

GENERAL REPORT OF EXPLOSION  
AT  
ERNEST NO. 2 MINE  
OF THE  
JEFFERSON AND CLEARFIELD COAL AND IRON COMPANY,  
ERNEST, INDIANA COUNTY, PA.  
FEBRUARY 11, 1916.

INVESTIGATED BY

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REPORT WRITTEN BY

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INTRODUCTION

At 3:20 o'clock on the afternoon of February 11, 1916, an explosion occurred in the Ernest No. 2 mine of the Jefferson and Clearfield Coal and Iron Company, at Ernest, Pa. Of the men in the section of the mine affected by the explosion, 27 were killed, probably by suffocation, and four escaped though burned. Two rescue men were temporarily overcome by "afterdamp" but afterwards revived.

The explosion was confined to a comparatively small section of the mine, - Nos. 3 and 4 Line entries and No. 14-1/2, 15 and 16 butt entries. There were 150 men at work in the other sections of the mine,

who were not aware that anything unusual had happened, nor was anything known on the outside until a messenger from inside the mine brought the news to Mine Supt. S. T. Oldham at the Company office. Mine Foreman Ball and Fireboss, Standquist, both lost their lives in the explosion.

Bureau of Mines Rescue Car No. 6 arrived from Pittsburgh, at the mine at 7:30 a.m. February 12, too late to assist in the mine rescue work.

#### GENERAL INFORMATION.

Ernest is situated in Indiana County, Pennsylvania, five miles from the town of Indiana. It is a clean, well drained, well laid-out mining town of 900 population, reached by the Indiana and Punxsutawney branch of the Buffalo, Rochester and Pittsburgh Railway. The tippie, washery, powerhouse and drift openings of Ernest mines Nos. 1 and 2 are located adjacent to the town, and about 1/4 mile from the railway station.

Ownership, Brief history of operation, etc. The Ernest No. 2 mine was opened in 1903 by the Jefferson and Clearfield Coal & Iron Co. and has been in constant operation since, with an annual output of about 250,000 tons. The officers of the company are as follows:

L. W. Robinson,	President,	Punxsutawney, Pa.
Geo. H. Glune,	Treasurer,	Rochester, N. Y.
F. M. Fritchman,	General Manager,	Indiana, Pa.
G. W. Brymer,	Mining Engineer,	Indiana, Pa.
S. T. Oldham,	Mine Supt.	Ernest, Pa.
Geo. L. Eaton,	Sales Manager,	Rochester, N. Y.

Character of Coal, Roof and Floor: The coal operated is the Upper Freeport, or "E" bituminous bed of the Punxsutawney field, Allegheny

formation, Pennsylvania Series, and Carboniferous system. Face samples collected in the section of the mine where the explosion occurred show the following proximate analysis:

Sample No. 24191, Moisture 2.97, Volatile 30.76, Fix.Car. 55.25, Ash 11.02  
 " 24192, " 2.10, " 30.97, " 57.09, " 9.84

The main roof is a hard sandstone and the bottom a very hard clay.

The coal seam averages 5 feet in thickness, a tough band of "bony" being persistent at a distance of 12 inches from the top, ranging from 5 to 9 inches in thickness.

Moisture: The Ernest No. 2 mine may be termed a fairly moist one throughout, many sections containing standing water. The main entries dip at about 2 per cent. It was noted that all haulage ways in the affected section were damp. Dry dust is found in the rooms.

Gas: Methane had been detected in various sections of the mine, although it was testified at the inquest that "explosive gas" had never been detected in the section (Nos. 3 and 4 Line entries) where the explosion of February 11, occurred. During the investigations of February 12 and 13, no methane was detected by the Bureau engineers in the affected section; however, it must be considered that a larger volume of air was being conducted through this section than there had been previous to the explosion.

Air samples collected in various portions of the mine show a very low methane content, as follows:

Lab. No. ....	7130	7131	7089	7090	7091	7132	7133
CO <sub>2</sub> .....	0.11	0.10	0.12	0.20	0.10	0.12	0.08
O <sub>2</sub> .....	20.68	20.72	20.67	20.60	20.73	20.83	20.83
CH .....	* 0.06	* 0.04	* 0.10	0.06	0.07	0.05	0.04
N .....	79.15	79.14	79.11	79.14	79.10	79.00	79.05

\*Sample 7089 showing 0.10 methane was collected on the fall in Room #1 off 14 $\frac{1}{2}$  butt entry; 7130 and 7131 were secured in the main return air off the explosion area.

Development, System of Working, Tonnage, Men Employed: Ernest Mines Nos. 2 and 3 are practically one development, and cover an extensive area, the advance faces now being about two miles from drift mouth. Ernest No. 1 mine is opened on the opposite side of the shallow ravine made by McKees Run, at a point about 1000 feet north of Ernest No. 2 drift mouth.

