Manual of Petroleum Measurement Standards Chapter 18—Custody Transfer

Section 1— Measurement Procedures for Crude Oil Gathered From Small Tanks by Truck

SECOND EDITION, APRIL 1997
REAFFIRMED, FEBRUARY 2007

American Petroleum Institute

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Suggested revisions are invited and should be submitted to the Measurement Coordinator, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005.

CONTENTS

Measurement Procedures for Crude Oil Gathered From Small Tanks by Truck

0 Introduction

These procedures are intended to encourage uniform custody transfer measurement and testing practices for crude oil gathered from small tanks (1000 barrels or less in capacity) by truck; however, they are not intended to interfere with business contracts or local conditions or to comprise the only acceptable method of custody transfer by crude oil truck.

1 Scope and Field of Application

These procedures are organized into a recommended sequence of steps for manually determining the quantity and quality of crude oil being transferred under field conditions. These measurements and tests are performed by crude oil truck drivers (COTDs) and other parties who are responsible for the custody transfer and for recording the results of the measurements and tests on run tickets.

Since the ownership of the crude oil being gathered may change and the custody is always passed from the storage tank to the transporting truck as the crude oil passes the tank's last fixed outlet flange, accurate custody transfer is extremely important to both the shipper and the carrier. Therefore, all measurements shall be taken carefully and completed to the full satisfaction of all parties or their authorized representatives.

2 Referenced Publications

The most recent editions of the following standards, codes, and specifications are cited in this standard:

ACGIH[1]

Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment

API

Publ 2026 *Safe Descent Onto Floating Roofs of Tanks in Petroleum Service*

Publ 2217 *Guidelines for Work in Confined Spaces in the Petroleum Industry*

RP 2003 *Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents*

Manual of Petroleum Measurement Standards

Chapter 3 "Tank Gauging," Section lA, "Standard Practice for the Manual Gauging of Petroleum and Petroleum Products"

Chapter 7 "Temperature Determination," Section 1, "Static Temperature Determination Using Mercury-in-Glass Tank Thermometers" and Section 3, "Static Temperature Determination Using Portable Electronic Thermometers"

Chapter 8 "Sampling," Section 1, "Manual Sampling of Petroleum and Petroleum Products" (ANSI/ASTM D 4057) and Section 3, "Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products"

Chapter 9 "Density Determination," Section 3, "Thermohydrometer Test Method for Density, and API Gravity of Crude Petroleum and Liquid Petroleum Products" (ANSI/ASTM D 1298)

Chapter 10 "Sediment and Water," Section 4, "Determination of Sediment and Water in Crude Oil by the Centrifuge Method (Field Procedure)" (ANSI/ASTM D 96)

OSHA[2]

29 *Code of Federal Regulations* Sections 1910.1000 and following Occupational Safety and Health Standards

3 Definitions

3.1 crude oil truck driver (COTD): assumes that the driver is also the gauger; however, it should be recognized that these duties may be divided between two individuals: a person who only drives the tank truck and a gauger who is responsible for measurement and testing.

3.2 free water: the water that exists as a separate phase.

3.3 gathering: the process of transferring the custody of crude oil in the field from one party to another by performing various measurements and quality tests.

3.4 meniscus: the concave upper surface of a liquid column.

3.5 merchantable oil: applies to liquid hydrocarbons that are judged to be acceptable for custody transfer to a carrier. Merchantable oil is settled and contains not more than a specified amount of suspended sediment and water and other impurities.

3.6 run ticket: the document customarily used to record lease or facility name, location, test data on crude oil quantity and quality, destination, and gauger and witness signatures that are applicable to a particular gathering.

[1] American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Building D-5, Cincinnati, Ohio 45211.

[2] Occupational Safety and Health Administration, U. S. Department of Labor. The Code of Federal Regulations is available from the U.S. Government Printing Office, Washington, D.C. 20001.

3.7 sampling: all the steps required to obtain a sample that is representative of the contents of any pipe, tank, or other vessel and to place that sample in a container from which a representative test specimen can be taken for analysis.

3.8 sediment and water (S&W): a material, including emulsified or suspended S&W, that coexists with and yet is foreign to petroleum liquid and requires a separate measurement for sales accounting. (The quantity of S&W is normally determined by centrifuge testing a sample of the crude oil that is to be transferred.)

3.9 small tank: a crude oil storage tank with a capacity of 1000 barrels or less.

3.10 thief: a bottom-closure, core-type sampler used to secure samples from storage tanks.

3.11 turndown: refers to the rejection of a tank's contents on the basis of the gauger's evaluation and analysis.

4 The Custody Transfer Concept Used

The *Manual of Petroleum Measurement Standards* covers individual procedures for sampling, temperature taking, gauging, and quality testing. This publication integrates these procedures into a sequence that can be applied during custody transfer of crude oil from small tanks to a tank truck (see Section 6).

With the column-of-oil concept used as the basis for the sequence, the sequence requires the COTD to start sampling and temperature taking from the top of the crude oil volume and to work systematically down through the crude oil layer until the free water and sediment level has been located; initial merchantability is then assessed. This practice offers the best known method for manually obtaining the most representative quality samples of the crude oil being gathered. After these quality samples have been obtained for testing, the quantity measurements may be taken without concern for possible contamination of the quality samples.

