ANNUAL REPORT

OF THE

MINE INSPECTOR FOR INDIAN TERRITORY

TO THE

SECRETARY OF THE INTERIOR

FOR

THE YEAR ENDED JUNE 30, 1904.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1904.

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SOUTH MCALESTER, *June 30, 1904.*

SIR: In compliance with the requirements of the act of Congress approved March 3, 1901, entitled "An act for the protection of miners in the Territories," I have the honor to submit to you my third annual report upon the conditions of the coal mines in the Indian Territory for the year ending June 30, 1904, the same being the eleventh annual report of the United States mine inspector since the passage of the act and the creation of the office of mine inspector.

Respectfully,

WILLIAM CAMERON,
Mine Inspector for the Indian Territory.

Hon. ETHAN ALLEN HITCHCOCK,
Secretary of the Interior, Washington, D. C.

At the outset and for the first six months of the past year the production of coal in the Indian Territory showed a large increase, and it was reasonably and confidently expected that the last six months would equal or exceed the production of the first half of the year. Had this expectation been realized the total production for the year would have closely approached the four million mark. The results of the last half of the year have failed to meet these expectations, and from causes which are quite apparent. In the latter part of January, 1904, a marked falling off in the demand was noticed, which might be attributed to several reasons, the principal one being that the short cotton crop in the southwest materially reduced the demand for coal for steam purposes, which class of coal represents the greater part of the tonnage produced in this Territory, and which finds its chief market in the Southwest, a part of which product is used in cotton gins, and the further consequent reduction in the freight moved and the demand for locomotive use of this coal. Another reason for this lack of demand in the last half of the year is to be found in the fact that dealers and consumers, anticipating the probability of an average and perhaps severe winter, and expecting advancing prices, laid in heavy stocks of coal. These anticipations, however, were not realized in the localities

supplied from this Territory, but on the contrary the season was unusually mild. In the early part of the month of June, 1904, unprecedentedly violent rain storms swept over the Territory, raising the creeks and rivers in some instances to a height never before known, and flooded several of the large-producing coal mines to an extent requiring months of pumping to reduce, and causing many thousands of dollars of expense in the process of pumping out the water and repairing the mines, after the damage that always follows such inundations. As this occurred at a time when the market was recovering to some extent and orders were coming in more freely, there is no doubt that a serious curtailment of the product was caused thereby.

Notwithstanding these drawbacks the total production for the current year amounted to 3,320,057 tons. The production of the first half of the year was 1,872,402 tons, and for the second half was 1,447,655 tons, or a decrease for the second half of 424,752 tons below the production of the first half. The total increase for the year ended June 30, 1904, over that of 1903 was 76,365 tons.

The work of the mine inspector increases each year, there now being 116 mines in active operation, besides a large number of small operations which are being worked on permits, all of which it would be impossible for the inspector to visit even were it his duty so to do. As the advent of numerous railroads is constantly developing fields that could not heretofore be profitably worked, the area covered by the operations is constantly widening, rendering it more and more arduous and difficult to cover the ground. There are now in operation 116 mines, and as each of these mines is provided with an additional ventilating shaft and escape way, the total openings are about 232 in number. There were 99 accidents investigated by me during the past year. Therefore when it is considered that for the year ended June 30, 1894, or the first year after the appointment of a mine inspector, the production of coal was 996,315 tons, produced by 15 mines with 30 openings, on two railroads only, and within a radius of a few miles, and with 41 accidents to investigate, the present difficulties attending the present inspection may easily be realized.

As a probable future factor in the production of coal in this Territory, the coal in the Creek Nation will doubtless be of considerable importance. Coal in this nation has heretofore been developed to a small extent and on the crop, in the neighborhood of Dawson and Henryetta, but of late much prospecting has been done on the Henryetta vein and some shafts have been sunk. This coal crops out east of the St. Louis and San Francisco Railway, with a very slight pitch to the southwest, the pitch averaging less than one-half a degree, and may be considered for mining purposes practically level. The coal at the crop averages 3 feet in thickness, and the roof and bottom so far as known are good. The coal is softer and not equal to that found in either of the veins in the Choctaw Nation. No gas or fire damp has so far been encountered. On account of the existing conditions it seems probable that the coal can be more cheaply produced than the coal in the Choctaw Nation, and as prospects would indicate an extensive field of practically level coal, I believe the coal will, when further developed, be of some consideration in the tonnage of the Indian Territory coal.

Some experiments have been made as to the coking qualities of this coal and are so far satisfactory, although further tests on a larger scale would seem to be necessary before the value of this coal for that purpose can be fully determined.

Owing to the present large number of mines and the constant calls on me to investigate accidents, or to make special inspections, it would be impossible for one man to make frequent visits to each mine, and I have therefore, while visiting each mine at least once, been obliged to concentrate a large portion of my time on such places as most needed my attention on account of the causes above mentioned.

I have received several requests from the representatives of the United Mine Workers of America to make special inspections, to all of which I have responded as promptly as my duties would permit. Some reference to this class of inspection will be found under the head of "Special correspondence." In all of such cases I have made careful and thorough inspections and brought the results to the attention of the operators, with the effect that where the conditions did not meet the requirements of the law or of careful and proper operation, these conditions were at once remedied to the satisfaction of the miners.

I take pleasure in saying that it is the expressed intention and desire of the operators generally to comply with the law and to adopt all necessary methods for the protection of the miners, and while I have had at times occasion to criticize and call attention to defects, this has generally been caused by failure of some employee to carry out the orders given him, and such defects have been speedily remedied when the attention of the officials has been called thereto.

In regard to the very grave question of gas explosions which has constantly been referred to in previous annual reports, it is with gratification that I am able to report that constant efforts to improve the ventilation in mines in this Territory has resulted in a marked diminution in accidents resulting from the "ignition of gas." For the year ended June 30, 1903, it was my duty to report 53 accidents from gas explosions, 13 of which proved fatal. For the year ended June 30, 1904, there have been only 9 accidents from this cause, 2 of which proved fatal. I shall not relinquish my efforts to maintain, so far as I can, the standard of good ventilation which these figures prove to exist in the mines in this Territory, resulting from my constant efforts to improve upon the present methods, and the adoption of better methods, such as by having but a single gas mark, which must not be crossed by the miner until the fire boss or gas man has eliminated the gas in the proper manner; by the abolition of the old and dangerous practice of allowing the miner himself to "brush" out the gas with his coat or a piece of canvas, and proceeding to work without any means of ascertaining whether the working place was free from gas or not; and other precautions of a like character.

One notable feature of this years' report is the considerable number of men and boys employed, the number for the year ended June 30, 1904, being as follows:

Over 16, underground	7,009
Under 16, underground	185
Over 16, above ground	1,033
Under 16, above ground	33
Total	8,260

It will be seen that while the production for the year has only increased some 76,365 tons, the number of men and boys has increased over 2,000. In seeking for the causes of this it would seem that there are two reasons to be given. First, the shortening of the hours of labor from ten to eight hours per day would alone account for much of the difference. The second reason is that the good prices paid attracted sufficient labor of all kinds to produce the amount of coal then in demand, and that this number of employees being on hand remained in this locality with the expectation of a revival of trade, although not nearly so fully employed as in the first half of the current year.

The output of coke for the preceding year was 52,625 tons, the output for the present year being 50,210 tons, showing a decrease of 2,415 tons. This may be accounted for by the high prices brought for slack during a large part of the year and by the recently increased competition and present lower prices at which eastern coke has been offered.

There is one important matter which is worthy of notice here, and that is the preparation and firing of shots and the use of powder in connection therewith. Much has been done in this direction, but much more remains to be done. Under the head of accidents this subject will be treated at length, and the difficulties that attend the enforcement of the rules and regulations in this regard will be pointed out and to which attention is particularly invited. It will be merely noted here that conditions are not satisfactory in this regard, notwithstanding my most careful and earnest attempts to institute the absolutely necessary regulations, the nonexistence or disregard of which, as in the past, and will in the future furnish so large a proportion of the accidents in this Territory.

As a whole the laws in force in regard to coal mines in this Territory are well observed. The mines are generally well ventilated, means of ingress and egress are provided, the machinery is of a good and in some instances of the best class, no furnace shafts are used as escape ways, metal speaking tubes or telephones are provided, safety catches of approved pattern are in use on all cages and cover overhead is provided, experienced and sober men are employed as engineers, regulations as to maximum number of men allowed on hoisting cages are observed, reports of fatal accidents are duly and with a few exceptions promptly made, and shot firers are employed in all mines where required by law. The amended act of July 1, 1902, in regard to sprinkling has been in some instances neglected, but under constant admonitions is receiving more attention.

The total estimated value of coal produced in the Indian Territory was $6,375.453, the value for the preceding year being $5,371,146, showing an increase in estimated value of $1,004,307 for the past year. The average selling price of coal at the mines of the Indian Territory for the current year was $1.923 per ton, or an increase of $0.223 per ton over the preceding year.

There were 10 mines opened during the current year and 6 mines were abandoned.

I am happy to report that during the past year there have been no labor troubles of any kind. At meetings held in Pittsburg, Kans., on July 27, 1903, and at Fort Smith, Ark., on September 1, 1903, between the Southwestern Interstate Coal Operators Association and the United

Mine Workers of America, district No. 21, a scale of prices for the Indian Territory for the different districts was agreed upon as follows:

Prices for mining in Indian Territory.

Coalgate, Edwardsville, Brewerville, Baker, Krebs No. 11, No. 5, and No. 7, Buck No. 6, Hartshorne, Haileyville, Gowen, Wilburton, Lutie, Turkey Creek, and Witteville, per ton for mine-run coal	$0.72
Alderson, Krebs No. 8, Carbon Bache, Dow, Craig, per ton for mine-run coal	.77½
Lehigh, for screened coal	.90
Bolen-Darnall, McAlester mines, per ton hand-picked coal	1.00
Samples, McAlester mines, per ton, hand-picked coal	1.00

The mining price at Midway, Henryetta, and Suter, the question of digging bottom, the price for loading after machines, and the question of clod at the Bolen-Darnall and Samples mines is referred to the district joint convention for adjustment.

All entry, yardage, and deficient work shall be advanced 12½ per cent, and the same rules and customs now existing in district 21 shall be continued in force during the life of this agreement.

The price of powder shall be $2 per keg.

INSIDE DAY WAGE SCALE.

Track layers	$2.56
Track layers' helpers	2.36
Trappers	1.13
Bottom cagers	2.56
Drivers	2.56
Trip riders	2.56
Pushers	2.56
Water haulers and machine haulers	2.56
Timbermen, where such are employed	2.56
Pipe men for compressed air plants	2.50
Company men in long-wall mines	2.36
All other inside day labor	2.36
Spragging, coupling, and greasing, when done by boys	1.75
Shot firers under normal conditions	3.00

OUTSIDE DAY WAGE SCALE.

First blacksmiths	3.00
Second blacksmiths	2.75
Blacksmiths' helpers	2.36
Carpenters	2.43

Provided, that in no case will there be any reduction from the rate of wages now paid to carpenters.

All other outside day labor	2.02½

Provided, that any class of outside day labor now receiving $2 or more per day shall be advanced 12½ per cent. This provision only applies to outside labor not otherwise enumerated.

SCALE FOR ENGINEERS.

Engineers—		
First class, 500 tons and over	per month	$79.00
Second class, 300 to 500 tons	do	73.00
Third class, 300 tons or less	do	65.00

Tail rope and slope engineers, 12½ per cent above present wages.

The minimum rate for tail rope and slope engineers shall be $2.38 per day, or $62 per month; provided, further, that the maximum rate for tail rope and slope engineers shall be $2.70 per day or $70 per month; twenty-six days to constitute a month's work and nine hours to constitute a day's work; all overtime in excess of nine hours to be paid for at a proportionate rate per hour.

The tonnage shall be determined by the average for the month of November, 1902, and based upon mine-run coal; but in no case shall any reduction from present wages be made.

This scale of wages applies only to mines in operation at least one year, and in all new mines the wages of the engineers shall be advanced with the increased tonnage until the maximum rate is reached; provided, that in no case shall engineers employed at new mines receive less than $2.38 per day; also that in no case shall engineers, firemen, or pumpers be interfered with or asked to cease work by any local committee or local union official during the life of this contract.

The mining prices inside and outside day wage scale (except engineers) provided for in this contract is based upon an eight-hour workday.

An eight-hour day was also agreed upon at these meetings, and certain details regulating the preparation of coal, the times of payment of wages, measurement of work, deaths and funerals, doctor, condition of the mines, provision for injured men, and other matters, were provided for. An arrangement was also made to submit to certain committees the arbitration of questions that might arise. Up to the end of the current year no difficulties arose except some of a very minor character, and which were speedily adjusted.

At the writing of this report, meetings have been held in Pittsburg, Kans., and the latest information is that the miners have consented to a 5½ per cent reduction on everything except the mining of coal, which remains the same. This agreement is intended to last for a year and a half, so that it seems probable that an amicable understanding will be had and no labor troubles arise for the ensuing year at least.

COKE PRODUCTION FOR THE INDIAN TERRITORY DURING THE YEAR ENDED JUNE 30, 1904.

During the current year there has been no increase, but a slight decrease, in the production of coke, and no new ovens have been built. It has been already said that the price of slack and the competition in coke accounts for this.

The production for the current year is as follows:

Name of producer.	Ovens.	Tons.
Mexican Gulf Coal and Transportation Co. (Howe and Alderson)	150	11,386
Osage Coal and Mining Co. (Krebs)	80	22,338
McAlester Coal Mining Co. (Buck)	50	14,355
Sans Bois Coal Co. (McCurtain)	6	2,131
Total	286	50,210

The above being a decrease of 2,415 tons below the preceding year, and, while the only reasons for this reduction are those given above, it would seem strange that with the excellent qualities for coking possessed by the Indian Territory coal that this industry should not be more largely developed.

During the past year a number of small operations under permits and leases in the Creek and Cherokee nations, which are not yet extensive enough to be covered by the law under which I am appointed, and which on account of their number and area covered, my duties have not permitted me time to visit. An estimate of the production has been made through data obtained by the courtesy of the Indian agent and his officials, and is included in the following list of the coal companies and their production.

The following is a list of the coal companies and individuals operating within the Indian Territory during the year ended June 30, 1904:

No.	Name.	Railway.	Shipping point.
1	Ardmore Coal and Power Co	Atchison, Topeka and Santa Fe Rwy.	Ardmore.
2	Bache & Denman Coal Co	Choctaw, Oklahoma and Gulf R. R.	Redoak.
3	Blackstone Coal and Mining Co	St. Louis and San Francisco Rwy	Henryetta.
4	Bolen-Darnall Coal Co	Missouri, Kansas and Texas Rwy	McAlester.
5	do	Choctaw, Oklahoma and Gulf R. R.	Craig.
6	Brewer Coal and Mining Co	Missouri, Kansas and Texas Rwy	Savanna.
7	Cameron Coal and Mercantile Co	Midland Valley R. R	Adkins.
8	Canadian Coal Co	St. Louis and San Francisco R. R	Dawson.
9	Central Coal and Coke Co	Missouri, Kansas and Texas Rwy	Carbon.
10	do	St. Louis and San Francisco Rwy	Henryetta.
11	Chambers Coal and Mining Co	Missouri, Kansas and Texas Rwy	Savanna.
12	Colgate Co., The	do	Coalgate.
13	Edwards, D. & Son	Choctaw, Oklahoma and Gulf R. R.	Edwards.
14	Folsom-Morris Coal and Mining Co	Missouri, Kansas and Texas Rwy	Midway.
15	Great Western Coal and Coke Co	Choctaw, Oklahoma and Gulf R. R.	Wilburton.
16	do	do	Baker.
17	Hailey-Ola Coal Co	do	Haileyville.
18	do	do	Wilburton.
19	Henderson Smokeless Coal Co	Fort Smith and Western R. R	Bokoshe.
20	Henryetta Coal and Mining Co	St. Louis and San Francisco Rwy	Henryetta.
21	Horsepen Coal and Mining Co	Atchison, Topeka and Santa Fe Rwy.	Collinsville.
22	Howard Coal and Mining Co	St. Louis and San Francisco Rwy	Dawson.
23	Indian Coal and Mining Co	Missouri, Kansas and Texas Rwy	Buck.
24	Kali Inla Coal Co	Choctaw, Oklahoma and Gulf R. R.	Gowen.
25	Le Bosquet Coal and Mining Co	do	Hughes.
26	McAlester and Galveston Coal Mining Co	Missouri, Kansas and Texas Rwy	McAlester.
27	McAlester-Choctaw Coal Co	do	Do.
28	McAlester Coal and Mineral Co	Choctaw, Oklahoma and Gulf R. R.	Wilburton.
29	McAlester Coal Mining Co	Missouri, Kansas and Texas Rwy	Buck.
30	McEvers Coal Co	do	McAlester.
31	McKenna-Terry Coal Co	St. Louis and San Francisco Rwy	Poteau.
32	Markley, Geo. J	Kansas City Southern Rwy	Shadypoint.
33	Mexican Gulf Coal and Transportation Co.	Choctaw, Oklahoma and Gulf R. R.	Howe.
34	Milby & Dow Coal and Mining Co	do	Dow.
35	Missouri, Kansas and Texas Coal Co	Missouri, Kansas and Texas Rwy	Wilburton.
36	Osage Coal and Mining Co	do	Krebs.
37	Ozark Coal and Railway Co	Kansas City Southern Rwy	Panama.
38	Poteau Coal and Mercantile Co	St. Louis and San Francisco Rwy	Poteau.
39	Rock Island Coal Co	Choctaw, Oklahoma and Gulf R. R.	Hartshorne.
40	do	do	Alderson.
41	do	do	Gowen.
42	Samples Coal and Mining Co	Missouri, Kansas and Texas Rwy	McAlester.
43	Sans Bois Coal Co	Fort Smith and Western Rwy	McCurtain.
44	Savanna Coal Co	Missouri, Kansas and Texas Rwy	Savanna.
45	Southwestern Development Co	do	Coalgate.
46	Turkey Creek Coal Co	Choctaw, Oklahoma and Gulf R. R.	Hughes.
47	Valley Coal Co	Missouri, Kansas and Texas Rwy	McAlester.
48	Warden Coal Co	St. Louis and San Francisco Rwy	Henryetta.
49	Western Coal and Mining Co	Missouri, Kansas and Texas Rwy	Atoka.
50	Whitehead Coal and Mining Co	St. Louis and San Francisco Rwy	Henryetta.
51	Sundry small operations	do	Sundry points.

Output of coal for the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	1903.	Six months ended—		Total 1904.
			Dec. 31, 1903.	June 30, 1904.	
		Tons.	*Tons.*	*Tons.*	*Tons.*
	Alderson Coal Co.[a]	114,000			
1	Ardmore Coal and Power Co		395	433	828
	Atoka Coal and Mining Co.[b]	408,093			
2	Bache and Denman Coal Co	2,715	3,510	2,393	5,903
3	Blackstone Coal and Mining Co		640	1,511	2,151
4 5	Bolen-Darnall Coal Co	87,335	39,807	24,141	63,948
6	Brewer Coal and Mining Co	3,374	5,180	7,125	12,305
	Bullette and Heffelfinger.[c]	26,518			
7	Cameron Coal and Mercantile Co		1,155	12,306	13,461
8	Canadian Coal Co	10,000	14,257	5,490	19,747
	Capital Trading Co.[d]	5,807			
9 10	Central Coal and Coke Co.[e]	57,285	35,054	26,840	61,894
11	Chambers Coal and Mining Co	66	1,167	795	1,962
12	Coalgate Co., The	197,396	89,536	41,506	131,042
	Eastern Coal and Mining Co.[f]	47,072			
13	Edwards, D. & Son	15,425	6,982	5,665	12,647
14	Folsom-Morris Coal and Mining Co	15,622	17,686	16,676	34,362
	Fry, Robert.[g]	9,898			
15 16	Great Western Coal and Coke Co.[h]	276,888	116,231	80,747	196,978
17 18	Hailey-Ola Coal Co	182,820	93,264	76,449	169,713
19	Henderson Smokeless Coal Co			2,036	2,036
20	Henryetta Coal and Mining Co	4,000	16,844	13,411	30,255
21	Horsepen Coal and Mining Co	25,365	7,134	21,765	28,899
22	Howard Coal and Mining Co			800	800
23	Indian Coal and Mining Co			122	122
24	Kali-Inla Coal Co				
	Lewis, A. S. and S. R.	2,806			
25	Le Bosquet Coal and Mining Co	3,097	103	4,509	4,612
26	McAlester and Galveston Coal and Mining Co	8,400	3,528	1,410	4,938
27	McAlester-Choctaw Coal Co	35,582	17,921	9,163	27,084
28	McAlester Coal and Mineral Co.[i]	116,900	100,853	92,525	193,378
	McAlester Coal Co., The[j]	196,179			
29	McAlester Coal Mining Co	80,130	35,362	27,827	63,189
30	McEvers Coal Co	7,950	8,636	4,318	12,954
31	McKenna-Terry Coal Co			557	557
32	Markley, George J	26,355	19,299	15,685	34,984
33	Mexican Gulf Coal and Transportation Co	83,957	40,342	28,193	68,535
34	Milby & Dow Coal and Mining Co	157,020	89,331	73,194	162,525
35	Missouri, Kansas and Texas Coal Co	7,769	8,325	10,423	18,748
36	Osage Coal and Mining Co	377,760	213,328	125,539	338,867
37	Ozark Coal and Railway Co	18,579	3,000	1,000	4,000
	Perona, Michael[k]	5,047			
38	Poteau Coal and Mercantile Co	62,659	37,883	34,944	72,827
39 40 41	Rock Island Coal Co.[l]	122,680	285,706	187,460	473,166
	St. Louis and Galveston Coal Co	159			
42	Samples Coal and Mining Co	49,311	27,828	32,562	60,390
43	Sans Bois Coal Co	61,495	94,322	36,646	130,968
44	Savanna Coal Co.[m]		3,418	2,509	5,927
45	Southwestern Development Co	292,881	175,921	186,708	362,629
46	Turkey Creek Coal Co	30,987	13,511	20,673	34,184
47	Valley Coal Co	4,316	2,524	1,597	4,121
48	Warden Coal Co		449	2,817	3,266
49	Western Coal and Mining Co.[n]		229,946	196,959	426,905
50	Whitehead Coal and Mining Co			875	875
51	Sundry small drift and strip operations in Creek and Cherokee nations not enumerated above	2,000	12,024	9,351	21,375
	Total	3,243,692	1,872,402	1,447,655	3,320,057

[a] Now operated by Rock Island Coal Company.
[b] See Western Coal and Mining Company.
[c] See Canadian Coal Company.
[d] See Savanna Coal Company.
[e] Product at Henryetta not reported for 1903.
[f] See McAlester Coal and Mineral Company for 1904.
[g] Output for 1904 included in Central Coal and Coke Company.
[h] Product for 1903 contains output of No. 5 Alderson, which is included in Rock Island Coal Company for 1904.
[i] Product of Eastern Coal and Mining Company included in report for 1904.
[j] The product from the mines operated by the McAlester Coal Company for 1903 is included in 1904 under the head of Rock Island Coal Company.
[k] Product for 1904 included in Savanna Coal Company.
[l] Output for 1903 included in addition to Rock Island Coal Company, Alderson Coal Company, the McAlester Coal Company, 53,462 tons produced at No. 5 mine at Alderson and included in 1903 under the head of the Great Western Coal and Coke Company.
[m] Includes production of Capital Trading Company for 1904.
[n] For 1903 output see Atoka Coal and Mining Company.

Statement of coal produced on the Missouri, Kansas and Texas Railway in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
	Atoka Coal and Mining Co.[a]	Lehigh	408,093	
4	Bolen-Darnall Coal Co	McAlester	55,994	35,585
6	Brewer Coal and Mining Co	Savanna	3,374	12,305
	Capital Trading Co.[b]	do	5,807	
9	Central Coal and Coke Co.[c]	Carbon	57,285	37,154
11	Chambers Coal and Mining Co	Savanna	66	1,962
12	Colgate Co., The	Coalgate	197,390	131,042
14	Folsom-Morris Coal and Mining Co	Midway	15,622	34,362
23	Indian Coal and Mining Co	Buck		122
26	McAlester and Galveston Coal and Mining Co	McAlester	8,400	4,938
27	McAlester-Choctaw Coal Co	do	35,582	27,084
29	McAlester Coal Mining Co	Buck	80,130	63,189
30	McEvers Coal Co	McAlester	7,950	12,954
35	Missouri, Kansas and Texas Coal Co	Wilburton		18,748
36	Osage Coal and Mining Co	Krebs	377,760	338,867
	Perona, Michael[d]	Savanna	5,047	
	St. Louis and Galveston Coal Co	Midway	159	
42	Samples Coal and Mining Co	McAlester	49,311	60,390
44	Savanna Coal Co.[e]	Savanna		5,927
45	Southwestern Development Co	Coalgate	292,881	362,629
47	Valley Coal Co	McAlester	4,316	4,121
49	Western Coal and Mining Co.[f]	Lehigh		426,905
	Total		1,605,167	1,578,284

[a] See Western Coal and Mining Company.
[b] See Canadian Coal Company.
[c] Product at Henryetta not reported for 1903.
[d] Product for 1904 included in Savanna Coal Company.
[e] Includes production of Capital Trading Company.
[f] For 1903 output see Atoka Coal and Mining Company.

RECAPITULATION.

	1903.	1904.
	Tons.	*Tons.*
Buck	80,130	63,311
Carbon	57,285	37,154
Krebs	377,760	338,867
McAlester	161,553	145,072
Savanna	14,282	20,194
Midway	15,781	34,362
Lehigh	408,093	426,905
Coalgate	490,277	493,671
Wilburton		18,748
Total	1,605,167	1,578,284

Statement of coal produced by mines on the Choctaw, Oklahoma and Gulf Railroad in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
	Alderson Coal Co.[a]	Alderson	114,000	
2	Bache & Denman Coal Co	Red Oak	2,715	5,903
5	Bolen-Darnall Coal Co	Craig	31,341	28,363
	Busby Baker[b]	Baker	48,530	
	William Busby[c]	Alderson	53,462	
	Eastern Coal and Mining Co.[d]	Wilburton	47,072	
13	Edwards, D. & Son	Edwards	15,425	12,647
15	Great Western Coal and Coke Co	Wilburton	174,896	165,934
16	do.[e]	Baker		31,044
17	Hailey-Ola Coal Co	Haileyville	101,427	97,208
18	do	Wilburton	81,393	72,505
25	Le Bosquet Coal and Mining Co	Hughes	3,097	4,612
28	McAlester Coal and Mineral Co.[f]	Wilburton	116,900	193,378
	The McAlester Coal Co.[g]	Hartshorne	98,161	
	Do.[g]	Gowen	98,018	
33	Mexican Gulf Coal and Transportation Co	Howe	83,957	68,535
34	Milby & Dow Coal and Mining Co	Dow	157,020	162,525
	Missouri, Kansas and Texas Coal Co	Wilburton	7,769	
39	Rock Island Coal Co.[h]	Hartshorne	41,318	148,935
40	do.[h]	Alderson	35,152	188,301
41	do.[h]	Gowen	46,210	135,930
46	Turkey Creek Coal Co	Hughes	30,987	34,184
	Total		1,388,850	1,350,004

RECAPITULATION.

	1903.	1904.
	Tons.	*Tons.*
Baker	48,530	31,044
Alderson	202,614	188,301
Dow	157,020	162,525
Haileyville	101,427	97,208
Hartshorne	139,479	148,935
Gowen	144,228	135,930
Craig	31,341	28,363
Edwards	15,425	12,647
Wilburton	428,039	431,817
Red Oak	2,715	5,903
Hughes	34,084	38,796
Howe	83,957	68,535
Total	1,388,850	1,350,004

[a] Now operated by Rock Island Coal Company.
[b] See Great Western Coal and Coke Company.
[c] Product for 1903 contains output of No. 5 Alderson, which is included in Rock Island Coal Company for 1904.
[d] See McAlester Coal and Mineral Company for 1904.
[e] See Busby Baker for 1903.
[f] Product of Eastern Coal and Mining Company included in report for 1904.
[g] Product from the mines operated by the McAlester Coal Company for 1903 is included in 1904 under the head of Rock Island Coal Company.
[h] Output for 1903 included in addition to Rock Island Coal Company, Alderson Coal Company, the McAlester Coal Company, 53,462 tons produced at No. 5 mine at Alderson and included in 1903 under the head of the Great Western Coal and Coke Company.

Statement of coal produced on the St. Louis and San Francisco Railroad in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
3	Blackstone Coal and Mining Co	Henryetta		2,151
	Bullette & Heffelfinger[a]	Dawson	26,518	
8	Canadian Coal Co	do	10,000	19,747
10	Central Coal and Coke Co.[b]	Henryetta		24,740
	Fry, Robert[c]	do	9,898	
20	Henryetta Coal and Mining Co	do	4,000	30,255
22	Howard Coal Mining Co	Dawson		800
	Lewis, A. S. & S. R.	do	2,806	
31	McKenna-Terry Coal Co	Poteau		557
38	Poteau Coal and Mercantile Co	do	62,659	72,827
48	Warden Coal Co	Henryetta		3,266
50	Whitehead Coal and Mining Co	do		875
51	Sundry operations estimated	Sundry places	2,000	21,375
	Total		117,881	176,593

[a] See Canadian Coal Company.
[b] No coal reported in 1903.
[c] Output for 1904 included in Central Coal and Coke Company.

RECAPITULATION.

	1903.	1904.
	Tons.	*Tons.*
Dawson	39,324	20,547
Henryetta	13,898	61,287
Poteau	62,659	73,384
Sundry small operations	2,000	21,375
Total	117,881	176,593

Statement of coal produced on the Atchison, Topeka and Santa Fe Railway in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
1	Ardmore Coal and Power Co	Ardmore		828
21	Horsepen Coal and Mining Co	Collinsville	25,365	28,899
	Total		25,365	29,727

Statement of coal produced on the Kansas City Southern Railroad in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
32	Markley, George J	Shadypoint	26,355	34,984
37	Ozark Coal and Railway Co	Panama	18,579	4,000
	Total		44,934	38,984

Statement of coal produced on the Fort Smith and Western Railroad in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
19	Henderson Smokeless Coal Co	Bokoshe		2,036
43	Sans Bois Coal Co	McCurtain	61,495	130,968
	Total		61,495	133,004

Statement of coal produced on the Midland Valley Railway in the Indian Territory for the years ended June 30, 1903 and 1904.

No.	Name.	Shipping point.	1903.	1904.
			Tons.	*Tons.*
7	Cameron Coal and Mercantile Co	Adkins		13,461

Summary—Grand total.

	1903.	1904.
	Tons.	*Tons.*
Missouri, Kansas and Texas R. R	1,605,167	1,578,284
Choctaw, Oklahoma and Gulf R. R	1,388,850	1,350,004
St. Louis and San Francisco Rwy	117,881	176,593
Atchison, Topeka and Santa Fe Rwy	25,365	29,727
Kansas City Southern Rwy	44,934	38,984
Fort Smith and Western Rwy	61,495	133,004
Midland Valley Rwy		13,461
Total	3,243,692	3,320,057

Statement of mines operated in the Indian Territory during the year ended June 30, 1904 (not including strip pits.)

No.	Operator.	Shipping point.	Vein.	Mine No.	Year opened.	Thickness of coal.	Degree of pitch at face.	Direction.	Depth of shaft in feet.	Length of slope in feet.
						Ft. in.				
1	Bache & Denman Coal Co	Red Oak	Lower Hartshorne	1	1901	4 6	28	N.		240
2	Blackstone Coal and Mining Co	Henryetta	Henryetta	1	1903	3 0	2	SW.		250
3	Bolen-Darnall Coal Co	McAlester	McAlester	3	1895	4 0	13	S.		2,500
4	do	Craig	do	4	1901	3 4	23	NE.		1,100
5	do	Savanna	do	1	1902	4 0	35	SE.		320
6	Brewer Coal and Mining Co	do	do	2	1902	4 0	36	SE.		150
7	Cameron Coal and Mercantile Co	Cameron	Panama	1	1903	3 10	13	SE.		800
8	Central Coal and Coke Co	Carbon	McAlester	77	1896	3 6	10	N.		2,600
9	do	Henryetta	Henryetta	22	1902	3 0	2	SW.		600
10	Chambers Coal and Mining Co	Chambers	Secor	1	1903	3 0	14	W.		490
11	Coalgate Co., The	Coalgate	Lehigh	1	1896	3 6	7	NW.		3,000
12	do	do	do	2		3 6	7	NW.		2,200
13	do	do	do	3		3 6	7	NW.		2,000
14	do	do	do	4	1900	3 8	7	NW.		1,500
15	do	do	do	5		4 6	10	NW.	633	450
16	Edwards & Son	McAlester	McAlester	1	1903	4 0	17	NW.		500
17	do	do	do	2	1902	4 0	17	NW.		350
18	Folsom-Morris Coal and Mining Co	Midway	Lehigh	1	1901	3 4	4	NE.	122	920
19	Great Western Coal and Coke Co	Wilburton	Lower Hartshorne	1	1898	6 0	21	N.		1,100
20	do	do	Upper Hartshorne	2	1898	4 0	21	N.		1,000
21	do	do	do	3	1899	4 0	18	N.		1,100
22	do	Lower Hartshorne	Lower Hartshorne	4	1900	4 5	18	N.		800
23	do	do	do	6	1899	5 0	25	N.		1,200
24	do	do	do	7	1904	6 0	18	N.		300
25	do	Baker	do	8	1898	4 0	11	N.		300
26	do	do	McAlester	9	1904	4 8	30	S.		1,080
27	Hailey-Ola Coal Co	Haileyville	Lower Hartshorne	1	1900	4 9	13	N.		400
28	do	do	do	3	1901	5 0	20	W.		700
29	do	Wilburton	do	1	1897	5 0	25	N.	320	500
30	do	do	do	11[a]	1901	5 0	20	N.		950
31	do	do	do	3	1899	5 0	20	N.		600
32	do	do	do	4	1903	6 0	31	N.		750
33	Henderson Smokeless Coal Co	Bokoshe	Panama	1	1904	4 6	10	SE.		300
34	do	do	do	2	1904	4 6	10	SE.		270
35	Henryetta Coal and Mining Co	Henryetta	Henryetta	1	1903	3 0	2	SW.		100
36	Indian Coal and Mining Co	Buck	Lower Hartshorne	1	1904	3 0	18	SE.		60
37	Kali-Inla Coal Co	Gowen	do	1	1904	4 6	7	S.		240
38	Le Bosquet Coal and Mining Co	Hughes	do	1	1901	4 8	30	N.		300
39	McAlester and Galveston Coal Mining Co	McAlester	do	1	1900	3 4	28	SE.		385
40	do	do	do	2	1902	4 0	45	SE.		800
41	do	do	do	3	1902	4 0	42	SE.		250
42	McAlester-Choctaw Coal Co	do	do	1	1900	4 3	30	S.		125
43	do	do	McAlester	2	1901	4 6	40	S.		450
										250

Statement of mines operated in the Indian Territory during the year ended June 30, 1904 (not including strip pits)—Continued.

No.	Operator.	Shipping point	Vein.	Mine No.	Year opened.	Thickness of coal.	Degree of pitch at face.	Direction.	Depth of shaft in feet.	Length of slope in feet.
						Ft. in.				
44	McAlester-Choctaw Coal Co	McAlester	McAlester	3	1901	4 3	30	S.		250
45	McAlester Coal and Mineral Co	Wilburton	Upper Hartshorne	4	1895	4 0	18	N.		2,800
46	do	do	do	5	1896	4 0	18	N.		2,600
47	do	do	Lower Hartshorne	6	1897	4 0	16	N.		2,600
48	do	do	do	7	1897	4 0	16	N.		2,900
49	do	do	Upper Hartshorne	8	1897	4 0	16	N.		600
50	do	do	Lower Hartshorne	9	1896	4 0	13	N.	130	800
51	do	do	Upper Hartshorne	10	1899	4 0	13	N.		2,500
52	McAlester Coal Mining Co	Buck	Lower Hartshorne	2	1896	4 0	9	NW.		2,900
53	do	do	do	12	1900	3 0	8½	SW.	118	1,600
54	do	do	do	6	1901	4 0	11	NW.	525	450
55	McEvers Coal Co	McAlester	do	1	1900	4 6	45	S.		300
56	McKenna-Terry	Poteau	Lower Cavanal	1	1903	2 0	4	SW.		300
57	Markley, George J	Sutter	Lower Witteville	1	1899	4 2	10	S.		
58	do	do	do	2	1901	4 2	10	S.		
59	Mexican Gulf Coal and Transportation Co	Howe	Arkansas	1	1899	4 0	5	N.	110	700
60	do	do	do	2	1903	4 0	5	N.		1,320
61	do	do	do	3	1903	4 0	5	N.		400
62	do	do	do	4	1903	4 0	5	N.	365	
63	Milby & Dow Coal and Mining Co	Dow	McAlester	1	1898	2 10	10	SW.	228	2,425
64	do	do	do	2	1902	3 0	10	SW.	328	1,900
65	do	do	do	3	1903	3 0	10	SW.		
66	Missouri, Kansas and Texas Coal Co	Wilburton	Upper Hartshorne	15	1899	4 0	17	NW.		1,400
67	do	do	Lower Hartshorne	16	1900	4 0	17	NW.		1,000
68	do	do	do	18	1903	4 0	17	NW.		1,000
69	do	do	do	19	1904	4 0	17	NW.	300	
70	Osage Coal and Mining Co	Krebs	McAlester	5	1895	4 0	9	SW.	482	2,000
71	do	do	do	7	1902	3 10	5	NE.		1,150
72	do	do	do	8	1899	3 7	6½	S.	272	1,000
73	do	do	do	11	1888	4 2	6½	SW.	470	3,100
74	do	do	do	11½	1894	4 2	6½	SW.	238	
75	do	do	do	14	1900	3 6	6½	S.		750
76	Ozark Coal and Railway Co	Panama	Panama	1	1898	4 0	13½	S.		1,000
77	Poteau Coal and Mercantile Co	Poteau	Witteville	4	1904	4 0	7	SW.		700
78	do	do	do	5	1900	3 8	7	SW.		1,500
79	do	do	do	6	1904	3 8	7	SW.		900
80	Rock Island Coal Co	Hartshorne	Lower Hartshorne	7	1902	3 6	3	N.	527	
81	do	do	do	8	1902	3 6	6	N.	254	1,000
82	do	do	do	18	1901	3 8	20	N.		900
83	do	Alderson	McAlester	5	1900	3 6	8	SW.	535	350
84	do	do	do	6	1901	3 6	12½	S.	505	
85	do	do	do	32	1901	3 6	12½	S.		1,100
86	do	do	do	33	1901	3 6	12½	S.		1,150

87	do	do	do	34	1901	3 6	12½	S.		1,150
88	do	do	do	35	1901	3 6	12½	S.		975
89	do	do	do	36	1901	3 6	12½	S.		1,050
90	do	do	do	37	1901	3 6	12½	S.		725
91	do	do	do	38	1901	3 6	12½	S.		1,400
92	do	do	do	15	1899	3 6	12½	S.		1,800
93	do	Gowen	Lower Hartshorne	3	1896	4 0	8	SW.	256	3,270
94	do	do	do	12		4 0	8	SW.		3,270
95	Samples Coal and Mining Co	McAlester	McAlester	1	1897	4 0	16	S.		1,150
96	do	do	do	2	1902	4 0	25	S.		750
97	Sans Bois Coal Co	McCurtain	Not determined	1	1902	5 0	5	NW.		1,732
98	do	do	do	2	1903	6 5	6	SW.		1,372
99	do	do	do	3	1903	4 5	8	NW.		1,355
100	Savanna Coal Co	Savanna	McAlester	2	1898	4 0	37	NW.		210
101	do	do	do	3	1902	4 0	37	NW.		140
102	Southwestern Development Co	Coalgate	Lehigh	4	1901	4 8	8	E.	158	2,500
103	do	do	do	9	1899	4 8	12½	S.	325	1,300
104	do	do	do	10	1902	4 8	8	S.	84	1,800
105	do	do	do	12	1904	5 0	8	E.	653	
106	Turkey Creek Coal Co	Hughes	McAlester	1	1900	2 10	20	N.		650
107	do	do	Lower Hartshorne	2	1901	4 2	30	N.		450
108	do	do	do	4	1901	4 2	30	N.		300
109	Valley Coal Co	McAlester	do	1	1900	3 0	42	S.		320
110	Warden Coal Co	Henryetta	Henryetta	1	1903	3 0	1	SW.	70	
111	Western Coal and Mining Co	Lehigh	Lehigh	5	1887	4 4	5	NE.	202	2,800
112	do	do	do	5½	1890	4 6	5	NE.	152	
113	do	do	do	6	1888	4 6	7	NE.	239	2,400
114	do	do	do	6⅝	1893	4 6	7	NE.	249	
115	do	do	do	7	1900	4 6	6	NE.	110	1,200
116	do	do	do	8	a1903					
117	Whitehead Coal and Mining Co	Henryetta	Henryetta	1	1903	3 0	1	SE.	88	

a Now sinking.

NO. 1. ARDMORE COAL AND POWER COMPANY.

This is a small operation within a few miles of the city of Ardmore, in the Chickasaw Nation. Slope has been driven down about 1,000 feet. The production of coal for the six months ended December 31, 1903, is 395 tons; for the six months ended June 30, 1904, is 433; total production for the year is 828 tons.

Equipment consists of a small steam engine for hoisting purposes, with necessary boiler. Ventilation is had by means of a furnace. There were no accidents reported to me from this mine.

NO. 2. BACHE & DENMAN COAL COMPANY.

This company first commenced to sink their slope at a point east of Red Oak, Ind. T., on the Choctaw, Oklahoma and Gulf Railroad, in the year 1901. The slope is opened on the lower Hartshorne vein. The coal is 4 feet 6 inches in thickness and pitches 28° to the north. The slope has been sunk 240 feet and there are four entries in operation This slope has been tapped by a drift, driven in from the side of the mountain, along which drift the coal is hauled to the surface. The average number of men and boys employed in and around this mine, above ground, is 6; underground is 10.

Output of coal for the six months ended December 31, 1903, is 3,510 tons. For the six months ended June 30, 1904, is 2,393 tons; total output for the year is 5,903 tons.

Natural ventilation.

There were no accidents reported from this mine.

NO. 3. BLACKSTONE COAL AND MINING COMPANY.

This company is operating in the Creek Nation at a point north of Henryetta, on the St. Louis and San Francisco Railroad The slope was commenced in the year 1903, on what is known as the Henryetta vein. The coal is 3 feet thick, and is almost level. The slope has been driven down to a depth of 250 feet, from which three entries have been turned. Air shaft is 63 feet in depth, 5 by 5 feet in size. Average number of men employed underground is 8; above ground is 3.

The output of coal for the six months ended December 31, 1903, is 640 tons; for the six months ended June 30, 1904, is 1,511 tons—total production for the year is 2,151 tons.

Equipment consists of one Sampson single-hoisting engine with 7 by 9 inch cylinder. Drum is 18 inches in diameter and 16 inches face. Steam is furnished by one Erie City Iron Works iron boiler, 5 feet 6 inches in diameter, 6 feet 6 inches in length. Ventilation is had by means of a furnace.

There were no accidents reported during the current year.

NOS. 4 AND 5. BOLEN-DARNALL COAL COMPANY.

This company has operated in the Indian Territory for the past two years. Its officers are C. A. Snider, president; J. J. Heim, vice-president; G. W. McGeath, vice-president; Ora Darnall, general manager; A. K. Craig, superintendent; M. W. Hovis, secretary and auditor; H. M. Boyer, general sales agent. One of the properties owned by this company is situated west of McAlester, Ind. T., known as mine No. 3, and located on the Missouri, Kansas and Texas Railway. The other property is located at a point known as Craig, Ind. T., on the Ardmore branch of Choctaw, Oklahoma and Gulf Railroad.

MINE NO. 3.

This mine consists of two slopes, one of which is now used as an air course and traveling way, and which two slopes are run together as mine No. 3. The main slope of this mine was sunk in the year 1895 on the McAlester vein. The coal is 4 feet thick and with a pitch of 17° at the mouth of the slope, which has now flattened out to a pitch of 13° at the face of the slope, the pitch being to the south. The main slope is sunk 2,500 feet, and twelve entries are in operation. Average number of men and boys employed in and around this mine is 144.

The production of coal for the six months ended December 31, 1903, is 24,070 tons; for the six months ended June 30, 1904, is 11,515; total production for the year is 35,735 tons.

Equipment of this mine consists of one Ellison & Son double hoisting engine, with cylinders 16 by 24 inches, drum being 6 feet in diameter, 8 feet in length, geared 1 to 3½; one single engine, Ellison & Son, 10 by 14 inch cylinder, direct acting, which operates shaker screen. One 150-horsepower McEwen high-speed engine with 16 by 16 inch cylinder for the purpose of running dynamo. Steam is furnished by two Roham steel tubular boilers 60 inches in diameter, 22 feet in length; and one O'Brien steel tubular boiler 60 inches in diameter, and 20 feet in length.

Ventilation is furnished by one 16-foot Ellison fan, driven by engine with 10 by 20 inch cylinder, direct.

Electric machinery consists of one Goodman generator, 134 horsepower, 250 volts; four Jeffrey hoists, 25 horsepower, 250 volts; and four McFarland hoists, 25 horsepower, 250 volts; a double pump 6 by 4 inch cylinders, 6-inch stroke, manufactured by Gardner, is used for pumping water from reservoir to boiler tank; one double 5¾ by 3½ inch cylinders, with 5-inch stroke Dean pump is in use for boiler feed.

During the busy season of the year a squeeze occurred in this mine which closed the slope for a distance of about 300 feet, and suspended operations for some two months, which doubtless decreased the production which otherwise would have been had from this mine.

There was one accident reported to me from this mine, which accident did not prove fatal.

MINE NO. 4.

This property was described in my previous report as consisting of five slopes, which were worked on the panel system. During the present year this system has been abandoned, and the workings are now operated as one mine on the room-and-pillar system, No. 4 slope being equipped so as to hoist the entire production, while two of the previously named slopes are now used for ventilation and escape ways for the men.

This slope was opened in the year 1901. The coal is 3 feet 4 inches in thickness, is on the McAlester vein, and pitches at the face of the slope 23° to the northeast, being an increase of 3° in the pitch from the mouth of the slope. The slope is driven down to a depth of 1,100

feet, and there are twelve entries now in operation. Air shaft is 15 feet in depth, is 6 feet 2 inches square. Average number of men and boys employed in and around this mine is 125.

The production for the six months ended December 31, 1903, is 15,737 tons; for the six months ended June 30, 1904, is 12,626 tons; total production for the year is 28,363 tons.

This mine was closed down for about three months of the past year owing to a lack of demand for coal.

Equipment consists of one Litchfield double hoisting engine, with 20 by 30 inch cylinders; drum is 8 feet in diameter and 8 feet in length; engine is geared 1 to 3. One McEwen single engine, 16 by 16 inches, driving dynamo by belt. Steam is furnished by two Kewanee steel tubular boilers, 60 inches in diameter and 18 feet in length, and one O'Brien steel tubular boiler, also 60 inches in diameter and 18 feet in length.

Ventilation is furnished by means of one 16-foot Litchfield fan and one Crawford & McCrimmon fan, driven by suitable engines.

Electric machinery consists of one Goodman generator, 100 kilowatt, 250 volts; two McFarland hoists, 35 horsepower, 220 volts; and one electric pump, 20 horsepower, 250 volts. There are also three Gardner double pumps, 6-inch steam cylinder, 4-inch water cylinder, 6-inch stroke, which are in use for pumping water in the boiler room, at the strip pits, and for supplying water from the lake.

There was one accident reported to me from this mine during the current year, and it was not fatal.

NO. 6. BREWER COAL AND MINING COMPANY.

This company is operating on the east side of what is known as the Savanna anticline. The coal is of the McAlester vein, 4 feet in thickness, and with a pitch of 36° to the southeast. Two slopes have been sunk, viz, slope No. 1 and slope No. 2, but slope No. 2 is not now and has not been for some time in operation, the reason being that the company has been waiting for a spur track to be put in from the Missouri, Kansas and Texas Railway. This, however, has now been completed, and slope No. 2 will doubtless commence operation again in a short time.

SLOPE NO. 1.

Slope No. 1 has been sunk 320 feet, and four entries are in operation. Two air shafts have been sunk, one of which is 24 feet in depth, 5 by 7 feet in size, the other one being 35 feet in depth, 4 by 5½ feet in size. Average number of men and boys employed in and around this mine is 28.

The production for the six months ended December 31, 1903, is 5,180 tons; for the six months ended June 30, 1904, is 7,125 tons; total production for the year is 12,305 tons.

Equipment consists of one South St. Louis Foundry Company double hoisting engine, with 8 by 12 inch cylinders; drum is 2 feet 6 inches in diameter and 3 feet in length. Engine is geared 1 to 5. Steam is furnished by one South St. Louis Foundry Company steel tubular boiler, 42 inches in diameter and 12 feet in length. Ventilation is had by means of a furnace.

There were no accidents reported to me from this mine.

NO. 2 SLOPE.

This slope was sunk in the year 1903, and is now at a depth of 150 feet. No entries have yet been turned. Neither has any air shaft been sunk farther than the air courses on each side of the slope. There is no equipment, except a gin operated by horsepower, as yet of any kind, but it is understood that this mine will be equipped and put in operation before long.

There were no accidents reported from this mine.

NO. 7. CAMERON COAL AND MERCANTILE COAL COMPANY.

This company operates one slope mine west of Cameron, Ind. T., on the Midland Valley Railroad. The officers of the company are George J. Williams, president; J. E. Reynolds, vice-president; C. G. Adkins, secretary-treasurer.

This slope was opened in the year 1903, on the Panama vein of coal, and is 3 feet 10 inches in thickness, with a pitch of 13° to the southeast. Slope has been sunk 800 feet, and there are four entries in operation. Air shaft is 65 feet deep and 6 by 12 feet in size and provided with a 4-foot stairway for escape. Average number of men and boys employed in and around this mine is 76.

The production for the six months ended December 31, 1903, is 1,155 tons; for the six months ended June 30, 1904, is 12,306 tons; total production for the year is 13,461 tons.

Equipment consists of one Litchfield double hoisting engine with 16 by 18 inch cylinders; drum is 4 feet in diameter and 4 feet long. Engine is direct acting. Steam is furnished by one Lookout Boiler Manufacturing Company steel tubular boiler, 60 inches in diameter, 16 feet in length. Ventilation is furnished by one 12-foot Worthington fan. A switch from the railroad is completed and over which the coal is shipped.

There were no accidents reported from this mine during the current year.

NO. 8. THE CANADIAN COAL COMPANY.

This firm is operating drift and strip pits, the product being shipped by the St. Louis and San Francisco Railway from Dawson, Ind. T.

There is no equipment, coal being hauled by wagons to a spur from the St. Louis and San Francisco Railway.

The production of coal for the six months ended December 31, 1903, is 14,257 tons; for the six months ended June 30, 1904, is 5,490 tons; total production for the year is 19,747 tons.

There were no accidents reported to me from this mine.

CAPITAL TRADING COMPANY.

The production of this company for the past year has been credited to the Savanna Coal Company, under which head all details will be be found.

NOS. 9 AND 10. CENTRAL COAL AND COKE COMPANY.

The officers of this company are R. H. Keith, president; Charles S. Keith, general manager; J. C. Sherwood, auditor; E. E. Riley, treasurer; D. Mackie, general superintendent; T. Mackie, manager mercantile department. This company operates a mine at Carbon,

Ind. T., and also has in operation one slope mine and also some strip and drift work near Henryetta, Ind. T.

MINE NO. 77.

This slope mine was sunk in the year 1896 on the McAlester vein of coal, which at this point is 3½ feet in thickness with a dip of 10° to the north. Slope has been sunk to a depth of 2,600 feet, and there are four double entries in operation. Air shaft is 28 feet in depth, 8 by 10 feet in size. Average number of men and boys employed in and around this mine is 108.

The production for the six months ended December 31, 1903, is 20,313 tons; for the six months ended June 30, 1904, is 16,841 tons; total production for the year is 37,154 tons.

Equipment consists of one Wright & Adams double direct hoisting engine, with 12 by 20 inch cylinders, drum being 3½ feet in diameter and 5 feet in length; also one Cleveland & Warwick single engine, with 5 by 12 inch cylinders, for operating screen driven by pulley. Steam is furnished by one Roach & Sons steel tubular boiler 72 inches in diameter and 18 feet in length, and one Crescent Iron Works steel tubular boiler, 60 inches in diameter and 20 feet in length.

Ventilation is furnished by one 12-foot Crawford & McCrimmon fan, with suitable engine. There is in operation in this mine one Norwalk air compressor, with steam cylinder 20 by 24 inches and air cylinder 13½ inches, which compressor operates three pumps, as follows: One Hooker single pump, diameter of cylinder 8 inches, diameter of water cylinder 5 inches, length of stroke 12 inches, in use in mine; one Pulling single pump, diameter of cylinder 16 inches, diameter of water cylinder 6 inches, length of stroke 24 inches, also in use in mine, and one pump for supplying water to the boilers, the same being a Cameron single pump, diameter of steam cylinder 7 inches, diameter of water cylinder 3½ inches, length of stroke 6 inches.

There were no accidents reported to me from this mine.

MINE NO. 22.

The above slope was opened in the year 1902 at a point east of Henryetta, and which is connected with a spur track to the St. Louis and San Francisco Railroad, on what is known as the Henryetta vein of coal, the same being 3 feet in thickness and nearly level. Slope has been driven down 600 feet, and there are 5 entries in operation. Air shaft is 40 feet deep, and is 4 by 9 feet in size. Average number of men and boys employed in and around this mine is 54.

The production for the six months ended December 31, 1903, is 14,741 tons; for the six months ended June 30, 1904, is 9,999 tons; total production for the year is 24,740 tons.

Equipment consists of one Great Western Manufacturing Company double hoisting engine, with 12 by 24 inch cylinders, drum being 4 feet in diameter and 5 feet in length. Engine is geared 1 to 4. Steam is furnished by one Newsome iron cylinder boiler, 36 inches in diameter and 28 feet in length.

Ventilation is furnished by one 12-foot Crawford & McCrimmon fan, with suitable engine. There is also in use in the mine one double Snow pump, diameter of cylinder 3 inches, diameter of water cylinders 4 inches, length of stroke 3 inches.

There were no accidents reported to me from this mine.

NO. 11. CHAMBERS COAL AND MINING COMPANY.

This company operates at Perryville, north of Savanna, and has one slope on the Secor vein. Slope was opened in the year 1903. The coal is 3 feet in thickness, with a dip of 14° to the west. Slope has been driven down 490 feet, and there are two entries in operation. There are two air shafts, one on each side of the slope, connecting with the air courses. Average number of men and boys employed in and around this mine is 20. The production for the six months ended December 31, 1903, is 1,167 tons; for the six months ended June 30, 1904, is 795 tons; total production for the year is 1,962 tons.

Equipment consists of one Shellenberg & Sons double hoisting engine, with 7 by 9 inch cylinders; drum 34 inches in diameter and 42 inches in length; engine geared 1 to 5. Steam is furnished by one John O'Brien steel tubular boiler 60 inches in diameter and 16 feet long. Ventilation is had by furnace.

There were no accidents reported to me during the current year.

NO. 12. THE COALGATE COMPANY.

This company operates at a point near to Coalgate, in the Indian Territory, shipping point being on the Missouri, Kansas and Texas Railway. The mines now operated consist of slope mines No. 1, No. 2, No. 3, No. 4, and shaft No. 5.

Slope mine No. 1, however, was abandoned in August, 1903. Mr. Ide F. Junkin, jr., is the general manager; Mr. S. W. Pomeroy is assistant secretary and treasurer, with headquarters at Coalgate, Ind. T. The coal produced by this company is from the Lehigh vein, on the north anticline.

SLOPE MINE NO. 1.

This mine, as above stated, was abandoned in August, 1903. The coal is 3 feet 6 inches in thickness, with a pitch of 7° to the northwest. The slope was driven to a depth of 3,000 feet, and eight entries were operated until the time of its abandonment. Air shaft was 125 feet in depth and 4 by 4 feet in size. Sixty-nine men were at that time employed in and around the mine. The production for the months of July and August, up to the time of the abandonment, was 1,850 tons.

Equipment has all been removed from this mine to the other mines of the company.

There were no accidents reported from this mine.

SLOPE MINE NO. 2.

The thickness of coal is 3 feet 6 inches, with a pitch of 7° to the northwest. Slope has been driven down 2,200 feet, and there are six entries in operation. Air shaft is 70 feet deep, 4 by 6 feet in size. Average numer of men and boys employed in and around this mine is 101.

The production for the six months ended December 31, 1903, is 22,000 tons; for the six months ended June 30, 1904, is 6,042 tons; total production for the year is 28,042 tons.

Equipment of this mine consists of one double-geared Ottumwa Iron Works hoisting engine. Drum is 48 inches in diameter. Engine is geared 1 to 3. Steam is furnished by two John O'Brien steel tubular

boilers, 60 inches in diameter, 16 feet in length. Ventilation is furnished by one 12-foot Crawford & McCrimmon fan, with suitable engine.

There were no accidents reported from this mine.

SLOPE MINE NO. 3.

This mine was opened in the year 1900. The coal is 3 feet 8 inches in thickness, with a pitch of 7° to the northwest. The slope has been driven down to a depth of 2,000 feet, and there are seven entries in operation. Air shaft is 100 feet in depth and 4 feet square in size. Average number of men and boys employed in and around this mine is 123.

The production for the six months ended December 31, 1903, is 25,127 tons; for the six months ended June 30, 1904, is 7,765 tons; total production for the year is 32,892 tons.

Equipment of this mine consists of one double Ottumwa Iron Works hoisting engine, with cylinders 12 by 12 inches, drum being 4 feet 6 inches in diameter and 5 feet in length. Steam is furnished by two John O'Brien steel tubular boilers, 60 inches in diameter and 16 feet in length. Ventilation is furnished by one 12-foot Crawford & McCrimmon fan, with suitable engine.

There was one accident reported to me from this mine. It was not fatal.

SLOPE MINE NO. 4.

This mine was opened in the year 1901. The coal is 3 feet 8 inches in thickness and has a pitch of 6° to the north. Slope has been driven down 1,500 feet, and there are five entries in operation. Air shaft is 120 feet in depth and is 4 by 4 feet in size. Average number of men employed in and around this mine is 150.

The production for the six months ended December 31, 1903, is 30,948 tons; for the six months ended June 30, 1904, is 22,026 tons; total production for the year is 52,974 tons.

Equipment of this mine consists of one double Litchfield hoisting engine with 10 by 16 inch cylinders, drum being 6 feet in diameter and 5 feet in length. Steam is furnished by 2 John O'Brien steel tubular boilers, 60 inches in diameter and 16 feet in length. Ventilation is furnished by one 12-foot Crawford & McCrimmon fan.

There were no accidents reported to me from this mine.

MINE NO. 5.

This mine was opened in the year 1903. The coal is 4 feet 6 inches in thickness and has a pitch of 8° to the northwest. Shaft has been sunk 633 feet. Length of slope is 450 feet, and length of plane is 200 feet. There are four entries in operation. Size of hoisting compartments is 8 by 10 feet, and size of third compartment is 4 by 8 feet. Air shaft is 600 feet in depth and is 6 by 14 feet in size. Average number of men employed in and around the mine is 96.

The production for the six months ended December 13, 1903, is 9,611 tons; for the six months ended June 30, 1904, is 5,673 tons; total production is 15,284 tons.

Equipment of this mine consists of one double Ottumwa Iron Works hoisting engine, with cylinders 24 by 36 inches, and drum 8 feet in diameter. Also one double Ottumwa Iron Works slope engine, with

12 by 18 inch cylinders and drum 6 feet in diameter. Steam is furnished by five John O'Brien steel tubular boilers, 60 inches in diameter and 16 feet in length. Ventilation is furnished by one 12-foot Crawford & McCrimmon fan.

There were two accidents reported to me from this mine, one of which proved fatal.

NO. 13. D. EDWARDS & SON.

This company is still operating the two slopes mentioned last year northeast of Kiowa and situated on the Ardmore branch of the Choctaw, Oklahoma and Gulf Railroad. These slopes are operated on a continuation of the McAlester vein of coal, which changes its character as it proceeds southwesterly and may be classed at this point as similar to the Colgate and Lehigh vein.

MINE NO. 1.

Average thickness of coal is 4 feet, with a pitch of about 17° to the northwest. The slope has been driven down to a depth of 600 feet, and 5 entries are in operation. Air shaft is 24 feet in depth and is 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 11.

The production for the six months ended December 31, 1903, is 5,633 tons; for the six months ended June 30, 1904, is 4,621 tons; total production for the year is 10,254 tons.

Equipment consists of one double, direct, Riverside Iron Works engine, with 14 by 20 inch cylinders, drum 6 feet in diameter and 8 feet in length. Steam is furnished by 2 boilers, one being a Riverside Iron Works steel tubular boiler 66 inches in diameter and 16 feet long, and one Liggett & Son steel tubular boiler 44 inches in diameter and 13 feet long.

The ventilation is furnished by one 10-foot Atlas fan. There is also in use at this mine one Ingersoll & Sargent compressor with 16 by 18 inch cylinder, which operates one double Worthington pump with 6-inch air cylinders, 2½-inch water cylinders, and 6-inch stroke. There were no accidents reported to me from this mine.

MINE NO. 2.

This slope was opened in the year 1901. The coal is 4 feet in thickness, with a pitch of about 17° to the northwest. Slope has been driven down about 350 feet and two entries are in operation. Air shaft is 20 feet in depth, and 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 13.

The production for the six months ended December 31, 1903, is 1,349 tons; for the six months ended June 30, 1904, is 1,044 tons; total production for the year is 2,393 tons.

Equipment consists of one double-geared Ledgerwood hoisting engine with 6¼ by 10 inch cylinders, drum being 18 inches in diameter and 32 inches in length. Steam is furnished by one Liggett & Son steel tubular boiler, 36 inches in diameter and 7 feet in length. Ventilation is had by means of one 10-foot Atlas fan. There are two pumps in use inside of the mine, one being a steam pump of the Union Steam Pump Company's make, with one 6⅛-inch steam cylinder, 3½-inch water

cylinder, and 8-inch stroke; and one James G. Pullen & Co. pump with 6-inch steam cylinder and 8-inch stroke. There were no accidents reported to me from this mine.

NO. 14. THE FOLSOM-MORRIS COAL MINING COMPANY.

This company operates one shaft and a strip pit at Midway, Ind. T. The officers of the company are L. P. Anderson, president; L. A. Morris, vice-president; W. B. Johnson, secretary and treasurer; and the home office of the company is at Ardmore, Ind. T. Michael Duffy, of Midway, Ind. T., is the local superintendent.

MINE NO. 1.

This mine was opened in the year 1901 on the Lehigh vein, coal being 3 feet 4 inches in thickness, with a pitch of 4° to the northeast. Shaft is 122 feet deep, from which level a slope has been driven down to the dip 920 feet and a plane to the rise of the coal has been driven up 735 feet; there are 10 entries in operation. The size of the two hoisting compartments is 7 by 10 feet, with third compartment used for return air way, 4 by 7 feet. Escape shaft is 69 feet in depth, 5½ by 7½ feet in size. Average number of men and boys employed in and around this mine is 80.

The production for the six months ended December 31, 1903, is 17,685 tons; for the six months ended June 30, 1904, is 16,676 tons; total production for the year is 34,361 tons.

Equipment consists of one Litchfield double direct hoisting engine, with 16 by 30 inch cylinders, drum being 6 feet in diameter and 7 feet in length; and one Hendrie & Bolthoff double direct engine, with 9 by 10 inch cylinders, drum being 36 inches in diameter and 17 inches in length, in use on slope.

Steam is furnished by two O'Brien steel tubular boilers 60 inches in diameter and 22 feet in length. Ventilation is had by means of one 12-foot Licthfield fan. The only pump in use around these mines is one single Union pump for the purpose of supplying boilers, the mine being perfectly dry. There were no accidents reported to me from this mine.

NOS. 15 AND 16. THE GREAT WESTERN COAL AND COKE COMPANY.

This company has operated during the past year the following mines: Slope mines Nos. 1, 2, 3, 4, 6, and 7, near Wilburton, Ind. T., which product is shipped over the Choctaw, Oklahoma and Gulf Railroad. It also operated slope mine No. 8 at a point west of McAlester, Ind. T., known as Baker, which mine was abandoned May 18, 1904. This company is now sinking a slope, known as slope mine No. 9 situated some distance west of slope mine No. 8 above mentioned. A spur track connects these two latter mines with the Choctaw, Oklahoma and Gulf Railroad, over which road the product is shipped.

The officers of this company are William Busby, president; J. F. Steele, vice-president; D. C. Welch, general auditor; Charles E. Rohrer, treasurer; J. C. Reid, general superintendent. The headquarters of this company are at South McAlester, Ind. T.

MINES NOS. 1 AND 2.

These mines have been sunk on the upper and lower Wilburton or Hartshorne veins, and all the developments and machinery will be given separately, but the product of these two mines, together with the product of mine No. 6, is concentrated upon one extensive tipple and adjacent to the Choctaw, Oklahoma and Gulf Railroad tracks, where the coal is dumped over a shaker screen to the railroad cars below. An improved box-car loader has been installed and adds very much to the facility of loading coal in covered cars, and consequently reducing the cost thereof.

SLOPE MINE NO. 1.

This slope was opened in the year 1898, the coal being 6 feet in thickness, with a pitch of 21° to the north. The slope has been driven down to a depth of 1,100 feet, and six entries are in operation. There are two air shafts, each being 30 feet in depth, and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 75.

The total production of this mine and of Nos. 2 and 6 slopes is given together, making a total production for the year of 94,242 tons.

Equipment of this mine consists of one double-geared Riverside hoisting engine with 14 by 24 inch cylinders, drum being 6 feet in diameter and 7 feet in length. Engine is geared 1 to 4. Steam is furnished by two O'Brien steel tubular boilers, 60 inches in diameter and 18 feet in length, and one Brownell steel tubular boiler, 72 inches in diameter and 18 feet in length. Ventilation is had by means of two 10-foot Erie fans. There is also in use one Ingersoll & Sargent air compressor, with 18-inch steam cylinder and 16-inch air cylinder, which furnishes power for the pumps in use in mines Nos. 1 and 2. The pumps in use in No. 1 mine are one Dean single pump, with 12-inch steam cylinder, 5-inch water cylinder, and 12-inch stroke, in use in said slope; and one single Snow pump, with 6-inch steam cylinder, 4-inch water cylinder, and 6-inch stroke, also in use in slope. There were no accidents reported to me.

SLOPE MINE NO. 2.

This slope was opened in the year 1898. The coal is 4 feet in thickness and is on the upper Wilburton or Hartshorne vein, with a pitch of 21° to the north. The slope has been driven down to a depth of 1,000 feet. There are six double entries in operation. There are two air-shafts to this mine, one on each side of the slope, each being 20 feet in depth and 5 by 5 feet in size. Average number of men and boys employed in and around this mine is 78. For product of coal from this mine see No. 1 mine.

Equipment consists of one Riverside double-geared hoisting engine, with 14 by 20 inch cylinders, with drum 6 feet in diameter and 8 feet in length; engine geared 1 to 4. Steam is furnished from the same boilers as has been above described under head of No. 1 mine. Ventilation is furnished by two 10-foot Ketcham fans.

There are two pumps in use at this mine, the power for which is furnished by the air compressor described under the head of No. 1 mine, one pump being a Dean single pump with 12-inch steam cylinder, 5-inch water cylinder, with 12-inch stroke, and one F. M. & Co. single

pump with 6-inch steam cylinder, 4-inch water cylinder, and 6-inch stroke, both of the foregoing pumps being in use in the slope.

There was one accident reported to me from this mine, which did not prove fatal.

SLOPE MINE NO. 3.

This slope was opened in the year 1899 on the upper Wilburton or Hartshorne vein. The coal is 4 feet in thickness with a pitch of 18° to the north. Slope has been driven down 1,100 feet and there are six entries in operation. Air shaft is 40 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 77.

The total production of coal for the year from this mine is 45,848 tons.

Equipment consists of one double-geared Litchfield hoisting engine, with 12 by 24 inch cylinders, drum being 5 feet in diameter and 8 feet in length. Engine is geared 1 to 3. Steam is furnished by two boilers, one being an O'Brien steel tubular boiler 60 inches in diameter and 14 feet in length, and one being a Thompkins steel tubular boiler 42 inches in diameter and 10 feet in length. Ventilation is had by means of one 12-foot Redpath South McAlester fan.

There are two pumps in use in this mine, one being a Hooker single pump, with 10-inch steam cylinder, 4½-inch water cylinder, and 12-inch stroke, and one being a Fairbanks double pump, with 6-inch steam cylinder, 4-inch water cylinders, and 6-inch stroke.

There was one accident reported to me from this mine, which proved to be nonfatal.

SLOPE MINE NO. 4.

This slope was opened in the year 1900 on the lower Wilburton or Hartshorne vein. The coal is 4 feet 5 inches in thickness, with a pitch of 18° to the north. Slope has been driven down to a depth of 800 feet, and there are four entries in operation. Air shaft is 25 feet in depth, and 6 by 6 feet in size. The average number of men and boys employed in and around this mine is 51.

