

ANTON EVANCICH, Austrian, miner, age 40 years, married, one child.

DIMITRIUS PAPPAULIS, Greek, miner, age 33 years, married, four children.

GEORGE MERIDAKIS, Greek, miner, age 52 years, married, one child.

GEORGE PAPPAS, Greek, miner, age 35 years, married, no children.

GEORGE SKRAKES, Greek, miner, age 30 years, married, no children.

SAVERIANO DIAZ, Mexican, miner, age 35 years, married, one child.

MIGUEL MAYORGA, Mexican, miner, age 29 years, married, no children.

FREINTAFOLAS FLEITIS, Greek, miner, age 26 years, married, one child.

TOM MANVILLE, American, miner, age 33 years, single.

JOHN KOPELAS, Greek, miner, age 31 years, married, three children.

JOHN KATRES, Greek, miner, age 30 years, single.

JIM ANUSIS, Greek, miner, age 40 years, single.

JOE BANNER, American, miner, age 45 years, single.

ANDY TAKOVIC, Austrian, miner, age 29 years, married, three children.

TOM VLAHOS, Greek, miner, age 37 years, married, two children.

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REPORT ON HASTINGS EXPLOSION

The Hastings mine is situated in Las Animas County, seventeen miles north of Trinidad, on the Colorado & Southeastern R. R., connecting with the Colorado & Southern R. R. at Ludlow and the D. & R. G. R. R. at Barnes, three miles east of the mine.

The mine is operated by the Victor-American Fuel Company, main office in Denver, who also owns the Colorado & Southeastern railroad.

Victor electric head lamps were used exclusively except the superintendent, mine foreman, fireboss, company inspector, shot-firer, and some of the entrymen working in entries generating explosive gas, used safety lamps in conjunction with the electric lamps. The safety lamps being used for testing purposes.

The seam under operation at the time of the disaster, is known as the Berwind or "B" seam at Hastings; it is the lower seam lying above the Trinidad sandstone, and varies in thickness from $5\frac{1}{2}$ to 7 feet.

The coal is of the coking bituminous variety. The mine is opened on the "A" seam by a slope driven on the dip of the seam. At a point about 2,000 feet from the portal of the mine, a rock tunnel or slope connects the two seams, the vertical distance between them being about 40 feet.

The face of the main slope or "B" seam is approximately 8,000 feet from the surface, with an average dip of 5%. Seven pairs of north and south entries have been opened from the main slope and ranging from 300 to 1,800 feet in length. At this time only the fourth, sixth and seventh north entries, the sixth and seventh south entries and the main slopes were being worked, the others being worked out or stopped.

The mine was ventilated by a Sirocco fan 8 feet by 8 feet. The volume of air varied from 91,000 to 96,000 cubic feet per minute under a water gauge of 2.9 inches. The volume of air entering the "B" seam amounted to 50,000 cubic feet per minute, split at the third and fourth cross entries off the fourth north which were connected with the third north entry; this volume again meeting the main volume below the fourth north. Another split ventilated the fifth south entries. The balance of the workings were on a continuous current.

Haulage was done by rope and mules. Pumping was done by electric pumps stationed on the intake air.

In the main slopes the coal was cut by an electric mining machine, which was out of repair at this time.

About 9 a m., April 27th, a trip of empty cars was descending the slope. The trip stopped and the trip-rider started down to investigate the cause of the trouble; seeing smoke come up the slope, he started for the outside, where he notified the superintendent that a fire or explosion had occurred in the mine.

I arrived at the scene of disaster at 2:30 p. m. and entered the mine at 2:50 p. m.

The fan was not injured as the force of the explosion did not reach the surface, having spent itself on the intake at the third north entry, and on the return at about the second north; at this point there is a very wet zone. From this point outward the stoppings were not destroyed, thus allowing the superintendent, night fireboss, and others to reach the third north entry very soon after the occurrence of the explosion. Here I found them repairing the stoppings below the fourth north entries and requested them to accompany me back to the third and fourth cross entries, off the fourth north, which were connected with the third north; those cross entries were on the first of the air, and as the explosion had spent itself in this vicinity, I concluded that if there were any live men in the mine, they could be found in these entries.

Our hopes were short lived; as upon entering the cross entries we found dead bodies burned, thus destroying the hope of finding anyone alive. On account of the destruction of stoppings and falls of rock materially affecting the air current, and all the workings below the fourth north being full of gas, the work of recovering the

bodies progressed very slowly. In order to get into the different entries with the volume of air at hand, each pair of entries were bratticed off as soon as the bodies in sight had been removed.