5 General Responsibilities and Cautions for the COTD

5.1 CONTROL OF MEASUREMENT ERRORS

Losses or gains may occur if preventive measures are not taken against spills, tank overruns, inaccurate measurements, or recording of incorrect measurements on run tickets. Proper truck and tank prepumping checks and alert monitoring during pumping are two measures that help to prevent losses or gains. Operating the measurement and testing equipment skillfully and keeping it clean and in top operating condition are two more preventive measures that help the COTD avoid losses or gains. A vital link in controlling crude oil losses or gains, the COTD is also responsible for detecting and reporting defective or inadequate control conditions such as internal encrustation of the tank, dents, settling, or leaks.

5.2 SAFETY

Safety is an essential part of crude oil trucking operations both on roadways and during custody transfer, so the COTD must be thoroughly familiar with all government and company safety regulations as well as API Recommended Practice 2003, which outlines safety procedures for truck transports. The following list provides some general safety practices but serves only as a guideline, and it does not cover all unsafe conditions that might be encountered while performing the procedures contained in this document. Precautionary information is also provided in Appendix A.

a. Do not smoke around crude oil loading or unloading or during crude oil testing.
b. Connect bonding cables before the hose is connected and leave them in place until the hose is disconnected.
c. Minimize the hazards of static electricity by grounding oneself. This can be accomplished by touching a bare hand or arm to the steel walkway, gauging platform, or tank shell when approaching the top of the tank and before opening the tank gauge hatch.
d. Attach the gauge tape bonding strap and/or maintain contact between the gauge hatch and metal gauge tape at least until the tape bob enters the crude oil layer.
e. Stand upwind and to one side with face turned away to avoid fumes while opening and after opening the tank gauge hatch cover.
f. Use authorized protective gloves when handling crude oil and solvents during gauging and testing.
g. Use a hydrogen sulfide analyzer and self-contained breathing apparatus when gauging crude oil if the lease is posted with a warning sign for hydrogen sulfide.
h. Do not use gasoline as a solvent.
i. Do not gauge when electrical storms are in the immediate area.
j. Report other unsafe conditions, such as weak tank ladders, defective valves, and leaks.

5.3 WITNESSING SAMPLING, GAUGING, AND TESTING

All parties directly involved in a custody transfer of crude oil have the right to witness the quantity measurements and quality tests made during the transfer. These measurements and tests include sampling, gauge reading, temperature taking, S&W and API gravity determinations. When a custody transfer is witnessed, both the witness and the COTD shall review and sign the accompanying run ticket.

6 Sequence for Measuring Crude Oil

6.1 The steps for measuring crude oil in a small tank (1000 barrels or less) are detailed in 6.2 through 6.12 and are summarized in Figure 1.

6.2 Inspect the gathering-tank facilities for distortions or leaks. Ensure that the tank is isolated and that the crude oil layer is still (see note). If these conditions are not satisfied, the COTD shall not proceed with gathering operations without approval.

Note: Generally, the only exception to this tank isolation policy is when a single tank is used to collect crude oil from a low-volume producing well or wells and prior arrangements have been made between the gathering company and the producer to purchase crude oil on a running gauge.

6.2.1 Physically ensure that the tank isolating valves are tightly closed and sealed in accordance with applicable laws and regulations.

6.2.2 Observe that the crude oil layer is not boiling or foaming; use of a mirror or an approved flashlight may be necessary (see API Recommended Practice 2003).

6.3 Suspend the cup-case thermometer in the tank (see Figure 2).

6.3.1 After making sure that the thermometer (see note) has no breaks in its mercury column, lower the cup-case thermometer on a cotton cord through the tank's thief hatch, holding the thermometer at least 12 inches from the side of the tank shell.

Note: Do not use a thermometer with a separated mercury column.

6.3.2 Lower the thermometer to the midpoint of the oil volume to be gathered.

6.3.3 Tie off and leave the thermometer in the tank for the appropriate time limit listed in Table 1 (see Note 1).

Note 1: The cup-case assembly can be used in either an in-motion or a stationary mode. In motion is defined as raising and lowering the assembly 1 foot above and below the desired depth for the time limit specified in Table 1, Column 2 (In Motion).

Note 2: Static temperature determination may also be accomplished by using portable electronic thermometers in accordance with MPMS Chapter 7, Section 3.

Table 1—Recommended Immersion Times for Woodback Cup-Case Assembly

	Recommended Immersion Time (minutes)	
API Gravity at 60 °F	In Motion	Stationary
>50	5	10
40–49	5	15
30–39	12	25
20–29	20	45
<20	45	80