The total production of coal for the year from this mine is 25,844 tons.

Equipment consists of one double-geared Riverside engine, with 14 by 24 inch cylinders, drum being 6 feet in diameter and 8 feet in length. Engine is geared 1 to 4. Steam is furnished by one Dallas Iron and Foundry Company steel tubular boiler, 54 inches in diameter and 12 feet in length. Ventilation is had by means of one 12-foot fan. There are two pumps in use in this mine, both being Snow double pumps. One of these pumps has 7-inch steam cylinders, 4½-inch water cylinders, and 8-inch stroke. The other one has 5¼-inch steam cylinders, 4¾-inch water cylinders, and 5-inch stroke.

There was one accident reported to me from this mine of a nonfatal character.

SLOPE MINE NO. 6.

This slope was opened in the year 1899 on the lower Hartshorne or Wilburton vein. The coal is 5 feet in thickness, with a pitch of 25° to the north. The slope has been driven down to a depth of 1,200 feet, and four entries are in operation. Air shaft is 25 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 49.

The total production of this mine for the year will be found included with the output of No. 1 mine, the reason for this being that all the coal produced by Nos. 1, 2, and 6 mines are concentrated at No. 1 tipple and there loaded on the railroad cars.

Equipment consists of 1 Ellison & Son single-geared hoisting engine, with 12 by 20 inch cylinder, and drum 5 feet in diameter and 6 feet in length. The engine is geared 1 to 4. Steam is furnished by 1 John O'Brien steel tubular boiler 54 inches in diameter and 12 feet in length. Ventilation is had by means of 1 12-foot Erie fan. No pumps are in use in this mine.

There were 3 accidents reported to me from this mine, 1 of which proved fatal.

SLOPE MINE NO. 7.

This is a new slope mine recently opened. It has been driven down 300 feet, and no entries have yet been turned. Air shaft is 85 feet in depth and 6 by 8 feet in size. The pitch of slope is 18° to the north. The production of this mine has been used for boilers, and is included in the production of other mines.

SLOPE MINE NO. 8.

This slope was opened in the year 1898 on the lower Hartshorne vein, a full description of which mine was given in my last year's report. This mine was abandoned on May 18, 1904, up to which time the total production of coal was 31,044 tons.

All equipment in use at this mine is being removed to a new slope now being driven down on the McAlester vein some distance west, and will be known as slope mine No. 9. This equipment consists of one Danville Machine Company double engine, with 18 by 36 inch cylinders, drum being 5 feet 6 inches in diameter and 6 feet in length. The steam is furnished by two boilers, one being a John O'Brien steel tubular boiler, 54 inches in diameter and 18 feet in length, and one being a Brownell boiler, 44 inches in diameter and 14 feet in length. Ventilation is had by means of one 12-foot fan.

There was one accident of a nonfatal character reported to me from this mine.

The rules enforced by the Great Western Coal and Coke Company are appended below:

DUTIES OF FIRE BOSSES.

RULE 1. Each fire boss shall enter the mine before the men have entered it, and before proceeding to examine the same he shall see that the air is traveling in its proper course; and if he finds the air traveling properly he shall then proceed to examine the workings.

RULE 2. He shall not allow any person, except those duly authorized, to enter or remain in any part of the mine through which a dangerous accumulation of gas is being passed in the ventilating current from any other part of the mine.

RULE 3. On entering the mine in the morning before the men have entered, he shall proceed to examine the same and mark all rooms or working places in the following manner:

When no gas is found he shall simply mark the date of the month, thus: "30," at the entrance of the place and on the coal at the face, which mark will be proof that the place has been examined.

Two large crosses with the day of the month between them, thus: + 30 +, indicates the presence of fire damp and *extreme danger*. These marks must be made on a cap

piece or other timber and laid in the roadway at mouth of room or entrance to working place.

RULE 4. After complete examination has been made he shall proceed to the bottom of the shaft and signal to the engineer that the workmen may now descend the shaft. In mines where there are more than one fire boss each fire boss shall allow only such men as work in the portion examined by him to proceed to their working places, and shall detain all others until the arrival of the fire boss who has examined their working places. Should he have found explosive gas or fire damp in any of the working places, he shall personally notify the men working in such places as to the danger and warn them not to work until he has removed the danger. After notifying the men working in places where he has discovered fire damp, it will be his duty, as speedily as possible, to take the necessary steps to remove the fire damp and render the place safe for work; he will then notify each man that his place is now free of fire damp. In removing the fire damp it will be his duty to see that the gas so removed will not be carried on to naked lights in the return air way.

RULE 5. It will be his special duty at all times to see that the air is moving in the proper manner; to look out for falls in air courses and to remove them if possible. Should the fall or falls be too large for him to remove personally, he will notify the mine boss, whose duty it will be to assign a sufficient force to have them removed as speedily as possible.

RULE 6. The fire boss shall inspect the mine as usual on all holidays and idle days, and on Sundays he shall inspect the mine not later than 8 a. m.

DUTIES OF MINERS.

RULE 7. As quantities of explosive gas or fire damp are generated in these mines, the miner will take special care, in entering his room or working place, to notice the cautionary marks made for his protection, the marks being made on a cap piece or other timber laid in the roadway at mouth of room or entrance of working place, the marks being as follows:

The day of the month, thus: "30," indicates that inspection has been made and that the room or working place is free from fire damp.

Two large crosses with the day of the month between them, thus: + 30 +, indicates the presence of fire damp; *extreme danger*. In case the marks indicate the presence of fire damp the workman shall not, under any circumstances, enter such room until the fire boss has again inspected and rendered the place safe.

RULE 8. The miner shall each day examine his working place before beginning work and take down all dangerous slate, or otherwise make it safe by timbering the same, before commencing to dig or load coal, and he shall at all times be very careful to keep his working place in a safe condition during working hours.

RULE 9. Should he at any time find his place becoming dangerous from any unusual condition that may have arisen, he shall at once cease working and inform the mine boss or his assistant of such danger.

RULE 10. Every miner shall order props, cap pieces, or other necessary timbers from the driver who brings him his cars. The miner shall always keep on hand a sufficient quantity of props, cap pieces, and other necessary timbers, and shall order same in advance, so that the driver may have time to bring them. Should the miner from any cause have no props or other necessary timbers on hand, he shall immediately cease work, vacate his working place, and report the fact to the mine boss.

RULE 11. All coal must be undercut at least 2 feet in rooms and no shot to be placed so the point of the shot or any part of the powder shall be more than 4 feet from the face or more than 2 feet beyond the undercutting. All entries or other narrow work under 12 feet wide to be undercut to full depth of holes drilled for blasting.

RULE 12. In case that timbers are blown out, causing falls at the working face owing to the negligence of the miner, he will be required to clear such falls at his own expense. The company will assist only where the roof was known to have been bad or there was no negligence shown on the part of the miner.

RULE 13. Any miner loading "bony" coal or any foreign matter with his coal shall for the first offense be suspended one day; for a second offense be suspended one week; and for the third offense shall be discharged.

DUTIES OF DRIVERS.

RULE 14. When a driver has occasion to leave his trip, or when his trip from any cause is stopped anywhere except at a regular station, he must see that it is left, when possible, in a safe place, secure from cars or other dangers or from endangering drivers or trips following, and if the trip is left in a main hauling way, he must go back and notify approaching drivers, if any, of the obstruction, that they may be enabled to stop their trips and avoid collisions.

RULE 15. The driver must take great care in taking his trip down grade to have the sprags so adjusted that he can keep the cars under control and thus prevent accidents.

RULE 16. On receiving orders from workmen for props, cap pieces, or other necessary timbers, the driver will bring the same with all possible dispatch, and in case, for any reason, they can not be obtained, he shall report the fact to the workman so ordering and also to the mine boss.

DUTIES OF ROPE RIDERS.

RULE 17. The position of rope rider being one of peculiar hazard, he must use special care and precaution to avoid the dangers incident thereto.

RULE 18. He shall exercise great care in seeing that all couplings are safe for use, and see that all trips are properly coupled before starting; and should he, at any time, see any material defect in the rope, link, hook, or chain, he shall immediately remedy such defect, or, if he is unable to do so, he shall detain the trip and report the matter to the mine boss.

RULE 19. He shall allow no person to ride up and down on cars except on man trip, and he shall not run man trip without safety chain from rope to rear end of the last car. Man trip shall leave top of slope promptly at 6.50 in the morning, and bottom of slope at 5 o'clock in the evening.

DUTIES OF CAGERS OR MEN ASSIGNED TO THAT POSITION.

RULE 20. The cager shall be at his proper place at the bottom of the shaft when men begin to descend in the morning and remain there until hoisting of coal commences. He shall see that men are safely off the cage and then signal the engineer. He shall be at his proper place at the time the hoisting of coal ceases and men begin to be hoisted in the evening, and shall see that no more than six persons get on the cage at any one time, and when they are safely on he shall signal the engineer to hoist them. The man acting as cager during the hoisting of coal shall see that all cars are safely held on the cage by the catch provided for that purpose before signaling the engineer. He shall not allow any tools or material of any kind to be placed on the same car with men or boys, nor on the opposite cage when persons are being hoisted out of the mine or lowered into it, except when for the purpose of repairing the shaft or the machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be hoisted or lowered before or after the men have been hoisted or lowered. And he shall immediately inform the mine boss of any violation of this rule. In signaling the engineer the cager shall use the signals directed in general rule No. 49.

DUTIES OF SHOT FIRERS.

RULE 21. Shot firers must not fire any shot unless coal is properly cut in accordance with the two following sections, nor unless said shot is otherwise in all respects proper and safe.

Section 1. All coal must be undercut at least 2 feet in rooms, and no shot to be placed so the point of the shot or any part of the powder shall be more than 4 feet from the face or more than 2 feet beyond the undercutting.

Section 2. All entries or other narrow work under 12 feet wide to be undercut to full depth of holes drilled for blasting.

RULE 22. Shot firers must fire only one shot at a time in any separate split of air, and the following shot must not be lit until the smoke has cleared away.

RULE 23. No shots are to be fired while anyone except the shot firers are in the mine, except by special permission of the mine boss, and the shot firers shall not enter the mine for the purpose of firing until all the men are out of the mine.

RULE 24. Shot firers must commence firing from a point farthest from the intake airway, and proceed with a firing in a direction opposite to that in which the air is traveling.

RULE 25. Before firing a shot the shot firers shall examine for gas in the place and under no circumstances will they fire where there is an accumulation of gas. Where gas is found it must be carefully removed by brushing until no gas shows in safety lamp. Where gas has been found, or in any place making gas, after firing a shot, the shot firer will return and see that no fire has been left from the shot.

RULE 26. No shots are to be tamped by miners, thus allowing shot firers opportunity to examine shots and leave it unfired if he considers it unsafe to fire it.

DUTIES OF FIRE RUNNER.

RULE 27. It shall be the duty of the fire runner to examine all places where shots have been fired to see that no fire has been started by the shots, and they shall mark the date of the month and the initial of their name on coal at the face of all entries as proof of their having examined the place. They shall commence examining the mine as soon as possible after the shot firers have fired the shots.

RULE 28. The fire runners shall see that barrels are kept near the face of each entry, and these barrels are kept full of water; also see that water pipes in each entry are in repair and ready for immediate use; that sufficient hose and all other material is handy for fighting fires. Any deficiency must be immediately reported to the pit boss.

DUTIES OF TOPMEN OR MEN ASSIGNED TO THAT POSITION.

RULE 29. He shall be at his proper place at ground landing of shaft in the morning from the time that persons begin to descend into the mine and shall remain there until the hoisting of coal begins. He shall see that not more than six persons get on the cage at any one time, and when they are ready he shall close the gate and signal the engineer to lower cage, and he shall not open gate until cage has been placed in position to receive men. After the hoisting of coal ceases in the evening it shall be his duty to be at his proper place until all men are hoisted from the mine. He shall see that men get safely off the cage and shall then signal the engineer in the proper manner. He shall not allow any tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when persons are being lowered into the mine, except for the purpose of repairing the shaft or machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be lowered before or after the men have been lowered. In signaling the engineer the topman shall use the signals as directed in Rule No. 49.

RULE 30. At shafts not using self-dumping cages the topman shall see that the stops for the cages to rest upon are kept in good working order, and he must remove loaded cars carefully, and in placing empty cars on the cage must see that the car is securely held by the catch provided for that purpose before signaling the engineer.

DUTIES OF ENGINEERS.

RULE 31. It shall be the duty of the engineer to keep careful watch over his engine and all machinery under his charge and see that the same is in proper working order before attempting to raise or lower men or material.

RULE 32. He shall see that the boilers are properly cleaned and inspected at proper intervals, and that the steam pressure does not at any time exceed the limit allowed by the superintendent.

RULE 33. He shall not allow any unauthorized person to enter the engine house, neither shall he allow any person to handle or run the engine without the permission of the superintendent.

RULE 34. When workmen are being raised or lowered he shall take special precaution to keep the engine well under control.

RULE 35. The engineer will observe and operate his engine in accordance with the general and special rules governing signals. See General Rule No. 49.

DUTIES OF FIREMEN.

RULE 36. Every fireman or other person in charge of a boiler or boilers for the generation of steam shall keep a careful watch of the same. He shall see that the steam pressure does not exceed at any time the limit allowed by the superintendent. He shall frequently try the safety valves and shall not increase the weight on the same. He shall maintain a proper depth of water in each boiler, and if anything should happen to prevent this he shall report the same without delay to the engineer, and take such other action as may, under the particular circumstances, be necessary for the protection of life and preservation of property.

RULES AND REGULATIONS IN REGARD TO POWDER.

RULE 37. All persons (except those appointed by the coal company or the mercantile company having charge of the powder sales) are prohibited from entering the powder house on any pretense whatever.

RULE 38. The use of tobacco in any form by any person while in the performance of his duties in and around the powder houses is strictly prohibited; neither shall any person enter a powder house with matches or other ignitible material about his person.

RULE 39. No powder keg shall be opened in any other manner than by the slide or lead plug provided for that purpose. It is strictly prohibited to use a plug of any kind to drive through the end of a powder keg for the purpose of opening the same.

RULE 40. It will be the duty of those authorized, who perform this work, to see that no person enters the powder house while said work is in progress, and to govern their actions by the above regulations.

RULE 41. No lights of any kind shall be allowed in or around the powder house.

RULE 42. No powder or high explosive shall be taken into the mine by any one man in greater quantities than required for use in one day (unless such quantity be 8 pounds or less), and all powder shall be sent or carried into the mine in metallic canisters.

RULE 43. Powder must be kept in proper air-tight powder cans and the cans must be kept in a close tight-locked box, said box to be at least 300 feet from any working face and only at points designated by the mine boss.

RULE 44. Whenever a workman shall open a box containing powder or other explosives, or while in any manner handling the same, he shall first place his lamp not less than 5 feet from such explosives, and in such a position that the air current can not convey sparks to it, and he shall not smoke while handling explosives.

GENERAL RULES.

RULE 45. No person shall be allowed to enter any mine, except employees working in that mine, without permission of the superintendent.

RULE 46. No person in a state of intoxication shall be allowed to go into or loiter about any mine.

RULE 47. No person shall be allowed to travel to or from his work on any incline, plane, or slope when other good roads are provided for that purpose. As each mine is provided with a passway around the shaft at the bottom, all persons employed in the mine or others are strictly forbidden to cross over from one side of the shaft to the other side through the hoisting compartment under any circumstances whatever.

RULE 48. Workmen and all others are strictly forbidden to commit any nuisance or throw into, deposit, or leave coal, dirt, or stones or other rubbish in the air courses or roads so as to interfere with, pollute, or hinder the air passing into or out of the mine.

RULE 49. In all shafts or slopes where persons, coal, or material of any kind are hoisted or lowered by machinery, the following code of signals shall be used:

One signal—To hoist coal or other material.

One signal—To stop cage or car when in motion.

Two signals—To lower cage or car.

Three signals—That persons are to be hoisted; on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal the persons will get on car or cage, and when they are safely on the car or cage one signal shall be given to the engineer to hoist. After the hoisting of coal has ceased in the evening and the 5 o'clock whistle has blown, it will only be necessary to use the three signals for the first three cages of men hoisted, after which the one signal "ready" will only be given for each cage until all the men are out.

Five signals—Turn steam on to slope or underground engines.

Six signals—Shut steam off from slope or underground engines.

RULE 50. No person or persons shall go into any old or abandoned part of the mine, or into any other place which is not in actual course of working, without permission of the mine boss, nor shall they travel to and from their work except by the traveling ways provided and assigned for that purpose.

RULE 51. No person in the mine shall be allowed to enter any room or working place to which his duties do not call him. It is strictly forbidden for any person to visit a room or other working place except his own, either during the presence or absence of its proper occupant. All boys or other persons assigned to special posts as trappers or otherwise must remain at their post while on duty.

RULE 52. All miners must be in the mine before the 7 o'clock whistle blows in the morning. Drivers must have their mules out of the stables and ready for work, and all other company men must be ready to start work when the whistle blows at 7 o'clock.

RULE 53. Any person found with tools or powder belonging to another, or taking or using tools or powder belonging to another without the owner's consent, shall for

the first offense be fined $2.50, and for the second offense he shall be discharged. Such fines to be paid to the owner of the tools and to be collected at the company's office, and any person detected in exchanging checks on the pit cars shall be immediately discharged.

RULE 54. Any miner or employee who shall damage any signal bell or wire, brattice, airway or door, or open a door and not close it again, or do anything by which the safety of the men or the mine may be endangered, shall be promptly discharged.

RULE 55. Whenever it shall be the duty of any person to go into the "sump" or space below the cage at the bottom of the shaft for the purpose of cleaning out, removing dirt or otherwise, they shall first place a prop or props of wood or iron in such a manner as to arrest the cage should it from any cause be made to descend, and thus secure themselves or others from possible danger.

RULE 56. All employees who desire to absent themselves from work must notify the foreman under whom they work the day before. And anyone absent without permission will for the first offense be suspended three days, and for the second offense be suspended one week, and for the third offense be discharged, except in case of sickness.

RULE 57. All persons except those duly authorized are forbidden to meddle or tamper in any way with any electric or signal wire about the mine.

RULE 58. No miner or other employee shall be entitled to receive his time at the company's office until he shall obtain from the mine boss a clearance card; and in case of employees renting a company house a note must be obtained from the superintendent's clerk stating the amount of rent due.

RULE 59. No miner or other person, unless duly authorized by the pit boss, will fire a shot of any kind. Anyone violating this rule will be immediately discharged.

RULE 60. No person shall ride on loaded cars, and no one except rope rider shall ride on any rope trip on any slope, except such trips as shall be run at morning and night on No. 7 slope for carrying the men to and from their work, and then only when safety chain is on the car.

Adopted May 1, 1902.

JOHN C. REID, *General Superintendent.*

Approved:
WILLIAM BUSBY, *President.*

NOS. 17 AND 18. HAILEY-OLA COAL COMPANY.

This company operates at Haileyville, Ind. T., and at Ola, a point east of Wilburton, Ind. T. The product at Haileyville is shipped from that station and the product from Ola is shipped from Wilburton, both being on the Choctaw, Oklahoma and Gulf Railroad. Dr. D. M. Hailey, of South McAlester, is president of the company, Mr. James Elliott is general manager, and Mr. R. W. Church is local superintendent at Ola, and Mr. M. K. McCoubrey is mine foreman at Haileyville. Mines at Haileyville are known as No. 1 shaft, and Slope Mine No. 3. The coal mined is the lower Hartshorne vein.

HAILEYVILLE NO. 1 SHAFT.

This mine consists of a shaft which was opened in the year 1900 and connected with No. 2 slope, which was opened in the year 1898, the whole now being operated as one mine and the coal all hoisted through the shaft, the No. 2 slope mentioned being considered now as a plane and used as an escapeway. The coal in this mine is 4 feet 9 inches in thickness, with a pitch of 13° to the north. The shaft is 320 feet in depth. The slope has been driven down 700 feet to the dip from level of shaft. No. 2 slope which forms the plane to No. 1 shaft is 1,640 feet in length. There are nine double entries in operation. The size of the two hoisting compartments is 7½ by 11½ feet, with third compartment 4 by 7½ feet. There are two air shafts, each 40 feet deep and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 150.

The production of coal for the six months ended December 31, 1903, is 46,814 tons; for the six months ended June 30, 1904, is 38,507 tons; total production for the year is 85,321 tons.

Equipment consists of one double Litchfield hoisting engine with 18 by 32 inch cylinders, drum being 8 feet in diameter and 7 feet in length. Plane engine consists of one double Litchfield engine with 12 by 16 inch cylinders, drum being 6 feet in diameter and 5 feet in length, engine geared 1 to 4, and is used for hoisting empty pit cars up plane and dropping loads down to the shaft bottom to be hoisted to the surface. Slope engine consists of one Griffith & Weage double-geared engine, with 8 by 10 inch cylinders, drum being 30 inches in diameter and 3 feet in length, engine geared 1 to 4. Steam for the hoisting and slope engines at shaft is furnished by two steel boilers, one being a Brownell boiler 66 inches in diameter and 16 feet in length, and one being a Kenny Brothers boiler 60 inches in diameter and 16 feet in length. For the purpose of furnishing steam to the two fans and the plane engine, there are two boilers in use, one being a Brownell boiler, 66 inches in diameter and 16 feet in length, and one being a steel flue boiler 36 inches in diameter and 12 feet in length. Ventilation is furnished for this mine by two 14-foot Ottumwa fans.

The pumps in use at this mine are one Hooker duplex pump with 12-inch steam cylinders, 6-inch water cylinders and 12-inch stroke, at use in bottom of shaft; one Knowles single pump, 10-inch steam cylinder, 5-inch water cylinder and 12-inch stroke, also in use at the bottom of slope; one Snow duplex pump is in use with 5¼-inch steam cylinders, 2½-inch water cylinders and 5-inch stroke in boiler room.

There were three accidents reported to me from this mine, two of which proved fatal.

SLOPE MINE NO. 3.

This slope was commenced in the year 1901. Average thickness of coal is 5 feet, and it has a pitch of 20° to the west. The slope has been driven down 500 feet and there are two entries in operation. Air shaft is 20 feet in depth and 6 by 8 feet in size. The average number of men and boys employed in and around this mine is 25.

The production for the six months ended December 31, 1903, is 8,495 tons; for the six months ended June 30, 1904, is 2,940 tons; total production of coal for the year is 11,435 tons.

Some stripping has been done near Haileyville during the past year, coal at this point being 3 feet in thickness with a pitch of 20° to the southwest.

This stripping has all been done under contract, and the amount of coal taken out during the past year is 452 tons.

Equipment consists of one South St. Louis Foundry and Machine Company double-geared hoisting engine with 10 by 16 inch cylinders, drum being 4 feet in diameter and 4 feet in length, engine geared 1 to 4. Steam is furnished by two boilers, one being a Johnson steel tubular boiler, 54 inches in diameter, and one an Erie steel tubular boiler, 48 inches in diameter and 12 feet in length. Ventilation is had by means of one 12-foot Ottumwa fan, driven by suitable engine.

Two pumps are in use, one being a Knowles single pump, with 10-inch steam cylinder, 5-inch water cylinder and 12-inch stroke, and one being a Snow duplex pump, with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke.

There were no accidents reported to me from this mine.

OLA MINE NO. 1.

Coal in this mine is 5 feet in thickness with a pitch of 25° to the north. Slope has been driven down to a depth of 950 feet, and there are six entries in operation. Air shaft is 9 feet in depth and 5 by 5½ feet in size. The average number of men and boys in this mine and also in No. 1½ mine is 87.

The production of coal as given here will include the output from No. 1½ mine, as production from both these mines is loaded from one tipple. The production for the six months ended December 31, 1903, is 28,258 tons; for the six months ended June 30, 1904, is 26,103 tons; total production for the year is 54,361 tons.

Equipment consists of one double-geared Litchfield hoisting engine with 12 by 16 inch cylinders, drum being 4 feet 6 inches in diameter. Steam for this engine is furnished by a battery of three boilers, the same being horizontal tubular boilers, two of them being Brownell boilers, 66 inches in diameter and 18 feet in length, and one being a John O'Brien boiler, 48 inches in diameter and 18 feet in length. Ventilation is furnished by one 12-foot Erie fan with suitable engine.

Three pumps are in use, one being a Snow duplex pump, with 4½-inch steam cylinders, 3¾-inch water cylinders and 4-inch stroke; one Snow duplex pump, with 6-inch steam cylinders, 4-inch water cylinders and 6-inch stroke; and one Pullen & Son duplex pump, with 16-inch steam cylinders, 6-inch water cylinders and 24-inch stroke, which is used for pumping water from face of slope to surface. In addition to the above pumps, there is also a Pullen & Son duplex pump, with 16-inch steam cylinders, 6-inch water cylinders and 24-inch stroke, which pump is used for pumping water from the creek to the mines for boiler use.

There were no accidents reported to me from this mine.

OLA MINE NO. 1½.

The coal in this mine is the lower Hartshorne vein, is 5 feet in thickness, and has a pitch of 25° to the north. The slope has been driven down 600 feet and three entries are in operation. Air shaft is 10 feet in depth, and 5 by 5½ feet in size. Average number of men and boys is included in description of slope mine No. 1. The production of coal is also so included.

Equipment consists of one single-geared engine, with 12 by 20 inch cylinder, drum being 54 inches in diameter and 60 inches in length. Steam is furnished by one Zanesville (Ohio) horizontal tubular iron boiler, 36 inches in diameter and 15 feet in length. Ventilation is supplied by one 10-foot Eagle Iron Works fan.

There was one accident, of a nonfatal character, reported to me from this mine.

OLA SLOPE MINE NO. 3.

This slope was opened in the year 1899. The coal is 5 feet in thickness, with a pitch of 25° to the north. The slope has been driven down to a depth of 750 feet, and five entries are in operation. Air shaft is 8 feet in depth, and 4 by 6 feet in size. Average number of men and boys employed in and around this mine is 31.

The production of coal for the six months ended December 31, 1903, is 9,697 tons; for the six months ended June 30, 1904, is 8,160 tons; total production for the year is 17,857 tons.

Equipment consists of one single-geared Schollhom-Albright engine, with 10 by 20-inch cylinder, provided with drum 48 inches in diameter and 61 inches in length, engine being geared 1 to 5. Steam is furnished by one John O'Brien horizontal tubular iron boiler 48 inches in diameter and 18 feet in length. Ventilation is supplied by one 10-foot South McAlester Foundry and Machine Company fan.

There is one pump in use at this mine at the bottom of the slope, the same being a Knowles single pump, with 10-inch steam cylinder, 5-inch water cylinder, and 12-inch stroke.

There were no accidents reported to me from this mine.

OLA SLOPE MINE NO. 4.

This slope was opened in the year 1903. The coal is 6 feet in thickness, with a pitch of 31° to the north. Slope has been driven down 300 feet and no entries are in operation. Air shaft is 50 feet in depth and 5 by 6 feet in size.

The total production of coal for the year is 287 tons.

Equipment consists of one G. B. Allen single-geared hoisting engine, with 8 by 20 inch cylinder. Engine is geared 1 to 4. Steam is furnished by one Brownell steel tubular boiler, 66 inches in diameter and 16 feet in length. Ventilation is had by means of one 10-foot Eagle Iron Works fan.

The pumps in use are one Hooker pump, with 12-inch steam cylinder, 6-inch water cylinder, and 12-inch stroke, and one Laidlaw & Dunn pump, with 7½-inch steam cylinder, 4½-inch water cylinder, and 6-inch stroke, both pumps being in use in the mine.

There were no accidents reported to me from this mine.

NO. 19. HENDERSON SMOKELESS COAL COMPANY.

Under this name I have heretofore reported an operation at Panama which was sold out to the Ozark Coal and Railway Company, and the Henderson Smokeless Coal Company is now conducting operations at Bokoshe, at the junction of the Fort Smith and Western Railroad and the Midland Valley Railroad. Mr. Ed. Henderson is the general superintendent.

MINE NO. 1.

The coal is the Panama vein; is 4 feet 6 inches in thickness, with a pitch of 10° to the southeast. Slope was opened in the year 1904 and has been driven down 270 feet. Air shaft is 35 feet in depth and 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 30. The total production of coal for the year is 2,036 tons.

Equipment consists of 1 double-geared hoisting engine, made by S. Flory Manufacturing Company, Bangor, Pa., with 12¼ by 15 inch cylinders, drum being 4 feet in diameter and 4 feet face. Engine is geared 1 to 5. Steam is furnished by 1 Nagle iron locomotive boiler, 54 inches in diameter and 19 feet in length.

Ventilation is had by means of a furnace at present. A fan will be erected in the near future. There are now in use 2 Worthington double pumps with 7½-inch steam cylinders, 8-inch water cylinders, and 6-inch stroke, 1 being used in the mine and 1 at the water tank for supplying water to the boilers.

There were no accidents reported to me from this mine.

MINE NO. 2.

This mine has been opened recently, and has been driven down about 100 feet. The coal is of the same thickness and pitch as No. 1. The production is included with mine No. 1. No equipment has yet been installed at this mine, coal being hoisted by horsepower.

There were no accidents reported to me.

Some stripping has also been done at this point, the output of which is also included above.

The Midland Valley Railroad Company is now grading for the purpose of putting in a switch to these mines, which will shortly be completed.

NO. 20. HENRYETTA COAL AND MINING COMPANY.

This company is operating near Henryetta, on the St. Louis and San Francisco Railway, being connected by a spur switch about 1 mile in length. The coal is the Henryetta vein. There is one slope mine in operation. The coal in this mine is 3 feet in thickness and pitches about ½° to the southwest. Slope has been driven down through the rock 60 feet, at an angle of 13°, to intersect the coal and land the same at a point convenient for loading on the spur track. Two entries have been turned in the coal. Air shaft is 20 feet in depth and 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 34.

The production of coal for the six months ended December 31, 1903, is 16,844 tons; for the six months ended June 30, 1904, is 13,411 tons; total production for the year is 30,255 tons.

Equipment consists of one single-geared hoisting engine, with drum 2 feet in diameter, maker's name unknown. Ventilation is had by means of one 10-foot fan.

Considerable of the product reported above was derived from 2 strip pits operated by the above company.

There were no accidents reported to me from this mine.

NO. 21. THE HORSEPEN COAL AND MINING COMPANY.

This company has been stripping coal at Collinsville, in the Cherokee Nation, the product being shipped from Collinsville on the Atchison, Topeka and Santa Fe Railway. Operations were commenced in the year 1899. The coal is 18 inches in thickness, with a very slight pitch. Average number of men and boys employed in and around these strip pits is 62.

The production for the six months ended December 31, 1903, is 7,134 tons; for the six months ended June 30, 1904, is 21,765 tons; total production for the year is 28,899 tons.

There were no accidents reported to me from this company.

NO. 22. HOWARD COAL MINING COMPANY.

The following letter from Mr. F. P. Anderson will explain the operations at this point:

HOWARD COAL MINING COMPANY,
Tulsa, Ind. T., July 4, 1904.

SIR: I commenced operations here in January, 1904. Have stripped and loaded out 800 tons of coal up to July 1. My operations have all been confined to stripping, except one slope which I have commenced to put down, and now have it down 50 feet; also the air course. There is an old slope at another point down 250 feet, with air course, and one side entry. At this slope I will commence this week to install a steam hoister, etc. The coal is 32 inches in thickness, with a very slight dip to the northwest. Both these slopes start in from strip pits, from which the coal has been taken out. We are located in the Creek Nation, 3 miles south of Dawson. Have a spur of the Frisco Railway from Dawson. We are 5 miles southeast of Tulsa, and 1½ miles northeast of the Missouri, Kansas and Oklahoma Railway.

Very respectfully,

HOWARD COAL MINING CO. (INCORPORATED),
F. P. ANDERSON, *Secretary-Treasurer.*

WILLIAM CAMERON.

NO. 23. INDIAN COAL AND MINING COMPANY.

This company has recently commenced operations near to Buck, Ind. T. The officers of this company are Harmon A. Miller, president; Charity Rusk Craig, vice-president, and John A. Nichols, secretary and treasurer. The coal is the lower Hartshorne vein and is 3 feet in thickness with a pitch of 18° to the southeast. A slope has been driven down by contract about 240 feet. Two air shafts have been sunk, the one being 33 feet and the other 32 feet in depth, both being 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 7. The production up to date consists of 122 tons.

Equipment consists of one Nelsonville double-geared hoisting engine with 10 by 12 inch cylinders, drum being 4 feet in diameter. Engine is geared 1 to 4. Steam is furnished by one Atlas steel tubular boiler, 48 inches in diameter and 14 feet in length. Ventilation is had by means of a furnace. There are two small pumps in use, one in the slope and one which is used for supplying water to boilers. One fatal accident was reported to me from this mine.

NO. 24. KALI-INLA COAL COMPANY.

This company has recently commenced sinking a slope and preparing for an output at a point southwest of Gowen, Ind. T. This slope is connected by a spur track with the Gowen branch of the Choctaw, Oklahoma and Gulf Railroad. The coal is 4 feet 6 inches in thickness, with a pitch of 6½° to the south. Slope has been driven down 300 feet. No entries have yet been turned. Air shaft is 36 feet in depth and 7 by 10½ feet in size. Average number of men and boys employed in and around this mine is 28. No coal has yet been shipped.

Equipment consists of two small hoisting engines in temporary use which are supplied with steam by two boilers, one being 40 inches in diameter and 10 feet in length and one 72 inches in diameter and 18 feet in length. Ventilation is had by one 12-foot Ottumwa Iron Works fan. One pump is in use, being a Worthington double pump, with 6-inch steam cylinders, 7½-inch water cylinders, and 10-inch stroke.

There were no accidents reported to me from this mine.

NO. 25. LE BOSQUET COAL AND MINING COMPANY.

This company operates at a point on the Choctaw, Oklahoma and Gulf Railroad, about 11 miles west of Wister Junction, and adjoining on the east the town of Hughes, Ind. T. Mr. J. E. Le Bosquet is general manager and Thomas Bell is superintendent. This company operates one slope mine opened in year 1902 on the lower Hartshorne

vein. Coal is 4 feet 8 inches in thickness with a pitch of 30° to the north. Slope has been driven down a distance of 385 feet and there are 4 entries in operation. There are two air shafts, one 20 feet in depth and one 15 feet in depth, both being 5½ by 5½ feet in size. Average number of men and boys employed in and around this mine is 23.

The production of coal for the six months ended December 31, 1903, is 103 tons; for the six months ended June 30, 1904, is 4,509 tons; total production for the year is 4,612 tons.

Equipment consists of one Ætna double-hoisting engine with 12 by 20 inch cylinders, drum being 5 feet in diameter and 5 feet in length. Engine is geared 1 to 5. Steam is furnished by two steel tubular boilers, 66 inches in diameter and 16 feet in length. Ventilation is had by means of two Eagle Iron Works fans 10 feet in diameter. There is one pump in use at the bottom of the slope which is a Fairbanks-Morse double pump, with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke.

There were no accidents reported to me from this mine.

NO. 26. McALESTER AND GALVESTON COAL MINING COMPANY.

This company opened up three slopes north of McAlester on the lower Hartshorne vein known as slope mines Nos. 1, 2, and 3, but slope mines Nos. 2 and 3 have been shut down during the current year waiting for a railroad track to be put in.

SLOPE MINE NO. 1.

This slope was opened in the year 1901. The coal is 3 feet 4 inches in thickness, with a pitch of 14° to the southeast. Slope has been driven down 800 feet and 6 entries are in operation. Air shaft is 20 feet in depth and 4 by 6 feet in size. Average number of men and boys employed in and around this mine is 10.

The production of coal for the six months ended December 31, 1903, is 3,528 tons; for the six months ended June 30, 1904, is 1,410 tons; total production for the year is 4,938 tons.

Equipment consists of one S. Flory Manufacturing Company double-hoisting engine with 10 by 12 inch cylinders, drum being 4 feet in diameter and 4 feet in length. Engine is geared 1 to 5. Steam is furnished by one Atlas steel tubular boiler, 42 inches in diameter and 12 feet in length. Ventilation is had by furnace. There is one pump in use at the bottom of the slope which is a Blakely single pump with 6-inch steam cylinder, 3¼-inch water cylinder, and 5-inch stroke.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 2.

This slope was opened in the year 1902. The coal is 4 feet in thickness, with a pitch of 20° to the southeast. The slope has been driven down 250 feet and two entries have been turned. Air shaft is 18 feet deep and 6 by 6 feet in size. No coal has been produced in the past year.

Equipment consists of horsepower for hoisting coal, one Walch & Weidner steel boiler, 42 inches in diameter and 16 feet in length. One Columbus pump is in use at the bottom of the slope. There have been no accidents reported to me from this mine.

SLOPE MINE NO. 3.

This slope was opened in the year 1902. The coal is 4 feet in thickness, with a pitch of 18° to the south. The slope has been driven down 125 feet and two entries have been turned. Air shaft is 20 feet in depth and 6 by 8 feet in size. No coal has been produced in the past year.

Equipment consists of one Ottumwa double-hoisting engine, with 10 by 16 inch cylinders, and is provided with drum 48 inches in diameter and 5 feet in length. Engine is geared 1 to 8. Steam is furnished by one Walch & Weidner steel boiler 4 feet in diameter and 16 feet in length. No accidents have been reported to me.

NO. 27. McALESTER-CHOCTAW COAL COMPANY.

This company operates three slope mines west of McAlester, and known as slope mines Nos. 1, 2, and 3. Mr. J. F. McMurray is president of the company, and Mr. William Simpson is general manager.

SLOPE MINE NO. 1.

This slope was opened in the year 1900 on the lower Hartshorne vein. The coal is 4 feet 3 inches in thickness, with a pitch of 30° to the south. Slope is driven down 600 feet, and eight single entries are in operation. Air shaft is 50 feet deep and 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 35. The total production of coal for the year is 9,900 tons.

Equipment consists of one double Monday hoisting engine, with 9 by 16 inch cylinders, drum being 3 feet in diameter and 3 feet in length. Engine is geared 1 to 5. Steam is supplied by one Nelson Machine Company steel tubular boiler 54 inches in diameter and 14 feet in length. Ventilation is had by means of one 11-foot Cole fan. Pumps in use are one Pullen double pump, with 10½-inch steam cylinders, 3¾ inch water cylinders, and 8-inch stroke in use in slope; and one Snow double pump with 9-inch steam cylinder, 4-inch water cylinders, and 6-inch stroke for supplying boilers.

There were no accidents reported to me during the past year.

SLOPE MINE NO. 2.

This slope was opened in the year 1901 on the McAlester vein. The coal is 4 feet 6 inches in thickness, with a pitch of 50° to the south at the mouth of the slope, and flattening out to 45° at the face of the slope. Slope has been driven down 250 feet, and there are four single entries in operation. Air shaft is 8 feet in depth and 4 by 4 feet in size. Average number of men and boys employed in and around this mine is 20. Total production of coal for the year is 10,800 tons.

Equipment consists of one single hoisting engine, with 12 by 26 inch cylinder, drum being 4 feet in diameter and 4 feet in length. Engine is geared 1 to 4. Steam is furnished by one South St. Louis Foundry Company steel tubular boiler 4 feet in diameter and 18 feet in length. Ventilation is had by means of one 12-foot Union Iron Works fan. There is one pump in use in slope, which is a Hooker single pump, with 7-inch steam cylinder, 3½-inch water cylinder, and 6-inch stroke. There have been no accidents reported to me.

SLOPE MINE NO. 3.

This slope was opened in the year 1901 on the McAlester vein. The coal is 4 feet 3 inches in thickness, with a pitch of 50° to the south, at mouth of slope, flattening out to 45° at face of the slope. Slope has been driven down 250 feet, and there are four single entries in operation. Air shaft is 6 feet deep, and 4 by 5 feet in size. Average number of men and boys employed in and around this mine is 34. The total production of coal for the year is 6,384 tons.

Equipment consists of one single hoisting engine, with 10 by 20 inch cylinder, provided with drum 5 feet in diameter and 6 feet in length. Engine is geared 1 to 4. Steam is furnished by one John O'Brien steel tubular boiler, 48 inches in diameter and 20 feet in length. Ventilation is had by means of one 10-foot Eagle fan. One pump is in use in slope, which is a Gardner single pump, with 7-inch steam cylinder, 3-inch water cylinder and 8-inch stroke.

There were no accidents reported to me from this mine.

NO. 28. McALESTER COAL AND MINERAL COMPANY.

This company, of which James Degnan is president and treasurer and James McConnell is secretary and general manager, has operated during the past year slopes Nos. 4, 5, 6, 7, 8, 10, and shaft No. 9, of which slope No. 8 was abandoned in September, 1903, and shaft No. 9 in January, 1904.

SLOPE MINES NOS. 4 AND 5.

Slope mine No. 4 was opened in the year 1896 on the upper Hartshorne vein of coal. The coal is 4 feet thick, with a pitch of 16° to the northeast. Slope has been driven down 2,800 feet, and there are nine double entries in operation. Air shaft is 50 feet in depth and 7 by 7 feet in size. Average number of men and boys employed underground in this mine is 102. There are also 20 men employed above ground, which men handle production of both No. 4 and No. 5 mines.

The production of this mine is not given separately. The total tonnage will be given at the end of the reports of this company.

No. 5 mine was opened in the year 1897 on the lower Hartshorne vein. Coal is 4 feet in thickness, with a pitch of 16° to the northeast. Slope has been driven down 2,600 feet, and nine double entries are in operation. Air shaft is 50 feet in depth and 7 by 7 feet in size. Average number of men and boys employed in this mine underground is 200. Top men are already given in description of mine No. 4. The production will be given at the end of the description of this company. Coal from mines Nos. 4 and 5 is concentrated at the same tipple and there dumped into railroad cars.

Equipment of the above two mines consists of one Ellison & Son single 14-inch engine, with 6-foot drum, 9 feet in length, geared 1 to 4, which engine is used for hoisting from both mines, and is supplied with steam by a battery of 5 boilers, one being a steel tubular boiler, 48 inches in diameter and 18 feet in length, and four steel flue boilers, 66 inches in diameter and 18 feet in length.

Ventilation is had by means of two 13-foot Cole fans. An Ingersoll & Sargent air compressor is in use at these mines for pumping purposes, with 20 by 24 inch steam cylinders, 22 by 24 inch air cylinders. There are two pumps in use on the inside of the mine, one being a Cameron pump, with 16 by 18 inch steam cylinder, and the other being a Worthington duplex pump, with 6 by 8 inch steam cylinders. Pumps in No. 5 mine not given.

There were no accidents reported to me.

SLOPE MINE NO. 6.

This mine was opened in the year 1897 on the lower Hartshorne vein. The coal is 4 feet in thickness, with a pitch of 16° to the northeast. Slope has been driven down 2,600 feet, and there are eight double entries in operation. Air shaft is 50 feet in depth and 7 by 8 feet in size. Average number of men and boys employed underground in this mine is 150. There are also 30 top men who are employed for this mine and also for No. 7 mine. The coal from mines Nos. 6 and 7 is dumped over the same tipple. The production will be given at the end of the report of these mines.

Equipment consists of one double direct acting South St. Louis Foundry Company engine, with 18 by 24 inch cylinders, drum being 6 feet in diameter and 9 feet in length. Steam is furnished by a battery of four steel tubular boilers, 66 inches in diameter and 18 feet in length.

Ventilation is had by means of one 13-foot Cole fan. Two air compressors are in use at this mine, one being an Ingersoll & Sargent compressor, with 20 by 24 inch steam cylinder and 22 by 24 inch air cylinder. The other is a Sullivan compressor, with 20 by 24 inch steam cylinder and 22 by 24 inch air cylinder. There are three pumps in use in this mine. One is a Cameron pump, one Pullen pump, and one Buffalo duplex pump, two of them being large, powerful pumps used for pumping water out of the slopes.

There were two accidents reported to me from this mine, one of which proved to be of a fatal character.

SLOPE MINE NO. 7.

This mine was opened in the year 1897 on the upper Hartshorne vein. The coal is 4 feet in thickness, with a pitch of 16° to the northeast. Slope has been driven down 2,900 feet, and there are nine double entries in operation. Air shaft is 50 feet in depth and 7 by 8 feet in size. Average number of men and boys employed underground in this mine is 150. Number of top men is given in description of mine No. 6. Production of coal will be given at end of the report of these mines.

Equipment consists of one single Ellison & Son hoisting engine with 15 by 30 inch cylinder, drum being 8 feet in diameter and 9 feet in length. Engine is geared 1 to 3. Steam is furnished by three steel tubular boilers, 60 inches in diameter and 16 feet in length. Ventilation is had by means of one 12-foot Cole fan.

There is in operation at this mine a general electric dynamo, 220 volts, driven by one 150-horsepower engine, and one Ingersoll & Sargent air compressor, with 16 by 24 inch steam cylinder and 18 by 24 inch air cylinder. There are three pumps in use, one large duplex pump on the outside of the mine for pumping water up to the boiler tank, and one large and one small pump on the inside of the mine for pumping water from the mine.

There was one fatal accident reported to me from this mine.

SLOPE MINE NO. 8.

This is a small slope mine which was run by contract and reported in my last year's report under the head of the Eastern Coal and Mining Company. This mine was abandoned in September, 1903. Output of coal for this year is not given separately, but will be included in total amount given for this company.

SHAFT MINE NO. 9.

This shaft mine, which was fully reported in my last year's report under the head of the Eastern Coal and Mining Company, was abandoned in January, 1904. Production of the same will be included in the total amount for this company.

SLOPE MINE NO. 10.

This slope was opened in the year 1899 and was reported in my last year's report under the head of the Eastern Coal and Mining Company. The coal is 4 feet in thickness, with a pitch of 12° to the northeast. Slope has been driven down to a depth of 2,500 feet and six double entries are in operation. Air shaft is 50 feet in depth and 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 106. Production of coal will be included in the total production for this company.

Equipment consists of one South St. Louis Foundry Company double hoisting engine, with 14 by 24 inch cylinders, drum being 6 feet in diameter and 9 feet in length. Engine is geared 1 to 4. Steam is furnished by one John O'Brien steel tubular boiler, 60 inches in diameter and 16 feet in length, and two steel tubular boilers, 48 inches in diameter and 16 feet in length.

Ventilation is had by means of one 16-foot Redpath South McAlester fan. There is one Ingersoll & Sargent compressor in use at this mine, with 16 by 20 inch steam cylinder and 18 by 20 inch air cylinder. There are two Cameron pumps in use, one having 18-inch air cylinder, 8-inch water cylinder, and one with 9-inch air cylinder and 10-inch water cylinder.

There were no accidents reported to me from this mine.

The total production of all the foregoing mines of this company is as follows: For the six months ended December 31, 1903, is 100,853 tons; for the six months ended June 30, 1904, is 92,525 tons; total production for the year is 193,378 tons.

NO. 29. McALESTER COAL MINING COMPANY.

This company operates three mines at Buck, Ind. T., on the Missouri, Kansas and Texas Railway. Mr. J. H. Allen, of St. Louis, is president. The three mines operated by this company are known as slope mine No. 2, and shaft mines Nos. 6 and 12.

SLOPE MINE NO. 2.

This slope was opened about the year 1895 on the lower Hartshorne vein. Coal is 4 feet in thickness with a pitch of 9° to the northwest. Slope has been driven down 2,900 feet and three double entries are in operation. Air shaft is 20 feet in depth and 8 by 8 feet in size. This mine is now temporarily closed. Production of coal will be included in the total production of this company.

Equipment consists of one single Fort Scott engine, with 16 by 32 inch cylinder, provided with two drums, operated by friction, 5 feet in diameter and 4 feet 6 inches in length. Steam is furnished by means of two steel tubular boilers, 5 feet in diameter and 18 feet in length.

Ventilation is had by means of one 12-foot fan. There is in use in this mine one double Gardner pump, with 14-inch steam cylinders, 7-inch water cylinders, and 12-inch stroke.

There were three accidents reported to me from this mine, and all of them were of a fatal character.

SHAFT MINE NO. 12.

This shaft was reopened to the upper vein in 1900, and was finally abandoned on June 6, 1904. The production from this mine is included in the total production given for this company.

The equipment at this mine has not yet been removed and consists of one double direct Litchfield hoisting engine, with 16 by 30 inch cylinders, with drum 7 feet in diameter and 7 feet in length. Steam was furnished by a battery of three Brownell steel tubular boilers, 72 inches in diameter and 16 feet in length.

Ventilation was furnished by one 12-foot Pioneer fan. There was one Fairbanks double pump in use in the mine, with 14-inch steam cyclinders, 7-inch water cylinders, and 12-inch stroke.

There was one accident reported to me from this mine, which was of a nonfatal character.

SHAFT MINE NO. 6.

This shaft was opened in the year 1901 to the lower Hartshorne vein. Coal is 4 feet in thickness with a pitch of 11° to the west. The shaft is 525 feet in depth. Slope has been driven down to the dip a distance of 450 feet and a plane driven to the rise, 260 feet. Four double entries are in operation. The size of the two compartments of the hoisting shaft is 8 by 14 feet, and with a third compartment 6 by 8 feet. Air shaft is 520 feet in depth and 7½ by 11½ feet in size. Average number of men and boys employed in and around this mine is 51. The production of coal is included in the total production as given for this company.

Equipment consists of one double direct Litchfield hoisting engine with 24 by 36 inch cylinders, provided with drum 10 feet in diameter and 8 feet in length. Steam is furnished by a battery of three boilers, two being Brownell steel tubular boilers, 72 inches in diameter and 16 feet in length, and one being a John O'Brien steel tubular boiler, 60 inches in diameter and 18 feet in length.

Ventilation is had by means of one 12-foot Pioneer fan. There is one Norwalk compressor installed with 22 by 30 inch steam cylinder and 18 by 30 inch air cylinder. There is one pump in use at the bottom of the shaft, the same being a Pullen single pump with 18-inch steam cylinder, 7-inch water cylinder, and 24-inch stroke.

There were no accidents reported to me from this mine.

The total output of coal from all the foregoing mines of this company is as follows: For the six months ended December 31, 1903, it is 35,362 tons; for the six months ended June 30, 1904, is 27,827 tons; total production for the year is 63,189 tons.

This company has 50 coke ovens and has produced 14,335 tons of coke during the past year.

It may be noted here that shaft No. 6, described above, is one of the deep mines in the Indian Territory, and it will be apparent from my reports that very slow progress has been made in developing this mine. The work of making a proper escape way required by law was very much impeded by various obstacles, a full report of which will be found under the head of special correspondence in regard to this mine.

The abundance of carbureted hydrogen or fire damp which this mine generated necessitated the use of safety lamps during the period prior to the connection of the proper escape way, it being well known that work conducted under such conditions must necessarily be slow. This connection, however, has been recently completed, as will be shown under the special correspondence mentioned. And now that this is done and that the main entries have been opened out, there would seem to be no good reason why this mine should not be a very important factor in the production of coal for the ensuing year.

NO. 30. McEVERS COAL COMPANY.

This slope mine was opened in the year 1900 on the lower Hartshorne vein. Coal is 4 feet 6 inches in thickness, with a pitch of 45° to the south. Slope has been driven down 300 feet and four entries have been turned. Air shaft is 25 feet in depth and 5½ by 6 feet in size. Average number of men and boys employed in and around this mine is 17.

The production of coal for the six months ended December 31, 1903, is 8,636 tons; for the six months ended June 30, 1904, is 4,318 tons; total production for the year is 12,954 tons.

Equipment consists of one double Ellison & Son engine, with 10 by 16 inch cylinders, drum being 4½ feet in diameter and 6 feet in length; engine geared 1 to 3. Steam is supplied by one Frost Manufacturing Company steel tubular boiler, 54 inches in diameter and 14 feet in length.

Ventilation is had by means of a furnace. One Ellison & Son double pump, with 12-inch steam cylinders and 18-inch stroke, is in use at this mine.

There were no accidents reported to me from this mine.

NO. 31. McKENNA-TERRY COAL COMPANY.

This company operates a small slope within the town site of Poteau, Ind. T. Slope was opened in the year 1903. Coal is 24 inches thick. Slope has been driven down 300 feet, and four entries are in operation. Air shaft is 28 feet in depth and 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 14. The production of coal for the year is 557 tons, all of this being produced in the latter half of the year.

There is no equipment at this mine, the coal being hoisted by mule power. Ventilation is had by means of a furnace. This mine is only run during the winter months, and the coal disposed of for local purposes in the town of Poteau.

There were no accidents reported to me from this mine.

NO. 32. GEORGE J. MARKLEY.

This party operates two slope mines at Sutter and is connected by a spur track 7 miles long, with the Kansas City Southern Railway, shipping point being Shadypoint.

SLOPE MINE NO. 1.

This slope was opened in the year 1899 on the lower vein found on the Cavanal Mountains, the coal being 4 feet 2 inches in thickness, with a pitch of 10° to the south. However, the coal is divided by two dirt bands, one being 20 inches from the bottom, 1 inch thick; another being 19 inches from the top, 1 inch thick, leaving 7 inches of coal between them. The slope has been driven down a distance of 1,500 feet. Ten entries have been turned to right and left, several of which have been abandoned. Air shaft is 39 feet in depth and 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 73. The production of coal for the year is 24,178 tons.

Equipment consists of one double Griffith & Wedge engine, with 12 by 18 inch cylinders, provided with two drums 5 feet in diameter and 6 feet in length. Engine is geared 1 to 6¾. Steam is supplied by two flue boilers, 48 inches in diameter and 28 feet in length. Ventilation is had by means of one 20-foot Crawford & McCrimmon fan. There are three single Cameron pumps in use in the slope. There have been five accidents reported to me from this mine, two of which proved fatal.

SLOPE MINE NO. 2.

This slope, which had been temporarily abandoned, was reopened during the past year. The coal is 4 feet 2 inches in thickness, including the two dirt bands, as described in mine No. 1. The slope has been driven down 710 feet. Four entries have been turned. Air shaft is 36 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 37. The production of coal for the year is 7,602 tons.

Equipment consists of one double Griffith & Wedge engine, with 12 by 18 inch cylinders, provided with two drums 5 feet in diameter and 6 feet in length. Steam is furnished by one steel tubular boiler 60 inches in diameter and 16 feet in length. Ventilation is had by means of one 16-foot Crawford & McCrimmon fan. There have been no accidents reported to me from this mine.

NO. 33. MEXICAN GULF COAL AND TRANSPORTATION COMPANY.

This company operates near Howe, Ind. T., on the Choctaw, Oklahoma and Gulf Railroad. There are three mines in operation known as shaft mine No. 1 and slope mines Nos. 2 and 3. There is also another shaft known as No. 4, but this has not been operated during the past year. The officers of this company are Z. W. Tinker, president; A. J. Fitzsimmons, secretary and treasurer; F. F. La Grave, superintendent.

SHAFT MINE NO. 1.

This mine was opened in the year 1899, the coal being 4 feet in thickness, with a pitch of about 5° to the north. The shaft is 110 feet in depth. This shaft was abandoned for hoisting purposes on Novem-

ber 15, 1903, up to which period there had been 1,173 tons of coal produced. This shaft is now being used for pumping purposes only.

Part of the equipment formerly in use is still located at this shaft and consists of one Murray Iron Works double hoisting engine with 10 by 12 inch cylinders, drum being 48 inches in diameter and 36 inches in length. Engine is geared 1 to 6. There are two Murray Iron Works steel tubular boilers, one being 54 inches in diameter and 16 feet in length, and one 60 inches in diameter and 18 feet in length, which furnish steam for running the pumps.

There is in use at bottom of shaft one Gardner double pump with 10-inch steam cylinder, 6-inch water cylinder and 10-inch stroke. There were no accidents reported from this mine to me.

SLOPE MINE NO. 2.

This slope was opened in the year 1903 on the Arkansas vein. The coal is 4 feet in thickness, with a pitch of 5° to the northeast. Slope has been driven down 1,320 feet, and was driven for the purpose of cutting off the long entries which had been driven from No. 1 shaft, so that the coal, formerly hoisted through No. 1 shaft, might thereafter be hoisted through No. 2 slope, which is now being done. There are eight double entries in operation. Air shaft is 16 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 150.

The production of coal for the six months ended December 31, 1903, is 9,168 tons; for the six months ended June 30, 1904, is 27,943 tons; total production for the year is 37,111 tons.

Equipment consists of one Murray Iron Works double-hoisting engine on top on slope, with 10 by 12 inch cylinders, drum being 48 inches in diameter and 36 feet in length. Engine is geared 1 to 7. Steam is furnished by one Houston portable steel boiler 60 inches in diameter and 18 feet in length.

Ventilation is had by means of one 12-foot fan. At the foot of the slope is located one Yought single pump, with 10-inch steam cylinder, 5-inch water cylinder, and 18-inch stroke.

There were two accidents reported to me from this mine, neither of which proved fatal.

SLOPE MINE NO. 3.

This slope was opened in the year 1903. Coal is 4 feet in thickness, with a pitch of 5° to the north. Slope has been driven down 500 feet. No entries have been turned. Average number of men and boys employed in and around this mine is 17. The total production of coal for the year is 250 tons.

Equipment around this mine is all of a temporary character and merely being used for purpose of sinking slope. This mine has been shut down temporarily. A spur track has been built to this mine from the Choctaw, Oklahoma and Gulf Railroad, and this mine will doubtless be developed in the near future.

There were no accidents reported to me from this mine.

SHAFT MINE NO. 4.

Shaft mine No. 4 is located at the coke yards of this company, is 365 feet deep, and was completed in the year 1903. One entry only has been driven to a distance of about 100 feet. The size of the two compartments of the hoisting shaft is 13 by 8 feet, with a third compartment 7 by 8 feet in size. This mine has been temporarily closed for the reason that the coal is thin and faulty, and is not likely to be opened until the field is proven adjacent to the mine by drilling or otherwise. There were no accidents reported to me.

NO. 34. MILBY & DOW COAL AND MINING COMPANY.

This company, as formerly reported, operates a plant at Dow, Ind. T., on the line of the Choctaw, Oklahoma and Gulf Railroad. The officers of the company are Mr. Andrew Dow, of Houston, Tex., president; Edwin Ludlow, consulting engineer, Las Esperanzas, Mexico; C. S. Wingate, manager and supply agent, Hartshorne, Ind. T., and A. W. Breckenridge, superintendent of mines, office at Dow, Ind. T. The property consists of two shaft mines known as Nos. 1 and 2, which connect with slopes driven from the crop, and also one slope mine, known as slope mine No. 3.

SHAFT MINE NO. 1.

This shaft was sunk in the year 1898 on the McAlester vein of coal, which is 2 feet 10 inches in thickness, with a pitch of 10° to the southwest. Shaft is 228 feet in depth. The slope is sunk from the surface and connects with this mine 2,425 feet in depth, and a plane has also been driven to the rise of shaft 1,000 feet in length. There are seventeen entries in operation. The size of the two compartments of the hoisting shaft is 8 by 12 feet, with a third compartment 8 by 8 feet in size. There are two air shafts, one being 45 feet in depth and 6 by 6 feet in size, and one being 92 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 225.

The production of coal for the six months ended December 31, 1903, is 43,613 tons; for the six months ended June 30, 1904, is 32,637 tons. Total for the year is 76,250 tons.

Equipment consists of one double direct Litchfield hoisting engine, with 18 by 32 inch cylinders, provided with drum 8 feet in diameter and 6 feet in length; one double direct Litchfield slope engine, with 18 by 32 inch cylinders, provided with drum 8 feet in diameter and 6 feet in length; one double direct Johnson plane engine with 12 by 18 inch cylinders, provided with drum 4 feet in diameter and 6 feet in length. There is also in use for the screen, one Eagle Iron Works single engine with 8 by 12 inch cylinder, and for the purpose of washing the nut coal one Stroah single engine with 6 by 15 inch cylinder. Steam is supplied by two Kenny & Co. steel tubular boilers 60 inches in diameter and 16 feet in length, and two Atlas steel tubular boilers 72 inches in diameter and 18 feet in length, and one Brownell steel locomotive boiler 48 inches in diameter and 14 feet in length.

There is also installed at this mine one McEwen & Co. dynamo of 75 horsepower, 300 volts, with suitable steam engine to run the same, which operates four Jeffrey "16A" mining machines of 220 volts. There is in use at this mine one triplex Dean electric pump at the slope bottom and one Knowles single pump with 8-inch steam cylinder, 4-inch water cylinder, and 12-inch stroke at the shaft bottom. For the purpose of supplying water to the boiler tank there is one Marsh single

pump with 5-inch steam cylinder, 3-inch water cylinder, and 6-inch stroke, and one Hooker duplex pump with 4-inch steam cylinder, 4-inch water cylinder, and 4-inch stroke. There were four accidents reported to me from this mine, one of which proved fatal.

The heavy and disastrous rain storm which visited the Indian Territory in the early part of June, 1904, raised the waters of the rivers and creeks to an unprecedented height, and the water of Brushy Creek rose to a sufficient height to pour into the slope that connected with No. 1 shaft, filling up the shaft nearly to the top, and at the present writing the water has not yet been all taken out of the mine. Notwithstanding this drawback the total production of coal for the year of this company has increased several thousand tons, and had it not been for this disaster the production of this mine, as well as of many others in the Indian Territory, would have been considerably in excess of the production for the year previous to this.

SHAFT MINE NO. 2.

This shaft was opened in the year 1902 on the McAlester vein of coal. Coal is 3 feet in thickness, with a pitch of 11½° to the southwest. This shaft is 328 feet in depth, and slope connects with main east entry from the shaft bottom and is 1,900 feet in length. There are thirteen entries in operation. The size of the two compartments of the hoisting shaft is 8 by 12 feet, with third compartment 8 by 8 feet in size. Air shaft is 55 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 240.

The production of coal for the six months ended December 31, 1903, is 45,718 tons; for the six months ended June 30, 1904, is 40,557 tons. Total production for the year is 86,275 tons.

Equipment consists of one Litchfield double direct hoisting engine, with 18 by 32 inch cylinders, provided with drum 8 feet in diameter and 6 feet in length, and one engine of exactly the same size, with connecting drum, for lowering the coal in the slope to the shaft level. There is also a slope running in connection with this mine equipped with one Lidgerwood double engine with 10 by 12 inch cylinders, provided with drum 22 inches in diameter and 3 feet in length, operated by friction. Steam is supplied by one Atlas steel tubular boiler 72 inches in diameter and 16 feet in length, one Frost & Co. steel tubular boiler 72 inches in diameter and 16 feet in length, one Brownell steel tubular boiler of locomotive type, 48 inches in diameter and 14 feet in length, and one Brownell steel tubular boiler 36 inches in diameter and 10 feet in length. There is in use in the shaft one Knowles single pump, with 8-inch steam cylinder, 4-inch water cylinder, and 12-inch stroke, and on the slope above mentioned one Marsh pump, with 5-inch steam cylinder, 3-inch water cylinder, and 6-inch stroke.

There were two accidents reported to me from this mine, both of which proved fatal.

SLOPE MINE NO. 3.

This slope was opened in the year 1903 on the McAlester vein of coal. Coal is 3 feet 2 inches in thickness, with a pitch of 11° to the southwest. Slope has been driven down 1,000 feet, and there are 3 entries in operation. Air shaft is 63 feet in depth and 6 by 8 feet in size. Average number of men and boys employed in and around this mine

is 30. The production of coal has been included in the production for No. 2. shaft.

The equipment consists of one engine, with 8 by 12 inch cylinders, used for sinking the slope. There were no accidents reported to me.

RULES OF THE MILBY & DOW COAL AND MINING COMPANY.

1. Miners or other workmen engaged in the mine shall read and such as can not read shall have these rules read to them, and all persons engaged in the service of the company must be governed by these rules and regulations.
2. All miners must be in the mines before the 7 o'clock whistle blows in the morning. Drivers must have their mules out of the stable and all other company men must be prepared to start work when the whistle blows at 7 o'clock.
3. Miners must be careful in building lumps of coal on their cars, so as to prevent loss to both company and miner by coal falling off and causing wreck on slope.
4. That when any grievance shall arise, the party having the grievance must first try and adjust it with the pit boss. Should they fail to adjust it, they will refer it to the superintendent of the mines, whose decision shall be final.
5. Any employee feeling aggrieved in any respect must present his grievance to the pit boss in person, and shall not stop work by reason of any grievance while the matter is being adjusted, and all matters shall be adjusted outside of working hours.
6. That any person found with tools or powder belonging to another, or taking or using tools or powder belonging to another without the owners' consent, shall for the first offense be fined $2.50, and for the second offense be discharged, such fines to be paid to the owners of the tools and be collected at the company's office, and any person detected in changing checks on the pit cars shall be immediately discharged.
7. All persons employed in the mines are strictly forbidden to ride up or down the slopes on the trips, and all men that may require to leave the mine while hoisting is being done must travel out the manways.
8. Miners are strictly forbidden from going into the next room for safety when firing a shot, but are required to go to a safe distance in the entry, in order to be out of all danger.
9. All miners are strictly forbidden to fire a shot without giving warning of their intention to other workmen who may be near them, and must wait until all are at a safe distance.
10. All miners must run their loaded cars down to their rooms to the parting, but not out on the entry. The drivers shall pull the empty cars to the face of the pitch rooms, miners to make height for mules.
11. In all the mines, unless otherwise designated, the time for firing shots shall be at 12 o'cloock noon when half time is being worked, and 5 o'clock evening when mine is working three-quarters or full time. Any employee detected in breaking this rule shall have his turn stopped for the first offense, and for the second offense shall be suspended one week; for the third offense will be discharged.
12. It shall be the duty of every miner to keep his room or working place well propped, in good order and repair, and to keep it perfectly safe in every way, and any miner who shall willfully or negligently or carelessly suffer his room to get out of order and repair shall, upon request, put same immediately in repair, and if he does not the company will do the work and charge the cost of same to the miner.
13. All miners causing falls of rock, either by carelessness or by the reckless use of powder, blowing out the timbers or damaging brattice, will repair the same at their own expense, or, failing to do so, the company will repair and charge the cost of same to the miner.
14. When falls of rock take place in working places that have been properly timbered, a reasonable amount (to be agreed upon between the pit boss and the miners) shall be paid for cleaning up the same, but where the falls occur through the blowing out of props or careless timbering no allowance will be allowed for repairing.
15. In places where roofs are dangerous and sufficient timbering can not be secured, it shall be the duty of the workman or miner to notify the pit boss at once and stop work until the timber can be obtained. All timber and rails will be furnished by the company to each working place at the point of delivery of empty cars after the miner has ordered the same.
16. All drivers must take proper care of their mules, and any driver known to mistreat, abuse, or injure his mules in any way shall be discharged.
17. The fire boss (in mines where gas or fire damp is generated) or persons acting in that capacity shall examine every working place in the morning before any miner or employee has entered the same, and shall mark the day of the month in some

conspicuous place with chalk, which will be proof that he has examined the same; and under no circumstances shall a miner or employee enter a working place with an open lamp after being notified not to do so or after finding a warning notice at the entrance of his working place.

18. It will be the duty of a fire boss when he finds standing gas in any working place to carefully dead line the same by making one, two, or three crosses with chalk plainly on a piece of board, the number of crosses to signify the amount of gas in the working place. If the standing gas is in a room he shall place the dead line at the entrance of the same; if in an entry or air course, at a safe distance from the gas. The fire boss shall then notify the pit boss, who will see that the gas is carefully removed, so as to avoid accident, and any employee who shall knowingly or carelessly enter a place with an open lamp thus dead lined shall be immediately discharged.

19. Miners employed in places where explosive gas is generated shall be furnished with a safety lamp, and if for any cause they leave their working places for even a short time, before reentering with an open lamp they shall first try the place with a safety lamp to see that no gas has collected in their absence.

20. No miner who has left the employ of the company, or who has been discharged from the same, shall be entitled to any pay or money due him until he shall have put his room in perfect working order, as required by the company. All miners leaving said employment shall be required to procure the certificate of the pit boss that they have complied with the rules aforesaid before final payment or settlement shall be made.

21. If any miner shall leave an empty pit car in his room overnight and the car should be lost or destroyed by caving in of the room or the firing of a shot, or through any other carelessness, the full value of the pit car shall be charged to him.

22. Any miner or employee who shall intentionally damage any signal bell or wire, safety lamp, brattice airway or door, or open a door and not close it again, or do anything by which the safety of the men in the mine may be endangered, shall be promptly discharged.

23. In the event of death by accident in the mines the employees shall be allowed one-half day for the funeral. In all other cases any employee desiring to attend the funeral of a fellow-employee or a member of his family shall be at liberty to absent himself after notifying the pit boss, but all other men shall be at work as usual.

24. No person shall be allowed to interfere with the employer's just right of employing, retaining, or discharging any person or persons whom the superintendent or mine boss having charge of the mine may consider proper, or to interfere, with threats or otherwise, with the right of any employee to work in any way or upon any terms and with whom he shall think proper and best.

25. All powder will be delivered at the top of the shaft after being ordered by the miner, and will be sent down by the company. The rope rider will be instructed to deliver it at the proper entries, but in no case will the company be responsible for powder lost after it has been delivered at the entry marked on the powder keg.

26. Miners in making up cartridges or charges of powder must put their lamps on the outside of their box and not less than 5 feet therefrom. Any miner found making cartridges or charges of powder with his lamp burning on his head shall for the first offense be suspended for three days, and for the second offense shall be discharged.

