

Dr. Kehoe

Buffalo, N. Y.
March 2, 1942

Mr. R. L. Goltz

Dear Roy:

Late Sunday afternoon, March 1st, I received at my home a telegram from Mr. W. B. Wight, resident chemist, McColl Frontenac Oil Co. Ltd., Montreal East, Que. stating that a pipeline had broken near an aviation blending tank while making a mix and that 3 or 4 small drums of fluid had probably been pumped out onto the ground. The wire asked what they should do.

As you know I called you on the phone and after a brief discussion I caught the night train to Montreal, advising Mr. Wight by telegram that I would be there Monday morning to suggest proper precautions to take in cleaning up the mess.

There are six aviation, kerosene and base stock upright tanks enclosed in one dike. The area is about 60'x100'. Almost one half of this area was covered with a very dark blue gasoline and fluid mixture and on the windward side a strong lead smell could be detected quite some distance away. The gasoline pumped out onto the ground through the break had a lead concentration of probably 200 cc's per gallon. They used five small drums of fluid and were pumping gasoline through the eductor for 35 minutes before the break was discovered and the pump shut down. Each drum took five minutes to empty and assuming about 20 gal. per minute of gasoline through the eductor a concentration of the above figure would result. While the drum was being washed this concentration would of course be reduced but at times there would probably be that higher concentration gasoline passing through the pipe line and through the break onto the ground. Shortly after the break was discovered a pumper made a mistake and pumped about 100 ~~mix~~ bbls. of kerosene through an open valve onto the ground covered with the highly concentrated gasoline fluid mix.

There is a sewer drain inside the dike wall leading to the refinery separator tanks. Investigation showed these tanks to be almost full of slop oil and gasoline, probably 300 bbls. The only way to get rid of this gasoline fluid mixture on the ground was to flush it down this drain. A fire hose was used and the entire area flushed all day Monday. The ground was frozen hard and there was a layer of ice over the entire area, as well as covered with snow. The ice layer was solid and the gasoline had not gone through it at any place so the surface was rather easily cleaned up. All snow showing any blue stain was flushed down the sewer. All of this work was done from the up-wind side and the use of masks was not necessary, but we had to keep everyone away from the area on the down-wind side.

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McColl Pipe-line Break.
Montreal. A. J. B.

The break was discovered by the pumper when he came out of the aviation pump house and thought he could detect an unusual odor. He went over to the aviation mixing tank and saw the gasoline coming up around the line to the tank. Before he could signal the Ethyl mixer the entire five drums had been emptied. A pipe fitter was called and Armond Leduc, an examined man, was sent to the job. He started to dig around the pipe but the odor was so strong that he knew it was dangerous so he stopped and reported to the office the condition and they in turn notified us. Armond said he did not dig more than ~~two~~ two or three minutes and did not think he was around the tank more than five minutes altogether.

Tuesday we equipped two men with rubber boots, rubber gloves and clothing and canister gas masks and started them digging up the pipe. The ground was frozen so hard that air hammers had to be used. The dirt dug up from around the pipe was completely saturated with the lead-gasoline mixture and we had it put in old sacks and later burned under a still. It took all day Tuesday to dig up about 10' ~~more~~ of pipe and locate the break at a coupling. Wednesday the entire pipe was uncovered to the tank and the coupling removed (it had to be cut away with chipping hammer) and the short length of pipe taken out. It was then discovered that the break was in the threads of the length of pipe not yet uncovered. This whole length had to be renewed so the diggers uncovered a 20' additional length.

Thursday the new pipe was put in and the entire area cleaned up. The dirt was burned as mentioned above and the pipe taken out of the line was also burned. 100 lbs. of Chlorinate of Lime was mixed with water and spread liberally in the hole while being filled and on the surface of the ground around the area after filling was complete.

The original installation was at fault causing this break. No provision had been made to allow for expansion and contraction and with the constant freezing and thawing the pipe had to buckle slightly. The breakage occurred at the weakest point. When the coupling was removed at the break it was found that only about four threads had been caught. I think that in our specifications or on drawing 1000-37 we should state that adequate provision be made for expansion and contraction of all piping carrying a highly concentrated mixture of Fluid in gasoline. A loop or double "L" arrangement would probably be sufficient to prevent another such break as we had here. McColl has had several such breaks recently in other lines and are equipping vulnerable lines with some provision for expansion and contraction.

When we completed the job there was no odor noticeable at any point around the tanks or inside of the firewall.

Very truly yours,