

Manual of Petroleum Measurement Standards Chapter 3—Tank Gauging

Section 1B—Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging

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Tank Gauging—Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging

1 Scope

This standard covers level measurement of liquid hydrocarbons in stationary, aboveground, atmospheric storage tanks using automatic tank gauges (ATGs). The standard discusses automatic tank gauging in general, accuracy, installation, commissioning, calibration, and verification of ATGs that measure either innage or ullage. It covers both intrusive and non-intrusive ATGs used for either custody transfer or inventory control. The standard also covers the requirements for data collection, transmission, and receiving.

This standard does not cover the following:

- a) Hydrocarbons having a Reid vapor pressure above 15 pounds per square inch (in. absolute (100 kPa).
- b) Measurement of weight or mass with ATG equipment. This is covered in Chapter 3.6 and Chapter 16.2 of the *Manual of Petroleum Measurement Standards*.
- c) Measurement of the level in underground tanks or in pressurized tanks storing liquid hydrocarbons.
- d) Conversion of the tank level to liquid volume. This is covered in Chapter 12.1 of the *Manual of Petroleum Measurement Standards*.
- e) Measurement of temperature, sampling, density, and sediment and water (S & W), which are discussed in Chapters 7–10 of the *Manual of Petroleum Measurement Standards*.

Safety and material compatibility precautions should be taken when using ATG equipment. Manufacturers' recommendations on the use and installation of the equipment should be followed. Users should comply with all applicable codes and regulations, API Standards, and NFPA 70 *National Electric Code*.

2 Normative References

API *Manual of Petroleum Measurement Standards (MPMS) Chapter 1, Vocabulary*

API MPMS Chapter 2, *Tank Calibration*

API MPMS Chapter 2.1A, *Standard Practice for the Manual Gauging of Petroleum and Petroleum Products*

API MPMS Chapter 3.3, *Measurement of Liquid Hydrocarbons by Hybrid Tank Measurement Systems*

API MPMS Chapter 7, *Temperature Determination*

API MPMS Chapter 8.1, *Standard Practice for Manual Sampling of Petroleum and Petroleum Products (ASTM D4057)*

API MPMS Chapter 8.2, *Standard Practice for Automatic Sampling of Petroleum and Petroleum Products (ASTM D4177)*

API MPMS Chapter 9.1, *Standard Test Method for Density, Relative Density, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method (ASTM D1298)*