

6 Weather and Terrain

The ambient air temperature and ground temperature of the route were conservatively assumed to be the annual average temperature for the Northeastern United States, specifically eastern Pennsylvania, which is 53°F (11.6°C). This ambient temperature was used for all calculations. Higher or lower temperatures are expected to impact the release consequence calculations slightly. The selection of a single temperature equal to the average annual temperature for the region is consistent with 49 CFR § 193 guidance for conducting vapor dispersion analyses of LNG releases at LNG terminal facilities.³⁵

The wind speed was assumed to be constant at 4.5 mph (2 m/s) and was assumed to occur with equal likelihood in any direction. Based on experience with dense cloud dispersion, lower wind speeds typically result in the largest impact areas. A Pasquill-Gifford stability class of F was assigned for all calculations, and this value is expected to provide conservative (i.e. larger) hazard impact areas. Additionally, a wind speed of 4.5 mph (2 m/s) and Pasquill-Gifford stability class F are consistent with 49 CFR § 193 guidance for conducting vapor dispersion analyses of LNG releases. The terrain was assumed to have a surface roughness factor consistent with the same guidance (0.03 m high).

³⁵ 49 CFR § 193.2059 – Flammable vapor-gas dispersion protection.