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Annual Report on the condition of the coal mines in the Indian Territory, 1894

ANNUAL REPORT

ON THE

CONDITION OF THE COAL MINES IN THE INDIAN TERRITORY.

SOUTH MCALESTER, IND. T., *June 30, 1894.*

SIR: In accordance with the requirements of the act of Congress of March 3, 1891, entitled "An act for the protection of the lives of miners in the Territories," I have the honor herewith to submit to you the first annual report upon the condition of the coal mines in the Indian Territory, for the year ending June 30, 1894.

Very respectfully, yours,

L. W. BRYAN,
Mine Inspector for the Indian Territory.

Hon. HOKE SMITH,
Secretary of the Interior, Washington, D. C.

The field occupied by the coal-mining industries of this Territory comprises the following named mines, lying principally in the Choctaw Nation, to wit:

At Krebs, the coal mines and strip and drift pits of the Osage Coal and Mining Company;

At Alderson, Hartshorne, and Wilburton, the coal mines and strip and drift pits of the Choctaw Coal and Railway Company;

At Lehigh, the coal mines and strip pits of the Atoka Coal and Mining Company;

At Coalgate and Midway, the coal mines and strip pits of the Southwestern Coal and Improvement Company;

At Bryan, Braidwood, and Cavanal, the coal mines of the Kansas and Texas Coal Company;

At Poteau, the coal mine of the Cavanal Coal and Mining Company;

At Savannah, the coal mine of the Tebo Coal and Mining Company, the mine and strip pits of Thomas & Co., and the coal mine of the Choctaw Coal and Mining Company.

In addition to the foregoing the Kansas and Texas Coal Company have been prospecting and preparing to develop a field of coal near Jenson. There is a large plant with coal slope at Ardmore, on the Atchison, Topeka and Santa Fe Railroad, and on the extreme western end of the coal field covered by the foregoing mines, the coal being of a very inferior quality and badly stratified with slate; this mine has not been operated during the period covered by this report. There are a number of small strip pits west of the Missouri, Kansas and Texas Railroad, between Muscogee and Vinita, from 6 to 15 miles distant from

the railroad; the coal is of a good quality, the vein running from 14 to 18 inches in thickness; this coal is disposed of locally, none of it being shipped by rail. At Tulsa, on the line of the St. Louis and San Francisco Railroad, in the Creek Nation, there are also several strip pits, from which quite an amount of coal is taken and shipped by rail.

At a point about 20 miles northwest of Antlers an opening has been made into a vein of coal 25 feet in thickness, dipping at an angle of 70°. This coal has not yet been fully developed, but sufficiently so to show that there is a very large deposit. It, however, is of a very friable nature and will not bear transportation, as it disintegrates rapidly on exposure to the atmosphere.

The general character of the coal in the Indian Territory is bituminous, of a good quality, and can be readily mined.

A detailed account of each of the foregoing coal mines and strip and drift pits and also of other minor industries follows.

In addition to the above, Edwards & Sons have opened a small slope at McAlester. Helm has a small coal bank 8 miles west of Vinita, and Coleman has a small slope west of McAlester.

DESCRIPTION OF THE COAL MINES AND STRIP AND DRIFT PITS OPERATED BY THE OSAGE COAL AND MINING COMPANY AT KREBS, IND. T.

MINE NO. 10.

The shaft of this mine is 350 feet deep. The cages are fitted up with approved patent safety catches, which work admirably, and which I have seen subjected to the severest tests. They also have sufficient overhead covers for the protection of the men while being raised and lowered. The upper and lower landings of the shaft are thoroughly protected with gates.

The hoisting engines are first motion double engines, manufactured by the Litchfield Car and Machine Company, with 16 by 30 cylinders and 7-foot drum. These engines are of an approved pattern and perform the work required of them with great ease and accuracy. A battery of 5 boilers is used for generating steam to run hoisting engines, slope engines, fan engines, pumps, etc.

This mine has, in addition to the hoisting shaft, 3 air or ventilating shafts, 2 of them situated on the "rise" or upper workings of mine and 1 to the "dip" or on the lower workings. The 2 shafts on the upper workings are used as exhaust shafts, the shaft on lower workings and the hoisting shaft being used as "intakes."

There are 2 shafts in this mine for the purpose of ingress and egress, viz, the hoisting shaft and one of the ventilating shafts aforementioned, which latter is provided with stairway either for ingress or escape of men. These shafts are situated from each other more than the number of feet prescribed by law. Good traveling ways are maintained between these shafts for the purpose of ingress and egress.

One of the upper shafts is fitted with a Crawford & McCrimmon fan, 12 feet in diameter, and the other shaft with a 15-foot Crawford & McCrimmon fan, both of which exhaust the air from the mine. The lower shaft is provided with a 7-foot Crawford & McCrimmon fan for forcing air into the mine, and is used chiefly in winter time for the purpose of preventing freezing in the hoisting shaft during severe frosts.

These fans are driven by steam engines of suitable capacity, and the quantity of air furnished is 32,000 cubic feet per minute.

The general condition of the mine is good, all the requirements of the act of Congress having been fully complied with.

This mine is the oldest of the mines now being operated at Krebs and will before long reach a point at which it can no longer be profitably operated, on account of the long distances which the coal will have to be hauled to the shaft, and the great expense of maintaining the long entries for said haulage.

MINE NO. 11.

The shaft of this mine is 470 feet deep. The cages are fitted up with safety catches, as in No. 10. These cages are frequently tested by me, and are periodically tested by the company. Tests are made by cutting the cages loose from the ropes, both empty and with loads, and at all times they have worked perfectly. Overhead covers are provided for the cages.

Hoisting engines are first motion double engines, with 18 by 32 cylinders, manufactured by the Litchfield Car and Machine Company. Drum is 8 feet in diameter. There is a battery of 6 boilers generating steam to run hoisting engine, slope engine, plane engine, electric engine, pumps, etc.

