Dear commissioners:

As an opponent of this terminal project you might expect that I would perform a diligent search for evidence to support my position. I must say I was quite unprepared to find the following description of likely events during an almost certain breach of the large, unpressurized tanks during any kind of a blast or seismic collapse at the facility. I originally wondered why the blast zone modeling did not logically extend to the larger volumes in the big tanks. I recommend you read this response by one of the scientists involved in the modeling project.

"The reason why we do not show blast maps for refrigerated propane storage tanks is that such tanks fail with more of a whimper than a bang, and will not produce a blast zone such as shown in the 1-million gallon blast map. This is not to say that the dangers from large refrigerated tanks are not potentially severe, about which more will be said below.

Blasts from pressurized propane tanks are the big safety issue, made worse whenever such tanks are placed in close proximity to large refrigerated propane tanks. Such blasts produce thermal/overpressure blast/shrapnel effects that often escalate to other pressurized tanks through a process known as "domino amplification." The resulting showers of high-speed tank shards and shrapnel can slice and dice the double-insulated wall of a big refrigerated tank. Since refrigerated tanks are not under pressure, this triggers a very different set of events, everything from pool fires, to jet fires, to ground-hugging heavy propane vapor clouds that, borne by the breeze, can find ignition sources and exhibit complex types of deflagrations, and flame pockets up to many miles away. If a 33-million gallon refrigerated propane tank is seismically collapsed, there will likely also be many adverse health and even lethality from the asphyxiating effects of the heavy vapor. We are talking about a lot of propane vapor from 33 million gallons. Since propane in gaseous form occupies 270 times as much volume as the liquid, we can cover almost 43 square miles of ground to a depth of 20 feet with an explosive 5% vapor-air mixture.

You've already seen our blast map that was computed for a boiling liquid expanding vapor explosion (BLEVE) in 1-million gallons of pressurized propane storage. We also produced a similar blast map for just one of the eight 125,000 gallon pressurized storage tanks proposed for the propane terminal. This reduced blast still has a blast area that is half the diameter of the 1M gallon blast, big enough to extend shrapnel blast effects right across St Johns to the Willamette.

The point about pressurized storage of propane at normal ambient temperature is that the flammable liquid (which must mix with air before it can burn or explode) is stored above its boiling point temperature. If such a tank is ruptured, or is heated by fire to the point where it will burst (showering high-speed--400 mph--shrapnel and other tank fragments up to miles away), the liquid propane instantly flash boils, the vapor instantly expanding out and mixing with the air. If a source of ignition is present (fire, spark, or explosion) the mixture will detonate, producing severe overpressure blast and thermal radiation that can collapse buildings, break glass, rupture lungs and eardrums, etc., and

also slice right through any large refrigerated propane storage tanks that happen to be nearby.

I recommend that if you have further questions about the blast maps, to do a quick skim of the propane terminal white paper, and at least read the figure captions."

I did read the report and may have missed this explanation but I think it bears rereading. Any facility housing such a volatile substance in a highly vulnerable, urban location, that could flood 43 square miles of a valley filled with people is a ridiculous proposal. No matter how unlikely the proponents claim this scenario to be, the risk is still extraordinary. Please examine the project in terms of this risk as well as all the other negative aspects. Portland is designated as a "climate champion" by the President. Becoming a conduit for fossil fuels is diametrically opposed to that honor.

One last thing, lest you have not witnessed an example of a relatively small propane BLEVE (30,000 gals), I am attaching a short video showing such a thing. Forgive the redundancy if you have seen this.

http://www.military.com/video/explosions/blast/30000-gallons-of-propane-explodes/1231135923001/

For an explanation of the mechanics of a BLEVE this video is instructive.

https://www.youtube.com/watch?v=UM0jtD_OWLU

Thanks for your time, your effort and your consideration.

Mike Horner
4329 SE 64th Ave.
Portland OR
97206
mike Horner <whitedog768@gmail.com>