Every employe should take advantage of this opportunity, especially the younger ones, regardless of whether they intend to follow mining or not. It is through education we learn to best take care of ourselves and our fellow man. It broadens one's views and creates greater respect for the rights and opinions of others. If put to good use, the result must be beneficial. Concerns employing large numbers of employes prefer promoting their own employes to do their business, in preference to hiring strangers to do it. The young men of today must be the leaders of tomorrow. The earnings to a great extent are governed by the ability shown, and ability depends on a good education. So, my advice to the young men is to make the best of the opportunity that is being offered to them.

The old employes who feel that they are too old to study arithmetic, grammar, penmanship, etc., could be included in this schooling by having a good practical teacher to show them how best to protect themselves from the numerous dangers connected with their work.

Some may take issue with this statement and say that on account of the great number of foreigners, composed of so many nationalities, that it cannot be done. I cannot agree with them. My experience has been that in most of the mining camps, I generally found one man or more of the different nationalities that could understand English sufficiently well to be able to interpret it to his own people. The great obstacle to be overcome is to make them believe that all efforts being made are for the express purpose of protecting them and their families. This established, their confidence and co-operation will have been won; both are badly needed in order to bring the rate of deaths and accidents down to the minimum.

The reply from the operators to that part of my letter of February 2nd, in relation to Certified Mine Officials, is so indefinite that I am unable to designate those holding positions from the others.

A material reduction has been made during the last two years in the number of lives lost per 1,000 employed. Also a substantial increase in the number of tons mined for each life lost. (See Tables 1 and 2.) This table says more for the improved conditions, better discipline and greater co-operation in our mines than anything I or any others could say. So, let us all who are in a position to keep the good work going put our shoulders to the wheel. Don't wait to be told to do your duty. Do it to the best of your ability and at the proper time.

During the year, sixty-four lives were lost in and around the mines from accidents; underground, fifty-nine; surface, five. Four deaths, one from natural causes and two died after thirty days—the time limit. One was not an employe and was trespassing at the time of the accident. These deaths are not charged to the industry. Two of the surface accidents occurred at the coke ovens and are included in the accidents charged against the industry.

An opinion has been asked of the Attorney General, but not given, as to whether or not such accidents should be charged.

Compared with 1914, the lives lost per thousand employed has been reduced from 7 to 5.1. The tonnage per fatal accident increased from 109,352 to 136,178. The injured per 1,000 employed has increased from 33.6 to 56.7. The tons produced per non-fatal decreased from 23,037 to 12,241.

Seven hundred and twelve non-fatal accidents, incapacitating for five days or more, were reported to the Department. Falls of rock and coal, two hundred and seventy-nine. Mine cars and motors, two hundred and twenty-two. Electricity, seven. Mine gases, nine. Miscellaneous, one hundred and ninety-five. All accidents classed as "Trivial," include from five days to three weeks disability; "Minor," from three to five weeks; "Serious," five weeks or more, and are classified in Table 6.

It is a very difficult matter to properly classify the above accidents unless the length of time incapacitated is given. I again request that this be done when possible. When it cannot be done, it should be approximated.

The only reason I can give for the great increase in the non-fatal accidents is the greater attention given to the reporting of same.

The mileage covered by the inspectors in the performance of their duties amounted to 37,000 miles.

There were no labor disputes at any of the coal camps and no increase in the cost of coal to the consumer.

A convention of state mine inspectors and representatives of industrial compensation commissions, which was the result of an invitation issued by the secretary of the interior to the governors of the various states, was held in Washington, February 24 and 25. There were thirty state and federal officials present in addition to a large number of representatives of insurance organizations and others interested in the matter of safety as related to industrial plants.

The meeting was an enthusiastic one and all members showed the spirit of co-operation, all being thoroughly convinced of the necessity of standardizing all data relating to the reporting of accidents and their classification. One of the principal objects of the meeting was to bring about a co-operative arrangement between the various state organizations and federal bureaus interested in the collection of statistics relating to the mining industry.

With the views of simplifying the collection of statistics and at the same time relieve the operator of rendering so many reports, it was the consensus of opinion that figures once collected by a state organization should be sufficient for all purposes, and that the operator should not be called upon to render another report of a similar nature. It was the purpose of this meeting to so standardize and broaden the requests for data, so as to include in one report sufficient information for the state mine inspector, the industrial compensation commission, and federal bureaus.

The question of the calendar year was brought up and all agreed that the calendar year should be adopted, and the representatives of the states wherein the fiscal year is at variance with the calendar year pledged themselves to do all they could to bring about legislative enactment to have the calendar year adopted. One of the principal arguments in favor of the calendar year was that with the enactment of the federal income tax law, a report under oath was required of the exact financial conditions of the company on the 31st of December. This law being federal applies to all of the states, and is an important argument in favor of the calendar year.

The principal questions discussed at the meeting were the matter of standard forms for recording and publishing matter relating to mine equipment, labor, and accidents. The data relating to mine equipment has in its scope a form for a directory of mines in actual operation during a calendar year; data relating to power equipment, ventilating equipment, mining methods, and haulage systems.

With reference to accidents, a standard form was discussed that related to fatal and non-fatal accidents, so that sufficient information could be available for anyone interested in the study of accidents. The forms discussed were so grouped and general in their character as to include not only coal and metal mines, but metallurgical plants, quarries, and coke ovens.

The result of the meeting was the appointment of a committee to prepare an official report of the proceedings, which will be published by the Bureau of Mines as a bulletin and will contain copies of all of the standard forms proposed and discussed at this meeting.

The following committee was appointed: The coal mining industry is represented on this committee by James E. Roderick (Chairman), Chief, Department of Mines, Harrisburg, Pa.; James Dalrymple, Chief Inspector of Mines, Denver, Colorado. The metal mining industry is represented by George H. Bolin, State Mine Inspector, Phoenix, Arizona; and W. B. Orem, State Metal Mine Inspector, Helena, Mont. The other members of the committee are L. W. Hatch, Chief Statistician, New York Industrial Commission, Albany, N. Y.; John Bohlander, President, Illinois

State Mining Board, Pekin, Ill.; and Albert H. Fay, Mining Engineer, Bureau of Mines, as Secretary of the Committee.

There was a formal discussion concerning the standardization of mining laws and regulations as relating to safety in coal mines, the point being made that the miners are migratory and in going from one state to another a different set of laws, rules, and regulations is encountered and with which they are not necessarily familiar. It was unanimously agreed that the Bureau of Mines draft a standard set of rules and regulations for coal mines, similar to that prepared by the bureau relating to metal mines and published as Bulletin No. 75.

Another point very freely discussed was the adoption of certain universal danger signals, so that a miner from one state would meet the same type of signals in a mine in a different state, and it being the same as that used in the mines where he formerly worked, he would at once recognize its meaning. Mr. W. L. Chandler, of the National Safety Council, extended an invitation to the state mine inspectors, representatives of industrial commissions, and the Bureau of Mines to assist in the establishment of universal danger signals in hazardous industries.

I sincerely hope that the coal mine operators of Colorado will consider this letter favorably, and that starting with January 1, 1917, they will supply this office with the necessary information concerning accidents, etc., so that Colorado can comply with the standard form. Remember, this cannot be done unless the required information is furnished this office by all of you. As soon as the standard form is completed I will see to it that all coal companies and mine superintendents are furnished with copies of same.

This Department has had the ungrudging support of the operators in carrying out such recommendations as seemed necessary for the safe and sanitary conditions of the mine. I hereby render them my sincere thanks and appreciation, for I fully realize that the operators have had a hard road to hoe and the financial reward was very slight, with an ever-increasing cost of production threatening to wipe out the slender margin.

In conclusion, I wish to tender to all the employees of the Department my thanks and appreciation of their loyal and able assistance. To the Deputy Inspectors, Messrs. Frank M. Oberding, Henry King, James W. Graham and A. E. Thompson, belongs much of the credit for the present improved conditions of the mines. They have been untiring in their efforts in this direction and carried out their work in a highly satisfactory manner.

Respectfully submitted,

JAMES DALRYMPLE,
State Inspector of Coal Mines.

TABLE No. 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. Men Killed per 1,000 Employed	No. Men Injured per 1,000 Employed
Alliance Coal Co.	115	..	18	..	156.5
American C. Refin. Co.	7	..	1	..	143
Aztec Coal Co.	89	1	3	11.2	32.7
Baldwin Fuel Co.	9	..	..	..	..
Baldy Coal Co.	6	..	..	..	..
Bear River Coal Co.	30	..	..	..	..
Bedlien, C. W.	4	..	..	..	..
Big Four Coal Co.	144	..	2	..	14
Big Six Coal Co.	39	..	2	..	51.3
Billstrom, C. O.	2	..	..	..	..
Black Canon Fuel Co.	55	..	..	..	..
B. D. Niggerhead Coal M. Co.	3	..	..	..	..
Bond, J. C.	2	..	..	..	..
Book Cliff R. R. Co.	16	1	1	62.5	62.5
Breen Coal Mining Co.	26	..	..	..	..
Brimble, David	1	..	..	..	..
Brimble, George	3	..	..	..	..
Brooks-Harrison Fuel Co.	22	..	..	..	..
Brookside Coal Co.	14	..	1	..	71.4
Calumet Fuel Co.	73	..	3	..	41.5
Canon Coal Co.	9	..	1	..	111
Canon City C. M. & L. Co.	15	..	..	..	..
Carbon Coal Co.	2	..	..	..	..
Carbon Coal & Coke Co.	268	3	49	14.4	235
Carbon Fuel & Iron Co.	17	..	..	..	..
Cedar Hill Coal & Coke Co.	230	1	2	4.35	8.7
Chicosa Fuel Co.	151	..	10	..	66.2
Colorado Fuel & Iron Co.	4,411	21	214	4.8	48.5
Colorado & Utah Coal Co.	101	1	5	9.9	49.5
Collom, Joseph	1	..	..	..	..
Consolidated Coal & Coke Co.	63	..	8	..	127
Converse, Frank	1	..	..	..	..
Corra, John	1	..	..	..	..
Coryell, P. C.	2	..	..	..	..
Crested Butte Coal Co.	29	..	1	..	34.8
Crested Butte Anthracite M. Co.	22	..	1	..	45.5
Crown Coal Co.	9	..	..	..	..
Curtis Coal Co.	..	..	..	..	..
David, Joe	3	..	..	..	..
Davies, F. D.	3	..	..	..	..
Degroffenried, Jas.	2	..	..	..	..
Diamond Coal Co.	1	..	..	..	..
Donnelly Coal Co.	10	..	2	..	200
Dugger Coal Co.	3	..	..	..	..
El Paso C. L. & F. Co.	69	..	4	..	68
Eureka Coal Co.	9	..	..	..	..
Evans Fuel Co.	46	..	3	..	65.2
Farmers Coal Co.	3	..	..	..	..
Farmers Progressive Coal Co.	3	..	..	..	..
Federal Coal Mining Co.	55	..	1	..	18
Fidel, Anthony	2	..	..	..	..
Flshers Peak Coal Co.	3	..	..	..	..
Fox Coal Mining Co.	48	..	2	..	42
Frederick, C. A.	..	..	..	..	..
Frederick Fuel Co.	89	..	1	..	11.2
Garfield Coal Mining Co.	11	..	1	..	90
Garfield Mine Leasing Co.	48	1	3	20.8	62.5
Gibson Lumber & Fuel Co.	55	..	1	..	18.2
Gibson Asphaltum Co.	6	..	..	..	..
Gordon Coal Co.	30	1	..	30.3	..
Grandview Coal Co.	7	..	..	..	..
Grand Junction Mining & F. Co.	79	..	..	..	..
Great Matchless Fuel Co.	78	..	1	..	12.8
Heyden Bros. Coal Co.	82	..	3	..	36.6
Hotchkiss Fuel & Supply Co.	1	..	..	..	..
Huerfano Coal Co.	101	..	5	..	49.5
Ideal Coal Co.	13	..	..	..	..
Ideal Fuel Co.	49	1	6	22	125
International Coal Co.	20	..	..	..	..

TABLE NO. 1—Continued

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. Men Killed per 1,000 Employed	No. Men Injured per 1,000 Employed
Jeffreys Fuel Co.....	35	..	..	..	..
John, Ed. & Co.....	8	..	1	..	125
Johnston Coal & Coke Co.....	11	..	..	..	..
Jones, D. W.	3	..	..	..	..
Juanita Coal & Coke Co.....	78	1	3	13	38.4
Lafayette Coal Mining Co.....	8	..	1	..	125
La Plant & Son.....	5	..	..	..	..
Lewis, J. T.	4	..	..	..	..
Leyden Coal Co.....	194	..	4	..	20.6
Littell Coal & Mining Co.....	56	..	2	..	36
Loma Fuel Co.....	17	1	..	59	..
Louisville Coal & Land Co.....	53	..	..	..	..
McLean & Gilbert.....	4	..	..	..	..
McNally & Mathews.....	31	..	..	..	..
McNeil Coal Co.....	60	..	..	..	..
McPherson, Thomas	5	..	..	..	..
Mile High Coal Co.....	4	..	..	..	..
Minnequa Coal Co.....	104	..	4	..	39.4
Mitchel & Graham.....	8	..	..	..	..
Moffat Coal Co.....	236	1	5	4.24	21.2
Monument Valley Coal Co.....	52	..	1	..	19.2
Mott Bros.	5	..	..	..	..
Mowry, J. F. ....	..	..	..	..	..
Mutual Coal Co.....	50	3	2	60	40
National Fuel Co.....	281	2	6	7.1	21.4
New Maitland Coal Co.....	31	..	2	..	64.5
Nichols, W. O.	5	..	..	..	..
Northern Colorado Coal Co.....	39	..	1	..	25.6
North Park Coal Co.....	12	..	..	..	..
Northwestern Coal & Coke Co....	3	..	..	..	..
Oakdale Coal Co.....	231	4	39	17	169
Oberding, W. J.	2	..	..	..	..
Ojo Canon Coal Co.....	3	..	..	..	..
O. K. Coal Co.....	6	..	..	..	..
Pagosa Lumber Co.....	2	..	..	..	..
Palisade Coal & Supply Co.....	14	..	..	..	..
Paomia Coal Co.....	5	..	..	..	..
Patterson Mine Co.....	23	..	..	..	..
Peerless Coal Co.....	3	..	..	..	..
Petry Coal Co.....	7	..	..	..	..
Pikes Peak Fuel Co.....	147	..	3	..	20.4
Porter Fuel Co.....	48	1	4	20.8	83.3
Primrose Coal Co.....	103	2	11	19	106.8
Prospect Coal Co.....	8	..	2	..	250
Proutt, Wm.	3	1	..	333	..
Pueblo Fuel & Mining Co.....	36	..	1	..	27.8
P. V. Coal Co.....	4	..	..	..	..
Rapson Coal Mining Co.....	113	..	5	..	44.2
Reese, W. M.	6	..	..	..	..
Richmond, Arthur	2	..	..	..	..
Rocky Mountain Fuel Co.....	1,027	5	108	4.8	105
Routt Electric Coal Co.....	38	..	..	..	..
Royal Fuel Co.....	111	1	..	9	..
Royal Leasing Co.....	11	..	..	..	..
Rugby Fuel Co.....	78	..	26	..	333
Russell, W. E. Coal Co.....	46	..	6	..	130.4
Shamrock Coal Co.....	15	..	..	..	..
Sheperd, Thomas	1	..	..	..	..
South Canon Coal Co.....	65	3	10	46	154
State Coal Co.....	5	..	..	..	..
States Coal Co.....	4	..	..	..	..
Stokes, W. D.	6	..	..	..	..
Sunshine Coal Co.....	4	..	..	..	..
Sunnyside Coal Co.....	64	..	6	..	93.7
Temple Fuel Co.....	130	1	1	7.7	7.7
Thomas Coal Co.....	10	..	..	..	..
Todd, G. S.	2	..	..	..	..
Trinidad Coal Co.....	4	..	..	..	..
Tudor Coal Co.....	14	..	..	..	..

TABLE No. 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. Men Killed per 1,000 Employed	No. Men Injured per 1,000 Employed
Turner Coal Co.....	37	..	..	..	..
Twenty Mile Coal Co.....	2	..	..	..	..
Union Coal & Coke Co.....	83	..	..	..	84.3
Utah Fuel Co.....	212	..	25	..	127.4
Vaughn, Levi.....	4	..	..	..	..
Vesta Coal Mining Co.....	22	..	3	..	136.4
Victor-American Fuel Co.....	1,252	5	49	4	39.1
Wagner & Austin.....	3	..	..	..	..
Walsenburg Coal Mining Co.....	99	..	6	..	60.6
Williamsburg Slope Coal Co.....	45	..	8	..	177.7
Winkler, Gus.....	2	..	..	..	..
Wootton Land & Fuel Co.....	33	..	..	..	..
Yampa Valley Coal Co.....	85	2	5	23.5	59
State of Colorado.....	12,563	64	712	5.1	56.7

TABLE NO. 2
SHOWING BY COMPANIES TOTAL PRODUCTION AND NUMBER OF MEN EMPLOYED FOR EACH
FATAL AND NON-FATAL ACCIDENT DURING THE YEAR 1915

Name of Company	No. Men Employed	Total Production	No. of Fatal Accidents	No. Men Employed Per Fatal Accident	No. Tons Produced Per Fatal Accident	No. of Non-fatal Accidents	No. Men Employed Per Non-fatal Accident	No. Tons Produced Per Non-fatal Accident
Alliance Coal Co.	115	74,756	..	..	..	18	6.33	4,133
American Coal & Refining Co.	7	1,430	..	..	..	1	7	1,430
Aztec Coal Co.	89	39,688	1	89	39,686	3	29.7	13,295
Baldwin Fuel Co.	9	4,126	..	..	..	..	..	..
Baldy Coal Co.	6	3,292	..	..	..	..	..	..
Bear River Coal Co.	30	16,149	..	..	..	..	..	..
Bedlien, C. W.	4	1,817	..	..	..	..	..	..
Big Four Coal Co.	141	97,892	..	..	..	2	72	48,946
Big Six Coal Co.	39	23,285	..	..	..	2	19.5	11,643
Billstrom, C. O.	12	1,909	..	..	..	..	..	..
Black Canon Fuel Co.	55	13,271	..	..	..	..	..	..
Black Diamond Niggerhead Coal M. Co.	3	58	..	..	..	..	..	..
Bond, J. C.	2	577	..	..	..	..	..	..
Book Cliff R. R. Co.	16	12,349	1	16	12,343	1	16	12,349
Breen Coal Mining Co.	26	4,592	..	..	..	..	..	..
Brimble, David	1	796	..	..	..	..	..	..
Brimble, George	3	191	..	..	..	..	..	..
Brooks-Harrison Fuel Co.	22	18,056	..	..	..	..	..	..
Brookside Coal Co.	14	9,748	..	..	..	1	14	9,748
Calumet Fuel Co.	73	50,868	..	..	..	3	24.3	16,965
Canon Coal Co.	9	2,760	..	..	..	1	9	2,760
Canon City C. M. & L. Co.	15	1,500	..	..	..	..	..	..
Carbon Coal Co.	2	69	..	..	..	..	..	..
Carbon Coal & Coke Co.	208	235,431	3	69.3	78,377	49	4.25	4,805
Carbon Fuel & Iron Co.	17	8,246	..	..	..	..	..	..
Cedar Hill Coal & Coke Co.	230	176,627	1	230	176,627	2	165	88,411
Chicosa Fuel Co.	151	94,669	..	..	..	10	15.1	9,466
Colorado Fuel & Iron Co.	4,411	2,379,767	21	210.5	113,332	212	20.8	11,225
Colorado & Utah Coal Co.	101	180,817	1	101	180,847	5	20.2	36,119
Collom, Joseph	1	200	..	..	..	..	..	..
Consolidated C. & C. Co.	63	56,824	..	..	..	8	8	7,103

TABLE NO. 2—Continued

SHOWING BY COMPANIES TOTAL PRODUCTION AND NUMBER OF MEN EMPLOYED FOR EACH
FATAL AND NON-FATAL ACCIDENT DURING THE YEAR 1915

Name of Company	No. Men Employed	Total Production	No. of Fatal Accidents	No. Men Employed Per Fatal Accident	No. Tons Produced Per Fatal Accident	No. of Non-fatal Accidents	No. Men Employed Per Non-fatal Accident	No. Tons Produced Per Non-fatal Accident
Converse, Frank	1	84	..	..	..	..	..	..
Corra, John	1	75	..	..	..	..	..	..
Coryell, P. C.	2	1,623	..	..	..	..	..	..
Crested Butte Anthracite Mining Co.	22	7,184	..	..	..	..	..	7,184
Crested Butte Coal Co.	29	18,263	1	..	..	1	22	18,263
Crown Coal Co.	9	4,772	..	..	..	..	29	..
Curtis Coal Co.	27	2,006	..	..	..	..	..	..
David, Joe	3	701	..	..	..	..	..	..
Davies, F. D.	3	850	..	..	..	..	..	..
Degroffenried, Jas.	2	614	..	..	..	..	..	..
Diamond Coal Co.	4	527	..	..	..	..	..	..
Donnelly Coal Co.	10	4,903	..	..	..	2	5	2,452
Dugger Coal Co.	3	918	..	..	..	..	..	..
El Paso C. L. & F. Co.	69	65,659	..	..	..	4	17.2	16,415
Eureka Coal Co.	9	6,521	..	..	..	..	..	..
Evans Fuel Co.	46	45,809	..	..	..	3	15.3	15,269
Farmers Coal Co.	3	120	..	..	..	..	..	..
Farmers Progressive Coal Co.	3	1,116	..	..	..	..	..	..
Federal Coal M. Co.	55	48,215	..	..	..	1	55	48,215
Fidell, Anthony	2	1,618	..	..	..	..	..	..
Fishers Peak Coal Co.	3	1,002	..	..	..	..	..	..
Fox Coal Mining Co.	48	47,359	..	..	..	2	24	23,685
Frederick Fuel Co.	89	42,547	..	..	..	1	89	42,547
Garfield Coal Mining Co.	11	7,875	..	..	..	1	11	7,875
Garfield Mining Leasing Co.	48	49,693	1	48	49,693	3	16	16,564
Gibson Lumber & Fuel Co.	55	37,488	..	..	..	1	55	37,488
Gibson Asphaltum Co.	6	8,805	..	..	..	..	..	..
Gordon Coal Co.	30	12,765	1	30	12,765	..	..	..
Grandview Coal Co.	7	1,680	..	..	..	..	..	..
Grand Junction M. & L. Co.	79	62,141	..	..	..	..	..	..
Great Matchless Fuel Co.	78	32,050	..	..	..	1	78	32,050