In addition to the other appliances for the safety of the men, it may be noted that the introduction of electric machinery into this mine has added greatly to their safety, for the reason that the mining is thoroughly done, necessitating only light charges of powder in comparison with the amount of powder required when the mining is done by hand. When the mining is done by electric machines, as in this case, the amount of powder used is only about one-fifth of the amount formerly used, thus reducing the chances of explosion to a minimum. I believe the increased use of these machines would do much toward lessening the danger arising from the coal dust always present in mines where the coal is of a rich bituminous nature.

This mine has, in addition to the hoisting shaft, 2 air or ventilating shafts, situated on the rise or upper workings of the mine, both used as exhaust shafts.

There are 2 shafts in this mine for the purpose of ingress and egress, viz, the hoisting shaft and 1 of the ventilating shafts aforementioned, which latter is provided with stairway either for ingress or for the escape of men. Good traveling ways are maintained between these shafts, and they are situated from each other more than the distance prescribed by law.

One of the aforementioned shafts is fitted with 2 fans, 1 of them being of the Crawford & McCrimmon type and 15 feet in diameter, the other being an 8-foot Murphy fan for auxiliary purposes in case of accident to the larger fan. The second shaft is fitted with a 12-foot Crawford & McCrimmon fan.

The aforesaid fans are driven by a steam engine, for which steam is generated by 2 steam boilers situated near the air shafts.

The quantity of air circulating in the mine averages 31,700 cubic feet per minute, and is at all times sufficient for the requirements of the law.

Mining by electric machinery has been carried on in this mine for the past two years, trial having first been made of one of the Jeffrey electric mining machines, and having proved satisfactory and found to be well-adapted to the mining of this coal, there are now in use 5 of these machines, being furnished with the necessary electric power generated by a 135-horse power general electric dynamo, which dynamo is driven by a 150-horse power Ideal steam engine. This plant has

been often inspected by me, and is a model of its kind, doing the work perfectly, the above company having demonstrated the practicability of this kind of machinery as applied to mining.

This mine, being the largest and best of the mines operated at Krebs, and the prospect being that large quantities of coal are yet available, and that it can be operated for several years, the company has deemed it advisable to sink another shaft for ventilating purposes, as a means of ingress and egress, and also for the purpose of pumping out a large body of water which had accumulated in an old mine known as No. 5, and which water was a menace to life and property in No. 11, and on May 1, 1893, this shaft, now known as No. 11½, was commenced.

Last October, when this shaft had been sunk about 228 feet, a large volume of water forced its way into this shaft, reaching to within 80 feet of the top. Three large pumps were employed, with a united capacity of 600 gallons per minute, and within ninety days 50,000,000 gallons of water was hoisted to the surface, a remarkably good record. This shaft, which is now completed, will soon be connected with the workings of No. 11, and when so connected will add greatly to the security and efficiency of No. 11 and meet all the requirements for ventilation and safety necessitated by the intended developments of this mine.

The general condition of this mine (No. 11) is good. All the requirements of the act of Congress have been fully complied with.

Mine No. 12.

This mine is situated about 2 miles east of Krebs. The shaft is 209 feet deep. Cages are provided with approved safety catches.

The hoisting engines are first-motion double engines with 16 by 30 cylinders and 7-foot drum. Engines are of approved pattern, manufactured by the Litchfield Car and Machine Company.

There are two steam boilers, generating steam for hoisting engines, plane engine, and fan.

There is one shaft for ventilating purposes in addition to the hoisting shaft, the hoisting shaft being used as intake or downcast, and the other ventilating shaft as exhaust or upcast.

There are two shafts for ingress and egress, viz, the hoisting shaft and the ventilating shaft mentioned above, the latter being provided with stairway; the distance between the two shafts is the number of feet required by law.

The ventilating shaft is fitted with a 12-foot Crawford & McCrimmon fan, which exhausts the air and is driven by the engine mentioned above.

The quantity of air supplied to this mine is 25,000 cubic feet per minute.

This mine has not been a large producer on account of the vein being much thinner than the other veins in this district. It is worked on the long-wall system, against which system the miners of this district seem to be prejudiced.

The company have erected a 35-horse-power Thompson & Houston dynamo, driven by a 40-horse-power Atlas engine, and have also a Sperry long-wall electric-mining machine on the ground; and it is their purpose to give this a thorough test to see if these machines can be successfully operated in this vein.

The general condition of this mine is good, and the requirements of the law have been fully complied with.

STRIP AND DRIFT PITS OF THE OSAGE COAL AND MINING COMPANY.

Patterson and Gregg.—Three-foot vein, near No. 12 mine; product hauled to switch and shipped over Missouri, Kansas and Texas Railroad. Strip pit.

Hughes.—Strip pit, 3-foot vein, near No. 12 mine; product hauled to switch and shipped over Missouri, Kansas and Texas Railroad.

Homer.—Drift pit, 4-foot vein; product hauled to spur of No. 12 track and shipped over Missouri, Kansas and Texas Railroad. Ten men.

Bells.—Drift and strip pit, 4-foot vein, 3 miles west of Krebs; loaded at track of Missouri, Kansas and Texas Railroad. Twelve men.

Galbraith.—Drift pit, 4-foot vein, 3½ miles west of Krebs; at present hauled in wagons, railroad spur being now put in; product shipped by Missouri, Kansas and Texas Railroad. Nine men.

Powers.—Strip pit, 3-foot 3-inch vein; product hauled to switch at No. 10 mine on Missouri, Kansas and Texas Railroad.

RÉSUMÉ, OSAGE COAL AND MINING COMPANY.

I am pleased to be able to report that Mr. W. Cameron, the superintendent of the above company, has made it his earnest study to comply not only with the requirements of the law and with my suggestions regarding the safety of the men, but has also made wholesome rules and introduced numerous appliances looking to their safety. My suggestions have been always cheerfully received and promptly acted upon.

