

Dr. Schrader Report

Thursday morning between three thirty and four o'clock the pumper started the circulating pump on the ethyl platform. This was a G. E. Motor pump with a suction line twelve hundred (1200) feet in length. As gas had accumulated in the line it failed to pump so the petcock on the cylinder was opened and then removed leaving a three-fourths inch opening for the escape of gas. It was replaced and pumped for a time but again was taken out and left out for a time. The starting switch was pulled and an explosion resulted, blowing the pumper out through the door. He at once ran to cut off valves and was later treated for superficial burns.

In the meantime a gasoline fire had started on the mixing end of the platform and rapidly spread over the entire wooden structure of the platform which included the roof. This fell on top of the drums of fluid stored on the other end of the platform; there being thirty-seven (37) full drums of fluid as a car had just been unloaded.

About six men were there at that time and they attempted to keep the fire from spreading to the remainder of the plant and to tank cars of gasoline which were three feet from the platform on a siding. The superintendent had his men at the mixing end of the platform with Foamite apparatus and hose fighting the fire. The wooden walks on the side of the two tank cars of gasoline were soon on fire as were the ties of track. Water thrown on the cars went off as steam. The superintendent, a short time later, opened the escape valves on these cars and the gas later caught fire but was put out with water.

KE 0000616

While fighting from the mixing end of the platform after the fire had burned about twenty minutes there was an explosion and the superintendent felt a liquid splash on his face and clothing. Thinking the benzol drum had exploded, he climbed up on the car to look on the platform when another explosion occurred and immediately he smelled ethyl fluid. As there was a light breeze blowing from the south-east, he then assembled his men on that side and from a distance of approximately one hundred twenty-five (125) feet watched and counted the drums explode. They counted about thirty (30) but they think some went off simultaneously.

Two men with gas masks went around the platform for the Foamite apparatus, otherwise they stayed on the windward side. The superintendent ran back to the refinery to see if the odor of fluid was being carried where other men were working, but he could not detect it over two hundred fifty (250) feet away. The wind was directed from the platform in the direction of stills and workings of the plant. Later, after the fire had subsided, the odor could not be detected more than fifty (50) feet on that side of the platform.

The explosion of the drums was described as follows: A loud report would be followed by a brownish black ball of smoke going immediately up about one hundred fifty (150) feet and then drifting off with the wind. As it went up they saw flames in the smoke and it continued to burn for a distance of about five hundred (500) feet, passing over stills and storage. Men working at a pressure still about fifteen hundred (1500) feet away said one or two came that far. No sparks

KE 0000617

fell and it apparently burned completely at about the same level. A white storage tank stands about one hundred (100) feet from the platform, over which these passed, and there was no evidence of fluid on this tank. The empty drums were all lying flat with the ends blown off and quite clean.

After the last drum exploded, six men went near the platform and put water and Foamite on it. This was about four twenty A. M. From then on, no one was near the platform until Mr. Graham from Tulsa arrived in the afternoon. During the day no fumes or odor could be detected around the plant or office.

On examination of the platform there were about three to four inches of charcoal on the concrete around and between the drums. No ethyl fluid stains were seen on the storage end. On the other end there were considerable stains on one side of the platform, on the tank car, and some on the ground along the platform. Considerable stain was on the railroad ties and rails. Excepting the first or first few drums, apparently all the remainder were burned when they exploded, so only a fraction of actual fluid present was on the ground and platform.

The empty drums were taken to a dump on Company property as was the screen and tubing on the platform, where they are to be burned. The charcoal was shoveled off the end of the platform which was washed four times and scrubbed with kerosene and then with water. The entire ground under and around the platform was covered with Fullers Earth and two to four feet of earth on top. An open ditch running under the platform was likewise filled its entire length.

KE 0000618

Clothing and shoes used in clearing up were disposed of by burning. Saturday evening the debris was all cleared away and earth filled in and no odor of fluid or stains remained anywhere around the plant. The tank cars were washed with kerosene and are being repainted.

As to exposure: The superintendent was exposed to the greatest extent and two others were also considerably exposed. The remainder had little exposure. A total of nine men were exposed. None showed any symptoms of acute lead poisoning.

RE 0000619

The following men were examined:

1 - Mr. [REDACTED], Superintendent of Refinery; age 42. He lives at the refinery and was on the scene from the first.

Exposure: He was on the west side of the platform with the Foamite apparatus approximately five or six feet from the platform when the first explosion occurred. He felt liquid sprayed over his face and coat, and on the next explosion smelled ethyl fluid. He then moved over to the windward side and remained there most of the time until the fire subsided. He went to the stills where a number of men were, in order to see if he could detect the odor of the fluid there - on return could detect its odor for about two hundred (200) feet. Little exposure otherwise; Total possible exposure of two hours.

Symptoms: (Thursday morning) A few hours after the fire, he had "sore throat and chest." He also noticed a soreness in his epigastrium and muscles of his thighs, calves and ankles. His left neck muscles were also sore. Immediately after the fire he noticed a slight weakness and had profuse perspiration. Friday morning he felt normal excepting some muscle soreness - no headache, dizziness, nervousness, or sleeplessness. There were no cardio-respiratory or gastro-intestinal symptoms.