Hayden Bros. Coal Co.	82	28,254	..	..	..	3	27.3	9,418
Hutchiss Fuel & S. Co.	1	63,518	..	..	..	..	..	..
Huerfano Coal Co.	101	63,461	..	..	..	5	20.2	12,632
Ideal Coal Co.	13	11,032	..	..	..	..	..	..
Ideal Fuel Co.	49	21,878	1	49	21,878	6	8	3,647
International Coal Co.	20	387	..	..	..	..	..	..
Jeffreys Fuel Co.	35	24,826	..	..	..	..	..	..
John, Ed. & Co.	8	5,801	..	..	..	1	8	5,801
Johnston Coal & Coke Co.	11	5,500	..	..	..	..	..	..
Jones, D. W.	3	2,948	..	..	..	..	..	..
Juanita Coal & Coke Co.	78	61,955	1	78	61,955	3	26	20,652
Lafayette Coal Mining Co.	8	400	..	..	..	1	8	400
La Plant & Son.	5	608	..	..	..	..	..	..
Lewis, J. T.	4	3,249	..	..	..	..	..	..
Leyden Coal Co.	194	126,560	..	..	..	4	48.5	31,640
Littell Coal & Mining Co.	56	27,732	..	..	..	2	28	13,886
Loma Fuel Co.	17	11,842	1	17	11,842	..	..	..
Louisville Coal & Land Co.	53	51,767	..	..	..	..	..	..
McLean & Gilbert.	4	1,099	..	..	..	..	..	..
McNally & Matthews.	31	13,546	..	..	..	..	..	..
McNell Coal Co.	60	6,173	..	..	..	..	..	..
McPherson, Thomas	5	200	..	..	..	..	..	..
Mile High Coal Co.	4	2,197	..	..	..	..	..	..
Minnequa Coal Co.	104	42,882	..	..	..	4	26	10,721
Mitchel & Graham.	8	6,286	..	..	..	..	..	..
Moffat Coal Co.	236	263,152	1	..	263,152	5	27.2	52,631
Monument Valley Coal Co.	52	21,469	..	..	..	1	52	21,469
Mott Bros.	5	1,372	..	..	..	..	..	..
Mowry, J. F.	2	245	..	..	..	..	..	..
Mutual Coal Co.	50	39,585	3	16.6	..	2	25	19,733
National Fuel Co.	281	268,047	2	140.5	134,023	6	47	44,675
New Maitland Coal Co.	31	12,210	..	..	..	2	15.5	6,105
Nichols, W. O.	5	525	..	..	..	..	..	..
Northern Colorado Coal Co.	39	23,480	..	..	..	1	39	23,480
North Park Coal Co.	12	3,501	..	..	..	..	..	..
Northwestern C. & C. Co.	3	60	..	..	..	..	..	..
Oakdale Coal Co.	231	215,729	4	58	53,952	39	5.9	5,532
Oberding, W. J.	2	349	..	..	..	..	..	..
Ojo Canon Coal Co.	3	400	..	..	..	..	..	..
O. K. Coal Co.	6	5,782	..	..	..	..	..	..
Pagosa Lumber Co.	2	1,255	..	..	..	..	..	..
Palisade Coal & Supply Co.	14	6,652	..	..	..	..	..	..
Pasola Coal Co.	5	5,568	..	..	..	..	..	..
Patterson Mine Co.	23	13,276	..	..	..	..	..	..
Peerless Coal Co.	3	2,212	..	..	..	..	..	..
Petry Coal Co.	7	4,213	..	..	..	..	..	..
Pikes Peak Fuel Co.	147	165,379	..	..	..	3	49	55,126
Porter Fuel Co.	48	34,760	1	48	34,760	4	12	9,440

TABLE NO. 2—Concluded

SHOWING BY COMPANIES TOTAL PRODUCTION AND NUMBER OF MEN EMPLOYED FOR EACH FATAL AND NON-FATAL ACCIDENT DURING THE YEAR 1915

Name of Company	No. Men Employed	Total Production	No. of Fatal Accidents	No. Men Employed Per Fatal Accident	No. Tons Produced Per Fatal Accident	No. of Non-Fatal Accidents	No. Men Employed Per Non-Fatal Accident	No. Tons Produced Per Non-Fatal Accident
Primrose Coal Co.	103	64,470	2	51.5	32,245	11	9.4	5,863
Prospect Coal Co.	8	4,970	1	3	420	2	4	1,243
Proutt, Wm.	3	420	1	3	420	1	36	10,674
Pueblo Fuel & Mining Co.	36	10,674	1	36	10,674	1	36	10,674
P. V. Coal Co.	4	614	1	4	614	1	22.6	13,105
Rapson Coal Mining Co.	113	65,223	1	113	65,223	1	113	65,223
Reese, W. M.	6	66	1	6	66	1	6	66
Richmond, Arthur C.	2	405	1	2	405	1	2	405
Rocky Mountain Fuel Co.	1,027	883,420	5	205.4	176,681	108	9.5	8,180
Routt Electric Coal Co.	38	23,047	1	38	23,047	1	38	23,047
Royal Fuel Co.	111	81,816	1	111	81,816	1	111	81,816
Royal Leasing Co.	11	325	1	11	325	1	11	325
Rugby Fuel Co.	78	52,681	1	78	52,681	1	78	52,681
Russell, W. E. Coal Co.	46	43,567	1	46	43,567	1	46	43,567
Shamrock Coal Co.	15	8,121	1	15	8,121	1	15	8,121
Shepherd, Thomas	1	293	1	1	293	1	1	293
South Canon Coal Co.	65	29,722	3	21.7	9,924	16	6.5	2,372
State Coal Co.	5	1,550	1	5	1,550	1	5	1,550
States Coal Co.	4	2,025	1	4	2,025	1	4	2,025
Stokes, W. D.	6	2,025	1	6	2,025	1	6	2,025
Sunshine Coal Co.	4	2,668	1	4	2,668	1	4	2,668
Sunnyside Coal Co.	64	27,733	1	64	27,733	1	64	27,733
Temple Fuel Co.	130	120,033	1	130	120,033	1	130	120,033
Thomas Coal Co.	10	4,583	1	10	4,583	1	10	4,583
Todd, G. S.	2	597	1	2	597	1	2	597
Trinidad Coal Co.	4	685	1	4	685	1	4	685
Tudor Coal Co.	14	12,101	1	14	12,101	1	14	12,101
Turner Coal Co.	37	26,331	1	37	26,331	1	37	26,331
Twenty Mile Coal Co.	2	1,000	1	2	1,000	1	2	1,000
Union Coal & Coke Co.	83	51,153	1	83	51,153	1	83	51,153
Utah Fuel Co.	212	295,877	1	212	295,877	1	212	295,877

Vaughn, Levi	444	..	..	.....	..	..	..	..	..
Vesta Coal Co.....	22	5,872	5	250.4	213,767	3	35.6	1,957	21,813
Victor-American Fuel Co.....	1,252	1,008,836	5	..	..	49	..	..	..
Wagner & Austin.....	3	562	..	..	..	..	..	..	..
Walsenburg Coal M. Co.....	99	39,778	..	..	..	6	16.5	6,630	..
Williamsburg Slope Coal Co.....	45	18,858	..	..	..	8	5.6	2,357	..
Winkler, Gus	2	497	..	..	..	..	..	..	..
Wootton Land & Fuel Co.....	23	8,284	..	42.5	61,287	5	17	24,515	..
Yampa Valley Coal Co.....	85	122,574	2	196.30	136,178	..	..	..	..
Totals of the State.....	12,563	8,715,397	64	..	..	712	16.24	12,241	..

TABLE NO. 3

NUMBER OF FATAL ACCIDENTS IN 1915

Underground	59
Surface	5
Total	64

TABLE NO. 4

NUMBER OF FATAL ACCIDENTS—CAUSES AND PERCENTAGES

Causes	Number of Accidents	Per Cent
Falls of rock and coal.....	41	64.0
Mine cars and motors.....	11	17.2
Electricity	3	4.7
Mine gases	5	7.8
Miscellaneous	4	6.3
Total	64	100.0
Number of widows left.....	31	
Number of children left.....	92	
Number of single men killed.....	33	

TABLE NO. 5

NUMBER KILLED PER 1,000 EMPLOYED IN 1913, 1914, 1915

1913	8.6
1914	7.0
1915	5.1

TABLE NO. 6

NUMBER OF NON-FATAL ACCIDENTS IN 1915

Causes	Number of Accidents	Per Cent
Falls of rock and coal.....	280	39.32
Mine cars and motors.....	221	31.10
Electricity	7	.98
Mine gases	9	1.20
Miscellaneous	195	27.40
Total	712	100.00
CLASSIFIED:		
Serious	184	
Minor	291	
Trivial	237	
	712	

TABLE NO. 10
EL PASO COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Pikeview	Pike's Peak Fuel Co.	Colorado Springs	.....11 ft.	Shaft	Lignite	214.5	147	165,379
El Paso	El Paso County Land & Fuel Co.	Colorado Springs	.7 to 9 ft.	Slope	Lignite	260	69	65,653
Rapson No. 1.	Rapson Coal Mining Co.	Colorado Springs	.5 to 8 ft.	Shaft	Lignite	265	42	36,027
Patterson	Patterson Mine Co.	Colorado Springs	.....12 ft.	Slope	Lignite	262	23	13,276
Danville	Tudor Coal Co.	Colorado Springs	.8 to 17 ft.	Slope	Lignite	268	14	12,107
Williamsville	Thomas Coal Co.	Colorado Springs	.....7 ft.	Slope	Lignite	225	10	4,583
Franceville	T. D. Davis	Colorado Springs	.....5 ft.	Slope	Lignite	249	8	880
Number of mines operated.....						249	308	297,881

TABLE NO. 11
FREMONT COUNTY, 1915

Name of Operator	Name of Mine	Post-Office Address of 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
Coal Creek	Colorado Fuel & Iron Co.	Coal Creek	3 ft. 6 in.	Shaft	Semi-bituminous	172.6	258	124,040
Rockvale	Colorado Fuel & Iron Co.	Rockvale	3 ft. 6 in.	Shaft	Semi-bituminous	98	359	81,888
Fremont	Colorado Fuel & Iron Co.	Rockvale	4 ft. 6 in.	Shaft	Semi-bituminous	65	265	50,476
Nonac	Colorado Fuel & Iron Co.	Canon City	6 ft.	Slope	Semi-bituminous	125	16	5,111
Chandler	Victor American Fuel Co.	Chandler	4 to 5 ft. 8 in.	Shaft	Semi-bituminous	197	164	113,648
Radiant	Victor American Fuel Co.	Pyrolite	3 ft. 2 in. to 3 ft. 8 in.	Slope	Semi-bituminous	141	76	37,226
Royal Gorge	Gibson Lumber & Fuel Co.	Canon City	6 ft. 6 in. to 7 ft.	Slope	Semi-bituminous	272	55	37,458
Emerald	Williamsburg Slope Coal Co.	Williamsburg	3 ft.	Slope	Semi-bituminous	208	45	18,858
Brookside	Brookside Coal Co.	Canon City	.5 to 5 ft. 6 in.	Slope	Semi-bituminous	160	14	9,748
Williamsburg	Donnelly Coal Co.	Williamsburg	3 ft. 2 in.	Slope	Semi-bituminous	231	10	4,903
Willie	Petry Coal Co.	Florence	3 ft.	Slope	Semi-bituminous	214	7	4,213
Smith-Tanner	Canon Coal Mining Co.	Florence	2 ft. 10 in.	Slope	Semi-bituminous	192	9	2,763
Central	Canon City M. L. Co.	Canon City	5 ft. 5 in.	Shaft	Semi-bituminous	150	15	1,500
Double Dick	McLean & Gilbert	Coal Creek	2 ft. 6 in.	Slope	Semi-bituminous	102	4	1,699
Reese	W. M. Reese	Rockvale	3 ft.	Slope	Semi-bituminous	22	6	66
Number of mines operated.....						156.9	1,234	493,024

TABLE NO. 14
HUERFANO COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Robinson	Colorado Fuel & Iron Co.	Walsen	..... 6 ft.	Slope	Bituminous	294.5	379	175,951
Rouse	Colorado Fuel & Iron Co.	Rouse	..... 6 ft. 6 in.	Slope	Bituminous	168.5	252	145,443
Cameron	Colorado Fuel & Iron Co.	Farr	..... 4 ft. 6 in.	Slope	Bituminous	241.5	178	135,600
Walsen	Colorado Fuel & Iron Co.	Walsen	..... 5 ft.	Slope	Bituminous	207.9	236	135,217
Lester	Colorado Fuel & Iron Co.	Lester	..... 5 ft.	Slope	Bituminous	163.9	186	99,694
Ideal	Colorado Fuel & Iron Co.	Ideal	..... 4 ft.	Slope	Bituminous	147	124	69,836
Oakdale	Oakdale Coal Co.	Oakview	..... 5 to 14 ft.	Slope	Bituminous	275	231	215,729
Reliance	Alliance Coal Co.	Ojo	..... 5 ft. 6 in. to 14 ft.	Slope	Bituminous	179.5	115	74,756
Ravenwood	Victor American Fuel Co.	Ravenwood	..... 2 to 3 ft. 2 in.	Slope	Bituminous	227	152	72,213
Rugby	Rugby Fuel Co.	Rugby	..... 3 ft. 10 in.	Slope	Bituminous	164	78	52,681
Pryor	Union Coal & Coke Co.	Pryor	..... 6 ft. 6 in.	Slope	Bituminous	105	83	51,153
Tioga	Minnequa Coal Co.	Tioga	..... 4 ft. 6 in. to 8 ft.	Slope	Bituminous	116	104	42,882
Big Four	Big Four C. & C. Co.	Tioga	..... 7 ft.	Slope	Bituminous	119.5	62	42,607
Solar	Walsenburg Coal Mining Co.	Walsenburg	..... 6 ft.	Shaft	Bituminous	116	99	39,778
Toltec	Aztec Coal Mining Co.	Toltec	..... 3 to 4 ft.	Shaft	Bituminous	107.7	89	39,688
Mutual	Mutual Coal Co.	Walsenburg	..... 7 ft.	Shaft	Bituminous	223.5	50	39,585
Sunnyside	Sunnyside Coal Mining Co.	Strong	..... 7 ft.	Slope	Bituminous	131.1	64	27,733
Turner	Turner Coal Co.	Walsenburg	..... 5 ft.	Slope	Bituminous	264	27	26,331
Larrimore	Monument Valley Coal Co.	Strong	..... 3 ft.	Slope	Bituminous	196.5	52	21,469
Maitland	McNally & Matthews	Maitland	..... 3 to 5 ft. 6 in.	Slope	Bituminous	115	31	13,546
Caddell	Black Canon Fuel Co.	Walsenburg	..... 3 to 3 ft. 6 in.	Slope	Bituminous	51	55	13,271
Gordon	Gordon Coal Co.	Walsenburg	..... 4 ft.	Slope	Bituminous	118	30	12,765
Black Canon	New Maitland Coal Co.	Walsenburg	..... 3 ft. 8 in.	Slope	Bituminous	154.5	31	12,210
Loma	Loma Fuel Co.	Walsenburg	..... 6 to 7 ft. 6 in.	Slope	Bituminous	214	17	11,842
Pinon	Rocky Mountain Fuel Co.	McGuire	..... 5 ft.	Slope	Bituminous	162	27	10,984
Vesta	Vesta Coal Mining Co.	Walsenburg	..... 4 ft.	Shaft	Bituminous	144	22	5,872
Breen	Green Coal Mining Co.	Walsenburg	..... 5 ft. 6 in.	Slope	Bituminous	26	26	4,592
Ojo	Ojo Canon Coal Co.	Ojo	..... 3 ft.	Slope	Bituminous	75	3	4,400
Number of mines operated.....						161.1	2,813	1,597,828

TABLE NO. 15

JACKSON COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Coalmont	Northern Colorado Coal Co.	Coalmont	65 ft.	Slope	Sub-bituminous	89	39	23,480
North Park	North Park Coal Co.	Coalmont	40 ft.	Slope	Sub-bituminous	111	12	3,501
Number of mines operated..... 2								
						100	51	26,981

TABLE NO. 16

JEFFERSON COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Leyden No. 2.....	Leyden Coal Co.	Leyden	9 ft.	Shaft	Sub-bituminous	150	194	126,560
Rooney No. 2.....	Thos. Shepherd.....	Golden	7 ft.	Shaft	Sub-bituminous	88	1	343
Number of mines operated..... 2								
						119	195	126,953

TABLE NO. 17
LAS ANIMAS COUNTY, 1915

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 No. of Men Employed	Tons Produced
Primero	Colorado Fuel & Iron Co.	Primero	5 ft. 6 in.	Drift	Bituminous	183.7	451	308,728
Frederick	Colorado Fuel & Iron Co.	Valdez	5 ft. 6 in.	Drift	Bituminous	186.2	221	295,409
Morley	Colorado Fuel & Iron Co.	Morley	6 ft.	Drift	Bituminous	204.5	238	304,941
Sopris	Colorado Fuel & Iron Co.	Sopris	3 ft. 6 in.	Drift	Bituminous	224	233	165,153
Berwind	Colorado Fuel & Iron Co.	Berwind	5 ft. 6 in.	Slope and	Bituminous	135	284	157,883
Tabasco	Colorado Fuel & Iron Co.	Tabasco	7 ft.	Drift	Bituminous	193	188	150,319
Tercio	Colorado Fuel & Iron Co.	Tercio	6 ft.	Drift	Bituminous	11	107	4,722
Starkville	Colorado Fuel & Iron Co.	Starkville	6 ft.	Drift	Bituminous	...	31	795
Delagua	Victor American Fuel Co.	Delagua	5 ft. to 6 ft. 10 in.	Slope	Bituminous	248	132	435,785
Hastings	Victor American Fuel Co.	Hastings	5 ft. to 6 ft. 6 in.	Slope	Bituminous	251	172	174,596
Gray Creek	Victor American Fuel Co.	Gray Creek	4 ft. 6 in.	Drift	Bituminous	278	113	84,440
Cokedale	Carbon Coal & Coke Co.	Cokedale	3 to 6 ft.	Slope and	Bituminous	259	178	212,512
Toller	Cedar Hill Coal & Coke Co.	Tollerburg	6 ft.	Drift	Bituminous	202.5	167	129,097
Greenville	Cedar Hill Coal & Coke Co.	Ludlow	5 to 7 ft.	Shaft	Bituminous	196	63	47,739
Piedmont	Rocky Mountain Fuel Co.	Sopris	4 to 6 ft.	Slope	Bituminous	123.1	207	123,296
Forbes No. 3	Chicosa Fuel Co.	Forbes	3 ft. 6 in. to 7 ft. 6 in.	Drift	Bituminous	182	133	72,158
Forbes No. 6	Chicosa Fuel Co.	Forbes	3 ft. 6 in. to 7 ft. 6 in.	Drift	Bituminous	182.5	18	22,502
Royal	Royal Fuel Co.	Aguliar	7 ft. 6 in.	Shaft	Bituminous	191.5	111	81,816
Broadhead No. 9	Temple Fuel Co.	Aguliar	6 ft. 6 in. to 3 ft. 6 in.	Slope	Bituminous	261	90	81,782
Primrose	Primrose Coal Co.	Rugby	4 ft.	Slope	Bituminous	237	103	64,490
Ludlow	Huerfano Coal Co.	Ludlow	4 to 6 ft.	Drift	Bituminous	183	101	63,461
Kenneth	Temple Fuel Co.	Maltby	4 ft. 6 in.	Drift	Bituminous	197	40	38,251
Rapson No. 1	Rapson Coal Mining Co.	Rapson	3 to 4 ft.	Slope	Bituminous	118	71	29,496
Jeffreyes	Jeffreyes Fuel Co.	Trinidad	6 ft.	Drift	Bituminous	289	25	24,626
Jewel	Ideal Fuel Co.	Aguliar	3 ft. 6 in.	Drift	Bituminous	190.5	49	21,878
Wootton-Turner	Wootton Land & Fuel Co.	Wootton	4 ft.	Drift	Bituminous	117	23	8,284
Prospect	Prospect Coal Co.	Trinidad	3 ft.	Slope	Bituminous	207	8	4,970
Baldy	Baldy Coal Co.	Trinidad	5 to 6 ft.	Slope	Bituminous	208	6	3,292

TABLE NO. 19

MESA COUNTY, 1915

Name of Mine	Name of Operator	Post-Office Address of 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
Cameo	Grand Junction Mining & Fuel Co.	Cameo	6 ft.	Drift	Semi-bituminous	155	79	62,141
Book Cliff	Book Cliff R. R. Co.	Grand Junction	7 ft.	Drift	Semi-bituminous	96.6	16	12,349
Garfield	Garfield Coal Mining Co.	Grand Junction	8 ft.	Drift	Semi-bituminous	107	11	7,875
Palisade	Palisade Coal & Supply Co.	Palisade	4 ft.	Drift	Semi-bituminous	88	11	6,662
Stokes	W. D. Stokes	Palisade	4 ft.	Drift	Semi-bituminous	138	6	2,025
Grandview	Grandview Coal Co.	Palisade	4 ft.	Drift	Semi-bituminous	111	7	1,680
Fidel	Anthony Fidel	Fruita	5 ft., 6 in.	Drift	Semi-bituminous	200	2	1,618
P. V.	P. V. Coal Co.	Cameo	6 ft.	Drift	Semi-bituminous	61	4	614
Riverside	Levi Vaughan	Palisade	2 ft. 8 in.	Drift	Semi-bituminous	47	4	444
Winger	C. A. Richmond	Palisade	6 ft.	Drift	Semi-bituminous	100	2	405
Number of mines operated.....						110.3	145	95,803