All the appliances for the safety of 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 the mines, and the quantity of air supplied to same are such as the law requires and the exigencies demand.

Metal speaking tubes are provided to all mines.

Particular attention has been paid to the twelfth section of the "act" as to children under the age of 12 years, and the law in this respect rigidly adhered to.

Experienced, competent, and sober men only are placed in charge of hoisting engines or any other machinery belonging to this company. All machinery, ropes, cages, safety catches, and appliances of whatever kind are frequently, periodically, and rigidly inspected by master mechanics of the best skill and ability, and everything possible is done to comply with the letter and spirit of the law as well as the demands of humanity. The air courses of all mines are kept in good condition.

The coal now being mined by the Osage Coal and Mining Company at Krebs is what is known as McAlester coal and has been celebrated for the past twenty years for its fine qualities for domestic purposes, and for its gas-producing as well as its coking qualities.

The total product is shipped out over the Missouri, Kansas and Texas Railroad, a large proportion being shipped to Texas, only a small proportion being shipped north.

On account of the rich bituminous character of this coal, it gives off a large quantity of fine coal dust at the working faces, and as these working faces are usually dryer than the other parts of the mine, this dust becomes explosive; this danger is greatly enhanced during the winter months when the air of the mine dries rapidly. Precautions are taken to lessen the danger from explosion by wetting down the entries and also by strict rules regulating the preparing and firing of shots. See following rules:

NOTICE.

For the protection of life and property the following rules regarding mining and the use of powder must be strictly adhered to from this date at this mine.

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 power shall be more than 4 feet from the face, or more than 2 feet beyond the undercutting.
2. All entries or other narrow work under 12 feet wide to be undercut to full depth of holes drilled for blasting.
3. Shot-firers must not fire any shot unless coal is cut as above specified, and *said shot is otherwise proper and safe.*
4. Only one shot to be fired at a time in any separate split of air, and the following shot not to be lit *until the smoke is cleared away.*
5. No shot to be fired while anyone except the shot-firers are in the mine, and they shall not enter the mine for the purpose of firing until all the men are *out of the mine.*
6. Only enough powder for one day's use will be allowed in the mine at any time.
7. Powder to 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 manager or "pit boss."

WILLIAM CAMERON,
Superintendent.

Approved.

R. M. MCDOWELL,
General Manager.

MCALESTER, IND. T., *February 8, 1892.*

These mines give out some "fire damp" or carburetted hydrogen (CH_4). The ventilation is entirely sufficient to dilute and expel this gas, and gas men competent and experienced are employed to examine for this gas every morning, and only one accident has occurred from an explosion of fire damp during my term of office; this accident was caused entirely by the gross negligence and disregard of rules by the person injured. Only a very small and inappreciable amount of black damp or CO_2 is given off by this coal and no accidents have occurred from this cause.

Output, Osage Coal and Mining Company, year ending June 30, 1894.

	Tons.
Mine No. 10	76,529
Mine No. 11	91,068
Mine No. 12	19,357
Drift and strip pits	39,569
Total output	226,523

The above is for nine months' work, the miners having been on strike from April 1 to date.

	Number of persons employed in mine.	Air furnished per minute.	Air per 50 men per minute.
		Cubic feet.	*Cubic feet.*
Mine No. 10	294	32,000	5,440
Mine No. 11	304	31,700	5,200
Mine No. 12	65	25,000	19,200

Total average number of persons employed, 896 (men and boys). Total average wages earned per day, $2.27. The above is exclusive of clerks and officials. Total average wages earned by miners per day, $3.19.

DESCRIPTION OF THE COAL MINES AND DRIFT AND STRIP PITS OPERATED BY THE CHOCTAW COAL AND RAILWAY COMPANY AT ALDERSON, HARTSHORNE, AND WILBURTON.

ALDERSON MINE.

This is a slope mine 1,800 feet in length with 6 lifts, having a capacity of 600 tons per day and employing 300 men.

The men walk in and out of the mine, there being a manway 150 yards distant from the slope and parallel therewith.

The hoisting engines are first-motion double engines with 16 by 30 cylinders and 8-foot drum. A battery of 4 boilers generates steam for the hoisting engines, pumps, fan, etc.

There is one shaft for ventilation in addition to the slope and manway, the ventilating shaft being the upcast, the slope and manway being the downcast.

For ingress and egress the slope and manway 150 yards apart are used and good traveling ways are maintained between these.

The ventilating shaft is fitted with an 18-foot fan of an approved pattern, the quantity of air supplied to the mine being 45,000 feet per minute, or 7,500 feet per 50 men per minute.

There is a metal speaking tube provided as required by law but owing to the long distance it is found not to work well.

Experienced, competent, and sober men are employed in charge of hoisting apparatus, engines, or other machinery.

The air courses are kept in good condition.

This mine is generally in excellent condition, being one of the best in the Territory in this respect.

Mr. Stumbaugh, the superintendent of this mine and who is exceedingly well qualified, uses every care to comply with the law in every respect and to provide for the safety of the men.

HARTSHORNE MINE NO. 1.

The shaft of this mine is 201 feet deep. It has a capacity of 1,100 tons per day, and 425 men are employed.

It has a plane 1,700 feet in length off the main south entry towards the crop and a slope to the dip with 2 lifts.

Safety catches of approved patterns are provided to the cages, which work well and are frequently tested. Cages are self-dumping.

Lower landings of shaft are provided with gates.

Cages are provided with overhead covers for the protection of men.

A metal speaking tube is provided as required by law.

Hoisting engines are first motion double engines, with 16 by 32 cylinders; drum is 8 feet in diameter.

For ventilating the plane 1,700 feet in length is used as the upcast, and there is a division in hoisting shaft used to assist the downcast which is the hoisting shaft.