KE 0000620

Examination: Eyes, ears, nose - Negative. Temperature - 97.6
Pharynx - much injected.
Neck - essentially negative.
Chest and heart examination showed normal findings.
B. P. 116/85. Pulse - 72.
Abdomen very slightly tender in epigastrium, otherwise normal.
Reflexes - Normal.
Sl. tender over muscles of calves and thighs on deep pressure.
Urine - Normal. Blood smear made Hb. 38.
(Saturday) Very little soreness - otherwise OK.
(Sunday) Soreness disappeared and he felt well as usual.

While the above apparently had greatest exposure, his symptoms appear to be the result of excessive exercise of fighting the fire, running, etc., and not due to excessive lead absorption.

2 - [REDACTED] 29; still helper.

Exposure: Total possible of two hours. He worked at the beginning of the fire with a hose all around the platform at a distance of fifty (50) to one hundred fifty (150) feet. Fumes were very bad at times, "almost suffocating" but he was only in the fumes for a few seconds. He removed the Foamite apparatus from the platform using a gas mask. No fluid spilled or splashed on his person. His chest was slightly sore the next morning. He noticed a few small white ulcers on his

lower lip the following morning which he had never seen before.

Symptoms: No abnormal symptoms excepting slight muscle soreness the following day.

Examination: Temperature - 98.6. Pulse - 66. B. P. 106/80
Excepting injected pharynx, findings (entire) essentially normal. On mucous membrane of lower lip there were about half dozen very small whitish gray ulcerations (canker sores.)

Urine - Normal

Smear made Hb. 90

3 - [REDACTED], age 37. Foreman pressure department.

Exposure: Approximately forty-five (45) minutes. He stayed on the windward side until after five. Then from a distance of fifteen to twenty feet (15-20) feet he helped throw Foamite on the platform for five minutes. He could smell and "taste" ethyl fluid for a moment.

Symptoms: None

Examination: B. P. - 125/82. P. - 72. T - 98.4

Findings essentially normal.

Urine - normal. Smear made Hb - 86

No evidence of excessive lead absorption.

4 - [REDACTED], age 38. Assistant Superintendent.

Exposure: Approximately two (2) hours. His only exposure was when he went around the platform after the Foamite apparatus. He smelled the fluid for a second and returned and put on a gas mask. Afterwards, he stayed on windward side. When the fire was out he assisted with the hose for a time.

Symptoms: None.

Examination: B. P. - 128/80. P. - 78. T. - 98.6

Findings essentially negative.

Urine - normal. Smear made Hb 90.

No evidence of excessive fluid absorption.

5 - [REDACTED], age 31. Mechanic.

Exposure: Approximately one and one-half (1½) hours at the fire. Very little, if any, exposure. He was never closer than fifty (50) feet and was always on the windward side. He

KE 0000623

Symptoms: None

Examination: B. P. - 125/86. P. - 78. T. - 98.4

Essentially normal findings excepting badly decayed teeth.

Urine - normal. Smear made Hb. 80.

No evidence of excessive lead absorption.

6 - [REDACTED], age 41. Filter house.

Exposure: Approximately one and one-fourth ($1\frac{1}{4}$) hours. He smelled ethyl fluid for a fraction of a minute then went on the windward side and when fire subsided some went home.

Symptoms: None.

Examination: B. P. - 114/82. P. - 72. T. - 98.4.

Findings essentially normal.

Urine - normal. Smear made Hb 88.

No evidence of excessive lead absorption.

7 - [REDACTED] age 25. Loading Rack.

Exposure: Approximately one and one-half ($1\frac{1}{2}$) hours. He stayed back at a considerable distance (south side) until the fire had subsided. He did not smell ethyl fluid. After the fire subsided he assisted with the hose in spraying platform at a distance of from twenty to thirty (20-30) feet.

Symptoms: Slightly more headache than normal (?) Some nausea - otherwise none.

Examination: B. P. - 132/78. P. - 84. T. - 98.4.

Essentially normal findings excepting soft systol. Murmur over base.

Urine - specimen not obtained. (Learned later from another worker that he has had G. O. recently.) Smear made Hb 80.
No evidence of excessive lead absorption.

8 - [REDACTED], age 34. Treater (No litharge)

Exposure: Approximately two hours. Exposure less than superintendent.
He worked between the tank car and the platform about ten minutes. The first drum exploded while he was near but no fluid fell on him. He directed hose for a time on the tank car to cool it. He went to the windward side on the advice of the superintendent. He did not smell ethyl fluid at any time excepting for a fraction of a minute while spraying the platform after the fire.

Symptoms: None.

Examination: B. P. - 120/78. P. - 78. T. 98.8

Findings essentially normal. (Flat chested)

Urine - normal. Smear made Hb 80.

No evidence of excessive lead absorption.

KE 0000625