TABLE NO. 20

MONTEZUMA COUNTY, 1915

Name of Mine	Name of Operator	Post-Office Address of 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
Todd	G. S. Todd	Cortez	3 ft., 4 in.	Drift	Lignite	200	2	597
Mitchell Springs	J. F. Morrey	Cortez	2 ft. 4 in. to 3 ft.	Drift	Lignite	150	2	245
Number of mines operated.....						175	4	842

TABLE NO. 21

MONTROSE COUNTY, 1915

Name of Mine	Name of Operator	Post-Office Address of Mine	Thickenss of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average No. of Men Employed	Total Number Tons Produced
Missouri	Gus Winkler	Nuclea	4 ft. 10 in.	Drift	Lignite	250	2	497
Knaus	W. J. Oberding	Nuclea	4 to 5 ft.	Drift	Lignite	150	2	349
Number of mines operated..... 2								
						200	4	846

TABLE NO. 22

MOFFAT COUNTY, 1915

Name of Mine	Name of Operator	Post-Office Address of Mine	Thickenss of Coal-Bed Under Operation	Kind of Opening	Character of Coal	Number of Days Worked	Average No. of Men Employed	Total Number Tons Produced
Collom	Joseph Collom	Axial	25 ft.	Drift	Bituminous	200	1	200
Number of mines operated..... 1								
						200	1	200

TABLE NO. 23

PITKIN COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Gulch	Colorado Fuel & Iron Co.	Gulch	9 ft.	Slope	Bituminous	167.5	68	51,289
Number of mines operated..... 1								

TABLE NO. 24

ROUETT COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Oak Hills No. 1	Moffat Coal Co.	Oak Creek	8 ft.	Slope	Bituminous	239	39	54,212
Oak Hills No. 2	Moffat Coal Co.	Oak Creek	10 ft.	Drift	Bituminous	225	197	208,940
Harris	Colorado & Utah Coal Co.	Mt. Harris	9 ft.	Slope	Bituminous	232	101	180,837
Pinnacle	Victor American Fuel Co.	Oak Creek	6 to 13 ft.	Drift	Bituminous	189	113	130,929
Yampa Valley No. 1	Yampa Valley Coal Co.	Pallas	5 ft., 6 in.	Drift	Bituminous	235.2	43	65,139
Yampa Valley No. 2	Yampa Valley Coal Co.	Pallas	5 ft., 6 in.	Drift	Bituminous	235.2	42	57,444
Federal	Federal Coal Mining Co.	Oak Creek	4 to 19 ft.	Slope	Bituminous	258.5	55	48,215
Hayden	Hayden Bros. Coal Corporation	Oak Creek	6 ft., 6 in. to 7 ft.	Drift	Bituminous	201	28	28,234
Electric	Bout Electric Coal Co.	Junction City	5 ft.	Drift	Bituminous	110.6	38	23,017
Bear River	Bear River Coal Co.	Bear River	10 ft.	Slope	Bituminous	188	20	16,149
McGregor	McNeil Coal Co.	McGregor	8 ft.	Slope	Bituminous	77	69	6,173
Jones	D. W. Jones	Oak Creek	4 ft., 10 in.	Slope	Bituminous	225	3	2,948
Curtis Rouett	Curtis Coal Co.	Poolo	5 ft.	Slope	Bituminous	90	25	2,006
Twenty-Mile	Twenty Mile Coal Co.	Junction City	16 ft.	.....	Bituminous	260	12	1,000

Diamond	Diamond Coal Co.....	Poole	8 ft.	Drift	Bituminous	48	4	527
Wolf Creek	International Fuel Co.....	Mt. Harris	14 ft.	Drift	Bituminous	50	20	287
Columbine	Frimble & Dell Bros.....	Oak Creek	2 ft. 10 in.	Slope	Bituminous	73	3	191
Golden Oak	Northwestern Coal & Coke Co.....	Poole	3 ft. 9 in.	.....	Bituminous	50	3	60
Number of mines operated..... 18								
						181	890	846,459

TABLE NO. 25

WELD COUNTY, 1915

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 No. of Men Employed	Total Number Tons Produced
Puritan	National Fuel Co.....	Erie	10 ft.	Shaft	Lignite	129.2	118	137,027
Parkdale	National Fuel Co.....	Lafayette	10 ft.	Slope	Lignite	176	17	21,462
Baum	Consolidated Coal & Coke Co.....	Dacona	7 to 7 ft. 6 in.	Shaft	Lignite	220.4	63	56,824
Firestone	Louisville Coal & Land Co.....	Firestone	6 to 9 ft.	Shaft	Lignite	152	53	51,767
Evans	Evans Fuel Co.....	Frederick	8 ft.	Slope	Lignite	192	46	45,809
Russell	W. E. Russell Coal Co.....	Firestone	6 ft.	Shaft	Lignite	252	46	42,567
Frederick	Frederick Fuel Co.....	Frederick	6 ft. 6 in.	Shaft	Lignite	86.1	89	42,547
Ideal	Ideal Fuel Co.....	Erie	8 ft.	Slope	Lignite	284	13	11,032
Grant	Carbon Coal & Iron Co.....	Frederick	11 ft.	Shaft	Lignite	103	17	8,246
Shamrock	Shamrock Coal Co.....	Erie	10 ft.	Shaft	Lignite	122	15	8,121
Eureka	Woolley Bros.....	Erie	8 ft.	Shaft	Lignite	251	9	6,521
Peerless	Peerless Coal Co.....	Frederick	4 ft.	Shaft	Lignite	158	3	2,212
Whiteash	W. C. Badlien.....	La Salle	2 ft. 8 in.	Shaft	Lignite	167	4	1,817
State	State Coal Co.....	Erie	11 ft.	Shaft	Lignite	101	5	1,550
New Washington.....	David Brimble	St. Vrain.....	5 ft.	Shaft	Lignite	160	1	786
Farmer	Wagner & Austin.....	La Salle .....	.....	Shaft	Lignite	163	3	562
Number of mines operated..... 16						170.4	502	438,860

TABLE NO. 26

PRODUCTION OF COUNTIES BY MONTHS

Months	Archuleta	Boulder	Delta	El Paso	Fremont
January	318	107,171	7,748	34,378	22,494
February	144	75,714	6,524	26,361	14,588
March	Idle	85,091	5,914	31,813	22,147
April	96	54,725	4,982	21,115	21,269
May	121	51,643	4,774	19,177	32,557
June	240	42,924	3,525	17,434	43,974
July	168	46,134	2,789	16,857	37,559
August	168	61,681	4,246	17,291	51,789
September	Closed	97,681	6,760	21,754	34,224
October	Down	104,807	7,789	24,032	58,311
November		119,874	9,322	31,125	37,831
December		123,885	12,407	36,544	70,281
Totals	1,255	971,360	77,840	297,881	493,024

Months	Garfield	Gunnison	Huerfano	Jackson	Jefferson
January	12,296	30,851	137,071	3,906	15,550
February	9,894	24,779	100,095	3,350	10,123
March	10,837	36,293	112,736	2,971	13,847
April	10,650	28,134	90,880	1,078	8,400
May	10,028	24,636	99,840	668	7,640
June	9,476	35,195	122,197	1,061	7,432
July	9,813	31,418	116,008	516	6,089
August	12,517	44,376	145,629	889	7,195
September	14,781	18,130	150,889	3,092	10,541
October	15,251	16,929	169,171	2,541	11,149
November	13,965	16,102	166,180	3,709	13,073
December	13,511	14,121	187,132	3,194	15,914
Totals	142,959	140,961	1,597,828	26,981	126,953

Months	Las Animas	La Plata	Mesa	Montrose	Montezuma
January	210,913	10,131	10,852		
February	202,318	9,959	8,565		
March	233,083	9,740	7,610		
April	209,818	5,681	5,584		
May	211,809	8,288	5,546		
June	217,085	8,438	3,433		
July	250,425	6,503	3,895		
August	264,679	8,712	3,692		
September	280,033	9,936	3,806		
October	281,679	13,564	9,750		
November	305,568	13,772	11,751		
December	313,251	12,668	13,259	846	842
Totals	2,985,661	117,392	95,803	846	842

Months	Moffat	Pitkin	Routt	Weld	Total Tonnage
January		5,094	70,618	58,624	739,015
February		1,019	40,091	39,426	575,983
March		1,151	14,206	47,649	670,091
April		1,000	43,494	18,776	529,012
May		3,637	52,464	16,192	549,020
June		3,031	65,292	13,116	593,866
July		3,821	66,199	11,757	609,952
August		3,695	81,114	17,691	733,362
September		1,297	78,377	35,419	825,780
October		4,628	98,370	52,974	903,918
November		4,912	99,733	61,027	957,884
December	200	5,912	106,198	67,209	1,027,461
Totals	200	51,289	846,479	439,860	8,115,397

TABLE NO. 27

SHOWING INCREASE AND DECREASE OF EACH COUNTY, 1914-1915.

County	1914	1915	Increase	Decrease
Archuleta	2,611	1,255	.....	1,356
Boulder	993,702	971,360	.....	21,342
Delta	97,073	77,840	.....	19,233
El Paso	283,142	297,881	14,739	.....
Fremont	173,483	493,024	319,541	.....
Garfield	117,994	142,959	24,965	.....
Gunnison	403,503	440,964	37,461	.....
Huerfano	1,686,606	1,597,828	.....	88,778
Jackson	45,769	26,981	.....	18,788
Jefferson	141,914	126,953	.....	14,961
La Plata	135,513	117,392	.....	18,121
Las Animas	2,756,281	2,985,661	229,377	.....
Mesa	158,267	95,803	.....	63,464
Moffat	300	200	.....	100
Montrose	.....	846	846	.....
Montezuma	987	842	.....	145
Pitkin	70,746	51,289	.....	19,457
Routt	653,878	816,159	160,281	.....
Weld	477,651	439,860	.....	37,791
Totals	8,201,423	8,715,397	.....	.....
Increase, 1915	.....	.....	.....	513,974

TABLE NO. 28

COKE PRODUCTION IN 1915 BY COMPANIES AND COUNTIES

Companies	Total No. Ovens	Total Tonnage	Counties	Total No. Ovens	Total Tonnage
Colorado Fuel & Iron Co.	1,324	537,652	Las Animas	1,706	661,910
Carbon Coal & Coke Co.	308	119,030	La Plata	18	9,544
Victor-American Fuel Co.	92	14,772			
Totals	1,724	671,454		1,724	671,454

HYGROMETRIC READINGS

Taken by Henry King.

FREDERICK MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
1st East & Main haulage R	55	55½	97	89
3rd East & Main haulage R	56	56	100	94
9 E. & Main haulage R	58	58½	97	97
At room No. 9, 11 West	65	66	95	98
At room 27, 11 East	63	63½	97	97
150 Ft. from face of main R	65	65½	98	95
Near face of 14 East entry	63	63	100	100
1 East return	62	62	100	100
Near face of 18 E. entry	62	62½	97	97
Main return air near face	62	62	100	100

This shows a humidified condition that is very good.

MORLEY SLOPE MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
Outside	30	35	58	78
4 Left entry and Main Slope	56	58	89	76
5 Right entry and Main Slope	57	58	95	81
Inside crosscut 5 right	62½	63	97	98
4 plain inside crosscut 5 right	61½	62	97	98
Inside crosscut 4 right	60½	61	97	100
Inside crosscut 5 and 6 plain 4 right	58½	59	97	97
Return air near fan	60	60	100	100

Reading good.

HYGROMETRIC READINGS—Continued

BERWIND MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
11th West main air course	50	52	88	90
5th Dip 2nd right entry of slope	66.5	67	98	97
Near face of slope	70	70.5	98	95
18th East 7 main entry	66	67	95	95
18th East and 2nd South	61.5	62	98	95
17th East near upcast shaft.....	65.5	66	98	98
6th South and 18th East.....	66	66	100	100
6th North and 12th East	64	64	100	100
Main return airway	63	63	100	100

Reading considered good.

FIRST EAST PRIMERO MINE

Locations	Wet Bulb	Dry Bulb	Winter Humidity	Summer Humidity	First Winter Readings
Outside freezing	0	0	0	..	..
250 Inside Radiators	42	47	65	45	56
On main road at A. 8 East	48	50	88	95	87
140 feet from face of main road	58	59	96	95	83
On 11 East entry at room 22	59	60	95	97	97
75 feet from end of pillars	63	65	90	90	97
B. 10 East	59	59½	97	100	94
On 11 West at 2 South entry	59	59½	97	100	94
Inside crosscut at 13 and 14	60	61	95	95	New station
East	61½	62	97	100	97
Return air near the fan...	61½	62	97	100	97

TABASCO MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
Outside	25	45	37	44
3 North and main slope	36	37	92	94
1 Dip of 2 South	58½	59	97	97
Inside crosscut 3 Dip of 2 South.....	59½	60	98	100
Inside crosscut 5 and 6 Plane of 2 South	55½	56	97	97
At bottom of slope	51½	52	97	New station
Inside crosscut 7 and 8 Dip of 2 South	60½	61	98	New station
Return air in airway	53	53	100	..

SOPRIS MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
Outside	22	36	68	36
Junction of 23 East and 2 South.....	64½	65	98	..
At room 32-22 East entry.....	64½	65	98	..
Return air from 20 East entry	63	64	95	..
150 feet from face of 20 East entry....	63	63½	97	..
At room 150, 18 East entry	61	61	100	..
At room 126, 16 East entry.....	61½	62	97	..
At room 119, 17 East entry return air near the fan	60	60½	97	..

The stations for reading the humidity have been changed from that of Summer Readings on account of air current.

FIRST NORTH PRIMERO MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
Outside .....	..	13	..	78
400 feet inside radiator	49	49	100	100
Main road and A-8.....	51	52	94	100
Main road and A-9.....	52	53	94	..
Near working face A-8.....	63	64	95	..
Near working face A-9.....	59	60	95	..
Return air near fan	63	63	100	100

FIRST WEST PRIMERO MINE

Locations	Wet Bulb	Dry Bulb	Winter Readings	Summer Readings
Outside .....	..	A-14	..	78
At 1st W. cut off.....	..	Below freezing	..	95
3 North at big fault	65	66	95	97
At bottom of A. 6 Northeast cut off....	55	57	89	100
250 feet from face of 2 North	62	63	95	97
Main slope and 3 North	51	51	83	97
Return air near fan	56	57	94	..

Radiators broken.

LIST SHOWING THE DIFFERENT NATIONALITIES AND NUMBER OF EACH EMPLOYED IN AND AROUND COAL MINES

English	4,045	Hungarians	189
Italians	2,444	Montenegrins	59
French	140	Swedes	65
Mexicans	1,173	Japanese	128
Austrian Croats.....	993	Belgians	21
Austrian Germans.....	533	Danes	6
Servians	72	Roumanians	40
Bulgarians	164	Macedonians	10
Russians	118	Armenians	5
Bohemians	24	Turks	2
Slavonians	376	Norwegians	1
Germans	234	Swiss	2
Greeks	581	Lithuanians	6
Poles	187		
Finlanders	47	Total	11,666

LIST OF FATAL ACCIDENTS WHICH OCCURRED IN AND AROUND THE COAL MINES OF COLORADO DURING THE YEAR 1915

January 4—Epifanio Ballon; Mexican; machine oiler; age, 22 years; employed by the Colorado Fuel & Iron Company at the Tabasco Washery, Las Animas County; was killed by being drawn into a gear wheel while oiling it. He had been instructed by the Washer Foreman not to oil that part of the machinery while it was in motion.

January 6—James Kilpatrick; Scotch; miner; age, 48 years; single; employed by the Grand Mesa Fuel Company at the Fairview Mine, Delta County; was killed by a fall of rock. The rock was surrounded by a slip and the Acting Foreman stated he had cautioned deceased the day prior to the accident, that the rock was loose. The accident was caused through the neglect of both the Mine Foreman and the deceased.

January 9—Albert Lucero; Mexican; miner; age, 27 years; single; employed by the Rocky Mountain Fuel Company at the Piedmont Mine, Las Animas County; was killed by a fall of rock. According to Dan Setzer, who was working with deceased, the latter had sounded the roof and found it loose. Setzer told him not to work, but deceased said he was going to fix the rails under the rock, and while doing so it fell and injured him so severely that he died a few hours later.

January 16—Mike Tamasi; Italian; miner; age, 35 years; single; employed by the Oakdale Coal Co. at the Oakdale Mine, Huerfano County; was killed by a fall of top coal. Deceased came on the shift the night the accident occurred. He was told that the roof below the entry pillar of 4th cross entry off the main entry 112, was breaking and preparing to fall all day, and that it was dangerous to go down to work on that part of the pillar, but deceased said he was boss on

the night shift and disregarding the caution and danger, went down to the lower end, where all the coal had been taken out, except the top coal. While he was working there the fall occurred which resulted in his death.

January 18—Adolph Kirch; German; miner; age, 16 years; employed by the Carbon Coal & Coke Co. at the Cokedale No. 2 Mine, Las Animas County; was killed by a fall of rock. Deceased was working with his father in room No. 5 off 8th E off 1st S, and it seems that the roof rock was bad close to the coal face and that the contractors, one of which was the father of the deceased, knocked out the props under this bad roof to allow it to fall, but some of this rock stuck. The father thought it safe, but there were two unseen slips surrounding this rock and while the boy was cleaning up the roadway, it fell on him, breaking his neck. The accident is classed as "Unavoidable."

January 26—Tony Sarach; Austrian; miner; age, 27 years; single; employed by the Victor-American Fuel Company at the Ravenwood Mine, Huerfano County; was killed by a fall of rock. This man was working alone driving a cross-cut through the pillar of room 13th of 1st W. entry. About 3 feet of brushing was hanging in front of the room roadway. No props were under this brushing rock and a slip ran across the road and along the left side of the cross-cut and made a junction with another slip close to the face of brushing rock on the roadway and while deceased was working in the cross-cut it fell and caused instant death.

January 30—Albert Seip; American; rope rider; married; two children; employed by the Yampa Valley Coal Company at the Yampa Valley No. 2 Mine, Routt County; was killed by a fall of rock. Deceased was in the act of gathering loaded cars. As he stepped into room 5 off the 2nd N. entry to see if there was a loaded car there, two pieces of rock fell from the roof. This rock had been observed for a couple of days and a Mr. Culp had tried on the morning of the 29th to take it down, using a pick and bar to do so. After he had worked on it for a while, he stopped. He could not get it down and considered it safe. On the morning of the 30th, he tested it again and it sounded hollow, but he did not notify any one as to the condition of the roof, although he made the usual mark with chalk, indicating that the roof was bad. This accident could have been avoided had the rock been taken down or made secure. Knowing the roof was bad the Mine Foreman should have seen that the rock was taken down.

February 2—Joe Kahna; Slav; miner; age, 20 years; single; employed by the Colorado Fuel & Iron Company at the Berwind Mine, Las Animas County; was killed by a fall of rock. Deceased was not aware this rock was surrounded by slips. A few minutes before it fell he had sounded it and it seemed all right. The place was timbered according to

agreement, but had the presence of this slip been known, the rock could have been made secure by two sets of timbers. The roof in the part of the mine where the accident occurred is considered good. Classed as an unforeseen accident.

February 3—W. M. Walker; Negro; machine contractor; age, 34 years; married; six children; and

J. C. Felthager; German; Mine Foreman; age, 49 years; married; two children; employed by the Colorado Fuel & Iron Company at the Walsen Mine, Huerfano County; were killed by three runaway cars. The deceased were on the 9th West entry. They heard a trip and thinking it was a runaway, ran down the slope, turning into the 9th East entry, where a loaded trip was standing. The latches were turned for the descending trip to enter this entry. Felthager was overtaken by runaway cars opposite the first loaded cars and thrown between the loaded and the empty tracks, dying a few minutes later. Walker was found 30 feet below Felthager on the opposite side of the empty track. Had the men remained where they were, or taken any other direction than the 9th East entry, they would not have lost their lives. Walker had no business on the slope; he came out to get supplies, which he should have secured from the electrician in the morning before entering the mine.

February 5—John Fischer or Rebich; Croatian; miner; age, 36 years; married; no children; employed by the Juanita Coal & Coke Company at the King Mine, Delta County; was injured by a fall of top coal and died Feb. 8th. Deceased was setting a prop when sudden subsidence of the overlying strata occurred, causing some bone and top coal to fall. From the evidence, it is a case of unavoidable accident.

February 11—Mike Reita; Hungarian; miner; age, 45 years; married; seven children; employed by the Oakdale Coal Company at the Oakdale Mine, Huerfano County; was killed by a fall of coal and rock. Two slips cut through the top coal and inclined towards each other, liberating the coal and rock. They were invisible to the deceased. This accident is classed as unavoidable from the fact that the place was well timbered.

February 13—Frank Petitti; Italian; miner; age, 37 years; single; employed by the Porter Fuel Company at the Hesperus Mine, La Plata County; was killed by a fall of rock. Deceased was working alone in room No. 3. At 11 a. m. the Mine Foreman visited his place and there was no eye-witness to the accident. When the employes were checked up prior to the Shot-firer starting to perform his duties, deceased was missing and a search disclosed him lying dead under a slab of rock in room No. 2, whereas he was employed in room No. 3. No one knows why he went into room No. 2. The Coroner's Jury rendered a verdict of "Unavoidable Accident."