Ingress and egress is had by the hoisting shaft and the plane above referred to, which are 1,700 feet apart, and good traveling ways are maintained.

Fans used are, for the upcast at plane, a Guibal fan with a capacity of 65,000 feet per minute, and a small 10-foot fan in the division of hoisting shaft noted above to assist the downcast.

The quantity of air actually supplied is 60,000 feet per minute, or 6,800 feet per 50 men per minute.

The thickness of this vein ranges from 3½ to 6 feet, averaging about 4 feet.

Special shot firers were put on for a time on north side of mine, but on account of this being a very wet mine this is no longer considered necessary as there is no danger from coal dust.

The general conditions of this mine are good and all the requirements of the law are fully complied with.

HARTSHORNE MINE NO. 2.

The shaft of this mine is 176 feet deep. It has a capacity of 350 tons per day. One hundred and fifty men are employed and 14 mining machines are used. It has a plane to the crop 1,700 feet in length, with 5 lifts. Safety catches are provided to the cages. These are of approved pattern and work well. Cages are self-dumping.

Lower landings of shaft are provided with gates.

Cages are provided with overhead covers for the protection of men.

A metal speaking tube is provided, as required by law.

Hoisting engines are first motion double engines with 16 by 32 cylinders. Drum is 8 feet in diameter.

The plane above mentioned is used as ventilating shaft, and there is a division in hoisting shaft which is used to assist the downcast.

The hoisting shaft and the plane are used for ingress and egress and good traveling ways are maintained for escape of men.

Ventilation is had by means of a 12-foot fan at plane and a 10-foot fan in the division of hoisting shaft.

The quantity of air supplied is 28,000 feet per minute, or 9,300 cubic feet per 50 men per minute.

Fourteen Harrison compressed-air mining machines are used, being furnished with air by a Norwalk compressor. These machines are found to work satisfactorily, and as they are constantly exhausting fresh air, they add considerably to the amount of pure air in the mine and consequently to the safety of the men.

This mine is a wet mine and there is in consequence no danger from coal dust.

The general condition of this mine is good, all the requirements of the law have been fully complied with, and every precaution necessary for the safety of the men is taken.

A shaft has been sunk at Wilburton by the aforesaid company but is not yet in operation; when completed and operated I will make report.

STRIP PITS OF THE CHOCTAW COAL AND RAILWAY COMPANY.

Alderson strip pits.—Product hauled to railroad and shipped out over the Choctaw Coal and Railway Company's road.

Hartshorne strip pits, John Grady.—Product hauled to above railroad.

Wilburton strip pits.—Product hauled to above railroad.

Mr. Edwin Ludlow, superintendent, and Capt. A. B. Frazier, assistant superintendent of the Choctaw Coal and Railway Company's mines, have always afforded me every facility for inspection, and have readily adopted suggestions looking to the safety of the miners.

Experienced, competent, and sober men are in charge of hoisting apparatus, engine, or other machinery, and in all positions of responsibility.

The requirements of the law have in all of the above company's mines been fully complied with.

Tonnage of Choctaw Coal and Mining Company, for year ending June 30, 1894.

	Tons.
Alderson slope mine	116,418
Hartshorne mine No. 1	159,874
Hartshorne mine No. 2	46,201
Drift and strip pits	11,123
Total	333,616

Total average number of men employed, 932.

DESCRIPTION OF THE COAL MINES AND STRIP PITS OPERATED BY THE ATOKA COAL AND MINING COMPANY AT LEHIGH, IND. T.

MINE NO. 4.

This mine has been recently abandoned, much of the available coal having been worked out and much of the remaining coal being contiguous to Mine No. 5, with which for a long time there has been a connection, and also because of the falling off in the demand for coal.

At the time of the abandonment of this mine and during the time of my holding the position of inspector the mine was in the following condition:

Cages were fitted with approved safety catches and overhead covers. Upper and lower landings of shaft were provided with secure gates.

Hoisting engines were first-motion double Litchfield engines.

A battery of three boilers supplied steam to hoisting engines, fans, pumps, slope engine, etc.

The shaft of this mine was 160 feet deep and was supplied with proper metal speaking tube.

In addition to the hoisting shaft there was one ventilating shaft to the "dip" which was used as upcast, the hoisting shaft being used as downcast.

Ingress and egress was had by No. 5 hoisting shaft, or No. 5½ air and haulage shaft, the distances being much more than the necessary distance required by law.

The ventilating shaft was fitted with a 12-foot Crawford & McCrimmon fan, the quantity of air furnished being 30,000 feet or 8,200 cubic feet per 50 men per minute.

The general condition of this mine was good and the law had been fully complied with.

MINE NO. 5.

The shaft of this mine is 201 feet deep. Cages are supplied with efficient safety catches and overhead covers.

Engines are first motion double engines made by the Keystone Ironworks Company, Kansas City, with 12 by 24 cylinders.

There is a battery of three boilers generating steam for hoisting engines, stock-car loader, screening arrangement, and slope engine.

There are two ventilating shafts in addition to the hoisting shaft, both upcasts, one fitted with two 10-foot Crawford & McCrimmon fans, the other one being fitted with a 12-foot Crawford & McCrimmon fan.

The quantity of air supplied to this mine is 50,000 feet, or 8,300 cubic feet per 50 men per minute.

Ingress and egress is had by No. 4 hoisting shaft, or No. 5½ air and haulage shaft, which is provided with stairway; these shafts are distant from each other more than the distance required by law.

Shaft is supplied with metal speaking tube.

Experienced, competent, and sober men are employed in charge of hoisting apparatus, engines, and other machinery.

Air courses are kept in good condition.

In connection with No. 5 mine No. 5½ air shaft has been used as a haulage shaft and is supplied with a Norwalk steam engine with one boiler, running two friction drums; the system of haulage adopted here is known as the tail-rope system, which has given good results and worked perfectly.