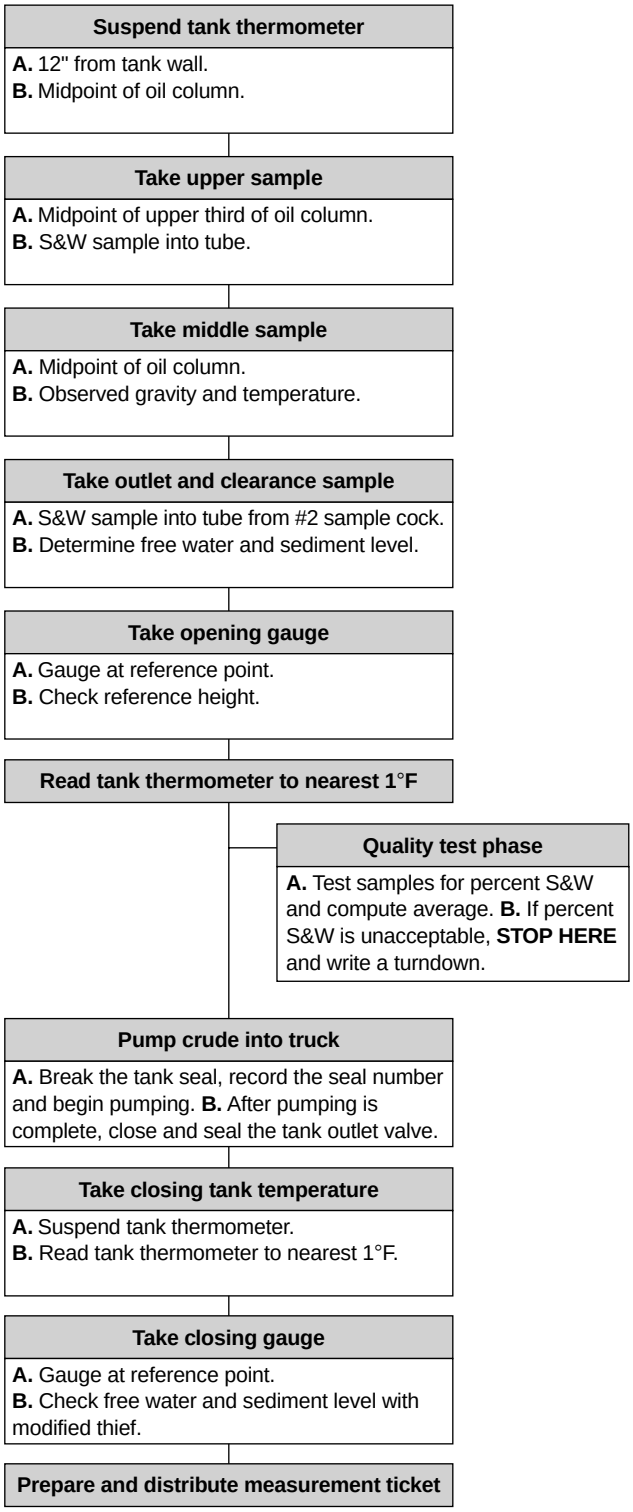


Figure 1—Logic Flow for Custody Transfer of Crude Oil from Small Tank to Truck

6.4 Take an upper sample from the middle of the upper one-third (see Figure 7) of the tank contents using a bottom-closure modified thief (see Note 1). If the tank is equipped with a suitable sampling tap or line, the tap sampling techniques described in MPMS Chapter 8, Section 1 may be used.

Note 1: The preferred thief used in these procedures is a bottom-closure, core-type, clear-barrel, 16-inch, 33-ounce-capacity model modified with sample cocks at the 4-inch and 8-inch marker levels (see Figure 3 and Notes 2 and 3). For states that specify a 6-inch clearance between the tank outlet connection and the top of the settled S&W, place the bottom sample cock 2 inches above the bottom of the thief.

Note 2: Other approved thieves that allow samples to be extracted at the proper level may be used.

Note 3: For tanks equipped with tank outlet connections higher or lower than 12 inches, the trip rod may be adjusted.

Note 4: If the height of the oil column cannot be determined from a level-indicating device located outside the tank, lower the tape and bob into the tank until the bob is completely submerged and the inch and fraction on the tape at the reference point is the same as the inch and fraction on the gauging reference height. Withdraw the tape immediately and record the reading. Subtract the tape reading obtained at the reference point from the reference height. Add the remainder, which will be in whole feet, to the reading on the tape. The result is the innage gauge. Use this to determine the proper sampling depths.

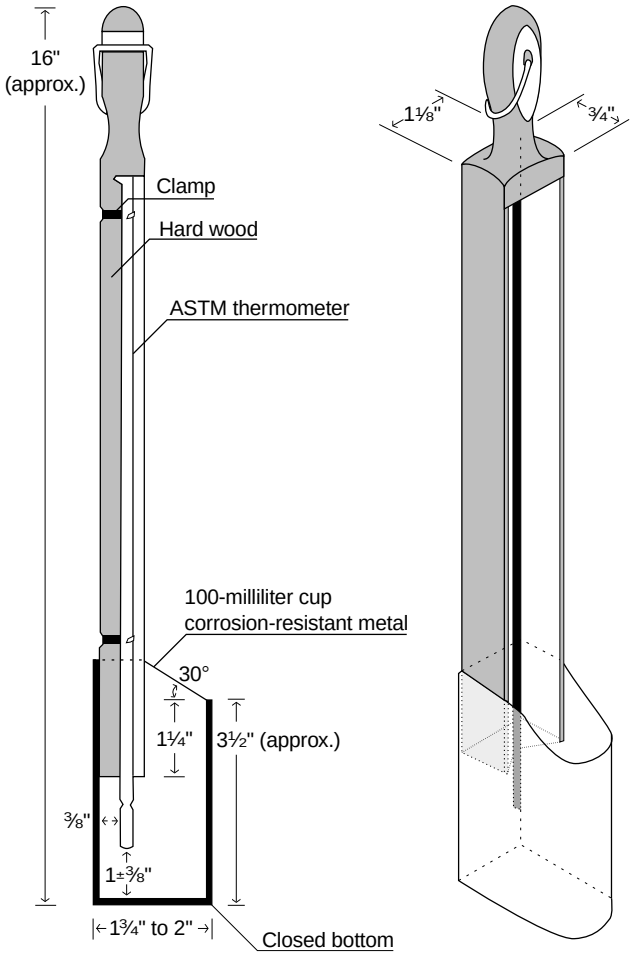


Figure 2—Cup-Case Thermometer Assembly

6.4.1 Transfer 50 milliliters of the upper sample of crude oil from the modified thief's No. 2 sample cock (see Figure 3) into one cone-shaped centrifuge tube. Cork the tube and place it securely in the gauger's tray for later testing (see MPMS Chapter 10, Section 4, for other approved techniques).