March 2—Fred Gaddie; American; not employed; age, 22 years; single; was struck by a cage and fell down the shaft of the Farmers Mine, operated by John Wagner, in Weld County. Deceased was waiting to take a small load of coal away and while waiting to have it loaded, he went to the shaft and looked down and while leaning over, the cage came up and struck Gaddie, causing him to fall down the shaft and resulting in his death. He had no business there and should not have been around the shaft. He was not employed in any capacity, either in or about the mine. Not charged to industry.

March 4—John Bell; English; miner; age, 72 years; widower; three children; and

Stevo Mozrok; Austrian; miner; age, 30 years; married; one child; employed by Jas. Etchells, lessee at the Parkdale Mine, Weld County; killed by inhaling noxious gases. Deceased were working in 3rd West entry and decided to go to 1st West entry to pull pillars. This entry gave off noxious gases at intervals and a signboard warning all not to enter this entry was put up at this entrance. They disregarded this warning and proceeded on their way, when about 12 feet from the 1st cross-cut of the entry, they were overcome. They came to their death by their own carelessness.

March 4—Fred Kauser; Austrian; timberman; age, 41 years; married; five children; employed by the Colorado Fuel & Iron Company at the Primero Mine; was killed by a fall of coal. The mine was idle and the deceased had been sent to 1st N. W. Slope to put up some crossbars. He started to cut a seat in the bottom for an upright to set a crossbar on, when a piece of loose coal fell from the pillar or rib side. Had the deceased taken down the loose coal before starting to set timbers, the accident would have been avoided.

March 5—Vincent Trujillo; Mexican; miner; age, 46 years; married; eight children; employed by the Loma Fuel Company at the Loma Mine, Huerfano County; was killed by a fall of rock. The place where the accident occurred had been visited by the Mine Foreman and the rock fell at 2:20 p. m. It was released by a slip surrounding it on all sides. Had the rock been supported by a crossbar, the accident would have been avoided.

March 10—James Yabican; Japanese; miner; age, 36 years; single; employed by the Temple Fuel Company at the Brodhead No. 9 Mine, Las Animas County; was killed by a fall of rock. About 25 minutes prior to the accident the acting Mine Foreman visited the place where the accident occurred and considered the place well timbered.

March 12—Andy J. Ritz; American; laborer; age, 34 years; single; employed by the Colorado-Utah Coal Company at the Harris Mine, Routt County; was killed by falling off the

tipple. Deceased was returning from dinner and instead of going up the regular gangway provided for the employes, he traveled up a stairway and stepped on the stringers on the west side of the tipple, where the plank had been torn up. In some manner he fell through between the stringers to the ground, a distance of 31 feet. This accident could have been avoided had deceased followed the usual course set aside for the employes.

March 23—John Lucotich; Slav; miner; age, 43 years; married; three children; employed by the Primrose Coal Company at the Primrose Mine, Las Animas County; was killed by a trip of empty cars. No one saw the accident, although deceased was seen by William Geiser at the entrance of the mine and he thought Lucotich was intoxicated and urged him to go home. He had taken his identification check off the board, but the Mine Foreman admitted he did not see deceased enter the mine. He was found dead at a point of about 1,500 feet from the entrance. He entered the mine at 4:40 p. m. and was found at 7 p. m., showing that it had taken him two hours and twenty minutes to get to this point and something must have happened to him between the entrance of the mine and the point where he was struck. Most likely he was intoxicated and lost his bearings.

March 25—Nick Solas; Greek; miner; age, 38 years; married; five children; employed by the Moffat Coal Company at the Oak Hills No. 2 Mine, Routt County; was killed by being run over by a loaded car. Deceased had started to take a loaded car down an entry and in some manner slipped and fell in front of the car, the west front wheel passing over him and causing the car to jump the track, pinning deceased under it and causing instant death. It seems to have been the custom of the men to stand on the front end of the car to handle the brake. This, in my opinion, is a dangerous practice and the company was cautioned to discontinue it.

April 2—Klemmens Potenski; Russian; laborer; age, 29 years; single; employed by the Colorado Fuel & Iron Company at the Floresta Mine, Gunnison County; was killed by a fall of rock. About 45 minutes prior to the accident, the Mine Foreman visited the 6th West parting, where deceased was engaged in taking down loose rock and retimbering the place, and he had two temporary props set under the loose rock pending the permanent propping of the rock. While engaged preparing the timber, the rock fell and resulted in the death of Potenski. The accident was unavoidable.

April 6—Chris Koseff; Bulgarian; miner; age, 28 years; single; employed by the Rocky Mountain Fuel Company at the Rex No. 1 Mine, Boulder County; was killed by a fall of draw-slate. Deceased had tested the roof ten or fifteen minutes prior to the accident and found it unsafe, but he and his partner decided to put a prop under the rock instead of taking it

down, after they had loaded their car. Probably had this been done before loading the car, or the rock taken down, the accident would have been avoided.

May 2—Mike Spock; Austrian; machine helper; age, 28 years; single;

Mike Gretch; Slavonian; mine laborer; age, 57 years; married; two children; and

Stanley Smolski; Russian; miner; age, 45 years; married; five children; employed by the Mutual Coal Company at the Mutual Mine, Huerfano County; were suffocated from after-damp caused by a gas explosion. (See report of Mutual Mine Explosions.)

May 13—Samuel Pelusa; Italian; miner; age, 25 years; single; employed by the Victor-American Fuel Company at the Delagua Mine, Las Animas County; was killed by a fall of rock. The rock was four feet six inches long, four feet wide and 2 thick, which was a violation of method of timbering adopted. Had the place been properly timbered, the accident would not have occurred.

May 21—Tony Rocchio; Italian; timberman helper; age, 58 years; married; five children; employed by the Colorado Fuel & Iron Company at the Fremont Mine, Fremont County; was killed by a fall of rock. Deceased was taking his noon lunch in the 2nd south entry; while reclining against the rib the rock fell, causing instant death. Evidently deceased had neglected to examine the rock before sitting down.

May 22—James McSparron; Scotch; brattice man; age, 30 years; married; two children; employed by the Colorado Fuel & Iron Company at the Robinson Mine, Huerfano County; was killed by a fall of rock. Deceased removed a prop from under a pot, not thinking that the rock was loose. He was taking down old brattice and putting up new and in the course of this work he took down the prop which probably was in his way.

May 27—Guadalupe Pena; Mexican; miner; age, 32 years; married; two children; employed by the Colorado Fuel & Iron Company at the Rouse Mine, Huerfano County; was killed by a fall of bone and coal. Deceased and two other men were digging and unloading coal from the face and encountered a slip in the roof and the act of removing coal released the bone and coal from the slip and it fell, killing Pena instantly. There were sufficient props on hand. This accident is considered unavoidable.

June 5—Angelo Toller; Tyrolese; engineer; age, 41 years; married; three children; employed by the Cedar Hill Coal & Coke Company at the Toller Mine, Las Animas County; was killed by being crushed between a loaded car and rib side of roadway. On the day of the accident, deceased was acting as

pump man, on a pump, standing between 6th north and 7th south entries on Toller slope. While on his way to visit some miner at a point 500 feet from the pump he encountered two miners pushing a loaded car down the entry. They did not see deceased until within twelve feet distance from him and they were unable to stop the car. The road pitches five per cent in favor of the loads. Had Toller remained at his station the accident would have been avoided. There was a shelter hole eight feet away from him when he was overtaken.

June 30—Mike Kuren; Austrian; machine helper; age, 32 years; married; two children; employed by the Carbon Coal & Coke Company at the Cokedale Mine, Las Animas County; was killed by a fall of rock. The room in which the accident occurred was visited by the Mine Foreman at 8 a. m. and found in safe condition. The timbers were set to within five feet of the rib and where the fall occurred, seven feet. This distance was needed to sump the machine. The first cut-off the pillar was taken and one cut had been taken previously for a cross-cut. Then the machine was sumped and two sprags were set against the coal and the cutting to the face begun. It is the belief that when the cut was made to connect the cross-cut with the pillar, that the coal settled and caused the rock to give way from the slip in the roof. The accident is deemed unavoidable.

July 2—Andy Vogmement; Austrian; loader; age, 32 years; single;

Vince Smerkol; Austrian; miner; age, 52 years; single; and John Hurt; English; track layer; age, 41 years; single; employed by the South Canon Coal Company at the South Canon Mine, Garfield County; were killed by a motor trip being derailed. On the day of the accident the regular motorman was not working and the extra man not having as much experience as the regular one in handling the trip, when starting it up from the inside door bumped the cars ahead; the track being straight at this point it did not leave the track, but on approaching the curve to the left, the car swung to the right and derailed the trip. From the evidence at hand, no responsibility could be fixed. The accident was seemingly and purely accidental.

July 3—Jim Papadacio; Greek; miner; age, 30 years; employed by the Rocky Mountain Fuel Company at the Gorham Mine, Boulder County; was killed by a fall of roof, coal and slate. At the time of the accident, deceased and three other men were working in room pillar 24 in the 12th south, taking out the last lift on the pillar. The roof was working and while loading the 14th car, the cave took place. From evidence obtained, it appears that the accident could have been avoided had the place been timbered as the coal was taken out.

July 13—Clifford Rinker; American; loader; age, 33 years; single; employed by the Victor-American Fuel Company at the

Hastings Mine, Las Animas County; was killed by a fall of rock. On the morning of the accident, John Sliger, contractor, had examined the place where the deceased was working, but did not go down close enough to the coal face where the fall occurred and, therefore, did not ascertain its condition. While loading coal back from the face, the rock fell. Had this rock been taken down or had been made safe with props, the accident would not have occurred.

July 19—Thomas Davis; American; rope-rider; age, 33 years; single; employed by the Yampa Valley Coal Company at Yampa Valley Mine No. 1, in Routt County; was killed by being squeezed between a pitcar and snowshed. Deceased was taking a trip of empty cars from the knuckle into Yampa No. 1 mine. The trip had not gone far before the first two cars got off at the latches. The distance from these latches to the entrance of the mine is about forty feet. The first two cars tumbled off east of the track and the next four west of the track. The last car remained on the track. When the cars went off the track, deceased stepped off on the west side and away from the bell wire. On the bell wire side the clearance is from 10 to 12 feet wide. On the opposite side, where deceased was caught by cars and rolled between pitcar and shed, the clearance is about 2 to 3½ feet.

July 27—Claude Bryson; American; machine runner; age, 24 years; single; employed by the Colorado Fuel & Iron Company at the Robinson Mine, Huerfano County; was killed by a fall of rock from the roof. Deceased and his partner, O. B. Hawthorne, were undercutting room 1 off the 1st South entry. The latter had gone out to get some sharp bits for the machine; upon his return he found Bryson under a fall of rock. He was dead when Hawthorne got him from under it. Hawthorne stated at the inquest that he and Bryson started to work in coal mines about a year ago and that they did not make it a practice to examine the roof regularly. On the day of the accident they had not examined the roof. The Mine Foreman stated that he did not detect any danger at the time of his visit. From evidence obtained, the accident was due to carelessness and inexperience.

August 2—Frank Rinna; Italian; oven charger; age, 19 years; single; employed by the Colorado Fuel & Iron Company at the Sopris Coke Ovens. Deceased was a mule driver on top of the ovens and also charged the ovens with fine coal from the washer. He had emptied two cars into the ovens and was returning to reload the cars when from some unknown cause he fell in front of the 1st car, which ran over him, throwing the car off the track. He received such injuries that he died a few minutes after the accident. It is supposed that deceased got off the car to whip the lead mule and in getting back on the front car, he fell over in front of it.

August 6—Joe Matioda; Italian; miner; age, 42 years; married and four children; employed by the Victor-American Fuel Company at the Ravenwood Mine, Huerfano County; killed by a fall of rock. Deceased worked alone in 9 north entry off 2nd west entry. The Mine Foreman stated that at the time of his visit, the room was in a reasonably safe condition. From the time he left until the accident occurred, considerable over a car of coal was mined from the face, and released a slip in the roof. It is very hard to detect a slip in the roof. Deceased was considered a careful and practical miner. From personal observation and from information obtained, it is apparent that no one was to blame for the accident.

August 9—Luigi Cardinali; Italian; miner; age, 34 years; married; six children; and

Nick Martin; Austrian; miner, age, 28 years; single; were employed by the Colorado Fuel & Iron Company at the Primero Mine, Las Animas County; were killed by a fall of coal. The deceased were working at the face of room 8, off the 1st south entry turned off the 11th west entry of the east side of the mine, when a large piece of coal fell suddenly, killing them both. They had mined into a smooth slip without detecting it. The Fire Boss stated that when he was making his rounds that morning, he saw that there were two sprags under the coal, one against the loose coal and the other in the center. The accident may be deemed unavoidable.

August 9—Harry Martin; Welsh; timberman; age, 41 years, single; employed by the Carbon Coal & Coke Company at the Cokedale No. 2 Mine, Las Animas County; was killed by a fall of rock. Deceased was cautioned that a loose rock was hanging on the side of the slant roadway between 9th and 10th East entries and was dangerous. Instead of either pulling it down at once or setting up a temporary prop until he could set a proper set of timbers, he began to cut out a place for a leg or upright for a set of timbers to be put up against the rock which was hanging over him. He may have weakened the part that was supporting the loose rock by cutting on the side of the rib, causing it to fall. There was a supply of timber on hand to make the place safe. Had deceased secured the rock or made it secure before starting to work, the accident would have been avoided.

August 12—Thomas John; Welsh; Fire Boss; age, 26 years; single; employed by the Garfield Mine Leasing Company at the Vulcan Mine, Garfield County; met his death by being electrocuted. Deceased was acting as Shot-firer for the night shift. He had made the connection with the lighting circuit. There was a break in the shot-firing wires at 6-B rooms, and when he put in the switch the shots missed. He

sought to correct the trouble without taking out the switch to open the circuit. There was a jumper or short wire across from the electric light wires to the shot-firing wires just outside 6-B room. He was found 50 feet in by where the connection was made with the live wire in his left hand. This was against the rules, as all shots are to be fired from the outside after all the men are out of the mine. The deceased was responsible for the accident, due to carelessness and violation of the rules, as all shots are fired by an independent electric battery from the surface.

August 23—Adam Cimila: Austrian; miner; age 31 years; married; three children (step-children); employed by the Royal Fuel Company at the Royal Mine, Las Animas County; was injured by a fall of rock on the 22nd of August and died on the 23rd. At the point where the accident occurred draw-slate is encountered. Deceased and his partner, Max Cechel, were taking coal off the upper or left rib about 30 feet from the main slope on the 3rd south entry. Deceased was ordered to take down the draw-slate when taking the skip off the rib. At this particular point the draw-slate seemed to stick to the main roof, but deceased failed to take the rock down and instead began to work under it. For some unknown reason the rock liberated itself from the roof and fell with the aforesaid result. Deceased should have set props under the rock to make it safe when he failed to get it down.

August 30—Richard D. Murray; Scotch; miner; age, 35 years; single; employed by the Aztez Coal Mining Company at the Toltec Mine, Huerfano County; was electrocuted. Murray was acting temporarily as machine helper and the machine runner, Thos. Campbell, had five or six years' experience as such. On the day of the accident, Campbell and deceased had done some under cutting and were loading the machine on the truck with the power. The cable was partly under the truck and had become jammed between the rail and chain on the pan of the truck. The weight was so great that it cut the insulation and caused the wire to become defective and charge the truck with electricity. Murray was on the truck and received the full shock. Campbell ran to his rescue and also received a shock. In the meantime the circuit breaker on the surface was discharged and cut off the power. Campbell was able to get to the phone and call for assistance. When it arrived Murray was dead. The voltage was about 440 at the machine, A. C. current. Had the cable been kept in the clear and not been permitted to coil up under the truck, so that it was jammed or run over by the wheels of the truck, the accident might have been avoided.

September 3—Lucas Lopez; Mexican; driver; age, 20 years; single; employed by the Colorado Fuel & Iron Company at the Cameron Mine, Huerfano County; was killed by a fall of

rock. The place where deceased met his death had been examined by the Fire Boss six hours prior to the accident, and he stated that he had not detected any danger at any time. The accident may be classed as "unavoidable."

September 10—Robert Frew; Scotch; miner; age, 37 years; single; employed by the Colorado Fuel & Iron Company at the Coal Creek Mine, Fremont County; was injured by a fall of rock on the 7th and died on the 10th. The deceased evidently had observed that the rock under which he was working was loose and he began to take down the coal that stuck to it, preparatory to setting a prop. However, in taking down this top coal he displaced a prop, in consequence of which the rock fell. The timbering in the room was in accordance with agreement as to maximum distance, but it would seem that when a defect was discovered between props, a temporary prop should have been set up while taking down the coal which was adhering to the rock. Had this been done the accident would probably have been avoided.

September 17—Claude D. Pfeffer; American; coal inspector; age, 22 years; married; no children; employed by the Colorado Fuel & Iron Company at the Walsen Mine, Huerfano County; had his hand cut by it being caught between apron and timber of chute. Pfeffer was coal inspector on the tippie. A car of rock had been dumped into the mine-run chute and the latter had become clogged. Pfeffer was in the act of releasing the rock which clogged the chute when one of the other employes pulled a lever to shake the apron and caught Pfeffer's hand. However, this injury was not serious until a blood infection set in and caused death. He removed bandages contrary to the doctor's orders and when the latter called and remonstrated, Pfeffer said he could take care of himself.

September 27—Harry Stamos; Greek; miner; age, 31 years; single; and

Mike Koukos; Greek; miner; age, 21 years; married; no children; employed by the Colorado Fuel & Iron Company at the Walsen Mine, Huerfano County; were killed by a fall of rock. The place where they were killed had been examined by the Mine Foreman and Fire Boss the afternoon previous and both considered the place well timbered and detected no loose rock. The rock which fell was of such large dimensions that it was not easy to detect the slip that loosened it. The pot was over the roadway and a prop was set under it at each end of the roadway. One of the deceased was taking coal down at the face with a pick and thus released the other end of the slip and it fell, dislodging the timber under it and resulted in the death of the two men.

October 2—Charles F. Thompson; American; timberman; age, 28 years; single; employed by the Colorado Fuel & Iron Com-

pany at the Primero Mine, Las Animas County; was killed by a fall of rock. Deceased and his helper, Dan Lueras, were in the act of taking out an old set of timbers to put in a new set. The Mine Foreman had instructed the men to put in the new set before taking out the old set, but they failed to comply and the result was that the overhanging rock not being held in place while the change was being made, it fell on Thompson and injured him to such an extent that he died five hours afterward.

October 5—Nick Saneff; Bulgarian; miner; age, 27 years; married; one child; employed by the Oakdale Coal Company at the Oakdale Mine, Huerfano County; was killed by a fall of top coal and bone. Deceased and his partner, Steve Boneff, were gathering their tools preparatory to quitting work for the day. They were in the roadway about 25 feet from the face. From the evidence, it is apparent that a sudden subsidence of the overlying strata occurred and caused the fall. The timber along the track was about 21½ feet apart with good caps over them. The coal fell out between props and ribs; therefore, it is probable that if crossbars had been used the accident would have been avoided. There was a good supply of timbers on hand.

October 19—Phele Gabrun; Russian; timberman helper; age, 27 years; single; employed by the Gordon Coal Company at the Gordon Mine, Huerfano County; was electrocuted. Deceased went to help Jack Kornick in cleaning a ditch in the back slope. He passed under a power line through a space of 3 by 2 feet; the wire at this point is 3 feet from the floor and the distance between prop and rib is 2 feet. The power line is anchored to the prop. The space from anchor post to next prop is four feet and the wire is four feet from the floor. The wire where he came in contact with it is bare of insulation and is used to make connections with the machine cable. The accident was probably caused by deceased's own carelessness.

October 27—Frank Obloch—Austrian; Fire Boss; age, 56 years; married; two children (wife in Donowitz, Austria); employed by the Colorado Fuel & Iron Company at the Spring Gulch Mine, Pitkin County; was injured by falling down a chute. Deceased was firing shots when the accident occurred. His tamping bar was found leaning against chute 75 feet below air course. Apparently he had all the shots lit and went back to fire them in the cross-cut off room No. 7 and coming back he stepped on the flat sheet and went down the chute which was empty to the battery. He was found at this point in an unconscious condition. His skull was fractured and his brain lacerated. He never regained consciousness and died on the 27th of October.

October 28—Louis Trujillo; Mexican; miner; age, 41 years; married; five children; employed by the Ideal Fuel Company at the Jewel Mine, Las Animas County; was killed by a fall of rock. In that part of the mine where the accident occurred the roof has a tendency to scale off, and while the place was well timbered, the particular point where the fall occurred, however, was not; the distance of the timber from the face was about 6 or 7 feet, while further along where the cut was not yet removed the timber was set $2\frac{1}{2}$ feet from the face. Therefore, it is probable that two additional props placed where the coal was removed might have prevented the accident.

October 31—Peter Di Giacomo; Italian; miner; age, 50 years; married; four children; employed by the Colorado Fuel & Iron Company at the Berwind Mine, Las Animas County; was injured on October 22nd and died October 31st. Deceased was injured by a fall of top coal while working night shift with his partner, Frank Morelli. The latter stated that they had loaded four cars of coal from the pillar which they were taking down and hony or top coal was hanging on the roof 2 feet back from the coal face. The deceased was loading another car under the overhanging top coal when it liberated itself by its own weight and assisted by a slip close to the coal face and fell on him, causing such injuries that he died as above stated. The slip may have been invisible, but the instructions given by the foreman were to always take down the top coal without delay. This order apparently was not heeded.

There were no fatal accidents in the month of November. A man was injured at the Ravenwood Mine on the 18th of November, but he did not die until December 2, 1915.

December 2—C. Kikuchi; Japanese; miner; age, 30 years; single; employed by the Victor-American Fuel Company at the Ravenwood Mine, Huerfano County; was injured by a fall of rock November 18th and died on the above date. From evidence obtained, it appears that the accident was unavoidable. The place was well timbered, holding up draw-slate, which, at the point where the fall occurred, was 16 inches thick. A streak of bone is below this draw-slate to which coal adheres and obscures any slip that may occur. The draw-slate fell out between the rib and props and broke over the prop. At the time, the injuries Kikuchi received were not considered serious; however, they proved to be fracture of the pelvis and internal injuries.

