State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5546(a)-11

California Type Evaluation Program
Certificate of Approval
for Weighing and Measuring Devices

For:

Hot Water Meter
Multi-Jet Domestic Style **(140 °F max)**
Models: 5/8" 140 °F
3/4" 140 °F
1" 140 °F
Sizes: $^{5}/_{8}$", x ¾", ¾", and 1"

Submitted by:

Conservice Metering Solutions
(Formerly Utility Submeter Applications, Inc.)
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Standard Features and Options

- Sealed six wheel odometer type register
- US Gallon or cubic foot unit of measure
- Bronze main case
- Magnetic drive register with an optional hinged lid
- Registers for $^{5}/_{8}$" x ¾" and ¾" meter sizes have one fixed zero
- Registers for the 1" meter size have two fixed zeros
- External threaded spuds
- Cast flow direction arrow on discharge end of meter case
- Remote pulsing Reed Switch counter or radio read system (functions not evaluated)

Note: Approved for use only when installed according to the manufacturer's instructions in a ***"HORIZONTAL"*** position.

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: April 1, 2011

Kristin J. Macey, Director

Conservice Metering Solutions
(Formerly Utility Submeter Applications, Inc.)
Hot Water Meter / Models: 5/8" 140 °F, 3/4" 140 °F, and 1" 140 °F

Application: Approved for use as a domestic hot water meter (140 °F max) in legal sub-metering installations. The meters may only be installed in a **"HORIZONTAL"** flow position with the register facing up. The flow direction indications are cast into the body of the meter.

Identification: The Conservice name, the unit of measure, and the model number (prefaced with the word "MODEL") are printed in red on the register face. The serial number (prefaced with "S/N") is engraved on the discharge end of the body and additionally on the optional hinged register lid. The body may or may not have "Mod MM3", "Mod MM4" or "Mod MM5" engraved on the brass case meter body.

Sealing: The meter can be sealed with a wire security seal threaded through a hole under the threaded cap located over the adjusting screw and through a hole in the register retaining ring. The factory plastic seal must be broken off first to access the threaded cap with a hole.

Operation: This is a velocity type meter where in-flowing water, distributed by multiple jets, flows past an impeller in the measuring chamber, creating an impeller velocity directly proportional to water velocity. The meter's register interprets the velocity into total flow indicated in a volumetric unit of measure.

Test Conditions: This Certificate is issued to correct the **"Test Conditions"** reference of Certificate of Approval Number 5378-04 to Certificate of Approval 5414-04.

Certificate of Approval Number 5546-08: This Certificate is issued based on information from Certificate of Approval Number 5378-04, issued to Utility Submeter Applications, Inc. The original test conditions are listed below for reference.

Certificate of Approval Number 5415-04: Three meter Model 3/4" 140 °F water meters were initially submitted for evaluation. The emphasis of the evaluation was on the device design, marking requirements, accuracy, and repeatability of the meter with both hot (140 °F maximum) and cold (80 °F maximum) water. The meters were mounted in line with each other on a water meter test bench in a lab at a university research facility and tested three times each at maximum, intermediate, and minimum flow rates using hot (140 °F maximum) water. The tests were then repeated using cold water (80 °F maximum). After successful initial testing, a permanence test was conducted which consisted of re-circulating in excess of 205 000 gallons of hot water (140 °F maximum) through the meters. All tests were then repeated.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2011 Edition

Tested By: Joe Raspino (CA) 5415-04

Information Reviewed By: John Roach (CA)