Note 1: This is the two cone-shaped tube, heated centrifuge method. Other field centrifuge methods presented in MPMS Chapter 10, Section 4, may be used.

Note 2: Only centrifuge tubes that are volumetrically verified and traceable to the National Institute of Standards and Technology shall be used (see MPMS Chapter 10 Section 10.4.7.2.2).

6.5 Take a middle sample from the middle of the tank contents (see Figure 7), using the modified thief, to determine the observed API gravity and sample temperature (see Figure 3). If the tank is equipped with a suitable sampling tap or line, the tap sampling techniques described in MPMS Chapter 8, Section 1, may be used.

6.5.1 Hang the modified thief vertically on the tank thief hatch. Attempt to keep the sample temperature as close as possible to that of the tank contents. Protect the thermohydrometer from wind exposure during readings.

6.5.2 Gently insert the thermohydrometer into the filled thief about 2 API gravity divisions below its expected settled position. Release it with a slight spin and make sure it floats freely away from the side of the thief (see Figure 4).

6.5.3 Remove any air bubbles (see MPMS Chapter 9, Section 3, for method) and allow the temperature to stabilize. Generally, for light crude oils, allow 3-5 minutes for the temperature to stabilize.

6.5.4 As shown in Figure 4, read and record the observed API gravity to the nearest 0.1 degree (50.8 in Figure 4). When measuring an opaque crude oil, read the scale at the top of the meniscus, and deduct 0.1 degree API gravity from the reading (50.7 in Figure 4).

6.5.5 Withdraw the thermohydrometer from the filled thief to expose the temperature scale. Keep the tip of the thermohydrometer in the sample while reading the temperature.

6.5.6 Record the temperature to the nearest 1 °F.

6.5.7 After testing, carefully clean the thermohydrometer and return it to its storage case.

6.6 Use a modified thief to take the outlet and clearance or oil merchantability samples simultaneously. Using a thief equipped as described in 6.4, Note 1, with the trip rod extended 4 inches (see Figure 3), lower the thief to the tank bottom and obtain a outlet and clearance sample (see Figure 7).

Note: This procedure specifically addresses a tank with a 12-inch-high outlet connection (see Figure 3). Alternative sampling techniques are detailed in MPMS Chapter 8, Section 1.

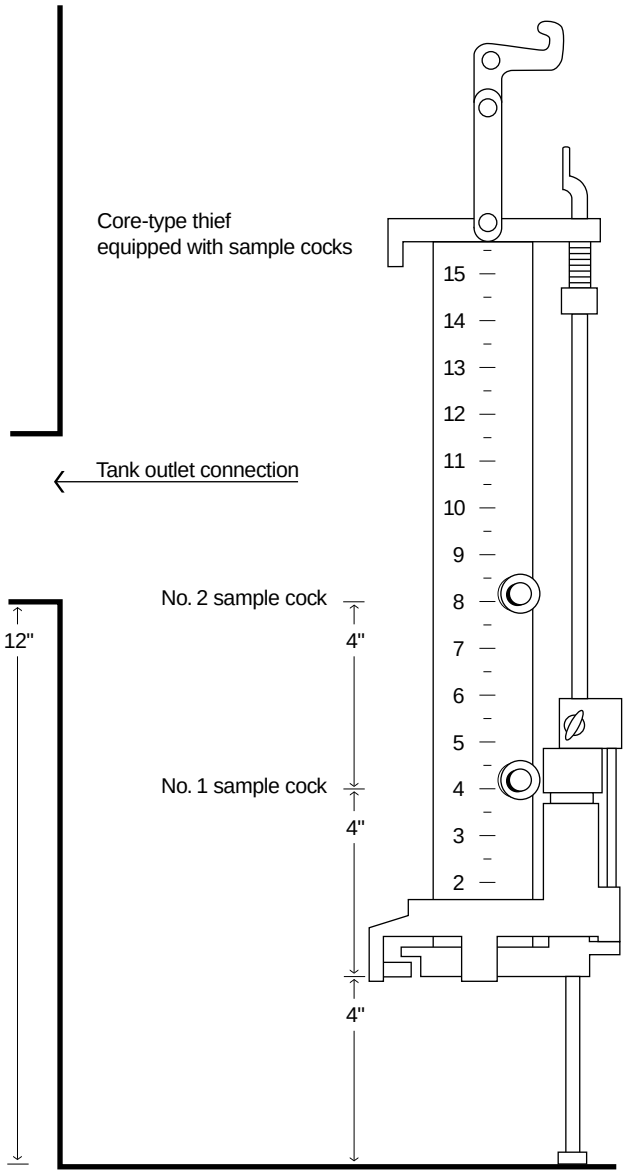


Figure 3—Taking the Outlet and Clearance on Oil Merchantability Samples Simultaneously

6.6.1 Transfer 50 milliliters of the outlet sample of crude oil from the modified thief's No. 2 sample cock (see Figure 3) into a second cone-shaped centrifuge tube. Cork the tube and place it securely in the gauger's tray.

Note: For states requiring a 6-inch clearance, the distance from the bottom of the tank to the No. 1 sample cock will be 6 inches.

6.6.2 Determine the free water and sediment level or oil merchantability as follows:

a. Use the No. 1 sample cock on the modified thief to check for the required clearance between the bottom of the tank outlet connection and the level of free water and sediment. Two commonly used techniques can be used; refer to your company policy for the one to use.

