

M/NM FATAL

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SUBJECT: Explosion in the Jumbo Asphalt Mine, Jumbo, Pushmataha County, Oklahoma, January 16, 1911.

A mine explosion occurred in the Jumbo Asphalt Mine at about 8:00 a.m., November 28, 1910 in which fourteen men lost their lives and two men were injured. The dead are as follows:

J. W. Carpenter, Mine Foreman, Richard Palmer, Charles self, William Brown, W. Z. Jones, Henry Self, Daniel McCarty, J. W. Gould, Farris Laz, Thomas Stephans, Olin Malone, William Hawkins, and J. N. Gyllenwater.

The rescue work, headed by Supt. A. W. Thomas, was started seven hours after the explosion. The last body was recovered about two hours later. Five men were blown out of the mine, two whom were in the tub going down to work: two were on the 200 ft. level, and one was on the 220 ft. level. One man was blown south 50 ft. Across shaft on the 260 ft. level. The above six men were blown to pieces but not badly burned.

Six men were found about 250 ft. inbye of shaft on the 200 ft. level, five of whom were dead: the sixth died within 48 hours. These six men were badly burned. Two men on the surface waiting in the tub going down were burned on the head but not seriously. The men in the tub going down the shaft were blown against head frame breaking it apart.

The mine has six shafts and twelve levels. Shaft No. 6, which is the working shaft, and shaft No. 3, the return air shaft, are the only ones in use. All the levels have been filled in except the four lower ones at 200 ft., 220 ft., 260 ft., and 290 ft. Shaft No. 6 is 290 ft. deep with a varying dip from 30 to 90 degrees. The drifts are run to the end of the field and the slopes are worked back toward shaft No. 6.

The bed of asphalt lies between two walls of shale. The asphalt varies in width from nothing to about 60 ft. with irregular horses and enclosures of fire clay. The asphalt itself is very pure and soft. The ore is mined by undercutting and picking down in overhead stopes and sub-levels, as they retreat toward the shaft. The old workings are filled by caving. No explosives had been used underground for sometime previous. The square set method of timbering is used, without lagging or flooring. The mine is ventilated by a 22' Sturtevant vacuum fan of about 4000 cu. ft. of air per minute.

On December 2nd and 3rd, five days after the explosion Mr.

Hamilton, Foreman of Mine Rescue Station of McAlester, Oklahoma, Mr. A. W. Thomas, the Superintendent of the Mine, and Mr. Jones, a miner, assisted the writer in investigating work for the purpose of this report. On the morning of the explosion the fan was not running. The foreman, a certificate fireboss, tested for gas wherever it seemed necessary. He had not been in the 260 ft. level on the morning of the disaster. On Sunday, December 27th, the fan was not running although three men were at work part of the day. The fan was not affected by the explosion.

On the 260 ft. level south, there was a small amount of firm coke for the first 50 ft., 20 ft. further south inby there was a fall of roof which prevented further investigation in that direction. A tub and several timbers had been blown against this fall. At this point, Mr. Hamilton tested for gas in a large cave in the roof but did not find any. To the north of shaft for the first 50 ft. there was 1/16 inch of coke inbye side of timbers and a little on the outbye side. From 50 ft. to 85 ft. to face, it was on the inbye side again.

The man found alive in the sublevel claimed to have ignited the explosive mixture with the lamp on his head. Several times previous to the fatal accident the men and the superintendent claimed to have seen flashes of dust exploding while the men were at work, but as there had never been a serious accident in the mine for seven years

it has been open these dust ignitions were not considered dangerous.

At the first sump 120 ft. in, there was 1-1/2 inches of melted asphalt adhering to inbye side of leg, part of which lapped around the corner of the leg. One collar here was twisted outbye. At 130 ft. in, the coke was 1/2 inches thick and resembled graphite. The fused asphalt lapped around the lower corner of the cap. At 165 ft. in, there was intense coke on inbye side and bright globules on outbye side. At 200 ft. in, the drift is 25-1/2 ft. wide, here one collar had been thrown outbye. On the inbye corner of collar there were stalactites of fused asphalt one inch long. On the inbye side of the timbers towards winze there was one fourth inch of coke. First collar in stope heavily coked on bottom and inbye side. Inbye of present working face where they are filling in the old workings, the timbers are blown inbye towards winze.

In working stope, we found several miners' lamps, with the carbide to refill them and burned clothing. Open carbide lamps were used exclusively and they were recharged about every two hours.

The working slope is about 24 ft. high. At one point on the third floor stope, there was found on the floor a miner's cap and vest which were badly burned. On the four timbers around this point, blistered coke had formed on the side there were but a few small globules of coke. It was in this stope the men intended to work and had climbed up and were either blown down or in trying to

escape were thrown down to the sublevel or understope below level 260. The roof overhead was very regular without pockets in which gas could accumulate, in the center was a winze leading to the level above and was used for the return air course. At the lower three to four inches thick and was very firm. The dust adhering to the other timbers in this stope was transformed to a few small globules.

On the 22 ft. level there was nothing on the timbers for the first 30 ft., from 30 ft. to 60 ft. dust and fire clay was impacted on the lower portions of timbers facing inbye on the outside of the curve only. At 130 ft. inbye in cross cut to shaft No. 3, the return air course, there was little evidence of fire, the cross cut was dump. From this point inbye, there was considerable coke on inbye side of timbers and few of the timbers and few of the timbers were broken and forced toward the shaft. At 250 ft. inbye, directly over and around the winze leading from the slope on level below, stalactites of melted asphalt had formed ranging in lengths up to 9 inches. All which were slightly pointed toward center of winze. Some burned clothes were found here. At about 300 ft. we passed the last air course leading to or from the 220 ft. level. There was much coke here, but for the next 60 feet toward the face the coking gradually diminished and at 330 ft. the dust along the road showed little or no signs of coking. The dust was damp and there was some water laying on the floor. On December 3rd from 310 ft. to 320 ft., in, a body of about 960 cu. ft. of gas was encountered 15 ft. up in the stope, with the exception of a small body at about 344 ft. inbye of the same stope. It was the only gas found in the mine. Analysis showed the above gas to be a little below the percentage of an explosive mixture. The oxygen was also low. The return air showed the mine to be generating a very small amount of fire damp. The tools in this slope were still hanging on the nails as they had left them the Saturday previous. There was little evidence of much force or heat near the pocket of gas.

On the 200 ft. level which was about half full of fire clay, there were little signs of fire but strong force toward the shaft; also an upheaval in the winzes from the levels below.

Samples of asphalt were taken from the working stope: on both the 220 and 260 ft. levels, samples of coke were taken wherever it had accumulated in large quantities. Gas samples were taken from the pocket of gas on the 220 ft. level and at the fan or return air course.

In conclusion there are but two logical points where the explosion could have originated, one the igniting of the pocket of dust in the stope on the 260 ft. level. When one considers that the dust under the pocket of gas was not affected by the force of the explosion, he would look for a more probable point. On the other hand, since it is known that the dust is very sensitive and that the only man found alive claimed to have ignited the explosive mixture, and the most intense heat and force was coming from this