Owing to the restricted demand for coal, none has been mined from No. 5 mine for over a year, only enough men having been retained to keep the entries and haulage ways in repair. It is the company's intention to open up and operate this mine during the coming winter, taking the place of No. 4, which has been recently abandoned.

The general condition of the mine is good, all the requirements of the law having been complied with.

No. 6 Mine.

The shaft of this mine is 240 feet deep. Cages are provided with efficient safety catches and overhead covers.

Gates are supplied to upper and lower landings.

For hoisting the engines are first-motion, double Litchfield engines, with 16 by 30 cylinders and 7-foot drum.

There are 3 boilers generating steam for hoisting engines, slope engine, fan engine, stock-car loader, and engine for screening apparatus.

There are 2 ventilating shafts in addition to the hoisting shaft, one to the rise and one 3,800 feet north, known as No. 6½.

Ingress and egress is had by the hoisting shaft by the first-mentioned ventilating shaft, which is 100 feet from hoisting shaft, and by No. 6½, mentioned above. Both of the ventilating shafts are provided with stairways. The law is complied with as to distance and good traveling ways are maintained.

Metal speaking tube is provided as required.

The first ventilating shaft is provided with a 12-foot Crawford & McCrimmond fan and the second one with a 10-foot C. & E. Cole fan. The quantity of air furnished to this mine is 50,000 feet, or 11,150 cubic feet per 50 men per minute.

Experienced, competent, and sober men are employed in charge of hoisting apparatus, engines, and other machinery and in all positions of responsibility.

The general condition of this mine is excellent, it being probably the best ventilated in the Territory. Each set of entries is supplied with a separate and distinct current of air, from whence it is conducted to the air shaft without being used for ventilation in any other section where operations are carried on. This system is the most approved for ventilating mines and dispenses with the necessity of trapdoors or boys to attend to them, and adds to the safety of the miners. There is a manway parallel with the slope as a traveling way for the men. All the entries of this mine are driven perfectly straight and parallel with each other. All the requirements of the law have been fully complied with.

In connection with this mine, No. 6, a shaft now known as No. 6½, and heretofore referred to, was sunk at my suggestion, as the air shaft previously in use for No. 6 was not the distance required by act of Congress as a means of ingress and egress. The Atoka Coal and Min-

ing Company deserve credit for their promptitude in sinking this shaft and the expedition with which the work was carried on, and in driving the entry to connect with the main north entry of No. 6. The shaft was sunk a distance of 250 feet and an entry driven a distance of 1,675 feet, to connect with No. 6 mine. The work was carried on night and day, and was cut through in three months and ten days. Credit is also due to the mining engineer, Mr. John Evans, who laid off this work, for his accuracy, the two entries being driven from each side and meeting exactly in line. This shaft will not only be used as an air shaft, but it is intended to supply it with an engine running a tail-rope system, which will be used to haul coal from this part of the field to the bottom of No. 6 hoisting shaft.

There is 1 strip pit at Lehigh which produces considerable coal, which is hauled to the Missouri, Kansas and Texas Railroad and shipped to market.

Total tonnage of Atoka Coal and Mining Company	tons..	133,480
Average number of miners working		310
Average wages per day		$3.45
Average number of men of all kinds		435
Average wages per day		$3.22

The vein of coal mined by the Atoka Coal and Mining Company at Lehigh averages about 4 feet in thickness. It is inferior in quality to the McAlester coal, being impregnated with sulphur, and does not sell so readily for domestic or gas purposes.

As it is not so rich in hydrocarbon there is not so much coal dust prevalent, and as the floor of the mines are of a soft nature, absorbing the dust that is made, the chances of explosion from coal dust are very remote.

Carburetted hydrogen, or "fire damp," CH_4, is almost unknown.

"Black damp," carbonic acid gas, CO_2, is given off in large quantities, but the system of ventilation is sufficient to dilute, render harmless, and expel this gas.

Spontaneous fires occurred frequently in the "gob" in No. 4 mine, arising from a mixture of sulphur and fire clay. Various precautions were taken to obviate or reduce the probability of these fires, and close watch was kept to check them when they occurred. This mine is now abandoned.

All of the Atoka Coal and Mining Company's mines are located on one vein, their leases covering an extent of 4 miles north and south and 1½ miles east and west, the coal improving in quality as it proceeds northward, the quality at No. 6 being superior to that at No. 4.

Mr. W. Cameron is superintendent of these mines. He has afforded me every facility for inspections and has taken great pains to see that the act of Congress is fully complied with.

DESCRIPTION OF THE COAL MINES AND STRIP PITS OPERATED BY THE SOUTHWESTERN COAL AND IMPROVEMENT COMPANY, AT COALGATE AND MIDWAY, IND. T.

MINE NO. 3.

Hoisting shaft of this mine is 42 feet deep.

No men are hoisted or lowered.

Hoisting engine, which also hoists coal up slope to foot of shaft, is single hoisting engine with 8 by 16 cylinder.

Ventilation is had by means of plane driven from crop of coal to foot of shaft, a distance of 250 feet.

Ingress and egress of men is by hoisting shaft and by plane mentioned above. Traveling ways are kept in good condition.

Plane which is used as ventilating shaft is fitted with 12-foot fan, and is used as upcast, hoisting shaft being downcast. Quantity of air supplied is 20,000 cubic feet, or 6,666 cubic feet per 50 men per minute.

Metal speaking tube is provided as required by law.

Experienced, competent, and sober men are employed in charge of hoisting apparatus, engines, and other machinery.

Air courses are kept in good condition.

The general condition of the mine is good, and all the appliances required by law are maintained in effective condition.

MINE NO. 4.

Hoisting shaft is 274 feet deep.

Cages are provided with efficient safety catches and overhead covers. Cages are self-dumping.