1. If, when the No. 1 sample cock is opened, free water and sediment flow out of the thief (see 6.6.2.3), the clearance between the bottom of the tank outlet pipe and the top of the free water and sediment level is less than 4 inches. Turn down the tank and record the free water and sediment level to the nearest ¼ inch.
2. Using the thief's No. 1 sample cock, transfer 50 milliliters of sample into a third cone-shaped centrifuge tube. Cork the tube and place it securely in the gauger's tray for later testing.

b. If no free water or sediment is observed at the No. 1 sample cock, carefully pour the contents of the thief over a mirror or other suitable smooth object back into the tank until a change of oil color or water globules are observed. These conditions indicate settled free water and sediment.

c. Return the thief to an upright position, measure the height of the remaining sample, and add this to the length of the trip rod extension, if any. The result is the calculated free water and sediment level.

d. Record the free water and sediment level to the nearest ¼ inch.

6.7 Take the tank's opening gauge.

6.7.1 Using an innage tape and bob, lower the gauge tape at the reference point, maintaining contact with the thief hatch to avoid a discharge of static electricity.

6.7.2 Unwind the tape slowly until the bob touches the tank bottom or datum plate lightly; ensure that the bob remains in the vertical position.

6.7.3 Withdraw the tape from the tank until the liquid cut is observed.

6.7.4 Read the tape scale at the liquid cut and note this reading. The reported gauge shall be determined by three consecutive readings to be within a range of ¼ inch (5 millimeters). If two of the three consecutive readings are identical, this reading shall be reported to the nearest ¼ inch (5 millimeters) (see MPMS Chapter 3, Section1A).

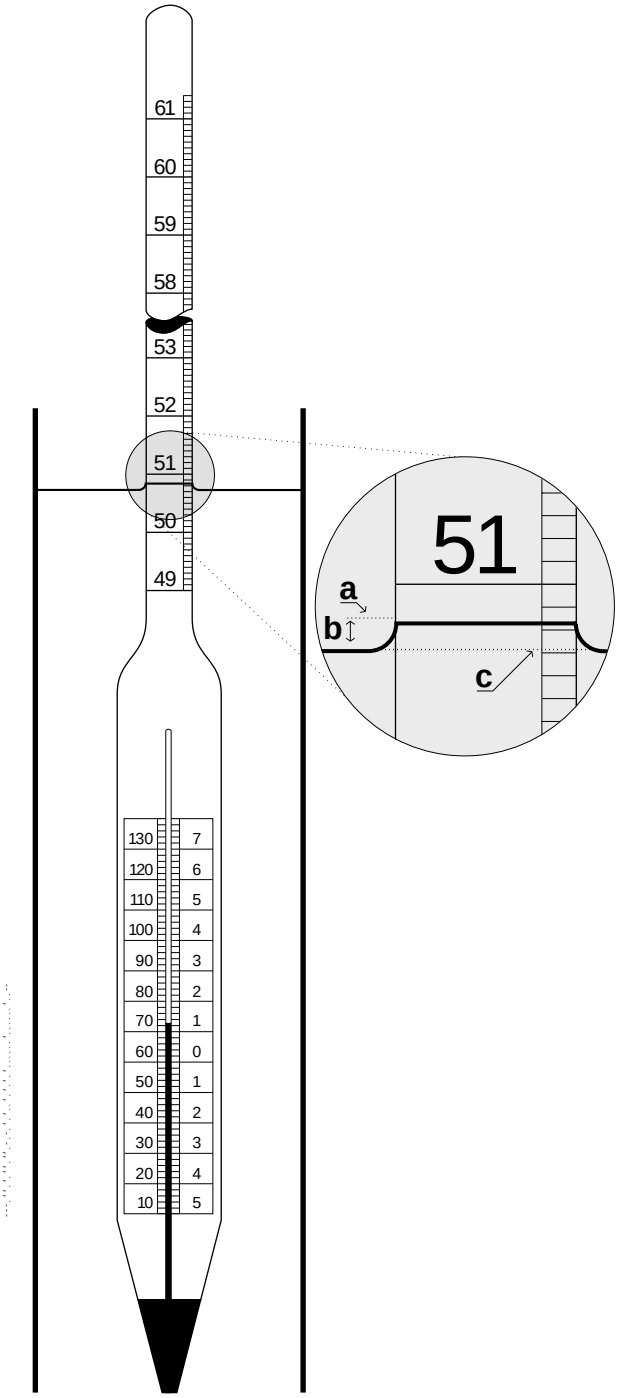
6.7.5 Repeat the procedure until a reportable gauge is obtained.

6.7.6 The use of a gauging paste may be required for light crude oil.

6.8 Remove the cup-case thermometer minimizing its exposure to wind. Ensure that the oil remains in the thermometer cup. Read and record the temperature to the nearest 1°F.

Note: If using a portable electronic thermometer, see MPMS Chapter 7, Section 3 for reading and reporting procedures.

6.9 Determine the percentage and volume of suspended S&W in the crude oil (see MPMS Chapter 10, Section 4).



Note: To obtain the observed API gravity of an opaque crude, read (a) 50.8°API, the top of the meniscus; and then subtract (b) 0.1°API, the height of the meniscus to find (c) 50.7°API, the actual liquid surface level.

Figure 4—Reading the Meniscus

6.9.1 Remove the cone-shaped, stoppered centrifuge tubes from the gauger's tray, and add to the 100-milliliter mark for those tubes marked in milliliters or to the 200-percent mark for those tubes marked in percentages, solvent that conforms to the requirements of MPMS Chapter 10, Section 4. (If toluene is used, refer to Appendix A of MPMS Chapter 10, Section 4, for the water saturation procedure.) Shake carefully, loosen the stoppers slightly, and immerse the centrifuge tubes in a preheater. Heat the crude oil/solvent mixture to above 140 °F. (Higher temperature ranges may be necessary to suit local conditions and crude oil types.)