Ernest No. 2 mine is worked on 3 entry and 2 entry, room and pillar system, the rooms being driven 300 feet long, 30 feet wide and on 50 foot centers. The daily tonnage averages 2000 and over. Three hundred and fifty men are employed underground.

Electric Equipment, Haulage, Drainage: The mine is supplied with power from a central plant, the voltage employed being 500. All haulage is performed by 9 electric locomotives, no animals being used, and the coal is cut by 30 electric machines. Six electric pumps are operated, the mine being very wet in places.

Explosives and Lights: Both black powder and permissible explosive (Coalite 2 D) were used - black powder being used in the section where the explosion occurred. Open lights, oil and carbide were used throughout the mine, excepting in some of the pillar workings and in the section where the 1910 explosion had occurred, where electric cap lamps and Wolf safety lamps were used.

Ventilation and Humidity: The mine is ventilated by a 22 foot steel Clifford fan operating as an "exhaust", and housed in a fan house constructed of masonry and steel. Air measurements in the two main return splits gave 37048 and 85514 cu. ft. per minute. The ventilation seemed adequate in all active workings. Humidity readings taken in several rooms in the explosion area gave a relative humidity ranging from 91 to 95.

As noted previously in this report, the larger portion of all haulageways were found in a damp condition, while some rooms and pillar workings were rather dry and dusty.

### PREVIOUS EXPLOSION (February 5, 1910).

On Saturday, February 5, 1910, at 7:50 a.m. an explosion occurred in Ernest No. 2 mine resulting in the loss of 11 lives, and injury to 8 others. This explosion was attributed to the ignition of gas by an open light in Room #5 off the 11th left entry off No. 2 main entry

at an approximate distance of 4000 feet southwest of the point of the explosion of February 11, 1916. The dip section affected has since been operated exclusively with locked safety lamps, and the Mine Inspector's Commission at that time also recommended as follows:

"That locked safety lamps be used exclusively in all pillar work in any or all parts of this mine; also in all parts outside of said dip section in which firedamp is being generated at this time or shall be generated at any time hereafter, and other places in or through which firedamp may be carried in the air current."

"That none but permissible explosives be used for the purpose of blasting coal or other material in the mine such as have passed the government test and are noted on the permissible list."

### STORY OF THE DISASTER

Local Conditions: The Ernest No. 2 Mine was operating as usual February 11th, although a large number of miners were absent owing to attendance at a local funeral. The usual fireboss rounds had been made and no gas reported in the section where the trouble occurred. The weather was not unusually cold, and there had been no sudden drop in temperature.

### THE DISASTER

Motor Boss Tom Weldon was on the sidetrack, 13th right entry

(see detail map) near the junction with the No. 4 Line entry, at about 3:20 p.m. when he was knocked down by a concussion and rush of dust and wind from the mouth of No. 4 Line entry. He decided that there had been a severe fall or blowout shot in No. 4 Line entry and started outside immediately to notify Mine Supt. Oldham (there being no underground telephone). As the distance to the drift mouth was over a mile, this checks out very closely with Mine Supt. Oldham's testimony that Weldon came outside and notified him at about 3:40 p.m.

Supt. Oldham at once procured a safety lamp at the lamp house (near the drift mouth) and notified some men there to telephone to Indiana to Genl. Mgr. Fritchman, and to notify all other officials to hasten to No. 2 mine. Supt. Oldham and Motorboss Weldon then went into No. 2 mine and reached the junction of No. 13 right entry with No. 4 Line entry before the odor of afterdamp was detected. The overcast at this point was found to be partially wrecked.

#### RESCUE AND RECOVERY WORK.

Mine Supt. Oldham and Motorboss Weldon immediately prepared to advance down No. 4 Line entry toward the seat of the trouble. First the holes were plugged up which had been blown through the overcast across No. 4 Line entry and two men on the sidetrack were ordered to throw up a temporary canvas brattice across No. 13 right entry just inby the mouth of No. 4 Line entry (see detail map) which served to throw an additional ventilating current down No. 4 Line entry.

Upon advancing a short distance down No. 4 Line entry Oldham and Weldon met two miners blackened and burned, who had escaped from the explosion area and as they were able to walk unassisted they were directed to proceed outside.

Four stoppings were found partially wrecked inby No. 4 Line entry, and these were repaired temporarily by Oldham and Weldon as they advanced. Finally No. 14 $\frac{1}{2}$  right butt was reached and entered. A door was found blown out inside No. 14 $\frac{1}{2}$  butt, also a wrecked trip of cars, and at the mouth of No. 1 room two dead bodies, on one of which the clothing was burning.