Hoisting engines are direct-acting, double engines of improved pattern, with 16 by 24 cylinders and 8-feet drums.

Four boilers generate steam for hoisting engines, pumps, fan, etc.

There are 2 shafts for ventilation in addition to the hoisting shaft, which latter is used as the downcast.

There are 3 shafts for ingress and egress, 1 escape shaft being 450 feet distant from the hoisting shaft and fitted up with a stairway, which is kept in good condition.

Air is supplied by a 12-foot fan, the quantity of air supplied being 35,000 feet, or 7,000 cubic feet per 50 men per minute.

Metal speaking tube is provided as required.

Experienced, competent, and sober men are in charge of hoisting apparatus, engines, and other machinery.

The air courses are kept in good condition.

The general condition of the mine is good, and all the requirements of the law are met.

At this mine quite a large fire occurred, originating near the foot of shaft, near the slope engine, on September 27, 1893. The fire proceeded along the air course to air shaft, destroying the fan and fan house. The fire was extinguished in eight days and fan house speedily rebuilt and a larger fan put in. No persons were injured and mine was quickly put in good working order.

MINE NO. 5.

Safety catches are provided to cages which work well.

Cages are fitted with overhead covers for protection of men.

Hoisting engines of sufficient size and approved pattern are used.

Ventilating shaft is in use for upcast.

There are two shafts for ingress and egress of men, one being the ventilating shaft, which is provided with stairway, the shafts being the distance apart provided by law.

Ventilation is had by means of 12-foot fan, and the quantity of air provided is 20,000 cubic feet per minute, or 7,500 cubic feet per 50 men per minute.

Metal speaking tube is provided in accordance with law.

Experienced, competent, and sober men are employed in charge of hoisting apparatus, engines, and all machinery.

The air courses are kept in good condition.

The general condition of the mine is good and all the requirements of the law are complied with.

Coalgate strip pits.—Produce hauled to Missouri, Kansas and Texas Railroad and shipped to market.

Midway strip pits.—Produce hauled to Missouri, Kansas and Texas Railroad and shipped to market.

Mr. Thomas Fleming, general manager of the Southwestern Coal and Improvement Company, has always furnished me every facility for inspection and has done everything possible to comply with the law and provide for the safety of his men.

Shot firers are employed at all of the above company's mines.

Coalgate mine No. 2 has been for some time abandoned.

Mr. Ed. Henderson, superintendent of mines at Coalgate, has also been careful to see that the law is complied with, and that everything possible has been done to assure safety to the men.

Total tonnage for Southwestern Coal and Improvement Company, 261,596 tons; total men, 847.

DESCRIPTION OF THE COAL MINES OF THE KANSAS AND TEXAS COAL COMPANY AT BRYAN AND BRAIDWOOD, ON THE ST. LOUIS AND SAN FRANCISCO RAILROAD.

BRAIDWOOD.

This is a slope mine 700 feet in length driven in upper vein of coal, there being two workable veins separated by 40 feet of strata, the lower vein being 4 feet thick and the upper one 3½ feet thick, the two veins being connected by a tunnel driven from each of the two lifts from the upper to the lower vein. The coal is of a very fine quality, of a rich bituminous character. The dip of the coal is 35°. This coal gives off considerable fire damp.

There is a very fine equipment to this mine, the hoisting apparatus consisting of a double, direct-acting Crawford & McCrimmon engine, with 4 large boilers.

Ventilation is had by a 20-foot fan, which is of full capacity to meet the requirements of the law.

This mine has not been operated since July, 1893.

The escapement shaft is not in compliance with the law, but I am assured that all requirements of the act of Congress will be complied with before the mine is operated.

BRYAN.

The machinery has been moved away from this mine and the mine temporarily abandoned.

CAVANAL.

A drift has been made at this place in a 3½-foot vein of coal but has not been further operated. Coal is of fair quality.

CAVANAL COAL AND MINING COMPANY AT POTEAU, ON ST. LOUIS AND SAN FRANCISCO RAILROAD.

A drift has been made in Cavanal Mountain by the above company about 400 feet above the level of the St. Louis and San Francisco Railroad track, and about 3 miles from Poteau Station. Track is now being completed from main line to the mine. As work has only recently been commenced the appliances and conditions required by law are not yet necessary. I am informed that they will be provided as the work proceeds.

This coal is of a soft, bituminus character, of fair quality. The vein is 4 feet in thickness, with a parting of slate from 3 to 6 inches thick in center of vein. There is some "bony" in this coal.

TEBO COAL AND MINING COMPANY AT SAVANNAH, ON MISSOURI, KANSAS AND TEXAS RAILROAD.

This is a slope mine just being opened, 350 feet long, with one lift.

Engines are geared, double-hoisting engines with one boiler.

There is one ventilating upcast shaft in addition to slope.

For ingress and egress an old slope was used, which is not in compliance with the law. A shaft was commenced at the proper distance and was being sunk at the time the strike occurred, and I am assured that this shaft will be completed as soon as the men return to work, and will be finished as speedily as possible.

There is a 10-foot fan furnishing 25,000 cubic feet of air per minute, or over 25,000 cubic feet of air per 50 men per minute.

The air courses are good and the mine is kept clear of standing gas.

Metal speaking tube is not yet put in, but will be as soon as work is commenced.

The coal is a 4-foot vein, of good bituminous coal with a dip of 60°.

The daily capacity of the mine is 100 tons. Forty men are employed in it. It is a wet mine, giving off very little fire damp. The general conditions are fair.

CHOCTAW COAL AND MINING COMPANY, AT SAVANNAH, ON MISSOURI, KANSAS AND TEXAS RAILROAD.

This is a slope mine with one lift. It has a small hoisting engine.