Note: Proper eye protection should be worn. Always heat tubes away from one's face to avoid accidental burns.

6.9.2 Check the mixture temperature with a thermometer. When the temperature reaches 140 °F, place the tubes in opposing centrifuge trunnion cups, balancing the centrifuge if three tubes are used. Close the lid and spin for 5 minutes at a speed that will develop a minimum relative centrifugal force of at least 500 at the tips of the tubes (see MPMS10.4.3).

6.9.3 The final sample temperature after the spin shall not drop below 125 °F. If it does, the prespin temperature of 140 °F shall be raised by the difference between the final spin temperature and 125 °F. As an example, assume a sample temperature at the completion of the spin of 115 °F. The difference between 125 °F and 115 °F is 10 °F; this difference must be added to the prespin sample temperature. The prespin sample temperature then becomes 150 °F. After reheating the sample to 150 °F, repeat the test.

6.9.4 Remove the tubes, read them, and record the volume of S&W at the bottom of each tube. Reheat the sample to 140 °F, return the tubes without agitation to the centrifuge, and spin for an additional 5 minutes at the same rate. Repeat this operation until two consecutive identical readings are obtained for each tube.

Read the centrifuge tubes in accordance with MPMS Chapter 10, Section 4. For tubes marked in milliliters, 100-part, 6-inch, cone-shaped (100-milliliter) tubes are read in accordance with Figure 5 and Table 2. Add the two tube readings together and record the sum as a volume percentage on the run ticket. For tubes marked in percentages, 200-percent tubes are read in accordance with Figure 6 and Table 3. Average the readings obtained from the two tubes and record the result as a volume percentage on the run ticket.

6.10 Break the tank seal and begin pumping to the truck.

6.11 After pumping is completed:

a. Close the tank outlet valve and seal it in accordance with applicable laws and regulations. If appropriate, record the seal number on the run ticket.

b. Take the closing tank temperature in accordance with 6.3.3.

Note: The tank free water and sediment level should be checked at this time to verify that the tank bottoms were not disturbed by the suction of the truck pump.

c. Gauge the tank as described in 6.7.6.