The afterdamp was so hot and heavy at this point that further progress was impossible; so Oldham and Weldon were compelled to retreat to No. 4 Line entry. An advance was then made inby No. 4 line entry until the door was reached between No. 15 and 16 right butts (see detail map). This door was found partially blown through and behind it greases were heard. Oldham and Weldon pushed the door open sufficiently to advance and found two men dazed and burned, one miner's carbide lamp still burning. These men were assisted out to fresh air, after which a further exploration was made beyond the door and a dead body located (apparently overcome by afterdamp). No other live men were found.

At this juncture Fireboss O'Hara arrived and he discussed with Mine Supt. Oldham the advisability of closing this door tightly, thus forcing the air current into No. 15 right butt (see map) where the after-



damp was very strong. It was decided to close this door and all stoppings were reinforced back along No. 4 Line entry in order to get the strongest possible air current into No. 15 Right butt. Shortly afterward, Genl. Manager Fritchman, Mine Inspector Lowther and other officials arrived and a systematic bratticing and recovery campaign was carried forward. During this work two men were partly overcome but were revived. By the next morning (Saturday) 19 bodies had been recovered (see detail map). The next day (Sunday) 7 bodies, including Mine Foreman Ball, Rock Boss Connelly and Fireboss Standquist, were found together on the aircourse, or No. 3 Line entry, where they had apparently been overcome by afterdamp while trying to escape. The last body was found in Room 11 off of No. 15 Right butt on Monday.

Courage shown by these officials: Although examples of unselfish courage are common in the annals of coal mining, yet, the splendid manhood of Mine Foreman Ball, Rock Boss Connelly and Fireboss Standquist, who gave up their lives in an effort to lead four foreign miners to safety, must be commented upon in this report. Mine Foreman's Ball's cap was found on No. 4 Line Heading near room 12, so that apparently he had been at this point when the explosion occurred. Instead of hastening outby No. 4 Line heading by which route he could have probably escaped safely, as four others did, Ball apparently thought of the four foreign miners working down at the faces of Nos. 3 and 4 Line Headings, and proceeded to these faces to get these miners and lead them to safety. Ball was evidently joined by

Connelly and Standquist, and these three officials found the four miners at the faces of the Line Headings. All seven men then started out by the aircourse, or No. 3 Line heading, traveling with the air current, apparently figuring that they could travel faster than the "afterdamp". At the concrete dam (see map) all seven men were apparently in good condition, as they walked an 8-inch pipe to avoid wading through the water. However, when they reached a point opposite No. 16 Right butt they were all overcome by the "afterdamp" which had leaked through the broken stoppings into No. 3 Line heading or caught up with them in the return air. When the bodies were found there, Ball was in the lead, and had apparently turned toward the other man to warn them back as he fell. Connelly was behind Ball, then came the four foreign miners, and about 100 feet behind lay Standquist. It was plain to be seen that these courageous officials had thus guarded these miners and led them toward safety until all had succumbed to the fatal afterdamp, within 1000 feet of fresh air.

Alleged causes. Current theories: At first it was generally thought that a blowcut shot had caused a local dust explosion, as this section of the mine had never been gaseous. Afterward, when investigation failed to reveal any dangerous shots, it was thought that a machine helper had gone close to the falls in Room 2 off 14-1/2 butt and ignited the gas from a fresh fall by his open light.

State Mine Inspector's Report: Chief Mine Inspector Roderick appointed a special commission of five inspectors: C. B. Ross, F. A.

Furniss, Nicholas Evans, C. H. Crocker and Thomas Lowther, to investigate and report upon the disaster. The findings of this commission were that the explosion had originated in Room 2 off No. 14-1/2 butt through the ignition of gas by a miner's open light, the gas being forced out by a sudden fall of roof. All the mine officials were completely exonerated of blame. The exclusive use of safety or electric lamps (approved by the Department of Mines) and of permissible explosives (approved by the Federal Bureau of Mines) was recommended for all "pillar work".

Coroner's Inquest and Verdict: Coroner H. B. Enterbaugh of Indiana County held his inquest February 16, at Indiana, Pa. Jas. E. Roderick, Chief of the State Department of Mines, attended; also Mine Inspectors G. B. Ross, C. H. Crocker, T. A. Furniss and Thos. Lowther. Mine. Supt. Oldham testified concerning the non-gaseous character of the section where the explosion occurred; also concerning the rescue work and general condition of the mine.

Fireboss O'Hara testified that he had inspected this section of the mine three hours before the men came in to work, and again between the hours of 9 and 11 a.m. February 11, and had found no traces of gas whatever. He had climbed the falls in rooms 1, 2 and 3 off No. 14 $\frac{1}{2}$  butt and had found no gas there on the morning of February 11, nor on any previous occasion. He had seen two miners at work in Room 3, and two in Room 2, all using open lights, but Room 1 was not working. The roof was falling slightly in rooms 2 and 3 during his final inspection on the morning of February 11.

