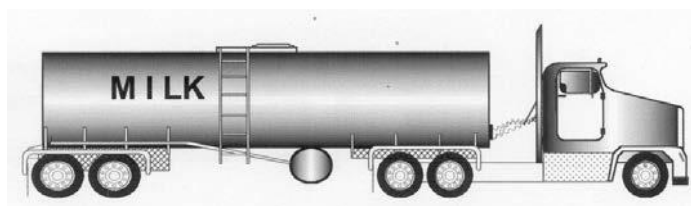
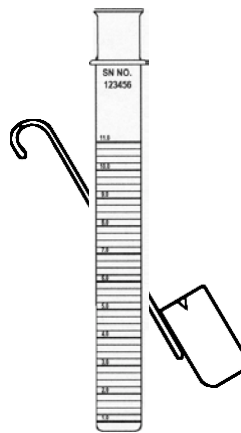


CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE  
ANIMAL HEALTH AND FOOD SAFETY SERVICES  
MILK AND DAIRY FOOD SAFETY BRANCH



# Sampler and Weigher Study Guide



# **STUDY GUIDE for the SAMPLER AND WEIGHER LICENSE EXAMINATION**

The applicant will be given a written examination based on the Study Guide material. The applicant will also be required to answer oral questions and demonstrate how to identify and record the proper information on temperature recording charts, including those that may not meet Grade A temperature requirements.

In addition to the Questions & Answers in the Study Guide, the applicant should study the following (reproduced after the Questions and Answers section):

## **Bulk Milk Hauler/Sampler Evaluation Report (Form FDA2399a)**

**Food and Agricultural Code**, applicable sections

**California Code of Regulations**, applicable sections

**Degrade/Restricted Use Chart Illustrations:** Examples of charts with temperature violations.

### **I. COUNTY SEALER OF WEIGHTS AND MEASURES**

The County Sealer of Weights and Measures, under the supervision of the California Department of Food and Agriculture, Division of Measurement Standards, determines the accuracy of calibrated farm tanks, public weigh master's scales and cream scales.

When measuring and weighing devices are found to be accurate, a seal is placed on the measuring chart used for farm tanks or weighing devices.

### **II. MILK AND DAIRY FOOD SAFETY BRANCH – CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE**

The Milk and Dairy Food Safety Branch (MDFS) will routinely check the measuring or weighing devices which have been approved by the County Sealer of Weights and Measure.

Other important functions of the Milk and Dairy Food Safety are to examine and license Prospective Samplers and Weighers, Milk and Cream Testers, and Technicians. Licensees shall be examined for the accuracy of their work at frequent, irregular intervals. The term **DAIRY INSPECTOR** used throughout the examination refers to a Dairy Foods Specialist employed by MDFS and/or an inspector employed by a County Approved Milk Inspection Service.

### **III. DEFINITIONS OF TYPES OF MILK SAMPLES**

- A. **DAILY SAMPLE**: a representative sample used for testing for butterfat and solids not fat
- B. **REPRESENTATIVE SAMPLE**: a small portion, which contains the same percent of milk components as the bulk from which it is taken.
- C. **PROPORTIONATE SAMPLE**: a sample of more than one lot of milk, collected in portions in ratio to the volumes of the lots being sampled.
- D. **COMPOSITE SAMPLE**: a representative, proportionate sample taken from several lots of milk.

## MILK AND DAIRY FOOD SAFETY BRANCH

### GENERAL INSTRUCTIONS FOR HANDLING BULK MILK

1. Wear **clean clothing** and maintain clean hands.
2. Be sure that your tanker has a **wash tag**, showing that it has been properly cleaned and sanitized. Notify your employer of any unusual conditions. Connecting hoses, pipes, fittings and pumps shall be properly protected from contamination in route, at the farm and the plant.
3. **Wash and dry hands** (use soap and clean towels) after connecting the milk transfer hose and just prior to sampling.
4. **Do not smoke** in the milk house.
5. Check recording thermometer chart for proper milk cooling. The **agitator shall be running** before the chart is removed. Report milk not meeting Grade A temperature requirements.
6. Milk room **doors shall not be left** open. Use the load-out hose port for the hose to pump milk from the milk house into the tanker.
7. Lift milk tank lid and **check milk quality**. Pocket thermometers placed into the milk should be washed and sanitized.
8. **Measure the milk** and immediately record the reading. Handle the measuring rod in a sanitary manner.
9. After starting the agitator, hook up pipes, hose and electrical cord. If the agitator is not working, note it on the shipper's measurement record (farm tag).
10. Make sure the sampling device is sanitized for at least one minute in a solution of 200 parts per million (ppm) or more for chlorine, or 25 ppm for iodine.
11. Take all **samples while the agitator is in motion**. Protect samples against breakage or spillage. In case of foreign objects in the milk tank, call your employer for instructions for pumping the milk. Do not fill the sample container over the opening of the tank.
12. **Identify the sample bottle** caps with shipper's name or number and date. Do not pre-label any sample bottles before arriving at the dairy farm. Complete the weight or measurement and record the reading. Required information on the farm tag includes:
  - date
  - buyer's name and address or number
  - producer's name and address
  - gallons / pounds
  - BTU number
  - Licensee's legal signature and Sampler and Weigher License number
13. After the tank is pumped out and the hose is disconnected, rinse the inside of the tank and pipes thoroughly and close the lid. Avoid spilling milk around floors, driveways and platforms; rinse any spilled product to the drain.

## MILK AND DAIRY FOOD SAFETY BRANCH

### QUESTIONS & ANSWERS

1. **Q.** Why is any individual who takes samples and records weights of milk and cream and/or who makes and records measurements of milk, licensed by the State of California?
  - A.** The **daily representative milk sample** tested for **percent butterfat** and **percent solids not fat**, and the **measurement** (normally converted to pounds) are used as the basis for payment to the dairyman. A Sampler and Weigher licensee holds a very important position. Upon his work rests the accuracy of the samples taken and fair payment for that lot of milk. Unless the sample represents the lot from which it is taken, any test on the sample will not result in fair payment between the buyer and seller. If the weights or measurements taken are not accurate, the basis for payment between the buyer and seller will not be correct.
  
2. **Q.** What is the Sampler and Weigher Licensee's duty if a scale or any device used for measurement appears not to be accurate?
  - A.** Report this to the Sealer of Weights and Measures or to the Dairy Inspector.
  