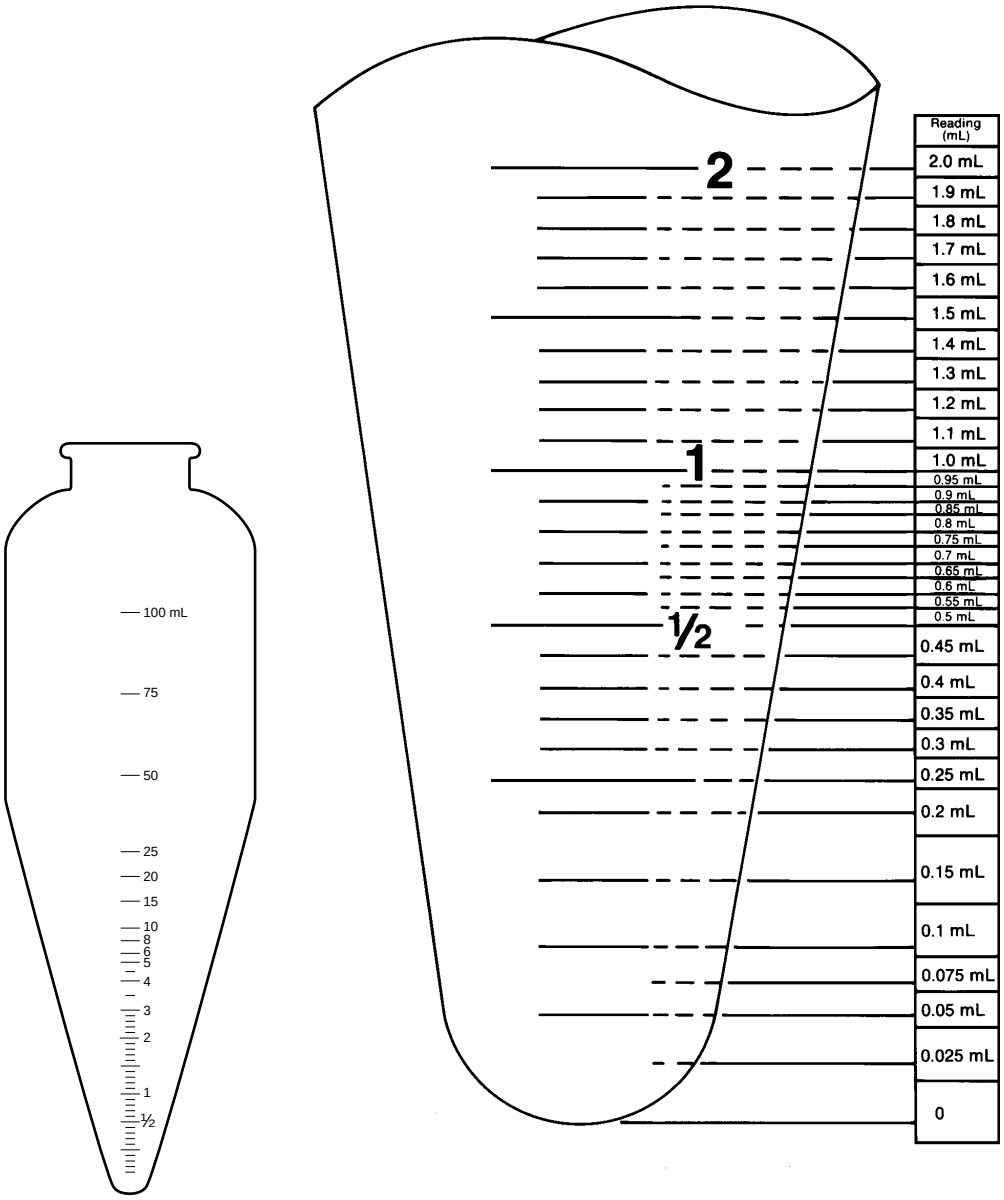


Figure 5—Procedure for Reading Sediment and Water When Using a Tube Reading in 100-Milliliters

Table 2—Procedure for Reading a 100-milliliter Cone-Shaped Tube

Volume of Sediment and Water (mL)	Read to Nearest (mL)
0.0–0.2	0.025
0.2–1.0	0.05
>1.0	0.10

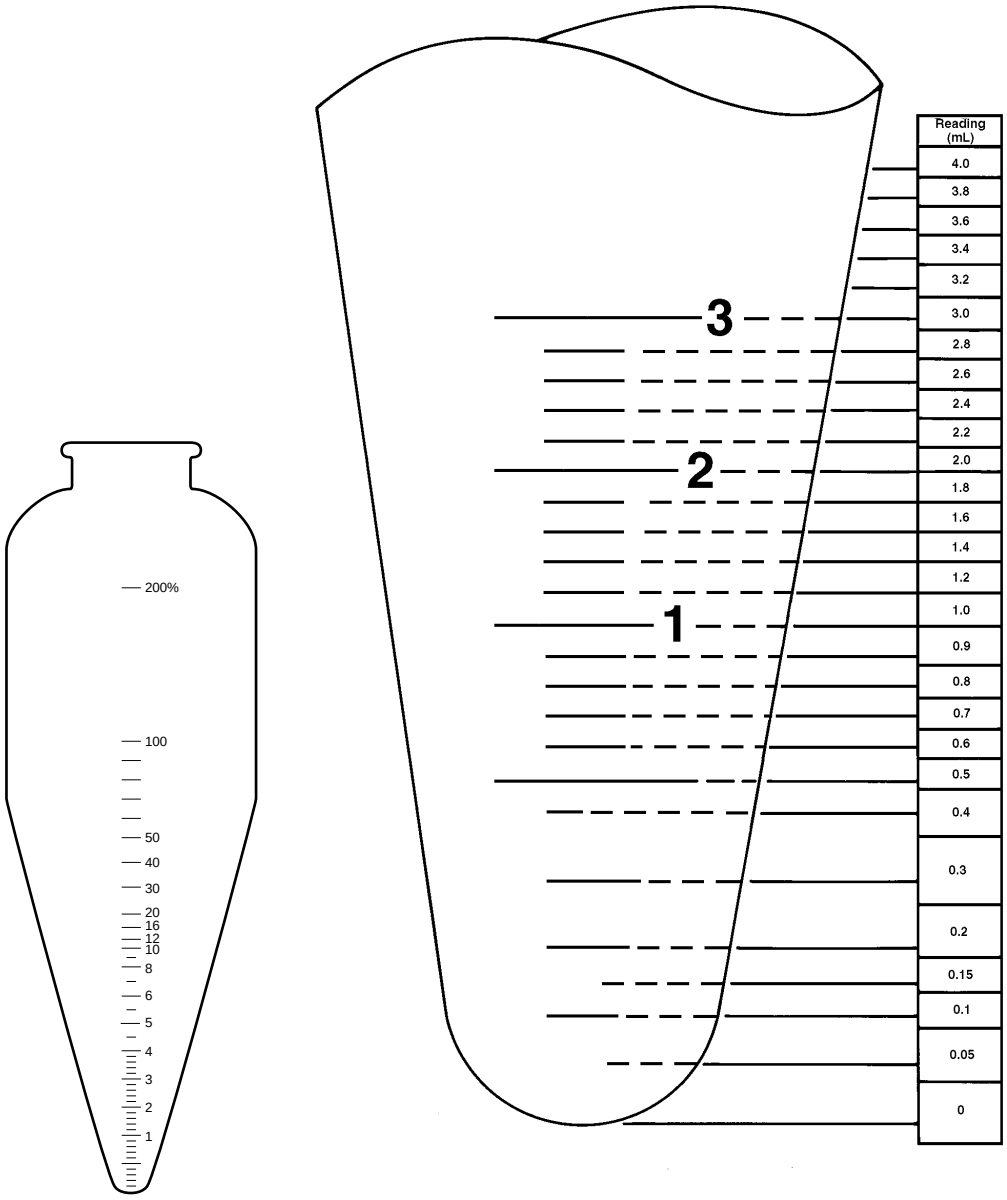


Figure 6—Procedure for Reading Sediment and Water When Using a Tube Reading in 200-Parts

Table 3—Procedure for Reading a 200-Part Cone-Shaped Tube

Volume of Sediment and Water (%)	Read to Nearest (%)
0.0–0.4	0.05
0.4–2.0	0.10
>2.0	0.20

6.12 Complete the run ticket by entering all of the data required by company procedures and distribute the copies.

6.13 Appendix B provides an abbreviated version of this recommended procedure, which should be useful for COTDs once they have mastered the steps outlined in this section.

