

## Application Note AN-0118-FT

# Flow Testing Vent Devices

### Hawkeye's Third-party flow- and performance-characterization of PVRV's, EPRV's, TRV's and TVTH's

Low pressure and atmospheric petroleum storage tanks require venting devices to maintain the internal pressure within a safe and efficient range. Many tank construction standards such as *API 650*, *620*, *12B* and *12F* direct the user to *API Standard 2000* to determine the minimum venting capacity for the tank or system being designed. This standard also requires that vent manufacturers quantify, through full scale testing, the relieving capacity of the devices that are intended to be used to satisfy these venting requirements.

In order to provide the highest level of service and support to their customers, Hawkeye Industries commissioned **C-FER Technologies** to perform flow rate and operational performance testing on Hawkeye's full array of tank venting devices. The testing was performed in accordance with *API 2000* and allows Hawkeye's venting devices to be used to satisfy the requirements of this venting standard and therefore the tank construction standard and jurisdictional legislation.

- Tested in accordance with *API Standard 2000, Seventh Edition*.
- Allows Hawkeye's line of relief vents, including the **Series 6000 PVRV**, **Series 5000 EPRV**, **Model 200 & 300 TVTH** and **Marsh Hawk TRV**, to be used to satisfy the venting requirements of:
  - » *API-620*: Design and Construction of Large, Welded, Low-Pressure Storage Tanks
  - » *API-650*: Welded Steel Tanks for Oil Storage
  - » *API-653*: Tank Inspection, Repair, Alteration, and Reconstruction
    - » *API-12B*: Bolted Tanks for Storage of Production Liquids
    - » *API-12D*: Field Welded Tanks for Storage of Production Liquids
    - » *API-12F*: Shop Welded Tanks for Storage of Production Liquids
    - » *API-12P*: Fiberglass Reinforced Plastic Tanks
    - » and numerous *ULC* standards.
- Valve performance and flow characteristic generated by Hawkeye Industries from data collected and verified by **C-FER** in accordance with *API 2000* and *ASME PTC 25*. Full test report available upon request.
- Unique insight into the operation of the **Series 6000 PVRV** allowed for optimization of every aspect of the design.
- Flow data for every vent configuration and every set pressure takes the guess work out of selecting and sizing a relief vent.
- Verified the superior venting behavior of Hawkeye's patent pending **UBR valve**.

Full-scale flow characterization apparatus, June 2017.



Series 6000 PVRV undergoing flow testing, June 2017.