27. All miners must carefully remove all slate from their coal while loading it into their cars. Any miner sending out slate in his coal cars shall for the first offense be docked 500 pounds, for the second offense 1,000 pounds, and for the third be suspended one week.

28. The whistle will blow at 7 o'clock in the evening when the colliery will not work on the following day.

29. All employees who desire to absent themselves from work must notify the foreman under whom they work the day before. Anyone absent without permission will for the first offense be suspended three days, and for the second offense be suspended one week, and for the third offense shall be discharged. All miners absenting themselves three consecutive days without permission will be considered as having left the employ of the company, and their places will be assigned to others.

30. All miners are strictly forbidden from leaving their working places to enter any vacant or unoccupied place without permission of the foreman. Any violation of this rule will be followed by an immediate discharge.

31. Anyone detected violating the above rules for which no penalty is named will for the first offense be suspended for three days, for the second offense will be suspended for one week, and for the third offense will be discharged.

32. Any tenant of the company will be charged for any damage done to the house he occupies, and upon leaving the service, whether voluntarily or by discharge, will not be entitled to receive any part of the wages due him until he shall have vacated the premises occupied by him and presented the keys of the same at the office, and the house has been examined and the amount of damages deducted from his wages.

33. No meeting shall be held during the working hours of a hoisting day.

Entering the employment of the company is understood to be an acceptance of the foregoing rules.

NO. 35. MISSOURI, KANSAS AND TEXAS COAL COMPANY.

This company operates three slopes and one shaft, known as slope mines Nos. 15, 16, and 18, and shaft No. 19. James Degnan is president and treasurer; James McConnell is vice-president and general manager; S. Guerrier is secretary.

SLOPE MINE NO. 15.

This slope was opened in the year 1899 on the upper Hartshorne vein. The coal is 4 feet in thickness, with a pitch of 9° to the north. Slope has been driven down 1,400 feet, and six entries are in operation. Air shaft is 40 feet in depth and 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 21. The production of coal for this mine is included in the amount given as a total for the mines operated by this company.

Equipment consists of one Ellison & Son single engine, with 10 by 16 inch cylinder, drum being 4 feet in diameter and 4 feet in length. Engine is geared 1 to 4. Steam is furnished by one steel tubular boiler 60 inches in diameter and 12 feet in length. There are three pumps in use on the inside of this mine, one being a Cameron pump, with 9-inch steam cylinder, 4½-inch water cylinder, and 12-inch stroke, and two being Dean pumps, with 7-inch steam cylinders, 4-inch water cylinders, and 9-inch strokes.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 16.

This slope was opened in the year 1900 on one of the Hartshorne veins. Coal is 4 feet in thickness, with a pitch of 9° to the north. Slope has been driven down 1,000 feet, and there are four entries in operation. Air shaft is 30 feet in depth and 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 16. The production of coal for this mine will be included in the total production for this company.

Equipment consists of one Ellison & Son single hoisting engine, with 9 by 14 inch cylinder, drum being 3½ feet in diameter and 4 feet in length. Engine is geared 1 to 4. Steam is furnished by one steel tubular boiler, 40 inches in diameter and 10 feet in length. There is one pump in use in the inside of this mine, being a Climax single pump, with 6-inch steam cylinder, 3-inch water cylinder, and 6-inch stroke.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 18.

This slope was opened in the year 1903 on the lower Hartshorne vein. The coal is 4 feet thick, with a pitch of 9° to the north. Slope has been driven down 1,000 feet and four entries are in operation. Air shaft is 40 feet in depth and is 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 22. The production of this mine will be included in the total production as given for this company.

Equipment consists of one South St. Louis Foundry Company double hoisting engine, with 12 by 20 inch cylinders, drum being 6 feet in diameter and 9 feet in length. Engine is geared 1 to 3. Steam is furnished by three steel tubular boilers, one being 60 inches in diameter and 16 feet in length; one being 54 inches in diameter and 16 feet in length, and one being 42 inches in diameter and 10 feet in length.

Ventilation is had by means of one 16-foot South McAlester Foundry Company fan. One Sullivan air compressor is in use, with 20 by 24 inch steam cylinder, and 22 by 24 inch air cylinder. One Dean single pump, with 12-inch steam cylinder, 7-inch water cylinder, and 10-inch stroke, is in use in inside of this mine.

There were no accidents reported to me from this mine.

SHAFT MINE NO. 19.

This shaft was opened in the year 1904. The coal is 4 feet in thickness, with a pitch of 9° to the north, and is sunk to the lower Hartshorne vein. Shaft is 300 feet in depth. Two main entries have been driven in a short distance. The size of the two compartments of the hoisting shaft is 7½ by 16 feet, with a third compartment 3½ by 7½ feet, which is used as return air way. The production of this mine will be included in the total amount for this company.

Equipment consists of one South St. Louis Foundry Company double direct hoisting engine, with 18 by 24 inch cylinders, drum being 6 feet in diameter and 9 feet in length. Steam is furnished by three steel tubular boilers, two being 66 inches in diameter and 18 feet in length and one being 44 inches in diameter and 18 feet in length.

Ventilation is had by means of one 16-foot South McAlester Foundry Company fan. One Sullivan air compressor is installed, with 20 by 24 inch steam cylinder and 22 by 24 inch air cylinder. Pumps in use are one Dean duplex pump, with 12-inch air cylinders, 7-inch water cylinders, and 10-inch stroke, and one Dean duplex pump, with 20-inch air cylinders, 7-inch water cylinders, and 18-inch stroke. These pumps are used on the outside for supplying boilers.

There were no accidents reported to me.

NO. 36. OSAGE COAL AND MINING COMPANY.

The mines operated by this company are located at Krebs and also at Richville, a mining camp near to the post-office of Carbon, Ind. T. Mines at Krebs are shaft mines Nos. 5, 8, and 11, which latter includes shaft known as No. 11½. There has also been some stripping done in the vicinity of Krebs. Mine at Richville is known as slope mine No. 7.

The officers of the company are William Busby, president; James Duncan, vice-president; D. C. Welch, auditor and secretary; Charles E. Rohrer, treasurer. The headquarters of this company are at South McAlester, Ind. T.

SHAFT MINE NO. 5.

This shaft was sunk in the year 1895. The coal is 4 feet in thickness, with a pitch of 9° to the southwest. Depth of shaft is 482 feet, from which level a slope is sunk to the dip for 900 feet and a plane driven to the rise, 2,000 feet. Six double entries are in operation.

The size of the two compartments of the hoisting shaft is 7 by 12 feet 6 inches, with third compartment 3 by 7 feet. The air shaft is 484 feet in depth, and 6 by 10 feet in size, with stairway. Average number of men and boys employed in and around this mine is 172.

The total production of coal from this mine for the year is 78,086 tons.

Equipment at this mine consists of one double direct Litchfield hoisting engine, with 16 by 30 inch cylinders, drum being 8 feet in diameter and 7 feet 4 inches in length. Slope engine, which is situated on the surface, is one double Ottumwa engine, with 10 by 12 inch cylinders, drum being 5 feet 6 inches in diameter and 6 feet 3 inches in length. Engine is geared 1 to 4½. One Ide & Son electric engine, with 16 by 16 inch cylinder, to drive generator. One Nagle elevator engine, with 10 by 12 inch cylinders. There is also one plane engine located on the surface which is a Fort Scott single engine, with 16 by 18 inch cylinder, and geared 1 to 5. These engines are supplied with steam by a battery of six John O'Brien steel tubular boilers, two of them being 48 inches in diameter and 22 feet in length, and four of them 60 inches in diameter and 22 feet in length.

Ventilation is supplied by one 15-foot Crawford & McCrimmon fan, which is driven by a Crawford & McCrimmon engine, with 10 by 20 inch cylinder.

Electric machinery consists of one Westinghouse dynamo of 120 kilowatts, which furnishes power for one Worthington centrifugal pump, 22 inches in diameter, operated by a Jeffrey motor, 15 horsepower, 220 volts; two General Electric Company haulage motors, 20 horsepower, 220 volts; two Jeffrey Manufacturing Company electric mining machines, 220 volts; one Morgan-Gardner mining machine, 220 volts.

Pumps in use in this mine are one triplex electric pump, with 3½-inch water cylinders and 4-inch stroke, in use on slope; one Worthington duplex pump, with 12-inch steam cylinders, 5½-inch water cylinders, and 10-inch stroke, for pumping in shaft, and one Worthington duplex pump, with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke, for supplying water to boiler.

There was one accident reported to me from this mine, which was of a nonfatal character.

SHAFT MINE NO. 8.

This shaft was sunk in the year 1899 on the McAlester vein. The coal is 3 feet 7 inches in thickness, with a pitch of 6½° to the southwest. Shaft is 272 feet in depth. Slope has been driven to dip of shaft 1,000 feet and plane is driven to the rise 1,200 feet. There are nine double entries in operation. The size of the two compartments of the hoisting shaft is 6 feet 10 inches by 11 feet 3 inches, with third compartment 3 by 6 feet 10 inches. Air shaft is 250 feet in depth and 6 feet 8 inches by 11 feet 8 inches in size, and is furnished with stairway for escapement. Average number of men and boys employed in and around this mine is 276. The total production of coal for the year is 105,490 tons.

Equipment consists of one double direct Litchfield hoisting engine, with 16 by 30 inch cylinders, and is provided with drum 7 feet in diameter and 7 feet 7 inches in length. Slope engine is one double Ottumwa engine, with 8 by 12 inch cylinders, drum being 4 feet in diameter and

4 feet in length. Engine is geared 1 to 4. Plane engine consists of one double Ottumwa engine, with 8 by 10 inch cylinders, provided with drum 3 feet 4 inches in diameter and 2 feet 4 inches in length. Engine is geared 1 to 4. Shaker screen engine is a single L. R. Manufacturing Company engine, with 9 by 12 inch cylinder. Fan engine consists of one Crawford & McCrimmon single engine, with 8 by 13 inch cylinder. There is also an additional slope engine, which is a Lidgerwood single engine with 7 by 10 inch cylinder, drum being 3 feet in diameter and 2 feet 6 inches in length. Engine is geared 1 to 8. Steam is furnished by two John O'Brien steel tubular boilers, 48 inches in diameter and 22 feet in length, and one John O'Brien steel tubular boiler 60 inches in diameter and 22 feet in length.

Ventilation is furnished by one 12-foot Crawford & McCrimmon fan.

Pumps in use are one Pond Engine Company pump, with 12-inch steam cylinder, 5½-inch water cylinder, and 10-inch stroke in use in shaft; one Worthington double pump, with 6-inch steam cylinder, 3½-inch water cylinders, and 6-inch stroke in use in slope, and one Worthington double pump, with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke to supply water to boilers.

There were two accidents reported to me from this mine, one of which proved fatal.

SHAFT MINES NOS. 11 AND 11½.

Shaft mine No. 11 was sunk in the year 1888 on the McAlester vein. The coal is 4 feet 2 inches in thickness, with a pitch of 6½° to the southwest. The shaft is 470 feet deep, and slope has been driven down to dip of shaft 3,200 feet. The plane described in my last annual report as being 3,500 feet in length has been all worked out except one entry, which is three lifts below the level of the main entry from the shaft. There are eight double entries in operation. The size of the two compartments of the hoisting shaft is 6 feet 6 inches by 12 feet, with third compartment 3 by 6 feet 6 inches in size. Air shafts for this mine consist of shaft No. 11½, which is 238 feet deep, 5 feet 9 inches by 13 feet in size, and old hoisting shaft No. 10, which is now used as an air shaft, is 350 feet deep and 7 by 12 feet in size. Average number of men and boys employed in and around this mine is 183. The production of coal for the year from this mine is 81,424 tons.

Equipment consists of one Litchfield double direct hoisting engine, with 18 by 32 inch cylinders, provided with drum 8 feet in diameter and 7 feet in length; one Litchfield double slope engine, geared 1 to 4½, with 12 by 20 inch cylinders, provided with drum 6 feet in diameter and 3 feet 6 inches in length; one Ridgeway electric single engine, with 15 by 16 inch cylinder and one Ide & Son electric single engine, with 14 by 15 inch cylinder, each running one generator for electric power; one St. Louis Foundry and Machine Company single shaker engine, with 10 by 15 inch cylinder, operating shaker screens; and one engine in the blacksmith shop, being H. B. Manufacturing Company single engine, with 3½ by 5 inch cylinder.

At No. 11½ shaft there is one L. Manufacturing Company double plane engine, with 12 by 24 inch cylinders, provided with drum 5 feet 2 inches in diameter and 4 feet 4 inches in length; engine geared 1 to 4; and one Fort Smith Foundry and Machine Company single hoisting engine at the shaft, with 14 by 18 inch cylinder, provided with drum

6 feet in diameter and 7 feet in length, engine geared 1 to 4, the said engine being used for hoisting men out of 11½ shaft as an escapeway; one Murphy fan engine with 6 by 12 inch cylinder; and one Centennial engine, with 10 by 14 inch cylinder, furnishing power for the fan.

Steam for the foregoing equipment is furnished by the following batteries of boilers: At No. 11 shaft, two John O'Brien steel tubular boilers, 48 inches in diameter and 20 feet in length; one Wangler steel tubular boiler, 48 inches in diameter and 14 feet in length; one John O'Brien steel tubular boiler, 72 inches in diameter and 18 feet in length; and one John O'Brien steel tubular boiler, 48 inches in diameter and 22 feet in length; one Brownell steel tubular boiler, 72 inches in diameter and 18 feet in length. At 11½ shaft there is one John O'Brien cylinder boiler, 48 inches in diameter and 26 feet in length, and one tubular boiler, 72 inches in diameter and 18 feet in length. At No. 10 shaft there are two John O'Brien cylinder boilers, 45 inches in diameter and 27 feet long, and two cylinder boilers, 44 inches in diameter and 26 feet in length, which are used for supplying steam to the pumps, and also for the purpose of running a ventilating fan.

Ventilation for this mine is furnished by one 15-foot Centennial Manufacturing Company fan, and one 8-foot Murphy fan in reserve, located at shaft 11½, and one Crawford & McCrimmon 12-foot fan, located at shaft No. 10.

Electric machinery consists of one Westinghouse 100-kilowatt dynamo, 300 volts; one 100-kilowatt Thompson-Houston dynamo, 220 volts, which furnishes electric power for one Hawkeye electric motor, 15 horsepower, 220 volts; two Jeffrey electric cutter-bar mining machines; four Jeffrey electric chain breast mining machines of 220 volts; one Goodman Manufacturing Company independent chain breast electric mining machine of 220 volts. There is also in use at this mine one 6-ton electric locomotive, which is used for haulage purposes on the main west entry. Pumps in use at this mine consist of one Worthington double pump, with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke, for supplying water to boiler; one Blake duplex pump (electric), with 4½-inch water cylinders, and 6-inch stroke; one Blake double-geared pump, with 3½-inch water cylinders, and 6-inch stroke, run by electric motor, in use in slope; and one single Blake pump, with 18-inch steam cylinder, 7-inch water cylinder, and 18-inch stroke, at bottom of shaft. At No. 10 shaft one Knowles single pump, with 12-inch steam cylinder, 6-inch water cylinder, and 12-inch stroke, for supplying water to boilers; and one Demming electric triplex pump, with 7-inch water cylinders, and 8-inch stroke, which has now been removed from No. 10 to No. 11, and is now being used for pumping water from slope to bottom of shaft. At 11½ shaft there is one Worthington double pump, with 12-inch steam cylinders, 6½-inch water cylinder, and 10-inch stroke, which is used for pumping water from bottom of 11½ shaft to the surface.

An old shaft known as No. 10 and shaft No. 11½ have been included in the description of this mine. No. 10 is connected with No. 11, and so also is No. 11½, and the whole product of these mines is hoisted at No. 11 shaft. The mines Nos. 10 and 11½ are used as adjuncts to No. 11 for pumping, ventilating, and escape-way purposes.

There were five accidents reported to me from this mine, none of which proved fatal.

SLOPE MINE NO. 7.

In my last report two slope mines were reported together, viz Nos. 6 and 7. These two mines have now been connected and will b reported here as No. 7 mine. Slope was opened in the year 1902 o the McAlester vein. The coal is 3 feet 10 inches in thickness, with pitch of 5° to the northeast. Slope has been driven down 1,150 feet and there are six entries in operation. Air shaft is 35 feet in dept and 6 by 8 feet in size. Average number of men and boys employe in and around this mine is 144. The total production of coal for th year is 46,289 tons.

Equipment consists of one Crane & Co. single-slope engine, with 1 by 26 inch cylinder, drum being 4 feet 4 inches in diameter and 4 fee 6 inches in length. Engine is geared 1 to 5. Also one Fort Scott single-slope engine, with 12 by 20 inch cylinder, drum being 5 feet inches in diameter and 4 feet 10 inches in length, engine geared 1 t 4. These engines are supplied with steam by two Brownell & Co. steel tubular boilers, 44 inches in diameter and 16 feet in length, and one steel tubular boiler, 42 inches in diameter and 10 feet 2 inches in length. The equipment heretofore used in No. 6 slope is included in this description.

Ventilation is had by means of one 7-foot Crawford & McCrimmon fan. Pumps in use consist of two Knowles single pumps, with 10-inch steam cylinders, 6-inch water cylinders, and 10-inch stroke, in use in slope, and one Knowles single pump, with 12-inch steam cylinder, 6-inch water cylinder, and 12-inch stroke, for furnishing water to the boilers.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 14.

This mine was opened in the year 1900, on the McAlester vein. Coal is 3 feet 6 inches in thickness, with a pitch of 6½° to the southwest. The slope has been driven down 750 feet, and one pair of entries is in operation. Air shaft is 50 feet in depth and 4 by 6 feet in size. Average number of men and boys employed in and around this mine is 25. The total production of coal for the year is 11,165 tons.

Equipment consists of one O. C. & M. Co. single-slope engine, with 10 by 16 inch cylinder, provided with drum 4 feet in diameter and 6 feet 6 inches in length, and is geared 1 to 4½. There is also one Litchfield single tipple engine, with 6 by 10 inch cylinder, with drum, 1 foot in diameter and 1 foot 8 inches in length, geared 1 to 2¼, and one Crawford & McCrimmon fan engine. Steam is furnished by one John O'Brien steel tubular boiler, 48 inches in diameter and 18 feet in length. Ventilation is furnished by one 7-foot Crawford & McCrimmon fan. At this mine there is one Norwalk single pump, with 7-inch steam cylinder, 3½-inch water cylinder, and 8-inch stroke, for supplying water to boiler, and one Knowles single pump, with 10-inch steam cylinder, 5½-inch water cylinder, and 10-inch stroke, in use in slope.

There were no accidents reported to me from this mine.

This company has in operation 80 coke ovens equipped with washer for washing slack, with suitable engines; with one Dean pump for supplying water to boiler and one Davidson pump for supplying water for washing slack.

The total production of coke for the year is 22,338 tons.

The violent storm which has been herein referred to caused this mine to be flooded with water for some 1,200 or 1,300 feet from the face of slope, running to dip of shaft. The pumping out of this water has been a tedious and expensive operation and has materially curtailed the product of this mine and the general production of the foregoing company.

Considerable damage was caused on account of this flood, the extent of which can hardly be estimated until the water is pumped out and the mine restored to its normal condition.

The total production of coal for all the mines operated by this company in the Indian Territory during the past year is as follows: For the six months ended December 31, 1903, 213,328 tons; for the six months ended June 30, 1904, 125,539 tons; total production for the year, 338,867 tons.

Rules governing the mines of the Osage Coal and Mining Company, in the Krebs, Ind. T., district.

DUTIES OF FIRE BOSSES.

RULE 1. Each fire boss shall enter the mine before the men have entered it, and before proceeding to examine the same he shall see that the air current is traveling in its proper course, and if he finds the air traveling properly he shall then proceed to examine the workings.

RULE 2. He shall not allow any person, except those duly authorized, to enter or remain in any part of the mine through which a dangerous accumulation of gas is being passed in the ventilating current from any other part of the mine.

RULE 3. On entering the mine in the morning before men have entered he shall proceed to examine the same and mark all rooms or working places in the following manner:

The day of the month, thus: "30," indicates that inspection has been made and that the room or working place is free from fire damp.

Two large crosses with the day of the month between them, thus: + 30 + indicates the presence of fire damp and extreme danger. These marks must be made on a cap piece or other timber and laid in the roadway at mouth of room or entrance to working place.

RULE 4. After complete examination has been made he shall proceed to the bottom of the shaft and signal to the engineer that the workmen may now descend the shaft. In mines where there are more than one fire boss, each fire boss shall allow only such men as work in the portion examined by him to proceed to their working places, and shall detain all others until the arrival of the fire boss who has examined their working places.

Should he have found fire damp or explosive gas in any of the working places he shall personally notify the men working in such places as to the danger and warn them not to proceed to work until he has removed the danger. After notifying the men working in such places where he has discovered fire damp, it will be his duty, as speedily as possible, to remove the fire damp and render the place safe for work. He shall then notify each man that this place is free from fire damp.

In removing the fire damp it will be his duty to see that the gas so removed will not be carried onto naked lights in the return airway.

RULE 5. It will be his special duty at all times to see that the air is moving in the proper manner; to look out for falls in the air course and remove them, if possible. Should the fall or falls be too large for him to remove personally, he will notify the mine boss, whose duty it will be to assign sufficient force to have them removed as speedily as possible.

DUTIES OF MINERS.

RULE 6. As quantities of explosive gas or fire damp are generated in these mines, the miner will take special care, in entering his room or working place, to notice the cautionary marks made for his protection, the marks being made on a cap piece or other timber laid on the roadway at mouth of room or entrance to working place, the marks being as follows:

The day of the month, thus, "30," indicates that inspection has been made and that the room or working place is free from fire damp.

Two large crosses with the day of the month between them thus, +30+, indicates the presence of fire damp; extreme danger. In case the mark indicates the presence of fire damp, the workman shall not, under any circumstances, enter such room or working place until the fire boss has again inspected and rendered the place safe.

RULE 7. The miner shall each day examine his working place before beginning work, and take down all dangerous slate, or otherwise make it safe by properly timbering the same before commencing to dig or load coal, and he shall at all times be very careful to keep his working place in a safe condition during working hours.

RULE 8. Should he at any time find his place becoming dangerous from any unusual condition which may have arisen, he shall at once cease working and inform the mine boss, or his assistant, of such danger.

RULE 9. Every miner shall order props, cap pieces, or other necessary timbers from the driver who brings him his cars. The miner shall always keep on hand a sufficient quantity of cap pieces or other necessary timbers, and shall order the same in advance, so that the driver may have time to bring them. Should the miner from any cause have no props or other necessary timbers on hand, he shall immediately cease work, vacate his working place, and report the fact to the mine boss.

RULE 10. All coal must be undercut at least 2 feet in rooms, and no shot to be placed so the point of the shot or any part of the powder shall be more than 4 feet from the face or more than 2 feet beyond the undercutting. All entries or narrow work under 12 feet wide to be undercut to full depth of holes for blasting.

RULE 11. In case timbers are blown out, causing falls at the working face, owing to the negligence of the miner, he will be required to clean up such falls at his own expense. The company will only assist where the roof was known to be bad, or there was no negligence shown on the part of the miner.

RULE 12. Any miner loading "bony" coal or any foreign matter with his coal shall for the first offense be suspended one day, for a second offense be suspended one week, and for the third offense be discharged.

DUTIES OF DRIVERS.

RULE 13. When a driver has occasion to leave his trip, or when the trip from any cause is stopped anywhere except at the regular station, he must see that it is left, when possible, in a safe place, secure from cars or other dangers, or from endangering drivers or trips following, and if the trip is left in the main hauling way he must go back and notify approaching drivers, if any, of the existing obstruction, that they may be able to stop their trips and avoid collisions.

RULE 14. The driver must take great care in taking his trip down grade to have the sprags so adjusted that he can keep the car under control and thus prevent accidents.

RULE 15. On receiving orders from workmen for props, cap pieces, or other necessary timbers, the driver will bring the same with all possible dispatch, and in case, for any reason, they can not be obtained, he shall report the fact to the workman so entering and also to the mine boss.

DUTIES OF ROPE RIDERS.

RULE 16. The position of rope rider being one of peculiar hazard he must use special care and precaution to avoid the dangers incident thereto.

RULE 17. He shall exercise great care in seeing that all couplings are safe for use, and see that all trips are properly coupled before starting; and should he at any time see any material defect in the rope, link, hook chain, he shall immediately remedy such defect, or if unable to do so, he shall detain the trip and report the matter to the mine boss.

DUTIES OF CAGERS OR MEN ASSIGNED TO THAT POSITION.

RULE 18. The cager shall be at his proper place at the bottom of the shaft when men begin to descend in the morning, and remain there until hoisting of coal commences. He shall see that men are safely off the cage, and then signal the engineer. He shall be at his proper place at the time the hoisting of coal ceases and men commence to be hoisted in the evening, and shall see that no more than six persons get on the cage at any one time, and when they are safely on the cage he shall signal the engineer to hoist them. The man acting as cager during the hoisting of coal shall see that all cars are safely held on cage by the catch provided for that purpose before signaling the engineer.

He shall not allow any tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when persons are being hoisted out of the mine or lowered into it, except when for the purpose of repairing the shaft or machinery therein.

The men shall place their tools in cars provided for that purpose, which car or cars shall be hoisted or lowered before or after the men have been hoisted or lowered. And he shall immediately inform the mine boss of any violation of this rule. In signaling the engineer the cager shall use the signals as directed in general rule No. 43.

DUTIES OF SHOT FIRERS.

RULE 19. Shot firers must not fire any shot unless coal is properly cut in accordance with the two following sections, nor unless said shot is otherwise and in all respects proper and safe.

Section 1. All coal must be undercut at least 2 feet in rooms, and no shot to be placed so the point of the shot or any part of the powder shall be more than 4 feet from the face, or more than 2 feet beyond the undercutting.

Sec. 2. All entries or other narrow work under 12 feet wide to be undercut to full depth of holes drilled for blasting.

RULE 20. Shot firers must fire only one shot at a time in any separate split of air, and the following shot must not be lit until the smoke has cleared away.

RULE 21. No shot to be fired while anyone except the shot firers are in the mine, except by special permission of the mine boss, and the shot firer shall not enter the mine for the purpose of firing until all men are out of the mine.

RULE 22. Shot firers must commence firing from a point farthest from the intake airway, and proceed with the firing in a direction opposite that in which the air is traveling.

DUTIES OF TOPMEN OR MEN ASSIGNED TO THAT POSITION.

RULE 23. He shall be at his proper place in the morning from the time that persons begin to descend into the mine, and shall remain there until the hoisting of coal begins. He shall see that not more than six persons get on the cage at any one time, and when they are ready he will close the gate and signal the engineer to lower cage, and he shall not open gate until cage has been placed in position to receive men. After the hoisting of coal ceases in the evening it shall be his duty to be at his proper place until all the men are hoisted from the mine. He shall see that men get safely off the cage, and shall then signal the engineer in the proper manner. He shall not allow any tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when persons are being lowered into the mine, except for the purpose of repairing the shaft or machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be lowered before or after the men have been lowered. In signaling the engineer the topman shall use the signals as directed in rule No. 43.

RULE 24. At shafts not using self-dumping cages the topman shall see that the stops for the cages to rest upon are kept in good working order, and he must remove loaded cars carefully, and in placing empty cars on the cage must see that the car is securely held by the catch provided for that purpose before signaling the engineer.

DUTIES OF ENGINEER.

RULE 25. It shall be the duty of the engineer to keep careful watch over his engine and all machinery under his charge and see that the same is in proper working order before attempting to raise or lower men or material.

RULE 26. He shall see that the boilers are properly cleaned and inspected at proper intervals, and that the steam pressure does not exceed at any time the limit allowed by the superintendent.

RULE 27. He shall not allow any unauthorized person to enter the engine house; neither shall he allow any person to handle or run the engine without the permission of the superintendent.

RULE 28. When workmen are being raised or lowered he shall take special precaution to keep the engine well under control.

RULE 29. The engineer will observe and operate his engine in accordance with the general and special rules governing signals. (*See* general rule No. 43.)

DUTIES OF FIREMEN.

RULE 30. Every fireman or other person in charge of a boiler or boilers for the generation of steam shall keep a careful watch on the same. He shall see that the steam pressure does not exceed at any time the limit allowed by the superintendent. He shall frequently try the safety valves, and shall not increase the weight on the same. He shall maintain a proper depth of water in each boiler, and if anything should happen to prevent this he shall report the same without delay to the engineer, and take such other action as may under the peculiar circumstances be necessary for the protection of life and preservation of property.

RULES AND REGULATIONS IN REGARD TO POWDER.

RULE 31. All persons (except those appointed by the coal company or the mercantile company having charge of the powder sales) are prohibited from entering the powder house on any pretense whatever.

RULE 32. The use of tobacco in any form by any person while in the performance of his duties in and around the powder house is strictly prohibited; neither shall any such person enter a powder house with matches or other ignitable material about his person.

RULE 33. No powder kegs shall be opened in any other manner than by the slide or lead plug provided for that purpose. It is strictly prohibited to use a plug of any kind to drive through the end of a powder keg for the purpose of opening the same.

RULE 34. It will be the duty of those authorized, who perform this work, to see that no person enters the powder house while said work is in progress; also to govern their actions by the above regulations.

RULE 35. No light of any kind shall be allowed in or around the powder house.

RULE 36. No powder or high explosive shall be taken into the mine by any one man in greater quantities than required for use in one day (unless such quantity be five pounds or less), and all powder shall be sent or carried into the mine in metallic canisters.

RULE 37. Powder must be kept in proper air-tight powder cans, and the cans must be kept in a close tight-locked box, said box to be at least three hundred feet (300 feet) from any working face, and only at points designated by the mine boss.

RULE 38. Whenever a workman shall open a box containing powder or other explosives, or while in any manner handling the same, he shall place his lamp not less than 5 feet from such explosives and in such a position that the air current can not convey sparks to it, and he shall not smoke while handling explosives.

GENERAL RULES.

RULE 39. No person shall be allowed to enter any mine, except employees working in that mine, without permission of the superintendent.

RULE 40. No person in a state of intoxication shall be allowed to go into or loiter about any mine.

RULE 41. No person shall be allowed to travel to or from his work on foot, on any incline, plane, or slope, when other good roads are provided for that purpose. As each mine is provided with a passway around the shaft at the bottom, all persons employed in the mine, or others, are strictly forbidden to cross over from one side of the shaft to the other side through the hoisting compartment under any circumstances whatever.

RULE 42. Workmen and all other persons are strictly forbidden to commit any nuisance or throw into, deposit, or leave coal, dirt, or stones or other rubbish in the air courses or roads, so as to interfere with, pollute, or hinder the air passing into or out of the mine.

RULE 43. In all shafts or slopes where persons, coal, or material of any kind are hoisted or lowered by machinery, the following code of signals shall be used:

One signal.—To hoist coal or other material.

One signal.—To stop car or cage when in motion.

Two signals.—To lower cage or car.

Three signals.—That persons are to be hoisted, on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal, the persons shall get on the car or cage, and when they are safely on the car or cage one signal shall be given the engineer to hoist. After the hoisting of coal has ceased in the evening and the 5-o'clock whistle has blown, it will only be necessary to give the three signals for the first three cages of men hoisted, after which the one signal "ready" will only be given for each cage until all men are out.

Four signals.—That mules are to be hoisted, on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal, the mule shall be placed on the cage, and when it is safely on the cage one signal shall be given the engineer to hoist.

Five signals.—Turn steam onto slope or underground engines.

Six signals.—Shut steam off from slope or underground engines.

RULE 44. No person or persons shall go into any old or abandonded part of the mine, or into any other place which is not in actual course of working, without permission of the mine boss, nor shall they travel to or from their work except by the traveling ways provided or assigned for that purpose.

RULE 45. No person in the mine shall be allowed to enter any room or working place except the working place to which his duties call him. It is strictly forbidden for any person to visit a room or other working place except his own, either during the presence or absence of its proper occupant. All boys or other persons assigned to special posts as trappers or otherwise must remain at their posts while on duty.

RULE 46. All miners must be in the mine before the 7-o'clock whistle blows in the morning. Drivers must have their mules out of the stables and ready for work, and all other company men must be prepared to start work when the whistle blows at 7 o'clock.

RULE 47. Any person found with tools or powder belonging to another, or taking or using tools or powder belonging to another without the owner's consent, shall, for the first offense, be fined $2.50, and for the second offense he shall be discharged. Such fines to be paid to the owner of the tools and collected at the company's office, and any person detected in exchanging checks on the pit cars shall be immediately discharged.

RULE 48. Any miner or employee who shall damage any signal bell or wire, brattice, air way, or door, or open a door and not close it again, or do anything by which the safety of the men or mine may be endangered, shall be promptly discharged.

RULE 49. Whenever it shall be the duty of any person to go into the "sump" or space below the cage at the bottom of the shaft for the purpose of cleaning out, removing dirt, or otherwise, they shall first place a prop or props of wood or iron in such a manner as to arrest the cage should it from any cause be made to descend, and thus secure themselves or others from any possible danger.

RULE 50. All employees who desire to absent themselves from work must notify the foreman under whom they work the day before. And any person absent without permission will, for the first offense, be suspended three days, and for the second offense be suspended for one week, and for the third offense be discharged, except in case of sickness.

RULE 51. All persons, except those duly authorized, are forbidden to meddle or tamper in any way with any electric or signal wire about the mine.

RULE 52. No miner or other employee shall be entitled to receive his time at the company's office until he shall obtain from the mine boss a clearance card; and in case of employees renting a company house a note must be obtained from the superintendent's clerk stating the amount of rent due.

RULES AND REGULATIONS IN REGARD TO ELECTRIC WIRES AND APPLIANCES.

RULE 53. All persons are forbidden to touch the electric wires or appliances in or about the mines except those especially emyloyed for the purpose.

RULE 54. All persons whose duty it is to handle wires and appliances should wear insulating gloves when handling wires and connections, and should exercise extreme caution to prevent any part of their body coming in contact with the wires or connections.

JACK RUSSELL, *Superintendent.*

Adopted July 24, 1897.

Approved:

J. C. REID, *General Superintendent.*

NO. 37. OZARK COAL AND RAILWAY COMPANY.

This company operates one slope mine near Panama, on the Kansas City Southern Railway. George W. Lane, of Joplin, Mo., is president and Y. M. Shirom, of Panama, is superintendent. This slope was opened in the year 1899. The coal is 4 feet thick, with a pitch of 13½° to the south. Slope has been driven down 1,100 feet and seven

entries are in operation. Air shaft is 42 feet in depth and 5 by 4 fe in size. Average number of men and boys employed in and arou this mine is 55.

The production of coal for the six months ended December 31, 190 is 3,000 tons; for the six months ended June 30, 1904, is 1,000 ton total production for the year being 4,000 tons.

Equipment consists of one double direct Oswego Iron Works engin with 10 by 18 inch cylinders. Steam is furnished by a battery of fou Ketcham Iron Works steel tubular boilers, 48 inches in diameter an 12 feet in length.

Ventilation is had by means of one 12-foot Crawford & McCrimmo fan. Pumps in use are three Worthington duplex pumps, two o which have 6-inch steam cylinders, 4½-inch water cylinders, and 6-in stroke, and one with 7-inch steam cylinders, 4½-inch water cylinder and 10-inch stroke.

There were two accidents reported to me from this mine, neither o which proved fatal.

In addition to the above mine, a new slope has been driven down short distance, but no entries have been turned and there has been n production of coal.

The recent heavy rain flooded these slopes with water and suspende operations for a considerable period.

NO. 38. POTEAU COAL AND MERCANTILE COMPANY.

This company is operating three slope mines on a spur track con necting with the St. Louis and San Francisco Railway at Potea Ind. T., which spur track runs up into the Cavanal Mountains, and i about 3 miles in length. W. F. Gheen, of Jersey Shore, Pa., is pres dent; and G. G. Gheen, of Kansas City, Mo., is general manager M. B. McHugh is superintendent at Poteau, Ind. T.

SLOPE MINE NO. 4.

This slope was opened in the year 1904 on the lower Witteville vein Coal is 4 feet in thickness, with a pitch of 6½° to the southwest. Slope has been driven down 700 feet, and two double entries are in operation Air shaft is 16 feet in depth and 7 by 8 feet in size. Average numbe of men and boys employed in and around this mine and the productio of coal will be given altogether at the end of the report of this company

Equipment in this mine consists of one double Crane hoisting engi with 10 by 12 inch cylinders, drum being 3 feet in diameter and 3 fee in length. Steam is furnished by two boilers situated at the powe house, which will be hereafter described. Ventilation is had by mean of a furnace. There were no accidents reported to me from this mine

SLOPE MINE NO. 5.

This slope was opened in the year 1900. The coal is 3 feet 8 inche in thickness, with a pitch of 6½° to the southwest. Slope has been drive down 1,500 feet. Air shafts are 15 feet in depth and 7 by 8 feet i size. Average number of men and boys employed in and around thi mine and the production of coal will be given at the end of the repor of these mines.

Prior to this year hoisting was done at this mine and also at No. by engines and steam power, but these have been replaced by stationary

electric hoists, power being furnished by one Jeffrey Manufacturing Company's 150-kilowatt, 250 volts, direct current dynamo, driven by one Strait Manufacturing Company's single engine, with 18 by 42 inch cylinder, which drives dynamo by belt. The electric hoist in use in this mine (No. 5) is one Lidgerwood electric hoist of 65 horsepower, 250 volts.

Steam is furnished for the dynamo, which in turn furnishes power for the machinery which is in use at Nos. 4, 5, and 6 mines, by two Kewanee steel tubular boilers 66 inches in diameter and 16 feet in length. Ventilation is had by means of one 12-foot Buffalo fan and run by motor. Pump in use in this mine is one Demming pump, with 4-inch water cylinder and 6-inch stroke, driven by 5-horsepower electric motor.

There were two accidents reported to me from this mine, neither of which proved fatal.

SLOPE MINE NO. 6.

This slope was opened in the year 1904. The coal is 3 feet 8 inches in thickness, with a pitch of 6½° to the southwest. Slope has been driven down 900 feet, and 5 double entries are in operation. Air shaft is 34 feet in depth and 7 by 8 feet in size. Total number of men and boys employed in and around this mine and also Nos. 4 and 5 mines is 185.

The total production for the three mines for the six months ended December 31, 1903, is 37,883 tons; for the six months ended June 30, 1904, is 34,944 tons; total production for the year is 72,827 tons.

Equipment consists of one Denver Engine Works Jeffrey electric hoist, 65 horsepower, 250 volts, driven by the dynamo and engine described under head of No. 5 mine, for which steam is furnished by the two boilers described also under head of No. 5 mine.

Ventilation is had by means of a 14-foot Cole fan, run by motor. Pump in use in mine No. 6 is one Demming triplex pump, with 4-inch water cylinders and 6-inch stroke, driven by a 5-horsepower electric motor.

There were no accidents reported to me from this mine.

The whole of the foregoing machinery is operated by means of the engine, dynamo, and boilers fully described under head of No. 5 mine.

Coal is hauled from mouth of No. 5 and No. 6 slope to the tipple, which is located about half a mile away from mouth of slope, by one 6-ton Jeffrey electric locomotive.

NOS. 39, 40, AND 41. ROCK ISLAND COAL COMPANY.

This company operates mines at Alderson, Hartshorne, and Gowen, which mines are situated on the leases of the Choctaw, Oklahoma and Gulf Railroad Company, at and near those points. The mines now operated by this company consist of shaft mine No. 5, which with No. 7 slope will be described as one mine; shaft mine No. 6, slope mine No. 15, slope mine No. 38, and also six small slopes numbered consecutively 32 to 37 inclusive. The foregoing mines are known as the Alderson Bache mines and are managed from that point. Mr. James Cameron is superintendent.

The mines at Hartshorne consist of shaft No. 7, shaft mine No. 8, which with slope No. 14 and slope No. 26 are described together, and slope mine No. 18. Mr. William Sperry is superintendent.

At Gowen, which is several miles northeast of Hartshorne, is shaft mine No. 3, and in connection with it a slope known now as slope No. 12, which was driven from the surface about half a mile distant from shaft, and which was connected with another slope known as the Darby slope, which is now abandoned, and slope No. 19, which is not now in operation. Mr. William Sperry, of Hartshorne, is the superintendent. Mr. Carl Scholz, of Little Rock, Ark., is president and general manager of all the mines operated by the Rock Island Coal Company in the Indian Territory and elsewhere.

ALDERSON SHAFT MINE NO. 5.

This shaft was sunk in the year 1900 on the McAlester vein. The coal is 3 feet 6 inches in thickness, with a pitch of 8° to the southwest. Shaft is 555 feet in depth. Two slopes have been driven to the dip of the coal; one known as the west slope has been driven down 350 feet, and one known as the east slope also driven down 350 feet. There is one plane to the rise of the coal 2,000 feet in length, which consists of the lower portion of old No. 7 slope, which was originally driven down 3,700 feet, the upper entries of which have now been abandoned and cut off. There is also a plane known as the west plane driven 350 feet up to the rise of the coal. Ten entries are in operation. The size of the two compartments of the hoisting shaft is 8 by 12 feet, with third compartment 7 by 8 feet in size. A new air shaft has been sunk intersecting the plane at a point 2,000 feet above the level of the main entry at bottom of shaft. This shaft is 326 feet in depth and is 7 feet 6 inches by 11 feet 6 inches in size. Average number of men and boys employed in and around this mine is 235.

The production of coal for the six months ended December 31, 1903, is 51,183 tons; for the six months ended June 30, 1904, is 43,654 tons; total production of coal for the year is 94,837 tons.

Equipment of this mine consists of one Kenny & Co. double direct hoisting engine with 24 by 36 inch cylinders. There are two conical drums, each of them ranging from 6 to 9 feet in diameter, with 3 feet 3-inch face each. One Eagle Iron Works single engine, with 10 by 12 inch cylinder, operates the elevator, and one Erie Iron Works single engine, with 8 by 10 inch cylinder, operates the shaker screen. At the air shaft of No. 5 there is one Webster, Camp & Lane double direct acting plane engine, with 16 by 30 inch cylinders. Steam is furnished for all the foregoing described machinery by a battery of six Atlas steel tubular boilers, 72 inches in diameter and 16 feet in length.

Ventilation is had by means of one 16-foot Kenny & Co. fan. There is also installed at No. 5 shaft one Norwalk compound air compressor with 18 by 24 inch steam cylinders, and air cylinders being 13 inches and 15 inches in diameter, for the purpose of operating the following pump: One Marsh single pump, with 16-inch air cylinder, 6-inch water cylinder, and 16-inch stroke, in use at shaft bottom. There is also one Gardner double pump, with 6-inch steam cylinders, 4-inch water cylinders and 10-inch stroke, driven by steam, for supplying water to the boilers.

There were three accidents reported to me from this mine, one of which proved fatal.

SHAFT MINE NO. 6.

This shaft was sunk in the year 1901 on the McAlester vein of coal. Coal is 3 feet 6 inches in thickness with a pitch of 12½° to the south. Shaft has been sunk 505 feet in depth. No work to the dip of this mine has been done, but a plane has been driven up to the rise of coal 350 feet. Three entries are in operation. The size of the two compartments of the hoisting shaft is 9 by 12 feet, with third compartment 7 feet 8 inches by 9 feet in size. Air shaft has been sunk 470 feet in depth, and is 7 feet 6 inches by 11 feet 6 inches in size. Average number of men and boys employed in and around this mine is 47.

The production of coal for this mine is 2,912 tons, which was produced during the last six months of the year and principally from narrow work.

Equipment consists of one Litchfield double direct hoisting-engine with 24 by 36 inch cylinders, supplied with drum 10 feet in diameter and 7 feet 6 inches in length; one single Eagle Iron Works engine with 9 by 12 inch cylinder is used for operating the elevator; one Erie Iron Works single engine, with 6 by 8 inch cylinder for the purpose of operating shaker screen. Steam for the foregoing engines is supplied by three John Rohan steel tubular boilers, 72 inches in diameter and 16 feet in length, and one 10-foot South McAlester Foundry and Machine Company fan supplies the ventilation. There is installed at this mine one Norwalk compressor with 18 by 24 inch steam cylinder, 13-inch and 16-inch air cylinders. There are in use at this mine one Hooker single pump, with 7-inch steam cylinder, 3¼-inch water cylinder and 10-inch stroke, at the shaft bottom; and one Hooker single pump with 10-inch steam cylinder, 6-inch water cylinder, and 12-inch stroke, for feeding boilers, and one Hooker single pump, with 7-inch steam cylinder, 3¼-inch water cylinder, and 10-inch stroke, for forcing the water from the reservoir to tank located at mine.

There have been no accidents reported to me from this mine.

SLOPE MINE NO. 15.

This mine was abandoned on April 1, 1904, and the machinery has been moved to other points.

The production of coal for the six months ended December 31, 1903, is 15,675 tons; for the period up to April 1, 1904, is 3,419 tons; total for year up to time of abandonment is 19,094 tons.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 38.

This slope was opened in the year 1901. Coal is 3 feet 6 inches in thickness, with a pitch of 12½° to the south. Slope has been driven down 1,400 feet, and there are six entries in operation. Air shaft is 40 feet in depth, 5 by 5 feet in size. Average number of men and boys employed in and around this mine is 101. The production of this mine is included in the production as given for slopes Nos. 32 to 37, which is given below.

Equipment consists of one Nelsonville double-hoisting engine with 10 by 12 inch cylinders, drum being 4 feet in diameter and 4 feet in length. Engine is geared 1 to 4; one Erie Iron Works single engine with 6 by 8 inch cylinder. Steam is furnished by a battery of five

John Rohan steel locomotive boilers, 48 inches in diameter and 17 feet in length.

Ventilation is had by means of one 10-foot Eagle Iron Works fan. There is in use at this mine one Ingersoll & Sargent air compressor with 16 by 18 inch steam cylinder and 16-inch air cylinder, which furnishes power for three pumps as follows: One single Hooker pump with 7-inch air cylinder, 3¼-inch water cylinder, and 10-inch stroke; one Knowles single No. 7 pump, both of these pumps being used for supplying the boilers, and one Hooker single pump with 7-inch air cylinder, 3¼-inch water cylinder, and 10-inch stroke in use in mine.

There were no accidents reported to me from this mine.

SLOPE MINES NOS. 32 TO 37, INCLUSIVE.

Slope mine No. 33 was abandoned on February 1, 1904; slope mine No. 35 was abandoned on June 30, 1904; slope mine No. 37 was abandoned on February 1, 1904, and slope mine No. 32 was abandoned October 1, 1903, as a coal-producing mine and is now in use as a pumping station, leaving only slope mines Nos. 34 and 36 as coal-producing mines.

These two mines were opened in the year 1901. Coal is 3 feet 6 inches in thickness, with a pitch of 12½° to the south. Slopes have been driven down 1,150 feet and 1,050 feet. There are no entries in these mines, rooms being driven directly from the slope, of which there are 60 and 43 rooms, respectively, turned, most of which have been exhausted. Air shaft to each mine is 40 feet in depth and 5 by 5 feet in size. Average number of men and boys employed in and around both mines is 16.

Total production of coal for the above two mines and also for slopes Nos. 32, 33, 35, 37, and 38 is as follows: For the six months ended December 31, 1903, 43,703 tons; for the six months ended June 30, 1904, 27,753 tons; total production for the year, 71,456 tons.

Equipment of mines Nos. 34 and 36 is the same in each case and consists of one Nelsonville double-hoisting engine with 10 by 12 inch cylinders, supplied with drum 4 feet in diameter and 4 feet in length. Engine geared 1 to 4. Steam is furnished by one John Rohan steel locomotive boiler, 48 inches in diameter and 17 feet in length. Ventilation is furnished at each mine by one 10-foot Eagle Iron Works fan. Each slope is provided with one Hooker single pump with 7-inch air cylinder, 3¼-inch water cylinder, and 10-inch stroke. These pumps are operated by air supplied from a Norwalk compressor, heretofore described at No. 6 shaft.

There were no accidents reported to me from these mines.

HARTSHORNE MINES.

SHAFT MINE NO. 7.

This shaft was sunk in the year 1902 to the lower Hartshorne vein. Coal is 3 feet 6 inches in thickness, with a pitch of 2½° to the north. The shaft is 526 feet in depth. Four double entries are in operation. A plane has been driven up to the rise of the coal, which is intended to make connection with an air shaft which is now being sunk for purpose of ventilation and escapeway. The size of the two compartments of the hoisting shaft is 9 by 15 feet, with third compartment 7 by 9 feet in size. The present depth of the air shaft is 360 feet and is 8 by 12 feet in size. Average number of men and boys employed in and around this mine is 115.

The production of coal from this mine for the six months ended December 31, 1903, is 6,746 tons; for the six months ended June 30, 1904, is 16,364 tons; total production for the year is 23,110 tons.

Equipment consists of one Litchfield double direct hoisting engine with 24 by 36 inch cylinders, drum being 10 feet in diameter and 7 feet in length. Steam is furnished by two steel tubular boilers, one being a Rohan boiler and one a John O'Brien boiler, size of each being 72 inches in diameter and 18 feet in length. Ventilation is had by means of one 10-foot and one 12-foot Eagle Iron Works fan, placed on third compartment of hoisting shaft. There is one Hooker single pump with 9-inch steam cylinder, 3⅝-inch water cylinder, and 10-inch stroke at bottom of shaft.

There was one fatal accident reported to me, occurring at No. 7 air shaft.

SHAFT MINE NO. 8.

This shaft was sunk in the year 1902 to the lower Hartshorne vein of coal, which coal is 3 feet 6 inches in thickness, with a pitch of 5½° to the north. The shaft is 254 feet in depth, and is connected with slope heretofore known as No. 14, which is 2,940 feet in length. An additional slope, known as slope No. 26, has been driven down 1,000 feet to the dip of shaft. Ten entries are in operation. The size of the two compartments of the hoisting shaft is 9 by 16 feet, with third compartment 4 by 9 feet in size. No. 14 slope, which was driven to the surface, acts as an airway and escapeway for this mine, an air shaft having been sunk to connect with No. 14 slope at a short distance from mouth of same. Average number of men and boys employed in and around this mine is 288.

The production of coal for the six months ended December 31, 1903, is 64,571 tons; for the six months ended June 30, 1904, is 44,061 tons; total production for the year is 108,632 tons.

Equipment consists of one Webster, Camp & Lane double direct hoisting engine, with 16 by 30 inch cylinders, drum being 8 feet in diameter and 8 feet in length. Steam is furnished by a battery of three steel tubular boilers, one being an Atlas boiler 72 inches in diameter and 18 feet in length; one being a Rohan boiler 72 inches in diameter and 18 feet in length, and one being a Gem City boiler 48 inches in diameter and 18 feet in length.

Equipment of slope No. 14 consists of one Webster, Camp & Lane double engine, with 8 by 10 inch cylinders, drum being 40 inches in diameter and 4 feet in length. Engine is geared 1 to 6. Steam is furnished by two steel tubular boilers, one being a Gem City boiler 48 inches in diameter and 18 feet in length, and one being a Nelson boiler 60 inches in diameter and 10 feet in length.

Ventilation is had by means of a fan which is placed at the air shaft connecting with No. 14 slope, as described above, being a 20-foot Atlas fan.

Equipment of No. 26 slope consists of one South St. Louis Foundry Company double engine, with 10 by 12 inch cylinders, drum being 48 inches in diameter and 4 feet in length. Engine is geared 1 to 3. Steam for this engine is supplied from the boilers at No. 8 shaft.

There is also one Ridgeway engine, with 13 by 16 inch cylinders, which furnishes power to the Thompson-Ryan generator, 250 volts, which in turn furnishes electric current for one triplex general electric pump, with 8-inch water cylinder and 10-inch stroke. There is also one Marsh single steam pump, with 16-inch steam cylinder, 6-inch water cylinder, and 16-inch stroke, both of these pumps being in use at bottom of shaft. The dynamo described above also furnishes light for bottom of shaft and the company's offices.

SLOPE MINE NO. 18.

This slope was originally opened with the intention of making connection with No. 7 shaft for ventilating purposes and for escape way, but owing to the large amount of water encountered in sinking this slope it was found impracticable to make this connection in any reasonable time, and therefore No. 7 air shaft, above described, was sunk to meet the same requirements. A full detail of this, in the correspondence with the Rock Island Coal Company and the Secretary of the Interior, is given under the head of "Special correspondence."

This slope was opened in the year 1901 on the lower Hartshorne vein. Coal is 3 feet 8 inches in thickness, with a pitch of 20° to the north. Slope has been driven down 900 feet, and there are six entries in operation. Air shaft is 20 feet in depth and 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 70.

The production of coal for the six months ended December 31, 1903, is 9,230 tons; for the six months ended June 30, 1904, is 7,963 tons; total production for the year is 17,193 tons.

Equipment consists of one South St. Louis Foundry Company double engine, with 10 by 12 inch cylinders, drum being 4 feet in diameter and 5 feet in length. Engine is geared 1 to 3. Steam is furnished by three Gem City steel locomotive boilers, 48 inches in diameter and 14 feet in length.

Ventilation is had by means of one John Mullen & Sons 22-foot fan, driven by belt. There is also installed at this mine one Norwalk compound air compressor, with 20-inch steam cylinders and 20 and 14 inch air cylinders. There are three single pumps in operation in this slope, two of them being Knowles pumps, with 10-inch air cylinder, 6-inch water cylinder, and 12-inch stroke; and one of them being a Hooker pump, with 6-inch air cylinder, 3¼-inch water cylinder, and 10-inch stroke.

There were two accidents reported to me from this mine, neither of which proved fatal.

SLOPE MINE NO. 22.

This mine was not worked during the past year to any degree, and has been abandoned on account of faulty coal.

GOWEN MINES.

SHAFT MINE NO. 3.

This shaft was opened in the year 1896 on the lower Hartshorne vein. The coal is 4 feet in thickness, with a pitch of 8° to the southwest. Shaft is 256 feet in depth, and slope No. 12, which was opened from the surface and connects with this mine, is 3,270 feet in length.

The coal obtained from this slope is now all hoisted through No. 3 shaft. Sixteen double entries are in operation. The size of the two compartments of the hoisting shaft is 8 by 11 feet, with a third compartment 8 by 9 feet in size. Slope No. 12 acts as an air and escape way for this mine. Average number of men and boys employed in and around this mine is 290.

The production of coal for the six months ended December 31, 1903, is 94,598 tons; for the six months ended June 30, 1904, is 41,332 tons; total production for the year is 135,930 tons.

Equipment consists of one double direct Webster, Camp & Lane hoisting engine, with 16 by 30 inch cylinders, drum being 8 feet in diameter and 8 feet in length. Steam is furnished by a battery of five steel tubular boilers, two of them being 72 inches in diameter and 18 feet in length and three being 48 inches in diameter and 20 feet in length. One of the boilers of 72 inches in diameter is an Atlas boiler; the other four are John O'Brien boilers.

Equipment of No. 12 slope consists of one double direct Litchfield hoisting engine, with 18 by 36 inch cylinders, drum being 8 feet in diameter and 8 feet in length, for which steam is furnished by two Atlas steel tubular boilers, one being 72 inches in diameter and 18 feet in length and one being a vertical boiler 48 inches in diameter and 10 feet in length. Ventilation for this slope and for Mine No. 3 is had by means of two 12-foot Crawford & McCrimmon fans. There is installed at this mine one double Ingersoll & Sargent air compressor, with 24 by 36 inch steam cylinders and 26 by 36 inch air cylinders. There is in use at bottom of shaft one single Hooker pump, with 20-inch air cylinder, 9-inch water cylinder, and 20-inch stroke.

There were seven accidents reported to me from this mine, one of which proved fatal.

SLOPE MINE NO. 19.

This slope mine, as reported in my last annual report as being intended to make a connection with No. 3 mine, has not been in operation during the past year.

Rules governing the mines of the Rock Island Coal Company, Choctaw Nation, Ind. T.

DUTIES OF FIRE BOSSES.

RULE 1. Each fire boss shall enter the mine before the men have entered it, and before proceeding to examine the same he shall see that the air current is traveling in its proper course; and if he finds the air traveling properly, he shall then proceed to examine the workings.

RULE 2. He shall not allow any person, except those duly authorized, to enter or remain in any part of the mine through which a dangerous accumulation of gas is being passed in the ventilating current from any other part of the mine.

RULE 3. On entering the mine in the morning before the men have entered he shall proceed to examine the same and mark all rooms or working places in the following manner:

When no gas is found, he shall simply mark the date of the month thus: "30" at the entrance of the place and on the coal at the face, which marks will be proof that the place has been examined.

Two large crosses with the day of the month between them thus: "× 30 ×" indicates the presence of fire damp and *extreme danger*. These marks must be made on a cap piece or other timber and laid in the roadway at mouth of room or entrance to working place.

RULE 4. After complete examination has been made, he shall proceed to the bottom of the shaft and signal to the engineer that the workmen may now descend the shaft. In mines where there are more than one fire boss, each fire boss shall allow only such

men as work in the portion examined by him to proceed to their working places, and shall detain all others until the arrival of the fire boss who has examined their working places. Should he have found explosive gas or fire damp in any of the working places, he shall personally notify the men working in such places as to the danger and warn them not to proceed to work until he has removed the danger. After notifying the men working in places where he has discovered fire damp, it will be his duty, as speedily as possible, to take the necessary steps to remove the fire damp and render the places safe for work; he shall then notify each man that his place is now free of fire damp. In removing the fire damp, it will be his duty to see that naked lights are in the return air way. While he is doing so he shall also remove the gas with the air current and not by brushing.

RULE 5. It will be his special duty at all times to see that the air is moving in the proper manner; to look out for falls in air courses and to remove them if possible. Should the fall or falls be too large for him to remove personally he will notify the mine boss, whose duty it will be to assign sufficient force to have them removed as speedily as possible.

RULE 6. The fire boss shall inspect the mine as usual on all holidays and idle days, and on Sundays he shall inspect the mine not later than 8 a. m., when directed by mine boss.

DUTIES OF MINERS.

RULE 7. As quantities of explosive gas or fire damp are generated in these mines, the miner will take special care, in entering his room or working place, to notice the cautionary marks made for his protection, the marks being made on a cap piece or other timber laid in the roadway at mouth of room or entrance to working place, the marks being as follows:

The day of the month, thus, "30," indicates that inspection has been made and that the room or working place is free from fire damp.

Two large crosses with the day of the month between them, thus, × 30 ×, indicates the presence of fire damp; *extreme danger*. In case the mark indicates the presence of fire damp, the workman shall not, under any circumstances, enter such room or working place until the fire boss has again inspected and rendered the place safe.

RULE 8. The miner shall each day examine his working place before beginning work and take down all dangerous slate, or otherwise make it safe by properly timbering the same, before commencing to dig or load coal, and he shall at all times be very careful to keep his working place in a safe condition during working hours.

RULE 9. Should he at any time find his place becoming dangerous from any unusual condition that may have arisen, he shall at once cease working and inform the mine boss or his assistant of such danger.

RULE 10. Every miner shall order props, cap pieces, or other necessary timbers from the driver who brings him his cars. The miner shall always keep on hand a sufficient quantity of props, cap pieces, and other necessary timbers, and shall order the same in advance, so that the driver may have time to bring them. Should the miner from any cause have no props or other necessary timbers on hand, he shall immediately cease work, vacate his working place, and report the fact to the mine boss.

RULE 11. All shots must be well prepared and square, not gripping, unless undercut parallel with drill hole and not over 3 feet on solid. All over 3 feet from face of coal must be undercut. Cutting shots in entries and rooms must be square and back of drill hole by not less than 12 inches behind back of cutting.

RULE 12. In case timbers are blown out, causing falls at the working face, owing to the negligence of the miner, he will be required to clear such falls at his own expense. The company will only assist where the roof was known to have been bad or there was no negligence shown on the part of the miner.

RULE 13. Any miner loading "bony" coal or any foreign matter with his coal shall for the first offense be suspended one day; for a second offense be suspended one week, and for the third offense shall be discharged. The gross weight of all foreign matter shall be deducted.

DUTIES OF DRIVERS.

RULE 14. When a driver has occasion to leave his trip, or when his trip from any cause is stopped anywhere except at a regular station, he must see that it is left, when possible, in a safe place, secure from cars or other dangers or from endangering drivers or trips following, and if the trip is left in a main hauling way he must go back and notify approaching drivers, if any, of the existing obstruction, that they may be enabled to stop their trips and avoid collisions.

RULE 15. The driver must take great care in taking his trip down grade to have the sprags so adjusted that he can keep the cars under control and thus prevent accidents.

RULE 16. On receiving orders from workmen for props, cap pieces, or other necessary timbers, the driver will bring the same with all possible dispatch, and in case, for any reason, they can not be obtained, he will report the fact to the workman so ordering and also to the mine boss.

DUTIES OF ROPE RIDERS.

RULE 17. The position of rope rider being one of peculiar hazard, he must use special care and precaution to avoid the dangers incident thereto.

RULE 18. He shall exercise great care in seeing that all couplings are safe for use and see that all trips are properly coupled before starting; and should he at any time see any material defect in the rope, link hook, or chain, he shall immediately remedy such defect, or, if unable to do so, he shall detain the trip and report the matter to the mine boss.

RULE 19. He shall allow no person to ride up and down on cars except on man trip, and he shall not run man trips without safety chain, from rope to rear end of last car. Man trip shall leave top of slope promptly at 7 in the morning and bottom of slope at 4 o'clock in the evening.

DUTIES OF CAGERS OR MEN ASSIGNED TO THAT POSITION.

RULE 20. The cager shall be at his proper place at the bottom of the shaft when men begin to descend in the morning and remain there until hoisting of coal commences. He shall see that men are safely off the cage and then signal the engineer. He shall be at his proper place at the time the hoisting of coal ceases and men commence to be hoisted in the evening, and shall see that not more than six persons get on the cage at any one time, and when they are safely on the cage he shall signal the engineer to hoist them. The man acting as cager during the hoisting of coal shall see that all cars are safely held on the cage by the catch provided for that purpose before signaling the engineer. He shall not allow any tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when persons are being hoisted out of the mine or lowered into it, except when for the purpose of repairing the shaft or the machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be hoisted or lowered before or after the men have been hoisted or lowered. And he shall immediately inform the mine boss of any violation of this rule. In signaling the engineer the cager shall use the signals directed in general rule No. 49.

DUTIES OF SHOT FIRERS.

RULE 21. Shot firers must not fire any shot unless coal is properly cut in accordance with the two following sections, nor unless said shot is otherwise and in all respects proper and safe. Note especially rule No. 11.

RULE 22. Shot firers must only fire one shot at a time in any separate split of air, and the following shot must not be lit until the smoke has cleared away.

RULE 23. No shot to be fired while anyone except the shot firers are in the mine, except by special permission of the mine boss, and the shot firers shall not enter the mine for the purpose of firing until all the men are out of the mine.

RULE 24. Shot firers must commence firing at a point farthest from the intake airway, and proceed with a firing in a direction opposite to that in which the air is traveling.

RULE 25. Before firing a shot the shot firers will first examine for gas in the place, and under no circumstances will they fire where there is an accumulation of gas. In places making gas, after firing a shot the shot firer will return and see that no fire has been left from the shot.

RULE 26. No shots are to be tamped by miners, thus allowing shot firers opportunity to examine shots and leave it unfired if he considers it unsafe to fire it.

DUTIES OF FIRE RUNNER.

RULE 27. It shall be the duty of the fire runner to examine all places where shots have been fired to see that no fire has been started by the shots, and they shall mark the date of the month and the initial of their name on coal at the face of all entries as proof of their having examined the place. They shall commence examining the mine as soon as possible after the shot firers have fired the shots.

RULE 28. The fire runners shall see that barrels are kept near the face of each entry and these barrels are kept full of water, also see that water pipes in each entry are in repair and ready for immediate use; that sufficient hose and all other material is handy for fighting fires. Any deficiency must be immediately reported to pit boss.

DUTIES OF TOPMEN OR MEN ASSIGNED TO THAT POSITION.

RULE 29. He shall be at his proper place at ground landing of shaft in the morning from the time that persons begin to descend into the mine, and shall remain there until the hoisting of coal begins. He shall see that not more than six persons get on the cage at any one time, and when they are ready he will close the gate and signal the engineer to lower the cage, and he shall not open gate until cage has been placed in position to receive men. After the hoisting of coal ceases in the evening it shall be his duty to be at his proper place until all the men are hoisted from the mine. He shall see that men get safely off the cage, and shall then signal the engineer in the proper manner. He shall not allow any tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when persons are being lowered into the mine, except for the purpose of repairing the shaft or machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be lowered before or after the men have been lowered. In signaling the engineer the topman shall use the signals as directed in rule No. 49.

RULE 30. At shafts not using self-dumping cages the topman shall see that the stops for the cages to rest upon are kept in good working order, and he must remove loaded cars carefully, and in placing empty cars on cage must see that the car is securely held by the catch provided for that purpose before signaling the engineer.

DUTIES OF ENGINEERS.

RULE 31. It shall be the duty of the engineer to keep careful watch over his engine and all machinery under his charge, and see that the same is in proper working order before attempting to raise or lower men or material.

RULE 32. He shall see that the boilers are properly cleaned and inspected at proper intervals, and that the steam pressure does not exceed at any time the limit allowed by the superintendent.

RULE 33. He shall not allow any unauthorized person to enter the engine house. Neither shall he allow any person to handle or run the engine without the permission of the superintendent.

RULE 34. When workmen are being raised or lowered he shall take special precaution to keep the engine well under control.

RULE 35. The engineer will observe and operate his engine in accerdance with the general and special rules governing signals. (See general rule No. 49.)

DUTIES OF FIREMEN.

RULE 36. Every fireman or other person in charge of a boiler or boilers for the generation of steam shall keep a careful watch of the same. He shall see that the steam pressure does not exceed at any time the limit allowed by the superintendent. He shall frequently try the safety valves and shall not increase the weight on the same. He shall maintain a proper depth of water in each boiler, and if anything should happen to prevent this he shall report the same without delay to the engineer, and take such other action as may, under the particular circumstances, be necessary for the protection of life and preservation of property.

RULES AND REGULATIONS IN REGARD TO POWDER.

RULE 37. All persons (except those appointed by the coal company or the mercantile company having charge of the powder sales) are prohibited from entering the powder house on any pretense whatever.

RULE 38. The use of tobacco in any form by any person while in the performance of his duties in and around the powder houses is strictly prohibited; neither shall any such person enter a powder house with matches or other ignitible material about his person.

RULE 39. No powder keg shall be opened in any other manner than by the slide or lead plug provided for that purpose; it is strictly prohibited to use a plug of any kind to drive through the end of a powder keg for the purpose of opening the same.

RULE 40. It will be the duty of those authorized to perform this work to see that no person enters the powder house while said work is in progress; also to govern their actions by the above regulations.

RULE 41. No lights of any kind shall be allowed in or around the powder house.

RULE 42. No powder or high explosive shall be taken into the mine by any one man in greater quantities than required for use in one day (unless such quantity be eight pounds or less), and all powder shall be sent or carried into the mine in metallic canisters.

RULE 43. Powder must be kept in proper air-tight powder cans, and the cans must be kept in a close tight-locked box, said box to be at least 300 feet from any working face and only at points designated by the mine boss.

RULE 44. Whenever a workman shall open a box containing powder or other explosives, or while in any manner handling the same, he shall first place his lamp not less than five feet from such explosives and in such a position that the air current can not convey sparks to it, and he shall not smoke while handling explosives.

GENERAL RULES.

RULE 45. No person shall be allowed to enter any mine, except employees working in that mine, without permission of the superintendent or mine boss.

RULE 46. No person in a state of intoxication shall be allowed to go into or loiter about the mine.

RULE 47. No person shall be allowed to travel on foot to or from his work on any incline, plane, or slope, when other good roads are provided for that purpose. As each mine is provided with a passway around the shaft at the bottom, all persons employed in the mine, or others, are strictly forbidden to cross over from one side of the shaft to the other side through the hoisting compartment under any circumstances whatever. No one except employees in the discharge of their duties, such as rope riders, pit bosses, or track layers when repairing tracks on slope, are permitted to travel on slopes where coal is being hoisted during working hours.

RULE 48. Workmen and all other persons are strictly forbidden to commit any nuisance or throw into, deposit or leave coal, dirt, or stones or other rubbish in the air courses or roads so as to interfere with, pollute, or hinder the air passing into or out of the mine.

RULE 49. In all shafts or slopes where persons, coal, or material of any kind are hoisted or lowered by machinery the following code of signals shall be used:

One signal—To hoist coal or other material.

One signal—To stop cage or car when in motion.

Two signals—To lower cage or car.

Three signals—That persons are to be hoisted, on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal the persons will get on car or cage, and when they are safely on car or cage, one signal shall be given to engineer to hoist. After the hoisting of coal has ceased in the evening and the 4 o'clock whistle has blown it will only be necessary to give the three signals for the first three cages of men hoisted, after which the one signal "ready" will only be given for each cage until all the men are out.

Four signals—That mules are to be hoisted, on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal the mule will be placed on the cage and when it is safely on the cage one signal shall be given the engineer to hoist.

Five signals—Turn steam on to slope or underground engines.

Six signals—Shut steam off from slope or underground engines.

RULE 50. No person or persons shall go into any old or abandoned part of the mine, or in any other place which is not in actual course of working, without permission of the mine boss, nor shall they travel to or from their work except by the traveling ways provided and assigned for that purpose.