3. **Q.** If the buyer, seller, or hauling company asks or orders the licensee to deviate from required procedures, what should the licensee do?
  - A.** Proper and legal requirements shall be followed regarding sampling and measuring. In cases of questionable practices, contact the Milk & Dairy Food Safety Branch in your area.
  
4. **Q.** Is the work of a licensee checked?
  - A.** Yes, the Dairy Inspector may check the accuracy of a Sampler and Weigher Licensee's work at any time. The Dairy Inspector may use the **Form FDA 2399a** - Bulk Milk Hauler/Sampler Evaluation Report.
  
5. **Q.** How fast should a licensee work?
  - A.** A licensee should never work so fast that the accuracy of the work is jeopardized.
  
6. **Q.** When should a Sampler and Weigher license be renewed?
  - A.** Each Sampler and Weigher License expires **two years** from the date of issue. Each licensee must, **within six months before the license expires**, successfully complete a **refresher course** and proficiency evaluation. Licenses may then be renewed upon payment of the fee. License renewal fees must be **received within 90 days** of the license expiration date.
  
7. **Q.** How much does 10 gallons of milk weigh?
  - A.** Approximately 86 pounds.
  
8. **Q.** How must samples of milk and cream be identified?
  - A.** By placing the patron's name or number on the sample bottle or otherwise identifying the sample in an approved manner so that the identification cannot be easily erased. Daily samples shall be dated or otherwise identified to show what lot is represented.
  
9. **Q.** How much milk or cream must be taken for an official sample?
  - A.** At least two (2) fluid ounces.

10. **Q.** How full shall sample bottles be filled?
- A.** Shall not be filled more than  $\frac{3}{4}$  full (to the line on the vial).
11. **Q.** What six points of information shall be on a weight or measurement record (farm tag)?
- A.**
1. **Date** - of receipt of product.
  2. **Buyer** - Name and address of person, company or association purchasing or receiving the product.
  3. **Seller** - Name or patron number of the producer.
  4. **Gallons or Pounds** - the amount of the product.
  5. **BTU #** - Bulk Tank Unit Number.
  6. The licensee's **signature and Sampler and Weigher License number**.
12. **Q.** What other points of information are desirable on records indicated in Question 11?
- A.**
1. Identity of the **product** including its **Grade**.
  2. The farm tank **stick reading(s)**, or measuring tube reading(s).
  3. Product **temperature**.
  4. **Route** number.
  5. **Trailer/tanker** number.
  6. **Comments** to list any defects or items to correct.
13. **Q.** Under what conditions may records of weights or measurement be changed?
- A.** Records of weights or measurements may be changed where obvious clerical errors or errors of omission or duplication have been made by the licensee. In case of doubt, contact your local Dairy Inspector. Whenever a change is made, the initials of the individual making the change should appear after the weight or measurement on the record sheet (farm tag).
14. **Q.** If a sample is spilled or a sample overfilled, or two samples are accidentally added together, what should the licensee do?
- A.** Discard the sample and collect a new sample. If the product cannot be re-sampled, it should be reported to the Sampler and Weigher license holder's employer.
15. **Q.** What is a **representative** sample of milk or cream?
- A.** A small portion, which contains the same percent of milk components as the bulk from which it was taken.
16. **Q.** Why is thorough mixing (**agitation**) of milk or cream necessary in order to secure a representative sample?
- A.** Thorough mixing is necessary to combine all of the components of milk so that they are evenly distributed throughout the sample. Because fat is the lightest component in milk or cream, it rises toward the surface when allowed to stand without agitation.

17. **Q.** How must a representative sample of milk or cream be obtained?
- A.** By thoroughly mixing with an agitator (or by pouring from one container to another) until the milk/cream components are evenly distributed throughout the bulk just before the sample is taken. (If milk is in quantities larger than a 10 gallon can,) a power driven mechanical agitator shall be used.
18. **Q.** What is the minimum agitation time required in farm tanks?
- A.** 1. For a tank of 1,000 gallons or less - At least 5 minutes.
2. For a tank over 1,000 gallon - At least 10 minutes, or as specified by the tank manufacturer.
3. For any tank standing for over 30 minutes without agitation or filling - At least 15 minutes.
19. **Q.** What four requirements shall a licensee remember and practice while sampling and weighing or measuring?
- A.** 1. Take a representative sample.
2. Weigh or measure accurately.
3. Identify samples and records of weights or measurements accurately.
4. Date the samples.
20. **Q.** How shall samples be cared for?
- A.** 1. Store in a tightly closed sanitary container, vertical position & milk level slightly below the ice
2. Temperature maintained between **32–40 degrees Fahrenheit (°F)** (0-4.4 degrees Celsius (°C)).
3. The storage container (ice chest) shall be self-draining and protected from dust and rain.
4. When not in possession of the licensed sampler, the samples shall be stored in a secure place accessible to a licensed Sampler and Weigher or licensed Tester.
21. **Q.** Must the employer provide a suitable and convenient place in which to keep the samples?
- A.** Yes, any box, case, cabinet, or room used for the reception of samples, which are used for determining the basis for payment, shall be secure to prevent tampering, and maintained at the required **32–40°F**.
22. **Q.** In what condition must a scale be kept in order to secure accurate results?
- A.** It shall be clean and in good mechanical condition; markings or graduations shall be clear; it shall be handled carefully. If it is a platform or stationary scale, it shall be level and on a solid foundation.
23. **Q.** Under what conditions may milk be measured instead of weighed?
- A.** If the measurement has been approved by the Milk and Dairy Food Safety and if the equipment has been approved and sealed by the County Sealer of Weights and Measures.
24. **Q.** May a meter be used for measuring milk?
- A.** Yes, if it has been approved by the Division of Measurement Standards and the Milk and Dairy Food Safety Branch of the California Department of Food and Agriculture.