Assistant Mine Foreman Geo. Love testified that he had never found gas in the section where the explosion occurred. Miners John Baird, W. E. Pugh, Bert Pindley and A. W. Creighton, all of whom had worked in rooms off No. 15 butt entry, but were not in the mine when the explosion occurred, testified that they had never seen gas in that section of the mine. Following the testimony of these company witnesses the report of the State Inspectors Commission was read.

The verdict of the Coroner's jury was that William Ball and 26 others had lost their lives as a result of an explosion of gas from a fall, which was ignited by unknown means.

#### NOTES OF EVIDENCE BY BUREAU ENGINEERS.

Personnel: Mine rescue car No. 6 left Pittsburgh, Pa. at 11:30 p.m. February 11, and arrived at Ernest, Pa. at 7:30 a.m. February 12, too late to assist in the rescue work.

Mine Safety Engineer, H. M. Wolfli was in charge of the car, assisted by Assistant Mining Engineer, H. D. Mason, Jr., Asst. Explosives Engineer, A. J. Strane, Junior Mining Engineer, E. H. Denny and Junior Mining Engineer H. J. Rahilly. Inspections were made inside of Ernest No. 2 mine on February 12, 13, 14 and 15, the company officials assisting in the work of investigation.

Extent of explosion: Indications of flame and violence were displayed in #14½ butt entry and the rooms turned off of it and to four line entry, 500 feet inby and outby #14½ butt entry; also in No. 15 butt

entry for a distance of 900 feet inby from its junction with No. 4 Line entry and to the first 13 rooms off of it. The explosion traveled at its farthest point a distance of 1000 feet from the point of origin and in so doing penetrated the rooms off the entries.

Violence of explosion: The overcast at the mouth of No. 4 Line entry was slightly wrecked; four stone stoppings between Nos. 4 and 3 Line entries were partly destroyed; a door inby No. 14-1/2 butt was blown out and a door on No. 4 Line entry was pushed through its frame. Two cars from No. 14-1/2 were pushed against a mining machine standing at the intersection of No. 14-1/2 and No. 4 line entry, jamming the mining machine up against the rib. The force was evidently not very great as is shown also by the fact that four men escaped alive from the area of the explosion. However, the heat and flame were of considerable duration as shown by the evidences of coking and charring; the fact that the clothes of the dead miners found at the mouth of room No. 1 off No. 14-1/2 butt were burning; also the fact that an inspection party, including Mine Supt. Oldham and H. D. Mason, Jr. on Sunday morning, Feb. 13, discovered two posts smouldering quite briskly near the face of Room 7, off No. 4 Line entry. The ample space for ~~exp~~- expansion afforded, coupled with the very damp condition of all adjacent entries seemed very evident factors in the rapid dying out of flame and violence.

Coke and coke dust: When the Bureau of Mines party of investigation proceeded toward the explosion area, the first evidence of coking appeared on No. 4 Line heading on the outby side of a bent prop

near the West rib located between the 3rd and 4th cut-throughs. Outby this point a slight soot and dust coating was noticed but no coke. Opposite the 4th cut-through, The West rib and the roof were charred and immediately inby posts began to show heavy coking which was, with one exception, on the outby side. Opposite 14 $\frac{1}{2}$  entry on the East rib was very extensive coking; on a recess in the roof was a large amount of dust apparently blown out of No. 14 $\frac{1}{2}$  and there was a chunk of coke about two inches square plastered in a roof crevice. On the inby of a trip of eight cars found at the mouth of and in No. 14-1/2 entry, coke was found on the inby side plastered one-half inch thick. Continuing up No. 14-1/2 entry and into Rooms 1, 2, 3 and 4 off of No. 14-1/2, very heavy coking was found everywhere, mainly on the inby projections and sides of timbers but thinly also on the outby side of posts. The last break-through between Rooms 2 and 3 showed much evidence of heat; heavy coking and coke <sup>were</sup> plastered over ribs, roof and timbers. Near the face of No. 3 room there were heavy deposits of coke on the floor on the inby side of the ties.

Proceeding next on down No. 4 heading, less pronounced coking was found mainly on the outby side of posts in varying quantity to a point 350 feet beyond No. 14-1/2 entry where it ceased entirely. On 15th Right entry off No. 4 Line heading, coking extended up to and including No. 13 room, being terminated apparently by the wet condition of the entry beyond. It was scattered irregularly over props and on surfaces throughout the 13 rooms but not nearly as heavily as in the rooms off No. 14-1/2 entry. Light coking was found only near the mouth of No. 16 Right heading. Two timbers

were found smouldering in No..5 room off 4th Line heading as shown in map.

Dust and Gas Conditions: In the three rooms off No. 14-1/2 entry where the evidences of coking were greatest, the room pillars were being drawn back giving a chance for gas to be released by falls to accumulate over falls. Dry dust was found in these rooms and also in other rooms off No. 15 and off No. 3 butt, the last named being out of the explosion area. But the entries were in general at least damp and in many places wet. No evidence of gas aside from the small amounts (0.1 of 1 per cent) found in samples taken was obtained by Bureau of Mines investigators.

