



Approval # 20040010
(Revised 990047-U)

Environmental & Regulatory Services Division
Bureau of Petroleum Products and Tanks
201 West Washington Avenue
P.O. Box 7837
Madison, WI 53707-7837

Wisconsin COMM 10 Material Approval

Equipment: Red Jacket CPT Line Leak Detection

Manufacturer: Veeder Root Company
P.O. Box 1676
6th Avenue at Burns Crossing
Altoona, PA 16603

Expiration of Approval: December 31, 2009

SCOPE OF EVALUATION

The CPT system was evaluated for use in hourly monitoring of rigid piping in accordance with **s. Comm 10.615 (1)**. The CPT system was also evaluated for use in hourly monitoring of flexible piping in accordance with **s. Comm 10.615 (1)**.

The CPT system was evaluated for use as line tightness testing methods for rigid and flexible piping in accordance with **s. Comm 10.615 (2)**.

The CPT system was evaluated for use in continuous monthly monitoring of rigid or flexible piping in accordance with **s. Comm 10.615 (3)**.

DESCRIPTION AND USE

CPT Line Leak Detection System

The CPT system may be used on lines containing gasoline, diesel, aviation fuel, alcohol and their blends with gasoline, #4 fuel oil and some solvents. The control unit is a microprocessor controlled, automatic line leak detector that differentiates between the types of signals produced by thermal contraction, line leaks and trapped air. The system monitors the product line between the tank and dispenser, including pump manifold and discharge line.

Tests are initiated after each operation of the submersible pump and may be conducted on demand. Annual line tightness testing may be manually initiated.

Time and pressure are both monitored by the console with the results displayed continuously on a liquid crystal display. The microprocessor stores information, determines if a leak exists and shuts down the system if a leak is detected. The control unit may be programmed to transmit leak alarm conditions or daily status reports to a remote location through a modem.

Three levels of tests are conducted automatically in the following sequence:

1. A Catastrophic Level Test is automatically conducted each time the pump is turned on. Large leaks of the order of 10 gallons per hour are detected in approximately eight seconds.
2. If the system passes the catastrophic level test, a Standard Level Test and a Precision Level Test are conducted sequentially after the pump is shut off. These tests will detect leaks small enough to meet the monthly monitoring and annual tightness test requirements specified in the EPA test protocol.
3. A Precision Level Test that will detect leaks as small as 0.1 gallons per hour in 35 minutes is conducted if the system passes the standard level test and the pump remains off for the required time period.

The CPT uses a precision functional element to hold the line pressure at 11 to 22 psi after the pump is shut off. The precision functional element is normally installed directly in the submersible pump for lines up to 4 inches in diameter. The CPT system includes a high pressure algorithm.

TESTS AND RESULTS

The performance of the CPT pipeline monitoring system was determined using the EPA protocol for evaluation of pipeline leak detection systems. When used as an hourly line leak detector, this system is capable of detecting a 3 gallon per hour leak at 10 psi with a probability of false alarm (P_{FA}) of 0 percent and probability of detection (P_D) of 100 percent. When used for monthly monitoring, this system is capable of detecting a 0.2 gallon per hour leak at 20 psi with a P_{FA} of 0 percent and a P_D of 100 percent. When used as a line tightness test, this system is capable of detecting a 0.1 gallon per hour leak at 45 psi with a P_{FA} of 0 percent and a P_D of 100 percent.

LIMITATIONS / CONDITIONS OF APPROVAL

General

- All monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer instructions, and verified every 12 months for operability, proper operating condition, and proper calibration by a certified service technician. Records of sampling, testing, or monitoring shall be maintained in accordance with **Comm 10.625**.
- The manufacturer shall submit for a revision to this Wisconsin Material Approval application if any of the functional performance capabilities of this equipment are revised. This would include, but not be limited to changes in software, hardware, or methodology.

Electronic Line Leak Detector

- The CPT Electronic Line Leak Detector is approved for use on pipeline systems for underground storage tank facilities that contain petroleum or other chemical products. It is approved for use on rigid piping and flexible piping.
- An annual test of the operation of the leak detector shall be conducted in accordance with the manufacturer requirements for testing to the recognized leak thresholds by inducing a physical line leak. The individual performing the test must be qualified by the equipment manufacturer or an individual meeting the requirements of **Comm 5.88** for pipe testing.
- Critical performance parameters for the **CPT** Line Leak Detector:

Parameter	Value
Total maximum allowable volume of product in any rigid or flexible test pipeline	172 gallons or less (3.0 gph) 163 gallons or less (0.2/0.1 gph)

Note: All other critical parameters, such as test line pressure; minimum test times; minimum wait times between product dispensing and start of test are pre-programmed into the software and are not accessible for viewing.

This approval will be valid through December 31, 2009, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department. The Wisconsin Material Approval Number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The Department is in no way endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive any code requirement unless specified in this document.

Effective Date: January, 1 2005

Reviewed by: _____

Greg Bareta, P. E.
Engineering Consultant
Bureau of Petroleum Products and Tanks

Approved by: _____ Date: _____