25. **Q.** How close must measurements be read and recorded on milk?
- A.** Measurements shall be read to the closest graduation on the calibrated measuring rod:
1. **One gallon** increments for farm tanks of 500 gallons or less.
  2. **Two gallon** increments for farm tanks in excess of 500 gallons.
26. **Q.** How shall a “transparent measuring tube” on a farm holding tank be read?
- A.**
1. Use an approved graduated reading indicator that slides easily up and down.
  2. The bottom of the milk meniscus shall coincide with the edge of the reading indicator.
  3. Badly etched tubes should be replaced.
27. **Q.** What precautions should be observed when measuring milk in the farm hold tank equipped with a transparent measuring tube?
- A.**
1. Let the milk slowly into the tube to prevent foaming.
  2. Take the reading when the milk is motionless in the tube, only **one reading** may be necessary.
  3. Upon arriving at the dairy, any milk already in the tube is to be drained to the floor. Then after rinsing the tube, let milk into the tube for the measurement reading.
  4. After reading the measurement, drain the milk in the tube to the floor.
  5. Do not let milk in tube warm up, as this will cause milk to expand and give a high reading.
28. **Q.** What precautions should be observed when measuring milk in a farm tank equipped with a measuring rod?
- A.**
1. The rod shall be dry, clean and free from fat or oily substances.
  2. The rod shall not be welded, bent or distorted in any manner.
  3. The rod shall be placed slowly into the motionless milk and is to rest properly on the **gauge point** before taking the reading; push any foam aside.
  4. The rod shall be wiped dry with a single service paper towel before first reading and between all other readings.
  5. Take at least two readings to obtain 2 identical consecutive readings.
29. **Q.** Must farm holding tanks be installed to give complete drainage?
- A.** Yes, this is required by law.
30. **Q.** How can the licensee know that the measuring rod in use was made for the tank in which he is measuring?
- A.** Each measuring rod and conversion chart shall be stamped with corresponding serial number found on the farm tank.
31. **Q.** What is the “measuring rod gauge point”?
- A.** It is a holder or device on the inside or outside of the farm tank designed to position the measuring rod while the measurement is being taken.

32. **Q.** Does the construction of a farm holding tank have any bearing of the accuracy of measurements?
- A.** Yes, the shell, bulkheads and supporting framework shall be of such construction that it will not become distorted under any conditions of normal usage.
33. **Q.** What are some approved methods used to determine if a farm holding tank is retained in a correct position after being calibrated?
- A.** 1. Scribe marks or permanent marks on the floor.
2. Cementing the tank legs or supports to the floor.
3. Permanent fastenings.
34. **Q.** What should a licensee do if the agitator is running when arriving at the dairy?
- A.** 1. Switch the agitator to the “on” position, agitate the tank for the proper length of time, and collect the sample.
2. Then turn “off” the agitator and wait until the milk is motionless to take the measurement.
35. **Q.** What should the licensee do if the milk is frozen to the walls or ice is observed floating in the milk?
- A.** 1. Report the condition to the producer and the buyer immediately.
2. Notation should be made on the measurement record (farm tag).
3. Do not take the stick reading if ice is found in the tank.
4. Take a sample, but mark it “ICE”. This sample may be used as a producer trace back sample if needed for antibiotic testing.
36. **Q.** How may it be determined that the contents of the farm holding tank are completely agitated?
- A.** The licensee can only follow minimum agitation times (see **Q.** # 18). Any concerns regarding proper agitation should be reported to the Dairy Inspector, who can follow up at the farm in question.
37. **Q.** Is the licensee responsible in any way for the quality of the product he handles?
- A.** Yes. The safety and quality of the product is jeopardized if the licensee does not protect it from contact with persons, animal life, unclean surfaces, dust, flies, insects, drippings or any other contaminant.
38. **Q.** How accurate must the driver's pocket thermometer be?
- A.** The pocket thermometer must be accurate within  $\pm 2^{\circ}\text{F}$
39. **Q.** How often must the driver's pocket thermometer be checked against a thermometer traceable to a National Institute of Standards and Testing (NIST) certified thermometer?
- A.** The pocket thermometer must be checked every 6 months in the 32-40°F (0-4.4°C) range and a tag attached to the carrying case with the date of check, correction factor (if any) and name of the person verifying the accuracy of the thermometer.



40. **Q.** What observations should be made of the milk in the tank by the licensee to determine if the milk is of such quality as to be received into the tanker?

- A.**
1. Observe the milk in a motionless state for floating extraneous matter.
  2. Observe the odor of the milk as soon as the lid is raised.
  3. Check the temperature using a sanitized pocket thermometer.
  4. Check for sediment when the last of the milk is being pumped from the tank.
  5. If quality is questionable, notify the buyer of the milk.

41. **Q.** How are samples required to be taken from a farm holding tank?

- A.**
1. Agitate the tank for the proper length of time
  2. The dipper used in taking a **representative** sample must be clean, free of fat and in good repair.
  3. The dipper or petcock must be in contact with a **sanitizing solution** of 200 ppm or more chlorine, or 25 ppm iodine, for at least one minute before sampling.
  4. With agitator going, rinse the **sanitized** dipper twice in the product before sampling, discard sample into the tank, and then take sample.
  5. Do not pour into sample bottle over the opening of the milk tank.
  6. Do not start pumping the milk until all the samples are taken.
  7. When a closed farm tank (**silos**) is sampled:
    - a. agitate for the proper length of time
    - b. sanitize the petcock (spigot) by placing a sanitary plastic bag containing sanitizer over the petcock and pulsate the bag to force the sanitizer up into the opening.
    - c. then pulsate the petcock, discarding approximately 2 liters (2 quarts) onto the floor.
    - d. take sample, by placing the sample bottle under a continuous flow of product from the petcock.

42. **Q.** How should dippers be cared for when used on dairies with farm holding tanks?

- A.**
1. A separate dipper should be kept at each dairy so that it may be washed and sanitized with the other dairy equipment.
  2. If the dipper is carried on the truck, the dipper shall be washed and sanitized after each use. It shall be transported in a protected manner.