RULE 51. No person in the mine shall be allowed to enter any room or working place to which his duties do not call him. It is strictly forbidden for any person to visit a room or other working place except his own, either during the presence or absence of its proper occupant. All boys or other persons assigned to special posts as trappers or otherwise must remain at their posts while on duty.

RULE 52. All miners must be in the mine before the 7.30 o'clock whistle blows in the morning. Drivers must have their mules out of stables and ready for work, and all other company men must be prepared to start work when the whistle blows at 7.30 o'clock.

RULE 53. Any person found with tools or powder belonging to another, or taking or using tools or powder belonging to another without the owner's consent, shall for the first offense be fined $2.50, and for the second offense he shall be discharged. Such fines to be paid to the owner of the tools and collected at the company's office, and any person detected in exchanging checks on the pit cars shall be immediately discharged.

RULE 54. Any miner or employee who shall damage any signal bell or wire, brattice, airway, or door, or open a door and not close it again, or do anything by which the safety of the men or the mine may be endangered, shall be promptly discharged.

RULE 55. Whenever it shall be the duty of any person to go into the "sump" or space below the cage at the bottom of the shaft for the purpose of cleaning out, removing dirt or otherwise, they shall first place a prop or props of wood or iron in such a manner as to arrest the cage should it from any cause be made to descend, and thus secure themselves or others from possible danger.

RULE 56. All employees who desire to absent themselves from work must notify the foreman under whom they work the day before. And anyone absent without permission will for the first offense be suspended three days, and for the second offense be suspended one week, and for the third offense be discharged, except in case of sickness.

RULE 57. All persons, except those duly authorized, are forbidden to meddle or tamper in any way with any electric or signal wire about the mine.

RULE 58. No miner or other employee shall be entitled to receive his time at the company's office until he shall obtain from the mine boss a clearance card, and in case of employees renting a company house a note must be obtained from the superintendent's clerk stating amount of rent due.

RULE 59. No miner or other person, unless duly authorized by the pit boss, will fire a shot of any kind. Anyone violating this rule will be immediately discharged.

RULE 60. No person shall ride on loaded cars, and no one except rope rider shall ride on any rope trip on any slope, except such trips as shall be run at morning and night on No. 7 slope for carrying the men to and from their work, and then only when safety chain is on the car.

RULES AND REGULATIONS IN REGARD TO ELECTRIC WIRES AND APPLIANCES.

RULE 61. All persons are forbidden to touch the electric wires or appliances in or about the mines except those especially employed for the purpose.

RULE 62. All persons whose duty it is to handle wires and appliances should wear insulating gloves when handling wires and connections, and should exercise extreme caution to prevent any part of their body coming in contact with the wires or connections.

JAMES CAMERON, *Superintendent.*

Approved:
CARL SCHOLZ, *President.*

NO. 42. SAMPLES COAL AND MINING COMPANY.

This company operates two slopes west of McAlester, and known as mines Nos. 1 and 2. Mr. William Busby is president of the company; D. C. Welch is general auditor; Charles E. Rohrer is treasurer; J. C. Reid is general superintendent, and W. S. Mellor is local superintendent.

SLOPE MINE NO. 1.

The slope was opened in the year 1897. The coal is 4 feet in thickness. The pitch of coal is 24° to the south, which pitch, however, becomes considerably modified at the bottom of slope to about 16° or 17°. The slope has been driven down 1,500 feet, and eight entries are in operation. There are two air shafts, one being 20 feet in depth, and one being 25 feet in depth, both being 4 by 4 feet in size. Average number of men and boys employed in and around this mine is 78. The production of coal for the year is 33,591 tons.

Equipment consists of one double Munday hoisting engine, with 10 by 16 inch cylinders, provided with two drums 48 inches in diameter and 48 inches in length, operated by friction clutch; one Atlas shaker engine, with 7 by 10 inch cylinder, operating shaker screen. Steam is furnished by one Palmer steel tubular boiler, 54 inches in diameter and 14 feet in length, and two Tompkin steel tubular boilers, 42 inches in diameter and 14 feet in length.

Ventilation is had by means of two 12-foot Erie fans. There are two Snow double pumps, with 5¼-inch steam cylinders, 4¾-inch water cylinders, and 5-inch stroke in use on top for supplying water to boilers.

There were four accidents reported to me from this mine, two of which proved fatal.

SLOPE MINE NO. 2.

This mine was opened in the year 1901. Coal is 4 feet 4 inches in thickness, with a pitch of 29° to the south. The slope is 750 feet in length, and four entries are in operation. Air shaft is 30 feet in depth and 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 52. The total production of coal for the year is 26,799 tons.

Equipment consists of one Danville double-direct-hoisting engine, with 18 by 36 inch cylinders, drum being 66 inches in diameter and 72 inches in length. Steam is furnished by two Welch & Weidner steel tubular boilers, 54 inches in diameter and 16 feet in length. Ventilation is had by means of one 20-foot Danville fan, with engine, 14 by 18 inch cylinder. There is one Snow double pump, with 5¼-inch steam cylinders, 4¾-inch water cylinders, and 5-inch stroke, in use on top for supplying boilers. There were four accidents reported to me from this mine, neither of which proved fatal.

NO. 43. SAN BOIS COAL COMPANY.

This company operates at McCurtain, Ind. T. E. R. Lightcap, of Fort Smith, Ark., is general manager. Mr. C. C. Woodson, formerly of Bonanza, Ark., has lately been appointed superintendent of mines. Mines operated by this company consist of slope mines Nos. 1, 2, and 3. The coal in this locality varies very much in thickness, being from 4 to 8 feet in thickness. It has not yet been fully determined whether this coal is a continuation of the Panama vein or whether it belongs properly to one of the Indian Territory veins.

SLOPE MINE NO. 1.

This slope mine was opened in the year 1902. Coal is 5 feet in thickness, with a pitch of 5½° to the northwest. Slope has been driven down 1,732 feet, and nine double entries are in operation. Air shaft is 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 92.

The production of coal for the six months ended December 31, 1903, is 54,675 tons; for the six months ended June 30, 1904, is 18,043 tons; total production for the year is 72,718 tons.

Equipment consists of one Litchfield double-direct engine with 24 by 36 inch cylinders, provided with drum 6 feet in diameter and 7 feet in length, which is furnished with steam by a battery of four Erie City steel tubular boilers 72 inches in diameter and 18 feet in length, which also furnishes steam for two compressors. The two compressors are of the Norwalk type, with 28 by 30 inch cylinders, which furnish power for five Cameron pumps, with 10-inch air cylinder, 5-inch water cylinder, and 12-inch stroke, in use in mines and for supplying boilers.

Ventilation is had by means of one 8-foot high-speed Cappell fan, which is run by steam engine with belt gear.

There were three accidents reported to me from this mine, one of which proved fatal.

SLOPE MINE NO. 2.

This slope was opened in the year 1903. Coal is 76 inches in thickness, with a pitch of 5° to the southwest. Slope has been driven down 1,372 feet and six double entries are in operation. Air shaft is 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 87.

The production of coal for the six months ended December 31, 1903, is 38,058 tons; for the six months ended June 30, 1904, is 11,980 tons; total production for the year is 50,038 tons.

Equipment consists of one Litchfield double-direct engine, with 20 by 36 inch cylinders, drum being 6 feet in diameter and 7 feet in length, which engine is supplied with steam by a battery of two Erie City steel tubular boilers 72 inches in diameter and 18 feet in length.

Ventilation is had by means of one 8-foot high-speed Cappell fan, operated by engine with belt gearing. There are in use in and around this mine three Cameron single pumps with 10-inch steam cylinder, 5-inch water cylinder, and 12-inch stroke.

There were two accidents reported to me from this mine, both of which proved fatal.

SLOPE MINE NO. 3.

This slope was opened in the year 1903. Coal is 4 feet 5 inches in thickness, with a pitch of 8° to the northwest. Slope has been driven down 1,355 feet, and four double entries are in operation. Air shaft is 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 43.

The production of coal for the six months ended December 31, 1903, is 1,589 tons; for the six months ended June 30, 1904, is 6,623 tons; total for the year is 8,212 tons.

This mine has not yet been fully equipped, but there is an engine on hand which has not yet been erected, and two Erie Iron Works steel tubular boilers 72 inches in diameter and 18 feet in length. Four Cameron single pumps, with 10-inch steam cylinder, 5-inch water cylinder, and 12-inch stroke are in use in and around this mine.

Ventilation is had by means of one 14-foot high-speed Cappell fan.

There was one accident reported to me from this mine, which proved to be of a fatal character.

NO. 44. SAVANNA COAL AND MINING COMPANY.

This company is operating two slope mines, formerly included in reports as Michael Perona and Catital Trading Company. The production of coal for this year includes the production of the two above named operators.

SLOPE MINE NO. 2.

This slope was opened in the year 1898 on the McAlester vein. The coal is 4 feet thick with a pitch of 48° to the northwest. Slope has been driven down 210 feet and one entry only is in operation. Air shaft is 18 feet in depth and 4 by 4 feet in size. Average number of men and boys employed in and around this mine is 6. The production of coal will be given in total for this and No. 3 mine later.

Equipment consists of one Scoville single engine, with 7 by 10 inch cylinder, drum being 16 inches in diameter and 30 inches in length. Engine is geared 1 to 6. Steam is furnished by one Scoville steel vertical boiler 36 inches in diameter and 6 feet in length. Ventilation is had by means of furnace.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 3.

This slope was opened in the year 1902 on the McAlester vein. Coal is 4 feet in thickness with a pitch of 48° to the northwest. Slope has been driven down 140 feet, and one entry only is in operation. Air shaft is 15 feet in depth and 4 by 4 feet in size. Average number of men and boys employed in and around this mine is 3.

The production of coal for this mine and for No. 2 mine for the six months ended December 31, 1903, is 3,418 tons; for the six months ended June 30, 1904, is 2,509 tons; total production for the year is 5,927 tons.

The coal in this mine is raised by means of gin and mule power. There is one pump in use at the bottom of the slope, which is a small Gardner double pump.

There were no accidents reported to me.

NO. 45. SOUTHWESTERN DEVELOPMENT COMPANY.

This company operates near to Coalgate, Ind. T., and at the present time is operating four shaft mines, known as mines Nos. 4, 9, 10, and 12. Mr. A. A. Allen is general manager. Mr. S. J. Tonkin, of Parsons, Kans., is general superintendent, and George Cullen, of Coalgate, Ind. T., is local superintendent. Besides the operation of the above mines, this company has done considerable stripping during the past year.

SHAFT MINE NO. 4.

This shaft was sunk in the year 1901. Coal is 4 feet 8 inches in thickness, with a pitch of 7° to the east. The shaft is 158 feet in depth, slope being sunk to the dip of shaft, 2,500 feet, and plane driven 300 feet to the rise. Fourteen entries have been turned but only six are in operation. The size of the two compartments of the hoisting shaft is 7 by 12 feet, with third compartment 4 by 7 feet in size, which acts as an air shaft for ventilation. Average number of men and boys employed in and around this mine is 206. The production of coal for the year is 80,209 tons.

Equipment consists of one Great Western double direct engine, with 16 by 24 inch cylinders, provided with drum 6 feet in diameter and 10 feet in length. Steam is supplied by a battery of three boilers, two of which are Rohan steel flue boilers 48 inches in diameter and 24 feet in length, and one John O'Brien steel tubular boiler 48 inches in diameter and 24 feet in length.

Ventilation is had by means of one 14-foot Crawford & McCrimmon fan. There is in use at bottom of shaft one Fairbanks-Morse pump, with 6-inch steam cylinder, 4-inch water cylinder, and 6-inch stroke.

There were four accidents reported to me from this mine, one of which proved fatal.

SHAFT MINE NO. 9.

This shaft was sunk in the year 1899. Coal is 4 feet 8 inches in thickness, with a pitch of 14° to the south. The shaft is 325 feet in depth. Slope has been driven to dip of shaft, 1,300 feet, and a plane to the rise, 1,500 feet. Eight pair of entries are in operation. Hoisting shaft is 7½ by 13 feet. Air shaft is 148 feet in depth and 8 by 8 feet in size. Average number of men and boys employed in and around this mine is 333. The production of coal for the year is 141,803 tons.

Equipment consists of one Webster, Camp & Lane double direct engine, with 16 by 30 inch cylinders, with drum 7 feet in diameter and 8 feet in length; one double direct Ottumwa slope engine, with 14 by 30 inch cylinders, provided with drum 5 feet in diameter and 6 feet in length, and one double Ottumwa engine for the plane, with 12 by 16 inch cylinders, provided with drum 5 feet in diameter and 4 feet in length, geared 1 to 5. Steam is furnished by a battery of three John O'Brien steel tubular boilers 60 inches in diameter and 20 feet in length, and two John O'Brien steel tubular boilers 48 inches in diameter and 20 feet in length.

Ventilation is had by means of one 22-foot Alton Manufacturing Company fan. One Fairbanks-Morse pump is in use at the bottom of shaft with 6-inch steam cylinder, 4-inch water cylinder and 6-inch stroke.

There were four accidents reported to me from this mine, none of which proved fatal.

SHAFT MINE NO. 10.

This shaft was sunk in the year 1902. The coal is 4 feet 8 inches in thickness, with a pitch of 7° to the south. The shaft is 84 feet in depth. Slope has been driven 1,800 feet to the dip of shaft, and a plane to the rise 100 feet in length, which plane has been worked out. There are six double entries in operation. The size of the two compartments of the hoisting shaft is 7½ by 11 feet, with third compartment 2 by 7½ feet in size. Air shaft is 70 feet in depth and 6 by 6 feet in size. Average number of men and boys employed in and around this mine is 243. The total production of coal for this mine for the year is 108,610 tons.

Equipment consists of one double Ottumwa hoisting engine, with 12 by 14 inch cylinders, provided with drum 5 feet in diameter and 5 feet in length, geared 1 to 5; and one Fort Scott single slope engine for hoisting on slope, with 10 by 20 inch cylinder, provided with drum 5 feet in diameter and 5 feet in length, geared 1 to 5. Steam is furnished by two John O'Brien steel tubular boilers 48 inches in diameter and 20 feet in length. Ventilation is had by means of one 12-foot Alton fan.

There were five accidents reported to me from this mine, one of which proved fatal.

SHAFT MINE NO. 12.

This shaft was opened in the year 1904. Coal is 5 feet in thickness with a pitch of 8° to the east. The shaft is 653 feet in depth. The size of the two compartments of the hoisting shaft is 7½ by 14 feet with third compartment 2 by 7½ feet in size. The production of coal from this mine is 1,519 tons.

Equipment consists of two direct-acting Ottumwa hoisting engines, with 20 by 32 inch cylinders, drum being 78 inches in diameter. Steam is furnished by three John O'Brien steel flue boilers, 66 inches in diameter and 20 feet in length.

There was one accident reported to me from this mine, which was of a nonfatal character.

NO. 46. TURKEY CREEK COAL COMPANY.

This company operates at Hughes, Ind. T. C. W. Turner, of Muskogee, Ind. T., is president, and T. W. Clelland is secretary and general manager. This company operated four mines last year, viz, Mines Nos. 1, 2, 3, and 4. No. 3 mine has been abandoned, leaving only Mines Nos. 1, 2, and 4 in operation. The production of coal of No. 3 will be included in the production from No. 4.

SLOPE MINE NO. 1.

This mine was opened in the year 1900 on the McAlester vein. The coal is 34 inches in thickness, with a pitch of 20° to the north. Slope has been driven down 650 feet and four entries are in operation. Air shaft is 25 feet in depth and 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 22. The total production of coal for the year is 6,410 tons.

Equipment consists of one single hoisting engine, with 10 by 20 inch cylinder, provided with drum 5 feet in diameter and 6 feet 6 inches in length, geared 1 to 6; one Atlas single engine, with 7 by 8 inch cylinder, for operating shaker screen. Steam is furnished by one Chandler & Taylor steel flue boiler 60 inches in diameter and 16 feet in length; one John O'Brien steel cylinder boiler 48 inches in diameter and 26 feet in length.

Ventilation is furnished by one 12-foot Crawford & McCrimmon fan. One Gardner double pump, with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke, is in use in slope, and one Iowa single pump, with 2-inch steam cylinder, 2-inch water cylinder, and 3½-inch stroke, for purpose of supplying water to boilers.

There were no accidents reported to me from this mine.

SLOPE MINE NO. 2.

This slope mine is opened on the lower Hartshorne vein. The coal is 4 feet 2 inches in thickness, with a pitch of 30° to the north. Slope has been driven down 450 feet, and five entries are in operation. Air shaft is 20 feet in depth, and 7 by 7 feet in size. Average number of men and boys employed in and around this mine is 25. The total production of this mine for the year is 15,980 tons.

Equipment consists of one double Litchfield hoisting engine, with 12 by 20 inch cylinders, drum being 5 feet in diameter, and 3 feet 6 inches in length. Engine is geared 1 to 5. Steam is furnished by one Ames steel tubular boiler 48 inches in diameter and 14 feet in length, and one Russell steel tubular boiler 72 inches in diameter and 16 feet in length.

Ventilation is had by means of one 7-foot Crawford & McCrimmon fan. There are two pumps in the slope, one of which is a Worthington double pump, with 10-inch steam cylinders, 5-inch water cylinders,

and 10-inch stroke, and one is a Pullen single pump, with 6-inch steam cylinder, 4-inch water cylinder, and 6-inch stroke.

There were no accidents reported to me.

SLOPE MINE NO. 4.

This slope was opened in the year 1901. Coal is 4 feet 2 inches in thickness, with a pitch of 30° to the north. Slope has been driven down 300 feet from the end of a drift which was driven in on the level from the side of the mountain, and from which a plane is driven upward to the crop. There are five entries in operation. Air shaft is 25 feet in depth and 4 by 12 feet in size. Average number of men and boys employed in and around this mine is 22. The total production of coal for the year is 11,794 tons.

Equipment consists of one Schoolhorn double engine, with 10 by 20 inch cylinders, provided with drum 5 feet in diameter and 3 feet 6 inches in length, geared 1 to 4. Steam is furnished by two John O'Brien cylinder tubular boilers, 48 inches in diameter and 26 feet in length.

Ventilation is had by means of one 12-foot Crawford & McCrimmon fan. Pumps consist of one Pullen single pump, with 5-inch steam cylinder, 3½-inch water cylinder, and 5-inch stroke, in use in slope, and one Worthington double pump, with 10-inch steam cylinder, 5-inch water cylinder, and 10-inch stroke, in use on the outside.

There was one accident reported to me from this mine, which was of a nonfatal character.

NO. 47. VALLEY COAL COMPANY.

This company operates one slope west of McAlester, Ind. T., on a spur of the Missouri, Kansas and Texas Railway. John Hopkins is superintendent.

This slope was opened in the year 1901 on the lower Hartshorne vein, the coal being 3½ feet in thickness with a pitch of 42° to the south. Slope has been driven down 320 feet and three entries are in operation. There are two air shafts, one 14 feet in depth and one 45 feet in depth, both being 6 by 8 feet in size. Average number of men and boys employed in and around this mine is 14.

The production of coal from this mine for the six months ended December 31, 1903, is 2,524 tons; for the six months ended June 30, 1904, is 1,597 tons; total for the year is 4,121 tons.

Equipment consists of one Ledgerwood double engine with 7 by 10 inch cylinders, drum being 2 feet 8 inches in diameter and 4 feet in length, geared 1 to 6½. Steam is furnished by one Fort Smith Foundry iron boiler, 3 feet in diameter and 12 feet in length. Ventilation is had by furnace.

There were no accidents reported to me from this mine.

NO. 48. WARDEN COAL COMPANY.

This company operates a shaft north of Henryetta, Ind. T. This shaft was sunk in the year 1903. Coal is 3 feet in thickness and is the Henryetta vein and pitches ½° to the east. Shaft is 70 feet in depth. Two main and four cross entries have been opened. The size of the two compartments of the hoisting shaft is 7 by 13 feet, with third compartment 3 by 7 feet in size. Air shaft is 70 feet in depth and 7 by 12 feet in size. Average number of men and boys employed in and around this mine is 43.

The production of coal from this mine for the six months ended December 31, 1903, is 449 tons; for the six months ended June 30, 1904, is 2,817 tons; total production for the year is 3,266 tons. This mine only produced coal during about three months of the past year.

Equipment consists of one South St. Louis Foundry Company double-hoisting engine, with 11 by 18 inch cylinders, drum being 5 feet in diameter and 6 feet in length. Engine is geared 1 to 4. Steam is furnished by two South St. Louis Foundry Company steel tubular boilers, 4 feet in diameter and 14 feet in length.

Ventilation is had by means of one 12-foot South St. Louis Foundry Company fan. There is one pump, which is a South St. Louis Foundry Company pump, placed at bottom of air shaft.

There were no accidents reported to me from this company.

NO. 49. WESTERN COAL AND MINING COMPANY.

This company operates mines at Lehigh, Ind. T. Its officers are Edwin Gould, president; B. F. Bush, vice-president and general manager; John S. Cameron, chief engineer; John Connell, superintendent. Mines operated by this company during the past year are No. 5 shaft connected with No. 5½ ventilating shaft, with tail-rope haulage; No. 6 shaft connected with No. 6½ shaft, with electric-motor haulage, and No. 7 shaft. A new shaft is now being sunk east of the present workings, which when completed will be a few feet over 600 feet in depth, and it is expected to strike coal during the month of September. An air shaft is also being sunk in connection with this mine, which will strike coal about a month later. A spur track has recently been constructed from the Missouri, Kansas and Texas Railway track to this mine.

SHAFT MINES NOS. 5 AND 5½.

No. 5. shaft was sunk in the year 1887. The average thickness of coal is 4 feet 4 inches, with a pitch of 5° to the northeast. The shaft is 202 feet in depth. A slope has been driven down to the dip of coal 3,160 feet and a plane has been driven to the rise of the coal 1,130 feet in length. This plane has been idle for some years, but has now been reopened and is producing coal. There are 24 single entries in operation. The size of the two compartments of the hoisting shaft is 7 by 10 feet, with third compartment 4 by 7 feet, furnished with stairway. Air shaft is 190 feet in depth and 6 by 10 feet in size, and is known as No. 5½ shaft. From the main entry of No. 5 shaft a plane has been driven to the rise of the coal, 600 feet, in what is known as No. 5½ section. In addition there is an air shaft 150 feet in depth and 6 by 6 feet in size. Ladders for escapement are furnished in 5½ shaft. The average number of men and boys employed in and around No. 5 and No. 5½ shafts is 306.

The production of coal for the six months ended December 31, 1903, is 79,712 tons; for the six months ended June 30, 1904, is 69,319 tons; total production for the year is 149,031 tons.

Equipment consists of one double direct-acting Litchfield hoisting engine with 16 by 30 inch cylinders, drum being 7 feet in diameter and 7 feet in length. Slope engine consists of one Litchfield double

engine with 12 by 18 inch cylinder, drum being 5 feet in diameter and 4 feet in length. Engine is geared 1 to 5. Conveyor engine is one Nagle engine (single) with 10 by 16 inch cylinder. Steam for these engines is supplied by a battery of four John O'Brien steel tubular boilers, two of which are 48 inches in diameter and 20 feet in length, one 50 inches in diameter and 22 feet in length, and one 60 inches in diameter and 18 feet in length.

Ventilation is had by means of one 8-foot Robinson high-speed fan, located on air shaft near No. 5 hoisting shaft. Equipment at No. 5½ shaft consists of one Norwalk single haulage engine with 12 by 20 inch cylinder, provided with two drums 8 feet in diameter and 8 feet in length, geared 1 to 6, and operated by friction clutch; said engine being used for operating tail-rope and slope haulage system. Steam for the last-named engine is furnished by one John O'Brien iron-flue boiler, 44 inches in diameter and 27 feet in length. Ventilation is had for 5½ section by one 12-foot Crawford & McCrimmon fan. Pumps at these mines consist of one Knowles single pump with 7-inch steam cylinder, 4½-inch water cylinder, and 10-inch stroke; one Worthington double pump with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke; one Norwalk single pump with 5-inch steam cylinder, 3-inch water cylinder, and 7½-inch stroke. These pumps are used for pumping from the reservoir and supplying boilers at this mine.

There were three accidents reported to me from this mine, one of which proved fatal.

SHAFT MINES NOS. 6 AND 6½.

No. 6 shaft was sunk in the year 1888. Average thickness of coal is 4 feet 6 inches, with a pitch of 7° to the northeast. The shaft is 239 feet in depth. Slope has been driven to the dip of the coal, a distance of 2,700 feet, and plane is driven 1,160 feet to the rise from level of shaft. There are 18 single entries in operation. Size of two compartments of hoisting shaft is 7 by 10 feet, with stair compartment 7 by 4 feet in size. There are two air shafts to this mine, one being 230 feet in depth and 6 by 10 feet in size, and 6½ shaft, which is 249 feet in depth, and 6 by 10 feet in size. Average number of men and boys employed in and around No. 6 and No. 6½ is 415.

The production of coal for the six months ended December 31, 1903, is 88,150 tons; for the six months ended June 30, 1904, is 81,961 tons; total for the year is 170,111 tons.

Equipment at this mine consists of one double direct Litchfield hoisting engine, with 16 by 30 inch cylinders, drum being 7 feet in diameter and 8 feet in length. One Keystone double engine is in use at slope with 10 by 16 inch cylinder, drum being 6 feet in diameter and 6 feet in length, geared 1 to 3. Plane is furnished with one Ottumwa double engine, with 8 by 10 inch cylinders, drum being 2½ feet in diameter and 3 feet in length, geared 1 to 8.

For the conveyor there is in use one Nagle single engine, with 11 by 13 inch cylinder. There is also installled at this plant one single Watertown dynamo engine, with 15 by 16 inch cylinder, which furnishes power to run the dynamo. Steam for these engines is furnished by a battery of five John O'Brien steel tubular boilers, three of which are 60 inches in diameter and 22 feet in length; one 60 inches in diameter and 18 feet in length; and one 48 inches in diameter and 20 feet in length. One Crawford & McCrimmon 15-foot fan furnishes air for the mine.

Electric machinery consists of one Ridgeway dynamo, 150 kilowatts, which in turn supplies power for one stationary haulage motor, Atoka Coal and Mining Company, of 30 horsepower, 240 volts, and one General Electric Company 9-ton electric locomotive, 240 volts.

Pumps in use at this mine consist of one Worthington double pump with 6-inch steam cylinders, 4-inch water cylinders, and 6-inch stroke for supplying boiler tanks, and one Worthington double pump with 7-inch steam cylinders, 5-inch water cylinder, and 6-inch stroke for use in the mine. There was one accident of a fatal character reported to me from this mine.

SHAFT MINE NO. 7.

This shaft was sunk in the year 1900, the coal being 4 feet 6 inches in thickness, with a pitch of 6° to the northeast. The shaft is 110 feet in depth. Slope has been driven down to a depth of 1,250 feet to the dip from level of shaft, and a plane has been driven upward for 700 feet to the rise. Eight entries are in operation. The size of the two compartments of the hoisting shaft is 7 by 10 feet, with stair compartment 7 by 4 feet in size. Average number of men and boys employed in and around this mine is 210.

The production of coal from this mine for the six months ended December 31, 1903, is 62,084 tons; for the six months ended June 30, 1904, is 45,679 tons; total production for the year is 107,763 tons.

Equipment consists of one double direct Keystone hoisting engine, with 12 by 24 inch cylinders, drum being 6 feet in diameter and 7 feet in length. Slope engine consists of one single Ellison & Son engine, with 10 by 20 inch cylinder, with drum 6 feet in diameter and 7 feet in length, geared 1 to 3.

Conveyor engine consists of one single Ottumwa engine, with 8 by 10 inch cylinder, with endless rope gear. Steam is furnished by two John O'Brien steel tubular boilers, 48 inches in diameter and 22 feet in length. Ventilation is had by means of one 12-foot Crawford & McCrimmon fan. There is in use in this mine one Knowles single pump with 7-inch steam cylinder, 4½-inch water cylinder and 10-inch stroke, for pumping in the mine; and one Worthington double pump with 6-inch steam cylinders, 4-inch water cylinders and 6-inch stroke, for supplying boiler tank.

There were no accidents reported to me from this mine.

This company runs a very complete machine shop, located near No. 5 shaft. It is equipped with a single L. & S. engine, with 6 by 8 inch cylinder, geared 1 to 5. There is in use in this shop a turning lathe, one shaper and two vertical drill pressers, also a complete set of tools and other necessary supplies for repairing machinery, etc.

The following rules are in force in the Western Coal and Mining Company's mines:

DUTIES OF MINERS.

RULE 1. The miner each day shall examine his working place before beginning work and take down all dangerous slate, or otherwise make it safe by properly timbering the same before commencing to dig or load coal; and he shall at all times be very careful to keep his working place in a safe condition during working hours.

RULE 2. Should he at any time find his place becoming dangerous from any unusual condition that may have arisen, he shall at once cease working and inform the mine boss or his assistant of such danger.

RULE 3. Every miner shall order props, cap pieces, or other necessary timbers from the driver who brings him his cars. The miner shall always have on hand a sufficient quantity of props, cap pieces, and other necessary timbers, and shall order the same in advance, so that the driver may have time to bring them. Should the miner, from any cause, have no props or other necessary timbers on hand, he shall immediately cease work, vacate his working place, and report the fact to the mine boss.

RULE 4. No shot in rooms of full width shall be placed at a greater depth on the solid than the depth of the undermining. In all narrow work, such as entries, room turning, break through, etc., the coal must be sheared or cut in on one side the full thickness of the vein and at least the full depth of the drill hole.

RULE 5. Any miner who negligently blows out timbers and causes falls at his working place will be required to clear the same at his own expense. The company will only assist at such clearing or falls when the roof was known to have been bad or there was no negligence shown on the part of the miner.

RULE 6. Any miner loading "bony" coal or any other foreign matter with his coal shall for the first offense be suspended one day, for a second offense be suspended one week, and for the third offense shall be discharged.

RULE 7. Firing of shots shall take place but once daily, and shall commence at 5 o'clock p. m., at a signal to be agreed upon by the mine boss and the miners. In case of men working but half a day shots may be fired at 12 o'clock noon. Any miner firing before these hours shall be subjected to the same penalties as are specified in rule 6 for loading dirty coal.

RULE 8. Blasting shall commence at first room on return air way, and shall be in rotation, ending in first room on intake air way, and rooms being turned shall wait until entrymen have fired.

RULE 9. Miners firing a shot in break through or in rib shall first warn miners working in next room that such shot is to be fired.

DUTIES OF DRIVERS.

RULE 10. When a driver has occasion to leave his trip, or when a trip for any cause is stopped anywhere except at a regular station, he must see that it is left, when possible, in a safe place, secure from cars or other dangers, or from endangering drivers or trips following; and if the trip is left on a main hauling way he must go back and notify the approaching drivers, if any, of the existing obstruction, that they may be enabled to stop their trips and avoid collisions.

RULE 11. The driver must take great care in taking his trips down grade to have his sprags so adjusted that he can keep the cars under control, and thus prevent accidents.

RULE 12. On receiving orders from workmen for props, cap pieces, or other necessary timbers, the driver will bring the same with all possible dispatch; and in case for any reason they can not be obtained, he shall report the fact to the workman so ordering and also to the mine boss.

DUTIES OF ROPE RIDERS.

RULE 13. The position of rope rider, being one of peculiar hazard, he must use special care and precaution to avoid the accidents incident thereto.

RULE 14. He shall use great care in seeing that all couplings are safe for use, and see that all trips are properly coupled before starting; and should he at any time see any defect in the rope, hook, link, or chain, he shall immediately remedy such defect, or, if unable to do so, he shall detain the trip and report the matter to the mine boss.

DUTIES OF CAGERS OR MEN ASSIGNED TO THAT POSITION.

RULE 15. The cager shall be at his proper place at the bottom of the shaft when men begin to descend in the morning, and remain there until the hoisting of coal commences. He shall see that men are safely off the cage and then signal the engineer. He shall be at his proper place at the time the hoisting of coal ceases and men commence to be hoisted in the evening, and shall see that not more than eight persons get on a cage at any one time, and when they are safely on the cage he shall signal the engineer to hoist them. The man acting as cager during the hoisting of coal shall see that all cars are safely held on the cage by the catch provided for that purpose before signaling the engineer. He shall not allow any tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when men are being hoisted out of the mine or being lowered into it, except when

for the purpose of repairing machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be hoisted or lowered before or after the men have been lowered. In signaling the engineer the topman shall use the signals as directed in general rule No. 30.

DUTIES OF TOPMEN OR MEN ASSIGNED TO THAT POSITION.

RULE 16. He shall be at his proper place in the morning from the time that persons begin to descend into the mine and shall remain there until the hoisting of coal commences. He shall see that not more than eight persons get on the cage at any one time, and when they are ready he will close the gate and signal the engineer to lower the cage, and he shall not open gate until cage has been placed in position to receive men. After the hoisting of coal ceases in the evening it shall be his duty to be at his proper place until all the men are hoisted out of the mine. He shall see that men get safely off the cage, and shall then signal the engineer in the proper manner. He shall not allow tools or material of any kind to be placed on the same cage with men or boys, nor on the opposite cage when persons are being lowered into the mine, except for the purpose of repairing the shaft or the machinery therein. The men shall place their tools in cars provided for that purpose, which car or cars shall be lowered before or after the men have been lowered. In signaling the engineer the topman shall use the signals as directed in general rule No. 30.

DUTIES OF ENGINEERS.

RULE 17. It shall be the duty of the engineer to keep careful watch over his engine and all machinery under his charge, and see that the same is in proper working order before attempting to raise or lower men or material.

RULE 18. He shall see that the boilers are cleaned and inspected at proper intervals, and shall see that the steam pressure does not at any time exceed the limit allowed by the superintendent.

RULE 19. He shall not allow any unauthorized person to enter the engine house, neither shall he allow any person to handle or run the engine without the permission of the superintendent.

RULE 20. When workingmen are being raised or lowered he shall take special precautions to keep the engine well under control.

RULE 21. The engineer will observe and operate his engine in accordance with the general and special rules governing signals. (*See* general rule No. 30.)

DUTIES OF FIREMEN.

RULE 22. Every fireman or other person in charge of a boiler or boilers for the generation of steam shall keep careful watch of the same. He shall see that the steam pressure does not exceed at any time the limit allowed by the superintendent. He shall frequently try the safety valves, and shall not increase the weight on the same. He shall maintain a proper depth of water in each boiler, and if anything should happen to prevent this he shall report the same without delay to the engineer and take such other action as may, under the peculiar circumstances, be necessary for the protection of life and the preservation of property.

RULE 23. No powder can be opened in any other way than that provided by the slide or lead plug provided for that purpose. It is strictly forbidden to use a plug of any kind to drive through the end of a powder keg for the purpose of opening the same.

RULE 24. Powder must be kept in a proper locked box at a sufficient distance from the working face, such distance to be designated by the mine boss.

RULE 25. Whenever a workman shall open a box containing powder or other high explosives, or while in any manner handling the same, he shall first place his lamp not less than 5 feet from such explosive and in such a position that the air current can not convey sparks to it, and he shall not smoke while handling explosives.

GENERAL RULES.

RULE 26. No person shall be allowed to enter any mine, except employees working in the mine, without permission of the superintendent.

RULE 27. No person in a state of intoxication shall be allowed to go into or loiter about any mine.

RULE 28. No person shall be allowed to travel to or from his work on any incline, plane, or slope when other good roads are provided for that purpose. As each mine

is provided with a pass way around the shaft at the bottom, all persons employed in the mines, or others, are strictly forbidden to cross over from one side of the shaft to the other side, through the hoisting compartment, under any circumstances whatever.

RULE 29. Workmen and all other persons are strictly forbidden to commit any nuisance or throw into, deposit, or leave coal, dirt, or stones or any other rubbish in the air course or roads, so as to interfere with, pollute, or hinder the air passing into or out of the mine.

RULE 30. In all shafts or slopes where persons, coal, or material of any kind are hoisted or lowered by machinery the following code of signals shall be used:

One signal—To hoist coal or other material.

Two signals—To stop cage or car when in motion.

Three signals—That persons are to be hoisted, on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal the persons will get on the car or cage, and when they are safely on car or cage one signal shall be given the engineer to hoist. After the hoisting of coal has ceased in the evening and the 5 o'clock whistle has blown it will only be necessary to give the first three signals for the first three cages of men, after which the one signal "ready" shall be given for each cage until all the men are out.

Four signals.—That mules are to be hoisted, on hearing which the engineer will signal back "ready" by giving one signal. On hearing the last-named signal the mule will be placed on the cage, and when it is safely on the cage one signal shall be given to the engineer to hoist.

Five signals—Turn steam into slope or underground engines.

Six signals—Shut steam off from slope or underground engines.

RULE 31. No person shall go into an old or abandoned part of the mine, or into any other place which is not in actual course of working, without the permission of the mine boss, nor shall they travel to or from their work except by traveling-ways provided and assigned for that purpose.

RULE 32. No person in the mine shall be allowed to enter any room or working place except the working place to which his duty calls him. It is strictly forbidden for any person to visit a room or other working place except his own, either during the presence or absence of the proper occupants. All boys or other persons assigned to special posts, as trappers or otherwise, must remain at their posts while on duty.

RULE 33. All miners must be in the mine before the 7 o'clock whistle blows in the morning. Drivers must have their mules out of the stable and ready for work, and all other company men must be ready to start work when the whistle blows at 7 o'clock.

RULE 34. Any person found with tools or powder belonging to another person without the owner's consent, shall for the first offense be fined $2.50, and for the second offense shall be discharged, such fines to be paid to the owners of the tools or powder and collected at the company's office. Any person detected in exchanging checks on the pit cars shall be immediately discharged.

RULE 35. Any miner or other employee who shall damage any signal bell or wire, brattice, air way, or door, or open a door and not close it again, or do anything by which the safety of the men in the mine may be endangered, shall be immediately discharged.

RULE 36. Whenever it shall be the duty of any person to go into the "sump," or space below the cage at the bottom of the shaft, for the purpose of cleaning out, removing dirt, or otherwise, they shall first place a prop or props of wood or iron in such a manner as to arrest the cage should it from any cause be made to descend, and thus secure themselves or others from any possible danger.

RULE 37. All employees who desire to absent themselves from work must notify the foreman under whom they work the day before, and anyone absent without permission will for the first offense be suspended for three days, and for the second offense be suspended for one week, and for the third offense be discharged, except in case of sickness.

RULE 38. All persons, except those duly authorized, are forbidden to meddle or tamper in any way with any electric or signal wire about the mine.

RULE 39. No miner or employee shall be entitled to receive his time from the company's office until he shall have obtained from the mine boss a clearance card, and in case of employees renting a company house a note must be obtained from the superintendent's clerk stating the amount of rent due.

Adopted July 24, 1897.

JOHN CONNELL, *Superintendent.*

Approved:

B. F. BUSH, *General Manager.*

NO. 50. WHITEHEAD COAL MINING COMPANY.

This company has recently opened a shaft mine some distance north of Henryetta, the same being connected by a spur track with the St. Louis and San Francisco Railway. Mr. Robert Gray is general superintendent. This shaft was opened in the year 1903 on what is known as the Henryetta vein of coal. Coal is 36 inches in thickness, with a pitch of $\frac{1}{2}^{\circ}$ to the southeast. Shaft is 88 feet in depth and is 7 by 12 feet in size. Only two entries have yet been turned. Air shaft is 88 feet in depth and is 6 by 10 feet in size. Average number of men and boys employed in and around this mine is 19. The total production of coal for the year is 875 tons.

Equipment consists of one Norton & Cole double direct engine with 14 by 20 inch cylinders, drum being 38 inches in diameter and 6 feet in length. Steam is furnished by one steel tubular boiler 54 inches in diameter and 18 feet in length.

Ventilation is had by means of one 12-foot Pittsburg Foundry Company fan. There is in use for supplying boiler one single pump, with 4-inch steam cylinder, 3-inch water cylinder, and 6-inch stroke.

There were no accidents reported to me from this mine.

SPECIAL CORRESPONDENCE.

Under this general head will be found reports of matters which I have taken up with the coal operators, either as a result of my usual inspections or on matter to which my special attention has been drawn by the miners. These matters have been usually adjusted in a satisfactory manner, either without delay or after some considerable correspondence and special inspection. In some instances it has been necessary to obtain time for the construction of escape-ways as required by law, full details of which will follow.

The following relates to a complaint made by the miners working at the mines of the Brewer Coal and Mining Company, near Savanna, Ind. T.

SAVANNA, *May 8, 1904.*

DEAR SIR: I wish to inform you in regard to the air at the Brewerville mines, which is very bad, and if it is convenient to you we would like to have you come down and investigate.

Yours, respectfully,

GEO. LINDSEY,
CHAS. POOLE,
TRONT SPINKS,
Committee.

MR. WILLIAM CAMERON.

SOUTH MCALESTER, *May 10, 1904.*

DEAR SIR: I beg to acknowledge receipt of a communication from you under date of May 8, signed by yourself, Chas. Poole, and Tront Spinks, in regard to the condition of the air at the Brewerville mines. I will take an early opportunity to visit these mines and inspect the same, but as I have very much work on hand at the present time it will possibly be eight or ten days before I can attend to this matter. However, I will do so as soon as possible.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

MR. GEO. LINDSEY,
Savanna, Ind. T.

SOUTH MCALESTER, IND. T., *May 19, 1904.*

GENTLEMEN: On the 17th of May I made a general inspection of your No. 1 mine (especially as to ventilation). This inspection was made on the complaint of the miners that you were not furnishing the proper amount of ventilation to meet the requirements of the act for the protection of the lives of miners.

I beg to advise you that by careful measurement I found 1,953 cubic feet of air per minute entering the mine for 24 men, this showing a shortage of 447 cubic feet per minute to begin with. Proceeding down the slope to the first set of entries I found six rooms being operated in each entry. No effort has been made to conduct what air there was to the face of entry; the entrance to each room is left open so that the air current does not travel beyond the first room in operation in the entry, this leaving the three or four rooms next the entry face practically without air. I also found that the air course on the upper side of the entry was blocked with coal and slate in several places so that it would have been impossible to have passed a sufficient quantity of air through it to meet the requirements for the number of men now at work.

I also found that the air current was not being circulated below the first set of entries, thus leaving the second lift without air. The reason given for this was that no men were working below the first entries. As I stated to your pit boss, this is a dangerous practice and must be discontinued. The air must be circulated through the entire mine.

From the foregoing statements it must be clear to you that the mine is not properly ventilated; that little or no effort has been put forth to conduct the air current to the working faces, as required by the act of Congress, and that great negligence is shown in the conditions of the air courses.

In closing I will say that it is my desire to induce you to put the mine in such condition as the law calls for without having to resort to extreme measures. I will therefore give you twenty days to have the necessary improvements made, at which time I will make another special inspection, hoping that by that time you will have taken such steps as will put your mine in condition to comply with the act of Congress.

Please acknowledge receipt of this letter, and state your intentions in regard to the subject thereof, and oblige,

Very respectfully,

WM. CAMERON,
United States Mine Inspector for Indian Territory.

BREWER COAL AND MINING COMPANY,
Savanna, Ind. T.

SOUTH MCALESTER, IND. T., *May 20, 1904.*

DEAR SIR: I beg to inclose you herewith, for your information and for that of the committee at the Brewerville mines, a copy of a letter which I have just addressed to the Brewerville Coal and Mining Company, at Savanna, Ind. T., from which you will see that I have made a visit of inspection to the mine, and have requested that certain improvements be made. I shall return to Brewerville at the time stated, and discover whether my requests in this regard have been carried out.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. GEO. LINDSEY,
Savanna, Ind. T.

BREWER COAL AND MINING COMPANY,
Savanna, Ind. T., May 25, 1904.

DEAR SIR: Your favor of 19th instant at hand. In reply will say that we are now at work making all necessary arrangements to ventilate and improve the condition of our mine No. 1, so as to meet the requirements of the law. We cut down our working force until we get things in good condition, and trust that everything will meet your approval when you visit us again. We are trying to go precisely according to your instructions.

Yours, truly,

BREWER COAL AND MINING CO.,
J. R. BREWER, *President.*

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

Inspection of the mine was duly made as provided in my letter of May 20, 1904, and conditions found satisfactory.

The following correspondence relates to a complaint made by the fire boss at the mines of Bolen-Darnall Coal Company, at Craig, Ind. T. On my inspecting the mines and reporting the conditions the defects were speedily remedied and the ventilation made good.

COLEMAN, IND. T., *October 6, 1903.*

DEAR SIR: I feel it my duty to let you know that the mines at Craig have not sufficient air going around the working faces at present, and it seems to me as they won't have under the present system, so I would like to see you here and investigate this, as I have requested it remedied, but seems like I can not have it done, but I believe if you lay the matter properly before them it will be done.

I am, yours, truly,

G. H. MOSTER,
Fire Boss, Coleman, Ind. T.

Mr. WILLIAM CAMERON,
United States Mine Inspector.

SOUTH MCALESTER, IND. T., *October 10, 1903.*

DEAR SIR: I beg to inclose you herewith carbon copy of a report which I have this day sent to Mr. George H. Moster.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. W. K. LEYDEN,
Superintendent Bolen-Darnall Coal Company, Coleman, Ind. T.

SOUTH MCALESTER, IND. T., *October 10, 1903.*

DEAR SIR: As requested in yours of October 6, I visited the mines at Craig, operated by the Bolen-Darnall Coal Company, and made a thorough inspection of them, especially as to the state of ventilation.

Proceeding down No. 4 slope to the first east entry, thence to face of said entry, I find that some six rooms are being turned to the rise; the air at the face of the entry was extremely bad, no provisions having been made to conduct the ventilating current beyond a point 150 feet back from face of entry, and at this point the current was so sluggish that it would only deflect the light of a miner's lamp to a slight degree. A careful measurement of the air at the upper end of air course leading from old long wall workings into this entry, I found 396 cubic feet of air traveling per minute, this being slightly under the requirements for four men.

The first west entry on No. 4 slope is reasonably well ventilated.

I then proceeded down the slope to the second west entry. Proceeding in same, I found four breakthroughs being widened out for the purpose of making room necks. All of them were open up to air course; no provisions had been made to force the air past the first three rooms, consequently no air was circulating at the inside opening.

I then proceeded out to the main slope and traveled in the second east entry from main slope, where a number of rooms were being turned to the rise. I found ventilation good up to room No. 16. Beyond this point all work had been suspended for the purpose of making changes, so that the air current could be conducted up to the entry face.

The air being reported in fair condition in the two lower entries, no inspection was made of them.

Taking a general view of the mine, it is clear to me that the air in the first east entry of No. 4 slope was such that in my opinion was unfit for men to work in. Referring to the second west entry, where they have made four openings from entry to air course all at the same time, and without any provision for conducting the air past first three openings, it is perfectly clear to me that such practice or custom should be discontinued and that only one opening should be made at a time.

While in conversation with Mr. Leyden, superintendent, and Mr. Thompson, pit boss, relative to the poor condition of the ventilating current in the two aforesaid entries, they admitted that in the first east entry the ventilation was poor, and that

they had erred in making four openings all at one time in the second west entry, and they also agreed to double shift an entry from the main slope to connect with the first east entry leading from No. 4 slope, a distance supposed to be between 20 and 25 feet remaining to be cut through. When this is cut through there is no reason why this entry should not have first-class ventilation. They also promise to place as many of the room men in first east entry off No. 4 slope in other entries until such times as communication can be had between these entries. Mr. Leyden also informed me that the antiquated method of operating a mine by single entry would be discontinued; that all new works opened would be on the double-entry system. If such method is carried out, there is no reason why this should not be a well ventilated mine. They have the proper machinery to ventilate the mine, and I may say that they have an abundant supply of air in some parts of the mine, and all that is lacking on the part of the management is to conduct it to the working faces, which I believe the management will now do as speedily as they possibly can.

Before closing this short report it may be said in behalf of the management that owing to the conditions of the vein at Craig, it being thin and pitching rather acutely, the usual method of mining coal was departed from, and in the various changes from one system to another, the ventilating system got somewhat disarranged. However they seem now to have fixed on one definite plan, and I have no doubt that in a very short time all reason for complaint will be removed.

Very respectfully,

WM. CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. GEORGE H. MOSTER, *Coleman, Ind. T.*

This defect was speedily remedied. Ventilation is now good.

The following letter refers to a recommendation made to the officials of the Coalgate Company, which was promptly complied with:

THE COALGATE COMPANY,
Coalgate, Ind. T., August 5, 1903.

DEAR SIR: When you made your last inspection of our mines you recommended that the west entries of our No. 3 mine should be connected with the entries at No. 4. I have to inform you that during the last week we have connected our second west entry at No. 3 mine with the second east entry at No. 4.

Trusting this will be satisfactory to you, I remain,

Yours, truly,

S. W. WYTHE POMEROY,
Secretary.

WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

The following correspondence relates to the construction of an escape way for mine No. 5 operated by the Coalgate Company near Coalgate, Ind. T., and its completion:

JULY 13, 1903.

DEAR SIR: On May 9 last you wrote me in regard to the necessary connection to be made for escape way in your mine No. 5, this being necessary to comply with the requirements of the act of Congress of 1891, and I advised you that it would be necessary to make a proper application for this purpose, with a linen tracing showing the manner in which the connection is proposed to be made.

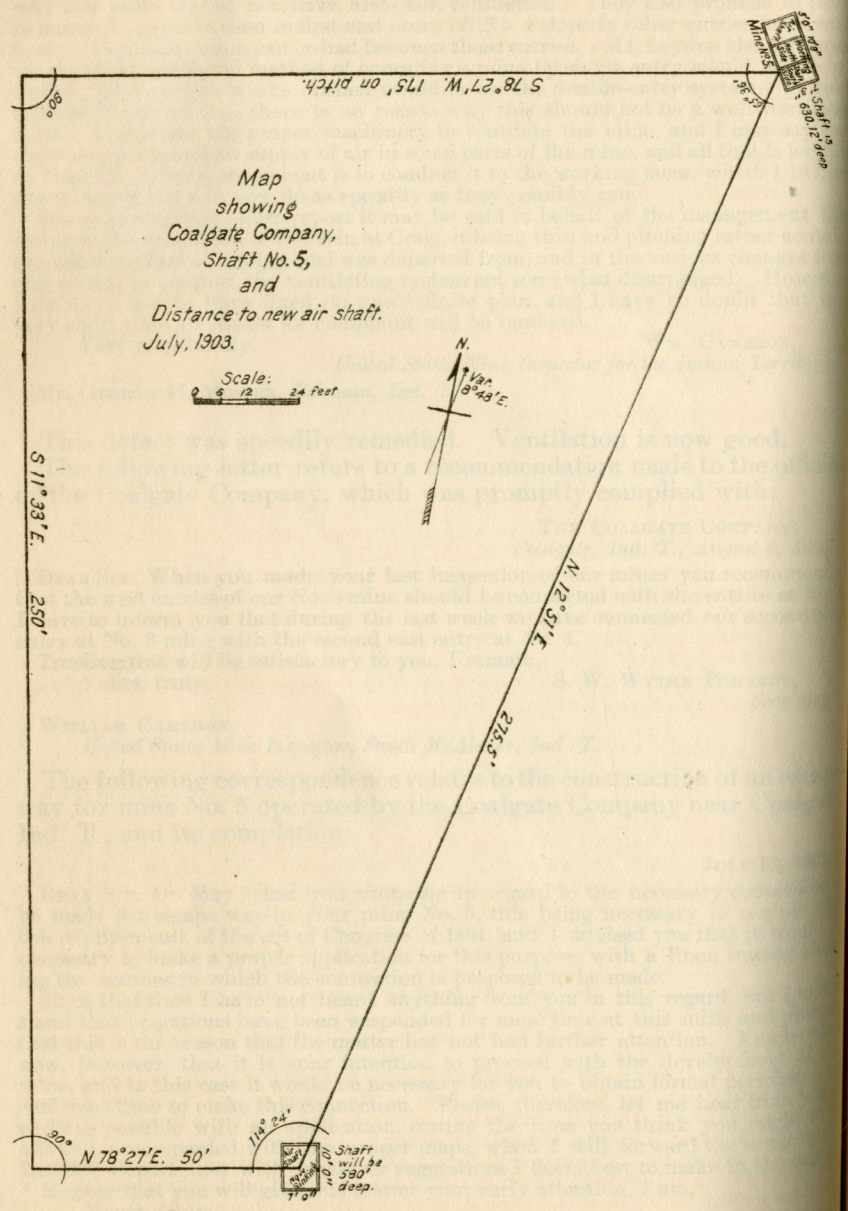
Since that time I have not heard anything from you in this regard, but I understand that operations have been suspended for some time at this mine and presume that this is the reason that the matter has not had further attention. I understand now, however, that it is your intention to proceed with the development of this mine, and in this case it would be necessary for you to obtain formal permission for sufficient time to make this connection. Please, therefore, let me hear from you as early as possible with an application, stating the time you think you ought to be allowed, accompanied with the proper maps, when I will forward the same to the Interior Department with whatever suggestions I deem best to make in the matter.

Hoping that you will give this matter your early attention, I am,

Yours, truly,

WM. CAMERON,
United States Mine Inspector for the Indian Territory.

J. de F. JUNKIN,
General Manager, The Coalgate Company, Coalgate, Ind. T.



COALGATE, IND. T., *July 25, 1903.*

DEAR SIR: The Coalgate Company, of Coalgate, Ind. T., has recently sunk a new mine shaft known as shaft No. 5, and desire to sink an air shaft for the purpose of supplying the mine with the necessary ventilation, and also for the purpose of providing an escape way for the miners. This will necessarily be a work of considerable time, and we ask that a period of fifteen months be granted to us in which to sink the said shaft and make the proper connections.

We are sending you under separate cover a map of the shaft and the projected air shaft and its connections; also three blueprints thereof.

Yours respectfully,

THE COALGATE COMPANY,
S. W. W. POMEROY, *Secretary.*

WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

JULY, 27, 1903.

GENTLEMEN: I am duly in receipt of your favor of the 25th instant, making application for the necessary time to make the connection between the air shaft which you are now sinking and shaft No. 5, and I have forwarded this application to the Secretary of Interior with my recommendation therein.

Yours respectfully,

WM. CAMERON,
United States Mine Inspector.

The COALGATE COMPANY, *Coalgate, Ind. T.*

JULY 27, 1903.

SIR: Inclosed herewith please find application of the Coalgate Company, of Coalgate, Ind. T., for time sufficient to sink an air shaft and to make the connection therewith to their shaft No. 5, at Coalgate, Ind. T.

I also beg to inclose herewith blueprint which will show the conditions existing and the distance from shaft No. 5 to the air shaft now being sunk.

I respectfully recommend that the Coalgate Company be allowed twelve months in which to make connection.

Very respectfully,

WM. CAMERON,
United States Mine Inspector for the Indian Territory.

The SECRETARY OF THE INTERIOR, *Washington, D. C.*

DEPARTMENT OF THE INTERIOR,
Washington, August 25, 1903.

SIR: Your letter of the 27th ultimo has been received, inclosing an application from the Coalgate Company, of Coalgate, Ind. T., reporting that they have recently sunk a new mine shaft, known as shaft No. 5, and desire to sink an air shaft for the purpose of supplying the mine with the necessary ventilation and for providing an escape way for the miners, and requesting, in pursuance of the provisions of the act approved March 3, 1891 (26 Stat. L., 1104), entitled "An act for the protection of the lives of the miners in the Territories," that a period of fifteen months be granted in which to sink said shaft and make the proper connections.

You recommend that the said company be allowed twelve months in which to make the necessary connections.

In response thereto I have to invite your attention to section 9 of the act above referred to, which reads:

"That escape shafts shall be constructed in compliance with the requirements of this act within six months from the date of the passage hereof, unless the time shall be extended by the mine inspector, and in no case shall the time be extended to exceed one year from the passage of this act."

You are accordingly authorized to grant the above-named company a period of six months from this date in which to sink said shaft and make the necessary connections for the same; if, at the expiration of that time, it appears that the shaft has not been fully completed, and the circumstances warrant such action, you may forward a further application for an extension of the time, when the same will receive due consideration.

Very respectfully,

E. A. HITCHCOCK,
Secretary.

Mr. WILLIAM CAMERON,
United States Mine Inspector for Indian Territory, South McAlester, Ind. Ter.

SOUTH MCALESTER, IND. T., *September 9, 1903.*

GENTLEMEN: I beg to advise you that in regard to your application for necessary time to make connection with the air shaft which you are now sinking in shaft No. 5 at Coalgate, Ind. T., you will be allowed a period of six months from the date of August 25, 1903, in which to complete this connection.

It is hoped that you will be able to make this connection within the period prescribed, but if the circumstances be such as to render it impossible for you to do this, it will be necessary for you to make a further application for extension of the time, such application to be forwarded to me two weeks before the expiration of the time already granted.

Yours, truly,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

THE COALGATE COAL COMPANY,
Coalgate, Ind. T.

SOUTH MCALESTER, IND. T., *February 26, 1904.*

SIR: In further reference to this matter, and in especial reference to your instructions under date of August 25, 1903, I beg to advise you that I have just received a letter from the Coalgate Company, a copy of which I herewith inclose.

I made a special inspection of this mine two days prior to the connection referred to having been made, and am therefore able to say that the necessary escapement and ventilating shaft has doubtless been completed. This, of course, I will verify on my next inspection of the mine.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

THE COALGATE COMPANY,
Coalgate, Ind. T., February 24, 1904.

DEAR SIR: I am pleased to notify you that our superintendent reports that the connection has been made between our air shaft and the plane of our No. 5 mine; we have, therefore, been able to get this air shaft down and the connection made in three days less than the six months' time allotted us.

Yours, truly,

J. DE F. JUNKIN, Jr.

WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

The following is a letter from the superintendent of the Folsom-Morris Coal and Mining Company relative to traveling way in its mine at Midway, Ind. T., which is in response to my personal notification that this should be done:

THE FOLSOM-MORRIS COAL MINING COMPANY,
Midway, Ind. T., January 11, 1904.

DEAR SIR: It has become necessary for me to post the following notice on the pit top:

Any miner traveling the slope between the hours of 8 a. m. and 4.30 p. m. will be instantly discharged.

A copy of this notice has been forwarded to the United States mine inspector for Indian Territory.

We have a good traveling way from the pit bottom to the bottom of the slope.

With best wishes for your success, I am,

Yours, truly,

MICHAEL DUFFY, *Superintendent.*

HON. WILLIAM CAMERON,
United States Mine Inspector for Indian Territory,
South McAlester, Ind. T.

Following is correspondence in regard to shot firing at No. 6 mine at Wilburton, operated by the Great Western Coal and Coke Company:

UNITED MINE WORKERS OF AMERICA,
Wilburton, Ind. T., December 28, 1903.

DEAR SIR: I have been requested to inform you of the violation of the shot-firing law at mine No. 6, Busbys; and this local wishes you to investigate the same. On December 24, the shots were fired at about 2 o'clock in the afternoon when there were men at work in the mine.

Trusting you will give this your attention at once,

I remain, yours, truly,

A. W. JONES, *Secretary.*

MR. WM. CAMERON,
Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T., *December 31, 1903.*

DEAR SIR: I respectfully beg to acknowledge receipt of your letter of the 28th instant in regard to the condition of affairs at No. 6 mine, and desire to say that it will be impossible for me to get to Wilburton before next Monday, the 4th proximo, on which day I expect to be at Wilburton, and will be glad to meet you and look into the matter referred to in your letter.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

MR. A. W. JONES, *Secretary,*
Wilburton, Ind. T.

This matter was investigated and adjusted satisfactory to all.

The following correspondence relates to ventilation at mines under the management of the Great Western Coal and Coke Company. Investigation was carefully made and the matter fully presented to the officials of the company and conditions remedied.

UNITED MINE WORKERS OF AMERICA,
Wilburton, Ind. T., July 21, 1903.

DEAR SIR: At a meeting of our local last evening I was instructed to write you, requesting you to come to this place at once, if possible, as there is great dissatisfaction in regard to the air at some of the mines.

Done by authority of L. U. 1864, U. M. W. of A.

[SEAL.]

S. P. LEE,
Recording Secretary.

MR. WM. CAMERON.

JULY 22, 1903.

DEAR SIR: I am duly in receipt of yours of the 21st instant in regard to the dissatisfaction with condition of the air at some of the mines at Wilburton. I am always willing to take up any matters of this character that are brought to my notice, but it is absolutely necessary before doing so that I should know exactly what are the troubles and where they are located—that is, I wish to know in what mine particularly there is any defect in regard to the air and what the character of the defect is, giving the entries or rooms in which it is claimed the air is defective.

If you will let me have this specific information by return mail, I will come out to Wilburton on Friday morning and make an investigation. Should it be, however, that there will not be time for you to write this letter and for me to receive it, I will come out on Friday morning anyway, if you will kindly meet me at Wilburton depot on my arrival, with the information that I now ask for, and I will make a proper investigation and send you a report as to the result.

Yours, very truly,

WM. CAMERON,
United States Mine Inspector for the Indian Territory.

MR. S. P. LEE,
Recording Secretary United States Mine Workers of America,
Wilburton, Ind. T.

AUGUST 11, 1903.

DEAR SIR: As per request of the United Mine Workers of America on the 24th day of July, I made a special inspection of Nos. 4 and 6 mines, operated by the Great Western Coal and Coke Company, at Wilburton, and at which inspection I granted the company two weeks to make certain improvements which I considered necessary for the proper ventilating of those mines.

Accordingly, I have again made special inspection of the above-named mines, and give below a brief report as to the improvements made during the interval between inspections.

No. 4 mine.—I measured the air at mouth of slope and found the quantity had been increased to 18,423 cubic feet per minute. No further measurements were made until we reached the face of third west entry. There we found the last two break-throughs open, and took the air current at both points. The break-through next face of entry was passing 5,520 cubic feet per minute, and the other break-through, which was only partly open, was passing 2,448 cubic feet per minute; thus this entry had a total of 7,965 cubic feet passing per minute, sufficient for 79 men, while only 22 men are now being worked. No more measurements were taken.

From the above measurements of the air, compared with the measurements taken on the 24th ultimo, it will be readily understood that very material improvements have been made, which is accounted for by higher speed of fan, the placing of doors and stoppings at the mouth of entries and in break-throughs, by the enlarging of the air courses and bottom of air shaft, and by stopping leaking to a considerable extent at overcast.

I consider that the mine is now well ventilated and in reasonably good shape all over. However, the mine can be put in still better condition in a very short time so far as ventilation is concerned. The changes now being made in the mode of ventilation, when completed, will increase the amount of air at least one half. These improvements, Mr. Reid assures me, will be made within reasonable time.

I hope no further necessity will arise for complaint, but should such conditions exist that I am needed, I will be ready at any and all times to assist.

Yours, very truly,

WM. CAMERON,
United States Mine Inspector.

Mr. BENJ. MOON,
Committeeman for No. 4 mine, Great Western Coal & Coke Co.,
Wilburton, Ind. T.

AUGUST 11, 1903.

SIR: As per request of the United Mine Workers of America, on the 24th day of July I made a special inspection of Nos. 4 and 6 mines, operated by the Great Western Coal and Coke Company, at Wilburton, and at which inspection I granted the company two weeks to make certain improvements which I considered necessary for the proper ventilating of those mines.

Accordingly, I have again made special inspection of the above-named mines, and give below a brief report as to the improvements made during the interval between inspections.

No. 6 mine.—After careful measurements of the air at the entrance to slope and at the eighth entries, I find that the ventilation is greatly improved. At the mouth of slope I found 24,820 cubic feet of air passing into the mine, and at the eighth entries on slope I found 8,000 cubic feet of air passing down the slope. The eighth west entry is well ventilated, but will be improved just as soon as the double-entry system is started. At the last breakthrough in the seventh west I found 3,080 cubic feet of air—a much greater quantity than the law demands for the number of men engaged in these entries.

Several places in the air course were enlarged, and new doors had been put in place at the mouth of entries. Stoppings and curtains had been repaired; also the fan had been speeded up to some extent, which changes account for the great improvement in the ventilation of the mines. I consider the mine is now well ventilated, and have the promise that it will be maintained in said condition.

Should need again arise, I will be glad to serve you.

Yours, etc.,

WM. CAMERON,
United States Mine Inspector.

Mr. BENJ. STRONG,
Committeeman for No 6 mine operated by the
Great Western Coal and Coke Company, Wilburton, Ind. T.

Report of No. 4 mine operated by the Great Western Coal and Coke Company.

DEAR SIR: On the 22d of this month I received a communication from the United Mine Workers of America, at Wilburton, requesting me to visit that place at my earliest possible convenience, as some of the mines were not properly ventilated. This request I complied with, and on my arrival at Wilburton I was informed that your Nos. 4 and 6 mines were the mines they complained of as being short of air, especially at the working faces.

I send you a short report of the result of my inspection.

I measured the air at the mouth of slope and found 9,735 cubic feet of air entering the mine. I then proceeded down the slope to the third entries and found that the quantity of air reaching that point was only 1,584 cubic feet—this in slope air course, which amount is not properly conducted to the working faces. I then measured the air in the last breakthrough of the third east and west entries next to face and the amount traveling was 1,430—this for 15 men. This you will see is short of the requirements. But the bad feature is that this air is not properly conducted to the face of rooms. The fourth entries are not being worked at present and could not be inspected on account of water; but no attempt has been made to conduct the air to these entries, and I advised your pit boss not to start them up until the proper amount of air had been conducted down to the face of same.

You will notice from the figures given, as the result of the different measurements of air at different points, that very serious loss or leakage takes place from the mouth of the slope to the third entries. Out of a total of 9,735 cubic feet entering the mine only 1,584 cubic feet reaches the first breakthrough below the third entries. These leakages take place principally at the overcast, which is in a very bad condition; also at the mouth of the different entries where curtains are being used to guide the ventilating current, said curtains not being in shape to conduct the air to the bottom of slope. In fact I did not examine a single curtain in the mine that was not leaking badly.

We then traveled the air course to the second west entry and found the air very slow at the faces of the working places. We then traveled the air course from the second to the first entry; thence through the return air way to the air shaft at different points. This air way is contracted and needs to be enlarged, which was pointed out to your pit boss. From air shaft we crossed over to the east side of slope by way of the overcast, and, as heretofore mentioned, the leaking at this point is very great; thence to the first east entry. The air way here is contracted at several points and must be enlarged before it can be considered a permanent air way.

To all these defects I drew the attention of your pit boss, and asked him how long it would take him to put the same in proper condition. After some consideration he concluded that two weeks would be sufficient time to complete the necessary improvements to this mine. I therefore will again inspect this mine on the 7th day of August and, if at all convenient, would ask you to accompany me at that time.

Since writing the above report I have seen Mr. Reid, general superintendent, and laid the matter before him. He assures me that he will attend to the proper ventilating of the two mines complained of at once.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector.

Mr. J. C. REID, *General Superintendent.*

Report of No. 6 mine operated by the Great Western Coal and Coke Company, A. Strang, contractor.

DEAR SIR: In company with the pit committee I inspected No. 6 mine, and herewith send a short report as to the conditions existing at that time.

The amount of air entering the mine is 17,588 cubic feet per minute. Of this only about 3,000 reaches the eighth entries. I found sufficient air at the bottom of the slope for four men, and instructed the contractor that before the number of men was increased more air must be put in. I next inspected the eighth west, measured the air in the last breakthrough, and found enough air for three men; thence through the air way to the seventh west. Air course in good condition. I measured air at breakthrough next to face and found 900 cubic feet passing through an area of 5 cubic feet—altogether too small; thence to return air way leading to sixth west entry and found same falling in between 9 and 10 rooms, so that the area was contracted to about 6 cubic feet. This again is altogether too small, as the entire volume of air

for the west side passes through this space. We then proceeded through the air ways and various entries to the air shaft, and while in fair condition generally there are several points that should be enlarged, all of which defects were pointed out to the contractor and a request made that these defects be remedied by the 7th day of August, when I will reinspect this mine.

The appearance of the mine plainly indicated to me that Mr. Strang had received notice that I was in Wilburton and would likely visit the mine under his charge, as I found a large force of men repairing curtains, putting in stoppings, etc. The miners stated that considerable improvements had been made on the ventilation during the previous twelve hours.

Since writing the above report I have seen Mr. Reid, general superintendent, and laid the matter before him. He assures me that he will attend to the proper ventilation of the two mines complained of at once.

Respectfully submitted.

WM. CAMERON,
United States Mine Inspector.

Mr. J. C. REID, *General Superintendent.*

JULY 30, 1903.

DEAR SIR: Herewith please find carbon copy of report made by me to Mr. J. C. Reid in regard to the ventilation and general conditions of No. 6 mine at Wilburton.

Yours, truly,

WILLIAM CAMERON,
United States Mine Inspector.

Mr. BEN STRONG, *Wilburton, Ind. T.*

The following correspondence refers to matters connected with mines operated by the Great Western Coal and Coke Company near Wilburton, Ind. T. The result of my report was a remedy of the conditions reported.

SOUTH MCALESTER, IND. T., *December 4, 1903.*

DEAR SIR: I beg to advise you that a few days ago I made an investigation of mine No. 3, at Wilburton, which is under your superintendency. I found that the ventilation as a whole was abundant in the slope and entries, but I also found that the air courses were from 40 to 70 feet behind the entries. I also found that it has been the practice to stop the fan after the shot firers come out and not start it up again until about 4 o'clock in the morning, and the consequence is that room turning and non-brattiched entries fill up with gas and that the fan is not started in sufficient time to clear out the accumulated gas. I found that on last Tuesday morning nine working places had been dead lined and that the men were passing and repassing with naked lights within a few feet of the gas.

