Manual of Petroleum Measurement Standards Chapter 19.6.2

Evaporative Loss from the Cleaning of Storage Tanks

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Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, Suite 1100, Washington, DC 20001, standards@api.org.

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Introduction

The purpose of this standard is to provide guidance for estimating emissions that result from forced ventilation of a storage tank, such as is commonly utilized while cleaning the bottoms of aboveground storage tanks. This forced ventilation is sometimes referred to as degassing.

While a given tank may be cleaned only once every 10 to 20 years, regulations may require reporting the resulting emissions when this does occur. Furthermore, petroleum industry facilities may be required to estimate emissions from all sources within their plant sites. These regulatory requirements include Toxic Release Inventory reporting under EPCRA Section 313 and annual emissions reporting under the Part 70 operating permit program. Given these requirements to report emissions, there is a need for guidance on how to estimate them.

Emission factors have been developed for most of the routine sources of emissions from petroleum-related facilities, but little guidance has been available for estimating emissions from non-routine sources. When non-routine events occur, companies often expend a significant effort in preparing a good-faith estimate of the resulting emissions. In the absence of any industry-wide practice or guidance, however, these estimates may vary widely.

This standard is intended to reduce the effort required to generate a good-faith estimate of tank cleaning emissions, and to result in more uniformity in the resulting emission estimates.

This standard replaces API Technical Report 2568, *Evaporative Loss from the Cleaning of Storage Tanks*, 1st Edition, November 2007. TR 2568 has been withdrawn.

Evaporative Loss from the Cleaning of Storage Tanks

1 Scope

This standard provides guidance for estimating emissions that result from forced ventilation of storage tanks such as may occur while removing the liquid heel (free-standing stock liquid) and cleaning the remaining deposits of stock liquid mixed with residue and water (sludge) from the bottoms of aboveground storage tanks.

The emissions addressed in this report are those that leave the tank during forced ventilation. This standard does not address:

— the fate of vapors after they have left the tank (other than accounting for the efficiency of a control device, as discussed in Section 8),

— the fate of sludge after it has left the tank (or emissions that may occur during sludge treatment or disposal), or

— emissions that may be expelled by the vacuum pump of a vacuum truck or suction pump, if such devices are used in the tank cleaning process.

In other words, this report addresses the estimation of the mass of volatile organic compounds that leave the tank as vapor during forced ventilation of the tank, such as may occur during a tank cleaning process such as is described in Annex E. It does not address emissions that may result from the handling of liquids or sludge after such materials have been removed from the tank.

This standard is not a guide for entering and cleaning storage tanks. Such procedures are addressed in API 2015 [1] and API 2016 [2].

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API *Manual of Petroleum Measurement Standards* (*MPMS*) Chapter 19.1, *Evaporative Loss from Fixed-roof Tanks*, Fifth Edition, June 2017

API *Manual of Petroleum Measurement Standards* (*MPMS*) Chapter 19.4, *Evaporative Loss Reference Information and Speciation Methodology*, Third Edition, October 2012 (including Addendum 2, June 2017)

API *Manual of Petroleum Measurement Standards* (*MPMS*) Chapter 19.6.1, *Evaporative Loss from Storage Tank Floating-roof Landings*, First Edition, February 2017