43. **Q.** What are some of the precautions which should be observed in caring for the safety and quality of the product?
- A.**
1. Before leaving the plant/truck yard, check tanker to make certain it is clean, drained, and has a “washed & sanitized” tag on it.
  2. Keep the milk lines and transfer hose capped when not in use.
  3. Wash and sanitize the sampling device each time it is used.
  4. Use a single service towel for wiping the measuring rod.
  5. Do not place anything on the floor that will come into contact with the product, such as the threaded end of the transfer hose cap or tank outlet cap.
  6. Do not leave milk on the floor, ramp or loading area.
  7. The tanker hose shall be disconnected and capped before rinsing the farm tank to prevent adulteration of the milk.
  8. When leaving the dairy, be sure all openings to the milk house and hose port are closed.
44. **Q.** What is the proper procedure for taking bacteria samples?
- A.**
1. Always take bacteria samples first, before any other samples.
  2. Use only sterile sample bottles or containers.
  3. Be sure the milk is properly agitated.
  4. If a dipper is used, it shall be clean and sanitized and shall be rinsed twice in the product to be sampled. The rinsing should go back into the tank.
  5. If a petcock is used, it shall be fully sanitized by placing a plastic bag with sanitizer over it and pulsating the sanitizer up into the petcock. Then flush the petcock with product (releasing approximately 2 liters or 2 quarts to the floor. Take the sample under a continuous flow of product.
  6. Sterile pipettes or other sanitary sampling devices should not come in contact with anything other than milk.
  7. Do not permit the inner surface of the cap or bottle to become contaminated (watch your finger location).
  8. Immediately immerse all samples in ice up to the milk line and keep iced until delivered. Maintain samples between 32-40°F. Take an extra sample at the first stop on each route for a **temperature control (TC)** sample.
45. **Q.** Is the Sampler and Weigher responsible for seeing that the bulk milk tanker is clean and sanitary?
- A.** Yes, before leaving to pick up the first load, the tanker hoses, pumps and valves should be inspected for cleanliness. The wash tag(s) should also be checked.
46. **Q.** If there are 2 bulk milk tanks on the dairy, shall the licensed Sampler and Weigher take separate samples from each tank?
- A.** Yes, sample and measure separately.

47. **Q.** What are the temperature requirements for Grade A market milk for pasteurization?
- A.** The milk shall be cooled to **50°F** (10°C) or less within **four hours of the start** of milking, **AND** **45°F** (7°C) or less within **two hours after completion** of milking, **AND** maintained at 45°F (7°C) or below until picked up; however the blend temperature during subsequent milkings shall not exceed **50°F** (10°C).
- Raw market milk in bulk milk tankers in transit shall not exceed **52°F** (11°C).
48. **Q.** When market milk fails to meet Grade A temperature requirements, what shall the licensee do?
- A.** Notify the buyer. Market milk failing to meet the Grade A temperature requirements shall be **“Restricted Use Market Milk” (degrade)** and not picked up on a Grade A route. Such milk failing to meet temperature requirements shall be used only for **manufacturing** purposes.
49. **Q.** When market milk fails to meet Grade A temperature requirements, and should be placed on **Restricted Use** (degrade - temperature violation), what shall the licensee note **on the front** of the temperature recording chart; and then do what with the chart?
- A.** After making the following notations **on the front** of the temperature recording chart, the licensee shall bring the chart to the plant for the Dairy Inspector to review:
1. The **date**.
  2. The **time** the milk is picked up.
  3. The temperature violation area is circled and write **“temperature violation”** on the chart.
  4. The **measurement** (stick or tube reading) and/or gallons or pounds of the milk.
  5. The licensee’s **signature and Sampler and Weigher License number**.
50. **Q.** Is it the **responsibility** of the licensed Sampler & Weigher to report restricted use market milk (degrade)?
- A. YES,** It is the responsibility of the licensed Sampler & Weigher to report temperature violations on milk in the farm tank, but only a Dairy Inspector may officially place it on Restricted Use (degrade) after due process. **It is the licensee’s responsibility to report and record the temperature violation on the chart as noted in Q. #50.**
51. **Q.** Why should the bulk milk tank agitator be running before the Sampler and Weigher removes the chart from the temperature recorder?
- A.** The temperature will be most representative of the entire lot of milk after agitation. It is important to record the temperature of the entire lot of milk to ensure there is no temperature violation.
52. **Q.** Shall a licensed Sampler and Weigher carry their Sampler & Weigher License (or a copy) while performing their job?
- A.** Yes.

53. **Q.** When all the milk goes to the same buyer and all the milk meets the temperature requirements, may the temperature recording charts be used for more than one pickup?
- A.** Yes, provided that all the pickups occur within the maximum time interval of the chart. When the chart is used for more than one pickup, the licensed Sampler and Weigher shall identify each lot of milk with the date, producer number, pickup time, and signature.
54. **Q.** What requirements shall a licensed Sampler and Weigher remember when changing the temperature recording chart?
- A.** 1. On the recording chart, mark the **date, time, producer number, the tank number** if more than one tank, **sign the chart** and **include their Sampler and Weigher License number**.
2. File the charts under protected conditions provided by the dairy, unless they are taken from the dairy for review by the buyer.
3. If the charts are taken for review, they shall be returned to the dairy within 10 days.
55. **Q.** May a licensee use water to force the last of the milk from the farm holding tank to the tanker?
- A.** No, the licensee would be guilty of **adulterating** the milk since a portion of the water would be commingled with the milk.
58. Required information to be on each sample container for different types of samples:

<u>Milk Fat</u>	<u>Bacteria</u>	<u>Temperature Control</u>
1. Date	1. Date	1. Date
2. Patron #	2. Patron #	2. Patron
	3. Temperature	3. Temperature
		4. Time
		5. Sampler and Weigher ID or Route #

The following sampler & weigher evaluation form on page 13 (**Form FDA2399a – BULK MILK HAULER/SAMPLER EVALUATION REPORT**) may be used during the inspection/evaluation of a licensed sampler & weigher at the dairy farm.

**This form should be studied as it contains information that may be on the written/oral examination and provides guidelines on proper procedures.**

DEPARTMENT OF HEALTH AND HUMAN SERVICES FOOD AND DRUG ADMINISTRATION  <b>BULK MILK HAULER/SAMPLER          EVALUATION REPORT</b>	BULK MILK HAULER / SAMPLER PERMIT NO.  BULK MILK HAULER / SAMPLER	TANKER PERMIT NO.  DAILY PICKUP NO.
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ADDRESS OF BULK MILK HAULER / SAMPLER  OWNER  ADDRESS OF OWNER	NAME AND ADDRESS OF INSPECTION LOCATION  NAME AND ADDRESS OF RECEIVING PLANT
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*An evaluation of your sampling procedures showed violations existing in the Items checked below. You are further notified that this evaluation report serves as notification of the intent to suspend your permit if the violations noted are not in compliance at the time of the next inspection. (Refer to Sections 3 and 5 of the Grade "A" Pasteurized Milk Ordinance.)*

**HAULER SANITATION PROCEDURES**

- 1. Pickup practices conducted to preclude contamination of milk contact surfaces .....
- 2. Hands clean and dry, no infections .....
- 3. Clean outer clothing, no use of tobacco .....
- 4. Hose port used, tank lids closed during completion of pickup. ....
- 5. Hose properly capped between milk pickup operations, hose cap protected during milk pickup.....
- 6. Hose disconnected before tank rinsed .....
- 7. Observations made for sediment/abnormalities .....
- 8. Sample collected from each producer's bulk tank picked up .....

