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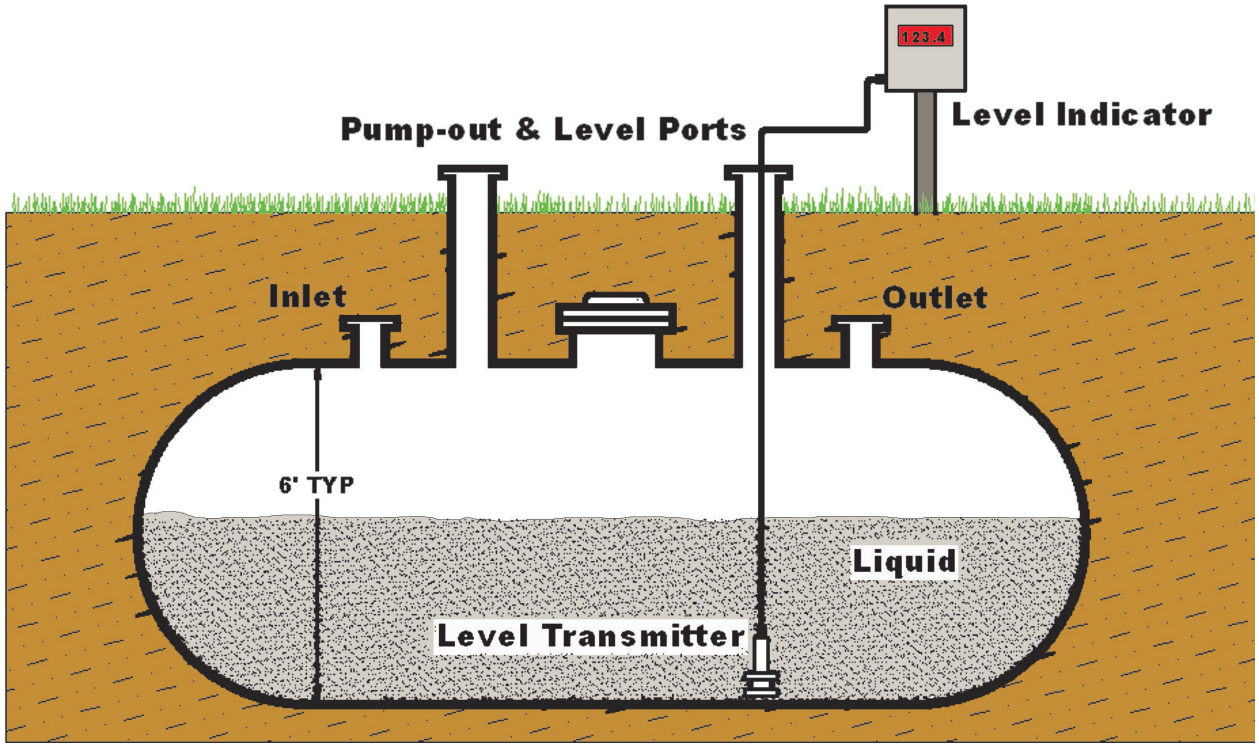
FLARE KNOCKOUT TANK

Application Note #2

A Flare Knockout Tank is typically a horizontal vessel for trapping hydrocarbon liquids in a gas flare system. Separating the liquids out of the gas stream prevents possible damage further down the process.

The fluid in knockout tanks is mostly water mixed with some hydrocarbon. In areas where above ground tanks are prone to freezing these knockout tanks are often buried underground below the frost line.



As these tanks fill with the hydrocarbon condensate, a reliable level indication is required to indicate when the tank reaches a predetermined level.

The simplest way to access the water level in this tank is through a stilling sell or access port that is installed in the tank and is accessible above ground. Because the tanks are installed underground, this access port is the only viable means of installing a level device.

Many different level instruments have been used with varying success. Mechanical floats were used but the coating tendencies of the hydrocarbon and water mix required regular maintenance. Guided wave radar is another option, but requires long rigid probes making it difficult to install, ship and handle. Ultraxonic devices are yet another option but require rpecise setup, are susceptible to errors in level due to foaming and can be costly.

A Blue Ribbon Model BC001 which works on a dhydrostatic level principal, avoicds these limitations. It simply is installed through the access port or stilling well, allowed to settle to the bottom and then interfaced to the existing SCADA system. The 3 inch sensing element eliminated the clogging issues found with other contact devices, is easy to install, and is impervious to foaming or other pitfalls found setting up radar level systems. The Model BC001 successfully prevents tank overflow which maintained plant safety and reduced unnecessary pump out cost by not emptying the tank sooner than is required.