This mine has not the appliances and conditions required by law. It will not be allowed to operate until the proper escapement and ventilating shafts are supplied and the law generally complied with. The mine is at present in the hands of a receiver and is not working.

There is a 4-foot vein of good bituminous coal with a dip of 60°.

Thomas & Co. have a small strip and drift pit at Savannah, the product being hauled to the Missouri, Kansas and Texas Railroad.

Edwards & Sons have a small slope mine just west of McAlester in process of opening, with a small engine. A stack is used now for ventilation and escapement, but proper shafts and other appliances will be provided as the work proceeds and as quickly as possible.

Coleman has a small slope west of McAlester. Coal is hoisted by horse power; product hauled to Missouri, Kansas and Texas Railroad.

Accidents that occurred in and around the coal mines in the Indian Territory from June 30, 1893, to June 30, 1894.

1893.

July 6. Ed. Elliot, jr., miner, arm broken; fall of coal at Krebs, Osage Coal Company mine No. 11.

July 7. John Fleming (colored), miner, leg broken; fall of roof at Hartshorne, Choctaw Coal and Railway Company mine No. 1.

July 10. John Rohr, signalman, both legs broken; run over by pit car; Coalgate, Southwestern Coal and Improvement Company mine No. 3.

July 14. John Reddington, miner, head severely cut; fall of roof at Hartshorne shaft No. 1.

Aug. 10. Ralph Wixon, trackman, crushed foot; caught between pit car and rib at Coalgate mine No. 4. Foot amputated; died September 16, 1893.

Aug. 12. Oliver Quinn, miner, severely bruised and cut; run over by pit car; Hartshorne mine No. 1.

A. W. Ford, laborer, bruised; caught between pit cars; Hartshorne mine No. 1.

Sept. 21. James Skohan, miner, killed; fall of slate, Hartshorne mine No. 2.
Oct. 7. William Morgan, mule-driver, bruised; run over by pit car, Krebs mine No. 11.
Oct. 21. William Henry, miner, head and face bruised; went back on shot, Hartshorne mine No. 1.
Oct. 19. William Thompson, miner, strained back, etc.; fall of roof, Coalgate mine No. 4.
Oct. 25. Dominic Martinett, miner, fractured jaw, etc.; fall of roof, Hartshorne mine No. 2.
Nov. 15. Anthony Caffro, miner, left leg broken; fall of roof, Hartshorne mine No. 1.
Nov. 27. Ivor Williams and William Lewis, miners, burned; drilling old shot, Krebs mine No. 10.
Dec. 2. George Doyle, laborer, leg broken; fall of rock, Hartshorne mine No. 1.
Dec. 4. R. T. C. Lee, miner, killed; fall of roof, Hartshorne mine No. 2.
Dec. 11. James Bugnie, miner, bruised; fall of coal, Coalgate mine No. 4.
Dec. 11. Serafino Marzoni, miner, leg broken; fall of roof, Krebs mine No. 11.
Dec. 4. W. G. Fisher, shot-firer, killed; explosion of dynamite at Williamson Strip pit, Lehigh.
Dec. 12. Theodore Steinsieppe, miner, leg broken; Michael Gorman, miner, legs broken; William McAlpine, miner, leg broken; John Stephenson, miner, legs broken; John Thieri, miner, legs broken; Clement Morgan, miner, legs broken; at Krebs mine No. 10. These six men were descending in the cage to work, when the engineer lost control of the engine, the fulcrum pin coming out of reverse lever, the cage striking the bottom violently.
Dec. 19. John Georgi, miner, badly crushed; fall of coal at Lehigh mine No. 4; died from injuries December 21, 1893.
Dec. 22. Martin Stankieveich, miner, severely burned; gas explosion, Krebs mine No. 11; died December 25.

1894.

Jan. 10. John McNeil, miner, leg broken; fall of coal, Coalgate Mine No. 4.
Jan. 20. John Bablis, miner, fatally burned; gas explosion, Alderson Slope mine.
Jan. 21. James England, miner, ankles broken and bruised; run over by pit cars, Hartshorne mine No. 1.
Feb. 1. Ben Rich, miner, leg broken; fall of roof, Hartshorne mine No. 1.
Feb. 5. Manley Madden, miner, dislocated ankle; fall of coal, Lehigh mine No. 4.
Feb. 10. John S. Smith, shot-firer, burned; gas explosion, Krebs mine No. 11.
Feb. 19. Jerome Pead, yard foreman, badly burned; powder explosion, Krebs mine No. 11; died March 14.
Mar. 24. William Zivel, shot-firer, killed; fall of roof, Hartshorne mine No. 1.
Apr. 4. Joe Gough and Thomas Locke, miners, severely burned; powder explosion, Hartshorne mine No. 1; Locke died April 25, 1894.
Apr. 11. John Orth, miner, fatally crushed; fall of slate, Alderson Slope mine; died same day.
Apr. 16. Henry Sanders (colored), runner, leg bone splintered; caught between pit cars, Hartshorne mine No. 1.
Apr. 30. John Bernard, miner, rupture of urethra; fall of roof, Gowen mine No. 2.
May 18. Jack Boling, outside laborer, leg broken; railroad car door fell on his leg, Gowen mine No. 2.
June 18. J. T. Munson, miner, leg broken, back bruised; fall of slate, Alderson Slope; died June 21, 1894; blood-poisoning.

Fatal accidents, 12; injuries, 29; total, 41.

RÉSUMÉ OF ACCIDENTS.