**BULK TANK SAMPLING PROCEDURES**

- 9. Thermometer – Approved Type ..... 
  - a. Accuracy – Checked against standard thermometer every 6 months – accuracy (+)(-) 1 division .....
  - b. Date checked and checker's initials attached to case .....
- 10. Sample Transfer Instrument ..... 
  - a. Clean, sanitized or sterilized and of proper construction and repair ....
  - b. Sterile needle for aseptically dispensing a milk sample from the bulk tank sample septum into a sample container (i.e., vial) .....
  - c. Or an approved in-line sampler .....
  - d. Or an approved aseptic sampler .....
  - e. Or a sanitized sampling cock .....
- 11. Sampling Instrument Container ..... 
  - a. Proper design, construction and repair for storing sample dipper in sanitizer .....
  - b. Applicable test kit for checking strength of sanitizer (200 ppm chlorine or equivalent) .....
- 12. Sample Containers ..... 
  - a. Clean, properly sanitized or sterilized.....
  - b. Adequate supply, properly stored or handled .....
- 13. Sample Storage Case ..... 
  - a. Rigid construction, suitable design to maintain samples at 0°C - 4.4°C (32°F - 40°F), protected from contamination .....
  - b. Ample space for refrigerant, racks provided as necessary .....
- 14. Sample Collection – Precautions and Procedures ..... 
  - a. Sampling instrument and container(s) properly carried into and aseptically handled in milkhouse .....
  - b. Bulk tank milk outlet valve sanitized before connecting transfer hose .....
  - c. Smell milk through tank port hole .....
  - d. Observe milk in a quiescent state with lid wide open and lights on when necessary .....

- e. Test thermometer sanitized (1 min. contact time) .....
- f. Non-acceptable milk rejected .....
- g. Dry measuring stick with single-service paper towel .....
- h. Measure milk only when quiescent .....
- i. Do not contaminate milk during the measuring process .....
- j. Agitate milk before sampling at least 5 min. or longer as may be required by tank specifications .....
- k. Do not open bulk tank valve until milk is measured and sampled .....
- l. Temperature of milk, time, date of pickup and bulk milk hauler/sampler name and license or permit no. recorded on each farm weight ticket .....
- m. Tank thermometer accuracy
  - 1. Tank thermometer accuracy checked monthly and recorded when used as test thermometer .....
  - 2. Accuracy of required recording thermometer checked monthly against standardized thermometer and recorded .....
- n. Temperature control sample provided at first sampling location for each rack of samples .....
- o. Temperature control sample properly labeled with time, date, temperature, producer ID and bulk milk hauler/sampler identification .....
- p. Sample containers legibly identified at collection points .....
- q. Sample dipper rinsed at least two times in the milk before transferring sample .....
- r. Dipper should be extended 6-8 inches into the milk to obtain a representative sample .....
- s. Sample cock properly sanitized and flushed prior to sampling .....
- t. Septum surface properly sanitized and single service sterile needle used .....
- u. Do not hold sample container over the milk when transferring sample into the container .....
- v. Fill sample container no more than ¾ full .....
- w. Rinse sample dipper in safe tap water, return to storage container, open tank valve, start milk transfer pump .....
- x. Immediately place milk sample in the sample case .....
- 15. Sample Collection – Storage and Transportation
  - a. Sample storage – refrigerant maintained no higher than milk level in sample containers – maintain sample temperature – 0°C - 4.4°C (32°F - 40°F), do not bury tops of containers in ice, protect against contamination .....
  - b. Deliver samples to laboratory promptly .....
  - c. Samples and sample data – submitted to laboratory – if by common carrier, use tamper proof shipping case with top labeled "This Side Up" .....

REMARKS (If additional space is required, please place information on the back of this Form or on a separate page.)

DATE	SANITARIAN	AGENCY
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## CALIFORNIA FOOD AND AGRICULTURAL CODE

32907. It is unlawful for any person to sell, give away, deliver, or knowingly purchase or receive any milk or product of milk which has been produced or handled in or by a dairy farm, milk products plant, carrier, store, or depot, that is in an insanitary condition.
32917. A person shall not render any statement or bill, which shows the weight, grade, percentage of fat, amount of fat, solids not fat, bacteria count, price or total amount paid for milk or any milk product which is false, deceptive, or misleading in any particular.
34201. A person shall not do any of the following:
- (a) Fraudulently manipulate the measure, weight, or test, which is used for determining the grade or quality of milk, cream, or any fluid derivative of milk or cream.
  - (b) Fraudulently manipulate the test, which is used for determining the percentage of milk fat in the milk, cream, or any fluid derivative of milk or cream.
  - (c) Over read or under read any such test.
  - (d) Take unfair sample of milk, cream, or any fluid derivative of milk or cream on which the grade, quality, or amount of milk fat in it is to be determined.
  - (e) Fraudulently manipulate any such sample, or the record of any measurement, weight, test or combination of them.
34202. No tolerance in weights, measures, percentages of milk fat, moisture, or any other measure or standard is permitted, except where specific provisions are made for such a tolerance.
35163. Every person, except a licensed tester, who takes any sample of milk, cream, or any fluid derivative of milk or cream, which is purchased, received, or sold on the basis of milk fat which is contained in it, on which sample tests are to be made as a basis of payment, and every person who weighs or measures milk, cream, or any fluid derivative of milk or cream, shall hold a Sampler and Weigher license if the weight or measure is to be used as the basis of payment.
35164. If one person does both sampling and weighing or measuring, only one license is required.
35166. Any person who takes any sample of milk, cream, or any fluid derivative of milk or cream for testing, shall hold the sample in an unchanged condition until it is delivered to a licensed tester.
35171. Every license that is issued . . . expires two years from the date of issue. License renewal fees must be received within 90 days of the license expiration date for renewals to be issued. Each licensee required to be licensed pursuant to Section 35163 must, within six months prior to the expiration of the license, successfully complete a refresher course and proficiency evaluation acceptable to the secretary.  
Licenses may then be renewed for two-year periods upon payment of the fee which is prescribed by Section 35231.
35231. The initial and renewal fees for . . . sampler and weigher . . . license are as follows:
- (b) For a sampler and weigher license, one hundred dollars (\$100).
  - (c) For a limited sampler and weigher license, seventy-five dollars (\$75).
35782. Market milk shall be cooled to 45°F or below, whether it is raw or pasteurized, and except as otherwise provided in Section 35783, shall be so maintained until it is delivered to the consumer.

