



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

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Secretary

MICHAEL SCOTT  
Director

November 13, 2018

**MEMORANDUM**

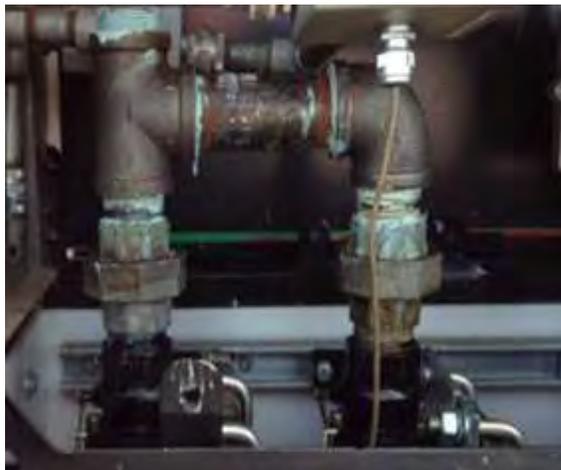
**TO: Underground Storage Tank Owners & Operators, Underground Storage Tank Equipment Installers, and Service Technicians**

**FROM: NC DEQ, Division of Waste Management, UST Section**

**RE: Advisory – Improper Installation of Product Pipe Manifolds  
Possible Safety and Fire Hazard**

The North Carolina Department of Environmental Quality, Division of Waste Management, UST Section has investigated the installation of manifolded piping above shear valves (emergency shut-off valve) within dispensers and finds this practice to present serious safety and environmental concerns.

A typical arrangement is shown in Figure 1. This type of product pipe manifold was typically installed when a station discontinued storing mid-grade gasoline and converted the product stored in the tank to regular unleaded gasoline. The purpose of a shear valve is to stop the flow of fuel from piping if a dispenser is damaged or knocked over or if a vehicle drives away from the dispenser with the nozzle still in its tank. For the arrangement in Figure 1, in the event of a break in one shear valve, the product flow would not shut-off on the other pipe, thus allowing product to continue to discharge resulting in a safety and fire hazard.



*Figure 1: Improperly installed product pipe manifold above the shear valves*

Section 2206.7.4 of the North Carolina fire Code states in part that “*an approved emergency shutoff valve designed to close automatically in the event of a fire or impact shall be properly installed in the liquid supply line at the base of each dispenser supplied by a remote pump.*” The UST Section consulted with the North Carolina Office of the State Fire Marshal. It is the opinion of the Office of the State Fire Marshal that this design may not shut off product flow upon impact to the dispenser and therefore does not comply with the North Carolina Fire Code.

Section 2206.7.4 also states in part “*Emergency shutoff valves shall be installed and maintained in accordance with the manufacturer’s instructions...*” The UST Section has found no information from any manufacturer explicitly stating that the arrangement shown in Figure 1 is an acceptable placement of the shear valves.

Tank owners and operators should work with a qualified petroleum equipment contractor to redesign the piping so that the manifold is below the shear valve. Other options are to operate with one product pipe by capping the other or to install the product manifold at the tank. For more information, please contact the NC DOI Office of State Fire Marshall at (919) 647-0000 or NC DEQ/UST at (919) 707-8171.