7 Run Tickets and Tank Turndowns

7.1 Although a detailed explanation of preparing run tickets is not included in this procedure, the importance of accuracy must be underscored. COTDs should record their gauge readings, tank temperatures, and quality test results on memo pads, and at the end of the measurement and testing activities they should carefully transcribe the recorded data to the run tickets and double check them for completeness. Since most run tickets are multiple-copy forms, write with sufficient pressure to ensure that all copies are legible.

7.2 When a tank is turned down for any reason, it is a common practice for the COTD to provide the reason for rejection, in writing, to the producer of the oil lease. This notification is usually done on a copy of a run ticket or a local form. It is also common practice for the producer to correct the situation and then to advise the COTD's company that the turned down oil is ready for pickup.

7.3 Manifests and run tickets should be prepared in accordance with all federal, state, local, and corporate rules, regulations, and policies.

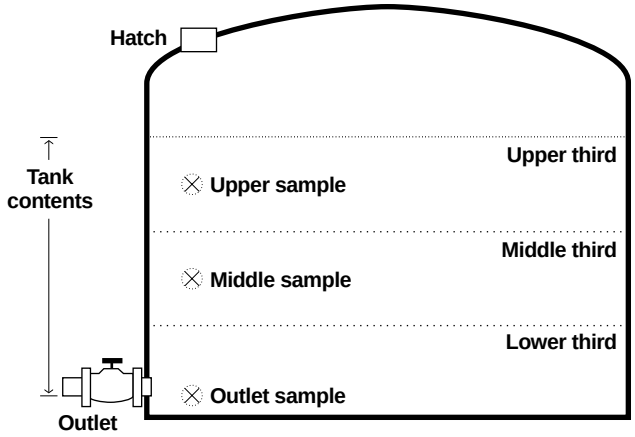


Figure 7—Spot Sampling Locations

APPENDIX A—PRECAUTIONARY INFORMATION

A.1 Physical Characteristics and Fire Considerations

A.1.1 Personnel involved in the handling of petroleum-related substances and other chemical materials should be familiar with their physical and chemical characteristics, including their potential for fire, explosion, and reactivity, and should also be familiar with appropriate emergency procedures. These procedures should comply with the individual company's safe operating practices and with local, state, and federal regulations, including those covering the use of proper protective clothing and equipment. Personnel should be alert to avoid potential sources of ignition and should keep the materials' containers closed when not in use.

A.1.2 API Publication 2026, Publication 2217 and any applicable regulations should be consulted when sampling requires entry into confined spaces.

A.1.3 Information regarding particular materials and conditions should be obtained from the employer, the manufacturer or supplier of that material, or the Material Safety Data Sheet (MSDS).

A.2 Safety and Health Considerations

A.2.1 Potential health effects can result from exposure to any chemical and are dependent on the toxicity of the chemical, its concentration, and the length of exposure to it. Everyone should minimize his or her exposure to workplace chemicals. The following general precautions are suggested:

a. Minimize skin and eye contact and breathing of vapors.
b. Keep chemicals away from the mouth; they can be harmful or fatal if swallowed or aspirated.
c. Keep containers closed when not in use.
d. Keep work areas as clean as possible and well ventilated.
e. Clean up spills promptly and in accordance with safety, health, and environmental regulations.
f. Observe established exposure limits and use proper protective clothing and equipment.

Information on exposure limits can be found by consulting the most recent editions of the Occupational Safety and Health Standards, 29 *Code of Federal Regulations* Sections 1910.1000 and following, and the ACGIH publication *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment*.

A.2.2 Information concerning safety and health risks and proper precautions with respect to particular materials and conditions should be obtained from the employer, the manufacturer, or the Material Safety Data Sheet (MSDS).

APPENDIX B—OUTLINE FOR TRANSFER-OF-CUSTODY PROCEDURE FOR CRUDE OIL GATHERED FROM SMALL TANKS BY TRUCK

B.1 Scope

This appendix provides an outline version of the recommended sequence of steps for manually determining the quantity and quality of crude oil being transferred under field conditions by COTDs or other responsible parties. This version should be useful for COTDs who have mastered the sequence detailed in Section 6.

B.2 Significance

Since the ownership of the crude oil being gathered may change and custody is always passed from the storage tank to the transporting truck, accurate custody transfer is extremely important to all parties.

B.3 Sequence

1. Inspect the gathering-tank facilities and attach all grounding cables (if available).

2. Suspend the cup-case thermometer in the tank.

3. Take an upper sample. Transfer the upper sample to a volumetrically verified centrifuge tube.

4. Take a middle sample. Determine the API gravity and temperature of the crude oil.

5. Take a combined outlet/clearance sample of the oil.
   a. Transfer the outlet sample to a volumetrically verified centrifuge tube.
   b. Check for the required clearance between the bottom of the tank outlet and the level of free water and sediment

6. Take the tank's opening gauge to the nearest ¼ inch.

7. Read the cup-case thermometer to the nearest 1 °F.

8. Determine the S&W as a percentage of the tank volume.
   a. Perform the centrifuge procedure.
   b. Take the readings and record the information.

9. If the readings are acceptable, break the tank seal and begin pumping the contents.

10. When pumping is completed, close and seal the tank outlet.

11. Take the closing temperature.

12. Take the closing gauge.

13. Verify closing free water and sediment level.

14. Complete and distribute the run tickets.

B.4 Run Tickets, Tank Turndowns, and Multiple Truck Loads

Detailed preparation of run tickets, tank turndowns, and multiple truck loads are not covered in these procedures. For the proper procedure, consult your company policies and procedures.

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