The fan had been operating normally and the fireboss O'Hara had completed his inspection rounds at noontime on the day of the explosion and had reported no gas in the section where the trouble afterward developed. However, it is important to note that Fireboss O'Hara testified at the inquest that small falls were occurring at the time of his last inspection, in the pillar section, comprising rooms 1, 2 and 3 off 14-1/2 butt, and that men were at that time working with open lights in Rooms # 2 and 3. A gas explosion had occurred in 1910 so that part of the mine was on a closed lamp basis.

Of the 27 men killed in this explosion, 16 were found on 15th Right entry; one in room 11 off 15th Right; two on No. 14-1/2 Right at No. 1 room switch; one on 4th Line heading, and 7 on 3rd Line heading. The two men on No. 14-1/2 were burned, one's clothes being found on fire. The remainder were apparently killed by the afterdamp. The bodies were not

mutilated and recognition was possible in all cases. Four men, who were in the explosion, escaped alive although burned. Two, it is said, had been near the coal cutting machine on the 4th heading opposite No. 14-1/2. These two walked out to the 13th Right by themselves. The other two were rescued by Supt. Oldham and the motor boss from just inby the door on the 4th Line heading.

Absence of evidence of a blownout shot or of any blasting leads to the only other conclusion apparently possible: namely, that a body of gas in all probability released by the fresh fall in Room 3, was ignited by the open lamps of the two miners found on No. 14-1/2 as they were pushing their car into the working place (room 2). This car was found about 40 feet from the falls, and the cap and lamp of one of the miners were found at the rear bumper of the car. Dust in the rooms was stirred up and assisted in the explosion, but the wetness of the adjoining entries and consequent lack of dry material for propagation prevented a general mine explosion.

If closed lights had been used on this pillar work adjacent to the falls, as was recommended by State inspectors in 1910, the accident, in all likelihood, would not have occurred.

#### LESSONS.

This mine disaster shows, as do others, the inadvisability of working with open lights in pillar drawing, particularly in a mine known to generate gas. The complete ventilation of or detection of gas over falls in pillar work is often impossible. Likewise the use of black



powder always hazardous where dust is dry and inflammable, near falls in pillar work is particularly dangerous.

Recommendations of coroner's juries and of State inspectors do no good unless observed. Recommendations after the 1910 explosion were in substance that safety lamps, or approved electric lamps, be used exclusively for all pillar work and that only permissible explosives be used in the entire mine. Neither of these were lived up to at the time of the second explosion. The miners in Rooms 1, 2 and 3 off No. 14-1/2 butt, were all engaged in "pillar work" and were all using open lights and black powder. This explosion illustrates how even a slight gas ignition may cause great loss of life, although not particularly damaging mine property.

The use of open lights (the motor boss had an open light when with Oldham during the rescue work) in connection with rescue work endangers the lives of rescuers from a possible second explosion.

The fact that two rescuers were overcome by afterdamp again illustrates the danger of men without rescue apparatus, advancing beyond the air current. Whenever at all possible, canaries or other small birds should be procured to warn of danger in such exploration.

## ERNEST MINE NO. 2 EXPLOSION

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The closing of the door on No. 4 heading between 15 and 15th Right may or may not have had an influence in causing the death of the seven men in No. 3 heading. The fact that two men were found alive inby this door should have indicated the desirability of exploring further in this section before turning the blackdamp into the section. As a general principle of rescue work, great care should be taken to explore areas in which there seems to be little blackdamp in preference to areas in which blackdamp is present in high percentage, since this practice will give the greatest chance of saving life.

Had there been a crew with breathing apparatus available immediately after the explosion they could have been of great service in exploring ahead of the air, and given good advice as to which district should be ventilated first from junction of 4th heading and 15th Right.

LOCATION AND DESCRIPTION  
OF SAMPLE FROM  
ERNEST NO. 2 MINE

Coal	24191F	From face of No. 4 room off butt entry off 15th right of 4th Line entry.
"	24192F	Room 2 off 14-1/2 entry from inby side of rib stump just inby 1st break-through to room 1.
Road	24211	Over a 20-foot section, between rails of 4th Line entry just inby No. 1 break-through.
"	24212	Rib, gob and road sample: Taken over a 3-foot section outside of track on 4th Line entry just inby No. 1 break-through
"	24213	On 14-1/2 Right entry just outby room turnings.
"	24214	From 15th Right entry just outby main siding.
Rib	24215	On 14-1/2 Right entry, just outby room turnings.
Road	24216	From room 2 off 14-1/2 Right off 4th Line entry.
Rib	24269	From 10 feet inby No. 14 room on 15th Right entry, just outby explosion area.
Road	24270	10 feet inby No. 14 room on 15th Right.
Coke	24217	Coke from explosion, from rock crevices in gob on No. 4 Line entry, opposite 14-1/2 entry.