December 2—Christ Callas; Greek; driver; age, 26 years; single; employed by the Rocky Mountain Fuel Company at the Gorham Mine, Boulder County; was killed by being squeezed between a car, roof and rib. The deceased was working on the third east blind parting on the slope and was in the act of taking two empty cars from the parting. On top of the

cars were 14 or 15 rails of different lengths, lapping over the front end of the car from two to four feet. The point where the accident occurred the parting is very narrow, being about seven feet and from the side of the car to the rib only twelve inches. Owing to the fact that the rails were extending so far out in front and not being able to stand on the top of the car, he hung on the side of the car and front. In this manner, his body became wedged in between the top of the car and the roof, resulting in his death. This accident could have been avoided had there been the proper clearance stipulated by law, or if the deceased had been careful in placing the rails further back on the cars so that he could have stood in the clear on the front end of the car.

December 3—Sam Petticoff; Bulgarian; miner; age, 26 years; married; three children; employed by the Rocky Mountain Fuel Company at the Rex No. 1 Mine, Boulder County; was killed by a fall of rock. This man had worked in coal mines only four months and he and his partner, Mike Angeloff, were employed by a contractor to load coal. When they came in on Saturday morning to work they found a small fall of dirt and coal. The contractor told them to clean it up and timber the place to make it safe as the roof sounded "drummy." They finished this work about 3:30 p. m. and they started to clean up the track, loading car with dirt, when a fall of rock came from the roof, dislodging all the timber which they had previously put up. The contractor had visited them at noon to see how they were getting on. This accident could have been avoided had the timbers been securely wedged. This work could have been done by more experienced men, as deceased and his partner had very little experience in putting up cross bars and the lagging of same.

December 29—Bertrand S. Stiles; American; miner; age, 35 years; single; employed by the Book Cliff Railroad Company at the Book Cliff Mine, Mesa County; was killed by a fall of rock. Deceased had started to work on the above date. The Mine Foreman had taken him to the place where the accident occurred and instructed him that before loading a car to set a prop and take down the slate that had been drawn by a previous shot. Deceased evidently tried to do this, but as the slate was hard he began instead to work out some coal from under it, with the result that it brought down the rock, killing him instantly. Both the foreman and the deceased were careless; the former in not seeing that his instructions were carried out and the latter in not obeying.

December 30—Joe Danjinovich; Austrian; miner; age, 25 years; married; no record of children; employed by the Primrose Coal Company at the Primrose Mine, Las Animas County; was killed by a fall of rock. Deceased was working on a

slope pillar and from evidence obtained the place was well timbered and a good supply of timber was on hand. The roof is strong and the timber was within five or six feet from the face. The rock fell from a pot slip in the roof which would have required a very close examination to detect, and, therefore, the accident was purely accidental.

December 30—Sakujiro Nakashima; Japanese; miner; age, 33 years; married; no record of children; employed by the Oakdale Coal Company at the Oakdale Mine, Huerfano County; was killed by a fall of top coal. Deceased was working in the pillars of room No. 14 and from evidence obtained, the place was well timbered and a good supply of timbers at hand. The Mine Foreman had visited the place about thirteen hours prior to the accident and found it in good order. The accident was pronounced as unavoidable by the jury holding an inquest over the body.

FOOT NOTE—John Bell and Stevo Mozrok, who were suffocated in the Parkdale Mine, March 4th, were using carbide lamps, which continued to burn at a distance of eighteen inches from the floor at the point where the bodies were found. Had they used oil lamps, the accident in all probability would not have happened, as the lights would have gone out before reaching the fatal atmosphere.

May 10, 1915.

HON. GEORGE A. CARLSON,
Governor of the State of Colorado,
Capitol Building, Denver.

Dear Sir: Herewith, I beg to submit to you my report covering the findings of my investigation of the Mutual explosion, which occurred May 2, 1915, at 1:15 p. m.

Accompanied by Deputy Inspector F. N. Oberding, I arrived at the scene of the explosion on the morning of the 3rd, about 8 o'clock, to make an examination to ascertain the probable cause of the explosion in which two men lost their lives and two were injured, one seriously, if not fatally.

LOCATION OF MINE

The Mutual mine is located two miles west of Walsenburg on the D. & R. G. R. R. It is owned and operated by the Mutual Coal Company. Mr. S. S. Murphy of Denver, Colo., is President; C. A. Balliet, Superintendent and Acting Mine Foreman, and Chas. Wommer, Fire Boss.

DESCRIPTION OF MINE

The mine is operated through two shafts about 500 feet in depth. The seam being operated is known as the Walsen Seam,

6½ feet in thickness. The coal is of the non-coking, bituminous variety. The main shaft is the intake and the mine is ventilated by a 5 x 16 feet Crawford & McCrimmon double port of entry fan, directly connected and operating as an exhaust at the time of the explosion. On March 19, 1915, the date of the last inspection of the mine, made by F. N. Oberding, the fan was running at 45 revolutions per minute.

The following are the air measurements taken on that date:

Main intake, 40,000 cu. ft. per minute.

Last crosscut between 1st and 2nd North entries, 3,360 cu. ft.

Last crosscut Main N. entries, 23,200 cu. ft.

Upon this date a recommendation was made to increase the volume of air in the 1st and 2nd North East entries by constructing an overcast at 1st East.

DESCRIPTION OF UNDERGROUND WORKINGS

The workings consist of two North entries 600 feet in length. Two East entries 350 feet in length with six rooms off each, ranging from 8 to 100 feet long.

EXAMINATION OF MINE AND OFFICIAL RECORDS

After taking the revolutions of the fan, a thorough examination of the mine was made. All records were found to have been recorded up to date. Fan running 50 revolutions per minute.

Main intakes shows 24,050 cu. ft. of air traveling per minute; entrance to 1st East, 13,820 cu. ft.; last crosscut 1st and 2nd East, 3,000 cu. ft. The overcast recommended in former inspection was in course of construction.

The only indication of flame was found in the East entries and in the necks of some of the rooms off same.

These entries are driven to the rise on a three per cent grade. All places appeared to have been regularly marked with chalk by the examining Fire Boss. This tends to show that he had visited and examined them as required to do by law.

C. A. Balliet, Superintendent and Mine Foreman, stated that he visited the faces of the East entries about an hour before the explosion to find if there was any fire-damp, using a Wolf lamp, and that he found about six inches of fire-damp at the face of 2nd East entry and the 1st East entry he found clear.

He also stated that at the time the explosion occurred the crosscut between the main intake and return, opposite the 1st East entry, where an overcast was under construction, had an opening of about 27 feet, which had been made to allow the removal of rock shot down, when making room for overcast on to the main entry.

When asked how long this opening had existed, said it was open all the previous day, but was closed at night, and reopened Sunday morning when men went to work.

I again examined the mine on the 4th and after examining the East entries, had an opening of 27 feet made in crosscut opposite 1st East, where overcast was under construction, and at the expiration of one hour again examined the East workings to determine approximately the amount of gas being given off, to ascertain to what extent the opening in crosscut had interfered with the ventilation of the East workings. The following are the results obtained:

1st East room 1, 2, 5, 6, clear; in room 3, 16 inches of gas in cavity in roof at face; room 4 had 4 inches of gas at face of room; the entry clear. 2nd East entry had 18 inches of gas 4 feet from face; room 6 had 30 inches of gas at face; this latter room is advanced about 8 feet from entry; room 5 and on entry at this point had only a trace; rooms 4, 3, 2 and 1, clear.

AIR MEASUREMENTS TAKEN DURING THIS EXAMINATION

At entrance to 1st East, 4,095 cu. ft. per minute.

Last crosscut between 1st and 2nd East, 1,050 cu. ft. per minute.

There were five men in the mine at the time explosion occurred:

William Coleman, employed in main North entry, preparing for overcast. He was injured but not seriously.

Mike Smolski, employed on main entry at entrance to 1st East, loading rock; very seriously injured.

Mike Gretch, unloading rock in room 1st East; suffocated by after-damp.

Mike Spack, repairing coal cutting machine, 90 feet from face of 1st East entry. Body found at face of room 3, 1st East. Died from burns and suffocation.

Chas. J. Wommer, Fire Boss, turning power on to electric pump; not injured. Very little damage was done to property.

C. A. Balliet and Chas. Wommer are both Certified Officials.

Balliet holding a Mine Examiner's Certificate, and Wommer a First Class Mine Foreman's Certificate; both issued by the Examining Board of the State of Colorado.

CONCLUSION

I believe the explosion to be a gas explosion caused by an accumulation of fire-damp in the East workings and that it was ignited by Mike Spack, who was repairing a coal cutting machine standing in slant 90 feet from face of East entries.

This man had a Wolfe and a carbide lamp, which were found with his cap 45 feet outside of where he was supposed to be working.

The accumulation of gas was due to the air being short circuited at crosscut between main intake and main return oppo-

site 1st East entry, the Superintendent and Fire Boss being responsible for the condition.

It appears that the opening in said crosscut had been there continuously for several days and nights prior to the explosion and that the East workings had not been examined for several days prior to the explosion either by the Fire Boss or Mine Foreman.

MY OPINION IS BASED ON THE FOLLOWING FACTS

There had been no coal mined since the 12th of April, nor had any fall taken place so that nothing had been done nor nothing happened tending to liberate any feeder of gas.

On my second examination, I had the air short circuited at the same point and to the same extent that it had been at the time of the explosion, allowing an hour, which was the same length of time the Mine Foreman claimed he examined the face of the East entries until the explosion occurred. At the expiration of this time a third examination of the East workings was made, with the result that the accumulation of gas during this time was very small and not sufficient to cause loss of life, where dust took no part as in this case.

The mine is very damp in all parts and under such conditions chalk marks soon lose their freshness.

The chalk marks referred to in this report which were supposedly placed there on the 1st, 2nd and 3rd inst., had the appearance of having all been made at the same time.

Very respectfully yours,

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

List of Certified men who qualified by examination before the State Board of Examiners for Mine Officials in the years 1913-1915:

MINE EXAMINERS AND MINE FOREMEN HOLDING CERTIFICATES ISSUED IN THE YEAR 1913

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Ball, Joseph, Walsenburg.....	22	Morgan, W. L., Oakview.....	102
Bell, J. W., Denver.....	252	Morgan, Wm., Sopris.....	104
Burnham, George, Cokedale.....	50	Nichol, Robert, Trinidad.....	13
Cavenaugh, James, Hastings.....	260	Oliver, Albert E., Broomfield.....	227
Cockburn, Ed., Kimball, W. Va.....	208	Pritchard, D. O., Aguilar.....	250
Curry, Robert, Walsenburg.....	89	Randack, J. F., Hastings.....	216
Dalrymple, Robert, Baldwin.....	244	Reese, David H., Hastings.....	215
Davis, Abraham, Sopris.....	218	Robinson, Alex H., Gulch.....	257
Davis, Dan, Sopris.....	219	Ross, Robert, Bowen.....	221
Dean, Samuel, Delagua.....	174	Sampson, John M., Primero.....	234
Douglas, Peter R., Segundo.....	196	Scott, Robert T., Delagua.....	243
Easton, W. A., Valdez.....	112	Smith, Joseph, Trinidad.....	160
Gibby, T. J., Newcastle.....	223	Smith, George H., Berwind.....	199
Harrison, J. L., Primero.....	233	Sommerville, Mathew E., Chandler.....	212
Haske, Joseph, Primero.....	173	Thomas, David, Morley.....	149
Husband, R. S., Louisville.....	188	Thomas, J. P., Trinidad.....	159
Jennings, Robert E., Delagua.....	249	Thomas, W. J., Chandler.....	191
Jolly, Archie, Walsen, via Walsenburg.....	100	Warburton, Thomas, Primero.....	232
Kilpatrick, Jas., Tabasco.....	52	Williams, Morgan, Trinidad.....	242
Mathias, Joseph, Williamsburg.....	31	Wilson, James, Morley.....	165
McAllister, Robert, Trinidad.....	156	Williams, David, Hastings.....	217
McKenna, Miles, Strong.....	214	Williams, Mathew, Berwind.....	200
McIntosh, Henry, Delagua.....	209	Wood, P. G., Trinidad.....	201
McBirnle, Alex M., Hastings.....	261	Young, J. B., Coal Creek.....	161
		Zook, Ira D., Shumway.....	73

Note: This department is desirous of having a roster of certified men employed in official capacities, and segregate them from the eligible list of certified men who are waiting an opportunity to fill such positions. We take this means of asking all certified men to register their names and addresses with this office and state whether they are employed in any position they qualified for. This information will enable us to secure a list of eligible men not employed to recommend to the operators of coal mines needing the services of such certified men.

FIRST CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING THE YEAR 1913

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Aitken, David, Lester.....	39	Bryden, Jas. W., Cokedale.....	22½
Allander, Alex., Walsenburg.....	185	Burns, John H., Sopris.....	263
Andrews, Samuel, Morley.....	94	Campbell, J. E., Pictou.....	16
Aters, J. W., Forbes.....	267	Caretta, Louis A., Aguilar.....	43
Ayers, S. J., Wootton.....	116	Chambers, Chas., Sopris.....	146
Beach, Ben, Coal Creek.....	25	Davidson, John C., Tercio.....	12
Bertolina, Battista, Hastings.....	65	Davis, Wm. J., Williamsburg.....	77
Bevan, John, Delagua.....	139	Deldosse, John, Sopris.....	106
Bickerton, Richard, Tollerburg.....	35	Douglas, John, Walsen.....	114
Bisch, Roy, Higgins.....	95	Getchell, Wm. S., Morley.....	155
Bowen, J. F., Tabasco.....	98	Godfrey, John, Williamsburg.....	3
Britton, T. S., Oakview.....	32	Grant, Chas., Rockvale.....	18
Brown, Thomas, Lester.....	36	Griffith, David, Canon City.....	40
Brown, Mark, Cokedale.....	24	Gross, Peter, Starkville.....	225

FIRST CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING THE YEAR 1913—Continued

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Haddow, John, Rouse.....	96	Nallon, Patrick J., Pictou.....	108
Hallas, Ernest, Delagua.....	122	Neesham, W. T., Rugby.....	75
Head, Ernest, Maitland.....	220	O'Neil, James, Valdez.....	158
Hodge, Andrew, Cokedale.....	47	O'Neil, Charles, Tabasco.....	103
Hooper, Richard H., Pryor.....	90	O'Neil, James, Ludlow.....	56
Hoss, John, Walsenburg.....	59	O'Neil, Robert, Aguilar.....	105
Hoss, William H., Walsenburg.....	211	Parker, G. B., Valdez.....	182
Humble, Adam, Walsenburg.....	95½	Poli, Ralph, Walsenburg.....	42
Jamieson, James F., Floresta.....	153	Pritchard, Jas., Trinidad.....	147
Jolly, Thomas, Gray Creek.....	267	Pitchard, William, Trinidad.....	38
Jones, R. C., Oak Creek.....	170	Roberts, Thomas, Primero.....	71
Jones, T. D., Cokedale.....	45	Ryan, James, Pryor.....	93
Jones, W. K., Rockvale.....	20	Scott, Samuel, Sopris.....	178
John, Harry, Rockvale.....	4	Shaw, John, Tabasco.....	37
Johns, Thomas, Starkville.....	120	Shaw, William, Sopris.....	262
Lewis, Mozart, Chandler.....	61	Sinckerson, John, Starkville.....	163
Long, Wm. H., Perins.....	72	Templeman, John, Walsen.....	167
Marshall, Alex, Farr.....	113	Thomas, B. F., Pictou.....	228
Mathews, James, Tloga.....	172	Tyson, W. J., Ideal.....	2
Mathias, Joseph, Williamsburg.....	31	Urfer, W. F., Primero.....	137
Miller, David, Walsen.....	82	Vallely, Patrick, Rugby.....	21
Miller, Frank Lewis, Trinidad.....	198	Wennberg, John, Hastings.....	84
Morgan, Zacharia, Sopris.....	101	West, William, Delagua.....	126
Muir, David H., Walsen.....	76	Westwater, Peter, Canon City.....	63
Murray, W. F., Trinidad.....	266	Williams, J. B., Canon City.....	30
McCaskil, James, Rugby.....	7	Williams, John C., Forbes.....	248
McGinnis, C. D., Morley.....	79	Williams, J. S., Sopris.....	55
McLaughlin, Jas. E., Trinidad.....	145	Williams, Morgan, Cokedale.....	48
McLaughlin, Thomas, Rugby.....	166	Young, Robert, Walsenburg.....	58
McNally, James, Berwind.....	57	Young, Andrew, Canon City.....	251
McQuade, John P., Walsenburg.....	46		

FIRST CLASS ASSISTANT MINE FOREMEN HOLDING CERTIFICATES ISSUED IN 1913

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Arthur, Reese, Rockvale.....	17	Manifold, Leonard, Valdez.....	135
Cameron, P. G., Bowen.....	207	McKeown, Patrick, Walsenburg.....	121
Collier, T. L., Williamsburg.....	202	O'Donnell, John, Starkville.....	133
Cunningham, James, Bowen.....	9	Pette, Archie W., Tollerburg.....	204
Duffy, Peter, Rouse.....	97	Price, David, Oakview.....	63
Hansen, David L., Coal Creek.....	25	Ray, William, Rouse.....	203
Marshall, Robert A., Farr.....	231	Urquhart, D. A., Gray Creek.....	246

FIRE BOSSES HOLDING CERTIFICATES ISSUED DURING THE YEAR 1913

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Anderson, James, Aguilar.....	88	McClusky, John, Starkville.....	118
Barfoot, Thomas, Starkville.....	119	McPhail, Thomas, Trinidad.....	60
Batter, Valentine, Tabasco.....	67	Nelson, John, Walsenburg.....	75
Boldini, Andrew, Wootton.....	141	Oss, Leo, Tollerburg.....	19
Boyd, Joe, Delagua.....	125	Price, W. D., Pictou.....	110
Burk, John, Walsen.....	81	Ray, William, Rouse.....	99
Cristel, Vigilio, Sopris.....	237	Reese, David, Terco.....	159
Davis, Thomas, Sopris.....	136	Rice, John, Delagua.....	123
Davis, David, Starkville.....	134	Segna, Candido, Sopris.....	175
Davis, Thomas, Rockvale.....	6	Shaw, Herbert, Sopris.....	107
Durkin, James, Walsenburg.....	53	Smith, Wm., Ravenwood.....	92
Felthager, J. C., Walsen.....	71	Spallina, Frank, Delagua.....	121
Froman, Sebastian, Morley.....	152	Struthers, Thomas, Wootton.....	197
Hamilton, And. K., Starkville.....	117	Turner, George H., Valdez.....	115
Jenkins, John, Pictou.....	111	Watson, Charles, Walsenburg.....	132
Lloyd, Reese, Gray Creek.....	268	Wylle, Jess M., Oakview.....	15
Lloyd, W. P., Chandler.....	68	Zanotelli, Oliver, Sopris.....	127
Myers, E. H., Ideal.....	128		

SECOND CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name and Address	No. of Certificate
Barnes, Hal, Trinidad.....	256
Barron, T. W., Valdez.....	154
Bell, Richard T., Walsenburg.....	132
Blyth, Thomas, Williamsburg.....	83
Brennan, Martin, Walsenburg.....	5
Brown, Wm. N., Rugby.....	70
Bubb, H. H., Cokedale.....	240
Campbell, D. O., Berwind.....	210
Campbell, W. S., Walsenburg.....	184
Dalby, J. H., Majestic.....	11
Dalby, James R., Majestic.....	162
Davis, T. P., Walsenburg.....	171
Douglas, L. R., Trinidad.....	258
Dunlavey, F. S., Hastings.....	257
Evans, Richard, Coal Creek.....	189
Hanes, J. E., Hastings.....	259
Jeffryes, Albert G., Trinidad.....	164

Name and Address	No. of Certificate
Jones, Gwillyn, Delagua.....	229
Kaiser, Chas. H., Farr.....	183
Lunney, Ambrose, Trinidad.....	151
McDermott, Frank, Ludlow.....	247
McDowell, James G., Ojo.....	129
Mellinger, Irving, Rugby.....	29
Miller, John, Pryor.....	142
Mitchell, Daniel, Walsen.....	84
Murray, James S., Walsenburg.....	44
O'Neil, C. P., Tioga.....	14
Peet, Chas. H., Walsenburg.....	41
Roberts, Idris, Canon City.....	186
Roberts, Thomas, Canon City.....	187
Smith, Harry, Aguilar.....	61
Sherman, Edgar, Trinidad.....	253
Tomaselli, Frank, Wootton.....	143
Wagstaff, Eph, Bowen.....	62

ASSISTANT SECOND CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED DURING YEAR 1913

Name and Address	No. of Certificate
Baione, Ettone, Oakview.....	33
Lepenske, Joe, Walsenburg.....	78
Lowe, Robert, Bowen.....	8
Robertson, Henry, Rouse.....	206

Name and Address	No. of Certificate
Smirsich, John, Berwind.....	34
Smith, L. O., Ideal.....	10
Tantrum, Thomas, Chandler.....	69
Templeman, Robert, Walsenburg.....	109

MINE EXAMINERS AND MINE FOREMEN HOLDING CERTIFICATES ISSUED IN THE YEAR 1915

Name and Address	No. of Certificate
Adamson, W. H., Denver.....	634
Allen, David, Lafayette.....	519
Anderson, James, Cameo.....	292
Beer, W. J., Pyrolite.....	344
Bennett, James B., Colo. Springs.....	499
Bevan, John, Colorado Springs.....	505
Billington, Chas. M., Lafayette.....	592
Brooks, Alex. J., Lafayette.....	561
Cameron, James, Hastings.....	491
Collier, T. Isaac, Williamsburg.....	321
Cook, O. C., Trinidad.....	643
Dalrymple, James, Denver.....	644
Dalrymple, James, Jr., Newcastle.....	269
Davis, Joseph P., Newcastle.....	276
Denman, Henry, Palisade.....	602
Featherstone, John G., Baldwin.....	307
Frodsham, Vincent, Canon City.....	326
Graham, Jas. W., Lafayette.....	647
Griffiths, D. J., Trinidad.....	489
Griffith, I. W., Lafayette.....	591
James, Wm. H., Cokedale.....	436
Jones, Harry M., Denver.....	570
Jones, John D., Denver.....	639

