

Hi Jack,

I tried to give you a call last week on another matter. I'll try again this week.

On this matter I don't think the risk is in handling the oil in sample quantities but rather in working on or around LTCs a general statement could be something like:

As this is not the only safety standard I would note that in addition to the usual safety standards for sampling energized equipment this is an additional concern with LTC because they can contain high concentrations of combustible gases.

Combustible gases dissolved in the oil in LTCs can reach concentrations that can create a flammable atmosphere above the oil. Many LTCs are vented to retain the atmosphere above the oil in a nonflammable state. However, the vent can become plugged and high concentrations of combustible gases can accumulate. Some sealed LTCs with arcing contacts can accumulate high amounts of combustible gases. Users should be aware that there can be high combustible gases and either handle them as though they might create a flammable atmosphere or test to determine if they do contain amounts of combustible gases that can form flammable atmospheres. This is of concern when working on LTCs and during processing of the oil.

I don't know how much you want to get into this. It might be useful to list some references. We have given a spreadsheet for people to use to allow them to calculate if the atmosphere would be combustible under equilibrium conditions with the oil in an air atmosphere. There are papers on proper bonding and grounding to avoid static discharges and also on flow rates to avoid static discharges. Some companies will gravity feed oils with high combustibles to avoid problems with static discharges. Not sure how much information you would want to provide on this. If you want I can look up some references.

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