Fall of roof	13
Fall of coal	6
Run over by pit car	4
Caught between pit cars	2
Caught between pit car and rib	1
Went back on shot	1
Drilling old shot	1
Explosion of dynamite	1
Gas explosion	3
Powder explosion	2
By fulcrum pin coming out of reverse lever of engine	6
By railroad car door falling	1
Total	41

It will be noted that a large percentage of accidents occur by falls of roof or of coal. Most of these occur through the negligence and disregard of rules by the miners. It is impossible to get many of these men to take ordinary care in propping the roofs. Every facility is afforded the men at all the mines to obtain sufficient timber, but they recklessly neglect, in many instances, to properly support the roofs. In my visits to the mines I invariably notice instances of this recklessness, and endeavor to induce the men to use more care. If the cases in which the accidents were caused by the sufferers' own negligence were taken from the above list the number of accidents would be extremely small. In the case of the 6 men injured on December 12, 1893, at Krebs mine, No. 10, I regard that as an unavoidable accident. I am pleased to be able to report that no accidents have occurred during the current year that could be traced as being caused by a neglect to comply with the laws on the part of the mine-owners or their agents.

HISTORY OF THE STRIKE.

In the early part of March, 1894, the mine-owners of the Indian Territory, claiming that they were driven out of the market, which they had long previously controlled, by coal from Alabama, Colorado, New Mexico, etc., and that their mines were compelled to lay idle for many days per month, some of the said mines having put out no coal for nearly a year, resolved to offer to their employés a lowered scale of wages, to take effect April 1, 1894.

The mine-owners further claimed that while miners' wages had been steadily reduced at other points, that no reduction had been made in miners' wages in the Indian Territory for over fourteen years; that the new prices offered were still, all things considered, as high or higher than any wages paid for the same kind of work anywhere in the United States; that if the proposed prices were accepted by the miners, they could recover their lost markets in Texas and elsewhere, and that the miners would themselves be benefited by the increased number of days they would be able to work. On the other hand, the miners claimed that they were unable to subsist at the wages offered.

On March 21 some of the superintendents of mines met, at Lehigh, Ind. T., a committee of men representing the miners at the principal camps in the Territory, and the situation was fully discussed. At the time of this meeting the Choctaw Coal and Railway Company had commenced running their mines, under an agreement with their men, at the reduced scale. The aforesaid committee reported to the various camps, mass meetings were held, and the men generally refused to accept the proposed reductions. On the 21st of April a national strike was inaugurated, and since that time up to the present writing the miners, with the exception of those employed by the Choctaw Coal and Railway Company, have been on strike, and at this writing the mines are still idle.

The Choctaw Coal and Railway Company, as it has been stated, put the reduced scale in force prior to the 1st of April, and at the commencement retained most of their old miners, but as the strike progressed many of these were induced to quit work and their places were filled with colored miners brought in by the company, and the mines have run continuously, putting out large quantities of coal.

The Choctaw Nation, having been deprived of a large revenue arising from the royalty on coal, timber, etc., as well as the sums for permits for the men, applied to the mine owners for payment for permits for

the men now idle, and on the refusal of the mine owners to pay for men not working for them, made application for troops to eject these men. A number of men have been ejected from Alderson and Hartshorne, and it is anticipated that other ejections will be made.

An attempt was made during May, by the Atoka Coal and Mining Company, to operate their strip pits at Lehigh, when their men were driven away by a large number of men and women and the pits were for the time abandoned; but recently a body of United States troops, consisting of two of the companies applied for by the Choctaw authorities, have been encamped at Lehigh, and the company is now operating its strip pits at that place.

The Osage Coal and Mining Company made several ineffectual attempts to start up their strip pits at Krebs. A company of soldiers is now encamped at Krebs, and the men at all of their strip pits have gone to work, and the company now hopes to be able to continue work unmolested.

None of the coal mines, however, have yet started up.

I believe the indications are that there will be a speedy settlement and work will be soon resumed. The effects of this prolonged strike are disastrous to all concerned.

I append hereto the scale of prices previously paid and the proposed prices.

Scale of wages paid to miners, etc., in the Indian Territory prior to April 1, 1894, and scale proposed by mine owners after April 1.

	Old price.	New price.
For Alderson, Lehigh, Hartshorne, and Coalgate, screened coal.....per ton..	$0.94	$0.75
For Krebs, screened coal.....do....	1.02	.80
For all points:		
Mine run.....do....	.81	.60
Entries.....per yard..	2.50	2.00
Air courses.....do....	2.00	1.60
Room turning.....each..	6.00	5.00
Room headings, or break throughs.....per yard..	2.00	1.60
Shot-firers.....per day..	2.75	2.75
Timberman, etc.....do....	2.50	2.25
Drivers and laborers.....do....	2.35	2.10
Top hands.....do....	2.00	1.80
Laborers, above ground.....do....	1.75	1.60
Weighman.....per month..	70.00	65.00
Boss timbermen and boss drivers.....per day..	2.60	2.35
Firemen.....do....	2.00	1.80

Old and new prices based on ton of 2,000 pounds.

Total tonnage of all mines in Indian Territory.

	Tons.
Osage Coal and Mining Company	*226,523
Choctaw Coal and Railway Company	333,616
Atoka Coal and Mining Company	*133,480
Southwestern Coal and Improvement Company	*261,596
Tebo Coal and Mining Company	*3,600
Choctaw Coal and Mining Company	*2,500
Sundry small slopes and strip pits (estimated)	5,000
Total	966,315

*Nine months' output only, owing to strike.

Total number of men employed at all mines.

Osage Coal and Mining Company	896
Choctaw Coal and Railway Company	932
Atoka Coal and Mining Company	435
Southwestern Coal and Improvement Company	847
Choctaw Coal and Mining Company	10
Tebo Coal and Mining Company	45
Sundry small slopes and strip pits (estimated)	100
Total	3,290

Full details in regard to accidents, shot-firers, and other matters have been furnished from time to time in my monthly reports. Plats of the various underground workings have also been sent to the Department. If it is desired to publish this report, these details can be obtained from the monthly reports, or I shall be pleased to furnish these details, if required.

L. W. BRYAN,
Mine Inspector for Indian Territory.

SOUTH MCALESTER, IND. T., *June 30, 1894.*