**ERNEST NO. 2 ANALYSIS  
REPORTS  
COAL AS RECEIVED**

Lab. No. ....	24191	24192	24211*	24212*	24213*	24214	24215
Moisture .....	2.97	2.10	5.77	6.43	2.72	6.95	3.50
Volatile matter ...	30.76	30.97	16.71	15.82	28.70	23.94	28.03
Fixed Carbon .....	55.26	57.09	39.39	24.61	54.52	40.35	55.61
Ash .....	<u>11.02</u>	<u>9.84</u>	<u>47.13</u>	<u>53.14</u>	<u>14.06</u>	<u>28.76</u>	<u>12.96</u>
Total .....	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Hydrogen .....	4.87	4.90	*A very few coke particles.				
Carbon .....	75.29	76.63					
Nitrogen .....	1.27	1.32					
Oxygen .....	4.37	4.35					
Sulphur .....	3.22	2.62					

B.T.U. .... 13275 13601  
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Lab. No. ....	24216	24269	24270	24217	24218
Moisture .....	3.63	4.66	6.91	2.57	1.69
Volatile Matter ...	28.22	29.06	24.18	21.17	22.44
Fixed Carbon .....	53.55	51.96	44.00	56.70	37.40
Ash .....	<u>14.30</u>	<u>14.30</u>	<u>24.91</u>	<u>19.56</u>	<u>38.47</u>
Total.....	100.00	100.00	100.00	100.00	100.00

Lab.No.....	SIZING TEST. (cumulative per cent)							
	24211	24212	24213	24214	24215	24216	24269	24270
Over 48-mesh .....	59.2	55.8	38.8	60.0	75.1	78.6	40.1	60.8
Thru 48-mesh .....	40.8	44.2	61.2	40.0	26.9	21.4	59.9	39.2
Thru 100-mesh .....	12.6	21.0	37.9	11.5	19.7	11.3	36.4	15.8
Thru 200-mesh.....	2.9	9.5	22.2	3.0	7.9	6.1	18.6	9.5

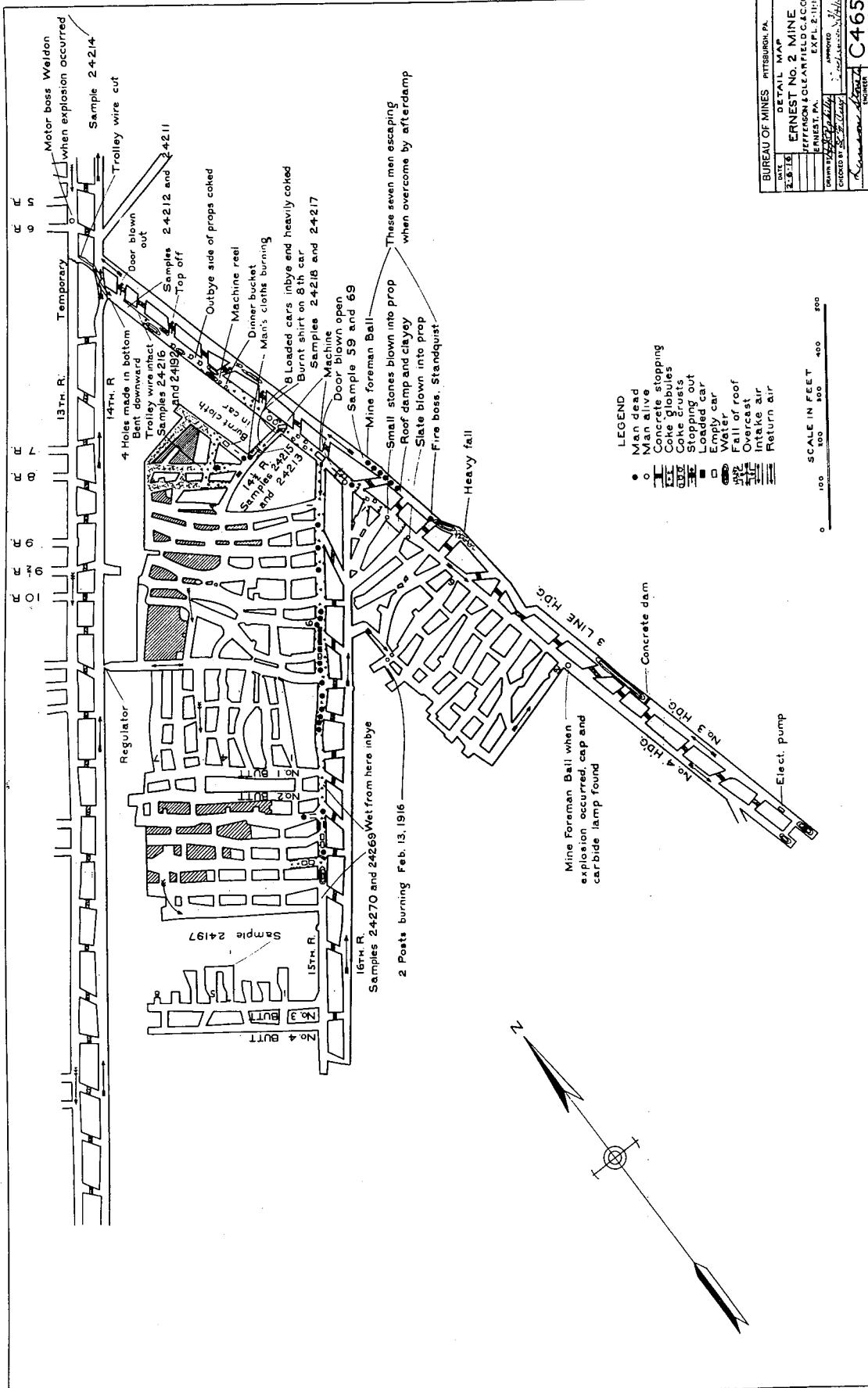
All road and rib dust samples probably explosive except 24211 and 24212.