If it is the intention to continue the practice of shutting down the fan, I suggest that it will be absolutely necessary to conduct brattice to all the working faces which are ahead of breakthroughs, so that working faces may be rapidly ventilated.

I take this method of notifying you of the conditions in order that necessary action may be taken to prevent accidents which seem to me to be quite liable to occur under the present conditions.

I have also made an inspection of your mine No. 6, and I find that Nos. 7 and 8 entries therein are extremely dry and dusty, and that the slope is piled up with dust thrown off to the side. As we are approaching the dangerous season of the year in regard to coal dust, and as the law requires that such entries shall be sprinkled or the dust removed, I trust that you will take steps to wet down or remove this coal dust at the earliest possible moment.

I desire to say that with the above exceptions I found No. 6 mine in first-class condition. Kindly reply to this letter advising me what will be done in regard to the suggestions made.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. J. C. REID,
General Superintendent Great Western Coal and Coke Company,
South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *December 12, 1903.*

DEAR SIR: On the 23d day of October last a man named Frank Purcelli was injured in mine No. 1, at Wilburton, Ind. T., and I received notice of the same on November 15, which was twenty-two days after the accident occurred. On November 25 a man named F. Balbolia was injured in mine No. 2, at Wilburton, Ind. T., and I received notice of the same to-day, December 12, 1903, or seventeen days after the accident.

While it is true that there is no legal requirement upon the operators to report anything but fatal accidents, it is the desire of the Department that all accidents should be promptly reported to me, and it would seem that it would certainly be beneficial for the companies' interests and for the benefit of all concerned if these accidents were promptly reported. You will readily perceive that it is impossible for me to intelligently investigate accidents of which I receive notice so long a time after their occurrence, and it also seems to me that it would be just as easy to report these accidents within twenty-four hours of their occurrence as it would be to wait such a considerable length of time. I would be obliged if you would advise me if it is the intention to report these accidents to me in the future, and if so, that you will see that these reports are promptly made and sent to me.

If, however, it is not the intention to do so, please advise me, and I can then dismiss the matter, thus saving myself considerable trouble.

On December 4, 1903, I wrote you a somewhat lengthy letter in regard to mines Nos. 3 and 6, at Wilburton, to which letter I have had no reply, and in this regard I would thank you to answer my letter.

Kindly acknowledge receipt of this letter and very much oblige.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. J. C. REID,
General Superintendent Great Western Coal and Coke Company,
South McAlester, Ind T.

THE GREAT WESTERN COAL AND COKE COMPANY,
South McAlester, Ind. T., December 16, 1903.

DEAR SIR: I acknowledge receipt of your favor of the 4th instant, which was received during my absence from town.

I have taken up the matters alluded to, namely, the operation of the fan at No. 3, Wilburton, and dry entries in No. 6. I expect in a day or two to be at Wilburton and intend to look into these matters thoroughly, especially the conditions at No. 6. I have repeatedly called the attention of the contractor at this mine, A. C. Strang, to the necessity of keeping entries well dampened, and, while he has always promised to attend to this, it seems that the promise has not always been fulfilled. When I inspect his mine some time this week or the early part of next week, if these matters have not been given attention, and the condition of the mine is not satisfactory to me, I will take the management out of his hands.

Yours, truly,

J. C. REID, *General Superintendent.*

WILLIAM CAMERON, Esq.,
United States Mine Inspector for the Indian Territory,
South McAlester, Ind. T.

The following correspondence relates to the requirements of the law in regard to employment of shot firers:

HAILEY-OLA COAL COMPANY,
Haileyville, Ind. T., October 22, 1903.

DEAR SIR: I write you in regard to putting on shot firers in slope No. 3. The mining law says 20 miners; does that include rope riders, trackmen, etc., or 20 diggers? Please answer as soon as possible.

Yours, respectfully,

ABE H. BROWN.

Mr. WM. CAMERON,
United States Mine Inspector.

SOUTH MCALESTER, IND. T., *October 23, 1903.*

DEAR SIR: In answer to yours of the 22d, relative to the number of miners that can be employed in a mine before shot firers must be used, I beg to advise you that the law explicitly says that where 20 or more miners are at work in a mine shot firers must fire the shots. This does not include other men working in the mine, such as track layers, drivers, etc.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

MR. ABE H. BROWN,
Superintendent Hailey-Ola Coal Company, Haileyville, Ind. T.

The following correspondence is in regard to a connection made, as requested by me on one of my inspections, between two of the slope mines of Henryetta Coal and Mining Company:

HENRYETTA COAL AND MINING COMPANY,
Henryetta, Ind. T., November 25, 1903.

DEAR SIR: We connected our slopes together yesterday. Everything in fine shape.

Yours, truly,

HENRYETTA COAL AND MINING COMPANY.
J. M. WISE.

MR. WILLIAM CAMERON,
South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *November 27, 1903.*

DEAR SIR: I have your favor of November 25 advising me that on November 24 you made connection between your two slopes, and that everything is in fine shape. I am very glad indeed to know that this connection has been made, and thank you for so promptly advising me of the same.

I am sending you some blank accident reports under separate cover, which kindly use in reporting to me any accidents which may happen in your mines in accordance with our conversation when I was last in your town. By doing this it will enable me to keep track of the number of accidents in the Territory, and be enabled to promptly give attention to those which are of a serious or fatal character.

Yours, very truly,

W. CAMERON,
United States Mine Inspector for the Indian Territory.

MR. J. M. WISE,
President Henryetta Coal and Mining Company, Henryetta, Ind. T.

The following correspondence relates to the construction of escape-way, as required by law, for mine operated by the Le Bosquet Coal and Mining Company, near Hughes, Ind. T.

LE BOSQUET COAL AND MINING COMPANY,
Hughes, Ind. T., April 7, 1904.

DEAR SIR: As per our conversation, when you last visited our mine, with reference to escape-slope or traveling-way, herewith find sketch showing relationship between main slope and proposed traveling-way.

You will notice by referring to the sketch that we have about 73 feet to drive this place yet, and, to make a good traveling-way, would like to ask you for three months' time to complete the same.

Hoping this will meet with your approval, I remain,

Yours, very truly,

THOS. BELL,
Superintendent.

MR. WILLIAM CAMERON,
Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *April 9, 1904.*

SIR: I have the honor to submit herewith a certain letter from Mr. Thomas Bell, superintendent of the Le Bosquet Coal and Mining Company, under date of April 7, 1904, with a sketch attached, showing relationship between the main slope of the

Le Bosquet mine and the proposed escape-way. This sketch shows that the escape-way is driven a distance of 70 feet only, and there is yet 73 feet to be driven so as to reach the surface of the earth.

I respectfully refer you to section 5 of an act for the protection of the lives of miners in the Territory, approved March 3, 1891, which requires that two shafts, slopes, or other outlets shall be provided for the purpose of an escape-way.

I most respectfully recommend that the time asked for by the coal company, to wit, three months, be granted to them for the completion of the work. Please return the letter and sketch, with your instructions therein.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

SOUTH MCALESTER, IND. T., *April 9, 1904.*

DEAR SIR: I beg to acknowledge receipt of yours of April 7 in regard to a traveling-way in your mine near Hughes, Ind. T. I have submitted this matter to the Secretary of the Interior with the recommendation that you be granted the time of three months, as requested, within which to complete the said traveling-way.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

MR. THOMAS BELL,
Superintendent Le Bosquet Coal and Mining Company, Hughes, Ind. T.

DEPARTMENT OF THE INTERIOR,
Washington, April 14, 1904.

SIR: In compliance with the recommendation contained in your letter of the 9th instant, the time for the completion of the escape-way now in progress by the Le Bosquet Coal and Mining Company at its mine at Hughes, Ind. T., is hereby extended for a period of three months from this date.

It is requested that you will advise the Department whether, upon the completion of the escape-way in question, the above-named company will have complied with the requirements of section 5 of the act of Congress approved March 3, 1891, for the protection of the lives of miners in the Territories, requiring that two shafts, slopes, or other outlets shall be provided for each mine.

The letter and sketch accompanying your communication are herewith returned, as requested.

Very respectfully,

THOS. RYAN,
Acting Secretary.

MR. WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory,
South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *April 16, 1904.*

SIR: I have the honor to acknowledge the receipt of yours of April 14 in regard to the time for the completion of the escape-way by the Le Bosquet Coal and Mining Company, in regard to which I have notified the aforesaid company of your decision in the matter.

I respectfully beg to advise you that when the connection is made in accordance with the sketch submitted to you that the company will then have complied fully with the requirements of section 5 of the act of Congress approved March 3, 1901.

Letter and sketch forwarded to you on the 9th instant by me was inclosed in your letter, and the receipt of the same is hereby acknowledged.

Very respectfully,

WM. CAMERON,
United States Mine Inspector for Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

SOUTH MCALESTER, IND. T., *April 16, 1904.*

DEAR SIR: I beg to advise you that under date of April 14, 1904, I have received instructions from the Secretary of the Interior granting the extension of time for the completion of the escape-way now in progress in your mine for the term of ninety days from this date. I trust that you will complete the escape-way in the time granted, and will advise me of this having been done within that period.

Very respectfully,

WM. CAMERON,
United States Mine Inspector for Indian Territory.

MR. THOMAS BELL,
Superintendent Le Bosquet Coal and Mining Company, Hughes, Ind. T.

LE BOSQUET COAL AND MINING COMPANY,
Hughes, Ind. T., July 5, 1904.

DEAR SIR: Beg to advise that escape or walking way in our mine, which Secretary of Interior granted us an extension of ninety days to finish, is now complete. We presume this is satisfactory, as the time will not be up until July 14.

Very respectfully,

THOS. BELL, *Superintendent.*

MR. WILLIAM CAMERON,
Mine Inspector, South McAlester, Ind. T.

JULY 22, 1904.

SIR: In reference to an escape-way for the mine at Hughes, Ind. T., operated by the Le Bosquet Coal and Mining Company, I beg respectfully to refer you to your letter of April 14, 1904, in this regard.

I now respectfully advise you that the said escape-way or means of communication from the said mine was fully completed on July 5, 1904, being some nine days prior to the expiration of the time granted for this purpose.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

The following letter refers to certain improvements suggested by me in regard to matters at Howe, Ind. T., under the management of the Mexican Gulf Coal and Transportation Company:

AUGUST 24, 1903.

DEAR SIR: I have just visited your mine near Howe, and regret that you were absent as I would liked to have made your acquaintance. However, I met your pit boss and among the things that I drew his attention to was the condition of your cages, more especially the one on the west compartment of the shaft. This cage is not in good condition, and should be repaired as soon as possible, and until such repairs are made I would recommend that men should not be allowed to ascend or descend in and from their work.

I also noticed that the slots cut in the head blocks of both cages where the dogs of safety catches work were filled up with dirt, so much so that I believe the safety catches would not work in case of accident. I would recommend that instructions be given to your men in charge of top work to see that the slots are kept free from dirt at all times, so that the dogs can operate if necessary. Kindly let me hear from you in regard to this matter.

I also send you under separate cover two annual reports, one for yourself and one for the pit boss. You will find a copy of the mining laws at the end of same.

Yours, respectfully,

_____,
United States Mine Inspector.

MR. CHARLES FRAZIER,
Superintendent Mexican Gulf Coal and Transportation Company,
Howe, Ind. T.

MEXICAN GULF COAL AND TRANSPORTATION COMPANY,
Howe, Ind. T., August 31, 1903.

DEAR SIR: I am in receipt of your favor of the 24th instant, also the two annual reports, which you were kind enough to mail under separate cover. Requisition has been made for new timber for the cages, and the slots in the head blocks of both cages have been cleaned, as per your suggestion. Upon receipt of the material the cage of the west compartment will receive immediate attention. The pit boss has also been instructed not to allow men to be lowered or hoisted upon this cage until repaired.

I regret very much of not having the pleasure of meeting you when here, and upon advice from you a day or two in advance of your next trip will be very glad indeed to arrange to meet you.

Yours, truly,

CHAS. D. FRASER,
Assistant General Manager.

MR. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

The following correspondence relates to a complaint received by me in regard to ventilation in mine No. 1, operated by Mexican Gulf Coal and Transportation Company, at Howe, Ind. T.

LOCAL UNION, UNITED MINE WORKERS OF AMERICA, No. 2028,
Howe, Ind. T., September 25, 1903.

MR. WILLIAM CAMERON,
Mine Inspector of Indian Territory:

I am instructed to write you to come to Howe at once. We have no air in the mine.

Yours, respectfully,

[SEAL.]

WM. LEIGH, *Recording Secretary.*

SOUTH MCALESTER, IND. T., *September 30, 1903.*

GENTLEMEN: As per your request of the 25th day of September, I visited No. 1 mine, operated by the Mexican Gulf Coal and Transportation Company, near Howe, and made a careful investigation as to the condition of ventilation, etc. Herewith you will find a short report setting forth the results of said inspection.

In company with your pit committee, I proceeded down the slope to the "I" entry. We took a careful measurement of the air that was traveling down the air course into this entry, and found 3,510 cubic feet traveling per minute. We then proceeded in the entry, where some twelve or thirteen rooms have been turned, but only a few of them were being operated. Proceeding into the last break-through leading to the air course or lower entry we found 495 feet per minute traveling through break-through, showing a loss in the short distance traveled of 3,015 cubic feet per minute, or a loss of about six-sevenths of the amount being forced into outer end of the entry. No effort had been made to force even the small volume of air that was traveling up to the face of the rooms by placing curtains on the entry.

The great loss of air on this entry may be accounted for as follows: The poor condition of the curtain hung on the dip switch or sligh leading to the lower entry, also the many leakages in break-throughs between the upper and lower entries, also a curtain being in use at the junction of empty track with main entry, are mainly responsible for all lack of air in this part of the mine. In fact, so long as a curtain is used at the last-named point there never can be satisfactory air in this entry. The attention of the pit boss was forcibly drawn to all these defects; also I impressed on him the necessity of hanging curtains on the entry not more than three room lengths apart, for the purpose of deflecting the air current to face of rooms.

We then traveled up the slope to the "G" entry and proceeded in same. Between rooms 41 and 42 we found a ventilating door placed, which is not in good condition, and a great deal of air escaping through same. This door should be put in good condition at once. By making this door tight a greater volume of air would be forced to face of "G" entry and a corresponding increase would be found in "I" entry. The pillars in 47 and 48 rooms are being drawn with no noticeable current traveling in any direction. I also traveled through the different rooms from 49 to 57 and did not find sufficient air in any of the break-throughs next working face to deflect the light of a small lamp to any degree. In fact, it may be said that the rooms heretofore mentioned simply got no air, unless that forced into them by the trips traveling

on the entry or what may reach them by chance. Proceeding into room 61, which is cut through on the main east air course, at which place we took a careful measurement of the air traveling per minute, and found 3,600 cubic feet of air passing through. Proceeding into face of entry we found a fair volume of air traveling, but the place was in such condition that it was difficult to get proper measurement of the air. The same condition existed in this entry as did in the "I" entry with reference to curtains being hung to deflect the air up to working faces. All of these defects were pointed out to the pit boss. We then traveled up through room 61 on to main lost entry and found a large volume of air traveling out of said entry which should be confined and forced down to the two entries heretofore mentioned.

Proceeding in this entry to the air course leading from "C" to main east we took a careful measurement of ventilating current and found 4,455 cubic feet per minute circulating. We then proceeded into the face of the entry and found two break-throughs open. The inside break-through which had been cut through and was of sufficient size to pass a good volume of air had it been left clear, but without any regard to the proper ventilation of the mine or of their own comfort the entrymen had blocked up the mouth of said break-through with coal which they had shoveled back from their cutting, and which, I am informed, had been allowed to remain for several days, thus blocking the air course and preventing air from traveling that would otherwise have traveled had this been kept clear. The same condition exists in this entry as in the others relative to forcing the ventilation current to face of rooms. No curtains have been hung on entry for that purpose. Proceeding up the air course to "C" entry we then traveled in same to last break-through leading down to air course and found 3,740 cubic feet per minute passing through the same. This is by far the best ventilated entry in the mine, but as in the other entries mentioned no effort has been made to force the current to face of rooms. We then traveled up No. 2 slope, thence overland to the ventilating fan, and found it running at a uniform speed of 90 revolutions per minute, under what might be called normal conditions, or when the slope engine was at rest, but just as soon as the slope engine began to hoist, and so long as it continued to hoist, the speed of the fan was reduced from 90 to something like 25 or 30 revolutions per minute. This can only be remedied by separate lines of pipe being used for conveying the steam from the boilers to the slope engine and fan. Just so long as they are supplied by one line of pipes, ventilation must be erractic and uncertain and no good results can be expected.

All of the different defects, etc., heretofore referred to were carefully pointed out to the pit boss with instructions that he have the same defects remedied. Inspection shows clearly that an abundant supply of air is being forced into the mine; that it only requires care and a little effort to conduct it to the working faces; that if such care and effort is put forth in a reasonable and workmanlike manner there is no reason why the mine should not be ventilated to comply with the act of Congress. After consulting with the pit boss and your committee it was mutually agreed that the company should be given until the 15th day of October to make the changes and improvements recommended, at the expiration of which time (unless something unforseen prevents me) I will again inspect mine.

Before closing this report I would earnestly draw the attention of the men working in this mine to the class of oil that is now being used. I have no hesitation in saying that it is of an inferior quality, and would respectfully suggest that miners, and others, would seriously consider the advisability of all employees of the mine confining themselves to the use of a good quality of oil. Such a change I am sure would add to their comfort and welfare.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

THE LOCAL UNION, UNITED MINE WORKERS OF AMERICA,
Howe, Ind. T.

SOUTH MCALESTER, IND. T., *October 23, 1903.*

DEAR SIR: Following you will find a short report covering my second special inspection of No. 1 mine, operated by the Mexican Gulf Coal and Transportation Company, near Howe, Ind. T.:

Proceeding from shaft up plain to "C" entry, thence in "C" entry to the point where the rooms are now being worked, after inspecting a number of rooms and the face of entry and air course, I find that the ventilation is much improved, that the air current is now being conducted fairly well to the working faces. Proceeding thence down through air course leading from "C" entry to "E," or main east entry, I measured the air traveling through this air passage, and found 4,440 cubic feet per minute, an increase of 700 cubic feet per minute over what was traveling at the last inspection.

Proceeding in the main east and traveling through rooms to entry face I find the air conducted up to the last break-through in rooms, also a good current was being forced to the last break-through, between entry and air course. Proceeding out this entry to the upper end of 61 room leading from the "G" entry, I found a large loss of air at this point which, properly conducted, would increase the volume of air being forced to the "G" and "I" entries.

I measured the air traveling through the air course leading down from main east entry to "G" entry (room 61) and found 3,270 cubic feet per minute, thus showing a decrease of 330 cubic feet per minute. The ventilating current was well conducted up to room faces on the inside of 61 room, but the few rooms outside of air course had not been improved over what they were at my last visit. However, the pit boss assured me that curtains would be placed that day, so that the ventilating current would be directed to the face of rooms. Nothing had been done to the lower or "I" entry from my last inspection, and I granted the company one week to improve this entry, which they promised to do without fail.

I am pleased to say that the company has shown a disposition to improve the ventilation, and they assure me that they will continue to still further improve the general ventilation of the mine, and altogether I consider the mine now in good condition (with the aforesaid exceptions), which I have no doubt has been improved by this time.

Should occasion arise at any future time, I shall be pleased to be of service to you.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

MR. P. KING,
Committeeman, Howe, Ind. T.

The following correspondence refers to ventilation in mine No. 2, operated by the Mexican Gulf Coal and Transportation Company, near Howe, Ind. T.:

SOUTH MCALESTER, IND. T., *March 7, 1904.*

MR. CHARLES FRAZER,
Superintendent Mexican Gulf Coal and Transportation Company, Howe, Ind. T.

DEAR SIR: A few days ago I visited your mine No. 2 for the purpose of investigating the accident to Joe Dewit and John Elder. While there Mr. Dan Whalin made quite a vigorous complaint with reference to the ventilation in No. 2 mine. I inspected all of the entries with your pit boss, and a committeeman, and will say that I consider the ventilation in very fair condition. However, I find you still run the fan from the same line of steam pipes that the hoisting engine is supplied with. Just so long as you continue to run these pieces of machinery from the same steam pipe, so long will you have trouble with your ventilation.

It is hardly necessary for me to say that when the hoisting engine is pulling a heavy trip the fan loses about one-half of its speed. I believe you understand this. I therefore strongly recommend that you will at as early date as possible put a separate line of pipes from your boilers to the fan; also that you instruct your master mechanic to see that the fan is run at not less than 80 revolutions per minute. If these suggestions are carried out your mine will be ventilated fully up to the requirements of the law. I hope you will see your way clear to carry out these suggestions, and end these continual complaints of the miners.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T., *March 7, 1904.*

DEAR SIR: A few days ago I visited the mines Nos. 2 and 3, located near Howe and operated by the Mexican Gulf and Transportation Company, for the purpose of investigating the accident whereby Joe Dewitt and John Elder were injured in No. 2 mine. Before entering the mine I met Mr. D. Whalin, a miner working in No. 2 mine, and he made very strong statements as to the condition of the ventilation of No. 2 mine, which statements caused me to make a general inspection of the mine, visiting every entry and a number of the rooms.

I now send you a short statement as to the result of my investigation.

In company with the pit boss and C. C. McKissack, I proceeded down No. 2 slope to the C entry, inspected it carefully, and found the ventilation good and properly conducted to the working faces; thence to the main east, inspected same, ventilation

good in entry and fairly well conducted except at one point, viz, the curtain on the dip switch was not in proper shape, and the ventilating door of this entry leaked more air than necessary. These defects were pointed out to the pit boss, with a request that he put them in proper condition at once.

We then proceeded to and examined all entries below this, and found them all in very good condition as to ventilation, etc. In fact I consider the mine as a whole to be in good condition and in all ways up to the requirements of the acts governing the operation of the mines in the Indian Territory. I may also state for your information that I have requested the superintendent to adopt a plan whereby the fan will be run at a uniform speed, said speed to be not less than 80 revolutions per minute, and that it be the master mechanic's business to see that the fan is run up to this speed when miners are at work in the mine.

Yours, very respectfully,

———— ————,
United States Mine Inspector for Indian Territory.

Mr. W. E. STURGON,
Local Secretary United Mine Workers of America, Howe, Ind. T.

In my annual report for the year ended June 30, 1903, on page 94, will be found copies of correspondence in regard to a necessary escape way for mine No. 6, operated by McAlester Coal Mining Company at Buck, Ind. T., certain time being granted for the completion of this escapeway. It becoming evident that the escape way could not be completed within the time granted, the matter was called to the attention of the coal company, and the following correspondence was had. At this writing the connection has been made and the law complied with.

SOUTH MCALESTER, IND. T., *September 12, 1903.*

GENTLEMEN: I beg respectfully to call your attention to the fact that on the 13th day of December, 1902, I was furnished by you with a receipt of a letter from the Secretary of the Interior, which letter was a notice directed to you requiring you to comply with section 5 on an act of Congress approved March 3, 1891, being entitled "An act for the protection of the lives of miners in the Territories," by making a proper means of escape from your shaft No. 6, near Buck, Ind. T., within ten months from the receipt of the notice given by the Secretary.

This notice was received by you on December 13, 1902, and, therefore, the time allowed for the consummation of this work will expire on October 13, 1903.

Having been advised of a change in the management at Buck, Ind. T., and also in view of the fact that the time allowed will very soon expire, I deem it proper to call your attention to the necessity of completing the work within the time named, as if this work is not completed within that time it will be a violation of the law to operate shaft No. 6 after that time.

Yours, respectfully,

WM. CAMERON,
United States Mine Inspector for Indian Territory.

THE MCALESTER COAL MINING COMPANY,
Buck, Ind. T.

OCTOBER 10, 1903.

SIR: Your communication of September 12 regarding the construction of a means of escape way from our shaft No. 6 at Buck, Ind. T., has been duly received and contents carefully noted.

Replying to this letter, we have to report to you that up to the present time a number of unforeseen causes have delayed the construction of the escape way as heretofore contemplated, and prevented the completion of the same within the time granted by the Department, which was a period of ten months from December 13, 1902.

The causes above alluded to are as follows:

First. At the commencement of the contemplated work the demand for mining machinery of all kinds was so great that orders were delayed to such an extent as to cause a delay of fully two months in the work.

Second. Early last spring a fire started in shaft No. 6, and after various efforts to control the same it was found absolutely necessary to flood the mine with water. The efforts to control this fire, the flooding of the mine with water, the pumping out of the water, and the resulting damage to the mine from the combination of fire and water, together with the removal of the débris, caused a furthed delay of fully three months.

Third. After the aforementioned fire had been extinguished and the water pumped out, during the operation of the removing of the débris, a miner very foolishly climbed on the top of some of the débris with his naked lamp, the flame of which ignited some gas which had accumulated in the cavities of the roof caused by fallen slate, and this in turn set fire to the coal, causing a second fire, and a still further delay of thirty days.

As you are aware, the present management of the McAlester Coal Mining Company has but recently taken charge of the work, and in view of the unfortunate conditions which they found to be then existing, they concluded, under your advice and suggestions, to abandon the former proposed method of escape way, and adopt the better, though considerably more expensive plan, of sinking an entirely new air shaft. The sinking of this air shaft will now be pushed with the utmost vigor, and connection made with the entries leading from No. 6 shaft at the very earliest possible moment.

In view of the foregoing conditions, we ask that an extension of time be granted us for the purpose of completing this escape way in the manner now comtemplated, and we think that by pressing the work forward with all possible dispatch that this can be done in eight months, which time we beg that you will recommend to the honorable Secretary of the Interior shall be granted us for that purpose.

Very respectfully,

MCALESTER COAL MINING COMPANY.
By L. D. BUTTON, *General Manager.*

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *October 10, 1903.*

SIR: I have the honor to inclose you herewith a letter which I have just received from the McAlester Coal Mining Company, asking for additional time to be granted it for the purpose of making the escape way required by law for mine No. 6, near Buck, Ind. T. I also inclose for convenience of reference a copy of the previous correspondence on this subject.

In presenting this request to you I beg to say that I have had intimate knowledge of the conditions existing at mine No. 6 at all times during my term of office as mine inspector, and I can verify the statement of the coal company in regard to the causes alleged by them as having delayed the construction of the escape way for a longer period than that heretofore granted to it. The three principal causes set out in their letter are known to me to be facts in this case.

My observation and the results of my investigations are that the new management is acting in good faith in their desire to comply with the law as speedily as is possible under the conditions they found existing when they took charge. They are also using every precaution recommended by me and necessary for the protection of the men until the law is fully complied with. All men employed in the mine are required to use safety lamps only, a competent man being employed to keep these lamps in thorough repair and in safe condition. Complete fire arrangements have been made for guarding against fire, and a sufficient quantity of hose in addition for instant use, in close proximity to the mine is maintained, and competent men are constantly on guard to deal with fire should any break out.

I am very much pleased with the contemplated change in the method of providing escape way, and this change has been made under my advice and suggestion, for the method now contemplated will not only, in my judgment, furnish a better and more accessible means of ingress and egress to and from the mine, but will also tend to perfect the system of ventilation in this mine. I therefore beg to indorse the application for an extension of time in this instance, and while, perhaps, the time asked for is somewhat longer than might be necessary, yet at the same time, if this time were granted, it would probably cover all possible contingencies that might arise in the future. Should the time asked for be granted, I will make a special effort and will use vigilance to see that there is no lack of precaution or unnecessary cause of delay in pushing the work to completion.

Awaiting your instructions in this regard, I am,

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

DEPARTMENT OF THE INTERIOR,
Washington, October 16, 1903.

SIR: Your letter of the 10th instant has been received, transmitting with favorable recommendation an application from the McAlester Coal Mining Company for a further extension for a period of ten months from October 13, 1903, in which to construct a means of escape from shaft No. 6, operated by said company at Buck in that Territory, for the reasons that there was delay in securing mining machinery and that two different fires broke out in the mine, whereby it became necessary to flood the same with water, causing a delay in the contemplated improvements of several months.

It appears from the records of the Department that you were instructed on December 6, 1902, to serve a notice upon said company, requiring them within ten months from the date of the receipt thereof, to provide proper and adequate means of ingress and egress in connection with the shaft above referred to, which they now state they were prevented from completing within the time specified by the reasons set forth in their application.

In accordance with your recommendation in the premises and for the reasons stated in the application of the above-mentioned company, the time within which the additional means of ingress and egress to shaft No. 6 shall be completed is further extended for a period of ten months from October 13, 1903, the date within which the required improvements should have been made.

You will please advise the proper officer of the McAlester Coal Mining Company of this extension.

Very respectfully,

THOS. RYAN,
Acting Secretary.

THE MINE INSPECTOR OF INDIAN TERRITORY,
South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *October 19, 1903.*

SIR: I beg respectfully to acknowledge receipt of your letter of October 16, 1903, in regard to the above matter, and in accordance with the instructions received from you, I have advised the proper officer of the McAlester Coal Mining Company, to wit, Mr. L. D. Button, general manager, of the extension granted and have notified him that it will be expected that this escape way will be completed in such a manner as to comply with the law within the time granted.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

THE SECRETARY OF THE INTERIOR, *Washington, D. C.*

SOUTH MCALESTER, IND. T., *October 19, 1903.*

SIR: I am instructed by the honorable Secretary of the Interior to advise you that the extension of a period of ten months from October 13, 1903, is granted to you in which to construct a means of escape from shaft No. 6, operated by the McAlester Coal Mining Company near Buck, Ind. T.

In accordance, therefore, with these instructions, I hereby notify you that this extension of time above indicated is granted, subject, however, to the same conditions heretofore required during the completion of this escape way, to wit, that your coal company be required to provide a fire engine with sufficient quantity of hose directed to various points of the top works of the shaft, and that a competent man be on guard at all times, when men are at work below, prepared to extinguish any fire that might arise, the aforesaid protective measures to be done in the manner directed by the United States mine inspector and to his satisfaction.

In asking for a period of ten months in which to complete this work, I have felt that I have asked for and been granted a considerably longer time than is absolutely necessary to complete the necessary escape way. I believe that this work, if vigorously pushed, can be completed within five or six months, and it is very essential for the protection of the men that the work should be completed at the very earliest possible date. I trust, therefore, that you will use all means in your power to make the necessary connection in the shortest possible time. In view of the time now

granted, I should not feel authorized to, nor do I think the Secretary would grant further additional time to that now specified. Kindly advise me of your receipt of this letter.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

MR. L. D. BUTTON,
General Manager McAlester Coal Mining Company, Buck, Ind. T.

MCALESTER COAL MINING COMPANY,
Buck, Ind. T., October 20, 1903.

DEAR SIR: Your valued favor 19th instant at hand and carefully noted. Its conditions will be vigorously complied with.

Thanking you for the generous indulgence shown us, we are,

Very truly, yours,

THE MCALESTER COAL MINING CO.,
By L. D. BUTTON, *General Manager.*

MR. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

MCALESTER COAL MINING COMPANY,
Buck, Ind. T., June 23, 1904.

DEAR SIR: This to advise that we connected our No. 6 shaft with our air shaft on yesterday and at your pleasure would be pleased to have you inspect same.

Yours, truly,

MCALESTER COAL MINING CO.

MR. WILLIAM CAMERON,
Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *July 2, 1904.*

SIR: I beg respectfully to refer you to your letter of October 16, 1903, in which a further length of time was given the McAlester Coal Mining Company for the purpose of completing the escape way required by law from mine No. 6 at Buck, Ind. T.

On June 23 last I was notified by the McAlester Coal Mining Company that this escape way was completed and I took an early opportunity of making an inspection, and beg to report that this escape way is now completed, that the connection is properly made, and that the provisions of the act of Congress in this regard have been fully complied with.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

Following is correspondence relative to the use of a poor quality of oil in the mines operated by the Ozark Coal and Railway Company near Panama, Ind. T.:

AUGUST 8, 1903.

SIR: I beg to advise you that I have recently made an inspection of the mines operated by the Ozark Coal and Railway Company at Panama, Ind. T.

I found that the mine was in fair condition, and that the current of air in the mine was reasonably well conducted to the faces. However, I regret to say that I found the air very much vitiated on account of the very inferior and noxious quality of oil used by the men in this mine. I was informed by the men that they were unable to buy any oil of a better quality, as there was none kept in stock. The use of this quality of oil in the mine is very reprehensible and practically nullifies to a considerable extent the effects of the ventilation. I have no hesitation in saying that the result is that the air under these conditions is unfit for the miners to breathe.

Kindly advise me of the receipt of this letter, and I trust you will also advise me that this matter will be remedied at once.

Yours, respectfully,

WM. CAMERON,
United States Mine Inspector.

Mr. GEORGE W. LAYNE,
President Ozark Coal and Railway Company, Joplin, Mo.

JOPLIN SAVINGS BANK, *Joplin, Mo., August 10, 1903.*

DEAR SIR: In reply to yours of the 8th instant wish to state that we received one bad barrel of oil and reported the same to the oil company and had another one sent on at once. I think the last barrel we received was all right.

I am thankful to have received your kind letter, and will forward same to the oil company, which will enable us to get better oil.

Hoping to have the pleasure of meeting you at some future time, I remain,

Yours, truly,

GEO. W. LAYNE.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

The following correspondence relates to an application that was made to me to make a special inspection of mines at Witteville, operated by the Poteau Coal and Mercantile Company:

MAY 2, 1904.

HONORABLE SIR: You are requested to come to Witteville, Ind. T., at your earliest convenience, as there is great dissatisfaction of the airing of these mines, and it is the will of the pit committee that you come at once. You will kindly let me know when you will be here.

Yours, truly,

CHAS. CUMMINGS.

Mr. WILLIAM CAMERON, *South McAlester, Ind. T.*

SOUTH MCALESTER, IND. T., *May 3, 1904.*

DEAR SIR: As per your request of May 2, by letter, I expect to inspect the mines at Witteville on Thursday, reaching the mines between 8 and 9 a. m., and if convenient would be pleased to have your committee accompany me when making the inspection.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. CHARLES C. CUMMINGS,
Witteville, Ind. T.

(NOTE.—Thursday was May 5.)

SOUTH MCALESTER, IND. T., *May 3, 1904.*

DEAR SIR: By request of the miners' union I will inspect your mines at Witteville on Thursday, reaching the mines between 8 and 9 a. m., and hope that it will be convenient for you to accompany me when making the inspection.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. B. MCHUGH,
Superintendent Poteau Coal and Mercantile Company, Witteville, Ind. T.

SOUTH MCALESTER, IND. T., *May 16, 1904.*

DEAR SIR: I beg to inclose you herewith a copy of a letter which I have written to Mr. B. McHugh, superintendent of the mines at Witteville.

My attention to this matter was somewhat delayed by the fact that I have had an unusual amount of business to attend to, and was unable to do so until the present time.

I will be glad to meet you at the mines when I return on the 25th instant, in accordance with arrangements made.

Yours, truly,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. CHARLES CUMMINGS,
Witteville, Ind. T.

SOUTH MCALESTER, IND. T., *May 16, 1904.*

DEAR SIR: I herewith inform you of the condition in which I found mines Nos. 5 and 6, under your superintendence, near Witteville, Ind. T., at the time of my recent visit and inspection.

Beginning at the entrance to No. 5 mine I made a careful measurement of the ventilating current, and found that there was 25,600 cubic feet of air per minute being discharged from the mine. Proceeding down the slope to the third north entry, which entry was the first in operation, I inspected this entry, and made several measurements of the air, and found that the air was not properly conducted to the working faces, no curtains being used to force the air to the face of rooms, and the curtains on dip switch in bad condition and leaking so much that an insufficient quantity of air reached the face of entry and air course.

I then proceeded to inspect and take measurements of the air in the various entries on the north side and down to the bottom of slope, and found the conditions far short of the requirements of the act covering the operations of mines in the Indian Territory in each of these entries.

The entries in operation on the south side of slope are in a similar condition to the entries on the north side, and it would only be a multiplying of words to go into detail as to their condition. We then proceeded through the escape way between and connecting Nos. 5 and 6 mines. This traveling way was in very fair condition, but I would recommend that finger boards should be placed at points where different roads branch off, so that persons not acquainted with the mine would be able to find their way without trouble.

I then proceeded to inspect and take air measurements of No. 6 mine. The north side is worked to a very limited extent, and but few men are working in this current. There is 5,972 cubic feet per minute being circulated, which is sufficient for all purposes on the north side of this slope.

I then proceeded to inspect the entries on the south side of No. 6 slope (four in all), and found that the air was not properly conducted to the working faces. In the past little or no effort has been put forth to conduct the air to the different points where it is most needed, viz, where the men are at work. Six thousand four hundred and eighty cubic feet of air is being passed over the overcast to the south side of slope, and if properly conducted would be sufficient for a much greater number of men than what was employed at the time inspection was made.

Generally speaking, there is a lack of sufficient ventilation at the working faces of mines Nos. 5 and 6, with the exception of the third north entry in No. 5 and the entries on the north side of No. 6 slope. The cause of this is, that while the total current of air is sufficient to properly ventilate the mine there is either a total lack of doors and curtains to properly carry the air to the working faces, or such doors and curtains as are provided are in a defective condition, resulting in much leakage and consequent failure to so conduct the air to such working faces as is required by law.

I beg to inform you of the fact that I have on several occasions drawn the attention of your pit boss to the defective condition of the ventilation in these mines, and on my last visit I found that instead of the conditions being improved that they were much worse, and I then notified you and your mine foreman, and also the miners' committee, that I would return in twenty days, or about the 25th of May, to make a further inspection. It is my desire to induce you to put the mine in such condition as the law calls for, without resorting to extreme measures, as I consider that the twenty days so given will be abundant time to so remedy the existing conditions as to force the air to the working faces as is explicitly required by the act of Congress. Unless this is done, it will be my unpleasant, but imperative duty, to report this matter to the Secretary of the Interior for such action as he may deem necessary.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. B. MCHUGH,
Superintendent Poteau Coal and Mercantile Company, Witteville, Ind. T.

WITTEVILLE, IND. T., *May 20, 1904.*

DEAR SIR: This will answer receipt of your report of 16th. Would you kindly extend the time to the 1st of the month, on account of the delay in material which is ordered but not yet received?

In order to carry out your instructions it will be necessary to have this curtain material.

Hoping to receive a favorable reply, we are,

POTEAU COAL AND MERCANTILE CO.,
M. B. MCHUGH, *Superintendent.*

Hon. WILLIAM CAMERON,
Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *May 21, 1904.*

DEAR SIR: I beg to acknowledge receipt of yours of the 20th instant, asking me to extend the time for my further inspection of your Nos. 5 and 6 mines, at Poteau, until June 1, 1904.

As I am exceedingly anxious that this matter shall be attended to properly in every respect, I shall be pleased to defer my visit to your mines above mentioned until the 1st of June next, at which time I shall hope to find them in proper condition.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. M. B. MCHUGH,
Superintendent Poteau Coal and Mercantile Company,
Witteville, Ind. T.

SOUTH MCALESTER, IND. T., *May 21, 1904.*

DEAR SIR: I have just received a letter from Mr. McHugh, superintendent at Witteville, to the effect that he would like to have the time extended for my next visit and inspection of the mines at Poteau until June 1, 1904.

In order that sufficient time may be given to effect a complete compliance with the requisites of the law, I have written Mr. McHugh that I will defer my visit until the 1st of June, 1904, and at that time I hope to find everything in good order and that I shall then be able to make a favorable report on the condition of the mines.

I therefore beg to notify you that my next visit will be made in accordance therewith, to wit, June 1, 1904.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. CHARLES C. CUMMINGS, *Witteville, Ind. T.*

SOUTH MCALESTER, IND. T., *June 13, 1904.*

SIR: I have the honor to attach hereto a report of my last inspection of the above-named mines.

Referring to your letter of May 27, 1904, and my reply of May 31, and in reference to the letter of Mr. Edward McGowan of May 23, 1904, a copy of which was attached to yours of the 27th ultimo, I beg respectfully to be permitted to say that while on my last trip of inspection Mr. Charles Cummings, the secretary of the local union of the United Mine Workers of America, being the same person who first wrote me in regard to the condition of the above-named mines, and a letter from whom I forwarded to you, asked me if I knew whether Mr. McGowan had written to you in regard to the mines in question, and on my replying that he had, Mr. Cummings stated that Mr. McGowan had no authority to act for the union in the matter. Mr. Cummings asks me to use his name in stating that the union are perfectly satisfied with the attention I have given to this and other matters and with my whole work in the performance of my duties in the field of his district.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

SOUTH MCALESTER, IND. T., *June 13, 1904.*

SIR: In further reference to your letter of the 27th May, 1904, and my reply thereto dated May 31, 1904, on the above subject, I beg to report that, in accordance with the arrangements heretofore noted, I made a special inspection of the above mines on June 1 and 2 with the following results:

Report of inspection of No. 5 mine.

Measurement of air at the mouth of slope showed a discharge of air of 21,700 cubic feet of air per minute; second measurement of air, taken below "overcast," showed 19,958 cubic feet of air per minute, thus showing considerable leakage at the overcast. The inspecting party then proceeded to the third north entry and took two measurements of the air current, finding between rooms 48 and 49 1,752 cubic feet of air per minute traveling through breakthrough next face, room 48 being the first room that was working; second measurement was taken in last break through next entry face, at which point measurement showed 1,725 cubic feet of air per minute traveling. There were 14 men working in this entry. We then proceeded to the fourth north entry and measured the air traveling in the air course between third and fourth entries, finding 3,927 cubic feet of air traveling per minute; next measurement was taken in last breakthrough next entry face, at which point we found 3,135 cubic feet of air traveling per minute; 13 men working on this entry. While there was sufficient air traveling in the entry, it was not properly conducted to the face of rooms; this was pointed out to pit boss, who accompanied us, and he agreed to hang curtains to force the air current to the working faces.

We next proceeded to the fifth north entry and found 7,032 cubic feet of air per minute traveling into the entry; we then took measurements in rooms and breakthrough next entry face and found sufficient air traveling in this entry for all purposes; 10 men working in this entry.

We then proceeded to the sixth north entry and found 6,804 cubic feet of air per minute traveling into this entry; in breakthrough between rooms 5 and 6 we found 5,120 cubic feet of air traveling, and in breakthrough between entry and air course we found 3,654 cubic feet of air traveling per minute; 10 men working in this entry. We next proceeded to the seventh north entry, took measurements, and found 6,972 cubic feet of air per minute traveling into this entry, and in last breakthrough, between entry and air course, we found 2,940 cubic feet of air traveling per minute. We next proceeded to the eighth north entry and found 2,760 cubic feet of air traveling per minute, the same being forced into this entry, where 4 men were working. This latter being the last entry on the north side, we crossed over the slope to the south side and took measurements in the fifth south entry, finding 4,810 cubic feet of air traveling per minute in this entry; 5 men working in this entry.

It will be noted that in the different entries in this mine there is a total of 63 men engaged. In addition we will add 7 men engaged as timbermen and tracklayers, making a total of 70 men in all, thus showing just about 100 cubic feet of air per man per minute in this mine, which is being properly conducted to the working faces, with the exception of the fourth north entry, and there is no doubt but this matter will be attended to at once. I recommended that steps be taken to stop the leaks through the overcast placed some distance from the mouth of the slope. If this overcast is made air-tight it will circulate a still greater quantity, to wit, 1,700 cubic feet of air additional through the different entries of the mine. I also found that the air being conducted into the fifth south entry was traveling into No. 6 mine. This arrangement I advised should be discontinued, and that the air from this entry should be returned and discharged out of No. 5 slope.

In this mine I also suggested to the superintendent that the speed of the fan might safely be increased some 30 revolutions per minute, and this being done a large increase in the total amount of air would be effected.

Report of inspection in No. 6 mine.

On June 2, 1904, I made special inspection of No. 6 mine, operated by the Poteau Coal and Mercantile Company, near Witteville, Ind. T., and found that the entries were being operated on the north side of slope.

There was an abundant supply of air in both these entries. We then crossed over and took measurements of air in the second, third, and fourth south entries, finding that the air was traveling in all of them considerably in excess of what the law requires, viz, 100 cubic feet per man per minute, which amount of air, with two exceptions, was properly conducted to the working faces. The attention of the management was called to these exceptions, and they promised to hang curtains on

that day to remedy the defect. The ventilation of this mine was so much in excess of the statutory requirements that I refrain from giving a detailed account of the measurements taken.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

JUNE 13, 1904.

DEAR SIR: I beg to advise you that I have reported to the Secretary of the Interior on the present conditions of the mines Nos. 5 and 6 at Witteville, Ind. T. I have made a favorable report, relying on the promises of the pit boss to put necessary curtains to stop the leaks in the overcast, and have also recommended that the fan at No. 5 mine be increased in speed some 30 revolutions per minute. I trust that these matters will have due attention and steps will be taken hereafter to keep the mine in the improved condition that it will then assume. I shall be pleased to hear from you at any time and shall take pleasure in attending to any necessary matters that may be called to my attention. With best wishes,

Yours, truly,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

MR. CHARLES CUMMINGS,
Secretary Local Union, United Mine Workers of America,
Witteville, Ind. T.

In my annual report for the year ended June 30, 1903, on page 97, copies of correspondence was given in reference to escape-way for No. 7 mine, near Hartshorne, at that time operated by the McAlester Coal Company. Since that correspondence was had the Rock Island Coal Company took possession and management of the mines. It became necessary for me to call its attention to certain conditions, and when it became evident that the escape-way could not be completed within the time, further time was applied for and obtained, as the following correspondence will show:

SOUTH MCALESTER, IND. T., *August 20, 1903.*

DEAR SIR: A few days ago I made an inspection of your mine No. 7, and I found that no safety catches were being used on the cages. Some three months ago I called the attention of your master mechanic to this condition of things, which is a very plain violation of the law, and he promised me then that the matter should be attended to. This has not been done. I must respectfully urge that this matter have immediate attention, or it will become my duty to report the same to the Secretary of the Interior.

In regard to the connection which was to be made between your mine No. 7 and slope 18, so as to provide an additional means of escapement for the men, I beg to refer you to the correspondence which I had at that time with The McAlester Coal Company and the instructions of the Secretary of the Interior to me in this regard, an additional copy of which I sent you a short time ago. One of the special requirements in this regard was that during the progress of the work, and in the interval granted you by the Department to make this connection, there should be kept constantly ready for service at the top of the shaft a fire engine, or some means of forcing water, with a hose connection, always ready for immediate use, and some competent person on guard to immediately apply the same. I found on my investigation that there was about 100 feet of hose stored away in the warehouse adjacent, and which for the purposes intended was absolutely useless, for, should a fire break out in the shaft timbers above the top, the structure would be burned to the ground before the hose could be attached. I respectfully request that this matter have immediate attention, and that the orders of the Department be strictly complied with, and thus save me the duty of reporting the same.

Kindly acknowledge receipt of this letter, with information as to what steps you will take in the above regards.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector.

MR. WILLIAM SPERRY,
Superintendent, Hartshorne, Ind. T.

ROCK ISLAND COAL COMPANY,
Hartshorne, Ind. T., August 24, 1903.

DEAR SIR: Replying to your esteemed favor of August 20, I desire to thank you for calling my attention to the safety catches on the cages at No. 7 and also the condition of fire protection at this mine, and desire to assure you that your recommendations have been carried out to the letter.

Yours, truly,

WM. SPERRY,
Superintendent.

WILLIAM CAMERON,
Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *May 25, 1904.*

DEAR SIR: On a recent visit of inspection to your mines at Hartshorne and Gowen I discovered that the entry or means of communicatfon between No. 7 shaft and No. 7 air shaft still lacks 600 feet of completion, and this entry or escapeway was being worked only by a single shift of men, and that only when the mine was working.

At the present rate of working it will, therefore, be impossible for you to make the connection within the time granted by the Secretary of the Interior, which time expires, as you are aware, on July 15, 1904.

On application to Mr. Sperry, superintendent, for an explanation of the reason that this work was not being double shifted, he advised me that the miners working under the direction of the American Mine Workers' Association had refused to pursue this work by constantly remaining at work, and by refusing to allow a double shift to be worked.

I think, however, that there must have been some want of pursuing the proper course in order to induce the men to remain at work in the necessary manner, and I, therefore, took the matter up with the district president and one of the executive committee of the miners' union, and they, without any hesitation and with the utmost cheerfulness, said that the union would not interfere in any manner to prevent the accomplishment of this very necessary work or to retard in any way its completion.

I therefore respectfully suggest that arrangements be made at once for the prosecution of this work by having men constantly at work, and by double shifting the same.

I trust that you will give this your special attention, for the reason that this communication has been very much delayed, and I should very much dislike to have to make further application to the Department for time in this regard.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

MR. CARL SCHOLZ,
President Rock Island Coal Company, Little Rock, Ark.

ROCK ISLAND COAL COMPANY,
Little Rock, Ark., June 1, 1904.

DEAR SIR: Replying to your letter of May 25 regarding communication between shaft No. 7 and air shaft for this mine, wish to say that entry in that direction is now being double shifted, and arrangements have been made to operate that mine regularly in order to complete the communication as soon as possible.

Yours, very truly,

CARL SCHOLZ, *President.*

MR. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

LITTLE ROCK, ARK., *June 26, 1904.*

DEAR SIR: I respectfully beg to advise that we will not be able to effect the connection between air shaft and mine No. 7 proper, referred to in letter of Mr. Thomas Ryan, Acting Secretary of the Interior, under date of December 6, 1902, and I shall be glad if you will recommend that an extension of four months will be granted us for the completion of this work, from July 15, 1904.

As you know, it was our first intention to drive the slope from No. 18 mine, but this work had to be given up after several months' trial to keep out the water, which

failed, and on February 15 we began the sinking of an air shaft 540 feet deep, in order to provide the second outlet, and we have since that time worked continuously at three shifts of eight hours each, with the view of completing this work. Our workings have been interrupted by the erection of tipple and surface plant, during which time the entries in mine No. 7 were idle, but, as you know, are now being driven with all speed and the mines provided with the best appliances available for the safety of the miners. We have installed a very complete hoisting plant, and trust that, in view of the conditions, you can consistently recommend to the Department that our request be complied with.

Awaiting to hear from you at an early date, I am, yours, very truly,

CARL SCHOLZ.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *July 2, 1904.*

SIR: In the above connection I beg respectfully to refer you to your letter of December 6, 1902, in this regard, in which the time granted for the completion of this escapeway was fifteen months "from the time operations are resumed at shaft No. 7."

Under date of June 26, 1904, I have received a communication from Mr. Carl Scholz, president and manager of the Rock Island Coal Company, stating that the coal company would be unable to effect the connection within the time previously granted, which time expires on July 15, 1904, this latter date being fifteen months from April 15, 1903, at which time operation of the mine was resumed. This original letter I inclose you herewith.

I have constantly urged the completion of this work, but, as I am well aware, there have been several obstacles to its completion within the time granted, and in addition to the causes assigned by Mr. Scholz in his inclosed letter, I beg to say that there has been during the progress of this work a complete change in the management of the mine, and that within the time granted there has been considerable delay on this account.

The work also was retarded for some time by a misunderstanding with the miners' union in regard to operating the work under what is known as the double-shift system, and this also is an additional cause for the delay.

On considering the whole matter, I respectfully recommend that the further time now asked for be granted, but that it be made absolutely clear to the coal company that it must fully complete this work at the time, or that the mine be shut down, or else that all other work except the completing of this communication be suspended.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

DEPARTMENT OF THE INTERIOR,
Washington, July 8, 1904.

SIR: In compliance with the recommendation contained in your letter of the 2d instant, the time for the completion of the additional means of ingress and egress in connection with shaft No. 7, now operated by the Rock Island Coal Company, but formerly by the McAlester Coal Company, near Hartshorne, Ind. T., as required by section 5 of the act of Congress approved March 3, 1891, entitled "An act for the protection of the lives of miners in the Territories," is hereby extended for a further period of four months from July 15, 1904, the date within which the same should have been completed as directed by Department letter of December 6, 1902.

You will please advise the proper official of the above-named company of the action taken by the Department in the premises.

Very respectfully,

THOS. RYAN,
Acting Secretary.

UNITED STATES MINE INSPECTOR FOR INDIAN TERRITORY,
South McAlester, Ind. T.

JULY 14, 1904.

SIR: I beg to respectfully acknowledge receipt of yours of July 8, 1904, instructing me to extend the time required for the connection and means of ingress and egress in connection with shaft No. 7, now operated by the Rock Island Coal Company, for the further period of four months from July 15, 1904.

I note your instructions to advise the proper official of the Coal Company of this decision, which I have accordingly done.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

JULY 14, 1904.

DEAR SIR: I am instructed by the Secretary of the Interior to advise you that the time for the completion of the additional means of ingress and egress in connection with shaft No. 7, now operated by the Rock Island Coal Company, but formerly by the McAlester Coal Company, near Hartshorne, Ind. T., as required by section 5 of the act of Congress approved March 3, 1891, entitled "An act for the protection of the lives of miners in the Territories," is hereby extended for a further period of four months from July 15, 1904, the date within which the same should have been completed, as directed by Department letter of December 6, 1902.

This permission has been applied for by me and granted by the Department on the assumption that there will be no further question about the date on which this means of communication shall be completed.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. CARL SCHOLZ,
President Rock Island Coal Company, Little Rock, Ark.

ROCK ISLAND COAL COMPANY,
Little Rock, Ark., July 18, 1904.

DEAR SIR: I have your letter of July 14, wherein you advise that the time for completion of connection between shaft No. 7 and air shaft for this mine is extended four months from July 15, 1904. I beg to assure you that we will leave nothing undone to complete this work prior to that time.

Yours, very truly,

CARL SCHOLZ.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

The following letter refers to the practice of permitting miners to "brush" gas from their working places:

SOUTH MCALESTER, IND. T., *September 26, 1903.*

SIR: While recently investigating a slight accident to James Motley, which occurred in mine No. 4, and in conversation with Motley's partner, I discovered that the old and reprehensible method and practice of allowing miners to brush gas out of their rooms had been revived in this mine. This practice, as you know, I have spoken to you about on many occasions, and which has been condemned by me as a practice in all mines in the Indian Territory. I regret very much to find that this practice has again been allowed. It is a practice that has caused, and if persisted in will cause, many accidents in the future, and should any gas explosion occur either in your mines or in any mines in the Territory from this cause, it would be my duty to throw the responsibility of such explosion on the officials of the company who had charge of the mine.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. ALEX. MCKENNON,
Superintendent, Southwestern Development Company, Coalgate, Ind. T.

The following correspondence relates to escape way necessary from No. 4 mine, operated by the Southwestern Development Company, near Coalgate, Ind. T. This matter was afterwards adjusted by arrangements to connect No. 4 and No. 12 mines, as will be seen by the correspondence immediately following, and also by the correspondence which will follow in regard to escape way for No. 12 mine:

COALGATE, IND. T., *November 27, 1903.*

DEAR SIR: I have been requested by the members of Local Union 2282, of United Mine Workers of America, working at No. 4 mine, Southwestern Development Company, to write you and inform you that they must have an escapement from said mine. We have asked the superintendent on several different occasions to make a manway, but have always been filled up on promises and they never fulfilled. You know well the condition of No. 4 and we kindly ask you to take this matter up at your earliest convenience and see what can be done.

Very truly, yours,

[SEAL.]

J. W. ALEXANDER,
Recording Secretary.

Mr. WILLIAM CAMERON.

SOUTH MCALESTER, IND. T., *November 30, 1903.*

DEAR SIR: Please note the inclosed letter which I have written to Mr. Tonkin, and send this copy for your information. I trust you will use every effort to comply with the law in regard to this escape way at the very earliest possible moment. Kindly advise me as to your intentions in this regard, and oblige,

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. ALEX. MCKINNON,
Superintendent Southwestern Development Company, Coalgate, Ind. T.

SOUTH MCALESTER, IND. T., *November 30, 1903.*

DEAR SIR: On several occasions I have notified Mr. Alex. McKinnon, your local superintendent at Coalgate, Ind. T., of the necessity of providing the escape way required by law for your mine No. 4 at Coalgate, Ind. T. I am now in receipt of a letter from the secretary of the United Mine Workers of America at Coalgate asking that this escape way be provided without delay.

I feel sure it is your desire to comply with the law in this regard, and trust that this matter will have your immediate attention without further occasion on my part. Kindly advise me at the earliest possible opportunity of your intentions in this regard, because I wish to avoid the necessity of making a formal complaint to the Secretary of the Interior, which it will be my duty to do, in regard to the want of this escape way, if the matter is not attended to at once.

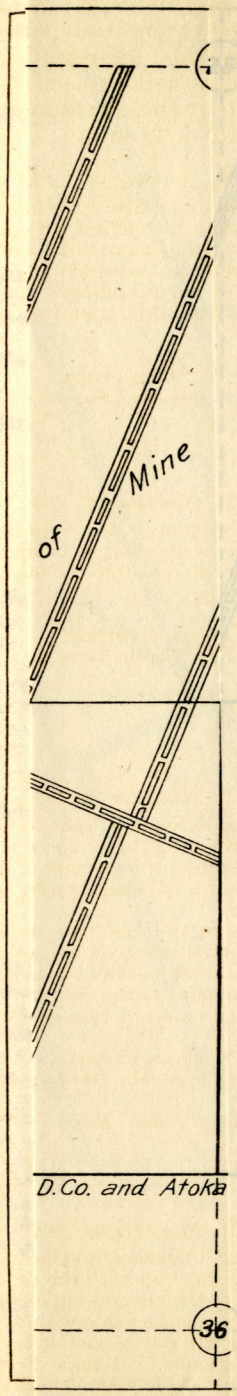
Very respectfully,

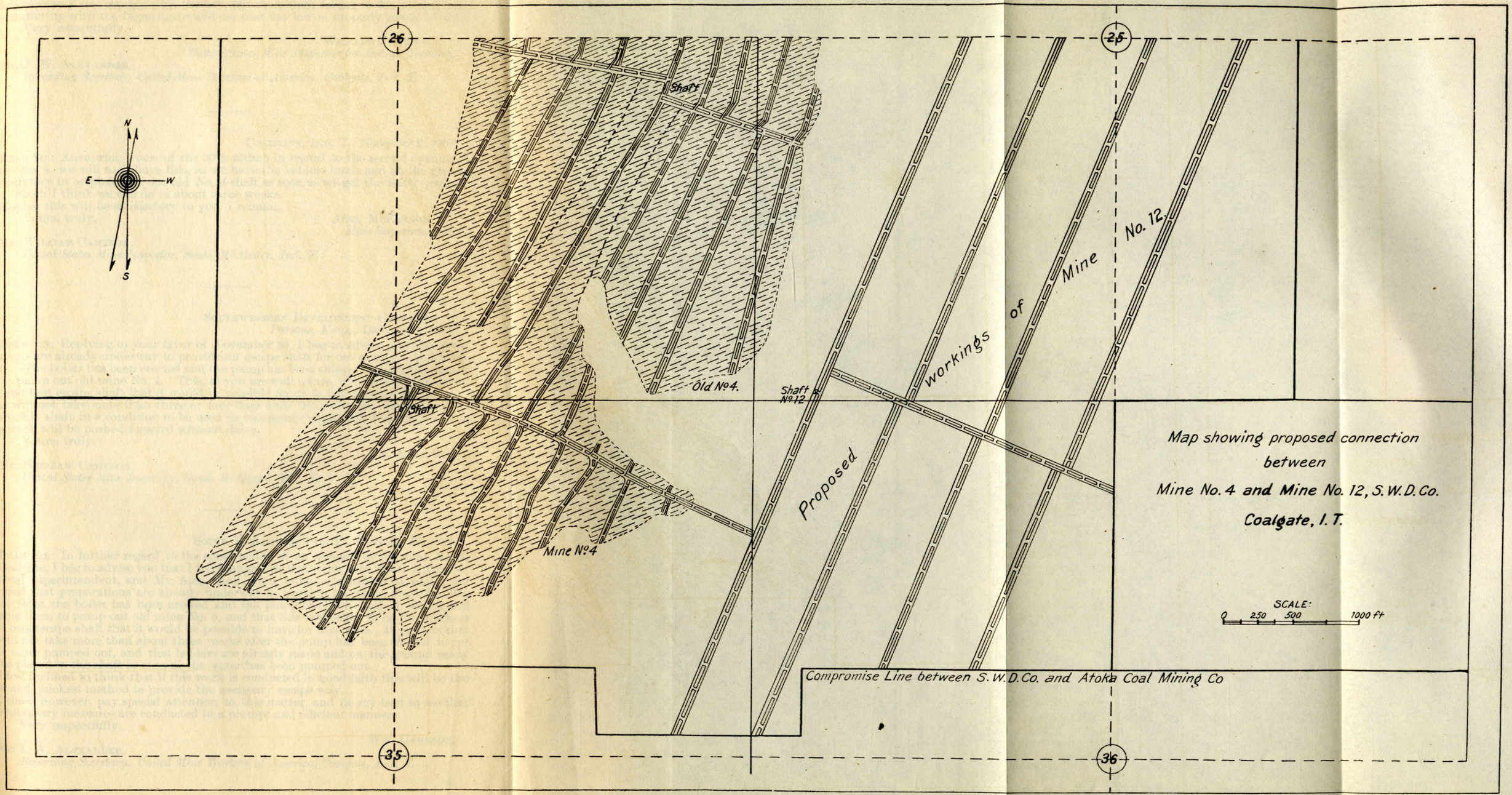
WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

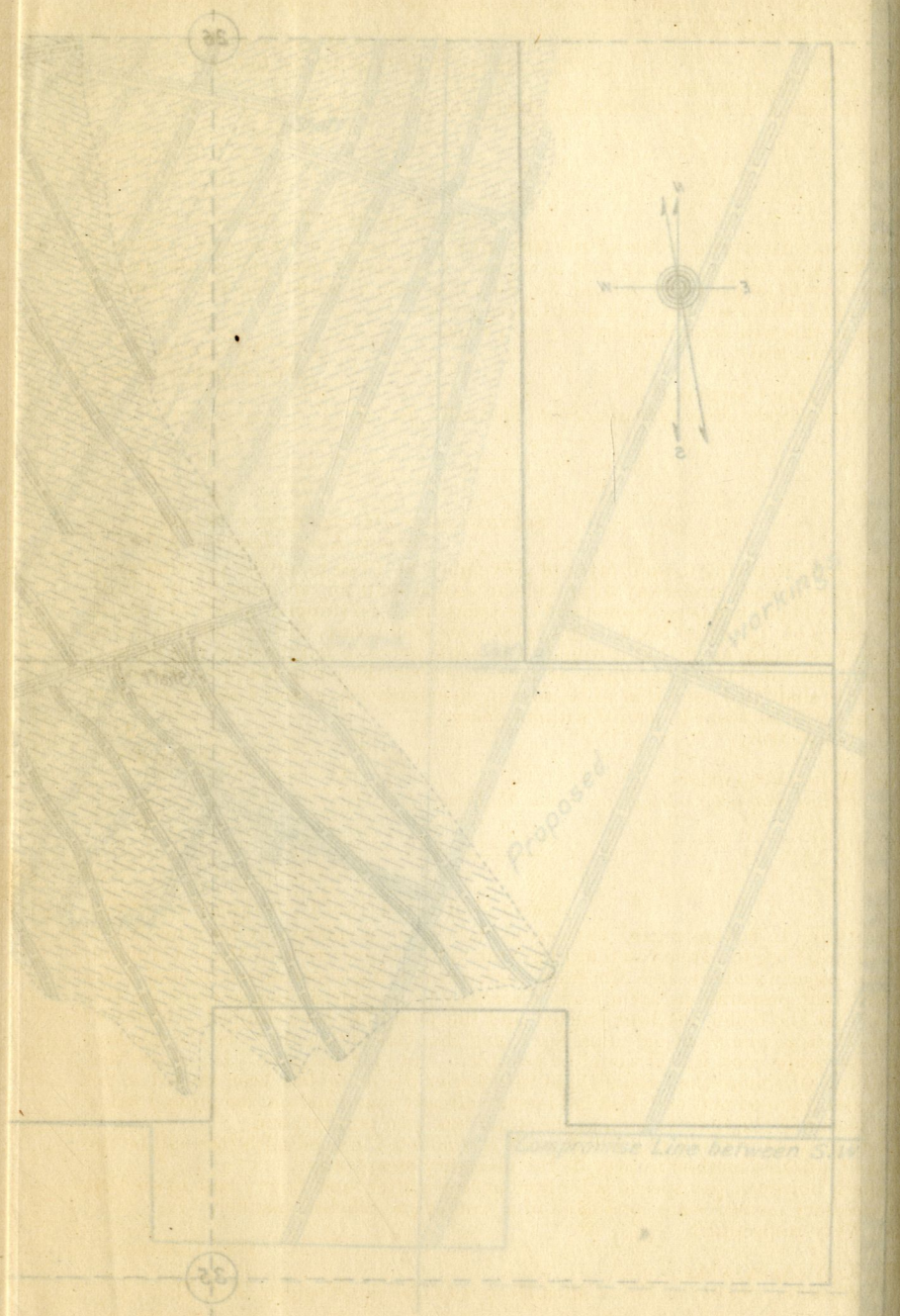
Mr. S. J. TONKIN,
General Superintendent Southwestern Development Company, Parsons, Kans.

SOUTH MCALESTER, IND. T., *November 30, 1903.*

DEAR SIR: I beg to acknowledge receipt of your letter of the 27th instant, and desire to say that I have had the matter of the escape way for mine No. 4 up with the coal company on several previous occasions, and am now writing to the general superintendent and the local superintendent requesting that this escape way be made without further delay, so as to comply with the law in this regard. I will advise you of the result of my application on hearing from the superintendents named. I hope that the coal company will without further application and in an amicable manner make




26
25
N
E
W
S
Shaft
Old No. 4.
Shaft
Mine No. 4
Shaft No. 12
Workings of Mine No. 12.
Proposed
Map showing proposed connection
between
Mine No. 4 and Mine No. 12, S. W. D. Co.
Coalgate, I. T.
SCALE:
0 250 500 1000 ft
Compromise Line between S. W. D. Co. and Atoka Coal Mining Co
35
36



this escape way and comply with the law, but upon their failing to do so I shall take the matter up with the Department and see that the law is properly complied with.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. J. W. ALEXANDER,
Recording Secretary United Mine Workers of America, Coalgate, Ind. T.

COALGATE, IND. T., *November 2, 1903.*

DEAR SIR: Answering yours of the 30th ultimo in regard to the second opening to mine No. 4, we will soon have this, as we have the ladders made and on the ground preparatory to be placed in our old No. 4 shaft as soon as we get the water pumped out, which I think we can do in about three weeks.

Hoping this will be satisfactory to you, I remain,

Yours, truly,

ALEX MCKINNON,
Mine Superintendent.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

SOUTHWESTERN DEVELOPMENT COMPANY,
Parsons, Kans., December 4, 1903.

DEAR SIR: Replying to your favor of November 30, I beg to advise you that preparations are already underway to provide an escape shaft for our mine No. 4 at Coalgate. The boiler has been erected and the pump has been shipped, which will enable us to pump out old mine No. 4. This, as you are well aware, will provide the quickest and best escape shaft that it would be possible for us to put down at this mine.

It will not take more than three or four days after the pump has been started to place this shaft in a condition to be used in emergency cases, and I assure you that the work will be pushed forward without delay.

Yours, truly,

S. J. TONKIN.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *December 12, 1903.*

DEAR SIR: In further regard to the construction of an escape way for mine No. 4, at Coalgate, I beg to advise you that I have taken this matter up with Mr. S. J. Tonkin, general superintendent, and Mr. Alex. McKinnon, mine superintendent, and I am advised that preparations are already underway to provide an escape shaft for this mine; that the boiler has been erected and the pump has been shipped, which will enable them to pump out old mine No. 4, and that this is thought to be the quickest and best escape shaft that it would be possible to have for this mine. It appears that it will not take more than about three weeks after the pump has been started to get this water pumped out, and that ladders are already made and on the ground ready to be placed in the shaft as soon as the water has been pumped out.

I feel inclined to think that if this work is conducted in good faith this will be the best and quickest method to provide the necessary escape way.

I shall, however, pay special attention to this matter, and do my best to see that the necessary measures are conducted in a prompt and efficient manner.

Very respectfully,

WM. CAMERON.

Mr. J. W. ALEXANDER,
Recording Secretary, United Mine Workers of America, Coalgate, Ind. T.

SOUTH MCALESTER, IND. T., *February 24, 1904.*

DEAR SIR: I beg to inclose herewith a copy of a letter which I have addressed to Mr. S. J. Tonkin. Please note its contents, and kindly see that the necessary preparations are carried out immediately, and acknowledge receipt of this letter to me.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. ALEX MCKINNON,
Mine Superintendent, Coalgate, Ind. T.

SOUTH MCALESTER, IND. T., *February 24, 1904.*

DEAR SIR: I beg to refer you to a copy of a letter written to me under date of December 2, 1903, by Mr. Alex McKinnon, mine superintendent, and a letter of December 4 written by yourself.