35783. Market milk shall be cooled as indicated by a recording thermometer, to 50° F (10°C) or less within four hours of the commencement of the first milking and to 45°F (7°C) or less within two hours after the completion of milking. The blend temperature after the first milking and subsequent milkings, or milk in transit on bulk milk tankers, shall not exceed 50°F (10°C). The secretary may promulgate regulations to provide for temporary deviations from the requirements of this section that may occur as a result of emergencies arising from equipment failure, or as a result of other unusual circumstances; provided, however, that the quality and safety of the product are not adversely affected.
- 35783.1 A recording thermometer shall be installed in each dairy farm milk storage tank used to cool or store raw market milk for pasteurization during the milking process. If a farm pickup tanker is used in lieu of a dairy farm tank, then the recording thermometer shall be installed in the pipeline following the cooling device that cools the milk to 45°F (7°C) or less. Nothing in this section shall be construed as meaning that a recording thermometer must be attached when milk tankers are moved over the road. The director shall issue regulations providing standards for such thermometer including installation and operation.

## **CALIFORNIA CODE OF REGULATIONS**

### **480.7 Dairy Farm Tank Installations.....**

(d) A sanitary stainless steel pipeline or rubber or plastic hose must be used for conveying milk from the farm tank . . . Hoses must be capped and contained in a dust proof compartment on the truck or trailer while in transit. Sanitary caps must be used for tank outlets.

(e) Sanitary milk pumps provided by the dairy must be protected at all times.

(f) The loading area or ramp must be kept in a sanitary condition and be graded, or graded and paved to provide good drainage.

(g) The farm tank must be constructed of acceptable materials and in such manner that it may be cleaned, sanitized, and drained. The measuring devices must be made of stainless steel or other acceptable material.

(h) When used as a farm storage tank, all openings to the truck tank must be protected with dust proof covers. For loading and unloading, tight, protected connections must be made. All valves and fittings of farm tanks and truck tanks must be easily disassembled for cleaning.

(i) Sufficient light, properly located, must be available to assure proper cleaning of the interior and exterior of farm tanks.

(j) Transfer of milk from the farm tank to truck tank must be made only through conductor pipe openings in the milk house wall or stationary door; such openings must be provided with closures.

### **480.75 Recording Thermometers on Farm Tanks...**

(c) Operation...

(2) The dairyman shall maintain an adequate supply of recording charts. The charts shall be those recommended for the specific instrument which is installed.

(3) The licensed Sampler and Weigher, in making a milk pickup, shall remove the chart from the recorder, mark the date and time of the pickup and sign the chart. He shall date and install a new chart on the recording device. He shall file the used chart under protected conditions provided for by the dairyman, unless they are taken to the buyer for his review. If the charts are taken from the dairy, they

shall be returned to the dairy within ten days from the date they were taken.

When all the milk goes to the same buyer and all lots of milk meet the temperature requirements, the temperature recording charts may be used for more than one pickup, provided that all of the pickups occur within the maximum time interval of the chart. When the chart is used for more than one pickup, the licensed Sampler and Weigher shall identify each lot of milk with the date, time of pickup, and signature.

A non-profit cooperative as defined in Food and Agricultural Code Section 61331 which maintains a processing plant, receiving station, or regular place of business may, subject to the approval of its members, file the recording thermometer charts at its place of business, provided that a copy of any chart indicating a failure to meet temperature standards is filed with the inspection agency in whose jurisdiction the dairy is located.

(4) Before removing market milk from the farm tank, the licensed Sampler and Weigher shall check the recorder chart, and if he finds temperature variations which would preclude acceptance of the product as market milk, he shall immediately notify his superior and the dairyman.

(5) If the milk is subsequently picked up as manufacturing milk, the licensed Sampler and Weigher shall sign the chart noting the date, time of receipt, and stick reading.

(6) Recorder charts shall be held at the producer dairy except as otherwise provided for 60 days and shall be available to the dairy inspector.

480.9

#### **Inspection and Permitting of Bulk Milk Tankers**

(d) Milk Tanker Standards. The milk tanker inspection criteria are listed below:

(1) Samples and Sampling Equipment.

(A) Sample containers shall be stored to preclude contamination.

(B) Sample box shall be in good repair and kept clean.

(C) Sample transfer instrument shall be cleaned and sanitized.

(D) Sample transfer instrument container shall be provided and adequate means for maintaining sanitizer solutions shall be on hand.

(E) Samples are properly stored to preclude contamination.

(F) Sample storage compartment shall be clean.

(G) Samples are maintained at an acceptable temperature (32°F to 40°F) and a temperature control sample shall be provided.

(H) A thermometer accurate within 1°C (2°F) shall be available for use by the sampler. The accuracy of the thermometer shall be checked each six months against a thermometer traceable to a National Institute of Standards and Testing certified thermometer. The date of the check and the correction factor shall be recorded on a tag attached to its carrying case.

(2) Product Temperature 45°F or Less.

(A) Product temperature shall meet requirements of Section 35782 of the Food and Agricultural Code.

(B) Product exceeding 45°F that remains in external transfer systems shall be discarded.

(3) Equipment Construction, Sanitizing and Repair.

(A) Construction and repair requirements.

1. The milk tanker interior and all appurtenances, including hoses, pumps, piping, fittings and connections which are exposed to milk or milk products or from which liquids may drip, drain or be drawn into milk or milk products, shall consist of material which is approved for food contact surfaces and meets requirements of Section 33520 of the Food and Agricultural Code.

2. Where flexibility is required, the fluid transfer system shall be free draining and so supported to maintain uniform slope and alignment. It shall be easily disassembled and accessible for inspection.

3. Cabinet(s) of the milk tanker used for storage of appurtenances and sampling



equipment shall be clean, dustproof and in good repair.

4. All openings to the milk tanker must be protected with dustproof covers. For loading and unloading, tight, protected connections must be made. All valves and fittings of milk tankers must be easily disassembled for cleaning.