On the 8th day of May the face of the main slope was reached by Mr. Harrington and Mr. Herbert of the U. S. Bureau of Mines; Mr. Watson, Inspector for the Mutual Insurance Company; Mr. Whiteside, Mr. Ganey, Mr. D. J. Griffiths, and Mr. Cameron of the Victor-American Fuel Company, Mr. Dalrymple and myself. The electric cutting machine was found disconnected; the thumb screws that hold the feed wires in place were not there.

The shift that went on at 1 a. m. on the morning of the 10th found the body of David Reese on the main seventh south entry, opposite the second last cross cut, one hundred and twenty-five feet from the face of the entries.

The key-locked Wolf Safety lamp carried by him was found beside his body with the oil vessel disconnected from the other parts of the lamp. The expansion ring was found by Mr. Dalrymple on the following shift in the presence of Joseph Watson and myself.

The entrymen working in the seventh south back entry had a Wolf Safety lamp in their working place, one hundred and twenty-five feet inside of where the body of David Reese was found; so if the cause and the initial point as stated hereinafter is correct, those men either unknowingly or intentionally continued to work in an explosive atmosphere, as most of the gas given off in this part of the mine was at the face of the entries, and if the atmosphere was explosive or inflammable at the point where the body of Reese was found, it must have been explosive at the face of the entries, making it impossible for a Wolf Safety lamp to continue to burn. Therefore, it is evident that they either did not know, or did not care, what extinguished the flame of the safety lamp.

The Hastings "B" seam has always been considered a gaseous mine; daily analyses of the return air being made by the company gave the following results: Methane from four-tenths to sixty-six one hundredths of one per cent. In January, 1916, the Chief Inspector took a sample of the return air in the sixth south entry, which was at that time the outby workings. The analysis of this sample by Dr. Ekeley, State Chemist, gave eight-tenths of one per cent. methane.

This analysis was made with the hearty approval of the company as a check on their own work. Explosive gas was found occasionally at the face of some of the entries through a brattice being knocked down, or a door being left open, or some other derangement of the ventilation. It was also considered a wet mine. The grade is undulating, resembling waves, standing water accumulated in all the lower depressions. On top of the higher raises a state of dampness existed. Under such conditions the percentage of gas given off was not considered dangerous.

INITIAL POINT AND CAUSE OF EXPLOSION AND
EVIDENCE SUPPORTING SAME

In exploring the mine down to the seventh south, everything supported an upward tendency of the force; props, stoppings, doors, pit cars, etc., were all blown upward. Below the seventh, everything was blown towards the face of the slopes, which supports the belief that the point of origin was in the seventh south entry.

Upon reaching the point in this entry, where the body of David Reese was discovered, we found that the force traveled both inwardly and outwardly; that the deposits of coke were found on the inside of the rib projections to the south; and on the outside to the north. The fact that no part of the safety lamp was injured, or carried away from the body of its owner, proves that little or no violence existed here.

It is entirely within the bounds of reason to believe that the explosion was caused by a naked light coming in contact with a body of inflammable or explosive gas at this point. The wet condition of the mine did not prevent the dust from taking an active part in the explosion.

One hundred and twenty-one lives were lost. One hundred and one bodies were recovered. The remaining bodies will not be recovered until the ventilation is restored and the falls cleaned up.

It is to be deeply regretted that Walter Kerr lost his life in the noble work of helping to recover the bodies of his fellow men. His death was caused from heart failure, due to over-exertion.

Respectfully submitted,

(Signed)

HENRY P. KING,
Deputy State Inspector of Coal Mines, District No. 1.

May 6—WALTER KERR, American, miner, age 27 years, married, three children, member of the Berwind Colorado Fuel & Iron Company's Helmet Crew; took part in the rescue work at the Hastings explosion. While carrying a body out of the mine, he suddenly left his crew and was later found dead in a cross cut at the face of the seventh north entry. It was found that he had a defective heart, and over-exertion caused heart failure.

May 8—JOE POSPAHALA, Pole, miner, age 20 years, single, employed by the Colorado Fuel & Iron Company, at the Sopris mine, Las Animas County; was killed by a fall of rock. Deceased and his partner, Gaetano Martini, were working in room No. 3, off the second east air course, No. 2 mine. Deceased was in the act of loading a car when a piece of rock fell from the roof, striking him, from the effects of which he died a few hours later. This is a case where cross bars were not set sufficiently close enough to support the roof. The mine foreman may be considered partly responsible in not seeing that cross bars were properly set up.