(Sgt.) L. M. Jones.

ERNEST NO. 2 MINE.

Sections.....	A		B	
Can Nos. ....	596		406	
Laboratory Nos. ....	24191		24192	
Roof - Sandstone .....	Ft.	in.	Ft.	in.
Coal .....	0	4-1/2	Coal .....	1 9
Sulphur .....	0	0-1/8	Boney coal .....	0 5-1/2*
Coal .....	0	3-1/2	Coal .....	0 5-1/2
Sulphur .....	0	0-1/8	Soft shale .....	0 0-1/4
Coal .....	0	9-3/4	Coal .....	2 11
Bone and boney coal....	0	9*	Sulphur .....	0 0-5/8*
Coal .....	1	2-1/2	Coal .....	0 3
Sulphur .....	0	0-1/4	Bone .....	0 2*
Coal .....	0	2-1/2	Coal .....	0 6
Boney coal .....	0	0-1/4		
Coal .....	2	1-1/2		
Boney coal .....	0	1-1/2*		
Coal .....	0	7		
Floor:				
Thickness of coal bed....	6	6-1/2		6 4-5/8
Thickness of bed sampled..	5	8		5 8-3/4

\*Excluded from sample.



Altoona Mirror  
February 12, 1916

## RECOVER 25 BODIES FROM INDIANA MINE

**Letgo In Jefferson and Clearfield Working Takes Terrible Toll—Cause of Disaster Is Being Probed.**

By United Press.

JOHNSTOWN, Pa., Feb. 12.—The bodies of nineteen miners killed in last evening's explosion in No. 1 mine of the Jefferson and Clearfield Coal and Iron company at Ernest, Indiana county, have been recovered from the mine.

An official of the company stated today that the cause of the explosion is not definitely known. The belief is however, that a spark from the electric cutting machine or from a motor set off a pocket of gas, as a number of the victims were those who were working around the cutter and the motor.

Officials of the company stated today that only twenty-six men were working at the time in the section in which the explosion occurred. Scattered throughout the big operations were between 700 and 800 men, but the damage did not go beyond the section in which the explosion took place. This official states that the mine was not much damaged.

The mine was classed as non-gaseous and was inspected at regular intervals.

The explosion yesterday was the first since nine or ten years ago when several were killed.

The known dead:

**GEORGE BUNTON**, jr., aged 25, motorman of Ernest.

**NORRIS ALLEN**, loader of Ernest.

**WILLIAM BALLS**, mine foreman of Ernest.

**CARL STRANDQUIST**, fire boss of Ernest.

In Indiana General hospital:

**W. R. Nord.**

**James McGuire.**

**Mike Correll.**

ny Ullish

Six more bodies were recovered from the Ernest mine at noon today, bringing the total of dead to twenty-five.

It is believed that all bodies have been found.

Uniontown Morning  
Herald  
February 12, 1916

# MANY ARE ENTOMBED IN A MINE

Fifteen Bodies Reported  
Brought From Jefferson  
& Clearfield Coal & Iron  
Co. Workings at Ernest,  
Near Indiana, Pa.

## RESCUE PARTIES SEEKING VICTIMS

(By Associated Press to The Herald)  
INDIANA, Pa., Feb. 12. —  
(Bulletin)—James McGuire, a  
rescuer, was brought to a local  
hospital tonight after having  
been overcome with gas. He said  
before he left the mine 15 bodies  
had been brought out.