Name and Address	No. of Certificate
Kendrick, Frank, Brodhead.....	425
King, Henry, Trinidad.....	646
Laurie, W. M., Leyden.....	642
Lawson, John R., Denver.....	574
Lewis, David, Pallas.....	629
Llewellyn, Thomas E., Palisade.....	303
McDonald, John F., Lafayette.....	641
McGinn, Thomas F., Louisville.....	552
Murray, W. J., Denver.....	637
Oberding, Frank N., Walsenburg.....	645
Parker, Geo. B., Trinidad.....	460
Pearl, Geo. T., Denver.....	636
Price, Fred W., Boulder.....	521
Richards, Henry, Somerset.....	293
Snodgrass, E. W., Delagua.....	490
Sultz, D. M., Lafayette.....	566
Thomas, John Jay, Lafayette.....	590
Thompson, A. E., Grand Junction.....	649
Turner, George H., Walsen.....	364
Watkins, Nathaniel, Newcastle.....	275
Watson, Joseph, Sr., Louisville.....	553
Weitzel, E. H., Pueblo.....	638
Wilson, Alex., Maitland.....	398

FIRST CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED IN 1915

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Adamic, Florijan, Canon City.....	349	John, Ed, Lafayette.....	523
Allen, Thomas, Coalmont.....	535	Johns, Thomas H., Lester.....	381
Angster, Joseph, Ideal.....	394	Johnson, E. W., Williamsburg.....	324
Angus, William, Somerset.....	314	Jones, L. F., Trinidad.....	443
Bowen, Daniel, Lafayette.....	331	Kilker, M. J., Oak Creek.....	616
Bain, William D., Firestone.....	513	Kurelich, Martin, Crested Butte.....	313
Beitler, Anton, Crested Butte.....	308	Laverty, H., Pool.....	610
Bell, John, Delagua.....	470	Lueras, D. H., Primero.....	442
Boyd, Joe, Delagua.....	448	Marshall, Robert A., Farr.....	400
Boyle, John C., Longmont.....	509	Mason, William R., Salt Lake City, Utah.....	529
Brewer, Thos. J., Oak Creek.....	607	Mathews, James, Forbes.....	429
Bryson, David, Hastings.....	466	Mathews, George, Erie.....	588
Buchanan, John, Gunnison.....	317	Maze, Walter, Lafayette.....	575
Burns, Patrick, Lester.....	383	Mellinger, Irving, Rapson.....	421
Campbell, William S., Ojo.....	370	Mellinger, Sylvester, Hastings.....	420
Cameron, P. G., Rugby.....	418	Meerdink, C. S., Shumway Camp.....	360
Carveth, F. N., Louisville.....	583	Miller, John G., Colo. Springs.....	497
Christopher, William, Oakview.....	372	Muhlestein, C. H., Somerset.....	360
Clark, W. S., Mt. Harris.....	623	Muir, John, Lester.....	417
Clark, Joseph, Valdez.....	423	MacBrayer, J. L., Oak Creek.....	603
Clark, Henry, Walsen.....	368	MacCorman, F. J. L., Superior.....	510
Cowlishaw, George, Pictou.....	397	McCallum, Finley, Pallas.....	614
Cunningham, James S., Delagua.....	487	McGregor, Wm., Cedar Hill.....	454
Cunningham, A., Tollerburg.....	463	McKeown, James, Berwind.....	435
Dalby, Jas. R., Forbes.....	494	Nash, John W., Rockvale.....	329
Davis, Arthur, Mt. Harris.....	627	Neish, John, Oak Creek.....	633
Davis, David Henry, Hastings.....	465	Neish, John, Ravenwood.....	381
Davies, Davy, South Canon.....	279	Peachey, William, Canon City.....	336
Davis, Thos. B., Broomfield.....	550	Penny, J. G., Rockvale.....	327
Davies, Thomas, Hastings.....	481	Penny, W. W., Rockvale.....	328
Davis, Wm. P., Florence.....	332	Reaume, H. W., Forbes.....	430
Dewey, L. G., Morley.....	428	Reynolds, James M., Rouse.....	391
Dick, Andrew, Walsenburg.....	387	Rhodes, J. L., Oak Creek.....	622
Dick, Hugh T., Ojo.....	371	Richards, Nicholas, Berwind.....	486
Dixon, V., Cokedale.....	452	Roberts, R. T., Primero.....	434
Dodge, D. D., Cokedale.....	464	Roberts, Idris, Canon City.....	343
Dollar, C. E., Lafayette.....	560	Robertson, Henry, La Plata.....	285
Donnelly, Henry, Florence.....	340	Robson, Carr, Delagua.....	446
Dougherty, John A., Walsen.....	411	Roe, Albert, Lafayette.....	534
Edwards, H. B., Morley.....	427	Russell, Duncan, Pictou.....	395
Edwards, L. H., Broomfield.....	593	Schuessler, W. G., Pool.....	603
Egan, Luke, Valdez.....	432	Shaw, Herbert, Farr.....	401
Elliot, Robert, Durango.....	562	Shields, Alex, Tabasco.....	452
Evans, Richard, Coal Creek.....	354	Shields, G. W., Berwind.....	455
Evans, David, Williamsburg.....	323	Simpson, John, Camp Shumway.....	359
Evans, David, Forbes.....	365	Sire, August, Lafayette.....	569
Evans, John, Primero.....	180	Smith, Walker, Oakview.....	374
Everly, Thomas L., Rockvale.....	337	Struthers, Thomas, Primero.....	440
Farris, Clyde L., Lafayette.....	559	Struthers, James, Pyrolite.....	345
Farris, W. M., Morley.....	477	Sugg, Arthur G., Oakview.....	377
Fern, Peter, Ojo.....	392	Swearingen, George, Lafayette.....	577
Fille, Lee, Oak Creek.....	617	Taylor, Edward, Gorham.....	546
Flemming, J. R., Bear River.....	611	Tennant, Hugh F., Tollerburg.....	495
Fortune, George, Primero.....	475	Thomas, Henry, Erie.....	522
Getler, A. W., Superior.....	511	Thompson, James G., Lafayette.....	576
Gold, Wm., Berwind.....	437	Thomson, T. C., Valdez.....	444
Gordon, William, Denver, Colo.....	530	Thomas, W. E., Walsen.....	362
Gulliford, Fred, Crested Butte.....	309	Thinsley, Tim, Tabasco.....	438
Hanson, David L., Coal Creek.....	320	Topping, Archie, Ravenwood.....	412
Hare, James, Baldwin.....	315	Turner, Robert, Tloga.....	404
Hart, Robert, Denver.....	564	Vaughan, John, Palsade.....	297
Holley, Hiram, Oak Creek.....	605	Vincent, J. H., Lafayette.....	571
Hood, Robert, Walsenburg.....	358	Waddell, William, Coalmont.....	544
Hoss, William W., Aguilar.....	379	Whles, E. H., Frederick.....	545
Hughes, William, South Canon.....	280	Wilson, Lewis G., Louisville.....	581
Hutchinson, John, Louisville.....	543	Williams, Thomas, Lafayette.....	520
Jenkins, John, Lester.....	380	Yates, John, Ludlow.....	492
Jenkins, John R., Crested Butte.....	370		

FIRST CLASS ASSISTANT MINE FOREMEN AND FIRE BOSSSES HOLDING CERTIFICATES ISSUED IN THE YEAR 1915

Name and Address	No. of Certificate
Beach, Allen, Coal Creek.....	348
Critchley, Ed. J., Florence.....	334
Embleton, Thomas, Coal Creek.....	319
Hinkle, P. K., Valdez.....	468
Hughes, Joseph, Crested Butte.....	311
Jones, G. D., Cokedale.....	451
Jorgensen, Neils, Delagua.....	447
McShane, William, Williamsburg.....	325
Millard, H. J., Sopris.....	482
Muir, John T., Walsen.....	361

Name and Address	No. of Certificate
Richards, Bryson, Rockvale.....	338
Smercich, John, Tabasco.....	467
Thomas, Evan, South Canon.....	282
Thompson, J. H., Lafayette.....	584
Vaughan, Levi, Palisade.....	298
Vernon, John, Rockvale.....	330
Ward, Joseph, Walsen.....	363
Walker, J. H., Somerset.....	299
Weiler, Jake, Lafayette.....	580
Williams, Isaac D., Canon City.....	351

FIRE BOSSSES HOLDING CERTIFICATES ISSUED IN THE YEAR 1915

Name and Address	No. of Certificate
Adamson, William, Hastings.....	467
Angus, James, Somerset.....	295
Ballate, Fred, Rouse.....	403
Beitler, Lawrence, Florence.....	312
Bowden, Angus, Denver.....	527
Brennan, James T., Primero.....	439
Burke, John, Walsen.....	415
Clark, Geo., Brodhead.....	449
Daniels, Charles, Oak Creek.....	630
Dennison, Archie, Valdez.....	433
Elieff, Steve, Lafayette.....	542
Elliott, Harry J., Lester.....	459
Evans, Henry, South Canon.....	283
Ferrero, Joe, Morley.....	472
Gallasini, John, Solar.....	405
Gieser, W. C., Rugby.....	488
Gilbert, Joseph, Coal Creek.....	352
Heywood, J. C., Oak Creek.....	621
Hirst, John, Gray Creek.....	461
Houry, Elise, Walsenburg.....	406
Jackson, Joseph, Rapson.....	424
Johnson, E. J., Primero.....	484
Johnson, Henry, Walsen.....	409
Kissell, Charles R., Coal Creek.....	342
Lumsden, Fred, Aguilar.....	635
Marriott, Joseph, Boulder.....	548

Name and Address	No. of Certificate
Marsh, David, Primero.....	462
McKenzie, William, Rockvale.....	356
Miller, Andrew, Walsen.....	388
Morrell, D. C., Mount Harris.....	626
Muhovich, John, Walsen.....	357
Munro, T. W., Camp Shumway.....	399
Newman, Alfred, Walsenburg.....	414
Norris, E. L., Farr.....	402
Pitchford, W. E., Lafayette.....	568
Rector, H. L., Brodhead.....	493
Robertson, Thomas, Chandler.....	353
Sandoval, Theo., Camp Shumway.....	563
Scariot, T., Sopris.....	483
Sherat, John C., Lafayette.....	574
Smith, A. F., Berwind.....	426
Stewart, D. M., Lafayette.....	579
Taylor, Vincent, Phippsburg.....	620
Thomas, Obadiah, Louisville.....	586
Turcsanski, Steve, Somerset.....	301
Wasero, Domenic, Lester.....	385
White, C. B., Glenwood Springs.....	274
Williams, Dan, Williamsburg.....	515
Williams, Ellis L., Rouse.....	389
Wilson, Thomas, Morley.....	471
Zaller, Frank, Walsenburg.....	413

SECOND CLASS MINE FOREMEN HOLDING CERTIFI- CATES ISSUED IN THE YEAR 1915

Name and Address	No. of Certificate
Atkin, S. B., Louisville.....	582
Atkin, William, Louisville.....	536
Bailleul, Leon, Ludlow.....	422
Bickerton, John H., Gulch.....	277
Bowie, Alex. R., Bowie.....	594
Bowie, John S., Bowie.....	554
Bowie, Wallace D., Bowie.....	485
Calderhead, John M., Cameo.....	283
Chaney, R. G., Pikeview.....	501
Comiskey, J. J., Colorado Springs.....	503
Coryell, Charles Q., Junction City.....	613
Coryell, Frank, Junction City.....	632
Deck, W. G., Rouse.....	458
Denardo, Domenick, Coal Creek.....	341
Dowd, James, Durango.....	367

Name and Address	No. of Certificate
Edwards, David L., Lafayette.....	541
Elder, P. G., Walsen.....	407
Etchells, James, Lafayette.....	596
Etchells, Wm., Lafayette.....	597
Ford, Homer D., Watson, Utah.....	291
Gardiner, Peter, Gulch.....	281
Gimble, Clyde F., Oak Creek.....	604
Griffith, William R., Canon City.....	318
Gulley, George, Denver.....	557
Harris, Clarence, Pallas.....	615
Harrison, John, Pictou.....	396
Hilton, Thomas, Gorham.....	525
Hodgson, Edward, Louisville.....	537
Hoffman, E. C., Phippsburg.....	619
Hopkins, O. M., Lafayette.....	567

SECOND CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED IN THE YEAR 1915—Continued

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Ichiye, M., Strong.....	410	Richmond, A. C., Palisade.....	305
Jackson, David, Tollerburg.....	441	Roberts, O. V., Crested Butte.....	316
Johnson, Thomas E., Strong.....	408	Rosser, Thomas, Gorham.....	601
Jones, D. W., Erie.....	558	Roy, W. P., Louisville.....	587
Jones, D. W., Oak Creek.....	608	Rusher, Henry, Lafayette.....	578
Jones, Thomas B., Lafayette.....	540	Scott, Mike, Walsenburg.....	369
Kelly, James, Oakview.....	376	Shackley, Durango.....	393
Kennedy, George H., Louisville.....	534	Shearer, Robert O., Denver.....	565
Kerr, David, Louisville.....	538	Schultz, J. W., Gorham.....	585
Lee, Daniel, Colorado Springs.....	500	Smith, Frank, Firestone.....	507
Lippis, John, Canon City.....	355	Smith, Fred, Firestone.....	508
Lowe, David, Aguilar.....	450	Smith, George, Grand Junction.....	287
Lowry, J. W., Mount Harris.....	628	Smith, H. J., Florence.....	331
Makin, Henry, Oak Creek.....	621	Smith, James E., Glenwood Springs.....	270
Marchetti, Andrew, Gulch.....	278	States, Charles G., Cedaredge.....	524
McCoy, Charles, Oakview.....	373	Stokes, W. D., Palisade.....	302
McDermott, Patrick, Walsenburg.....	378	Taylor, Phillip H., Oak Creek.....	631
McDonald, Allan, Louisville.....	600	Thomas, H. M., Colorado Springs.....	506
McFarlane, George C., Denver.....	523	Thomas, T. E., Colorado Springs.....	502
McGowan, L. H., Tioga.....	416	Treasure, Arthur, Rouse.....	390
McLaughlin, Daniel, Rugby.....	478	Turner, R. S., Walsenburg.....	375
Miller, Peter G., Strong.....	526	Wagstaff, Eph., Bowen.....	474
Morgan, William W., Gorham.....	547	Walker, Edward, Downer.....	516
Morris, D. W., Denver.....	533	Watson, Joseph (Jr.), Louisville.....	555
Morton, Roy S., Denver.....	517	Watson, Murray M., Firestone.....	514
Murphy, John J., Broomfield.....	528	Watson, William, Gray Creek.....	496
Nicol, J. W., Rugby.....	479	While, James, Aguilar.....	419
Norgard, John, Colorado Springs.....	498	Wilbarger, Harry, Louisville.....	549
Oldham, William, Lester.....	382	Williams, D. L., Lafayette.....	518
Palmer, C. W., Louisville.....	539	Williams, D. E., Delagua.....	431
Pocker, N. Howard, Golden.....	512	Wyatt, Z. E., Denver.....	551
Ralston, James, Crested Butte.....	306	Zwahlen, H. W., Somerset.....	286
Reed, A. L., Pyrolite.....	346	Zullo, Domenick, Glenwood Spgs.....	272
Renstrom, Edward L., Gulch.....	612		

SECOND CLASS ASSISTANT MINE FOREMEN HOLDING CERTIFICATES ISSUED IN THE YEAR 1915

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Blose, Stanley, Dacona.....	598	Leuras, Daniel, Primero.....	476
Bond, V. D., Mount Harris.....	625	Little, W. E., Pallas.....	606
Costen, William, Williamsburg.....	281	Mallon, Owen, Oak Creek.....	618
Davis, E. C., Somerset.....	595	Mason, Albert, Lafayette.....	532
Dekrow, T. R., Newcastle.....	273	Mason, Wm., Delagua.....	445
De Ross, George W., Lester.....	366	Nichols, Elijah, Glenwood Springs.....	271
Ford, James, Berwind.....	456	Patrick, Walter, Williamsburg.....	322
Green, William R., Superior.....	556	Smith, Frank B. Brewster.....	333
Jarrell, Lee, Delagua.....	473	Woods, D. M., Delagua.....	469
Jones, E. W., Canon City.....	335		

SECOND CLASS MINE FOREMEN HOLDING CERTIFICATES ISSUED IN THE YEAR 1915, VALID ONLY FOR THE MINE SPECIFIED.

Name	Address	Mine	No. of Certificate
Hafen, William.....	Mack	Carbonera	289
Harris, E. R.....	Florence	Smith-Tanner	347
Graheek, Matt.....	Canon City	Nonac	350
Jenkins, P. B.....	Paonia	Farmers	296
Knudsen, Andrew.....	Mack	Carbonera	290
Mortensen, Peter.....	Colorado Springs	Rapson No. 2	504
Petry, Samuel.....	Florence	Willie	339
Sanford, T. E.....	Grand Junction	Book Cliff	599
Sixby, Morris.....	Camco	P. V.	304
Thomas, Charles F.....	Grand Junction	Thomas	294
Tudor, Jenkins.....	Roswell	Danville	589

LIST OF SHOT-FIRERS HOLDING CERTIFICATES FOR
GASEOUS MINES

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Austin, Edwin J., Newcastle.....	316	Damacero, Dominick, Lester.....	318
Arnold, Andy, Primo.....	120	Dalrymple, Jas., Jr., Coalmont.....	134
Anlauf, Manuel, Frederick.....	391	Evans, Alfred, Starkville.....	428
Angus, James, Somerset.....	278	Edwards, L. H., Broomfield.....	339
Anderson, C. W., Leyden.....	92	Edwards, David L., Lafayette.....	26
Andrews, William, Louisville.....	203	Fabry, John, Rockland.....	329
Allison, James, Tioga.....	352	Fario, Clyde, Leyden.....	18
Alderson, John, Louisville.....	22	Felici, Frank, Walsen.....	417
Anderson, Stewart, Lafayette.....	488	Ferderber, Tony, Pictou.....	258
Burns, Patrick, Lester.....	201	Fenero, Joe, Wootton.....	37
Burns, H. L., Pikeview.....	41	Finley, William, Newcastle.....	186
Boyd, James D., Walsen.....	340	Foley, W. J., Louisville.....	21
Bowen, Daniel, Tabasco.....	170	Gillies, William, Lafayette.....	494
Bonfar, John, Shumway.....	222	Guzowsky, Mike, Walsen.....	220
Bodnar, Joe, Aguilar.....	49	Grantham, Jos., Durango.....	241
Blosson, Albert, Tollerburg.....	315	Gorsuch, Offa Dee, Rockland P. O.....	327
Black, Joseph, Walsenburg.....	419	Gilchrist, Archie, Leyden.....	243
Blondo, Vincenzo, Valdez.....	1	Garwood, John, Junction City.....	35
Blair, L. E., Pallas.....	30	Gale, William, Walsenburg.....	155
Bibby, T. H., Tioga.....	252	Happs, John, Walsenburg.....	154
Benson, Jesse W., Pikeview.....	411	Holadai, Mike, Rockland.....	377
Bell, Thos., Walsenburg.....	226	Howell, David, Berwind.....	427
Baynk, Martin, Walsenburg.....	257	Howells, Edwin, Curtis.....	24
Bauers, Ernest, Ojo.....	374	Hughes, Thomas, Hesperus.....	238
Bakavach, Jos., New Castle.....	317	Hutchison, Jas., Lafayette.....	463
Badger, A. E., Oakview.....	396	Hanison, Michael T., Valdez.....	426
Baconick, Jerry, Oakview.....	67	Hamman, Evan, Strong.....	380
Babish, Charles, South Canon.....	264	Hale, J. R., Walsen.....	54
Corneck, Charles, Lafayette.....	281	Hamilton, Colin, Walsenburg.....	365
Cunningham, E., Oak Creek.....	32	Hourec, Elise, Walsenburg.....	341
Crocker, C. E., Walsenburg.....	245	Irons, S. J., Tioga.....	349
Coughlin, Thos., Strong.....	412	Jorgensen, Neils, Delagua.....	78
Corvell, P. C., Rifle.....	265	Jones, Jeff, Rugby.....	402
Cornish, Richard, Aguilar.....	403	Jones, John C., Lafayette.....	213
Conway, Thomas, Walsenburg.....	416	John, Thomas, Newcastle.....	266
Conway, Frank, Box 1602, Denver.....	173	John, Louie, Sopris.....	386
Clark, Henry, Walsen.....	385	Jones, T. B., Lafayette.....	136
Clark, Alexander, Crested Butte.....	342	Jolly, Archie, Walsenburg.....	156
Claire, George, Tioga.....	128	Jackson, Joe, Rapson.....	376
Christopher, William, Oakview.....	321	Jerent, Joe (colored), Rapson.....	59
Chaney, R. G., Colorado Springs.....	383	James, W. H., Cokedale.....	407
Cerjanic, Nick, Farr.....	360	Koebbler, Joe, Lafayette.....	464
Cavors, Jim, Walsenburg.....	72	Kerr, Newton, Lafayette.....	496
Carroll, Thos. E., Aguilar.....	442	Kocovich, Nick, Forbes.....	283
Carlino, Tony, New Castle.....	432	Korkes, Steve, Solar.....	404
Casker, William, Morley.....	14	Kollins, Peter, Tioga.....	264
Casker, John, Jr., Morley.....	240	Knapp, H. O., Colorado Springs.....	105
Casker, John, Morley.....	13	Kinetz, Steve, Walsenburg.....	216
Cameron, Jas. E., Coalmont.....	133	Karcich, Veadimir, Tabasco.....	250
Caddell, William J., Walsenburg.....	159	Kimberlin, O. D., Ravenwood.....	82
Donnelly, Pat, Pikeview.....	42	King, W. J., Walsen.....	48
Donnelly, Henry, Florence.....	246	Lowe, David, Oak Creek.....	290
Domino, Joe, Valdez.....	2	Lumsden, Fred, Aguilar.....	334
Dolan, Charles, Walsenburg.....	363	Lutsick, Vincent, Delagua.....	80
Dodez, Emile, Bowie.....	309	Landis, M. L., Lafayette.....	442
Dickie, Stewart, Hastings.....	121	La Plante, D. L., Baldwin.....	287
Dickens, Frank E., Sunlight.....	314	Lamb, Walter, Walsen.....	221
Dick, A. D., Walsenburg.....	406	Lacey, Edwin H., South Canon.....	88
Deutsch, Steve, Walsenburg.....	358	Morgan, Jas., Lafayette.....	468
Deringe, Louis, Ravenwood.....	179	McFarland, John A., Canon City.....	346
Delost, John, Delagua.....	347	Murphy, Frank, Forbes.....	171
Depeazzo, Tony, Valdez.....	345	Murnik, Andrew, Ojo.....	429
Davis, Thos. H., Somerset.....	274	Munn, Thos. W., Ojo.....	249
Davis, E. L., Walsenburg.....	96	Mullican, Charles, Aguilar.....	441
Davies, Thomas, Hastings.....	349	Muir, John S., Walsenburg.....	180
Davies, Henry R., Durango.....	101	Muir, John T., Walsen.....	47
David, Joseph P., Newcastle.....	164	Morton, R. S., Broomfield, R. R. 1, Box 101.....	211
David, Fred, Newcastle.....	168	Morgan, P. J., Newcastle.....	433
Davies, David, South Canon.....	311	Morrison, Angus, Palisade.....	116
Davies, Dan, South Canon.....	312	Moore, Wade H., Walsen.....	138
Daurer, Fred, 5134 W. 46th Ave., Denver.....	160	Mock, J. T., Walsenburg.....	422
Daniels, Thos., Tioga.....	253	Mitchell, Dan, Walsenburg.....	153

