

# **Manual of Petroleum Measurement Standards Chapter 17.3**

## **Guidelines for Identification of the Source of Free Waters Associated with Marine Petroleum Cargo Movements**

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## Introduction

The presence of free water is a factor in marine custody transfers of bulk petroleum, especially in the case of crude oil cargoes.

The source and type of water contamination encountered can be identified if proper sampling and testing procedures are followed.

Depending on the type of loading involved (i.e. shoreside-to-vessel, offshore buoy, or vessel-to-vessel) water contamination can involve produced formation waters, sea-line leakage, ballast water within the vessel or ballast water from a lightering vessel.

In addition, the party receiving the cargo at discharge may also encounter waters that entered the vessel during its voyage.

This chapter outlines recommended water-sampling locations and testing procedures to determine the most probable source(s) of free water volumes that occur in custody transfer.

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# Guidelines for Identification of the Source of Free Waters Associated with Marine Petroleum Cargo Movements

## 1 Scope

This chapter recommends the water samples and volumes to be taken, the containers to be used, the care and distribution of the samples, and the analytical procedures for use in identifying the probable source(s) of free water associated with marine petroleum cargoes.

This chapter includes the following:

- a) basic sampling and on-site testing procedure,
- b) basic analytical procedures,
- c) Annex A—Interpretation and Presentation of Results,
- d) Annex B—Comprehensive Investigative Program,
- e) examples of analysis and report forms,
- f) the notice that final results should be understood to apply on the specific voyage under consideration.

## 2 Normative Reference

This document should be used in conjunction with the following referenced documents. 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 3, Tank Gauging (all sections)*

*API Manual of Petroleum Measurement Standards (MPMS) Chapter 8, Standardized Procedures for Sampling Crude Oil or Its Products (All Sections)*

*API Manual of Petroleum Measurement Standards (MPMS) Chapter 17.1, Guidelines for Marine Cargo Inspection*

*API Manual of Petroleum Measurement Standards (MPMS) Chapter 17.2, Measurement of Cargoes on Board Marine Vessels*

*API Manual of Petroleum Measurement Standards (MPMS) Chapter 17.11, Measurement and Sampling of Cargoes On Board Tank Vessels Using Closed and Restricted Equipment*

*API Recommended Practice 45, Analysis of Oilfield Waters (Third Edition, August 1998, Reaffirmed, January 2012)*

## 3 Terms and Definitions

For the purposes of this document, the following definitions apply.

### 2.1

#### **ballast**

Water taken on when a vessel is empty or partially loaded/discharged to increase draft to properly submerge the propeller and maintain stability and trim.