(B) Cleaning and Sanitizing Requirements.

1. The milk tanker and its appurtenances shall have an effective cleaning and sanitizing regimen meeting requirements of Section 33519 of the Food and Agricultural Code.

2. The milk tanker shall be cleaned and sanitized prior to first use. When time elapsed after cleaning and sanitizing before first use exceeds 72 hours, the tank must be resanitized.

3. The milk tanker and its pumps, hoses and fittings must be cleaned and sanitized after each load is hauled, whenever the following load is to go to a different plant. A farm pickup milk tanker may make several trips to the same plant before complete washing and sanitizing, provided satisfactory results are obtained and the inspection service involved has approved the system. If milk products other than market milk or market milk products are transported, there must be a complete cleaning and sanitizing of the milk tanker before it is used for transporting market milk or market milk products.

4. Exterior Condition of Tank. The exterior of the milk tanker shall be constructed to protect the products contained therein from contamination and be in good repair. Defects and damage that could contaminate or adversely affect products contained in the milk tanker shall be noted during the inspection and corrected. Cleanliness of the milk tanker exterior shall be adequate to protect the contents from contamination. The weather and environmental conditions shall be considered in determining compliance with these requirements.

5. Wash and Sanitize Record.

(a) The licensed sampler and weigher shall be responsible for assuring that the milk tanker has been properly cleaned and sanitized. A milk tanker without a cleaning and sanitizing tag shall not be loaded or unloaded until verification of cleaning and sanitizing is obtained.

(b) Each tank on the milk tanker after being washed and sanitized must be identified by a tag attached to the outlet valve, bearing the following information: plant and specific location where cleaned, date and time of day of washing and name of person who washed and sanitized the tank. This tag must not be removed until the milk tanker, after being used for reception of milk or milk products is again washed and sanitized and shall include identification of the milk tanker. When a milk tanker is washed, the previous cleaning and sanitizing tag shall be removed and stored at the location where the milk tanker was washed for a period of no less than 15 days.

(c) The licensed sampler and weigher or the milk tanker operator (lessee or owner) shall be responsible for assuring that all information on the cleaning and sanitizing tag is noted by the person conducting the cleaning and sanitization of the tanker.

6. Location of last cleaning. The location of the last cleaning shall be verified by the regulatory agency during the milk tanker inspection and noted on the 2399B.

7. Labeling. The licensed Sampler and Weigher shall be responsible for assuring that all shipping invoices, bills of lading or weight tickets contain the information listed below. A milk tanker transporting raw, heat-treated or pasteurized milk and milk products to a milk plant from another milk plant, receiving or transfer station is required to be marked with the name and address of the milk plant or hauler and the milk tanker shall be under a proper seal. Shipping documents shall contain the following information:

(a) Shipper's name, address and permit number. Each tanker load of milk shall include the IMS Bulk Tank Unit (BTU) identification number(s) or the IMS listed Plant Number (for farm groups listed with a plant) on the weight ticket or manifest.

(b) License number of the Sampler & Weigher, if not an employee of the shipper.

(c) Point of origin of shipment.

(d) Tanker identification number.

(e) Name of product.

- (f) Weight of product.
- (g) Temperature of product when loaded.
- (h) Date of shipment.
- (i) Name of supervising regulatory agency at the point of origin of shipment.
- (j) Whether the contents are raw, pasteurized, or in the case of cream, lowfat or skim milk, whether it has been heat treated.
- (k) Seal number on inlet, outlet, wash connections and vents, where applicable.
- (l) Grade of product.

8. Vehicle and Milk Tankers Properly Identified. The milk tanker operator (lessee or owner) shall insure the legible identification of the milk tanker in their possession.

9. Previous Inspection Report Available. When a milk tanker transports milk and milk products from one regulatory jurisdiction to another it is not necessary to inspect each milk tanker upon each arrival. Tank truck owners and operators shall carry proof of annual inspection from a state dairy regulatory agency. A milk tanker may be inspected at any time at the discretion of the Department.

10. Transportation of Samples. When any individual transports samples for official laboratory analysis, that individual shall carry a valid Sampler and Weigher license; or, alternatively, a sample case sealed in a manner acceptable to the Department may be accepted.

500. **Sampler and Weigher Examination and License**

(a) The Department shall issue a general and limited Sampler and Weigher license. The general license shall apply to persons who collect milk samples for basis for payment under section 35163 of the Food and Agricultural Code. The limited license shall apply to processing plant personnel who only collect samples of bulk raw milk for drug residue testing prior to processing under section 32761.5 of the Food and Agricultural Code.

(b) Any person desiring to obtain a Sampler and Weigher license as required by section 35163 of the Food and Agricultural Code or section 576.1(c) of Title 3 of the California Code of Regulations shall comply with all of the following requirements:

(1) File an application with the Department on the Sampler and Weigher License Application, Form No. 72-246 (Rev. 09/12) or the Limited Sampler and Weigher License Application, Form No. 72-246a (Rev. 09/12), which are incorporated by reference, accompanied by the applicable fee for the license pursuant to Food and Agricultural Code section 35231. The fee is non-refundable and covers Departmental costs of administering the examination.

(2) Obtain a grade of at least 80 percent on a written examination specific to the type of license to be issued.

(3) A general Sampler and Weigher license applicant must, in addition to subsections (b)(1) and (2) above, obtain a grade of at least 80 percent on an oral and practical examination to demonstrate the ability of the applicant to correctly collect representative samples, make correct weights on milk and cream and properly and legibly complete a satisfactory weigh sheet. A weigh sheet shall contain all of the following essential information: full date on which the milk and cream was received; name and address of person purchasing, receiving, or selling the product weighed; name or number of the patron; net weight of the milk or cream of the delivery or shipment; and the full name and sampler and weigher license number of the person who does the weighing.

(4) A limited Sampler and Weigher license applicant must, in addition to subsections (b)(1) and (2) above, obtain a grade of at least 80 percent on an oral and practical examination to demonstrate the ability of the applicant to correctly collect representative samples from a bulk milk tanker.

(c) Each general licensed Sampler and Weigher shall keep their current license on their person and available for inspection at all times during their work as a licensee.

(d) Each limited licensed Sampler and Weigher shall keep their current license displayed at all times at the facility where they are employed.