I have recently returned from Coalgate, where I examined the conditions existing at mine No. 4, and I find that matters are in about the same conditions as they were when the promises were made by Mr. McKinnon and yourself some three months ago.

It seems that the boiler was defective, the tubes were imperfect, and the crown sheet worn-out, and that it has never been able to do anything in regard to furnishing steam to pump out the water. This boiler was not only of no efficiency in doing the work contemplated, but was a menace and a danger to the people who were operating it.

The condition of matters in No. 4 shaft are, under the present state of things, in a most dangerous condition. Ordinarily the probability of a fire of the tipple would be sufficient, but this is increased by the fact that a stove is used in the weigh room. Should a fire break out in this tipple at any time no preparation has been made to contend with it in the way of hose or power to apply water to the fire, and in such case the number of men at work in the mine would probably be 90 or 100, as I understand it, and these men would be imprisoned and confined like rats in a trap.

You are also aware that I have been solicited by the United Mine Workers in regard to this dangerous condition, and that I have conveyed to them your promise to remedy the conditions, and that they are relying upon me to see that this is done.

It therefore now becomes my duty to insist that this matter shall have speedy attention, and the dangerous conditions remedied, and I must ask that you notify me at once, setting a certain date by which time this will be accomplished, and that you will give such peremptory instructions as shall result in the fulfillment of your promises thus made.

I expect to make a further inspection in about six or eight days from this time, and if I find no preparation for the protection of the pit top by the necessary fire arrangements, it will be my duty to report the matter to the Interior Department, and recommend that the mine be closed until such time as the law is complied with. The time which you desire to take to perfect the arrangement must be a reasonable one, and must be followed up by action in order that the arrangements may be completed within the time named.

I should regret very much to have to take up this matter seriously with the Interior Department, but I feel myself compelled to do so unless I hear from you promptly, and that the action required in this regard is speedily taken. The time for promises is now passed, and the time has arrived in which definite action must be taken.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. S. J. TONKIN,
Superintendent Southwestern Development Company, Coalgate, Ind. T.

COALGATE, IND. T., *February 25, 1904.*

DEAR SIR: This is to acknowledge receipt of your letter of the 24th inclosing copy of your letter to Mr. Tonkin.

Yours, truly,

ALEX. MCKINNON,

Mr. WILLIAM CAMERON, Esq.,
United States Mine Inspector, South McAlester, Ind T.

SOUTHWESTERN DEVELOPMENT COMPANY,
Coalgate, Ind. T., February 26, 1904.

MY DEAR MR. CAMERON: Beg to acknowledge receipt of your letter of February 24 referring to Superintendent McKinnon's letter of December 2 and my own of December 4, relative to existing conditions of mine No. 4, Coalgate.

At the time of writing, December 4, instructions were given that this work be pushed as rapidly as possible, and ladders were constructed and were placed in the shaft in question, to be used in emergency cases by the men. The ladders are constructed in such a manner as to permit of rapid traveling on the part of the men, and as conducive to their comfort as it is possible to make them.

As this work progressed, subsequent examination of the boiler proved conclusively to my satisfaction that the boiler was inefficient for the duty required of it, and other boilers were ordered to replace it.

The isolation of these plants renders it extremely difficult to secure material as promptly as I might desire, and I have been severely handicapped in this respect.

Boilers of sufficient capacity are now on the ground, and I assure you the work of pumping out the water will be pushed to the fullest extent.

Relative to protection of tipple, will say stove has been removed from weigh house and provision made to protect tipple in case of fire.

I trust upon the occasion of your next visit, which I understand will be in six or eight days, you will find conditions to your entire satisfaction. In conclusion, will say it is my earnest desire to carry out to the fullest extent the laws, not only of the Territory, but any that would be conducive to the welfare and safety of our employees; and any promises made you were made with the hope of their immediate fulfillment, but circumstances beyond our control prevented their fulfillment in this case.

Yours, very truly, S. J. TONKIN.

WILLIAM CAMERON, Esq.,
United States Mine Inspector, South McAlester, Ind. T.

The following correspondence relates to the construction of necessary escapeway for mine No. 12, operated by Southwestern Development Company, near Colgate, Ind. T. Communication is now being made between mine No. 12 and mine No. 4, thus providing escapeway for both mines:

PARSONS, KANS., *May 17, 1904.*

DEAR SIR: Attached hereto you will find a blue print showing the location of our new shaft No. 12, and its relation to our present No. 4 mine, which mine, when connected with the workings of our No. 12, will be operated as a plane, and the present hoisting shaft of our mine No. 4 will be used as a ventilating shaft, and also as a second opening to the new mine.

Shaft No. 12 is sunk to a depth of 653 feet to the coal, and approximately 1,000 feet north of the foot of the slope of our present No. 4 mine. It is our intention to drive the south shaft-level entry from this shaft forward with as little delay as possible to connect with this slope, which will establish an excellent second opening for the new mine. The coal from the present No. 4, as I have told you before, will be hoisted from the new shaft. On the north side of the shaft, a distance of about 250 feet, a slope will be sunk, and the shaft-level entry pushed north as rapidly as possible, so that at some future period we will be able to operate another plane and slope in connection with this mine.

We are at the present time ready to hoist coal from this shaft, and have started to open our south shaft-level entry, and I wish you would kindly grant us a period of eight months' time in which to make the connection between this new shaft and the slope of our present No. 4 mine.

I will give you a more detailed description of the equipment, etc., at this mine when you send out the blanks for compiling your annual report. I should also be pleased to have you make any suggestions in regard to this matter that you may deem proper.

Yours, truly,

S. J. TONKIN.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *May 20, 1904.*

SIR: I beg to inclose you herewith a letter from Mr. S. J. Tonkin, superintendent of the Southwestern Development Company, in regard to a needed communication between the bottom of the slope and the shaft of mine No. 12, situated near the town of Coalgate, Ind. T.

I also beg to inclose herewith a blue print, showing the present location of both slope and shaft with the intervening distance between them.

This coal company requests permission to be granted for a period of eight months' time in which to make this connection between the slope of its present No. 4 mine and the bottom of the shaft of its No. 12 mine. After a careful investigation of the conditions existing, I beg most respectfully to recommend that the time of eight months, as required by the aforesaid coal company, be granted to it. I would be much obliged by the return of this letter and blue print, with your instructions in regard to the same.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

SOUTH MCALESTER, IND. T., *May 20, 1904.*

DEAR SIR: I beg respectfully to acknowledge a receipt of yours of May 17 in regard to the period of time needed by you in order to complete the connection of escapeway between your slope No. 4 and shaft No. 12, near Coalgate, Ind. T.

I have forwarded this communication to the Secretary of the Interior, also the blue print, and have recommended to him that the time asked for by you be granted, and I have no doubt on such recommendation he will instruct me to grant the time requested. On receipt of his reply I will communicate the same to you.

It will be necessasy, however, for you to send me a linen tracing of the blueprint which you have sent, as this matter has to be made a matter of record for my annual report, and in order to make a copy thereof it will be necessary to have a linen tracing. Kindly send me this tracing at your earliest convenience, and oblige,

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. S. J. TONKIN,
Superintendent Southwestern Development Company,
Parsons, Kans.

SOUTHWESTERN DEVELOPMENT COMPANY,
Parsons, Kans., May 21, 1904.

DEAR SIR: I have your valued favor of the 20th, asking me to send you a tracing of the proposed workings of our new mine No. 12 at Coalgate, and mail the same to you as per your request, under separate cover. I would say, for your information, that the dip of the slope of the proposed new workings is much more to the due east than is shown on this tracing. Hoping that this will serve your purpose, I remain,

Yours, truly,

S. J. TONKIN.

Mr. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

DEPARTMENT OF THE INTERIOR,
Washington, May 25, 1904.

SIR: In compliance with the recommendation contained in your letter of the 20th instant, the application of the Southwestern Development Company is hereby granted to make, within the period of eight months from this date, a connection between the slope of its present No. 4 mine to the bottom of the shaft of its No. 12 mine, located near the town of Coalgate, Ind. T.

It is requested that you will advise the Department whether, upon the completion of the connection in question, the above-named company have fully complied with the requirements of section 5 of the act of Congress approved March 3, 1891, for the protection of the lives of miners in the Territories, requiring that two shafts, slopes, or other outlets shall be provided for each mine.

The communication and sketch plan accompanying your letter are herewith returned as requested.

Very respectfully,

THOS. RYAN, *Acting Secretary.*

Mr. WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory, South McAlester.

JUNE 4, 1904.

SIR: I beg respectfully to call your attention to the inclosed correspondence, to wit, letter from the Southwestern Development Company, dated May 20, 1904; my letter in reply thereto, dated May 21, 1904; letter from the Southwestern Development Company, dated May 28, 1904.

My investigations confirm the conditions as stated in the correspondence, and I find that in order to make the second escapement required for No. 4 mine, operated by the Southwestern Development Company near Coalgate, would require as much time as has been granted for making a communication between No. 4 and No. 12 mines. This connection was therefore applied for and granted, as per your letter of the 25th ultimo, and would serve the double purpose of a connection for No. 12 mine and for No. 4 mine, for which latter purpose application is now made.

Therefore, to compel the coal company to make a second opening for No. 4 mine would be no advantage in time for the protection of the men and would entail very heavy additional expense on the coal company.

I therefore respectfully recommend that the time granted for a second opening for mine No. 4, operated by the Southwestern Development Company at Coalgate, Ind. T., be commensurate with the time granted for the connection to be made between mine No. 4 and mine No. 12, as per your letter of May 25, 1904, to wit, eight months from May 25, 1904.

Please return attached correspondence with your instructions.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

THE SECRETARY OF THE INTERIOR,
Washington, D. C.

DEPARTMENT OF THE INTERIOR,
Washington, June 9, 1904.

SIR: In compliance with the recommendation contained in your letter of the 4th instant the application of the Southwestern Development Company is hereby granted, to make within the period of eight months from May 25, 1904, a second opening or escapement from mine No. 4, operated by that company near the town of Coalgate, Ind. T.

It is requested that you advise the Department whether, on completion of the connections required by this and Department letter of the 25th ultimo, the above-named company will have fully complied with the requirements of section 5 of the act of Congress approved March 3, 1891, for the protection of the lives of the miners in the Territories, requiring that two shafts, or slopes, or other outlets should be provided for each mine.

Very respectfully,

M. W. MILLER,
Acting Secretary.

Mr. WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory,
South McAlester, Ind. T.

JUNE 18, 1904.

DEAR SIR: I beg to notify you that I have received instructions from the Secretary of the Interior to grant to the Southwestern Development Company its application to make, within a period of eight months, from May 25, 1904, a second opening or escapement of mine No. 4, said opening to connect with No. 12 mine, operated by your company near the town of Colgate, Ind. T.

The Department further instructs me to advise the Department of the completion of this escapement, and to report whether, at the time the escapeway is made, you will have fully complied with the requirements of section 5 of the act of Congress approved March 3, 1891, for the protection of the lives of miners in the Territories, requiring that two shafts or slopes, or other outlets, should be provided for such mine. I therefore specially request that you will take note of these instructions and see that without fail I am fully notified at the time you have completed this escapeway, and that the same complies with requirements of the act quoted above.

Yours, truly,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. S. J. TONKIN,
Superintendent Southwestern Development Company, Parsons, Kans.

The following correspondence relates to conditions in mine No. 1, operated by Whitehead Coal and Mining Company, near Henryetta, Ind. T.:

WHITEHEAD COAL COMPANY,
Henryetta, Ind. T., June 12, 1904.

DEAR SIR: I am requested to inform you of the condition of mine No. 1, Whitehead Coal Company. In regard to condition of said mine, there are too many men for the amount of air—in fact, there is no air in the mine—and we would like for you to come at once and make some arrangement in regard to same. The mine foreman is trying to make changes in the air, but to no success. The airshaft is sunk but not connected with the mine shaft, and he is putting men on as soon as there is a place ready. Please come at once and see for yourself.

Yours, very respectfully,

JAMES LEWIS,
JESS NEWMAN,
Mine Committee.

Mr. W. P. K. CAMERON, *South McAlester, Ind. T.*

JUNE 15, 1904.

GENTLEMEN: I beg respectfully to acknowledge receipt of yours of June 12, 1904, and in answer thereto will say that I will make a visit to Henryetta just as soon as my duties will permit me, which will probably be in the early part of the coming week, when the matter contained in your letter will receive my attention.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Messrs. JAMES LEWIS and JESS NEWMAN,
Henryetta, Ind. T.

JUNE 15, 1904.

DEAR SIR: For your information, I beg to inclose you herewith a copy of a letter which I have just received from a mine committee at Henryetta, Ind. T. I beg to inclose you also a copy of my reply thereto.

The above for such action as you may deem proper to take. I fully expect to be in Henryetta on either Monday or Tuesday next, and should you find it convenient to be there at that time I should be pleased to meet you.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

Mr. ROBERT GRAY,
General Superintendent J. R. Crowe Coal Company
and Whitehead Coal Company, Kansas City, Mo.

THE J. R. CROWE COAL AND MINING COMPANY,
Weir City, Kans., June 17, 1904.

DEAR SIR: I have your letter of the 16th, with correspondence inclosed, in reference to the condition of the air in the Whitehead Coal and Mining Company's mine No. 1. I will leave to-night for Henryetta and see that these conditions are remedied. When I was there last week I instructed the mine foreman to rush the air course going toward the airshaft so we could get connection.

I inclose you a letter I received to-day from the United Iron Works Company stating that the fan ordered for this mine is ready for shipment. When same arrives we will have it installed at once.

Yours, truly,

R. A. GRAY.

WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

JUNE 20, 1904.

DEAR SIR: I beg to acknowledge receipt of yours of the 17th, inclosing a letter from the United Iron Works Company at Pittsburg, Kans., in regard to the fan for Henryetta. I hope to be able to see you at Henryetta when I make my visit there.

I beg to return herewith the letter from the United Iron Works Company.

Yours, truly,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. R. A. GRAY,
Care of J. R. Crowe Coal and Mining Company, Weir City, Kans.

JUNE 24, 1904.

Mr. A. R. GRAY,
General Superintendent J. R. Crowe Coal Company, Kansas City, Mo.:

By special request of the miners of No. 1 shaft operated by the Whitehead Coal Company near Henryetta, I made a general inspection of said mine, but more especially to the amount of air being furnished to the miners. At the time I visited the mine I found 2,080 cubic feet was being circulated through the workings, this amount being fairly well conducted to the working faces.

This is a new mine and has not made connection with the escape shaft, which is sunk and will be reached in a short time, there being less than 100 feet to be driven. After this connection is made, this mine will be in a first-class condition and will fill all requirements of the mining act. Until this connection is made, I would recommend that not over 20 men be employed at any one time.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

STATEMENT OF THE ACCIDENTS OCCURRING IN AND AROUND THE COAL MINES IN THE INDIAN TERRITORY AND INVESTIGATED BY THE MINE INSPECTOR DURING THE YEAR ENDED JUNE 30, 1904.

I am again pleased to be able to report a further diminution in the number of accidents as compared with previous years. While the production of coal and area of production steadily increases, the number of accidents has constantly decreased. We had for the year ended June 30, 1902, 149 accidents, 60 of which were fatal. For the year ended June 30, 1903, there were 116 accidents, 33 of which proved fatal; while for the present year we have had 99 accidents, 30 of which were fatal. The principal decrease for the current year was from gas explosions, of which there were 53 for the year ended June 30, 1903, and only 9 for the current year. It is to be hoped that the serious lessons taught by the disasters of previous years have been thoroughly learned, and that the precautions I so frequently urge, and which are

essential to any degree of safety from the carburetted hydrogen which continually exudes from the newly worked coal faces in the majority of mines in this Territory, may be strictly maintained and enforced.

Had there been a corresponding reduction in accidents from other causes than gas, there would have been a still more notable reduction in the total accidents for the year, but in the two causes of falling roof and pit car accidents there is an increase. In searching for the cause of the increase in accidents from falling roof, I have made up an extra table showing explicitly the origin of such accidents, and by looking at this table on one of the following pages, it will be readily seen that only a very few of the number are or could be classed as unavoidable accidents, and from the character of the roof and steep pitch of the coal in this Territory it is not probable that the proportionate number of accidents of this class can ever be materially reduced by the utmost care on the part of either employer or employee.

In regard to the far larger number of accidents under this head and which are preventable by the use of proper care on the part of the miner, it may be said that years of experience and frequent escapes from danger and minor injuries seem to have but little effect or warning on the old and practiced miner, who is at least as often found on the list of the killed or injured as the man of less experience. Familiarity with this danger seems to breed contempt or indifference, and many of the most expert coal miners will linger under a dangerous piece of rock, or fail to set a needed prop, or to take down the faulty rock while he hurries to complete the filling of a half-loaded pit car, that he may forward the work of the day at the risk of life and limb.

The second in number of causes of accident is found to be from pit cars, and this is largely to be accounted for by the steepness of the pitch of the vein of coal. While the cages in all hoisting shafts are provided with safety catches, the pit cars ascending and descending on steep slopes are not always provided with drags, and sometimes, when furnished, are thrown aside by the men as encumbrances, and runaway cars are not infrequent. Sometimes a defectively welded link, the defect being latent and not to be detected by inspection, will break, precipitating the trip of cars down the steep slope, with consequent damage to life, limb, and property.

A large proportion of injuries from pit cars, however, arises from unauthorized persons riding and jumping on and off pit cars when in motion, and while the mines generally have rules prohibiting such actions, these rules are frequently violated and are very difficult of enforcement. Other accidents (with one exception, of which further notice will be taken) are of the ordinary character, and such as will in all probability continue to occur as long as men have to descend into the earth under the methods generally in use all over the world in the occupation of mining.

The exceptional case noted above is one which has given me the utmost concern during a long experience in the Territory, and is one which affects a large proportion of all the mines in the world. I allude to the firing of shots and the use of blasting powder in coal mines. A long step in the right direction to reduce the hazard from the above causes was taken in the passage of the act of Congress approved July 1, 1902, providing for shot firers in each mine where twenty or more miners are at work, but the conditions still remain

very unsatisfactory, and I deem it my duty to call special attention to the necessity of remedying this condition.

That these conditions can be remedied is impressed on me by the very significant fact that for months or longer, when this Territory has suffered from an extensive and disastrous explosion such as we have unfortunately had, and while the extent of the calamity is resting on the minds of employer and employee, no accident from this cause occurs. Shots are either properly prepared or, if improperly prepared, are not fired by the shot firer, and all the elements of care and caution are strictly followed. As time elapses, the unfortunate disaster is forgotten and less caution is observed here and there, until all are again wakened to the danger through the costly and painful results of another explosion.

On one of the following pages will be found a special statement showing the accidents in which the firing of shots and use of powder cut some figure. It is necessary to explain here that the causes of accidents are often complex and so often interwoven together as to make it difficult to arbitrarily classify the accident under one cause. An instance of this may be cited in one accident whereby two men were killed and three men seriously injured and which accident is classified under premature blast, the fact being that several other causes concurred with the cause given to produce the results. The first cause was the ignition of a small feeder of gas in the drill hole, which gas lit the fuse and in turn the fuse lit the large charge of powder, which had been placed in drill hole with only one round of tamping on the same, and caused the premature blast. The hole not being tamped, a large body of flame rushed out of the drill hole, causing a violent explosion, in which no doubt gas in small quantities, coal dust, and blasting powder in kegs, which was in the course of the explosion, played a considerable part.

There have been many attempts to reduce the danger from the causes above given. Rules have been promulgated by the operators, in some instances printed, in some instances verbal, and in some instances there has been a general reliance on the duty of shot firers and miners in this regard. Under the very best of systems the rules are very difficult of enforcement. The shot firer is alone in the mine; he is tempted to hasten through his work; he will take the chances that some experienced miner has prepared his shot properly, without closely examining it, as it is his duty to do; he will fire a number of shots with too short intervals between them, and in a number of other ways will make the rules (if any there are) nugatory and destroy their efficiency.

Further, under the existing relations between the coal operator and the United Mine Workers of America, to make a rule really effective it must be indorsed and have the support of both organizations. I therefore determined to make an effort to get these two parties together in a set of rules which would, so far as was practicable, obviate or minimize the dangers in question, and in accordance therewith, after some consultation with the officers of the United Mine Workers of America, the following correspondence was had:

SOUTH MCALESTER, IND. T., *March 7, 1904.*

DEAR SIR: I desire to call the attention of the members of the Coal Operators' Association to the fact that during the past three months there have been a large number of explosions in the Indian Territory, and that in nearly every case in which I have

made investigation of such explosions the explosion has been augmented by a considerable quantity of powder which has been found to have been exploded, and in one case it seems entirely probable, to say the least, that there were 25 powder kegs in all of which the powder had been exploded. Some of these kegs, so far as I could ascertain, had been full of powder and some of them partly full, and I respectfully beg to suggest that it would be a wise thing on the part of the coal operators to limit the amount of powder which any miner may take into the mine in one day to 5 pounds; that is to say, no miner should be allowed to take any more than that quantity each day, and that all powder should be kept in the mine in tight, locked boxes, at a considerable distance from the working face, and at such a spot as should be designated by the mine foreman or pit boss.

I also desire to mention that in some of the cases in which I have had occasion to investigate explosions I have found that the mines have not been sprinkled, nor has the dust been removed as required by law.

I should be pleased at any time to meet the coal operators and talk this matter over with them. I feel sure that you will understand that these suggestions are made for the protection of the property and to save disastrous consequences to the operators as well as to the men employed in the mines.

I expect to be in South McAlester to-morrow (Tuesday) afternoon, and would be glad to meet the operators and discuss this matter if they so desire.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

Mr. T. W. CLELLAND,
Secretary Coal Operators' Association, South McAlester, Ind. T.

SOUTH MCALESTER, IND. T., *March 11, 1904.*

SIR: With reference to your important and timely communication of the 8th instant I have the honor to request you to be present at out next regular meeting, on April 12 next, to discuss and decide on suggestions you offered.

Yours, truly,

T. W. CLELLAND, *Secretary.*

Hon. WILLIAM CAMERON,
United States Mine Inspector, South McAlester, Ind. T.

In conformity with the request of Mr. Clelland I attended the meeting of the Coal Operators' Association and spoke at considerable length in regard to the necessity of some action, and advised the appointment of a committee for the purpose of formulating rules and to take other steps to amend the existing conditions. This committee was accordingly appointed. I then appeared before the committee and read the following paper:

To the coal operators and employees of the Indian Territory coal mines.

GENTLEMEN: The increased number of explosions initiated by blown-out shots during the past winter has been such that in my opinion calls for some action, not only on the part of the operators, but I believe that it is necessary that concerted action should be taken by both operators and miners for the purpose of devising means whereby the continual danger existing to both life, limbs, and property may be reduced to a minimum. It seems to me that if a set of laws or rules were formulated by both interests the danger would be reduced very much. I may say that I have given considerable thought to this matter, and that I can arrive at no other conclusion than that no permanent or desirable results can be attained by the operators themselves. I believe that in order that the best results may be obtained, and that (as near as possible) adequate protection to life and property be provided, operators and miners must realize that their interests in this matter are identical, and that they must labor together to make any set of rules (if such are formulated) a success. If such cooperation is entered into and carried out with the view to obtaining the greatest factor of safety to life and property, I do not fear but that good will result to all.

If it will not be taking up too much valuable time, and with permission, I would be pleased to submit a few facts relating to the explosions that occurred last winter.

From November 20, 1903, to February 12, 1904, we had ten explosions, one caused by a miner driving a pick into a keg of powder, and nine by blown out or windy shots. Careful investigation shows that in at least four of the nine explosions more or less powder was ignited, and that the force of said explosions was materially augmented by the ignition of this powder, and in two of the four it is very doubtful to me if powder did not exert more force than the blown-out shot did. These ten explosions caused the death of ten men and injuries of a more or less serious character to twelve. I may say that in the four accidents where powder had been ignited that the result was fatal in each case—six deaths resulted; and that in the five explosions where no powder was ignited the result was three fatal and twelve nonfatal, besides the one fatal from a keg of powder being opened by a pick.

Now, it is evident to me that the operators and miners of the Indian Territory have three dangerous elements to contend with in shot firing, viz, coal dust, powder, and badly prepared shots.

First, let us look at the coal-dust question. The law provided, wherever it is practicable to do so, that the entries, etc., shall be kept well dampened with water to cause the coal dust to settle, and that when water is not obtainable at reasonable cost for this purpose accumulations of dust shall be taken out of the mine, and shall not be deposited in any way places in the mine where it would be again disturbed by the ventilating current. It will be seen at a glance that but little comfort can be obtained from the law as it now stands.

It is not my purpose to go into the coal-dust question very deeply, but yet it is of such importance that I can not pass it without referring briefly to it. It has been held, and is now held by many, that a system of sprinkling or spraying would eliminate the danger of coal-dust explosions from blown out or windy shots; also that the loading up and sending the dust out of the mine would accomplish safety.

I will not here burden your minds with any opinion of my own, but will confine myself to a few extracts from the most advanced minds on this subject (quoting from Mines and Minerals).

A portion of the evidence given before the English Coal Supplies Commission has been published, and although further evidence is being taken, the facts which have already come to light are quite sufficent to substantiate every word of the argument already set forth, and to show that watering or spraying mines is both a fallacious and an impossible safeguard.

Professor Dixon says that 5 per cent of water (which can only be in the form of steam) must be present in the air before a mixture of air and gas can attain its highest explosive effects, and therefore it is now possible to realize clearly that the air of a mine can not be so saturated with water as to minimize the effects of an explosion in a coal mine. Supposing that it were possible to attain such a point of saturation it would be physically impossible for any miner to work in the mine, and consequently some other means must be found to deal with the coal dust.

The difficulties which naturally surround this subject were vividly illustrated by Mr. R. Martin, who stated that in the in the great seam of the Niddrie and Benhar colleries in Scotland the natural wetness of the mine charged the air with water vapor, and where the air had a temperature of 80 degrees it was carrying 10½ grains of water per cubic foot, and some of the men could not stand the test, and those who could had to become acclimatized to it, and yet he described the mines as *dry* and *dusty*.

A number of questions were asked by the coal supplies commission (England) which bear directly on this subject. Replies to these questions have been given by engineers connected with the deepest coal mines in England, and also by Government inspectors of mines from the districts where these mines are situated. All these replies, without exception, completely upset the watering theory. No doubt a divergence of opinion still exists, but the consideration of what is best for the miner's health will undoubtedly overbear that of the very problematical point of safety to be gained by watering. A change now appears to be imminent, or has already come over the minds of these officials, for we find Mr. Hall, who has undoubtedly gained a world-wide reputation in connection with explosives and coal-dust experiments, stating that water spraying is not a practicable method of reducing the temperature, and that the best way of doing so is to increase the velocity of the air, and keep it dry. Mr. Hall's insistence on the temperature of dry air brings us back again to the proper treatment of coal dust in a dry mine, because a deep mine is for natural reasons also a hot mine, and as a deep and hot mine must be ventilated with as dry air as possible, it is quite clear that it must per se be a dry and dusty mine.

Without referring further to the different authorities, I think it has been clearly shown that we still have this dangerous element (coal dust), to contend with, and I fear that it is an unsolved and difficult problem. It is patent to all that every day is bringing us closer to the time when coal operations in this Territory must be conducted by means of deep shafts, and I need not remind this body that the dangers of explosions will increase with the depth at which the coal vein is mined.

I would now beg to refer to the powder question. From statements already made I think it will be admitted that where powder is ignited by the flame of an explosion created by a blown out or windy shot, that it intensifies the force seriously, and I am inclined to believe that lives have been lost through this agency that would otherwise have been saved. It does seem to me that this element of danger can be overcome by concerted action between the operators and miners coming together and drawing a set of rules providing for the amount of powder to be taken or sent into the mine by one man in one day, also providing for a safe place for powder—stations in different sections of the mine—and that it should be the designated duty of some person or persons to see that such rules were observed. I can not refrain here from emphasizing the danger of unnecessary quantities of powder being kept in mines, and I think I have demonstrated that this cause alone has resulted in the death of miners whose lives could otherwise have been saved.

I will now briefly refer to the shot-firing question. Under the present mode of mining coal in the Indian Territory, by the use of powder, and with but little or no undercutting, and no general rule as to size or shape of shot, the condition of the coal, roof, and bottom, the location of the hole with regard to remaining parts of previously fired holes, cracks, and fissures made by them, the location of the hole in regard to adjoining working places, and the amount of powder to be used, that there will be little or no difficulty in getting together and framing a set of rules that (while not eliminating the danger) will minimize it very materially if properly carried out by both parties.

Generally speaking, therefore, the office of a committee as suggested would be to formulate a set of rules, and provide for their enforcement, that would minimize as far as is practically possible, the danger arising from the causes hereinbefore named, taking into consideration the fact now conceded by the most expert that spraying or watering the mines is either ineffective, or else is counterbalanced by the effect on the health of the miners resulting from an attempt to moisten or dampen the mine to a sufficient degree to be any efficient factor in preventing or checking explosions, and if this is also conceded by a committee appointed as suggested, then it leaves but two subjects to be seriously considered, viz: The presence of unnecessary and dangerous quantities of powder in the mine, and the preliminary mining or cutting of the coal, and placing and preparation of the shots (including the firing thereof). The proper tamping of the holes is also an important factor and should have the earnest consideration of the committee as to the manner of tamping and the kind of tamping to be used.

It may be interjected here that an act of Congress prescribes that the mines must be watered or the coal dust removed in a certain way, and that eliminates the necessity of making any rules in this regard, as the law is obligatory, and whether the result is efficient is not, it must be obeyed.

In regard to the powder proposition, as heretofore said, it would seem a simple proposition on which a committee of practical men could readily formulate rules which, while not working any inconvenience or hardship on either party, would achieve the desired result.

As to the mining, preparation, or firing of shots it would be premature for me to suggest any definite rules, this being the office of the suggested committee, who would doubtless consider and be ready to receive suggestions as to the conditions in this regard herein mentioned, and others that will readily occur to all practical miners.

In bringing this subject to your notice I am actuated by a simple motive, and one that should appeal equally to employer and employee, viz, the saving of life, limb, and property. Should the adoption of proper measures result in the saving of life and limb in any degree, I shall feel abundantly rewarded for any effort I have made or can make in this regard, and a committee or body of men who can increase the protection of those who work in this dangerous coal field should, and doubtless will, earn the gratitude, not only of all directly or indirectly connected with coal mines, but also of all good citizens of this Territory.

All of which is respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

After presentation and reading of the paper it was agreed that it was necessary to cooperate in the establishment of proper rules, and the matter was referred to a future date for attention. The matter has not been again taken up and remains in statu quo. I regret very much that a subject of so much importance should be treated with such indifference, and I despair of obtaining permanent results unless both parties can be aroused from this indifference, or laws can be passed to amend the conditions. As to whether Congress should be asked, under the conditions existing here, to enact such laws, is a matter which I respectfully submit for your consideration.

Following will be found the tables showing details and causes of accidents, with other matter usually so classified:

Statement of accidents occurring in mines in the Indian Territory for the year ended Jun 30, 1904, by causes.

Fall of roof	32	Cage	1
Pit car	26	Fall from tipple	1
Windy shot	11	Runaway team	1
Gas explosion	9	Drowning	1
Windy shot caused by premature blast	6	Rock falling down shaft	1
Powder explosion	3	Caught between rope and wheel	1
Fall of coal	3	Suffocation	1
Caught by shot	2	Total	99

Statement of fatal accidents occurring in coal mines in the Indian Territory for the year ended June 30, 1904, by causes.

Fall of roof	8	Runaway team	1
Windy shot	7	Powder explosion	1
Pit car	4	Drowning	1
Gas explosion	2	Rock falling down shaft	1
Premature blast	2	Suffocation	1
Caught by shot	1		
Fall from tipple	1	Total	30

Statement of fatal accidents occurring in coal mines in the Indian Territory for the year ended June 30, 1904, by companies.

Coalgate Company, The	1	Osage Coal and Mining Company	2
Great Western Coal and Coke Company	1	Rock Island Coal Company	3
Hailey-Ola Coal Company	2	Samples Coal and Mining Company	2
Indian Coal Company	1	Sans Bois Coal Company	4
McAlester Coal Mining Company	3	Southwestern Development Company	2
McAlester Coal and Mineral Company	2	Western Coal and Mining Company	2
Markley, George J	2	Total	30
Milby & Dow Coal and Mining Company	3		

Statement of accidents occurring in the coal mines in the Indian Territory for the year ended June 30, 1904, by companies and mines.

	Mine No.	Injury.	Fatal	Total for mine.	Total for company.
Bolen-Darnall Coal Co	4	1	.....	1	2
Do	3	1	.....	1	
Coalgate Co	5	1	1	2	3
Do	3	1	.....	1	
Great Western Coal and Coke Co	4	1	.....	1	7
Do	3	1	.....	1	
Do	6	2	1	3	
Do	8	1	.....	1	
Do	2	1	.....	1	
Hailey-Ola Coal Co	1	1	2	3	4
Hailey-Ola Coal Co. (Lutie)	1½	1	.....	1	
Indian Coal Co	1	.....	1	1	1
McAlester Coal Mining Co	2	.....	3	3	4
Do	12	1	.....	1	
McAlester Coal and Mineral Co	7	.....	1	1	3
Do	6	1	1	2	
Markley, George J	1	3	2	5	5
Mexican Gulf Coal and Transportation Co	2	2	.....	2	2
Milby & Dow Coal and Mining Co	1	3	1	4	6
Do	2	.....	2	2	
Osage Coal and Mining Co	11	5	.....	5	9
Do	5	1	.....	1	
Osage Coal and Mining Co. (strip pit)	.....	.....	1	1	
Osage Coal and Mining Co	8	1	1	2	2
Ozark Coal and Railway Co	1	2	.....	2	2
Poteau Coal and Mercantile Co	5	2	.....	2	2
Rock Island Coal Co	18	2	.....	2	16
Do	3	6	1	7	
Do	8	3	.....	3	
Do	5	2	1	3	
Rock Island Coal Co (7 air shafts)	7	.....	1	1	8
Samples Coal and Mining Co	2	4	.....	4	
Do	1	2	2	4	
Sans Bois Coal Co	1	2	1	3	6
Do	2	.....	2	2	
Do	3	.....	1	1	
Southwestern Development Co	10	4	1	5	14
Do	4	3	1	4	
Do	9	4	.....	4	
Southwestern Development Co. (Sunshine)	.....	1	.....	1	1
Turkey Creek Coal Co	4	1	.....	1	1
Western Coal and Mining Co	6	.....	1	1	4
Do	5	2	1	3	
Total	.....	69	30	99	99

Statement of gas explosions occurring in coal mines in the Indian Territory for the year ended June 30, 1904, by companies.

	Nonfatal.	Fatal.
Great Western Coal and Coke Co., The	1	.....
Hailey-Ola Coal Co	.....	1
McAlester Coal Mining Co	1	.....
Osage Coal and Mining Co	3	.....
Rock Island Coal Co	1	.....
Southwestern Development Co	.....	1
Turkey Creek Coal Co	1	.....
Total	7	2

Statement of gas explosions occurring in the coal mines of the Indian Territory for the year ended June 30, 1904, showing cause of same.

Cause.	Number.	Cause.	Number.
Failure by gas man to use safety lamp	3	Disturbance of ventilation by storm	1
By shot firer, firing in the known presence of gas	2	Going in to brush gas carrying naked lamp with him	1
Going into vacant or abandoned places	1		
Crossing dead line	1	Total	9

Statement of accidents occurring by fall of roof in coal mines in the Indian Territory during the year ended June 30, 1904, by companies.

	Nonfatal.	Fatal.	Total.
Bolen-Darnall Coal Co	1	.....	1
Coalgate Co., The	1	1	2
Great Western Coal and Coke Co	2	.....	2
Hailey-Ola Coal Co	1	.....	1
McAlester Coal and Mineral Co	1	1	2
Mexican Gulf Coal and Transportation Co	2	.....	2
Milby & Dow Coal and Mining Co	.....	1	1
Osage Coal and Mining Co	4	1	5
Ozark Coal and Railway Co	1	.....	1
Rock Island Coal Co	5	2	7
Samples Coal and Mining Co	4	.....	4
Southwestern Development Co	1	1	2
Western Coal and Mining Co	.....	2	2
Total	23	9	32

Statement of accidents by fall of roof in coal mines in the Indian Territory during the year ended June 30, 1904, with causes.

Cause.	Number.	Cause.	Number.
Failure to secure roof	13	Standing under rock after being warned	2
Unforeseen and unavoidable accident	7	Shot knocking down support of roof	1
Injured while attempting to secure roof	5	Projecting timbers on pit car knocked out supports	1
Props insufficiently placed	11		
Support of roof removed by mining coal	1	Total	32
Failure to secure roof after being warned	1		

Statement of men injured in coal mines in the Indian Territory from windy or other shots and from explosion of powder or coal dust.

Cause.	Nonfatal.	Fatal.	Total.
Caught by flying shots	.....	1	1
Gas explosion, originated by shot	1	2	3
Shot blew through pillar	.....	1	1
Smoke explosion, lit too many shots at one time	2	.....	2
Windy shot	2	1	3
Well prepared but improperly tamped and prematurely fired shot	3	2	5
Simultaneous firing of a number of shots and ignition of several kegs of powder	.....	2	2
Windy shot blowing man into sump and drowning him	.....	1	1
Windy shot and powder	.....	1	1
Total	8	11	19

SOUTH MCALESTER, IND. T., *July 31, 1903.*

SIRS: I have the honor to report for the month of July, 1903, 4 accidents in coal mines in the Indian Territory, 2 of which proved fatal. There were investigated for the corresponding month of July, 1902, 13 accidents, 3 of which proved fatal.

I give below details of the causes of the accidents for July, 1903. I also inclose detailed report and original accident report.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Southwestern Development Co	.....	1	1
Ozark Coal and Railway Co	1	.....	1
Samples Coal and Mining Co	1	.....	1
McAlester Coal Mining Co	.....	1	1
Total	2	2	4

Statement of accidents by causes.

Cause.	Nonfatal.	Fatal.
Gas explosion	.....	1
Pit car	1	.....
Fall of slate	1	.....
Caught by shot	.....	1

Statement of accidents occurring in coal mines in the Indian Territory and investigated by the United States mine inspector during the month of July, 1903.

No. 1. Charles Vanona; married; age, 46; nativity, Italian; occupation, miner; was injured on the 30th day of June, 1903, at about 10 o'clock a. m., in entry No. 2, room No. 13, in mine No. 10, operated by the Southwestern Development Company, at Coalgate, Ind. T., by a gas explosion, resulting in burns about the hands and face, also little on the back, from which he died on the 3d day of July, 1903. Had been in the employ of the company about ten months. Dr. L. A. Connor, attending physician. FATAL.

Mr. Vanona went into a vacant, or a room that was not worked for about two months. He went into this room on his own accord and was burned in it. This room has been examined every morning since and has been found free from gas each morning The supposition is that this man was burned with powder.

My investigation shows that Vanona had gone into a room that had not been worked for about two months, where he lighted a body of gas that had accumulated at or near the face of said room (No. 13). This room was driven up 45 feet from entry. No break through had been made. A fall of roof had taken place at the face, which extended about 15 feet down the room. This fall also formed a pocket in the roof, where gas would accumulate if any was generated. The gas man

states that he examined room No. 13 on the morning of the 30th up to the tail of fall (15 feet from face of room) and found no gas up to that point (30 feet from entry). The rules of the company, which are posted so that the workmen can read them, prohibit workmen from entering old or abandoned workings or rooms not being in operation.

I am of the opinion that Vanona erred in entering this room for any purpose, and was burned through his error.

I am also of the opinion that the gas man should have examined room 13 close to the face of the coal, and also in the cavity formed in the roof by the fall of slate, which was the most dangerous place for gas to accumulate. Had the injured man and the gas man done their duty no accident would have occurred.

No. 2. Lawson Heaford; married; age, 29; nativity, American; occupation, mule driver; was injured on the 15th day of July, 1903, at about 11 o'clock a. m., in the first east entry of mine No. 1, operated by the Ozark Coal and Railway Company, at Panama, Ind. T., by having his hand caught between the car and the coal, resulting in the third finger of the right hand being torn off. Had been in the employ of the company about three months. Dr. E. L. Collins, attending physician.

He was driving mule with loaded car. The car left the track and his finger was caught between the car and the coal, necessitating the amputation of the third finger on the right hand at first joint.

My investigation shows that the injured man was engaged as a mule driver in the third east entry. He was hauling car out of lower entry, the car left the track and caught Heaford's third finger on the right hand between the rib of coal and the car, bruising it so severely that it had to be amputated at the first joint.

No. 3. W. D. Lesley; married; age, 45; nativity, American; occupation, coal miner; was injured on the 16th day of July, 1903, at about 11 o'clock a. m., in the first west entry of mine No. 2, operated by the Samples Coal and Mining Company, at McAlester, Ind. T., by a small fall of slate, resulting in a severe sprain and contusion of left shoulder and elbow, laceration of lower lip, and seventh rib of right side slightly fractured. Probable time of disability, about thirty days. Had been in the employ of the company about two days. Dr. R. J. Crabill, attending physician.

A small fall of slate. About one-half ton in small pieces.

My investigation shows that Lesley was engaged in mining coal in room No. 11; that he had ordered props to timber the roof at his room face. The props had been delivered, as four props were found at face of room (not in use). As no other person was in the room at the time of the accident it is not known just what Lesley was doing at the time the slate fell on him. This slate was within 3 feet of the room face, and it is supposed by those who examined the room after the accident that the injured man was in the act of putting up props to support the roof when the slate fell.

No. 4. Peter Wychel; single; nativity, Poland; occupation, shot firer; was injured on the 27th day of July, 1903, at about 4.30 p. m. in the eighth south entry, room 16, of No. 2 mine, operated by the McAlester Coal Mining Company, at Buck, Ind. T., by being killed instantly by flying coal from shot. Had been in the employ of this company irregularly for two or three years. Taken in charge by Undertaker Reid, at Krebs, Ind. T. FATAL.

My investigation shows that Peter Wychel was engaged with John Ansur, as shot firers in this mine. These two men proceeded in the mine about 4 p. m., the eighth west entry being the first entry for them to start their labors. They proceeded into room No. 16, from which room they examined the following rooms: 14, 15, 17, and 19; Wychel examining 14 and 15, while Ansur examined Nos. 17 and 19, respectively. The statement of Ansur is that he agreed to light the shots in rooms Nos. 16, 17, and 19 (five in all), while Wychel was to light the four shots in rooms Nos. 14 and 15. The two men proceeded to carry out this agreement. Ansur lighted the five shots beginning at room No. 16 and ending at room No. 19, after which he went down room No. 19 to the entry, where he remained until the nine shots had gone off. He then went out of entry to the mouth of room No. 16, where he expected to find Wychel; but not finding him there, he become alarmed, and shouted "Pete" several times, but got no answer. After the smoke of the shots cleared away, Ansur went up the rooms looking for his partner, and found him lying about the center of room No. 16, and about 15 feet from face, his head being badly bruised from flying coal from shots. How he got in this room is not known, but it is supposed that he must have become confused after lighting the shots, and instead of retiring down the room to entry, he had gone into the face of room No. 16, where he was caught and fatally injured by the flying coal from shots which had been lighted by his partner, John Ansur.

This accident was brought about by the deceased becoming confused, and going into room No. 16 where shots had been lighted, which was known to him.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

SOUTH MCALESTER, IND. T., *August 31, 1903.*

SIR: I have the honor to report for the month of August, 1903, six accidents in coal mines in the Indian Territory, none of which have proved fatal. I give below details of the causes of accidents and also a statement of accidents by companies, and attach hereto original accident reports and my investigations of the same.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector.

COMMISSIONER OF THE GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company.	Number of accidents nonfatal.
Rock Island Coal Co	5
Osage Coal and Mining Co	1
Total	6

Statement of accidents by cause.

Cause.	Number.
Explosion of gas	1
Pit, cars, etc	2
Fall of rock and slate	3
Total	6

For the corresponding month of August, 1902, there were two accidents, one of which was fatal.

Statement of accidents reported to me as occurring in coal mines in the Indian Territory and investigated by me during the month of August, 1903.

No. 5. M. M. Esmond; age, 25; nativity, American; occupation, bell boy. Was injured at the top of No. 18 slope, operated by the Rock Island Coal Company, at Hartshorne, Ind. T., July 20, 1903, at about — o'clock, by falling from trip of cars coming out of mine, on which he was riding, causing abrasions in right scapular, subscapular, and dorsal regions; also abrasions over stomach and inner surface of left thigh. The injured party is married and has a wife and two children living. He has been in the employ of the company about four months.

Left in charge of John Murphy. W. W. Sames, physician.

Was riding out of slope. When he came to the top he went to jump off the front of the trip; his foot slipped from the rope, causing him to fall in front of the car. The front car caught him and dragged him along, producing his injuries before the engineer could stop the trip.

My investigation shows that the injured man was engaged as a switchman; that he got onto the front of the last trip that was being hauled out of the slope that day, and that just as the trip came out of the mouth of the slope he attempted to jump off of the trip, and in so doing his foot slipped from the chain that connects the wire rope with the trip, and that he fell in front of the cars and was dragged some distance before the engineer could stop the engine. Esmond was injured so that he was unable to work for about three weeks.

No. 6. Isom Burnett; age, 18; nativity, American; occupation, rock car man; was injured at mine No. 3, at Gowen, Ind. T., August 6, 1903, at about 8.30 o'clock a. m., on rock dump, mine operated by Rock Island Coal Company at Gowen, Ind. T., by falling from car, causing abrasion between the scapula and on left crest of ilium; fracture of left humerus at junction of middle and upper third; probable duration of disability, six or eight weeks; party is single; has been in employ of company eight months; resides at Gowen; was left in charge of George Ward; Doctors Cleckler and Sames, physicians.

Cause of accident: Says he was dizzy and fell off in front of the rock car, which ran over him.

My investigation shows that Burnett was engaged in hauling out slate from the shaft by mule and dumping the same on the dirt pile. He was riding on a loaded car while the mule was pulling it out to be dumped, and he thought the mule was going too slow and jumped off the car and struck the mule with a leather belt. In attempting to get back on the car he slipped and fell in front of it and was injured as shown by the above report.

No. 7. John Gronow; age, 52; nativity, Welsh; occupation, timberman; was injured in lower "N" entry, opposite room 72 of mine No. 11,

operated by the Osage Coal and Mining Company, at Krebs, Ind. T., August 8, 1903, at about 10 o'clock a. m., by fall of rock, causing fracture of the lower third of the femur of right leg; back slightly bruised; married; two in family; resides at Krebs, Ind. T. Left in charge of wife; G. S. Turner, physician; been in employ of company fifteen years.

John Gronow, man injured, was employed in mine No. 11 as a timberman, and had been employed at this class of work for several years. On this date the pit boss sent him to lower "N" entry to put up some timbers. Gronow was cutting a place in the roof and side to set a prop to support the cross timber; while doing so he loosened the rock above him and a piece fell, striking him first on the head, which knocked him over and broke his right leg below thigh. Gronow has been timbering a long time, and was familiar with the nature of the roof where he was working, and his injury can only be attributed to his own carelessness in not being more cautious in cutting hole in roof at side of entry.

From my investigation it seems that John Gronow was engaged in timbering on the lower "N" entry; he had started to cut in the slate to make room for a crossbar and post, when a piece of loose slate fell on him, breaking his right leg. It was Gronow's duty to secure the slate before he started to work, either by taking the loose slate down or by putting up prop to support it until he had secured same by the cross timbers which he was preparing to put in.

No. 8. Thomas McKee (colored); age, 42 years; nativity, American; occupation, miner; was injured in room No. 6 of the ninth west entry of slope No. 20 of mine No. 3, operated by the Rock Island Coal Company, at Gowen, Ind. T., August 10, 1903, at about 1 o'clock p. m., by fall of slate, causing cut under and over right eye, small cuts on head, and right knee sprained. Married; six in family; employed by company three years; resides at Gowen; left in charge of George Ward; W. H. Cleckler, physician.

Cause of accident, fall of slate.

My investigation shows that Thomas McKee was injured by a fall of draw slate about 2½ inches thick, which fell on him while he was mining coal at the face of his room. His partner, Dennis Brown, who was in the room with him at the time the slate fell, says they had put up three props to support the loose slate before starting to work, but that the slate was so thin it broke off around the props and fell on McKee, injuring him slightly.

No. 9. E. Luqua; age, 35; nativity, Italian; occupation, miner; was injured in mine No. 3, at Gowen, Ind. T., in eighth east entry, room 28, operated by the Rock Island Coal Company, at Gowen, Ind. T., August 10, 1903, at about 10.30 a. m., by fall of rock, causing fracture of left fibula in lower third, sprain left ankle, and scalp wound above left ear. Probable length of disability, six weeks; married; three children; resides at Gowen; left in charge of George Ward; W. H. Cleckler, physician.

Cause of accident, fall of rock.

It seems that the injured man was not an experienced miner; that he had prepared a shot, which did not throw out the coal, and that he was engaged in mining the standing coal, when a piece of slate, with a piece of the coal that he had mined, suddenly fell on him, injuring him

as shown by the accident report. Luqua should have secured the coal before he mined it, by putting up sprags. He had a number of props in his room not in use.

No. 10. Mike Grego; age, 40; nativity, Policj; occupation, miner; was injured in main east entry of mine No. 8, operated by the Rock Island Coal Company, at Hartshorne, Ind. T., August 17, 1903, at about 7.30 a. m., by gas, causing burns about face and hands. Party is a widower, wife dead; has 4 children; been employed by company about ten years; left with family. Witnesses, Sigman Shamasko, Frank Clements, and Noah Ganner.

STATEMENT OF PIT BOSS.

Shortly after 7.30 the mine was just started. I was in entry hall when I felt a concussion, and knew at once that it must be gas. The fire boss had told me previous to coming down that the main east entries were dead lined. I went to the shaft bottom at once and found Grego was burned. I examined the entries and found all dead lined. Grego's lamp was found later on inside of dead line. I also found by inquiry that the fans were stopped the night previous.

JAMES CURRAN.

My investigation shows that Mike Grego was a miner in No. 8 shaft mine; that he was engaged in driving the main east entry, and that he was an experienced miner and had worked in entries which generated large quantities of gas for many years. Noah Ganner, gas man, examined the section of this mine which included the main east entries, which are three parallel entries, and found that they all had a little gas in them on the morning of the explosion. He accordingly dead lined the entries at three different points, so that it would be impossible for anyone to enter either of the three entries without passing over a dead line. Ganner also met Grego at the pit top and told him that there was a little gas in his place, and instructed him to wait until he came in and cleared the gas out, saying that he would follow in a few minutes. Notwithstanding these instructions Grego went down into the entry and no doubt passed over the dead line and ignited the gas, burning himself and endangering others. The accident was caused by Grego disobeying orders.

WILLIAM CAMERON.

SOUTH MCALESTER, IND. T., *September 30, 1903.*

SIRS: I have the honor to report that I have investigated during the month of September, 1903, 11 accidents in coal mines in the Indian Territory, 4 of which were fatal. There were investigated for the corresponding month, September, 1902, 12 accidents, 1 of which proved fatal. I give below details of accidents investigated during September, 1903, by companies and by causes, and I also beg to attach hereto the original accident reports and report of my investigations.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Ozark Coal and Railway Co	1	.....	1
The Great Western Coal and Coke Co	1	.....	1
Osage Coal and Mining Co	1	.....	1
Rock Island Coal Co	.....	1	1
McAlester Coal and Mineral Co	.....	1	1
Bolen-Darnall Coal Co	1	.....	1
Southwestern Development Co	1	1	2
Milby & Dow Coal and Mining Co	2	.....	2
Western Coal and Mining Co	.....	1	1
Total	7	4	11

Statement of accidents by causes:

Causes.	Nonfatal.	Fatal.	Total.
Fall of roof	4	4	8
Cage	1	.....	1
Premature blast	1	.....	1
Pit car	1	.....	1
Total	7	4	11

Statement of accidents reported to me as occuring in coal mines in the Indian Territory, and investigated by me, during the month of September, 1903.

No. 11, Frank Turner; age, 35; nativity, American; occupation, miner; was injured in first east entry, room No. 5, of mine No. 1, operated by the Ozark Coal and Railway Company, near Panama, Ind. T., August 10, 1903, at about 1 o'clock p. m., by a fall of rock, causing badly bruised muscles of back, and leg sprained. Injured man was single, had been in the employ of the company about six weeks, and was left in charge of Meadows's boarding house; doctor, E. L. Collins.

My investigation shows that Frank Turner (man injured) had just taken down some draw slate in his roadway near the place of his room, and that while in the act of gobbing the slate a large piece of slate fell on him from the main roof, which was about 10 feet long, 7 feet wide, and 4 to 7 inches thick. Both the injured man and his partner say that the room was well timbered and that they had no expectation of the slate falling. This may be classed among the unforeseen accidents.

No. 12, H. Colar; age, 55; nativity, American; occupation, miner; was injured in third east entry of mine No. 4, operated by the Great Western Coal and Coke Company, near Wilburton, Ind. T., August 17, 1903, at about 9 o'clock a. m., by a fall of rock, causing cut in scalp extending 3 inches above left ear and 1 inch below right eye; left knee twisted and sprained; also sprain of left shoulder. Injured man was married, had been in the employ of the company about two weeks, and was left in charge of his family; doctor, A. L. Anderson.

My investigation shows that H. Colar was severely injured by a fall of rock near the face of the third east air course. It seems that the gas man on his inspection tour in the morning, before the miners entered the mine, discovered a piece of rock near the face of the third east air course, and that out of an abundance of caution he deadlined

the entry. In addition to this he personally warned the injured man not to go into that place until he could go with him. It seems that he had also been notified by Joe Stevens, pit boss, of this dangerous piece of rock. After thus being warned, it seems that Colar and Hill went into the place with the fire boss, who showed them the dangerous rock and told them to take it down before going to work underneath it. It seems that Colar and Hill made an attempt to take it down, but found it much stronger than they expected. After working some time and failing to take the rock down they discontinued, and Colar said he would load a car of coal and get it down afterwards, and just while he was in the act of loading the car the rock fell on him, causing the aforesaid injuries.

No. 13. Alex. Ballard; age, 34; nativity, American; occupation, miner; was injured in entry No. "D," of mine No. 5, operated by the Osage Coal and Mining Company, near Krebs, Ind. T., August 18, 1903, at about 3 o'clock p. m., by a fall of rock, causing such injuries to the thumb of his left hand that it was necessary to amputate it. Injured man was married, had been in the employ of the company about twelve years, and was left in charge of his wife; doctor, G. S. Turner.

My investigation shows that Alexander Ballard (man injured) was a mule driver in the "D" entry of mine No. 5; that he was coming out of the "D" entry with a loaded trip of cars and walking alongside of trip with his hand on a car; that while he was in this position a small piece of rock fell from the roof, injuring his thumb so that it had to be amputated at the second joint. This may be considered as one of the unavoidable accidents which will occur.

No. 14. Pete Johnson; age, 45; nativity, American; occupation, miner; was injured September 4, 1903, in shaft No. 5, entry No. 10 west, and room No. 27, operated by the Rock Island Coal Company, near Alderson, Ind. T., by a fall of rock, causing instant death. Deceased man was single; had been in the employ of the company about four months; was buried. FATAL.

My investigation of this accident shows that Pete Johnson (man injured) went to his work at the usual time in the morning; that he was engaged in driving a 12-foot air course from the tenth to the ninth west entries. He had loaded one car of coal that morning; also the pit boss had visited him about 8 a. m. in the morning and had some conversation with him. All was apparently in good condition at that time. This was the last that was seen of him alive. He had been complaining of being unwell, and it was presumed by those working near him, also by the driver who hauled coal from him, that he had gone home. Nothing more was thought of him until about 7 o'clock p. m., when his boarding mistress sent word to the mine to the effect that he had not returned to the boarding house at the usual time of quitting work. Search was immediately made, and he was found at the face of his working place under a large piece of rock. From the position in which he was found it was believed that he had shoveled out his loose coal, and had just begun to make a cutting, when a large piece of rock fell on him, causing the aforesaid injury. This piece of rock broke off along the rib of his working place in the roadway; was about 12 feet long, 4 feet wide, with an average thickness of 12 inches on one side and tapering to a feather edge on the other. The rock was surrounded by a very smooth slip on one side and both ends. It is more than possible that by ordinary inspection this slip would not be discov-

ered. There was an abundance of props lying near his place which he could have used had he discovered the rock was dangerous.

No. 15. J. W. Brazelton; age, 41; nativity, American (colored); occupation, miner; was killed September 8, 1903, at about 9.15 o'clock a. m., in the fourth east entry of mine No. 7, operated by the McAlester Coal and Mineral Company, near Wilburton, Ind. T., by a fall of rock, causing instant death. Deceased man was married; had five children; had been in the employ of the company about eleven months. His remains were left in charge of H. C. Brazelton; doctor, A. Kilpatrick.

FATAL.

My investigation shows that the accident whereby J. W. Brazelton was fatally injured by a fall of rock on the 8th day of September occurred in the fourth east entry at his working face. The injured man was engaged in driving this entry. He had fired a butt shot on the lower side of entry, which did not throw the coal out. There was fully 20 feet of brushing that had not been shot down, and the statement of three different men show that this slate or brushing seemed to be solid and perfectly safe to work under. Brazelton went in below the brushing and started to mine the shot on low side of entry, between the roof and coal, and had only struck a few blows when, without any warning, a large piece of slate burst off the brushing, striking him on the head, breaking his neck, and causing instant death. It was the injured man's duty to have set props under the brushing before he started to work, and if he had done so the accident would not have occurred.

No. 16. John Cowan; age, 37; nativity, English; occupation, miner; was injured September 11, 1903, about 7.25 p. m., in the east long wall in mine No. 4, operated by the Bolan-Darnall Coal Company, near Craig, Ind. T., by a fall of rock, causing his left leg to be broken midway between the thigh and knee, and other bruises about the back and side. Injured man was single; had been in the employ of the company about fifteen days; was taken to All Saints Hospital, South McAlester, Ind. T.; doctors, Phillips and James.

My investigation of this accident shows that John Cowan was shooting and doing other work on the east long wall face. There was a bad piece of top caused by a roll in the coal about 125 feet up the face from the entry. Cowan had fired a shot in the coal and had examined the roof and found that it was unsafe to work under, and asked another man who was near him to come and assist him to put props up, so that he might work with safety. He was in the act of moving a piece of slate out of the way to give them room to set the prop, when, without warning or notice of any kind, a piece of the slate that he was preparing to secure fell on him, breaking his left leg as heretofore described.

No. 17. Peter Genoski; age, 26 years; nativity, Russian; occupation, miner; was injured in the shaft bottom of mine No. 4, operated by the Southwestern Development Company, near Coalgate, Ind. T., August 31, 1903, at about 9 o'clock a. m., by being caught in the cage, causing injuries on the head, chin, back, and sides; also right leg injured seriously. Injured man had been in the employ of the company about three years; was married, and was left in charge of his brother and sister; attending physician, Dr. W. Hume.

My investigation of this accident shows that Peter Genoski was working on the night shift in mine No. 4. It seems that the mule driver who was hauling material from the injured man and others had gone home, and as none of the men in the mine could drive or were inclined to drive, they decided also to go home. They came to the bottom of the shaft and signaled to the engineer, who came to the mouth of the shaft and asked them what they wanted. They answered that they wanted to get out. He told them to ring the proper signals and he would hoist them up, which Peter Genoski did. He rang three bells, the engineer signaling back all ready. Genoski then told the other men to get on the cage and he would signal the engineer all right, then get on himself, which he did. The engineer was rather slow in starting to hoist the cage, and Genoski thought probably he had not given the proper signal and stepped off to signal him again to hoist. Just after he had stepped off the cage the engineer began to raise it, and Genoski attempted to get on it when it was in motion, but failed and got caught between the side of the shaft and the cage and was injured as above described. Genoski should not have attempted to get on the cage while in motion. It was very fortunate that the engineer was hoisting very slowly and with great care, which enabled him to detect that something had caught the cage, and he immediately stopped the engine, which no doubt saved the man's life.

No. 18. Louis Gamero; age, 35 years; nativity, Italian; occupation, miner; was injured in mine No. 4, operated by the Southwestern Development Company, near Coalgate, Ind. T., September 17 at about 11 o'clock a. m., by a fall of slate, which caused instant death. The injured man had been in the employ of the company about three months, was married, and was left in charge of his friends; attending physician, Dr. L. A. Connor.

FATAL.

My investigation of this accident whereby Louis Gamero was killed by a fall of slate shows that the injured man was engaged as a miner in No. 2 dip room on the fifth south entry. The room was driven down about 75 feet, and he had just walked from face of room up to neck of room for the purpose of taking an empty car down to the face. Ed. Watkin, driver, states that he brought in two empty cars and stopped at the mouth of No. 2 room. He uncoupled the last car and said to Gamero, "Here is a car for you," and he turned around for the purpose of proceeding into the entry with the other car, when all at once, without any warning, a large piece of slate fell on the entry and partly in the mouth of No. 2 room. This piece of slate struck Gamero, doubling him up and crushing his head on the T-iron rail, and causing instant death. The tail or thin edge of slate fell on Watkin but did not injure him in any way. He was the only eyewitness to the accident. G. W. Easter, timberman, also stated that he had timbered in this mine, and had examined this entry the day previous to the accident and found the same all in good condition so far as he could discover by a careful examination. He states that there was one crossbar about the center of the rock that fell, and that there was no appearance of any break or crack or weakness of any description that he could discover in the roof where the rock fell from. From the statements of these two men it seems that this is one of that class of accidents that will occur when least expected.

No. 19. William L. Pringle; age, 28 years; nativity, negro; occupation, miner; was injured in No. 7 north room mine No. 1, operated by the Milby & Dow Coal Company, near Dow, Ind. T., September 8, 1903, at about 3.30 o'clock p. m., by a premature discharge of shot, causing burn about face and hands. Injured man was single; had been in the employ of the company about two years; attending physician, Dr. A. E. Carlock.

My investigation shows that the injured man had drilled a hole and had pushed in a cartridge filled with powder for the purpose of making a blast. After putting cartridge into the hole he went to get some material to tamp same, and return to mouth of drill hole and was just beginning to tamp when he ignited a feeder of gas coming from the drill hole. The gas in turn burned the paper cartridge and ignited the powder. Pringle should have set his lamp back from the drill hole before beginning to tamp same.

No. 20. Robert Lowery; age, 31; nativity, negro; occupation, mule driver; was injured in mine No. 1 in the fifth north entry, operated by the Milby & Dow Coal Company, near Dow, Ind. T., September 9, 1903, at about 2.30 o'clock p. m., by being caught between cars, causing dislocation of his ankle. Injured man was married; had been in the employ of the company about two years; was left in charge of his family; attending physician, Dr. A. E. Carlock.

My investigation shows that Robert Lowery was engaged as a mule driver, and was coming out of lower entry with a trip of loaded cars, and when he reached the junction of upper and lower entries another driver came down from upper entry with a loaded trip, and before Lowery could stop his trip the two loaded trips came together, bruising Lowery's ankle as before stated.

No. 21. Thomas Morgan; age, 58; nativity, Welsh; occupation, miner; was injured in No. 6 mine at 6½ slope, operated by the Western Coal and Mining Company, near Lehigh, Ind. T., September 19, 1903, at about 4.10 o'clock p. m., by a fall of rock, causing instant death. Injured man had been in the employ of the company about three years; was married; had a wife and four children. His body was left in charge of his family. Attending physicians, Doctors Bentley and Wallace. FATAL.

My investigation of this accident shows that Thomas Morgan was engaged as a miner in No. 6 mine, operated by the Western Coal and Mining Company, north of Lehigh, Ind. T. He was "driving" down 6½ slope, and the statement of the rope rider who hauled his coal from him, shows that Morgan and his partner's attention had been drawn to the unsafe condition of the roof. They both examined it, and they came to the conclusion that it would stand up for a time at least. They at that time instructed the rope rider to bring crossbars so they could secure it. The crossbars were delivered to them about 10 o'clock. Morgan's partner (Dick Traval) had some business which called him out of the mine at 12 o'clock. Before leaving his working place he told Morgan he should load up a little loose coal that was there, secure the roof with crossbars, and tamp a hole, leaving it ready for the shot firer. It seems that Morgan loaded what loose coal there was, and had just completed the tamping of the hole, and had straightened up and had taken one or two steps from the place, when suddenly a large piece of rock, which would weigh about 1 ton, fell on him, killing him instantly. It is evident from the statements made by Traval and others that Morgan knew this rock was loose and dangerous, and that he took chances and lost his life thereby. It was the duty of deceased to timber his own working place.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

SOUTH MCALESTER, IND. T., *October 31, 1903.*

GENTLEMEN: I have the honor to report that I have investigated, during the month of October, 1903, 8 accidents in coal mines in the Indian Territory, 3 of which were fatal. There were investigated for the corresponding month, October, 1902, 10 accidents, 1 of which proved fatal. I give below details of accidents investigated during October, 1903, by companies and by causes, and I also beg to attach hereto the original accident reports and report of my investigations.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
The Coalgate Co		1	1
Western Coal and Mining Co	1		1
Southwestern Development Co	1		1
McAlester Coal Mining Co	1		1
Rock Island Coal Co	2		2
Sans Bois Coal Co		1	1
Hailey-Ola Coal Co		1	1
Total	5	3	8

Statement of accidents by causes.

Cause.	Nonfatal.	Fatal.	Total.
Fall of rock	2	1	3
Gas	1	1	2
Pit car	2	1	3
Total	5	3	8

Statement of accidents reported to me as occurring in coal mines in the Indian Territory and investigated by me during the month of October, 1903.

No. 22. John Saunders; age, 26; nativity, American; occupation, driver; was injured in mine No. 5, at Coalgate, Ind. T., operated by the Coalgate Company, on the 6th day of October, 1903, at 3 p. m., by a fall of slate, causing internal bruises. Injured man was married, had been in the employ of the company about six months, and was left in charge of Dr. Waverly Hume. FATAL.

Investigation shows that Saunders was engaged in assisting the rope rider in taking the coal from the slope air course, and that on the morning of October 6 he had placed an empty car at the face of the east air course, running parallel with the slope, and was on his way up the air course, where he had to pass a place where a timberman and the pit boss were in the act of replacing some crossbars that had been knocked out by blasts fired in a room that was being turned off the air course. The pit boss and the timberman knew that the slate was loose and dangerous, and had requested Saunders not to stand under same, he having stopped to speak to them. He had made but one step after being warned when the slate fell on him. At first he was thought to be very slightly injured, but he only lived until the evening of October 10.

No. 23. Ben Taylor; age, 40; nativity, American; occupation, miner; was injured on October 13, 1903, at about 9 o'clock a. m., at No. 5½ crossing in mine No. 5, operated by the Western Coal and Mining Company, near Lehigh, Ind. T., by being caught between rope and rib of coal, causing both bones in right leg to be broken halfway between knee and ankle. Injured man was married, had been in the employ of the company about two years, and was left in charge of his wife.

Investigation shows that Taylor had just come down the ladder at No. 5½ shaft to go to work. The operations of the ropes, hauling coal, had commenced. Taylor was standing between the rope and rib, when the wheels of an empty car, which was being drawn by a driver, caught the rope, pulling it against the rib where Taylor was standing, breaking his leg as before stated.

Charles Fenoylio, roperider, states that he told Taylor to look out, as he was standing in a dangerous place, but that he paid no attention to what he said. A driver named Jackson also states that he saw Taylor standing between the rope and rib, and knew that it was dangerous, but did not think to tell him to get out of the way. Taylor had worked in the mine for some time and should have known that he was in a dangerous place. This is another case of taking chances.

No. 24. Angelo Pazzini; age, 29; nativity, Italian; occupation, miner; was injured on October 30, 1903, at about 1 o'clock a. m., in No. 5 east entry of mine No. 10, operated by the Southwestern Development Company, near Coalgate, Ind. T., by a fall of rock, causing his left leg to be broken below the knee and bruises on the back. Injured man was married, had been in the employ of the company about seven months, and was left in charge of his wife; doctor, Waverly Humes.

Investigation shows that Pazzini was working in the fifth east entry on the night shift; he and the roperiders were the only men in the mine at the time the accident occurred. Pazzini states that the roperider and himself examined the roof and they both considered it safe, and he proceeded with his work. At about 1 a. m. a piece of slate fell from the roof, striking him on the shoulders, sliding down his back and striking him on the leg, breaking it between the knee and ankle. The accident occurred while he was loading a car at the face of entry.

No. 25. Samuel Powell; age, 44; nativity, English; occupation, miner (fire boss); was injured on October 4, 1903, at about 12.30 p. m., n south entry, room 15, mine No. 12, operated by the McAlester Coal

Mining Company, near Buck, Ind. T., by ignition of gas, causing burns of the second degree on the hands and face. Injured man was married, had been in the employ of the company about five months, and was left in charge of his family; doctor called, O. W. Rice.

Investigation shows that Samuel Powell was burned while on his way out of the mine. The accident occurred on Sunday. There being no engineer to hoist him up the shaft, it was necessary that he should come out by the manway. When on his way out he had reached a point a short distance from the escape shaft, where he met with and ignited a small quantity of gas at a break-through leading from room 15 to manway. It is hard to account for the accumulation of gas at this point, as the manway had been traveled about two hours before the accident occurred by Norman Kiser with a naked lamp. Also this part of the mine had been often inspected by Powell in performing his duties as fire boss, and no gas had been observed up to this time.