LIST OF SHOT-FIRERS HOLDING CERTIFICATES FOR GASEOUS MINES—Continued

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Miller, John F., Pryor.....	85	Semmings, Charles, Colo. Springs..	25
Mide, Frank, Tioga.....	297	Segna, Candido, Sopris.....	108
Millard, H. J., Sopris.....	387	Schulz, Wm., Oak Creek.....	299
Miller, Andrew, Lester.....	4	Schuessler, W. J., Oak Creek.....	232
Middleton, George, Floresta.....	125	Schober, Ludwig, Walsen.....	418
Meek, James, Junction City.....	370	Sannic, George, Floresta.....	209
Mechin, John, Newcastle.....	166	Sandifer, J. C., Walsen.....	212
McVay, Howard, Walsen.....	139	Samosa, Alex., Trinidad.....	378
McNa, Thomas, Ojo.....	152	Salvatori, Pete, Sopris.....	107
McIsaac, Alexander, Aguilar.....	50	Solovick, Jack, Delagua.....	5
McGreechan, Thomas, Maitland.....	338	Snyder, Joseph, Lafayette.....	465
McGregor, William, Toltec.....	158	Sutherland, H. A., Newcastle.....	435
McDermott, Charles, Baldwin.....	206	Sury, John, Baldwin.....	343
McCullough, Albert, Louisville.....	46	Summers, Perry, Louisville.....	308
Matonis, J. P., Rockland.....	328	Stone, Jack, Newcastle.....	165
Mathews, Joe, Oak Creek.....	34	Stewart, Peter, Colorado Springs..	143
Martin, J. H., Strong.....	395	Stesek, Marco, Floresta.....	207
Mariano, Batiste, Walsen.....	140	Spark, Mike, Walsenburg.....	330
Mathews, James, Forbes.....	95	Smith, R. E., Walsen.....	52
Malone, James, Sopris.....	12	Smith, Henry, Louisville.....	172
March, Walter, Cokedale.....	8	Smith, Charles, Cokedale.....	7
Marshall, Robt. A., Farr.....	60	Turner, Richard, Strong.....	362
Martine, Ben, Hastings.....	351	Turcasski, Steve, Somerset.....	277
Norris, E. L., Farr.....	359	Tronsdie, John, Valdez.....	425
Nichols, Daniel, Newcastle.....	169	Trew, Charles, Terco.....	23
Nicholas, Nick, Berwind.....	29	Trempach, Richard, Tioga.....	127
Nichols, Harvey, Hastings.....	350	Toward, George, Bowie.....	204
Newton, Burney, Walsen.....	53	Topping, Archie, Ravenwood.....	83
Negus, Chas. B., Farr.....	361	Tomich, Joe, Maitland.....	337
Naba, Peter, Oak Creek.....	33	Thompson, John H., Lafayette.....	161
Owen, Llewelyn, Pallas.....	231	Thomas, Edward, Louisville.....	319
Oldham, William, Lester.....	399	Thomas, Obadiah, Louisville.....	202
Oldfield, James, Pallas.....	31	Taylor, Michael, Newcastle.....	167
Oblak, Frank, Spring Gulch.....	263	Tally, T. H., Tollerburg.....	355
Poleski, Joseph, Farr.....	62	Visich, Pete, Walsenburg.....	459
Pritchard, Reese, Sopris.....	388	Vicendone, Ferdinando, Hastings..	68
Price, William (colored), Hastings..	56	Vaughan, Levy, Palisade.....	118
Premusik, Blas, Walsenburg.....	71	Vaughn, John, Palisade.....	117
Prah, Frank, Farr.....	326	Vallery, John, Lafayette.....	224
Piercem, T. G., Durango.....	307	Ward, Jos., Walsen.....	219
Pickens, Andrew, La Veta.....	141	Walsh, Robert G., Frederick.....	39
Pettek, John, Walsenburg.....	379	Walker, John H., Somerset.....	280
Pelegrino, Bassi, Walsen.....	390	Walker, Charles, Somerset.....	275
Pastore, Joseph, Baldwin.....	344	Walker, A. M., Farr.....	130
Quilan, Frank, Gen. Del., Denver..	234	Wagner, Henry, Oak Creek.....	36
Quella, John, Tollerburg.....	135	Weinberg, Gus, Lafayette.....	457
Ryan, John F., Walsenburg.....	324	Watkins, Nathaniel, Newcastle.....	267
Rose, Arthur, Walsen.....	51	Weaver, L. M., Colorado Springs..	106
Ronzat, Joe, Hastings.....	348	Welsh, H. F., Mt. Harris.....	444
Romanovitch, John, Floresta.....	208	Wertin, Joe, Tollerburg.....	3
Rogers, Jos., Farr.....	129	Whiles, Ernest, Frederick.....	40
Roe, Albert, Pikeview.....	45	White, Charles B., Newcastle.....	364
Robusky, Walter, Ludlow.....	227	Williams, Robert P., Baldwin.....	132
Richards, Henry, Somerset.....	275	Williams, Gwellyn, Sopris.....	215
Reznani, Frank, Farr.....	61	Williamson, Sam, Walsen.....	213
Rector, H. L., Pryor.....	225	Wylan, Jay, Ludlow.....	228
Smerich, Pett, Rugby.....	81	Yates, John, Hastings.....	57
Sire, August, Lafayette.....	282	Zwahlen, Hyrum W., Somerset.....	276
Stackley, Herbert L., Durango.....	102	Zoller, Frank, Walsenburg.....	393
Seymour, H. C., Baldwin.....	205	Zingles, William, Rockland.....	354

LIST OF SHOT-FIRERS HOLDING CERTIFICATES FOR NON-GASEOUS MINES

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Adamic, Florian, Canon City.....	261	Ankele, Phillip, Lafayette.....	147
Alderson, Alfred, Lafayette.....	20	Atwood, Ed., Tioga.....	74
Alian, D. M., Lafayette.....	489	Baisley, Wm., Pallas.....	121
Alexander, Walter, Pagosa Junc.....	103	Barnett, P. B., Lafayette.....	163
Armstrong, Owen, Littell.....	61	Barr, W. F., Leyden.....	17

LIST OF SHOT-FIRERS HOLDING CERTIFICATES FOR NON-GASEOUS MINES—Continued

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Barrett, S. S., Boulder.....	122	Graham, Harry, Box 61, Boulder, Route 3	447
Battiste, Frank, Farr P. O.....	325	Glavich, John, Lafayette.....	491
Bauer, Oscar, Ojo.....	151	Green, Billy, Lafayette.....	490
Bay, W. W., Durango.....	242	Gins, Joe, Firestone.....	194
Becker, Paul, Oak Creek.....	477	Gutfelder, Lewis, Louisville.....	469
Bell, James, Lafayette.....	144	Hafen, William, Mack.....	109
Bertilino, John, Ludlow.....	440	Haines, W. F., Frederick.....	104
Berto, Joseph, Baldwin.....	10	Hamilton, F. B., Gorham.....	456
Beveridge, Thos., Louisville.....	472	Hanson, Nels, Rockvale.....	9
Bold, Richard, Colorado Springs.....	473	Harris, Walter, Pallas.....	184
Bonelli, Joe, Frederick.....	195	Hart, Herman, Lafayette.....	498
Bostwick, Joe, Gorham.....	251	Helburg, Victor, Louisville.....	273
Boussman, Herman, Louisville.....	470	Higgins, John, Broomfield.....	259
Bradbury, C. E., Strong.....	255	Hill, R. C., Poole.....	446
Brissio, Frank, Palisade.....	111	Hilton, Wm., Louisville.....	449
Brooks, Alex, Dacona.....	247	Hoften, Nick, Dacona.....	421
Brown, Richard, Gorham.....	452	Houck, Alex, Oak Creek.....	233
Bruce, J. A., Oak Creek.....	479	Hotter, Joseph, Hesperus.....	97
Burnette, Hubert, Oak Creek.....	300	Hortnagle, Niles, Gorham.....	455
Burnett, Edward R., Oak Creek.....	295	Hull, Roy E., Oak Creek.....	298
Butchard, Gilbert, Pallas.....	86	Hurst, Noah, Oak Creek.....	331
Caddick, Joseph, Oak Creek.....	443	Ivy, Lee, Mt. Harris.....	329
Calabrese, Peter, Durango.....	100	Jacoretta, Pasgnall, Firestone.....	193
Calivas, Gustave, Gulch.....	93	Jennings, Firestone	420
Campos, John, Pallas.....	182	Johnson, Henry, Walsen.....	84
Campos, Mike, Oak Creek.....	185	Johnstone, John, Lafayette.....	19
Candill, Judd F., Oakview.....	320	Jones, Edward A., Louisville.....	356
Chakaras, Nick, Pallas.....	431	Jones, Jos. T., Littell.....	262
Chase, J. N., Ravenwood.....	229	Kallas, Nick, Gorham.....	415
Chew, Frank, Walsenburg.....	137	Kalwaitis, Anton, Toltec.....	335
Clark, W. S., Leyden.....	16	Karivalys, Nick, Lafayette.....	486
Cocoles, James, Delagua.....	77	Katsaxonis, Mike, Cameo.....	189
Cole, J. R., Pikeview.....	44	Kerr, Adam, Cameo.....	114
Coliff, Coli, Louisville.....	471	Kerr, David A., Louisville.....	27
Collins, B. F., Gorham.....	124	Kerr, Thomas P., Superior.....	462
Copley, Edwin, Oak Creek.....	373	Kerr, William, Gorham.....	123
Crase, Henry N., Oak Creek.....	372	Kilker, M. J., Oak Creek.....	371
Crocker, Steve, Oak Creek.....	291	Klikns, John, Ojo.....	68
Culp, Wm., Pallas.....	230	King, Hugh P., Sunlight.....	313
Curnow, J., Leyden.....	423	Knudsen, Andrew, Mack.....	110
David, Edward, Cameo.....	115	Lamb, George, Colorado Springs.....	474
Davis, Isaac, Downer, via Gorham.....	458	Lawson, Nat, Downer.....	178
Davis, Thomas, Lafayette.....	487	Lee, Dan, Colorado Springs.....	142
Deberer, Anton, Colorado Springs.....	475	Lehdi, Victor, Junction City.....	336
Deckrow, Theo., Glenwood Springs.....	90	Lemberg, Joe, Lafayette.....	493
Dole, J. R., Oak Creek.....	481	Little, W. E., Pallas.....	181
Demersh, D. L., Ludlow.....	357	Lippis, John, Canon City.....	149
Derr, Wm., Oak Creek.....	438	Lloyd, John, Frederick.....	191
Dick, Hugh T., Ojo.....	69	Lyons, Chas. E., Pallas.....	367
Dudley, F. N., Oak Creek.....	333	Madsen, Ole, Ludlow.....	405
Duffy, John, Louisville.....	200	Madvacak, Antone, Mt. Harris.....	445
Dowds, James, Perins.....	99	Maki, Gus, Oak Creek.....	375
Ebert, Rudolph, Oak Creek.....	439	Malone, Frank, Gorham.....	448
Edwards, George, Rockland.....	353	Manning, Fred, Superior.....	460
Elieef, Steve, Lafayette.....	145	Marks, Mike, Oak Creek.....	289
Erler, Andrew, Durango.....	98	Martin, N., Oak Creek.....	301
Epperson, James, Lafayette.....	485	Mashitto, Rocco, Canon City.....	148
Essman, Arthur, Lafayette.....	162	Mason, Albert, Lafayette.....	146
Estes, A. J., Oak Creek.....	368	Massic, Robert, Palisade.....	408
Evangel, Frank, Walsenburg.....	157	May, Joseph, Palisade.....	409
Evez, Joseph, Crested Butte.....	15	McCartney, Thos., Maitland.....	384
Farmer, J. H., Gorham.....	453	Miller, John, Oak Creek.....	480
Ferrick, Mike, Canon City.....	63	Mills, John, Pallas.....	436
Fillas, Jas., Gorham.....	450	Mitchell, Josiah, Louisville.....	199
Forish, William, Lafayette.....	495	Moleski, Paul, Oakview.....	150
Fulton, Nick, Oak Creek.....	478	Morgan, John, Louisville.....	467
Gaffney, Mat, Oak Creek.....	369	Morrell, Dan, Mt. Harris.....	398
Gardiner, Peter, Glenwood Springs.....	94	Morrison, W. J., Superior.....	382
Gardner, Harvey, Canon City.....	28	Mortenson, Peter, Colo. Springs.....	410
Gebler, Ted, Box 1602, Denver.....	175	Moore, Ed, Frederick.....	196
Gooras, Nick, Coalmont.....	176	Moore, Frank, Superior.....	461
Grabek, Math., Canon City.....	305		

LIST OF SHOT-FIRERS HOLDING CERTIFICATES FOR NON-GASEOUS MINES—Continued

Name and Address	No. of Certificate	Name and Address	No. of Certificate
Murray, Charles, Frederick.....	197	Sigsby, Morris, Palisade.....	116
Myers, C. E., Bear River, via Hayden	302	Simmons, Jas. H., Firestone.....	248
Munden, H. W., Trinidad.....	11	Simpson, John, Tioga.....	75
Naughten, Jas., Oak Creek.....	401	Simpson, J. C., Erie.....	192
Nelson, George L., Primero.....	119	Stevens, Frank, Glenwood, R. F. D. No. 1.....	414
Norberg, Charles, Pallas.....	430	Solo, Tony, Wooton.....	38
Oates, Thomas, Lafayette.....	223	Sponsky, John, Ojo.....	244
Patch, A. A., Gunnison.....	288	Stoinaoff, Steve, Gorham.....	454
Parks, Dallas, Lafayette.....	303	Stonich, Frank, Superior.....	210
Parker, Geo., Gorham.....	322	Stunbo, D. H., Delagua.....	346
Pascoe, Sid, 3747 Clay St., Denver.....	424	Tafoya, Frank, Walsenburg.....	256
Patterson, A. A., Frederick.....	190	Tantrum, Thos., Canon City.....	482
Pearson, Carl, Delagua.....	79	Tapp, J. C., Erie.....	392
Pena, J. N., Lafayette.....	466	Tappro, August, Gulch.....	91
Peratti, Guy, Junction City.....	87	Thompson, Grant, Pikeview.....	43
Perhinig, Fred, Oak Creek.....	409	Thompson, J. E., Oak Creek.....	289
Perry, Frank, Louisville.....	260	Tilbure, Paul, Louisville.....	239
Pertele, Joseph, Ojo.....	70	Tiller, Fred G., Arvada.....	499
Peter, Paul, Gorham.....	451	Twite, William, Oak Creek.....	235
Peters, Gus, Lafayette.....	497	Vachersee, Victor, Bear River, via Hayden	237
Petrun, John, Louisville.....	271	Van Cleare, Fred, Oak Creek.....	293
Peterson, Chas., Oak Creek.....	476	Van Cleare, Joe, Oak Creek.....	297
Phillips, Martin J., Superior.....	272	Vercakis, George, Cameo.....	113
Pierce, Fred, Durango.....	306	Vollinar, Edgar, Oak Creek.....	296
Pokoring, Phillip, Oak Creek.....	437	Walsh, John, Frederick.....	310
Powers, Patrick, Louisville.....	214	Warren, Jas. C., Oak Creek.....	268
Raddy, John, Glenwood Springs, R. F. D. No. 1.....	413	Wheatley, Mark, Oakview.....	66
Robinson, E., Walsen.....	285	Wilding, William, Oak Creek.....	434
Rose, Edward D., Oakview.....	65	Williams, A., Pallas.....	366
Rosser, Robert, Gorham.....	323	Williams, T. J., Harris.....	226
Ross, Frank, Boulder.....	218	Williamson, Harry, Louisville.....	198
Rosich, Frank, Canon City.....	304	Wing, A. L., Boulder.....	381
Runge, Gustave W., Box 1602, Denver	174	Wright, Kelly, Pallas.....	332
Starkey, John, Denver.....	177	Wyatt, Zoris, Oak Creek.....	294
Schneider, Jos. W., Gorham.....	286	Yacoli, Frank, Gray Creek.....	6
Scoysk, Joe, Louisville.....	126	Yearack, Victor, Walsenburg.....	55
Shuster, Ernest, Oak Creek.....	183	Yob, Lorenzo, Lafayette.....	270
		Zullo Dominic, Glenwood Springs..	89

NEW MINES

Only three new mines of any importance have been opened up during the year 1915. They are as follow :

1. The McGregor mine operated by the McNeil Coal Company at McGregor, Routt County. The name of the seam under development or the series in which it is located is not yet determined, but is eight feet thick and of the bituminous variety. The mine is connected with the Denver & Salt Lake Railroad and is equipped for a two hundred ton daily capacity. The plant is up to date in every way and includes 7,000 feet of railroad track, two railroad bridges, four sets of railroad scales, tippie, power house, eleven dwelling houses, office building, water system, stable and blacksmith shop. A 14- by 5-foot fan has been installed in a fireproof building and the air shaft is lined throughout with concrete. The coal has been struck and about 6,000 tons have been taken out.

2. The Curtis-Routt mine, operated by the Curtis Coal Company at Poole, Routt County. The seam at this mine under exploitation is supposed to be the top workable seam of the lower measures, presumably 180 feet above the Pinnacle seam. It is of the bituminous character and the vein is five feet thick. The mine is connected with the Denver & Salt Lake Railroad by a spur of about two miles and is equipped for a one hundred ton daily capacity. Substantial machinery has been installed and a camp for the miners and their families built. Coal has been struck but little taken out.

3. The Wolf Creek mine, operated by the International Coal Company at Mount Harris, Routt County. This company is working the Wolf Creek seam of the Middle Series. The coal is of the bituminous variety and the vein is 14 feet thick. The mine is connected with the Denver & Salt Lake Railroad and is equipped for a one hundred ton daily capacity. Tipple, boiler house, blacksmith shop, carpenter shop and boarding house have been erected. This mine has shipped a little coal.

Directory of Coal Mines

ARCHULETA COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
*Talian	Pagosa Lbr. Co., Pagosa Springs	.....	O. S. Galbreath, Jr.	Wm. Gill	Nat.	D. & R. G.

BOULDER COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Simpson	Rocky Mountain Fuel Co., Denver	D. W. Brown	Geo. T. Peart	J. 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.
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.
Hecla	Rocky Mountain Fuel Co., Denver	D. W. Brown	Geo. T. Peart	J. C. Williams	Fan	C. & S.
Gorham	Rocky Mountain Fuel Co., Denver	D. W. Brown	Geo. T. Peart	Thos. Hilton	Fan	C. & S.
Industrial	Rocky Mountain Fuel Co., Denver	D. W. Brown	Geo. T. Peart	F. J. L. MacCormac	Fan	C. & S.
*Monarch No. 1	National Fuel Co., Denver	H. Van Mater	Geo. T. Peart	Andrew Walker	Fan	C. & S.
Monarch No. 2	National Fuel Co., Denver	H. Van Mater	Alexander Bowie	A. E. Oliver	Fan	C. & S.
Centennial	Big Four Coal & Coke Co., Denver	L. B. Cannon	.....	H. F. McFadden	Fan	C. & S.
Fox	Fox Coal Mining Co., Denver	.....	.....	J. W. Schultz	Fan	C. & S.
Matchless	Great Matchless Fuel Co., Denver	.....	.....	R. Husband	Fan	C. & S.
Sunnyside	Big Six Coal Co., Louisville	.....	.....	F. W. Carveth	Fan	C. & S.
Nonpareil	Brooks-Harrison F. Co., Louisville	.....	.....	J. E. Brooks	Fan	C. & S.
Black Diamond	Mitchell & Graham, Boulder	.....	.....	R. Harvey	Blower	.....
Strathmore	John & Co., Lafayette	.....	.....	Ed. John	Blower	C. & S.
Electric	Crown Coal Co., Lafayette	.....	.....	J. W. Evans	Blower	C. & S.
†Mile High	Mile High Coal Co., Lafayette	.....	.....	Swan Edison	Nat.	.....
New Fox	American Coal R. Co., Denver	.....	.....	.....	.....	.....
Pluto	Lafayette Coal Co., Lafayette	.....	.....	O. M. Hopkins	Nat.	B. & M.
Lewis	J. T. Lewis, Boulder	.....	.....	J. T. Lewis	Nat.	.....