514. **Samples, Sampling and Weighing**

(a) Bulk milk and cream must be thoroughly mixed . . . for at least five minutes before sampling, or longer as may be required to obtain a representative sample throughout the tank . . . Samples shall be representative of the fat content of the product sampled. Sampling tubes and dippers that are badly dented, or leak, must not be used. Cylindrical shaped dippers, only, shall be used when samples are secured with dippers. The sampling devices shall be rinsed in the product to be sampled before any part of the product is transferred to the sample bottle. Sample bottles shall be filled away from the farm tank opening so that no milk is spilled back into the farm tank. Sample bottles shall be filled no more than three quarters full to permit proper mixing of the sample at the laboratory.

(b) Samples shall be marked with the date and the producer's name or patron number in a manner that will not erase.

(c) Weights must be read and recorded to the nearest half-pound graduation on the scales for cream, and the nearest one-pound graduation for milk or weights taken or measurements made in a manner and to an accuracy acceptable to the Sealer of Weights and Measures.

(d) At the time samples are being taken, licensee will be held responsible for operating the mechanical agitators in a manner that will assure a representative sample, and for securing a correct weight or measurement.

517. **Storage and Testing of Samples**

(b) Each person purchasing, receiving, or selling milk or cream on the basis of milk components shall provide a refrigerator maintained at a temperature between 0° and 4.4°C in which licensed samplers, weighers and testers shall keep all samples taken or maintained during sampling and holding periods.

525. **Keeping Records of Tests**

(f) Weights or measurements must not be changed without approval of the Department, except where obvious errors have been made by the licensed Sampler and Weigher. An average weight or measurement based on the four immediately preceding recorded weights, whenever available, shall be used if the actual correct weight cannot be determined.

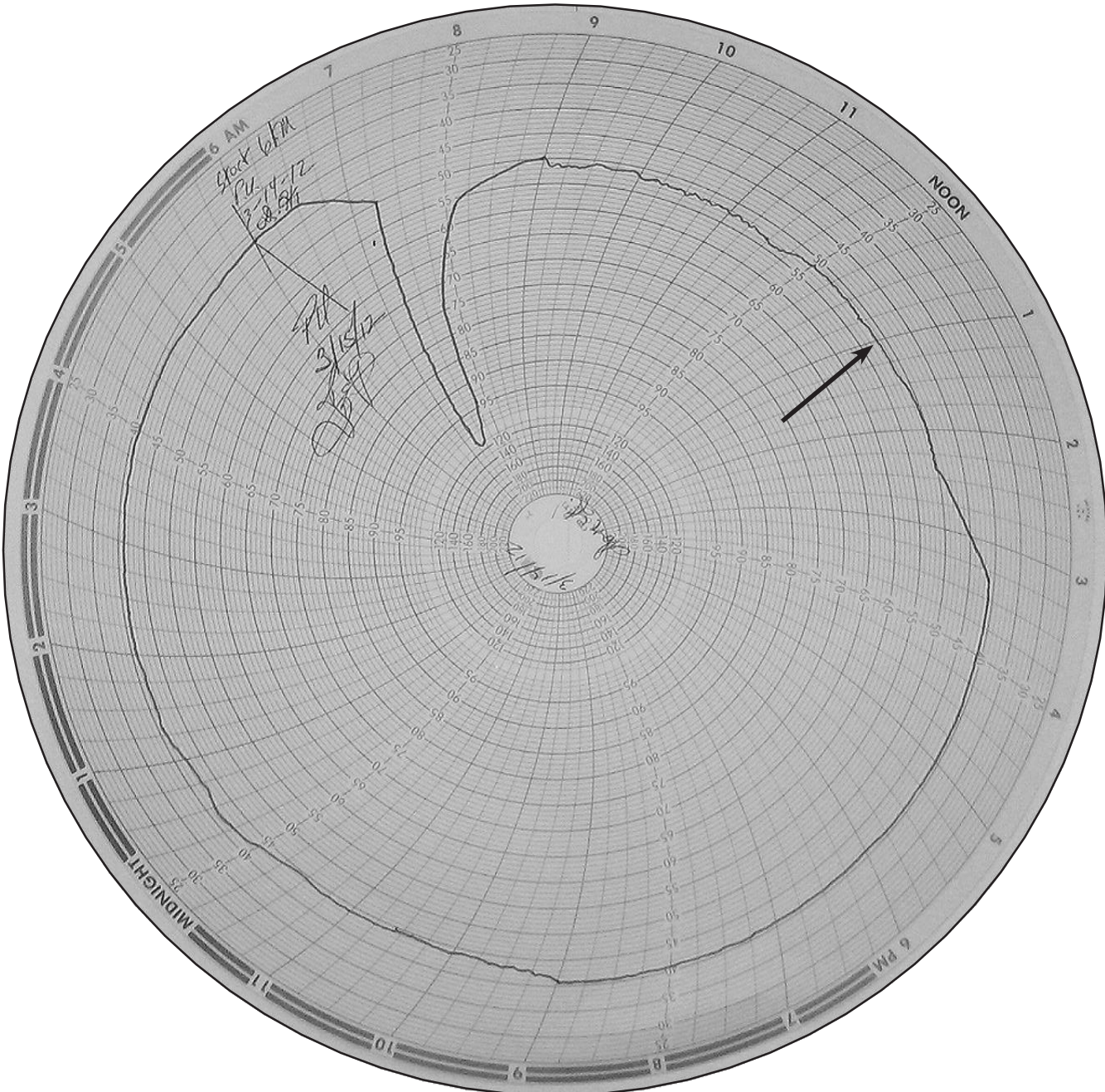
Standard Methods for the Examination of Dairy Products:

3.037 (B) 2. Chemical Sanitization: “. . . a solution of an approved germicide that is at all times bactericidally equivalent to 200 mg/L (200 ppm) or more of available chlorine as hypochlorite. Submerge sampling equipment for at least one minute . . . iodine compounds at 25 ppm . . . “

**ILLUSTRATIONS—TEMPERATURE VIOLATION CHART REQUIREMENTS:**

The following recording charts show Grade A temperature violations that would require notations to be marked on the chart by the licensee and the milk reported as **Restricted Use market milk**(degrade):

**Temperature Violation:**  
The milk was not cooled to 50°F or less within four hours of commencement of the first milking.



**TEMPERATURE VIOLATION:**

The blend temperature during the second milking exceeded 50°F, and milk was not cooled to 45°F or less within 2 hours after the second milking.