A short time before the accident occurred a terrific wind and rain storm passed over this section, and it seems to be quite probable that said storm affected the running of the fan, consequently reduced the ventilating current, and with a very low barometer, which no doubt existed at the time, gas would generate freely, and I believe that these unusual conditions were the direct cause of the accident.

No. 26. Ed. Battles; nativity, American; occupation, driver; was injured on the 28th of September, 1903, at about 2 o'clock p. m., in No. 20 slope of mine No. 3, operated by the Rock Island Coal Company, by having a piece of wood jabbed through his thigh while in the act of trying to throw it from the trip car. Injured man had been in the employ of the company about twelve months, was single, and was left in charge of Dr. Cleckler.

Investigation shows that Ed. Battles was employed as mule driver in the ninth west entry, off slope 20. He left the place where his duties called for him to be as driver, going to top of slope, where he got in an empty trip of cars to ride back down to his work. On his way down he tried to throw out a roller bracket, and in doing so one end of the bracket struck the roof, pushing the other end into his thigh, injuring him as above stated. Had Battles remained at the ninth west entry where he was driving he would not have been injured.

No. 27. Jubert Johnson; age, 16; occupation, trapping; was injured on August 13, 1903, at about 11 o'clock p. m., in entry No. 1 of mine No. 1, operated by the Sans Bois Coal Company, near McCurtain, Ind. T., by being run over by a car, causing one leg to be badly bruised and other injuries of like nature. Injured man was single, had been in the employ of the company about two months, and was left in charge of Drs. Chambers and McClure. FATAL.

The injured boy was employed as a trapper, and had gone to sleep at his door. On approaching the door the driver signaled to Johnson, but he did not hear him till the mule had almost reached the door. Johnson then attempted to open it, but he was too late, and got caught with the trip and injured severely, which injuries proved fatal a few days afterwards.

No. 28. Andrew Rosso; age, 55, nativity, Italian; occupation, miner; was injured on the 16th of October, 1903, at about 8.30 a. m. in the eighth west entry in mine No. 5, operated by the Rock Island Coal Company, near Alderson, Ind. T., by a fall of rock, causing bruises on the small of back and hip and cut on forehead. Injured

man was married, had been in the employ of the company about two months, and was left in charge of his family; doctor called, R. K. Pemberton.

Investigation shows that Rosso and the driver were pushing an empty car from the entry to face of room, which had been driven up about 30 feet from entry, and while they were in the act of pushing the car a piece of slate fell from the top striking Rosso on the back and head, knocking his face against the empty car, cutting it slightly, and bruising his back. The roof is solid at the point where the accident occurred, but the piece of slate that fell came from a pot or slipe that would not have been discovered by ordinary examination. This should be placed among the unforeseen accidents.

No. 29. James Van Austen; age, 41; nativity, American; occupation, shotfirer; was injured on the 9th day of October, 1903, at about 7 o'clock p. m., in room 16, main east entry of mine No. 1, operated by the Hailey-Ola Coal Company, near Haileyville, Ind. T., by an explosion of gas, which caused serious burns of the first, second, and third degrees upon entire surface of both hands, wrists, face, neck, and back; also upon portions of both arms and shoulders. Injured man was single, had been in the employ of the company about two and one-half years, and was left in charge of boarding house of Mrs. Milton; doctor called, W. W. Horine. FATAL.

Investigation shows that Van Austen was engaged as a shotfirer in mine No. 1, operated by the Hailey-Ola Coal Company, near Haileyville, Ind. T. Van Austen had proceeded with his work up to room 16 in the main east entry. It seems from his own statement that he had tamped the holes in 16 and 17 rooms, and split the fuse of all shots in both rooms. He then lighted the shots in 16 room, and on leaving the face he raised his lamp too high and lit a small body of gas that had accumulated at the face of the room, which burned him as described. The rules of the company prohibit shotfirers firing shots in rooms where gas has accumulated in quantities sufficent to be dangerous. As the injured man was provided with a safety lamp for the purpose of examining all places where shots are prepared before firing them, it is clear to me that he did not observe the rule laid down by the company and that he erred seriously in firing the shots in 16 room. It may be stated that this room was examined in the morning by the gas man, also that the man who worked in the room worked up to 2 or 3 o'clock p. m. with a naked lamp without discovering any accumulation of gas. The last break-through was 10 feet from the face of room, with a strong current of air traveling through it. Therefore a very limited quantity of gas could stand in the room. There can be no doubt that Van Austen came to his death by carelessly violating the rules of the company.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T., *November 30, 1903.*

SIRS: I have the honor to report that I have investigated, during the month of November, 1903, 9 accidents in coal mines in the Indian Territory, 4 of which were fatal. There were investigated for the

corresponding month, November, 1902, 7 accidents, one of which was fatal. I give below details of accidents investigated during November, 1903, by companies and by causes, and I also beg to attach hereto the original accident reports and report of my investigation.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Sans Bois Coal Co	2	.....	2
Southwestern Development Co	3	.....	3
Osage Coal and Mining Co	.....	1	1
Western Coal and Mining Co	.....	1	1
Hailey-Ola Coal Co	.....	1	1
Milby & Dow Coal and Mining Co	.....	1	1
Total	5	4	9

Statement of accidents by causes.

Causes.	Nonfatal.	Fatal.	Total.
Fall of coal	1	.....	1
Explosion	1	1	2
Pit car	3	.....	3
Fall from tipple	.....	1	1
Runaway team	.....	1	1
Fall of rock	.....	1	1
Total	5	4	9

No. 30. George Gammel; age, 35; nativity, American; occupation, miner; was injured on October 9, 1903, in mine No. 1, at second south entry, room No. 14, at 11 o'clock, operated by the Sans Bois Coal Company, by being caught by a fall of coal. Injured man was married, had been in the employ of the company about three months, and was left in charge of Doctors Chambers and McClure.

Investigation shows that George Gammel was engaged as a miner in No. 1 mine, operated by the Sans Bois Coal Company; that he was mining off a standing shot in his room, and that a large piece of coal broke loose without giving any warning, and before he could get back out of the way the falling coal struck him, breaking his right leg and injuring him otherwise. It seems that Gammel left his shovel standing behind him, and in his effort to get out of the way of the falling coal the shovel caught him and prevented him from getting out of danger. Had he spragged or otherwise secured the shattered coal before mining it the accident would not have occurred.

No. 31. Henry Jones; age, 23; nativity, colored American; occupation, miner; was injured on November 4, 1903, at about 12 o'clock noon, in No. 9 mine, operated by the Southwestern Development Company, near Coalgate, Ind. T., by being burned by gas. Injured man

was single, had been in the employ of the company about thirteen months, and was left in charge of his boarding mistress; physician called, Doctor Connor.

Investigation shows that the miner working in No. 15 room while drilling a hole struck a feeder of water and gas when about 3 feet in. He went back down his room to get a longer drill, and said to Henry Jones, who worked in the next room, that he had struck the aforesaid feeder in his drill hole, and asked him (Jones) to come up and see what he had got. Jones proceeded up to the face of No. 15 room and when he got within a short distance of the drill hole a small body of gas ignited, burning him slightly on right arm, left hand, and back of neck. It is evident that the accumulation of gas came from feeder cut by drill hole, as no gas had been detected in this room for five or six weeks previous to the time of the accident.

No. 32. Jesse Maxwell; age, 14; nativity, American; occupation, teamster; was killed on November 5, 1903, at about 1.30 o'clock p. m., in strip pit, at Krebs, Ind. T., operated by the Osage Coal and Mining Company, near Krebs, Ind. T., caused by team running away and killing him. Injured boy was single; had been in the employ of the contractor for four days, and was left in charge of his father; doctors called, Turner and Pemberton. FATAL.

Investigation shows that Jesse Maxwell was driving a team for Mr. Williamson, contractor, in strip pit, near Krebs. It seems that the man engaged in firing the shots had prepared a blast, and that he had notified all the men working about the strip pit to retire to a place of safety until he had fired the blast. Maxwell did not retire to a sufficient distance, and the shot, which was somewhat overcharged with powder, threw the coal to a considerable height. It seems that the falling pieces of coal frightened the team so that they became unmanageable; and it is not known whether the team run over him or whether the flying coal struck him. However, one or the other of these causes injured Maxwell so severely that he died a short time afterwards. Maxwell was 14 years of age, but was driving the team by consent of his father.

No. 33. Louis Glazier; age, 27; nativity, American; occupation, shot-firer; was injured on November 6, 1903, at about 7 o'clock p. m., in mine No. 5, operated by the Western Coal and Mining Company, near Lehigh, Ind. T., by a shot which was fired, knocking down the pillar between two rooms, and the coal and stones falling upon him, causing injuries which later caused his death. Injured man was married; had been in the employ of the company about two years; was left in charge of his family; doctor called, Gardner. FATAL.

Louis Glazier was employed as a shot-firer in mine No. 5, and on November 6 was at his usual work. He had gone into the seventh north entry to fire the shots, and lit a shot on the north rib in room No. 18, top entry. He then came out of this room and went up into room No. 19, and was in the act of firing a shot in this room, when the shot that had been lit in No. 18 room went off and blew through the pillar between the rooms. The flying coal and shock injured him so badly that he died from injuries.

Investigation shows that from the point of the shot that was lit in No. 18 room to south rib of No. 19 room there was only about one foot of coal.

No. 34. James Pluker; age, 24; nativity, colored American; occupation, miner; was injured on November 10, 1903, at about 10.30 o'clock a. m., in mine No. 9, operated by the Southwestern Development Company, near Coalgate, Ind. T., by being caught between the car and rib. Injured man was single, had been in the employ of the company about one month; doctor called, Connor. Shoudler dislocated.

James Pluker was engaged as a miner in the first east entry, and was sitting at the mouth of his room when the mule driver asked him to assist him down the entry with a car, which he agreed to do. He jumped onto back end of car, which was traveling at a high rate of speed; the car jumped the track and threw him against the rib or side of entry, injuring him so that he was unable to work for about two weeks. It was no part of his duty to assist the driver, and had he stayed in his own room he would not have been injured.

No. 35. J. F. Miller, age 20; nativity, American; occupation, rope-rider; was injured on November 18, 1903, at about 9 o'clock a. m., in mine No. 1, operated by the Sans Bois Coal Company, near McCurtain, Ind. T., by being knocked from a trip of cars, his head striking a cross-piece, fracturing his skull, and otherwise bruising him. Injured man was single, had been in the employ of the company about four months, and was left in charge of his parents; doctors called, Chambers and McClure.

J. F. Miller was engaged as rope rider in No. 1 slope, operated by the Sans Bois Coal Company, west of McCurtain, on the morning of the 18th of November. He was taking down a trip of seven empty cars. He got in the dark, and was sitting on the end of the fourth car, when passing through the door at the mouth of the third south entry his head came in contact with the frame of the door, and he was knocked off the trip. The three cars behind him struck him and injured him as above described. The accident came about by Miller sitting up too high on the cars. The frame of the door was 5½ feet high above the rail, thus allowing him ample room to pass safely under it.

No. 36. August Bookman; age, 35; nativity, German; occupation, blacksmith; was injured on November 17, 1903, at about 3.30 o'clock a. m., at mine No. 1, operated by the Hailey Ola Coal Company, near Haileyville, Ind. T., by falling from the tipple, killing him almost instantly. Injured man was married, had been in the employ of the company about three weeks, his remains were sent to Krebs, Ind. T.; doctor called, W. H. Horine. FATAL.

August Bookman was engaged as blacksmith at No. 1 mine, operated by the Hailey-Ola Coal Company, near Haileyville, Ind. T. He was assisting in taking out the old gravity screen and putting in a new shaker screen. It seems that on the morning of the 17th, about 3.30 a. m., he had completed his part of the work and had sent his helper home. Before leaving he went up on the tipple where four carpenters were at work to see if anything else was needed before he left. He carried a large torch in his hand which he set down on a platform which had been raised about 4 feet above the level of the third floor, and then started around the platform in the dark. The floor of the old platform had been taken up in order to put in the new work. Bookman walked into this opening and fell through to the ground, a distance of 35 feet, and was severely injured, dying one hour afterwards.

Bookman was engaged in making these repairs, and knew all about the conditions of the floor, etc., on the tipple, and it would appear that he overlooked the fact that the floor had been taken up.

No. 37. James F. Anderson; age, 32; nativity, American; occupation, miner; was injured on November 20, 1903, at about 3.45 p. m., in mine No. 2, operated by the Milby & Down Coal and Mining Company, near Dow, Ind. T., by an explosion of a keg of powder, which burned him so severely that he died a short time afterwards. Injured man had been in the employ of the company about one year, was married, and was left in charge of his family; doctor called, Carlock.

FATAL.

J. F. Anderson was engaged as a miner in No. 2 mine, operated by the Milby & Dow Coal and Mining Company, near Dow, Ind. T. On November 20, about 3.45, he had prepared his shots ready to charge, and was in the act of opening a keg containing 25 pounds of powder, from which he intended to take powder to charge his holes. In opening the keg of powder he stated that he was late and in a hurry, and that he drove a pick through the keg, and that in doing so the pick must have created a spark and ignited the powder, which burned him so badly that he died in about twelve hours afterwards.

Had Anderson opened the keg by the means provided he would not have been injured. He alone is responsible for this accident, which resulted in his death.

No. 38. Richard Hughes; age, 26; nativity, colored American; occupation, mule driver; was injured on November 14, 1903, at about 10 o'clock a. m., in mine No. 4, operated by the Southwestern Development Company, near Coalgate, Ind. T., by getting his leg caught under a loaded car, causing the leg to be broken below the knee, also his left arm bruised. Injured man had been in the employ of the company about four years, was single, and was left in charge of his mother; doctor called, Connor.

Richard Hughes, mule driver, was bringing out a loaded trip of three cars from the third south entry. He was riding on the first car, and when he had reached room No. 3 his foot slipped off of the tail chain, causing him to fall in front of the trip, which was running at a high rate of speed. The car passed over Hughes's left leg, breaking it below the knee, and slightly bruising his left arm.

Investigation shows that the track was in good condition, also that it was the duty of the driver to put sprags in his cars while coming out of this entry. This he failed to do, and thereby allowed the cars to gain too high a rate of speed, which no doubt was the cause of the accident.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

SOUTH MCALESTER, IND. T., *January 1, 1904.*

SIRS: Attached hereto you will please find my usual monthly notification of accidents with my report of the same, and the original reports. I desire to say, however, that there are in addition to the accidents herein reported some eight accidents which are not included in this report, as these accidents occurred on the latter end of December and before I had time to make investigations. A full report of these will be made and included with my report of January, 1904.

Very respectfully,

WM. CAMERON,
United States Mine Inspector for the Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

SOUTH MCALESTER, IND. T., *December 31, 1903.*

SIRS: I have the honor to report that I have investigated during the month of December, 1903, 13 accidents in the coal mines in the Indian Territory, 3 of which were fatal. It is quite noticeable that a number of these accidents are the result of explosions, and this is during the time of the year when the danger of explosions is greatly increased by the weather conditions, the month of December in the Territory having been particularly dry with considerable cold weather, and it is under such conditions that the chances of explosions are greatly increased. For the corresponding month, 1902, there were 9 accidents, showing an increase of 4 over the month of December, 1902.

The total accidents for the six months ending December 31, 1903, is 51, and the total number investigated for the six months ending December 31, 1902, was 53, thus showing a total reduction of 2 accidents for the corresponding six months last year. I also attach hereto a statement showing the number of accidents by companies and by causes for the said month of December, 1903, and attach thereto my report on these accidents, together with original accident reports made to me.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Great Western Coal and Coke Co	2	1	3
Poteau Coal and Mercantile Co	2		2
Rock Island Coal Co	2		2
The Coalgate Co	2		2
Hailey-Ola Coal Co	1		1
Milby & Dow Coal and Mining Co		1	1
Samples Coal and Mining Co	1		1
Osage Coal and Mining Co		1	1
Total	10	3	13

Statement of accidents by causes.

Causes.	Nonfatal.	Fatal.	Total.
Pit car	4		4
Gas	1		1
Smoke explosion or overcharge	2		2
Windy shot	2		2
Fall of roof	1	1	2
Coal-dust explosion from windy shot		1	1
Powder explosion		1	1
Total	10	3	13

Statement of accidents reported to me as occurring in the coal mines in the Indian Territory and investigated by me during the month of December, 1903.

No. 39. V. Smith; age, 25; nativity, American; occupation, miner; was injured on November 20, about 4 p. m., in mine No. 3, near Wilburton, Ind. T., operated by the Great Western Coal and Coke Company, by trying to catch a trip to ride out, and was caught between the car and rib, causing fracture of spinous process, first lumbar vertebræ, and hemorrhage on cord; few small bruises on legs.

V. Smith was engaged as a miner in No. 3 mine. He had just completed his day's work and was sitting down on the entry, near the entrance to his room, when the driver came out of the entry with a trip of loaded cars. Smith attempted to get on the trip to ride out of the slope. In getting on the trip, which was traveling rather fast, he got caught between the side or top of the entry and was injured rather severely. Smith erred in attempting to get on the trip while in motion. He also erred in getting on the trip between the cars while in motion, and I consider that he is responsible for the injury which he sustained.

No. 40. John Wade; age, 25; nativity, American; occupation, shotfirer; was injured on November 23, 1903, at about 5.30 p. m., in mine No. 6, ninth west entry, room No. 5, operated by the Great Western Coal and Coke Company, near Wilburton, Ind. T., by an explosion of gas, causing second-degree burn of face and both hands; injured man was single; had been in the employ of the company about four months; was left in charge of his home folks; doctor called, W. P. Hailey.

John Wade was shotfirer, and had completed the firing of shots down to the ninth west entry. He found a little standing gas in No. 5 room, which he brushed out. He then went to prepare the shots in No. 3 room, after which he returned to No. 5. During the interval the gas had again accumulated in No. 5 room. Wade went in to fire the shot without testing or brushing and lit the gas, burning himself slightly. M. W. Windsor, his partner, told him he had better test i before going in, and he replied that he did not think it necessary.

Nos. 41–42. Ed. Riley; age, 40; nativity, Irish; occupation, shotfirer; was injured on November 27, 1903, at about 6.30 p. m., in mine No. 5, entry No. 4, operated by the Poteau Coal and Mercantile Company, near Witteville, Ind. T., by a smoke explosion, causing burns about the face, hands, and neck. Injured man had been in the employ of the company about one year; was married, was left in charge of his wife. Physician called, H. P. Belt.

Tim Donovan; age, ——; nativity, Irish; occupation, shotfirer; was injured on November 27, 1903, at about 6.30 p. m., in mine No. 5, entry No. 4, operated by the Poteau Coal and Mercantile Company,

near Witteville, Ind. T., by a smoke explosion, causing burns about the face, hands, and neck. Injured man had been in the employ of the company about two or three years; was married; and was taken to McAlester hospital; physician, Doctor Belt.

Investigation shows that Ed. Riley and Tim Donovan were employed as shotfirers, and that on the night of the 27th they had fired all the shots in No. 6 mine and had just started in No. 5. It seems that 17 shots had been prepared in the fourth south entry. The injured men's own statements show that they had started in the air course and lit the 17 shots in rotation, and without any interval or time elapsing between the shots. It seems that after the last shot had been lighted the two men had retired to the double switch, a distance of 60 or 70 feet from the nearest room. From some unknown cause the shots caused a slight explosion. The flame traveled out to where the men had retired, burning them as above stated.

The injured men erred in lighting too many shots at one time; also in not retiring to a more remote place after lighting the shots. Had they been 50 feet farther from where the shots were placed they would not have been injured.

Nos. 43, 44. Joe Welch; age, 45; nativity, Polish; occupation, shotfirer; was injured on December 5, 1903, at about 6 o'clock p. m., in mine No. 8, eighth west entry, room No. 14, operated by the Rock Island Coal Company, near Hartshorne, Ind. T., by an explosion caused by an overcharged shot, causing burns about the hands and face and legs. Injured man had been in the employ of the company about one year; was left in charge of his brother, John Welch; doctor called, W. W. Sames.

Joe Palulus; age, 35; nativity, Polish; occupation, shotfirer; was injured on December 5, 1903, at about 6 o'clock p, m., in mine No. 8, eighth west entry, room No. 14, operated by the Rock Island Coal Company, near Hartshorne, Ind. T., by an explosion caused by an overcharged shot, causing burns on both hands and face. Injured man had been in the employ of the company about one year, was married and left in charge of his wife; doctor called, W. W. Sames.

Investigation shows that Joe Welch and Joe Palulus were engaged as shotfirers in No. 8 mine, and that on the 5th of December they had proceeded with their work down to the eighth west entry, No. 14 room. It seems that they lit a shot on the right-hand rib of the room, then retired to a distance of 70 feet from the shot and almost in a straight line with the same. When the shot fired it seems to have turned the coal out in one solid block about 1 foot 6 inches from its original position, this showing that the shot had been overpowdered, and no doubt created considerable flame. This flame, assisted by coal dust, traveled down to the point where the two injured men had retired, burning them both severely.

The injured men erred in not retiring to a greater distance from the shot; also in standing in a direct line with the shot. The ventilation was good. The lower entry was wet, but to the best of my judgment the upper entry was dry and dusty at the time of the explosion, but had been well sprinkled at the time the investigation was made.

No. 45. Joseph Sherwood; age, 25; nativity, American; occupation, roperider; was injured on December 7, at about 4 o'clock p. m., in mine No. 3, operated by the Coalgate Company, caused by a fall of rock, breaking a rib and his collar bone and otherwise badly bruising

him. Injured man had been in the employ of the company about five years, was married, and was left in charge of his family and physician; doctor called, Waverly Hume.

Investigation shows that Joseph Sherwood was engaged as a rope-rider in No. 3 slope; that he had taken a number of crossbars down on the trip, and that the crossbars were too high above the cars, and when the trip was a short distance above the fifth entries the crossbars came in contact with a low place in the slope and in some way loosened the timbers that supported the roof. The trip passed down the slope to one of the entries below, where Sherwood hooked onto a loaded trip and started up. He got onto the trip between the second and third car, and when he reached the point where the timbers had been disturbed, as aforesaid, a piece of rock fell and knocked him off the cars, injuring him rather seriously.

No. 46. Angelo Bartillo; age, 35; nativity, Italian; occupation, miner; was injured on December 11, 1903, at about 2 o'clock p. m., in mine No. 1, main west entry, room No. 25, operated by the Hailey-Ola Coal Company, near Haileyville, Ind. T., by getting his leg caught under a mine car, causing dislocation of kneejoint. Injured man had been in the employ of the company about two weeks, was married, and was left in charge of boarding house; doctor called, W. H. Horine.

Angelo Bartillo was engaged as a miner in room No. 25, west entry. He was bringing down a loaded car from the face of his room and loosened the sprag too much, thereby allowing the car to get out of his control. The car knocked him down and ran onto his leg, pushing him along for a short distance, and dislocating his knee.

No. 47. John Wade; age, 20; nativity, American; occupation, shot-firer; was injured on December 12, 1903, at about 5 o'clock p. m., in mine No. 6, at Wilburton, Ind. T., operated by the Great Western Coal and Coke Company, by coal dust explosion, caused by a windy shot. Man was found dead. He had been in the employ of the company about seven months, and was left in charge of his home. Physician called, L. M. Sackett. FATAL.

This explosion occurred in No. 6 mine, operated by the Great Western Coal and Coke Company. The explosion originated in the air course of No. 9 entry, and was caused by a blown-out shot. Both the force and fire spread over a considerable portion of the mine. Two men were in the mine when the explosion occurred. Neither of them was burned. However, both of them were overcome by the after damp, and were found near the bottom or lower end of slope. John Wade was dead and W. M. Windsor unconscious.

A careful measurement of the air current showed 22,200 cubic feet entering the mine, with the fan running about 10 revolutions per minute, less than it usually runs.

The slope has been driven about 1,100 feet. Ten entries have been turned to the right and to the left, respectively. Only the fifth, seventh, eighth, ninth, and tenth entries to the left are in operation, and on the right side of the slope all the entries, with the exception of the tenth, have been exhausted and abandoned.

Proceeding down the slope but little violence was observed until a point below the fourth entry was reached. Here a stopping had been blown down. Also the doors at the entrance to entries 5, 7, and 8 were blown down and a number of stoppings had been disarranged on

both sides of the slope between the aforesaid entries. At the entrance to the ninth west entry coked coal dust was deposited on props and in such a position that it was quite evident that the flame had traveled from this entry. Proceeding in the ninth west entry coked coal dust was found on the side of props and the ends of pit cars next to the face of the entry. This entry has five rooms turned to the pitch of vein. The five rooms are connected with an air course about 12 feet above the entry, or, in other words, a 12-foot pillar is left between the entry and air course. The statement of W. M. Windsor, shot firer, is that he and John Wade prepared all the shots in this entry ready to touch off—one in the air course and six in the first four rooms. Windsor lit the shots in the air course and rooms 4 and 3, while Wade fired the shots in rooms Nos. 2 and 1. Both reached the entry about the same time. They then made their way to the lower end of the slope, where they both were found.

Windsor says that he prepared the air-course shot to go off first, and that it did go off first and caused the explosion. A careful inspection of the shot shows that it was improperly prepared, and such a shot that it was very dangerous to fire. It is what is known as a cutting shot, and that about 2 feet 2 inches had been cut, while a hole had been drilled 5 feet 5 inches, thus putting the point of the hole 3 feet 3 inches ahead of the cutting. The coal was blown out to the back of cutting 22 inches, then a pocket of about 1 foot 5 inches was blown out past the cutting. Still 1 foot 10 inches of the drill hole remained intact, the coal being slightly cracked at the top and bottom. The shots in the rooms were such that were not likely to cause an explosion.

After examining the shots I then proceeded to follow the course the explosion traveled, which was clearly shown from this point (ninth west air course). The force and flame traveled out the air course to 3, 2, and 1 rooms, thence down on to the entry, thence out the entry to slope. From the entrance to the ninth entry the force and fire traveled up the slope, dividing at the entrance to the eighth and seventh west entries. That both force and flame had traveled over the greater part of these entries was clearly in evidence by coked coal dust being deposited on props and projections of ribs, and the disturbed condition of empty powder kegs, wooden trucks, and other débris, and, as before stated, the evidence of force ended between the fourth and fifth entries.

In conclusion, there can be no doubt that this explosion originated from a badly prepared shot, which blew out the coal violently and created a large volume of flame; that said flame ignited the coal dust, which intensified the explosion. The ventilation was abundant, and I am of the opinion that explosive gas was not an important factor in the explosion.

No. 48. J. S. Rowe; age, 31; nativity, American; occupation, miner; was injured on December 10, 1903, at about 11.30 a. m., in mine No. 5, operated by the Coalgate Company, near Coalgate, Ind. T., by getting his leg caught under a car, breaking his ankle bone. Injured man had been in the employ of the company about six weeks, was married, and was left in charge of Dr. R. F. King.

It seems that J. S. Rowe, miner, and the mule driver were engaged in bringing down a loaded car from the face of room No. 3. In doing

so the car left the track, and while raising the car to replace it on the track the car suddenly twisted around and caught Rowe's leg, breaking the small bone above the ankle joint.

No. 49. Nunzio Fulgenzio; age, 40; nativity, Italian; occupation, miner; was killed on December 16, 1903, at about 10 o'clock a. m., in mine No. 1, operated by the Milby & Dow Coal and Mining Company, near Dow, Ind. T., by a fall of rock. Deceased man had been in the employ of the company but a short time, was married, and left in charge of the company. Dr. A. E. Carlock. FATAL.

Investigation shows that Nunzio Fulgenzio had just started in room No. 66 to mine coal. He prepared two shots on the 15th which the shot firers fired the same evening. The injured man started his work on the morning of the 16th. He had loaded one car with coal and was in the act of mining off a standing shot when a large piece of slate fell on him killing him instantly. The entry man, Thomas Dobbs, states that he saw Fulgenzio working on the rock trying to take it down. He also states that he told the injured man that it was not safe for any person to work under it. Notwithstanding this advice, Fulgenzio went to work mining off a piece of coal that one of the shots had left standing, and while in this position the rock fell as above stated.

No. 50. A. Britt; age, 20; nativity, American; occupation, driver; was injured on December 21, 1903, at about 10 a. m., in mine No. 2, operated by the Samples Coal and Mining Company, near McAlester, Ind. T., by being caught between rib and car, causing four broken ribs, breastbone broken, also collar bone broken. Injured man had been in the employ of the company about three months, was single, and was left in charge of Mercy Hospital; Doctor Troy.

I investigated this accident and found that A. Britt, driver, was injured while bringing a loaded trip out of the first east entry. It seems that the mule kicked at him, and that he jumped from the trip to one side, and in doing so he lost his foothold and got caught between the rib and car.

No. 51. Antone Gentela; age, 27; nativity, Italian; occupation, miner; was injured on December 8, 1903, at about 3.30 o'clock p. m., in mine No. 8, operated by the Osage Coal and Mining Company, near Krebs, Ind. T., by explosion of powder in two 5-pound cans, causing severe burns. Injured man had been in the employ of the company about five years, was single, and was left in charge of All Saints Hospital; doctor called, G. S. Turner. FATAL.

This accident occurred on the 8th of December, but was not reported to me until the 22d of December; therefore such investigation as was possible for me to make was only taking the statements of others. It appears that the injured man was engaged as a miner in No. 8 mine; that he had drilled a hole and had gone to the entrance of his room for the purpose of making up a cartridge. It is supposed that while in the act of filling the cartridge with powder that a spark from his lamp ignited the powder which burned him so severely that he died on the 20th day of December. Reports show that he had two cans of powder, containing 5 pounds each, both of which exploded. Had the injured man placed his lamp in the proper place while handling the powder the explosion would not have occurred.

Respecfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T., *January 30, 1904.*

SIRS: I have the honor to report for the month of January, 1904, 15 accidents in coal mines in the Indian Territory, 7 of which proved fatal. There were investigated for the corresponding month of January, 1903, 11 accidents, 4 of which proved fatal.

I give below details of the causes of the accidents for January, 1904. I also inclose detailed report and original accident reports.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Geo. J. Markley	3	2	5
Sansbois Coal Co		2	2
Turkey Creek Coal Co	1		1
McAlester Coal and Mineral Co	1		1
Osage Coal and Mining Co	1		1
Samples Coal and Mining Co	1	1	2
Rock Island Coal Co		1	1
Milby & Dow Coal and Mining Co	1	1	2
Total	8	7	15

Statement of accidents by causes.

Causes.	Nonfatal.	Fatal.	Total.
Premature blast	3	2	5
Windy shot		2	2
Gas explosion	1		1
Fall of roof	3		3
Drowning		1	1
Pit car	1	2	3
Total	8	7	15

Statement of accidents reported to me as occurring in coal mines in the Indian Territory, and investigated by me during the month of January, 1904.

No. 52. J. M. Williams; age, 34; nativity, colored; occupation, coal miner; was injured on December 30, 1903, at about 2.15 p. m., in mine No. 1, near Sutter, Ind. T., operated by George J. Markley. Injured man had been in the employ of the company about one year; was married; doctor called, J. J. Hardy. FATAL.

No. 53. William Loom; age, 27; nativity, American; occupation, coal miner; was injured on December 30, 1903, at about 2.15 p. m., in mine No. 1, near Sutter, Ind. T., operated by George J. Markley. Injured man had been in the employ of the company about two months; was single, and left in care of Dr. J. J. Hardy. FATAL.

No. 54. William Blackburn; age, 30; nativity, American, occupation, coal miner; was injured on December 30, 1903, at about 2.15 p. m., in mine No. 1, near Sutter, Ind. T., operated by George J. Markley.

Injured man had been in the employ of the company two weeks; Dr. J. J. Hardy.

No. 55. Doc Sims; age, 31; occupation, coal miner; nativity, colored; was injured on December 30, 1903, at about 2.15, in mine No. 1, near Sutter, Ind. T., operated by George J. Markley. Injured man had been in the employ of the company about three months, and was single; Dr. J. J. Hardy.

No. 56. Will Sanford; age, 28; nativity, colored; occupation, mule driver; was injured on December 30, 1903, at about 2.15 p. m., in mine No. 1, near Sutter, Ind. T., operated by George J. Markley. Injured man had been in the employ of the company about two weeks, and was married; Dr. J. J. Hardy.

This explosion occurred on the 30th day of December, 1903, at about 2.15 p. m., in No. 1 mine, operated by George J. Markley, near Sutter, Ind. T., about 7 miles west from Shadypoint, Ind. T. Two men were fatally injured, three seriously injured, and four slightly.

I was notified by telegram and at once proceeded to the mine, which I reached on the day following the explosion, and in company with the pit boss and gas man, also a committee of two of the miners, we proceeded into the mine to investigate as to the cause and origin of said explosion. Proceeding down the slope to a point just below the first entries we made a careful measurement of the air current and found 15,150 cubic feet of air per minute traveling down the slope. Proceeding on down the slope but little sign of force was in evidence till the entrance to the fourth east and west entries were reached. At a point just above the fourth entries another measurement of the ventilating current was made, at which point we found 6,665 cubic feet traveling, thus showing a loss of 8,495 cubic feet per minute in the short distance traveled. These measurements were made with the fan running about 48 revolutions per minute, while the usual speed of running the fan when men are at work is about 60 revolutions per minute.

At the entrance to the fourth west entry enough of force had been exerted to show that the explosion had come out of this entry. We then proceeded in this entry and found eight loaded cars standing on sidetrack. The coal on the inner end of the last car was scooped off, showing that considerable force had been exerted on it. We also found a keg of powder intact standing between the tracks on the sidetrack. Traveling in the entry we found slight signs of fire at the mouth of No. 2 room, the fibers on the props being burned to a crisp. As we proceeded in the entry slight deposits of coked coal dust was observed on the side of the props next to the entry face, also empty powder kegs, props, brattice cloth, and other débris was scattered about on the entry which showed clearly from which direction the force had been exerted. Up to the entrance to No. 10 room all the force was outward toward the slope, but at this point it was clearly in evidence that the force and flame had traveled down No. 10 room; that it split in two, part going in toward the face of the entry, but the greater portion turned toward the slope. Near the mouth of No. 10 room a stopping between the upper and lower entries had been blown down toward the lower entry, which showed clearly that considerable force had been exerted from the direction of No. 10 room. We then examined the face of No. 10 room and found a cutting shot that had been prepared—two holes had been drilled, one in the upper and one in the lower beds of coal. The hole in the lower bench had been fired and had blown out the tamping. The shot was not what might be termed a bad shot. It was cut 5 feet and the hole was drilled 5 feet 11 inches, this being 11 inches beyond the cutting and the only bad feature in the preparation of the shot. However, taking the statements of J. M. Williams, the man who worked in this (No. 10) room, it is clearly shown that he had placed his powder in the hole and had put one (dummy) or round of tamping in, which displaced a small quantity of gas from the drill hole, and which gas ignited on his naked light, which was placed on the floor a short distance back from the hole. The gas ignited, flashed into the drill hole, lighting a feeder in same, which continued to burn. Williams could not put the gas out, and went for William Loom, who worked in the entry, to assist him. Loom came to his assistance and at once succeeded in putting the gas out.

But during the interval between the gas being ignited and being extinguished the fuse had been burned through, which in a very short time ignited the powder, and, not being confined by tamping, the flame would rush out the drill hole in great quantities and with great force, and no doubt initiated the explosion. The opinion of the miners' committee, pit boss, and gas man (after a very careful investigation) is that the explosion originated from this shot; that this shot was well prepared and would not have caused any trouble had it been properly tamped, which no doubt would have been done only for the unfortunate igniting of the gas. In this opinion I entirely concur.

To sum up: There is no doubt that the cause of the accident was the premature firing of the shot prepared in No. 10 room by J. M. Williams; that this shot was fired by the accidental lighting of a gas feeder in the drill hole, which should have been extinguished at once by Williams, but which he failed to do until too late.

There is an abundant supply of air entering the mine, which is fairly well conducted to the working faces, and which kept the mine free from standing gas, yet the air current might contain a small per cent of gas, which gas would assist in intensifying the force; also some powder was ignited; also there is no doubt that coal dust played some part in the distance the explosion traveled, but from the small deposits of coked coal dust found I am inclined to think that coal dust did not play any very important part in the disaster.

No. 57. Evan Giles; age, 24; nativity, American; occupation, shotfirer; was instantly killed on January 5, 1904, at about 4.40 p. m., in mine No. 2, operated by the Sans Bois Coal Company, near Chant City, Ind. T., by an explosion caused by a "windy shot." The deceased was married, had been in the employ of the company about five weeks, and was left in charge of his family. No physician. FATAL.

No. 58. Robert Lane; age, 32; nativity, American; occupation, shotfirer; was instantly killed on January 5, 1904, at about 4.40 p. m., in mine No. 2, operated by the Sans Bois Coal Company, near Chant City, Ind. T., by an explosion caused by a "windy shot." The deceased was single, had been in the employ of the company about thirteen days, and was left in charge of his brother. No physician. FATAL.

On the 5th day of January, 1904, at about 4.30 p. m., an explosion occurred in No. 2 mine, operated by the Sans Bois Coal Company, near Chant City, Ind. T., resulting in the death of two men who were engaged firing shots and causing much damage to the mine.

The explosion was not confined to any one section of the mine, but seems to have traveled all entries and many of the rooms.

The mine has three slopes ("main," "south," and "north") driven down parallel for a distance of about 1,250 feet, with a pitch of 5° to the southwest. Three double entries have been turned to the north and south, and the slope has been extended a sufficient distance below the third entries, so that the fourth south entry has just been turned.

The mine is ventilated by an 8-foot Capell fan, which furnishes an abundant quantity of air. The fan is placed at the mouth of the south slope, which is used as a return, the main and north slopes being used as intake air ways. The main air current is split into three separate currents by the use of overcasts. The first split ventilates the first north and south entries; the second split ventilates the second north and south entries, while the third split ventilates the third north and south entries, also the extension of slopes below the third entries.

The entrances to the slopes were all badly damaged, especially the entrance to the main and north slopes. On the main slope about 150 feet of timber was blown out and the cover caved in; also at the mouth of the north slope or manway about 100 feet of timber was blown out and the cover caved in.

I arrived at the mine Thursday morning, January 7, and in company with Mr. Bankard, general manager, Mr. Bennett, pit boss, and a committee of three miners, we proceeded to make an examination of the mine to try and determine the cause and origin of the explosion. We entered the mine by the north slope or manway. Considerable force had been exerted, timbers were blown out, and a large quantity of slate and débris had fallen down between entrance and first entries. On reaching the first north entries we passed into the main slope. At that point great force had been exerted; the overcast, which had been constructed in a very substantial manner, was completely wrecked. Thence down the main slope to the second south, where we found the second overcast blown down and destroyed. We then proceeded to examine the second south entries and rooms, and found that the flame had traversed the entry and rooms in various directions, and that force had been exerted in a similar manner. Only one shot had been fired in this entry, and that in No. 5 room. All were of the opinion that this shot was not fired by the shot firers, but that it had been ignited by the flame of explosion. Before examining this entry it seemed to be the general opinion that the explosion had originated in it, but after going over it the second time the conditions were not such as would justify such a conclusion.

We then proceeded down the main slope to the lower end of the same. After a careful examination of the three slopes ("main," "north," and "south") the following conditions were found: Two shots had been fired in the south slope—one on the right rib had been overpowdered and had blown the coal out with considerable force; other two or three shots had been fired in the face of the main slope, all of which seemed to be very fair shots. Two shots had been fired in the fourth south entry (which has been extended only a few feet from the main slope). Both shots seemed to have done the work expected very well. One shot in the breakthrough (just started) on the north side of main slope which was badly prepared, and which did not blow out the coal, only making a wide crack or opening in the coal such as

would permit a large volume of flame to rush out, and, in my opinion, this was such a shot as would cause the explosion. This shot was cut 4 feet, hole drilled 6 feet 11 inches, or 2 feet 11 inches ahead of the cutting (a very dangerous practice), and about 5 feet 3 inches of coal in front of the powder. In my opinion these six shots had been tamped and lit at the same time.

We then proceeded to examine the face of the north slope and found two shots prepared, but not tamped. The powder was lying ready to put in the holes with "dummies," etc., prepared for tamping them. On our way down the slope we found a Davy lamp lying on the middle of the track a short distance below the third north entry, this very probably being the point where the explosion overtook the short firers when retiring.

We then proceeded up the slope and examined the various entries in detail. Third north, no shots fired. It was in this entry that the two short firers were found lying with their heads toward the face, about 70 or 90 feet, respectively, from main slope. Near to where the bodies were found a powder keg was found, which had all indications of being blown open by force from the inside. No great violence was shown in this entry.

The third south entry was not examined to any extent, owing to the ventilating current being disarranged, and gas had accumulated and it was considered best not to attempt to explore same further.

Proceeding up to the second north, great force had been exerted at the entrance to this entry, which force extended over a greater portion of same. From the appearance of powder kegs found at different points in this entry, it was the opinion of all that at least three kegs of powder had been exploded. At the face of the entry three shots were prepared, one cutting shot, one back shot, and one top shot, none of which had been tamped; also one shot in a room just starting to turn had been prepared and not tamped. The powder was prepared in cartridges and placed at or near the drill holes, so that they would be convenient for the short firers. Indications show clearly that three of these cartridges had been ignited by the flame of the explosion. A top shot had been fired in No. 5 room, which had been driven up 20 feet, and no doubt it also was ignited by the flame of the explosion.

We then made careful examination of the first south entry and found that four kegs of powder had been ignited. In this entry great force and violence had been exerted. There are eleven rooms in this entry. No shots fired. Thence to first north entry and traveled in entry to No. 10 room, found the after damp so strong that it was unsafe to proceed further. At different points on this entry, three powder kegs were found that had been exploded. No shots had been fired so far as we observed; great force had been exerted, especially at the entrance to this entry. This finished our investigation. The ventilating current was badly disarranged, so no measurement was taken, but it is beyond doubt that at least 300 cubic feet of air per minute per man was circulating through the mine at the time the explosion occurred. As before stated, there is no doubt in my mind but that the two shot firers on entering the mine proceeded to the face of the slopes, that they first fired the two shots in the south slope, then they tamped the holes prepared in the face of the main slope, also the holes prepared in the fourth south entry and breakthroughs just begun

to the north, lighting them all before retiring. It seems very clear that some of the shots (if not all) lit in this main slope and fourth south entry must have gone off before the shot in the breakthrough; that said shots must have created considerable dust, also a great deal of heat and very probably released more or less gas, thus making the conditions just right for such a shot as the one fired in the breakthrough to initiate the explosion. On the day the explosion occurred the weather conditions were reported as follows: Barometer stood high up to noon, and between noon and 4.30 fell twelve hundredths of an inch.

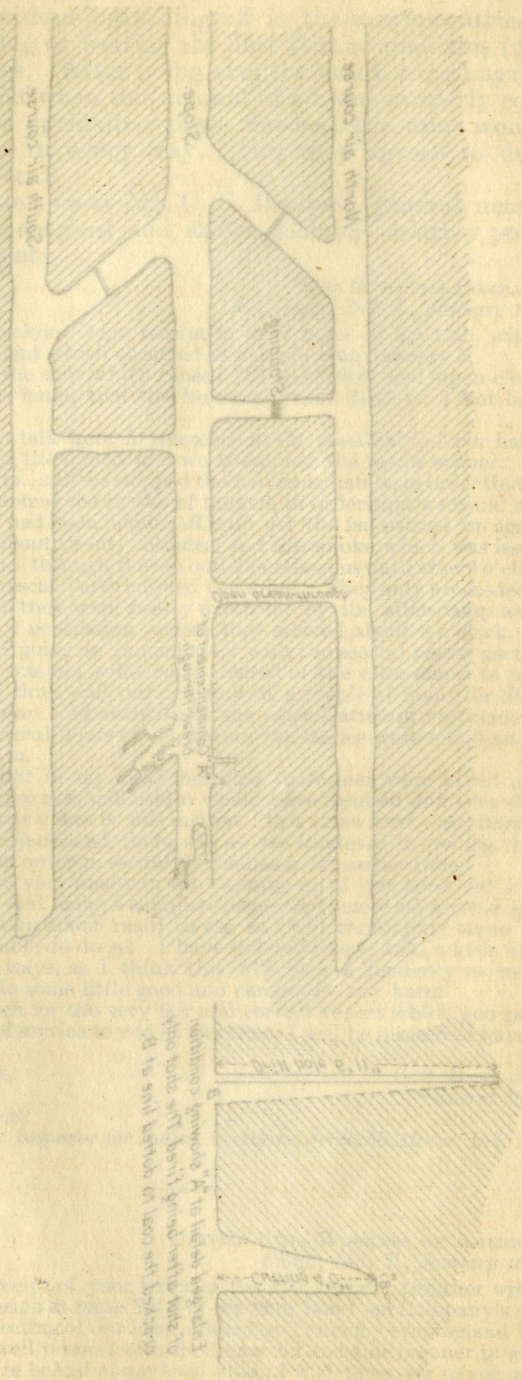
The observed indications of the direction of the explosion were sufficient to point conclusively to the shot in the breakthrough (being turned to the north of main slope) as being the point of origin, and this conclusion I am strongly inclined to from all the facts surrounding.

The indications of force at face of slope, the point which, in my judgment, the explosion originated, were quite moderate, but increased in violence as the explosion traveled upward until it found relief at the point of exit. This is in keeping with all of my former experience in regard to explosions of this character, and especially in this Territory, it being the invariable rule in such cases that the force in evidence at the initiative point is light, but that it gathers momentum and exerts increasing violence until it culminates at the place where it finally finds relief.

To sum up, it may be said that the explosion was first caused by the simultaneous lighting of six shots, one of which at least was badly prepared and calculated to cause a windy or blow-out shot. That after the force and flame had commenced to travel that they met with conditions that assisted in conducting them throughout the mine. One of these conditions may be found in the state of atmosphere as above-described, and which may have caused the sudden exudation of small quantities of gas, notwithstanding the fact that the men having worked with naked lights up to quitting time would seem to demonstrate that the mine up to that time was clear of gas. Another condition may be found in the fact that several kegs of powder were found exploded in various parts of the mine, which doubtless conducted the explosion to the various ramifications of the mine, stirring up and being fed by the existing coaldust. This explosion is an exemplification of the wisdom of the law requiring the employment of shot firers, for if the shots at or near the face of the slope had been fired under the old practice the result would doubtless have been the injury or death of nearly if not all, the men in the mine.

I have requested that as soon as the mine is restored to its normal conditions that I be notified, it being my intention to revisit the mine and after a full and complete inspection to suggest the necessary precautions to be taken to prevent, as far as possible, the recurrence of similar disasters.

I revisited No. 2 mine at McCurtain on the 19th, and found that considerable progress had been made in repairing the damage that had been caused by the explosion. After instructing the engineer to run the fan at the usual speed at which it was run before the explosion occurred, I proceeded to take a careful measurement of the air that was being forced through the mine, and found 44,075 cubic feet of air circulating per minute. I also found that a line of pipes was in process



of being laid in the slope branching off in the various entries for the purpose of sprinkling or wetting the dust that accumulates from time to time in the entries. After going over the entire mine I agreed with the management that when this amount of air was properly conducted to the faces and the sprinkling pipes finished, the mine would be in first-class condition in every way. This they agreed to do before beginning to mine coal.

Following is letter from Mr. C. S. Bankard, general manager, in regard to the above accident and sketch showing relative position of shots causing accident:

SANS BOIS COAL COMPANY,
McCurtain, Ind. T., January 16, 1904.

DEAR SIR: I beg to acknowledge receipt of your favor of the 13th, with copy of your report of the accident which occurred at this place on January 5.

I further examined the shot which caused this explosion, and upon cleaning out the hole with a tamper, found that the hole was 7 feet deep, or 3 feet beyond the cutting.

There has been some talk here in reference to the possibility of our having been able to save the lives of these men had we attempted the rescue sooner. The accident occurred at 4.40 p. m., and we stopped the fan immediately, in order that we could clear away the débris around the intake of the fan, in order that we could cover over the fan opening which had been blown off, and get the fan started up again at full speed. This required about twenty minutes, and the smoke which was issuing from the mine in large volumes through the fan outlet detained us until after 6 o'clock p. m., at which time the first rescue party entered the mine. They only proceeded as far as the second south when they were nearly overcome by the after-damp and had to return to the surface for ventilation, where they arrived about 8 o'clock. I talked over the advisability of going in immediately with the second rescue party, but we decided that the mine was not sufficiently cleared of the after-damp to permit the men going in a second time, and decided to wait a couple of hours for the mine to become clear of after-damp, and about 10.30 the second attempt was made to rescue the bodies, and after several hours of hard work the bodies were found and brought to the surface at 1.30 a. m.

There is not any doubt in my mind but that these men were killed practically instantly, and if they were not, suffocation would have resulted in a very short time. I should like to have your views in this matter. As I know that everything possible to have been done was done, and there was no use whatever in risking the lives of any of my employees, in order to secure the bodies at an earlier time.

We have gotten along very nicely in the cleaning up of our mine and I have just wired you to come over and make a complete inspection before we resume operations. We have our water system about ready to use and will thoroughly water the mine whenever it is practicable to do so. I have ordered coarse salt, which will be distributed along the air ways, as I think this will have a tendency to create some dampness, which will do some little good and can not do any harm.

I thank you very much for the very fair and correct report which you gave of the accident. If I can be of service to you at any time, I will be pleased to have you call upon me.

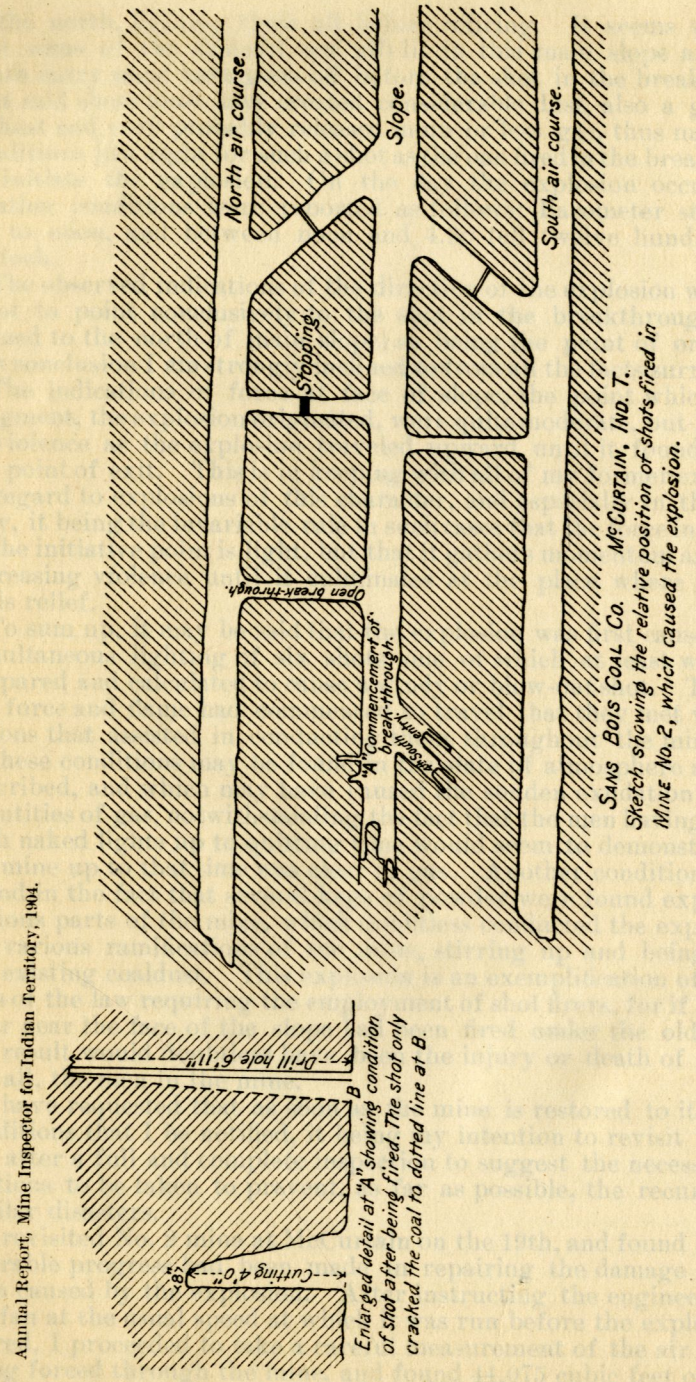
Yours, very truly,

C. S. BANKARD,
General Manager.

Mr. WILLIAM CAMERON,
United States Mine Inspector for Indian Territory, South McAlester, Ind. T.

UNITED MINE WORKERS OF AMERICA,
Chant, Ind. T., January 16, 1904.

DEAR SIR: I am in receipt of your letter of the 13th instant, together with carbon copy of account of explosion at mine No. 2 of the Sans Bois Coal Company's mines. I read your report to a meeting of our local union last Thursday evening and I am glad to state that we are all well pleased with the impartial and able manner in which you treated the subject, and in behalf of our local union I wish to tender to you our appreciation and confidence for the manner in which you conducted and the interest you displayed in our behalf while making the examination.



I have been informed since you left here that further investigation regarding the supposed shot that caused the explosion developed the fact that the hole was drilled nearly 7 feet.

Mr. Bankard intends commencing hoisting coal again Wednesday (19th). He said he would notify you by wire.

Trusting everything will meet your expectation upon your arrival,

I am yours, very truly,

FRANK J. McGUIRE.

Mr. WILLIAM CAMERON,
Inspector of Mines for Indian Territory, South McAlester, Ind. T.

No. 59. G. E. McIntosh; age, 45; nativity, American; occupation, pit boss and gasman, was injured on December 12, at about 7.45 a. m., in the second west air course of mine No. 4, operated by the Turkey Creek Coal Company, near Hughes, Ind. T., by being burned by a slight explosion of gas. Injured man had been in the employ of the company about three days, was married, and was left in charge of his boarding house. Physician called, Dr. W. I. Reece.

This accident was caused by McIntosh going in to brush out gas with his naked light, either on his head or in his hand, as his safety lamp was found at the point where the explosion took place in good condition in every way. The injured man simply made a mistake.

No. 60. M. Angelo; age, 24; nativity, Austrian; occupation, miner; was injured on December 31, 1903, at about 3 o'clock, p. m., in mine No. 6, operated by the McAlester Coal and Mineral Company, near Wilburton, Ind. T., by a fall of slate. Injured man had been in the employ of the company about one week, was single, and was left in charge of William Prantitt. Physician called, Dr. G. A. Kirkpatrick.

M. Angelo was engaged turning a room on the fourth east entry. It seems that slab of slate had become dangerous near his working face. Angelo had been instructed by William Wynn to set timber in his room to secure this rock, but he proceeded with his work paying no attention to Mr. Wynn's orders. A short time afterwards the rock fell and injured him seriously. Mr. Wynn also pointed out the place where he should set props in the presence of John Sweeney, driver. The accident was brought about by the injured man's own carelessness.

No. 61. Carl Bosley; age, 14; nativity, American; occupation, miner; was injured on January 6, 1904, at about 9 o'clock, a. m., in mine No. 8, operated by the Osage Coal and Mining Company, near Krebs, Ind. T. Injured boy had been in the employ of the company about two years, was single, and was left in charge of his father. Physician called, G. S. Turner.

Carl Bosley was a boy 14 years old assisting his father in the mine. They worked in the lower "I" entry, and while the boy was in the act of loading coal at the entry face a slab of slate fell on him injuring him rather severely.

The boy's father erred in not securing the loose slate with props (which were at hand) or in not taking it down before allowing the boy to begin work under it.

No. 62. John Trione; age, 24; nativity, Italian; occupation, shot firer; was injured on the 31st day of December, 1903, at about 5.20 p. m., in mine No. 1, operated by the Samples Coal and Mining Company, near McAlester, Ind. T., by being drowned. Injured man had been in the employ of the company about two years, and was left in charge of his boarding house. FATAL.

John Trione was engaged in firing shots in No. 1 mine, fourth east entry. There were three rooms just being turned off the air course. Two shots were prepared in No. 1 room which were very much over powdered, both throwing the coal out with great force. Also the shot in No. 2 room was a very badly prepared shot, and should not have been fired. The injured man lit six shots all at one time, and in close proximity to one another, which is a very dangerous thing to do, and no doubt was the cause of the windy shot. After Trione lit the shots he retired but a short distance (about 70 feet) and to a place where the force of the explosion would strike him. He was found in a pool of water at the bottom of the slope drowned. Had he retired to a more remote place he would not have been hurt. The mine was not damaged in any way, and the pit boss was at the bottom of the slope in ten minutes after the explosion occurred, but could not find Trione on account of him being under water.

No. 63. Lee Perry; age, 29; nativity, American; occupation, rope-rider; was injured on January 12, 1904, at about 2.15 p. m, in mine No. 3, operated by the Rock Island Coal Company, near Gowan, Ind. T., by being run over by a trip of cars. His injuries proved fatal. Injured man had been in the employ of the company about ten months, was married, and was left in charge of his family. Physician called, Dr. W. H. Cleckler. FATAL.

Lee Perry was acting as rope rider in No. 20 slope, operated by the Rock Island Coal Company, near Gowan, Ind. T. He had worked up to about 2 p. m., and had just placed an empty trip of cars in the tenth west entry, and hooked on to a trip of loaded cars. He then signaled to the engineer to hoist up. After the engineer began to pull the trip up the slope Perry attempted to get on the first car. In doing so he slipped and fell in front of the cars, and was dragged about 100 feet before the trip could be stopped, and received such injuries that he died the following day.

The injured man stated before he died that it was an accident that might happen to anyone, and that no one was to blame.

No. 64. William Decker; age, 28; nativity, American; occupation, miner; was injured on January 13, 1904, at about 9.30 a. m., in mine No. 2, operated by the Samples Coal and Mining Company, near McAlester, Ind. T., by a fall of slate. Injured man was married, had been in the employ of the company about one year, and was left in charge of the hospital. Physician called, Dr. A. J. Crabill.

William Decker was engaged as a miner in mine No. 2. He worked in No. 1 room on the first entry, and was shoveling coal at the time the accident occurred. Both Decker and his partner, Walker, had examined the roof and discovered a piece of slate which was loose and dangerous, but they concluded that they would shovel out their loose coal before taking down the rock; and while engaged in doing so the rock fell, injuring Decker, as above stated. This loose rock was about 6 feet from the face of their room, and it was their duty to have taken it down or secure it with timber before doing any work underneath it.

No. 65. J. L. Williams; age, 25; nativity, American; occupation, mule driver; was injured on January 15, 1904, at about 3.45 p. m., in mine No. 2 in the second east entry, operated by the Milby & Dow Coal and Mining Company, near Dow, Ind. T., by being caught under a trip of cars. His injuries proved fatal. Injured man had been in

the employ of the company about two years, was married, and was left in charge of his family. Physician called, Dr. A. E. Carlock.

FATAL.

J. L. Williams was engaged as a mule driver in the second west entry of mine No. 2, operated by the Milby & Dow Coal & Mining Company, near Dow, Ind. T. Williams had worked all day, and was bringing out his last trip for the day. He states that on reaching the junction of the upper and lower entries his trip of two loaded cars was traveling rather fast, and that he was riding on the front end of the first car, which jolted so much at the junction of the tracks that he fell off the car in front of the trip and was run over. He was so severely injured that he died the following day.

He should have used two sprags on the trip, but only used one. He also should have stopped his trip, and thrown the latches before attempting to cross over them. There is no doubt that in his hurry to get through with his day's work he was taking some chances, and paid the penalty with his life.

No. 66. Albert Allen; age, 50; nativity, negro; occupation, miner; was injured on the 18th day of January, 1904, at about 3.50 o'clock a. m., in mine No. 1, operated by the Milby & Dow Coal and Mining Company, near Dow, Ind. T., by being struck by a trip of cars, causing bruises about the head and shoulders. Injured man had been in the employ of the company about forty days, was single, and was left in charge of Dr. W. S. Webber. Physician, Dr. A. E. Carlock.

Investigation shows that Albert Allen was engaged in No. 1 mine, operated by the Milby & Dow Coal and Mining Company as a miner; that he had just completed his day's work and was on his way to the bottom of the shaft. He with several others had reached a point between the slope and hoisting shaft when a trip of loaded cars were being run into the entry leading to the shaft. These men state that they heard the trip coming, and said to Allen to look out. He stepped to one side of the track, but continued on toward the shaft, and just as he reached a point where the rib or side of entry was close to the track the cars overtook him, injuring him as above stated.

Had injured man remained where he first left the track till the trip had passed he would not have been injured.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T., *February 29, 1904.*

SIRS: I have the honor to report for the month of February, 1904, 10 accidents in coal mines in the Indian Territory, 4 of which proved fatal. There were investigated for the corresponding month of February, 1903, 7 accidents, 4 of which proved fatal.

I attach hereto details of the causes of the accidents with names of the coal companies for February, and I also inclose detailed report and the original accident reports.

During the month of February, while removing some dirt from strip pits on the surface of the ground, a man named Charles Storey was killed by a fall of dirt. I investigated this case, but as I considered that it could not be called a mine accident, I have not included it in my monthly report.

Very respectfully, WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company's name.	Nonfatal.	Fatal.	Total.
Sans Bois Coal Co		1	1
Bolen-Darnell Coal Co	1		1
McAlester Coal and Mineral Co		1	1
Samples Coal and Mining Co	1	1	2
McAlester Coal Mining Co		2	2
Great Western Coal and Coke Co	1		1
Southwestern Development Co	2		2
Total	5	5	10

Statement of accidents by causes.

Causes.	Nonfatal.	Fatal.	Total.
Pit car	1	1	2
Windy shot	1		1
Fall of roof	2	1	3
Explosion		3	3
Fall of coal	1		1
Total	5	5	10

No. 67. Ed. Davie; age, 30; nativity, American; occupation, miner; was injured on January 28, 1904, at about 1 o'clock a. m., in mine No. 3, operated by the Sans Bois Coal Company, near McCurtain, Ind. T., by being caught between a car and crossbar. Injured man had been in the employ of the company about three months, was married, had two children, and was left in charge of Drs. Chambers and McClure.

FATAL.

Ed. Davie was engaged as a miner in No. 3 slope, operated by the Sans Bois Coal Company, and was fatally injured by being crushed between a pit car and a crossbar about 30 feet from the face of south air course, and at the entrance to a lodgment which was in course of construction.

It seems that Davie had completed his work and that the roperider had come into his working place to haul out the car he had loaded. Davie said to the roperider that he would ride on the car, and for him to go and signal to the engineer to hoist up. This the roperider did, and when the car reached the crossbar Davie was too high and got caught between the car and crossbar, and before the engineer could stop the car he was so severely crushed that he died.

Davie was performing work that was no part of his duties, and work that the roperider was specially employed to do.

No. 68. John Morrison; age, 28; nativity, American; occupation, shotfirer; was injured on February 3, 1904, at about 9 o'clock p. m., in mine No. 3, operated by the Bolen-Darnall Coal Company, near McAlester, Ind. T., by a windy shot, causing burns on his hands and face. Injured man had been in the employ of the company one day, was single, and was taken to Mercy Hospital. Physician called, Dr. J. O. Grubbs.

Investigated accident whereby John Morrison, shotfirer, was slightly burned by a windy shot in No. 3 mine, operated by the Bolen-Darnall Coal Company.

It seems that John Morrison and his butty had fired shots in several rooms on the fifth east entry. One of the shots in No. 1 room threw the coal out with considerable force, and no doubt made a large volume of flame which traveled out the entry to where John Morrison had retired, burning him as above described. The injured man did not retire to a safe place, or to a distance from the shots that a prudent man would have done. Had he used ordinary care he would not have been injured.

No. 69. M. Cartagno; age, 24; nativity, Italian; occupation, miner; was injured on January 26, 1904, at 1 o'clock p. m., in mine No. 6, operated by the McAlester Coal and Mineral Company, near Wilburton, Ind. T., by a fall of rock which caused his death. Injured man had been in the employ of the company about eight months, was single, and was left in care of Joe Marsazellia. Physician called, Dr. R. L. Cobble.

FATAL.

Investigation shows that M. Cartagno was engaged as a miner in the second west air course in mine No. 6, operated by the McAlester Coal and Mineral Company; that he was injured by a fall of slate close to the butt shots, which resulted in his death on January 27.

Cartagno had been notified of the danger of this slate, and instructed by Robert Strang, gas man, to set props to it or he would get injured. It seems that he paid no attention to the instructions given him and continued to work under the loose slate without securing it with props or making it safe otherwise. It was the duty of the injured man to secure the roof near his working face. This he failed to do and paid the penalty with his life. There were seven props of various lengths convenient to his working place that he could have used to secure the roof and make the place safe for him to work in.

No. 70. Dan Smith; age, 45; nativity, American; occupation, miner; was injured on January 29, 1904, at about 3.30 o'clock p. m., in mine No. 1, operated by the Samples Coal and Mining Company, near McAlester, Ind. T., by a fall of rock, breaking his leg. Injured man had been in the employ of the company about two years, was single, and was taken to the hospital. Physican called, Dr. R. J. Crabill.

Investigated accident whereby Dan Smith was injured in the third east entry of mine No. 1, operated by the Samples Coal and Mining Company. Smith and his butty were engaged in cleaning up and retimbering the lower third east entry. This entry had fallen in for a considerable distance, and enough slate had been loaded out to make room for a crossbar. Smith was in the act of preparing a place for a prop when a loose piece of slate fell from the top, striking him on the leg, and injuring him as above stated.

Smith was aware that the slate was loose about where he was working, and should have put up a prop to keep him safe till the crossbar was got in place.

No. 71. John Soleski; age, 30; nativity, Pole; occupation, shotfirer; was killed on the 8th day of February, 1904, at about 5.15 p. m., in mine No. 2, operated by McAlester Coal Mining Company, near Buck, Ind. T., by after-damp. Injured man was single, had been in the employ of the company about six months, and was left in care of his brother.

FATAL.

No. 72. Frank Daily; age, 34; nativity, Pole; occupation, shotfirer; was killed on the 8th day of February, 1904, at about 5.15 p. m., in mine No. 2, operated by McAlester Coal Mining Company, near Buck, Ind. T., by after-damp. Injured man had been in the employ of the company about six months, was single, and left in care of undertaker.

FATAL.

On Tuesday morning, about 7 o'clock a. m., I was notified by telephone that an explosion had occurred in No. 2 mine, operated by the McAlester Coal Mining Company, near Buck, Ind. T. I proceeded to the mine, and in company with the superintendent, pit boss, and gas man entered the mine and made a careful examination with the view of locating the point where the explosion originated and the cause of the same. It may be stated that the result of the first day's investigation was very unsatisfactory, so much so that I decided to return and make a second investigation after the ventilation had been restored to its normal condition and the gas cleared out which had accumulated in the ninth east entry owing to the disarrangement of the air current.

On Thursday morning I was notified by telephone that ventilation had been restored so that a complete investigation of the mine could be made with naked lights. I at once went to the mine, and in company with the superintendent, pit boss, gas man, and two men representing the miners, entered the mine and carefully examined all of the workings in the tenth east entry, also the entries and many of the rooms in the ninth east entry.

No. 2 is a slope mine and has been driven down about 3,000 feet, with a pitch of nine degrees to the southwest. The mine is ventilated by a 12-foot fan. Ten entries have been turned to the east side of the slope, the west side workings being limited to a very small area, and at the present time no coal is being drawn from the west side of the slope above the tenth entries. Of the ten entries on the east side only three are in operation, viz—the eighth, ninth, and tenth east. The two day's investigation will not be taken up and treated as one.

Proceeding down the slope to a point above the sixth east entry I made a careful measurement of the air current, and found 16,520 cubic feet per minute traveling into the mine. No great force was observed above the eighth east entry; between the eighth and ninth east entries several stoppings in breakthroughs were more or less disturbed, some of them being blown out entirely. These damaged stoppings all indicated that the force had been exerted from the east side. The ventilating door placed in the ninth entry a short distance in from the slope was blown out, and was found lying against the west side of the slope, and must have been blown a distance of 25 or 30 feet by the force of the explosion. Proceeding down the slope we

found a number of stoppings in breakthroughs on east side blown out toward the slope. Also the props on the slope had a thick coating of coal dust on the lower side. However, this dust had not been subjected to any great heat. At the entrance to the tenth east entry a curtain was placed for the purpose of forcing the air to the bottom of the slope. On the east side of this curtain slight deposits of coked coal dust was observed, this being the first signs of flame. A number of pit cars were standing on the double switch on this entry, several of them having deposits of coked coal dust on the inner end, or the end next to the face. Also the side of props next to the face of entries were more or less covered with deposits of coked coal dust.

At the mouth of No. 2 room a safety lamp was found which had been used by one of the shotfirers; also the caps and open lamps of both shotfirers were found at this point. This shows that the shotfirers were at this point when an explosion occurred, but must have traveled out onto the slope, going down same for a distance of about 70 feet, where they were both found together dead. Proceeding in this entry it was clearly in evidence that both force and flame had traveled from the face toward slope. A careful examination was made of the shots that had been fired in rooms 7, 8, and 9, also the shots fired in the lower entry or air course. Starting in the lower entry we found a heavy butt shot had been fired on the lower side. This shot was too heavy, and such a shot as should not be fired. A very bad shot was prepared in the breakthrough just started from the lower to the upper entry. The hole was drilled ahead of the cutting to a distance of 7 inches, but both top and bottom of the coal was uncut for a distance of 12 inches back, and in my opinion these conditions made it about equal to a hole drilled 17 inches ahead of cutting. All cuttings should be cut square both top and bottom, and the hole should not be drilled ahead of the cutting.