*Closed down.

†Leased to Downer Coal Co.

‡Changed to Swan Edison, A. Peterson & Co.

DELTA COUNTY

Names of Mine	Names and Addresses of Operators	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
King	Juanita Coal & Coke Co., Pueblo	.....	.....	Wallace D. Bowie	Fan	D. & R. G.
Farmers	Paonia Coal Co., Paonia	.....	.....	P. B. Jenkins	Nat.	.....
States	States Coal Co., Cedaredge	.....	.....	Chas. G. States	Nat.	.....
Winton	C. O. Billstrom, Austin	.....	.....	C. O. Billstrom	Nat.	.....
Red Mountain	Hall & Motto, Cedaredge	.....	.....	A. W. Lowell	Nat.	.....
Black Diamond	Farmers Progressive Coal Co., Paonia	.....	.....	Wm. Price	Nat.	D. & R. G.

Dugger	Dugger Coal Co., Delta.....	S. A. Dugger	Nat.
Converse	Frank Converse, Paonia.....	Frank Converse	Nat.
Leroux Creek.....	J. R. Degraffenried, Hotchkiss.....	J. R. Degraffenried	Nat.
Coalby	J. C. Bond, Cedaredge.....	W. E. Phenice	Nat.
Bennett	Hotchkiss Fuel & Supply Co., Hotchkiss	M. W. Bennett	Nat.
Fairview	Wm. Proutt, Delta.....	Wm. Proutt	Nat.

EL PASO COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Ventilation	Railroad Connections
Pikeview	Pike's Peak Fuel Co., Colo. Spgs.....	J. T. Milliken	H. McGarry	W. K. Anderson	Fan	D. & R. G.
El Paso	El Paso Co., Colorado Springs.....	J. E. Ullrich		Fred Price	Fan	A. T. & S. F., C. R. I. & P.
Rapson No. 2.....	Rapson Coal Min. Co., Colo. Spgs.....	W. W. Curtis		Pete Mortenson	Fan	C. R. I. & P.
Patterson	Patterson Mine Co., Colo. Spgs.....			W. K. Anderson	Fan	
Danville	Tudor Coal Co., Colo. Springs.....			W. D. Tudor	Fan	A. T. & S. F.
Williamsville	Thomas Coal Co., Colo. Springs.....	W. E. Thomas		W. E. Thomas	Nat.	
Franceville	T. D. Davis, Colo. Springs.....			T. D. Davis	Nat.	

FREMONT COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	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. Davis	Fan	D. & R. G.
Rockvale	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	Henry Johns	Fan	A. T. & S. F.
Nonac	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Weitzel	W. R. Griffiths	Fan	A. T. & S. F.
Chandler No. 1.....	Victor-American Fuel Co., Denver.....	J. C. Osgood	W. J. Murray	M. E. Sommerville	Fan	D. & R. G. F.
Chandler No. 2.....	Victor-American Fuel Co., Denver.....	J. C. Osgood	W. J. Murray	James Struthers	Fan	A. T. & S. F.
Royal Gorge	Gibson L. & F. Co., Canon City.....	D. E. Gibson		Ed. Jones	Fan	A. T. & S. F.
Emerald	Williamsburg Slope Coal Co., Williamsburg			H. J. Smith	Fan	A. T. & S. F.
Brookside	Brookside Coal Co., Canon City.....			John Lippis	Nat.	
Williamsburg Slope	Donnelly Coal Co., Florence.....			Henry Donnell	Nat.	
Willie	Petry Coal Co., Florence.....			Samuel Petry	Tun.	
Smith-Tanner	Canon Coal Co., Florence.....			Tom Orecchio	Nat.	
Central	Canon City Coal M. & L. Co., Canon City.....			J. A. Littell	Fan	A. T. & S. F.
Double Dick	McLean & Gilbert, Coal Creek.....			Joe Gilbert	Fur.	
*Reese	R. M. Reese, Rockvale.....			W. M. Reese	Nat.	

GARFIELD COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Midland	Rocky Mt. Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. E. Smith	Fan	C. M.
Vulcan	Garfield Mine Leasing Co., Denver.....	D. W. Brown	Geo. T. Peart	Thos. Gibby	Fan	C. M.
South Canon	South Canon Coal Co., Denver.....	W. B. Lewis	H. F. Nash	Evan Thomas	Fan	C. M.
Carbonera	Gilson Asphaltum Co., Watson, Utah.....			Homer T. Ford	Nat.	Uintah
Harvey Gap	P. C. Corvelli, Newcastle.....			P. C. Corvelli	Nat.	.....
*Mascot	Farmer Coal Co., Glenwood Spgs.....			Peter Gardner	Fan	C. M.

*Closed down.

GUNNISON COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Somerset	Utah Fuel Co., Salt Lake City, Utah.....	A. H. Cowie	W. C. Ferguson	R. Williams, Jr.	Fan	D. & R. G.
Floresta	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	Wm. Manly	Fan	D. & R. G.
Crested Butte	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	J. G. Featherstone	Fan	D. & R. G.
Alpine	Rocky Mountain Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	W. R. Kerr	Fan	D. & R. G.
Porter	Littell Coal & Mining Co., Denver.....			O. V. Roberts	Fan	D. & R. G.
Bulkley	Crested Butte Coal Co., Denver.....	Frank Bulkley		James Ralston	Fan	D. & R. G.
Horace	Pueblo Fuel & Mining Co., Denver.....			O. V. Roberts	Fan	D. & R. G.
Smith	Crested Butte Anthracite M. Co., Denver.....	Frank Bulkley		James Hare	Nat.	D. & R. G.
Baldwin-Star	Denver	Frank Bulkley		Joseph David	Nat.	.....
Great Western	Baldwin Fuel Co., Denver.....			D. La Plante	Nat.	D. & R. G.
*New Baldwin	Joseph David, Gunnison.....					

HUERFANO COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Robinson	La Plante & Son, Gunnison.....	J. F. Welborn	E. H. Wetzell	W. S. Getchell	Fan	C. & S. and D. & R. G.
Rouse	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	W. G. Deck	Fan	D. & R. G.
Cameron	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	C. H. Kaiser	Fan	C. & S.
Walsen	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	W. S. Getchell	Fan	C. & S. and D. & R. G.
Lester	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	W. G. Deck	Fan	D. & R. G.
Ideal	Colorado Fuel & Iron Co., Denver.....	J. F. Welborn	E. H. Wetzell	W. J. Tyson	Fan	C. & S.
Oakdale	Oakdale Coal Co., Denver.....	Wm. B. Lewis		W. L. Morgan	Fan	D. & R. G.
Reliance	Alliance Coal Co., Denver.....	D. A. Cannon		John McDowell	Fan	D. & R. G.
Ravenwood	Victor-American Fuel Co., Denver.....	J. C. Osgood		John Neish	Fan	C. & S.
Rugby	Rugby Fuel Co., Denver.....			Thos. McLaughlin	Fan	C. & S. and D. & R. G.
Pryor	Union Coal & Coke Co., Denver.....	J. F. Bowen	Gilbert C. Davis	Chas. Beuchat	Fan	C. & S. and D. & R. G.
Tioga	Minnequa Coal Co., Denver.....	E. F. McGowan		J. H. Vincent	Fan	C. & S. and D. & R. G.
Big Four	Big Four Coal & Coke Co., Denver.....	L. B. Cannon		John McQuade	Fan	C. & S. and D. & R. G.
Solar	Walsenburg C. M. Co., Walsenburg.....	Geo. Fruth		T. J. Stone	Fan	C. & S. and D. & R. G.
Toltec	Aztec Coal Min. Co., Walsenburg.....	Geo. Fruth		S. B. Smith	Fan	C. & S. and D. & R. G.
Mutual	Mutual Coal Co., Denver.....	S. S. Murphy		R. F. Poll	Fan	D. & R. G.

Sunnyside	Sunnyside Coal Mining Co., Denver. W. F. Oakes	.....	H. M. Graves	.....	Fan	C. & S. and D. & R. G.
Turner	Turner Coal Co., Walsenburg.....	.....	Leo McCormack	.....	Fan	D. & R. G.
Larimore	Monument Valley Coal Co., Colo- rado Springs.....	.....	P. G. Miller	.....	Fan	D. & R. G.
Maitland	McNally & Mathews, Maitland.....	.....	Jas. Mathews	.....	Fan	D. & R. G.
Caddell	Black Canon Fuel Co., Denver.....	.....	Robert Curry	.....	Fan	C. & S. and D. & R. G.
Gordon	Gordon Coal Co., Walsenburg.....	.....	R. T. Bell	.....	Fan	D. & R. G.
Black Canon	New Maitland Coal Co., Walsenburg.....	.....	Samuel Dunford	.....	Fan	D. & R. G.
Loma	Loma Fuel Co., Walsenburg.....	.....	Joseph Ball	.....	Fan	C. & S.
Pinon	Rocky Mountain Fuel Co., Denver.....	.....	Chas. Meerdink	.....	Fan	D. & R. G.
Vesta	Vesta Coal Mining Co., Denver.....	.....	Robert Hood	.....	Fan	D. & R. G.
Breen	Breen Coal Min. Co., Walsenburg.....	.....	M. Brennan	.....	Fan	C. & S. and D. & R. G.
Ojo	Ojo Canon Coal Co., Ojo.....	.....	Peter Fern	.....	Nat.	D. & R. G.

JACKSON COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Coalmont	Northern Colo. Coal Co., Coalmont.....	.....	E. R. Miller	Wm. Waddell	Fan	C. W. & E.
North Park	North Park Coal Co., Coalmont.....	.....	.....	Joseph Purdy	Nat.	C. W. & E.

*Closed down.

JEFFERSON COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Leyden No. 1	Leyden Coal Co., Denver.....	.....	F. A. Perry	Fred Newmeyer	Fan	D. I. M.
Rooney No. 2	Thos. Sheperd, Golden.....	.....	.....	Thos. Sheperd	Nat.	D. I. M.

LAS ANIMAS COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Primerio	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	Joe Haske	Fan	C. & W.
Friederick	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	Chas. O'Neil	Fan	C. & W.
Morley	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	Jas. Wilson	Fan	A. T. & S. F.
Sopris	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	Chas. Chambers	Fan	C. & S. and C. & W.
Berwind	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	J. P. Davis	Fan	C. & S.
Tabasco	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	Chas. O'Neil	Fan	C. & S.
*Terco	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	John Shaw	Fan	C. & W.
Starkville	Colorado Fuel & Iron Co., Denver.....	.....	E. H. Weitzel	John Snickerson	Fan	C. & W.
Delagua	Victor-American Fuel Co., Denver.....	.....	W. J. Murray	B. W. Snodgrass	Fan	C. & S. E.
Hastings	Victor-American Fuel Co., Denver.....	.....	W. J. Murray	James Cameron	Fan	C. & S. E.
Gray Creek	Victor-American Fuel Co., Denver.....	.....	W. J. Murray	Thos. Jolly	Fan	C. & S.
Cokedale Nos. 1, 2	Carbon Coal & Coke Co., Denver.....	.....	.....	D. D. Dodge	Fan	C. & S. and D. & R. G.
Toller	Cedar Hill Coal & Coke Co., Denver.....	.....	D. M. Harrington	H. F. Tennant	Fan	C. & S.
Greenville	Cedar Hill Coal & Coke Co., Denver.....	.....	D. M. Harrington	H. F. Tennant	Fan	C. & S.
Piedmont	Rocky Mountain Fuel Co., Denver.....	.....	Geo. T. Peart	Wm. Morgan	Fan	C. & S.

LAS ANIMAS COUNTY—Continued

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Forbes No. 6.....	Chicosa Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. H. Dalby	Fan	C. & S. and D. & R. G.
Forbes No. 9.....	Chicosa Fuel Co., Denver.....	D. W. Brown	Geo. T. Peart	J. H. Dalby	Fan	C. & S. and D. & R. G.
Royal.....	Royal Fuel Co., Denver.....	H. Van Mater	.....	Chas. H. Peet	Fan	C. & S.
Broadhead No. 9.....	Temple Fuel Co., Trinidad.....	F. S. Wood	.....	O. C. Cook	Fan	C. & S.
Kenneth.....	Temple Fuel Co., Trinidad.....	F. S. Wood	.....	Alex. Shields	Fan	C. & S. and D. & R. G.
Primrose.....	Primrose Coal Co., Pueblo.....	H. B. King	.....	H. A. Mallot	Fan	C. & S. and D. & R. G.
Ludlow.....	Huerfano Coal Co., Denver.....	S. S. Murphy	.....	F. McDermott	Fan	C. & S. and D. & R. G.
Rapson No. 1.....	Rapson Coal M. Co., Colo. Spgs.....	W. W. Curtis	.....	I. Mellinger	Fan	C. & S. and D. & R. G.
Jeffreyes.....	Jeffreyes Fuel Co., Trinidad.....	Eli Jeffreyes	.....	A. G. Jeffreyes	Nat.	Trinidad E. T. Ry.
Jewel.....	Ideal Fuel Co., Aguilar.....	Joseph Cox	.....	Harry Smith	Fan	C. & S.
Wootton-Turner.....	Wootton Land & Fuel Co., Wootton.....	.....	.....	Andrew Boldini	Fan	A. T. & S. F.
Prospect.....	Prospect Coal Co., Trinidad.....	.....	.....	L. F. Jones	Fur.	.....
Baldy.....	Baldy Coal Co., Trinidad.....	.....	.....	James Adams	Fan	.....
Fishers Peak.....	Fishers Peak Coal Co., Trinidad.....	.....	.....	R. Marsh	Fan	.....
Keystone.....	Trinidad Coal Co., Trinidad.....	.....	.....	George W. Haigh	Nat.	.....
Viola.....	Johnston Coal & Coke Co., Trinidad.....	.....	.....	Austin Lunney	Nat.	.....
Jerryville.....	W. O. Nichols, Sopris.....	.....	.....	Joseph Cox	Nat.	.....
McPherson.....	Thos. McPherson, Sopris.....	.....	.....	W. O. Nichols	Nat.	.....
Corra.....	Corra & Corra, Sopris.....	.....	.....	John Corra	.....	.....
Niggerhead.....	Black Diamond Niggerhead Coal Mining Co., Trinidad.....	.....	.....	J. E. McLaughlin	Nat.	.....

*Closed down.

†Taken over November, 1915, by M. M. Grant & Sons.

LA PLATA COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Perrin's Peak.....	Calumet Fuel Co., Denver.....	.....	W. C. Ferguson	M. T. Lommason	Fan	D. & R. G.
Hesperus.....	Porter Fuel Co., Durango.....	.....	.....	W. I. Gifford	Fan	D. & R. G.
San Juan.....	Carbon Coal & Coke Co., Denver.....	.....	.....	F. C. Gilbert	Fan	D. & R. G. and R. G. S.
O. K.....	O. K. Coal Co., Durango.....	.....	.....	W. W. Bay	Nat.	.....
Sunshine.....	Sunshine Coal Co., Durango.....	.....	.....	Fred E. Pierce	Nat.	D. & R. G.
City.....	Royal Leasing Co., Durango.....	.....	.....	Peter Phillip	Nat.	D. & R. G.
Carbon.....	Carbon Coal Co., Durango.....	.....	.....	.....	.....	.....

MESA COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Cameo.....	Grand Jct. M. & F. Co., Grand Jct.....	.....	.....	G. W. McNell	Fan	D. & R. G. and C. M.
Book Cliff.....	Book Cliff R. R. Co., Grand Junction.....	.....	.....	T. E. Sanford	Nat.	Book Cliff
Garfield.....	Garfield Coal M. Co., Grand Junction.....	.....	.....	Geo. Smith	Fan	D. & R. G. and C. M.
Palisade.....	Palisade Coal & Sup. Co., Palisade.....	.....	.....	Henry Denman	Nat.	D. & R. G. and C. M.

Stokes	W. D. Stokes, Palisade.....	W. D. Stokes	Nat.	D. & R. G. and C. M.
Grandview	Grandview Coal Co., Palisade.....	T. E. Llewellyn	Nat.	.....
Fidel	Anthony Fidel, Fruita.....	Anthony Fidel	Nat.	.....
†P. V.	P. V. Coal Co., Cameo.....	M. Sixbey	Nat.	D. & R. G. and C. M.
Riverside	Levi Vaughan, Palisade.....	Levi Vaughan	Nat.	.....
Winger	A. C. Richmond, Palisade.....	A. C. Richmond	Nat.	.....

*Closed down.

†Leased to Sixbey & Foreman.

MONTEZUMA COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Todd	G. S. Todd, Cortez.....			G. S. Todd	Nat.	.....
Mitchell Springs	J. F. Mowry, Cortez.....			J. F. Mowry	Nat.	.....

MONTROSE COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Missouri	Gus Winkler, Nucla.....			Gus Winkler	Nat.	.....
Knaus	W. J. Oberding, Nucla.....			W. J. Oberding	Nat.	.....

MOFFAT COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Collom	Joseph Collom, Axial.....	J. F. Welborn		Joseph Collom	Nat.	.....

PITKIN COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Spring Gulch	Colorado Fuel & Iron Co., Gulch.....		E. H. Weitzel	A. H. Robinson	Fan	C. M.

ROUTT COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Oak Hills No. 1.....	Moffat Coal Co., Denver.....	S. M. Perry	R. M. Perry	John Alexander	Fan	D. & S. L.
Oak Hills No. 2.....	Moffat Coal Co., Denver.....	S. M. Perry	R. M. Perry	John Alexander	Fan	D. & S. L.
Harris	Colorado & Utah Coal Co., Denver.....	W. J. Murray		B. A. Harris	Fan	D. & S. L.
Pinnacle	Victor-American Fuel Co., Denver.....	John Connell		Wm. Burt	Fan	D. & S. L.
Yampa Val. No. 1.....	Yampa Valley Coal Co., Denver.....	John Connell		J. J. Wolfersberger	Fan	D. & S. L.
Yampa Val. No. 2.....	Yampa Valley Coal Co., Denver.....	John Connell		J. J. Wolfersberger	Fan	D. & S. L.
*Federal	Hayden Coal Mining Co., Denver.....	M. E. Serat		Joseph Matthews	Fan	D. & S. L.
Hayden	Hayden Bros Coal Corp., Denver.....	L. A. Hayden		C. P. O'Neil	Fan	D. & S. L.
Electric	Routt Electric Coal Co., Denver.....			C. C. White	Nat.	D. & S. L.

ROUTT COUNTY—Continued

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Bear River	Bear River Coal Co., Denver.	.....	Geo. M. Sharling	Paul Tibbure	Fur.	D. & S. L.
Wm. Gregor	McNeil Coal Co., Denver.	.....	.....	John McNell, Jr.	Fur.	D. & S. L.
Jones	D. W. Jones, Oak Creek.	.....	.....	D. W. Jones	Fur.	D. & S. L.
Curtis Routt	Curtis Coal Co., Colorado Springs.	.....	.....	Ralph Woodson	Nat.	D. & S. L.
Twenty-Mile	Twenty-Mile Coal Co., Junction City.	.....	.....	Tom Chargo	Nat.	.....
Diamond	Diamond Coal Co., Poole.	.....	.....	W. J. Schuessler	Nat.	D. & S. L.
Wolf Creek	International Fuel Co., Denver.	.....	John Zarlinga	Sam Domenica	Fan	D. & S. L.
Columbine	Brimble & Derr Bros., Oak Creek.	.....	.....	Geo. Brimble	Nat.	.....
Golden Oak	Northwestern Coal & Coke Co., Steamboat Springs.	.....	Wm. Kernaghan.	.....	Nat.	D. & S. L.
*Formerly Juniper mine.	.....	.....	.....	H. Laverty	Nat.	.....

WELD COUNTY

Name of Mine	Name and Address of Operator	President of Company	General Manager or Superintendent	Local Supt.	Mode of Ventilation	Railroad Connections
Puritan	National Fuel Co., Denver.	.....	.....	Henry Thomas	.....	U. P.
Parkdale	National Fuel Co., Denver.	.....	.....	Jas. Etchell	Fan	C. B. & Q.
Baum	Consol. Coal & Coke Co., Denver.	.....	.....	C. W. Smith	Fan	U. P.
Firestone	Louisville Coal & L. Co., Firestone.	.....	.....	D. Rotolo	Fan	U. P.
Evans	Evans Fuel Co., Denver.	.....	.....	L. B. Domenica	Fan	U. P.
Russell	W. E. Russell Coal Co., Denver.	.....	.....	Wm. Sharp	Fan	U. P.
Frederick	Frederick Fuel Co., Denver.	.....	Geo. T. Peart	J. C. Williams	Fan	U. P.
*Ideal	Ideal Coal Co., Erie.	.....	.....	P. D. Woolley	Fan	.....
Grant	Carbon Coal & Iron Co., Denver.	.....	.....	Evan Jones	Fan	U. P.
Shamrock	Shamrock Coal Co., Erie.	.....	Geo. T. Peart	Thos. P. Morgan	Fan	U. P.
Eureka	Woolley Bros., Erie.	.....	.....	P. D. Woolley	Fan	.....
Peerless	Peerless Coal Co., Frederick.	.....	.....	Emil Deboutier	St. Jet	.....
White Ash	W. C. Bedlien, La Salle.	.....	.....	C. W. Bedlien	Fur.	.....
State	State Coal Co., Erie.	.....	.....	D. L. Jones	Nat.	.....
New Washington.	David Brimble, St. Vrain.	David Brimble	Fan
Farmer	Wagner & Austin, La Salle.	John Wagner	Nat.
*Change to Woolley Bros.

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