INDIANA, Pa., Feb. 11. — One man  
was killed, three seriously injured  
and a score of men entombed by a  
gas explosion late today in Mine No.  
2 of the Jefferson and Clearfield Coal  
& Iron company at Ernest, six miles  
from here. One hundred volunteers,  
including miners from various parts  
of the county, have entered the mine  
and are working in relays in an effort  
to reach the entombed men.

The explosion occurred in an entry  
just off the main entry of the mine.  
More than 100 men were at work at  
the time but all managed to escape  
with the exception of 37 who were  
trapped by falling rock and debris.  
Rescue parties were at once organized,  
however, and 13 of this number  
were brought to the surface several  
hours after the explosion. A number  
were seriously hurt.

The mine is one of the largest in  
this section and is one of a group  
belonging to the Rochester and Pitts-  
burgh Coal & Iron company. As soon  
as news of the explosion was received  
here, a special train carrying  
physicians and nurses were dispatched  
to Ernest. Rescue teams from  
Luzerne and Graceton mines of the  
company, near Ernest, were also  
rushed to the scene and they are  
working under the direction of State  
Mine Inspector Thomas C. Lowther.

The explosion occurred about one  
mile from the main entrance to the  
mine. According to rescuers, the interior  
of the mine was badly wrecked.



## **NINETEEN DEAD IN EXPLOSION**

**Terrific Explosion Sweeps Ernest Coal Mine of Jefferson-Clearfield Coal and Iron Company On Friday**

**EXPLOSION SO FIERCE THAT MEN WERE PRACTICALLY TORN TO BITS**

**Only Two of Them Have Been Identified; U. S. Mine Rescue Car Rushed to the Scene of the Explosion**

Indiana, Feb. 12.—Nineteen dead bodies have been brought out, four are injured, two rescuers have been overcome by poisonous fumes and three are missing as a result of a terrific explosion which swept the working of Ernest Mine No. 2 of the Jefferson-Clearfield Coal and Iron Company at Ernest late yesterday.

The nineteen bodies were so badly disfigured that their identifications was doubtful when they arrived here. They were distributed among three undertakers to be prepared for burial. Only two were identified, one through being found by the side of the motor and one by his check. The force of the explosion was so fierce that the men were practically torn to bits.

George Burton, Norris Allen, Jas. McGuire and George Love, rescuers, are today recovering from gas fumes and poisoning. They were brought out by others after having fallen unconscious.

Coroner H. B. Fritchman, Mine Inspector Thos. Lowther, and company officials today began an investigation into the cause. The mine rescue car from the Pittsburg station of the United States Bureau of Mines arrived here this afternoon, its equipment being used by miners battling with pick and bar to penetrate the length of the mine. After-damp filled the working ahead after the explosion, making death certain for the three missing men believed to be still in the mine.

The explosion occurred about one mile from the main entrance to the mine. According to rescuers, the interior of the mine was badly wrecked.

Officials of the company said no assistance had been asked of the United States bureau of mines authorities, as the company rescue teams are equipped with oxygen helmets.

The exact cause of the explosion has not been determined, but officials believe a pocket of gas was ignited in some manner.

Indiana Evening Gazette  
Indiana, PA  
February 17, 1916

## COAL COMPANY EXONERATED

Coroner's Jury Yesterday Afternoon Decided Death Was Due to "Explosion of Gas, Ignited by Unknown Cause."

### INSPECTORS' WORD.

The Jefferson & Clearfield Coal & Iron Co., in whose mine at Ernest the disastrous explosion occurred last Friday evening, was exonerated from all blame connected therewith by the Coroner's Jury, which conducted the inquest yesterday afternoon, with Coroner, Dr. H. B. Buterbaugh presiding.

The jury also determined that the explosion was due to an unknown cause. The text of the verdict follows:

"That the 27 men came to their death on February 11, 1916, about 3:20 p. m. at Ernest Mine No. 2, Ernest, Indiana county, Pa. The deceased came to their death as a result of an explosion of gas in said mine, ignited by some unknown cause."

The Coroner's jury was composed of John P. Clements, Josiah Neal, Dr. A. H. Stewart, J. Willis Wilson and Hon. Wilmer H. Wood.

#### Inspectors' Report.

The report of the Commission of Mine Inspectors, the commission being named by the J. E. Roderick, chief of the State Bureau of Mines to comprise Thomas S. Lowther, of Indiana; C. H. Crocker, of Blairsville; Nicholas Evans, of Johnstown; T. A. Furniss, of Punxsutawney, and C. B. Ross, of Latrobe, follows:

"That explosive gas that had accumulated on a all had been driven down off the fall by another caving of the strata above on the open lights of the two men who were working in No. 2 room pillar off 14 1-2 right entry, said lights igniting the explosive gas."

Their report also stated that they had no criticisms to offer concerning the work of the Superintendent, Mine Foreman and Assistants, which includes the Fire Boss; as they had done their work in compliance with the Mining Laws of the State.