We then proceeded to the upper entry. No. 9 room is just being turned. Two shots had been fired in this room, one of which was drilled 14 inches ahead of cutting; coal blown out violently. No. 8 room just turning. Two shots were fired in this room. The one on the right side was drilled about 2 feet ahead of cutting and was a very improper shot to fire. No. 7 room has been driven up sufficient dis- for a breakthrough. One shot had been prepared on the right-hand side of room. This was probably the most dangerous shot that I examined in this entry. The coal blown off the heel was scattered down the room to the entry, one large piece being thrown a distance of 32 feet 6 inches. I refer to these shots specially to show that badly prepared shots are common.

We then traveled through the breakthrough next face of rooms No. 7 to No. 1; thence by the air course to ninth east entry. From the heavy deposits of coked coal dust on the posts in these rooms and other indications it was very plain that a large body of flame must have traversed them in various directions; but it was just as clearly demonstrated that the general course of the force was from the ninth east entry. Careful inspection satisfied all that flame had entered the air course leading from the ninth east entry, and that it traveled down said air course and entered the rooms of the tenth east entry. At the point where the air course joins the ninth east great force had been exerted. Timbers were blown out, pit car turned over and broken, stoppings broken down, and falls of slate. Evidence of this force continued for

a considerable distance in the entry, but gradually diminished as we traveled toward the face. All the shots had been fired both in rooms and entries. We proceeded to the face of lower entry and found that the shots that had been fired in this entry had blown down the brattice cloth that was in use to conduct the air past the last breakthrough, close to the face of entry, a distance of over 30 feet. This brattice no doubt had been set on fire by the flame from the shots and in turn had set fire to the props supporting it; also to the loose coal lying on the lower end of breakthrough and near the curtain, coking the same. We then proceeded to the upper entry, traveling out through a number of the rooms, all of which had been visited by considerable flame. The force and the flame traveled out the entry and through to the first breakthrough. In the rooms the stoppings were blown out, leaving the breakthroughs as clean as if they had been swept by a broom. We also found a powder keg which, from its appearance, had been blown open. On making inquiry we learned that the powder keg had been nearly full. No doubt the exploding of the powder augmented the intensity of the explosion and added to the damage done.

From the foregoing conditions, as observed by us in the investigations of the mine, it now remains to draw conclusions as to the cause of the explosion. From the examination of the number and character of the shots fired in the seventh, eighth, and ninth rooms in the tenth east entry and also in the air course, together with the conditions observed in the entries, air courses, etc., it seems quite apparent that these shots and the manner of their being fired would create considerable flame, accompanied with wind, which caused considerable disturbance and resulting damage, but would hardly account for the extraordinary violence shown in the ninth east entry. The only cause for this that I am able to understand would be the fact that the brattice in the lower ninth entry or air course had been ignited, together with the props supporting same. This destruction of the brattice or the disarrangement of the ventilation by previous shots, or both, may and probably did cause an accumulation of gas at the face of the ninth entry, and the flame and explosive gas may have been brought together by the force of the shots in the tenth entry, in which an explosion of more or less magnitude doubtless occurred, or by the same force having sent the flame from the burning brattice and timbers on to the gas, or by the gas having accumulated and separated by the foregoing means, or by its own increase until it came in contact with the flame, thus causing an extensive explosion with resulting damage. Something of this character must have occurred to account for the extraordinary damage done, and also to account for the force and flame shown to have traveled down the air course from the ninth to the tenth east rooms.

In short, I am strongly inclined to believe that there were two separate explosions. First, an explosion from the heavy shots fired in the tenth entry and rooms and air course; second, a gas and powder explosion at or near the face of the ninth entry, which swept out along the entry and down the air course to the tenth entry, where it met with the heated and dry condition, together with fine coal dust resulting from the first explosion, which fed the second explosion, conducting it along the course which investigations showed it had taken. These explosions would so rapidly follow each other that to the observer outside of the mine they would appear but as one. The bodies of both

the shotfirers showed some evidence of burning, but this alone would hardly account for their death, and doubtless their death was caused by asphyxiation from after damp. I am of the opinion that had it not been for the second explosion in the ninth entry that both men could have been got out alive.

No. 73. August Clark; age, 30; nativity, French; occupation, miner; was injured on February 1, 1904, at about 2.30 o'clock p. m., in mine No. 8, operated by the Great Western Coal and Coke Company, near Archibald, Ind. T., by a fall of rock, breaking his back. Injured man had been in the employ of the company about two months, was single, and was left in care of All Saints Hospital. Physician called, Dr. J. O. Grubbs.

Investigation shows that August Clark was engaged as a miner; that he was drawing pillars, and on the morning of February 1 the gas man, while making his inspection before the miners started their day's work, discovered a dangerous piece of rock in Clark's working place. The gas man notified the pit boss, also Clark and his butty. Clark was aware of the danger, as he warned the mule driver to look out for the rock.

Clark erred in not taking the rock down, or securing it before proceeding to work under it.

No. 74. Dave Fanello; age, 22; nativity, Italian; occupation, miner; was injured on January 29, 1904, at about 11 o'clock a. m., in mine No. 4, operated by the Southwestern Development Company, near Coalgate, Ind. T., by the fall of a piece of coal, breaking his right leg. Injured man was single, was left in care of his boarding house. Doctor called, L. A. Connor.

Investigation shows that Dave Fanello was engaged as a miner in No. 4 mine, operated by the Southwestern Development Company. It seems that he was undermining coal when a large piece (weighing about 300 pounds), without any warning, suddenly broke loose, falling on Fanello's leg, breaking it between the foot and knee. This is an accident that could have been prevented by the injured man securing the coal before starting to mine it, which it was his duty to do.

No. 75. Morgan Jenkins; age, 23; nativity, Welch; was injured on February 15, 1904, at about 1 o'clock p. m., by falling off of the car and getting his foot caught under the car, bruising and spraining his ankle. He was a driver and miner. Injured man had been in the employ of the company about two weeks, was single, and was left in charge of his father. Accident happened in mine No. 9, operated by the Southwestern Development Company, near Coalgate, Ind. T.

It seems that Morgan Jenkins was employed as a miner, and worked with his father in the third west entry (slope). Jenkins was put to driving a mule (by his father's request), on the day he was injured and while making his first trip he fell off the front of the car and got slightly injured. The injured man was represented by his father as an experienced driver.

No. 76. William Tucker; age, 30; nativity, American; occupation, shotfirer; was killed on February 12, 1904, at about 6.45 o'clock p. m., in mine No. 1, operated by Samples Coal and Mining Company, near McAlester, Ind. T., by a supposed windy shot. Real cause unknown. Injured man had been in the employ of the company about three years, was married, and had one child. FATAL.

This accident has not yet been investigated, on account of the mine being on fire, which necessitated the sealing up of the mine to cut off the air so that the fire might be thereby extinguished. After the mine is opened a careful investigation will be made and result of same will be forwarded.

All of which is respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T.,
March 31, 1904.

SIRS: Attached hereto please find final report on accident No. 76, whereby William Tucker was killed on February 12, 1904. This man lay in the mine from February 12 to March 21, it being impossible to get at his dead body before that time, it having become necessary to seal up the mine to extinguish the fire.

There can be no possible doubt that the deceased died within a very short time after the explosion, and it was considered by all parties concerned much more prudent to refrain from risking the lives of a number of men in a vain attempt to rescue the body, which could not possibly survive the disaster but a very few moments.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

No. 76 (continued). William Tucker; age, 30; nativity, American; occupation, shotfirer; was killed on February 12, 1904, at about 6.45 o'clock p. m., in mine No. 1, operated by Samples Coal and Mining Company, west of McAlester, Ind. T., by a windy or blown-out shot. Injured man had been in the employ of the company about three years, was married, and had a wife and child.

On February 12, 1904, at about 6.45 p. m., an explosion occurred in No. 1 slope mine, operated by the Samples Coal and Mining Company, west of McAlester, Ind. T., resulting in the death of one man, engaged as shotfirer, and nine mules.

I was notified on the morning of the 13th by telephone that an explosion had occurred in No. 1 mine aforesaid. I at once proceeded to the mine and found that an explosion had occurred; that the flame had ignited the timbers and other combustible material in the stable; also that the timbers on the slope had caught fire and were burning fiercely. The flame came out of the mouth of the slope and ignited the tipple house. The fire in the tipple house was quickly extinguished, and in about thirty minutes after the explosion occurred a rescuing party entered the mine to look for the shotfirer. They could only proceed down the slope a little over 300 feet, when they encountered the burning timber, which barred their further advance. A large number of men battled with the fire for about fourteen hours without making any headway in extinguishing it. About this time it was seen that

the fire had gained a strong hold; that it had burned out timbers, and the steam created by the water being thrown on the burning material caused the roof to fall in, so that they were practically shut off from the fire. To clean the fallen slate so that the fire could be reached would consume considerable time. In fact it was considered rather dangerous for men to continue work in the mine, as it was thought possible that gas might accumulate in the entries below the fire and by some cause be driven out to and ignited by the fire (burning so fiercely), causing another explosion and thereby endangering the lives of ten or twelve men.

In consultation with J. C. Reid the question was discussed as to the desirability of sealing up the mine and smothering out the fire. Some objection was raised to this for the reason that the body of the shotfirer had not been recovered. To this objection it was shown that there could not be any possibility that he could be alive, and that the danger to the men working at the fire was so apparent that the proper method to pursue was to seal up the mine as soon as possible. This was finally consented to by all in consultation, and the work of sealing up the mine was at once begun, and on the night of the 13th the sealing was completed. Nothing further was done until the 3d of March, when the sealing was removed, the fans started, and the ventilation put in motion, when the work of cleaning up was begun. It may be here said that the fall brought about by the fire burning out the timbers extended over 100 feet along the slope, having fallen to an average height of 20 feet above the coal.

This is a slope mine and has been driven (in the coal) for a distance of about 1,000 feet, pitching to the south 24°, which pitch decreases, as the slope is extended down, to 16° or 18°. Four entries have been turned to the east and west, respectively, the first east entry being worked out. The double switch at the entrance to this entry from slope had been utilized as a stable, with ten stalls, where nine mules were stabled. Ventilation was furnished by two 12-foot fans, placed on air shafts on the east and west sides of slope. The mine remained sealed from the night of February 13 to the 3d day of March (nineteen days). It was then considered safe to open it up, which was done, and all signs of fire had disappeared. However, after ten or twelve days slight signs of smoke in the discharge of the east fan showed and caused considerable alarm. However, about this time an opening was made into the stable, and it was discovered that a little fire was smoldering in it. This did not give any serious trouble and was at no time dangerous.

After the sealing of the mine had been removed and the ventlation started up, an examination of the slope showed that at the point where the fire had been burning a large fall of slate had taken place, which fall completely blocked the slope so that it was impossible to proceed down till the fall had been cleaned.

On the morning of the 4th, J. C. Reid and several others and myself made an effort to reach the lower workings by going down the west airshaft and traveling the air course. We could only proceed a short distance, as the air was so loaded with carbonic-acid gas that our lights would not burn. We gave up this attempt till the following day. We again tried to make our way through this air course, but found that it had fallen in so that it was impossible to get through it. It was hen agreed that the first west entry was the next point where it would

be possible to get through. However, when the fall had been cleaned down to this entry, it was also found to have fallen so bad that it was impossible to get through it. At this time the fall on the slope showed signs of narrowing down, and it was thought that in a day or two we would be able to get over the fall. This proved to be correct, and on the morning of March 21 a search party, composed of J. C. Reid, general manager, his local superintendent, the pit boss, also a committee of the miners, and myself, proceeded down the slope, and after repairing the stoppings and doors that had been blown out and damaged by the force of the explosion we were able to proceed down the slope. At a point about 82 feet above the fourth or lower entries we found the body of William Tucker (shotfirer) lying on his face. His position showed that he had been trying to make his escape up the slope and had been overcome by the after-damp.

We examined the body as closely as his condition would permit, and it was the opinion of all that he had been burned, but to what extent it was impossible to determine. The body had been in the mine from February 12 to March 21, about five weeks and three days, and was not in a good state of preservation, so much so that it was necessary to take the coffin into the mine to where the body was found, where he was placed in the coffin, the same being closed and not opened afterwards.

Further investigation could not be made on account of the water having accumulated in the fourth entries, where all the conditions pointed to as being the section of the mine where the explosion originated.

Later I was notified that the water would be lowered sufficient so that an investigation could be made, on the 25th day of March. Accordingly I visited the mine on that day, and in company with General Manager J. C. Reid, his local superintendent and pit boss, also a committee of three miners, we proceeded to investigate the cause of explosion and the point of origination.

On the night of February 12 a large volume of flame and heavy clouds of dust, accompanied by a loud rumbling sound, shot from the mouth of the slope, which was heard for a considerable distance and readily understood by all who lived in the vicinity of the mine. That an explosion had occurred in the mine was beyond doubt, and great excitement existed for some time. As before stated, the stables in the first east entry were set on fire, also the timbers on the slope, which necessitated the sealing of the mine before the body of the shotfirer was recovered.

My investigation on the 25th day of March points to the following conclusions: Proceeding down the slope to the first entry, it was found that the ventilating door had been blown from the slope, also the second and third west doors were blown from the slope with great violence. However, the door on the third east was only blown open toward the slope, the force having been exerted from the inside. About 100 feet below the third east a wide stopping was blown from the east air course toward the slope. Proceeding down to the fourth east or lower entry, we found three loaded cars that had been standing on the sidetrack had been forced out toward the slope for a distance of 20 feet, the coal being scooped off the top of them: also three empty cars were thrown from the fourth east entry. This entry has been driven in from the slope about 200 feet. Five rooms have been turned.

Investigation showed that shots had been prepared in all the rooms and upper and lower entries. However, only the shots in rooms Nos. 1 and 2 had been fired. The two shots in No. 1 room seemed to have done their work fairly well, but they were both strong shots and had been drilled too deep and might be expected to throw considerable fire. Two shots had been fired in No. 2 room, one on each rib of the room. The shot on the right rib was drilled 6 feet, and had at least 5 feet of solid coal in front of the point of hole. This was evidently too strong, as the powder had bursted out the coal at the mouth of hole to a distance of 2½ feet, leaving the heel and all other parts of the shot intact. From all information that could be gathered, there must have been 3 feet 6 inches of powder in this hole, and in the opinion of all who investigated the shot it must have created a large volume of flame. In fact, the conditions existing, such as deposits of coked coal dust, and the manner in which timbers and other débris was thrown, all pointed to this shot being the origin of the explosion.

We next proceeded to the fourth or lower west entry, and found that the shots in Nos. 1 and 2 rooms had also been fired, one shot in No. 1 room and two shots in No. 2 room. The shot in No. 1 room was a badly prepared shot, and such a shot as it was improper to fire. This shot had created an explosion of considerable magnitude, although it was confined entirely to the entry where it had occurred, and it can not be considered as a factor in the disastrous explosion.

In summing up this matter, it is clear that the explosion that killed Tucker and set fire to the mine originated in room No. 2 of the fourth east entry, and that the explosion split at the mouth of the room, part going up the east air course parallel with the slope, and part going out the entry and up the slope. That part of the explosion that went up the air course no doubt set fire to and exploded one keg of powder, and one dinner bucket filled with powder, which were in the air course, no doubt seriously augmented the force and flame of the explosion, causing the disaster. This disaster is a repetition of the conditions which have caused so many accidents in the Territory, to wit: First, the want of care of some miner in his anxiety to produce a large quantity of coal with little labor by placing shots too much on the solid, and with excessive charges of powder. Second, the want of care on the part of the shotfirer in firing such ill-placed and excessively charged shots. Third, by the carrying into the mine and the leaving at points in the mine of large quantities of powder, all of which act together, cause and intensify the disastrous results so often occurring.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

APRIL 8, 1904.

No. 76 (continued). Made special inspection of Samples mine No. 1 before the production of coal was resumed, after the explosion that occurred on the 12th day of February, 1904, and found 20,250 cubic feet of air traveling in the mine, this amount being conducted to and distributed around the working places in proper shape. Found that a fall in the west air course had not been cleared, but they were working

at this fall, and expected to complete the repairs in two days, which would put the mine in very good condition. A line of pipes had also been laid down the slope, and the lower entries will be sprinkled by this method.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T.,
March 31, 1904.

SIRS: I have the honor to report for the month of March, 1904, 6 accidents which I have investigated in coal mines in the Indian Territory, 1 of which proved fatal. For the month of March, 1903, there were 9 accidents, 3 of which proved fatal.

I inclose herewith details of the causes of the accidents, together with the names of the companies in whose mines the accidents occurred. I also inclose detailed reports and the original accident reports.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Mexican Gulf Coal and Transportation Co	2	.....	2
Southwestern Development Co	1	.....	1
Samples Coal and Mining Co	1	.....	1
Rock Island Coal Co	1	1	2
Total	6	1	6

Statement of accidents by cause.

Causes.	Nonfatal.	Fatal.	Total.
Fall of roof	2	.....	2
Pit car	2	.....	2
Powder explosion	1	.....	1
Rock falling down shaft	.....	1	1
Total	5	1	6

Statement of accidents reported to me as occurring in the coal mines in the Indian Territory, and investigated by me during the month of March, 1904.

No. 77. John Elder; age, 46; nativity, American; occupation, miner; was injured on the 12th day of January, 1904, at about 8 o'clock a. m., in mine No. 2, operated by the Mexican Gulf Coal and Transportation Company, near Howe, Ind. T., by a fall of slate, causing slight injuries. Injured man had been in the employ of the company about two years, was married, and was left in charge of his family. Physician, Dr. S. A. Dean.

No. 78. Joe Dewitt; age, 48; nativity, American; occupation, miner; was injured on the 12th day of January, 1904, at about 8 o'clock a. m., in mine No. 2, operated by the Mexican Gulf Coal and Transportation Company, near Howe, Ind. T., by a fall of slate, causing slight injuries. Injured man had been in the employ of the company about four years, was married, and was left in charge of his family. Physician called, Dr. S. A. Dean.

Investigation shows that John Elder and Joe Dewitt were working in the air course, main east entry; that they were employed as miners, and had just started to load their first car in the morning. It seems that a piece of draw slate about 4 inches thick, 18 feet long, and 12 feet wide fell on them, injuring them as above described. Had these men examined their working place they would have discovered that it was dangerous, and should have secured the draw slate by putting up props. There were six or eight props of the proper length close to their working face.

No. 79. John Ornel; age, 28; nativity, Italian; occupation, miner; was injured on the 25th day of February, 1904, at about 3.50 p. m., by getting his legs caught by the wheels of a pit car, in Sunshine mine, operated by the South Western Development Company, which injuries resulted in having his leg amputated below the knee. Injured man had been in the employment of the company about fourteen days, was single, and was left in charge of United Mine Workers of America. Physicians called, Drs. W. W. Hume and Guinn.

Investigation shows that John Ornel was engaged in mining coal in the second east entry of Sunshine Slope mine, north of Coalgate, Ind. T.; that he went into No. 21 room to assist his butty to bring a car down to the entry. The room pitches about 9 degrees, and the car should have had at least two sprags in the wheels. Ornel got in front of the cars, with his butty behind. In this position the car was started, and at once got beyond their control. Ornel, who was in front of the car, fell, and it ran over his leg, bruising it so that it had to be amputated below the knee. These men were careless in not putting sprags in the wheels before starting it down the room.

No. 80. A. J. Gray; age, 54; nativity, American; occupation, weigh boss, was injured on the 7th day of March, 1904, at about 10.45 a. m., on tipple at Samples mine No. 2, operated by Samples Coal and Mining Company, near McAlester, Ind. T., by being caught by a pit car, breaking his left leg below the knee. Injured man had been in the employ of the company about one week, was married, and was left in charge of Mercy Hospital. Physicians called, Drs. A. J. Crabill and E. H. Troy.

Investigation shows that A. J. Gray was engaged on the tipple at Samples No. 2 mine, weighing and assisting to dump coal. It seems that a trip of three loaded cars had just been hauled on the tipple, and that the engine or hoisting rope had been detached while the cars were in motion. Gray uncoupled the first car, which was loaded with slate, and pushed it ahead of the other cars, and on reaching the switch that leads to the dirt dump the car left the track and stopped. He had not observed that the last two cars of the trip were following him, and remained between the cars until they came together, catching his leg and bruising it rather severely.

No. 81. William Kowallis; age, 22; nativity, Russian; occupation, miner; was injured on the 16th day of March, 1904, at about 7 o'clock p. m., in mine No. 18, operated by the Rock Island Coal Company, near Hartshorne, Ind. T., by an explosion of powder, which caused burns of all degrees about his face, ears, neck, and hands. Injured man had been in the employ of the company about three months, was single, and was left in charge of All Saints Hospital. Physician called, Dr. W. W. Sames.

Investigation shows that William Kowallis went into the mine after working hours and was in the act of making a cartridge for the purpose of making a blast in the coal in No. 8 room on the second west entry, when the powder ignited in some way, burning him rather severely.

Kowallis violated both the rules of the company and the law governing shot firing, and he alone is responsible for the injuries he received.

No. 82. O. H. Duren; age, 24; nativity, American; occupation, shaft sinker, was killed on the 22d day of March, 1904, at about 10.40 p. m., in No. 7 air shaft, operated by the Rock Island Coal Company, near Hartshorne, Ind. T., by a piece of rock falling from the bucket and striking him on the head, causing instant death. Injured man had been in the employ of the company about two months, was single, and was left in charge of Mrs. Aldridge's boarding house. Physician called, Dr. W. W. Sames. FATAL.

O. H. Duren was engaged as a sinker in the new air shaft being sunk east of Hartshorne by the Rock Island Coal Company. On March 22, at about 10.40 p. m., he had loaded a bucket with slate, which contained about 1¼ tons. After loading same the engineer was signaled to hoist the bucket to the surface (a distance of 80 feet). When the loaded bucket was hoisted to the top and brought to a stand the top man then hooked a chain, known as a bull chain, to the bucket chain, connecting the wire rope with the bucket, after which the engineer released the drum and allowed the bucket to become suspended on the bull chain and about 5 feet clear of the shaft.

It seems that when the bucket was being lowered the bull chain took the weight and partly swung it off the shaft, but before it reached its proper position the hook of the bull chain became detached and allowed the bucket to swing back and strike the platform, tipping the bucket, so that two pieces of slate fell down the shaft, one of which struck Duren on the head, killing him almost instantly. After a very careful investigation I am of the opinion that the hook of the bull chain was not properly in place when the engineer lowered the bucket. If it had been so it seems to me that it would be impossible for it to come out.

Respectfully submitted.

WILLIAM CAMERON.

SOUTH MCALESTER, IND. T., *April 30, 1904.*

SIRS: I have the honor to report for the month of April, 1904, 7 accidents which I have investigated in coal mines in the Indian Territory, none of which proved fatal. For the month of April, 1903, there were 20 accidents, 9 of which proved fatal.

I inclose herewith details of the causes of the accidents, together with the names of the companies in whose mines the accidents occurred. I also inclose detailed reports and the original accident reports.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Southwestern Development Co	4	.....	4
Hailey-Ola Coal Co	1	.....	1
Samples Coal and Mining Co	1	.....	1
Great Western Coal and Coke Co	1	.....	1
Total	7	.....	7

Statement of accidents by causes.

Causes.	Nonfatal.	Fatal.	Total.
Fall of roof	2	.....	2
Pit car	4	.....	4
Caught between rope and wheel	1	.....	1
Total	7	.....	7

Statement of accidents reported to me as occurring in the coal mines in the Indian Territory and investigated by me during the month of April, 1904.

No. 83. J. T. Cummings; age, 24; nativity, American; occupation, blacksmith, was injured on the 19th day of March, 1904, at about 2.30 o'clock p. m., in mine No. 10, operated by the Southwestern Development Company, near Coalgate, Ind. T., by getting his hand caught between rope and wheel, bruising and cutting his hand. Injured man had been in the employ of the company about eleven months, was married, and was left in charge of his wife. Physicians called, Doctors Connor, Allan, and Guinn.

Investigation shows that J. T. Cummings, blacksmith, was engaged oiling the slope rope, and that he carelessly allowed his hand to get caught between the rope and sheave wheel, which injured his hand as above described. The accident was due to his own carelessness.

No. 84. J. E. Steward; age, 23; nativity, colored American; occupation, mule driver, was injured on the 14th day of March, 1904, at about 10 o'clock a. m., in mine No. 9, operated by the Southwestern Development Company, near Coalgate, Ind. T., by being caught between top of loaded car and the roof, dislocating his right hip joint, and cutting his right leg below the knee. Injured man had been in the employ of the company about sixteen days, was married, and was left in charge of George Green. Physician called, Doctor Lyon.

Investigation shows that J. E. Steward was engaged as mule driver in the third west entry (slope) in No. 9 mine; that while hauling out a trip of two loaded cars he was riding on the first car with his foot on the tail chain when he lost his balance and fell in front of the cars, and was rather severely injured. It was Steward's first day on this entry, and the boss driver made two trips with him to show him the run. The entry was 6 feet wide and 4 feet 6 inches high, with good track. This accident may be placed among the unforeseen.

No. 85. Anton Berteletti; age, 34; nativity, Italian; occupation, miner, was injured on the 2d day of April, at about 10 o'clock a. m., in mine No. 10, operated by the Southwestern Development Company, near Coalgate, Ind. T., by getting his hand caught between car and roadside props, cutting off the first three fingers on his left hand. Injured man had been in the employ of the company about three months, was married, and was left in charge of Anton Possini. Physician called, Doctor King.

Investigations shows that Anton Berteletti was engaged in No. 10 mine as a miner, and that while in the act of taking a loaded car from the face of his room down to the entry one wheel came off which caused the car to swing around so that the corner of the car struck a prop catching Berteletti's hand between prop and corner of car, injuring it so that three fingers had to be taken off at the first joint.

No. 86. Leon Jones; age, 16; nativity, American; occupation, trapper, was injured on the 6th day of April, 1904, at about 8 o'clock a. m., in mine No. 10, operated by the Southwestern Development Company, near Coalgate, Ind. T., by runaway cars, causing his left arm to be broken in two places above elbow, also cut about 1 inch long below elbow, and cut over left eyebrow. Injured man had been in the employ of the company about two days, was single, and was left in charge of his parents. Physician called, Dr. L. A. Conner.

Investigation shows that Leon Jones was engaged as latch thrower, trapper, and bell ringer in No. 10 mine.

This accident occurred in the slope which has been driven down from the level of the shaft about 1,400 feet. Five entries had been turned to the west and six to the east. Work for the day had just begun. The first trip was being hoisted from the third west entry and had reached the second west entry when a miner passing under the signal wires carelessly ran his head against them, causing the bell to ring once. The engineer in the engine room stopped the trip. The signal to hoist up the trip was again given to the engineer. He put the engine in motion, and had started the trip up the slope about 12 feet when the spur wheel on the drum shaft broke, thus releasing the drum from all control of the engine. The trip of six loaded and two empty cars ran down the slope at a high rate of speed, and when it reached the fifth east entry five of the cars left the track, the three lower cars broke loose, two going about 40 feet farther, and one of the three cars went about 110 feet before it stopped, when it turned across the track throwing the coal it was loaded with about 15 or 20 feet down the slope. This coal which must have been thrown with great force struck the injured boy, who was found lying on the slope just at the entrance to the fifth west entry and about 12 feet below the car. Had the boy stepped into the entry, or retired into one of the break throughs on slope when he heard the trip coming, he would have been

safe, but it seems that he stood in the most dangerous place he could have chosen. Examination showed that the spokes of the spur wheel had been partly cracked before the accident occurred, but it is very probable that the defects could not have been discovered by ordinary inspections. The engineer states that in making his examination of the machinery that morning he examined the spur wheel that broke, sounding it with a hammer, and that it appeared all sound and in good order.

No. 87. Anton Values; age, 43; nativity, Polander; occupation, miner; was injured on the 25th day of April, 1904, at about 10 o'clock a. m., in mine No. 1½, operated by the Hailey-Ola Coal Company, near Lutie, Ind. T., by a piece of slate falling on him, breaking his left upper arm about 3 inches above the elbow. Injured man had been in the employ of the company about three months; was single, and was left in charge of his brother. Physician called, Dr. J. C. Johnston.

Investigated the cause of accident that occurred in No. 1½ mine, operated by the Hailey-Ola Coal Company, near Lutie, Ind. T.

It seems that Values was engaged as a miner in the fifth west entry, room 64, that he was in the act of taking down a piece of draw slate with an iron bar, and that he got too close to the slate when it fell, striking him on the left arm, breaking it above the elbow. Investigation showed that the piece of slate that fell was close to the working face, and that it was carelessness on the part of the injured man in not keeping clear of the falling slate.

No. 88. William Donaldson; age, 36; nativity, negro; occupation, miner; was injured on the 13th day of April, 1904, at about 2.30 p. m., in mine No. 1, operated by the Samples Coal and Mining Co., by a fall of slate, which bruised his foot. Injured man had been in the employ of the company about fifteen months, was married, and left in charge of his wife. Physician called, R. J. Crabill.

Investigated accident that occurred in Samples No. 1 mine whereby William Donaldson was injured.

The injured man was engaged as miner, and worked in second west entry and on the top of east landing (plane). He was clearing out a place to set up a prop to a loose piece of rock. While doing this a piece of the rock fell on some loose coal and slipped down on his foot, injuring it as above described.

The accident occurred at the face of Donaldson's working place, and he had been notified by the pit boss about one hour before the accident occurred that the rock was bad, and that he should secure it at once, and if he had carried out these instructions he would not have been injured.

No. 89. H. J. Adams; age 33; nativity, American; occupation, driver; was injured on the 27th day of April, 1904, at about 1 o'clock p. m., in mine No. 6, operated by the Great Western Coal and Coke Company, near Wilburton, Ind. T. Injured man had been in the employ of the company about two years, was single, and left in charge of his boarding house. Physician called, L. M. Sackett.

Investigated the cause of accident that occurred in No. 6 mine, operated by the Great Western Coal and Coke Company, whereby H. J. Adams was injured by a car wheel running over his toes.

Adams was engaged as a mule driver in the eighth west entry, and had brought out a trip of loaded cars to the top end of sly where, in order to regulate the speed of cars, he put sprags in the wheels.

The end of sprag caught the bottom part of his pants, and pulled his foot under the wheel of car, the same passing over his toes, bruising two of them. No bones were broken. This is an unforeseen accident.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

MAY 31, 1904.

SIRS: I have the honor to report to you for the month ending May 31, 1904, the investigation of 5 accidents in coal mines in the Indian Territory, none of which proved fatal.

There were investigated for the corresponding month of May, 1903, 7 accidents, 2 of which were fatal.

I give below details of the accidents investigated during May, 1904, by coal companies and by causes. I also inclose detailed report and original accident reports.

Very respectfully, WILLIAM CAMERON,
United States Mine Inspector for the Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents by companies.

Company.	Nonfatal.	Fatal.	Total.
Great Western Coal and Coke Co	1		1
Rock Island Coal Co	3		3
Osage Coal and Mining Co	1		1
Total	5		5

Statement of accidents by causes.

Causes.	Nonfatal.	Fatal.	Total.
Pit car	1		1
Fall of roof	4		4
Total	5		5

Statement of accidents reported to me as occurring in the coal mines in the Indian Territory and investigated by me during the month of May, 1904.

No. 90. H. O. Thompson; age, 30; nativity, American; occupation, miner; was injured on the 4th day of May, 1904, at about 3.45 o'clock p. m., in mine No. 2, operated by the Great Western Coal and Coke Company, near Wilburton, Ind. T., by being caught between pit car and rib, fracturing his ribs, and causing internal hemmorhage. Injured man had just been employed by the company, was single, and left in charge of his boarding house, but later was taken to the hospital. Physician called, Dr. L. M. Sackett.

Investigation shows that H. O. Thompson was engaged as a miner in No. 2 slope, and that on the evening of Wednesday, May 4, he had completed his day's work, and was on the slope between the fifth and sixth entries when the rope rider was hoisting a trip from the seventh

west entry. He observed Thompson trying to jump on the trip while it was moving at a high speed. The rope rider at once reached for the bell wire, and signaled the engineer to stop the trip, but before the trip was stopped Thompson, who failed to get properly on the trip, was caught between the rib and cars, and was injured rather seriously. Thompson was warned by the rope rider (Frank Dick) not to attempt to ride on the loaded trip. This warning he disregarded, and he alone is responsible for his injuries.

No. 91. Jacob Bannosik; age, 32; nativity, Austrian; occupation, miner; was injured on the 6th day of May, 1904, at about 10 o'clock a. m., in mine No. 3, operated by the Rock Island Coal Company, near Gowen, Ind. T., by a fall of rock, fracturing his fifth rib, causing some contusion below scapala; also in pelvic region and foot of right side. Injured man had been in the employ of the company about seven months; was married, and was left in charge of his wife. Physician called, Dr. W. H. Cleckler.

Investigation shows that Jacob Bannosik was working in Gowen No. 3 mine. While in his room, and near his working face, it seems that this slab of rock fell without warning, or without its loose condition being observed by the injured man. This room has a sand-rock top, and it was very unusual for a piece of it to slab or shell off from the main body. The general condition of the top being good, there is no doubt but that Bannosik became careless and did not examine and timber as he should have done.

No. 92. Rock Fennell; age, 20; nativity, Italian; occupation, driver; was injured on the 6th day of May, 1904, at about 3.30 o'clock p. m., in mine No. 11, operated by the Osage Coal and Mining Company, near Krebs, Ind. T., by a fall of rock, fracturing the lower third of right femur, small cut on right shoulder, and other slight bruises. Injured man had been in the employ of the company about four years; was single, and was left in charge of Mercy Hospital. Physician called, Dr. S. D. Turner.

Investigation shows that Rock Fennell was engaged as a driver in mine No. 11, and that he had gone into the sixth west lower entry to pull out a loaded car. The car was not quite loaded when he reached the face of entry. He passed the car and sat down on the bottom to rest, when Steve Corrano (the man loading the car) said to him that he had better not sit there, as he was under a loose rock. He moved back to the end of the car and stooped down to pick up a piece of coal to put on the car, when the piece of rock fell and injured Fennell as above described.

No. 93. M. Velamella; age, 31; nativity, Mexican; occupation, miner; was injured on the 17th day of May, 1904, at about 1 p. m., in mine No. 3, operated by the Rock Island Coal Company, near Gowen, Ind. T., by a fall of rock, causing a number of lacerations and wounds about his face and head. Injured man had been in the employ of the company about five months; was married, and was left in charge of his wife. Physician called, Dr. W. H. Cleckler.

Investigation of the cause of the accident whereby M. Velamella was injured in mine No. 3, at Gowen, Ind. T., shows that the injured man was engaged as a miner, and was injured by a piece of slate that fell from the top while he was in the act of drilling a hole in the coal at his working face. It is the duty of all miners to examine and secure the top of their room. Had Velamella done this he would not have been injured.

No. 94. Jesse L. Fain; age, 30; nativity, American; occupation, fire boss; was injured on the 19th day of May, 1904, at about 10 o'clock p. m., in mine No. 8, operated by the Rock Island Coal Company, near Hartshorne, Ind. T., by a fall of rock, causing bruises about his body; injury slight. Injured man had been in the employ of the company about three years; was married, and was left in charge of his home. Physician called, Doctor Sames.

Investigated accident that occurred in No. 8 mine, operated by the Rock Island Coal Company, whereby Jesse L. Fain was injured. He was engaged as fire boss, but at the time he was injured he had gone to assist in putting out a fire that had been ignited by some unknown cause, and while in the act of throwing water on the fire by a hose a piece of slate fell on him, injuring him slightly.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

JUNE 30, 1904.

SIRS: I have the honor to inclose herewith my report of accidents of the last month of the present fiscal year, and in addition thereto I beg to report that during the present month this locality has been visited with the most violent rain storms that have occurred here during the last twenty years. The result has been that an immense amount of damage has been done to the various coal mines under my inspection.

At the mines of the Milby & Dow Coal and Mining Company, at Dow, the water in Brushy Creek rose to a greater height than has been known in the experience of the residents here, and, contrary to all calculations and reasonable expectations, rose above the mouth of the slope connecting with mine No. 1, and consequently flooded the mine to such an extent as to raise the water within a few feet of the mouth of the shaft.

At Savanna the mine of the Chamber Coal Company was inundated and filled up to the top of the slope.

At the mine of Bache & Denman, between Hartshorne and Gowen, the water also entered and filled the mine.

At No. 11 mine, operated by the Osage Coal and Mining Company, at Krebs, the water found its way from the old workings of adjacent and abandoned mines and flooded the mine with water up to what is known as D entry, or about 1,200 feet above the face of the slope, and will stop the production of coal in this mine for at least two months.

The above are the principal mines that have suffered from this unprecedented storm, but at least two-thirds of the mines in the Indian Territory have suffered from the same cause to a greater or less degree. A moderate estimate of the damage caused by this influx of water would not be less than from $75,000 to $100,000, besides the diminution in the production of coal for from two to three months, which must necessarily occur.

Very respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

JUNE 30, 1904.

SIR: I have the honor to report to you for the month ending June 30, 1904, the investigation of 5 accidents in coal mines in Indian Territory, 1 of which proved fatal.

There were investigated for the corresponding month of June, 1903, 9 accidents, 2 of which proved fatal.

I give below details of the accidents investigated during June, 1904, by coal companies and by causes. I also inclose detailed report and original accident reports.

Yours, respectfully,

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

DEPARTMENT OF THE INTERIOR, GENERAL LAND OFFICE,
Washington, D. C.

Statement of accidents, by companies.

Company.	Nonfatal.	Fatal.	Total.
Osage Coal and Mining Co	3	.....	3
Western Coal and Mining Co	1	.....	1
Indian Coal and Mining Co	.....	1	1
Total	4	1	5

Statement of accidents, by causes.

Cause.	Nonfatal.	Fatal.	Total.
Gas explosion	3	.....	3
Fall of coal	1	.....	1
Suffocation by dynamite smoke	.....	1	1
Total	4	1	5

Statement of accidents reported to me as occurring in the coal mines in the Indian Territory and investigated by me during the month of June, 1904.

No. 95. James B. Yates; age, 39; nativity, American; occupation, gas man; was injured on the 4th day of June, 1904, at about 12 o'clock m. at connection between mines Nos. 5 and 11 operated by the Osage Coal and Mining Company, at Krebs, Ind. T., by a gas explosion, which burned his arms, hands, face, breast, and back. Injured man had been employed by company for one year; was married; was taken to All Saints Hospital at South McAlester, Ind. T. Physicians called, Doctors Turner and Pemberton.

No. 96. David Archibald; age, 25; nativity, American; occupation, driver; was injured on the 4th day of June, 1904, at about 12 o'clock m. at connection between mines Nos. 5 and 11 operated by the Osage Coal and Mining Company, at Krebs, Ind. T., by a gas explosion, burning about hands, face, and body; right arm broken; also bruised on back and side. Probable time of disability, four months. Injured man had been in employ of the company for seven years; was single; was left in charge of his father. Physician called, Dr. J. C. Robinson.

No. 97. Samuel Utterback; age, 34; nativity, American; occupation, brattice man; was injured on the 4th day of June, 1904, at about 12 o'clock m. at connection between mines Nos. 5 and 11 operated by the Osage Coal and Mining Company, at Krebs, Ind. T., by a gas explosion, which burned him on arms, hands, face, and upper part of back. Probable time of disability, ninety days. Injured man had been in employ of company for four years; was married; was taken to All Saints Hospital, in South McAlester, Ind. T. Physicians called, Doctors Turner and Pemberton.

My investigation shows that James B. Yates, gas man, David Archibald, boss driver, and Samuel Utterback, brattice man, were injured by gas explosion near the point where Nos. 5 and 11 mines are connected. The above three men were engaged in their respective positions in No. 5 mine, and on the 4th day of June the pit boss was informed that water had broken into No. 11 mine and that the mine was filling up with water, and also that a number of men were drowned. The sudden inflow of water was caused by the heavy rains which had raised the creeks, so that the backwater overflowed the lowlands where the coal had been worked, and it broke through, doing much damage to the mine, but at no time was there the least danger to the lives of the men at work in the mine.

The pit boss sent David Archibald, boss driver, to look for the gas man, and instructed him to go with the gas man through the door placed at the connection of the two mines, and to proceed into No. 11 mine and ascertain if there was any truth in the report he had heard. Archibald found the gas man, also Samuel Utterback, brattice man. The three men proceeded as directed, and after passing through the door placed at the point of connection, they had proceeded but a short distance in No. 11 workings when a considerable body of gas ignited and burned the three men rather severely.

Mr. Rylance, the pit boss, sent Archibald for the gas man so that they might proceed in this unused part of No. 11 mine in safety, but it appears that they proceeded with their open lights. The gas man had two safety lamps with him, but from investigation I find that he failed to use the safety lamps as he should have done.

It seems that these men had become excited by the false report they had heard and that they proceeded with undue haste, which in all probability they would not have done under ordinary circumstances.

No. 98. John Tromboloch; age, 34; nativity, Slav; occupation, miner; was injured on the 6th day of June, 1904, at about 9 o'clock a. m. at mine No. 5 operated by the Western Coal and Mining Company, near Lehigh, Ind. T., by fall of coal, fracturing right leg above knee, both bones. Injured man had been in employ of company for two years; was married; was left in charge of his wife. Physician called, Dr. D. Gardner.

My investigation shows that John Tromboloch was engaged as a miner in the first north entry, room 26, incline 5½ section, of No. 5 mine. The injured man had started to mine off a standing shot, when, without any warning, a piece of coal about a ton in weight fell and struck him on the right leg above the knee, breaking the same, and driving him before it. He was not injured in any other way. Had the injured man put sprags to the coal before starting to mine he would not have been injured.

No. 99. David Archie, age about 40; nativity, American; occupation, miner; was fatally injured on the 18th day of June, 1904, at

about 1.30 p. m., in mine No. 1, operated by Padgett, Freeman & Co., contractors for the Indian Coal and Mining Company, east of Buck, Ind. T., by being suffocated by dynamite smoke. Man had worked for contractors about three weeks; was divorced; was left in charge of Dr. Gregg. Physician called, Dr. Gregg. FATAL.

Investigated the cause of accident that occurred in No. 1 mine operated by contractors, Padgett, Freeman & Co., for the Indian Coal and Mining Company, east of Buck, Ind T., whereby David Archie was fatally injured. The injured man was engaged as a miner and worked in the east (slope) air course. He had prepared two shots, which he lighted about noon, as the miners quit work at that time for the day. Only one of the shots went off. After waiting some time in company with Ed. Padgett and Frank Young, he proposed to go down and see what was wrong that the second shot did not go off. Both Padgett and Young advised him not to go back till later, so that the gases made by the shot that had gone off would be removed and the working face clear. This he agreed to do, but after Padgett and Young left he changed his mind and went down and into his working place, where the gases created by the shot were so strong that he fell and was suffocated before assistance reached him. The ventilation was good, and had the injured man waited sufficient time, as advised by Padgett and Young, he would not have been injured. This accident was clearly brought about by the carelessness of the injured man.

Respectfully submitted.

WILLIAM CAMERON,
United States Mine Inspector for Indian Territory.

I beg to append herewith a copy of an act for the protection of the lives of the miners in the Indian Territory, approved March 3, 1891; and also copy of the act amending the same, approved July 1, 1902:

AN ACT for the protection of the lives of miners in the Territories.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in each organized and unorganized Territory of the United States wherein are located coal mines, the aggregate annual output which shall be in excess of one thousand tons per annum, the President shall appoint a mine inspector who shall hold office until his successor is appointed and qualified. Such inspector shall, before entering upon the discharge of his duties, give bond to the United States in the sum of two thousand dollars, conditioned for the faithful discharge of his duties.

SEC. 2. That no person shall be eligible for appointment as mine inspector under section one of this act who is not either a practical miner or mining engineer and who has not been a resident for at least six months in the Territory for which he shall be appointed; and no person who shall act as land agent, manager, or agent of any mine, or as mining engineer, or be interested in operating any mines in such Territory shall be at the same time an inspector under the provisions of this act.

SEC. 3. That it shall be the duty of the mine inspector provided for in this act to make careful and thorough inspection of each coal mine operated in such Territory, and to report at least annually upon the condition of each coal mine in said Territory with reference to the appliances for the safety of the miners, the number of air or ventilating shafts, the number of shafts or slopes for ingress or egress, the character and condition of the machinery for ventilating such mines, and the quantity of air supplied to the same. Such report shall be made to the governor of the Territory in which such mines are located and a duplicate thereof forwarded to the Secretary of the Interior, and in case of an unorganized Territory directly to the Secretary of the Interior.

SEC. 4. That in case the said mine inspector shall report that any coal mine is not properly constructed or not furnished with reasonable and proper machinery and appliances for the safety of the miners and other employees it shall be the duty of

the governor of such organized Territory, it shall be the duty of the Secretary of the Interior, to give notice to the managers of said coal mine that the said mine is unsafe and notifying them in what particular the same is unsafe, and requiring them to furnish or provide such additional machinery, slopes, entries, means of escape, ventilation, or other appliances necessary to the safety of the miners and other employees within a period to be in said notice named, and if the same be not furnished as required in such notice it shall be unlawful after the time fixed in such notice for the said owners or managers to operate said mine.

SEC. 5. That in all coal mines in the Territories of the United States the owners or managers shall provide at least two shafts, slopes, or other outlets, separated by natural strata of not less than one hundred and fifty feet in breadth, by which shafts, slopes or outlets distinct means of ingress and egress shall always be available to the persons employed in said mines. And in case of the failure of any coal mine to be so provided it shall be the duty of the mine inspector to make report of such fact, and thereupon notice shall issue, as provided in section four of this act, and with the same force and effect.

SEC. 6. That the owners or managers of every coal mine at a depth of one hundred feet or more shall provide an adequate amount of ventilation of not less than fifty-five cubic feet of pure air per second, or thirty-three hundred cubic feet per minute, for every fifty men at work in said mine, and in like proportion for a greater number, which air shall by proper appliances or machinery be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious or poisonous gases; and all workings shall be kept clear of standing gas.

SEC. 7. That any mine owner or manager who shall continue to operate a mine after failure to comply with the requirements of this act and after the expiration of the period named in the notice provided for in section four of this act, shall be deemed guilty of a misdemeanor, and shall be fined not to exceed five hundred dollars.

SEC. 8. That in no case shall a furnace shaft be used or for the purposes of this act be deemed an escape shaft.

SEC. 9. That escape shafts shall be constructed in compliance with the requirements of this act within six months from the date of the passage hereof, unless the time shall be extended by the time inspector, and in no case shall the time be extended to exceed one year from the passage of this act.

SEC. 10. That a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same.

SEC. 11. That an approved safety catch shall be provided and sufficient cover overhead on every carriage used in lowering or hoisting persons. And the mine inspector shall examine and pass upon the adequacy and safety of all such hoisting apparatus.

SEC. 12. That no child under twelve years of age shall be employed in the underground workings of any mine. And no father or other person shall misrepresent the age of anybody so employed. Any person guilty of violating the provisions of this section shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not to exceed one hundred dollars.

SEC. 13. That only experienced and competent and sober men shall be placed in charge of hoisting apparatus or engines. And the maximum number of persons who may ascend or descend upon any cage or hoisting apparatus shall be determined by the mine inspector.

SEC. 14. That it shall be lawful for any inspector to enter and inspect any coal mine in his district and the work and machinery belonging thereto at all reasonable times, but so as not to impede or obstruct the working of the mine; and to make inquiry into the state of the mine, works, and machinery, and the ventilation and mode of lighting the same, and into all matters and things connected with or relating to the safety of the persons employed in or about the same, and especially to make inquiry whether the provisions of this act are complied with; and the owner or agent is hereby required to furnish means necessary for such entry, inspection, examination and inquiry, of which the said inspector shall make an entry in the record in his office, noting the time and material circumstances of the inspection.

SEC. 15. That in all cases of fatal accident a full report shall be made thereof by the mine owner or manager to the mine inspector, said report to be in writing and made within ten days after such death shall have occurred.

SEC. 16. That as a cumulative remedy, in case of the failure of the owner or manager of any mine to comply with the requirements contained in the notice of the governor of such Territory or the Secretary of the Interior, given in pursuance of this act, any court of competent jurisdiction, or the judge of such court in vacation,

may, on the application of the mine inspector in the name of the United States and supported by the recommendation of the governor of said Territory or the Secretary of the Interior, issue an injunction restraining the further operation of such mine until such requirements are complied with, and in order to obtain such injunction no bond shall be required.

SEC. 17. That whenever the term "owner or manager" is used in this act the same shall include lessees or other persons controlling the operation of any mine. And in case of the violation of the provisions of this act by any corporation the managing officers and superintendents, and other managing agents of such corporation, shall be personally liable and shall be punished as provided in act for owners and managers.

SEC. 18. That the mine inspectors provided for in this act shall each receive a salary of two thousand per annum and their actual traveling expenses when engaged in their duties.

SEC. 19. That whenever any organized Territory shall make or has made provision by law for the safe operation of mines within such Territory, and the governor of such Territory shall certify said fact with a copy of said law to the Secretary of the Interior, then and thereafter the provisions of this act shall no longer be enforced in such organized Territory, but in lieu thereof the statute of such Territory shall be operative in lieu of this act.

Approved, March 3, 1891.

AN ACT to amend an act entitled "An act for the protection of the lives of miners in the Territories."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section six of the act entitled "An act for the protection of the lives of miners in the Territories" be amended by striking out "thirty-three hundred" and inserting "five thousand," so as to read:

"SEC. 6. That the owners or managers of every coal mine shall provide an adequate amount of ventilation of not less than eighty-three and one-third cubic feet of pure air per second, or five thousand cubic feet per minute for every fifty men at work in said mine, and in like proportion for a greater number, which air shall by proper appliances or machinery be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious or poisonous gases. Wherever it is practicable to do so the entries, rooms, and all openings being operated in coal mines shall be kept well dampened with water to cause the coal dust to settle, and that when water is not obtainable at reasonable cost for this purpose accumulations of dust shall be taken out of the mine, and shall not be deposited in way places in the mine where it would be again distributed in the atmosphere by the ventilating current: *Provided*, That all owners, lessees, operators of, or any other person having the control or management of any coal shaft, drift, slope or pit in the Indian Territory, employing twenty or more miners to work in the same, shall employ shot firers to fire the shots therein. Said shots shall not be fired to exceed one per day; at twelve o'clock noon in cases where the miners work but half a day, and at five o'clock in the evening when the mine is working three-quarters or full time, and they shall not be fired until after all miners and other employees working in said shafts, drifts, slopes or pits, shall be out of same. The violation of this act shall constitute a misdemeanor and any person convicted of such violation shall pay a fine of not exceeding five hundred dollars."

Approved, July 1, 1902.

DECISIONS OF THE DEPARTMENT CONSTRUING THE ACTS OF CONGRESS FOR THE PROTECTION OF THE LIVES OF MINERS IN THE TERRITORIES.

DEPARTMENT OF THE INTERIOR,
Washington, November 21, 1892.

SIR: I have the honor to acknowledge the receipt, by reference from the honorable Acting Secretary Bussey, dated the 12th instant, of a communication from the Acting Commissioner of the General Land Office, transmitting the report of Robert Forrester, mine inspector at Castlegate, Utah Territory, relative to the condition of the Deseret Coal and Coke Company's mine, situated at Connelsville, Emery County, and leased by William Hans Carlston, of Fairview, San Pete County, in said Territory.

The inspector reports that said Carlston employs at said mine four men; that the vein of coal is 11 feet thick, and that from 1,000 to 1,400 tons of coal are taken from said mine each year; that said coal is hauled out by a mule, and the mine is worked from six to nine months during the year.

The inspector further says:

"There is no escapement way provided. There is a return air way, but no air was passing through the mine when I made my examination. The connection between the air way and the working is a small aperture 20 inches square, and this is entirely too small. I would suggest that there be a furnace or other means employed to create a current of fresh air through the mine. In all other respects the mine is operated in compliance with the requirements of the Federal coal-mine laws."

In view of the foregoing the inspector requests the Acting Commissioner of the General Land Office to direct said Carlston "to provide the necessary improvements required by law, to wit:

"1. The enlargement of the return air way.

"2. The installing of some method to produce the circulation of a sufficient quantity of air for the number of miners that may be employed.

"3. The construction of an escapement way, separated from the entrance to the mine by 150 feet of natural strata."

By said reference I am requested to give an "opinion as to what action should be taken by this Department, under the act of March 3, 1891 (an act for the protection of the lives of miners in the Territories), on the within report, and, if any, the character thereof."

The requirements of the act of March 3, 1891 (26 Stat., 1104), have been heretofore considered by the Department, and the duties of mine inspectors thereunder were prescribed in the circular dated July 12, 1892, prepared by the Acting Commissioner of the General Land Office and approved by you (copy inclosed herewith).

In said circular, after mentioning the provisions of sections 1 and 2 of said act, it is stated:

"That it shall be the duty of the mine inspector provided for in this act to make careful and thorough inspection of each coal mine operated in such Territory, and to report at least annually upon the condition of each coal mine in said Territory with reference to the appliances for the safety of the miners, the number of air or ventilating shafts, the number of shafts or slopes for ingress or egress, the character and condition of the machinery for ventilating such mines, and the quantity of air supplied to same. Such reports shall be made to the governor of the Territory in which such mines are located and a duplicate thereof fowarded to the Secretary of the Interior, and in the case of an unorganized Territory, directly to the Secretary of the Interior."

The fourth section is quoted as follows:

"That in case the said mine inspector shall report that any coal mine is not properly constructed or not furnished with reasonable and proper machinery and appliances for the safety of the miners and other employees, it shall be the duty of the governor of such organized Territory, it shall be the duty of the Secretary of the Interior to give notice to the owners or managers of said coal mine that the said mine is unsafe,

and notifying them in what particular the same is unsafe, and requiring them to furnish or provide such additional machinery, slopes, entries, means of escape, ventilation, or other appliances necessary to the safety of the miners and other employees within a period to be in said notice named, and if the same be not furnished as required in such notice it shall be unlawful after the time fixed in such notice for the said owners or managers to operate said mine."

A cursory reading of said section 4 alone might indicate that both the governor and the Secretary of the Interior were required to notify the mine owners or managers in an organized Territory that their mine was unsafe, and require them within a specified time to make the necessary improvements. But when the whole act is considered it is manifest that the notice required in said section 4 must be given by the governor of the "organized Territory," if the mine is situated therein and the law is applicable thereto, and when the Territory is unorganized the notice must be given by the Secretary of the Interior. This view is strengthened by an examination of the sixteenth section of said act, providing "a cumulative remedy, in case of the failure of any owner or manager of any mine to comply with the requirements contained in the notice of the governor of such Territory *or* the Secretary of the Interior, given in pursuance of this act," and authorizing the mine inspector to apply to "any court in vacation * * * to issue an injunction restraining the further operation of such mine until such requirements are complied with."

It may also be observed that the nineteenth section of said act makes it inoperative in any organized Territory which has made or shall make provision by law for the safe operation of mines therein, "and the governor of such Territory shall certify said fact, with a copy of the law, to the Secretary of the Interior."

I am informed that no certification of the governor of Utah, as required by said act, has been filed in this Department, but I find that said Territory has made provision by law for the safe operation of mines therein, by the acts of its legislature approved March 10, 1892, copies of which are inclosed herewith.

From the report of said inspector it is evident that the manager of said mine has failed to comply with section 5 of said act of March 3, 1891, and since Utah is an organized Territory I am of the opinion, and so advise you, that a copy of said report should be sent to the governor of Utah for proper action thereon, and he should also be furnished with a copy of said circular and his attention specially called to section 19 of said act, in order that he may, if he so desires, make the certificate required therein.

The papers submitted are herewith returned.

Very respectfully,

GEO. H. SHIELDS,
Assistant Attorney-General.

THE SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
ASSISTANT ATTORNEY-GENERAL'S OFFICE,
Washington, March 2, 1893.

SIR: I have the honor to acknowledge the receipt, through your reference of January 17, of certain correspondence with the governors of the Territories of Utah and New Mexico relative to the act of Congress approved March 3, 1891 (36 Stat., 1104), entitled "An act for the protection of the lives of miners in the Territories," in which my attention is invited thereto for my opinion "as to whether the laws of Utah and New Mexico make such provision for the safe operation of mines within said Territories as is contemplated by the act of March 3, 1891, and would warrant the governors in certifying same to the Secretary of the Interior in the manner prescribed by section 19 of said act, and if so, what action, if any, should be taken by the Department in the premises."

The inspector appointed under the act of 1891, Mr. Robert Forrester, in his report relative to the condition of the Deseret Coal and Coke Company's mine, situated at Connelsville, Utah, recommended that the owner of said mine be required to make certain specified improvements.

Upon said report a question arose as to who should give the notice to the owner—the Secretary of the Interior or the governor of the Territory.

In my opinion of November 21, 1892, I held that, being an organized Territory, the required notice should be given by the governor, but, as the act might be inoperative in the Territory under section 19 of the act, I was under the opinion, and so advised you, that "a copy of said report should be sent to the governor of Utah for proper action thereon, and he should be furnished with a copy of said circular and

his attention especially called to section 19 of said act, in order that he may, if he so desires, make the certificate required therein."

Acting thereunder, a letter was addressed to the governor of Utah on December 9, 1892, in which his attention was invited to the nineteenth section of the act of March 3, 1891 (supra).

Under date of December 19, 1892, the governor replied "that the law of Utah was not understood to be a substitute for or to cover the subjects referred to in the act of Congress." He then goes on to show that the act of the legislature of Utah does not cover all mines; that it provides only for escapement shafts, and recognizes the existence and continued performance of the duties of the mine inspector appointed under the act of Congress.

This would seem to show conclusively that the Territory did not desire to supersede the act of Congress in this matter by the legislation referred to.

From the language of the reference, some doubt must have existed as to whether you can overrule the action of the governor, or, in other words, review the laws of the Territory and determine whether the laws of the Territory do supersede the act of Congress, and if so found, what action should be taken.

In my opinion the only purpose of the nineteenth section of the act was to provide a way by which the Territory might supersede the act of Congress.

Under this section this could only be done by the governor certifying that the legislature has made due provision by law for the safe operation of the mines in its own territory. Of this matter the Territory is its own judge, and until such fact is certified to the Secretary of the Interior by the governor, accompanied by a copy of the law or laws on the subject, the act of Congress will remain operative.

In the present case, acting upon the report of Mr. Forrester, the governor having been furnished with a copy of the report, the duties of this department are at an end. Under the fourth section of the act it becomes the duty of the governor to notify the owner of the mine in what particular the same is unsafe and to require that the same be remedied within a time to be fixed by him.

Herewith are returned the papers referred by you.

Very respectfully,

GEO. H. SHIELDS,
Assistant Attorney-General.

THE SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
ASSISTANT ATTORNEY-GENERAL'S OFFICE,
Washington, April 6, 1893.

SIR: I am in receipt, through reference of April 1, 1893, of letter from John C. Spears, inspector of mines for the Territory of New Mexico, for an opinion as to the proper construction of section 6 of the act of March 3, 1891 (26 Stat., 1104), entitled "An act for the protection of the lives of miners in the Territories." Said section provides:

"That the owners or managers of every coal mine at a depth of one hundred feet or more shall provide an adequate amount of ventilation of not less than fifty-five cubic feet of pure air per second, or thirty-three hundred cubic feet per minute, for every fifty men at work in said mine, and in like proportion for a greater number, which air shall by proper appliances or machinery be forced through such mine to the face of each and every working place, so as to dilute and render harmless and expel therefrom the noxious or poisonous gases, and all workings shall be kept clear of standing gas."

From the letter referred it appears that a difference of opinion exists between the mine inspector and the owners of mines in said Territory as to the proper construction of the expression "Every coal mine at a depth of one hundred feet or more." This expression clearly limits the operation of the section, and it becomes necessary to determine how the measurement shall be made.

The mine owners claim that this refers to the perpendicular measurement—that is, it means 100 feet of surface by perpendicular measurement—while the mine inspector is of the opinion that it refers to the distance from the surface following the drift, slope, or shaft of the mine.

From a review of the matter, I am of the opinion that the construction placed upon the section by the mine inspector is the proper one.

This section provides for an adequate amount of ventilation, and it would seem that the length of the shaft or slope would be the basis of the determination, when considering the necessity for proper ventilation, and not the distance to the face of the workings by perpendicular measurement. The distance from the surface by the slope

may be 3,000 feet or more, and by the perpendicular measurement the same may be less than 100 feet. If the perpendicular measurement was the criterion, this act would have no application, and as the act is for the protection of the lives of miners, it would seem that a mine with a slope of 3,000 feet or more should be properly ventilated for the protection of the lives of miners therein employed.

I can see no good reason why the ventilation should be measured by the perpendicular measurement, and am therefore of the opinion, as before expressed, that the length of the shaft or slope is the criterion in the matter of determining the operation of this section.

Attached hereto is the letter referred.

Very respectfully,

GEO. H. SHIELDS,
Assistant Attorney-General.

The SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL,
Washington, May 9, 1893.

SIR: On the 1st instant the Acting Secretary, Hon. George Chandler, asked for my opinion as to the proper construction of sections 5 and 9 of the act of Congress for the protection of the lives of miners in the Territories, approved March 3, 1891. The exact question touching which he asks my opinion in the construction of the aforesaid sections of the act of 1891 is presented by a letter addressed to Hon. George Chandler, Acting Secretary of the Interior, by Luke W. Bryan, mine inspector for the Indian Territory, dated April 13, 1893, in which he reports that sections 5 and 9 of said act have not been complied with by several mining companies therein named in respect to the erection of shafts, slopes, and outlets, and he propounds the following question: "Will you kindly advise me whether they (meaning the owners and managers of mines) are entitled to any time beyond that prescribed in the act aforesaid for the erection of shafts, slopes, or outlets, as means of escape from coal mines?"

Section 5 of said act is as follows:

"That in all coal mines in the Territories of the United States the owners or managers shall provide at least two shafts, slopes, or other outlets, separated by natural strata of not less than one hundred and fifty feet in breadth, by which shafts, slopes, or outlets distinct means of ingress and egress shall always be available to the persons employed in said mine. And in case of the failure of any coal mine to be so provided it shall be the duty of the mining inspector to make report of such fact, and thereupon notice shall issue, as provided in section four of this act, and with the same force and effect."

This section prescribes the duty imposed upon the owners or managers of coal mines as to the erection of means of escape from coal mines for the benefit of miners, and it also prescribes the distance that such shafts, slopes, or outlets shall be separated one from the other.

Section 9 is as follows:

"That escape shafts shall be so constructed in compliance with the requirements of this act within six months from the date of the passage hereof, unless the time shall be extended by the mine inspector, and in no case shall said time be extended to exceed one year from the passage of this act."

It will be seen that section 9, just quoted, requires that the escape shafts provided for in section 5 shall be constructed in compliance with the requirements of the act of 1891 within six months from the date of its passage, and, if not constructed within that time, the mine inspector may give such reasonable time as in his judgment is proper, but in no case to extend beyond one year from the date of the passage of the act. This act was approved March 3, 1891. It is therefore apparent that the mine inspector can not extend to the owners or managers of mines any further time in which to comply with section 5 of said act of 1891. The latter clause of section 5 reads as follows: "And in case of the failure of any coal mine to be so provided it shall be the duty of the mine inspector to make report of such fact, and thereupon notice shall issue, as provided in section 4 of this act, and with the same force and effect."

Section 4 of the act provides that the mine inspector shall report to the Secretary of the Interior any failure on the part of any owners or managers of any mines to comply with the requirements of said act of 1891, and when such report is received by the Secretary of the Interior he shall give notice to such owners or managers, informing them in what respect they have failed to comply with the act of Congress aforesaid, and direct that they furnish or provide such shafts, entries, or means of escape as are required by said act, within a period to be prescribed by him in said notice; and if such shafts, outlets, or means of escape are not provided as required by such notice, then it shall be unlawful, after the time fixed in the notice, for such owners or managers to operate such mine.

In my opinion it is very clear that the mine inspector has no power or authority over the subject except to report the failure on the part of any owners or managers of coal mines to comply with the requirements of said act; and the Secretary of the Interior alone can prescribe the additional time which he deems proper within which the law can be complied with in a notice served upon the owners or managers of mines, as hereinbefore stated.

The report of the mine inspector is that certain mining companies therein named have failed to comply with the law in respect to the distance given between the escape shafts erected by them and the main shafts in the respective mines, and it is in this respect that the owners or managers of said mines are delinquent.

I am of the opinion that this report of Inspector Bryan furnishes sufficient data upon which the Secretary of the Interior can act and serve notice upon the delinquent owners or managers of the coal mines therein named, as is provided in section 4 of said act of March 3, 1891.

The papers submitted are herewith returned.

Very respectfully,

JOHN I. HALL,
Assistant Attorney-General.

The SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
ASSISTANT ATTORNEY-GENERAL'S OFFICE,
Washington, June 13, 1893.

SIR: I am in receipt of a letter dated June 5, 1893, from Robert Forrester, inspector of mines for Utah, inclosing a communication dated May 23, 1893, addressed to him by Mr. F. A. Mitchell, relative to the act of Congress of March 3, 1891 (26 Stat., 1105), entitled "An act for the protection of the lives of miners." Said letter and communication you have submitted to me for an opinion upon the points referred to therein.

The tenth section of said act requires "that a metal speaking tube from the top to the bottom of the shaft or slope shall be provided in all cases, so that conversation may be carried on through the same;" and the questions upon which an opinion is asked are:

1. Is this section applicable to slopes through which no one is allowed to travel while the trips are running?

2. Can a telephone or electric-bell system be substituted for the metal speaking tube required by law?

It seems to me that the language of said section is so clear and unambiguous that there is no room for any other construction than that indicated by the plain letter of the law, which in specific terms provides that the means of communicating from the top to the bottom of the shaft or slope must be by conversation through "a metal speaking tube," even though other means of communication may be superior thereto; and this section would be equally applicable to all slopes, whether anyone is allowed to travel while the trips are running or not.

Very respectfully,

JOHN I. HALL,
Assistant Attorney-General.

The FIRST ASSISTANT SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL,
Washington, October 9, 1902.

SIR: The act of July 1, 1902 (Public—No. 222), amended section 6 of the act of March 3, 1891 (26 Stat. L., 1104), entitled "An act for the protection of the lives of miners in the Territories," and added thereto the following:

"* * * *Provided*, That all owners, lessees, operators of, or any other person having the control or management of any coal shaft, drift, slope, or pit in the Indian Territory, employing twenty or more miners to work in the same, shall employ shot firers to fire the shots therein. Said shots shall not be fired to exceed one per day, at twelve o'clock noon in cases where the miners work but half a day, and at five

o'clock in the evening when the mine is working three-quarters or full time, and they shall not be fired until after all miners and other employees working in said shafts, drifts, slopes or pits shall be out of same. The violation of this act shall constitute a misdemeanor, and any person convicted of such violation shall pay a fine of not exceeding five hundred dollars."

By your reference, I am asked for an opinion as to the meaning of the clause in this proviso, to wit: "Said shots shall not be fired to exceed one per day."

Shot firing in coal mines consists in exploding powder or other substance in such way as to loosen the coal and thereby expedite its removal from the mine. By reference to the annual report of the mine inspector for the Indian Territory to the Secretary of the Interior for the year ending June 30, 1901, it appears that this shot firing is a dangerous proceeding, and that some of the companies doing a mining business in said Territory have rules in force which do not permit the firing of shots until the working day is over and the miners have left the mines. It is shown by said report, on the other hand, that some of these operators do not employ shot firers at all, the shots being fired indiscriminately by the miners themselves. This is evidently a dangerous practice, sometimes causing explosions resulting in loss of life, and is the mischief which the statute was designed to correct. But unless the danger from firing shots in mines were so great as to warrant its prohibition altogether it would be absurd to limit it to one shot per day. Such limitation would in many cases amount to a practical inhibition against operating the mines. A special report on this matter by a mine inspector for the Indian Territory, July 24, 1902, shows that in some of the larger mines in the Indian Territory the production is from 500 to 1,000 tons per day, and that in such mines it is necessary to fire from two hundred to three hundred shots per day, and that to restrict such a mine as this to one shot per day would limit the production of the mine to two or three tons per day.

Viewing the statute in the light of these considerations, I am of the opinion that it was not the intention of Congress to limit shot firing in these mines to one shot per day, but rather to limit or restrict this firing to one stated or fixed time in such day—that is, "at 12 o'clock noon in cases where the miners work but half a day, and at 5 o'clock in the evening when the mine is working three-quarters or full time," and even then not until "after all miners and other employees working in said shafts, drifts, slopes, or pits shall be out of same." To give to the act the effect evidently intended by Congress the phrase "one per day" should be read "once per day." The danger to the miners does not lie in the number of shots fired, but in the time when they are fired, and if fired at a fixed and generally understood time after the working day is over and after all miners and other employees are out of the mine, it is not a matter of public concern how many shots are fired in the work of facilitating the removal of coal therefrom.

Very respectfully,

WILLIS VAN DEVANTER,
Assistant Attorney-General.

The SECRETARY OF THE INTERIOR.

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