

STANDARD OPERATING PROCEDURES
DIVISION OF COMPARATIVE MEDICINE
UNIVERSITY OF SOUTH FLORIDA

SOP#: 1014.6

Date Issued: 1/07

Date Revised: 1/20

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TITLE:	Monitoring Animal Drinking Water Quality
SCOPE:	Animal Care Personnel
RESPONSIBILITY:	Facility Manager and Technical Staff
PURPOSE:	To Outline the Proper Procedures for Collecting, Processing, and Testing Animal Drinking Water Quality

I. PURPOSE

1. To describe the procedures for assuring the quality of potable water for research animals housed in animal facilities under the direction of the Division of Comparative Medicine.

II. RESPONSIBILITY

1. Facility Managers are responsible for the quarterly assessment of water quality using a AccuPoint Luminometer. Water testing will be conducted during the months of March, June, September, and December and the results of testing reported to the Assistant Director.
2. The Assistant Director is responsible for reviewing and maintaining the results of water sample testing, ensuring that water sampling is performed by the methods and at the frequency described in this procedure and oversight of any follow-up testing in response to failed tests.
3. The Assistant Director maintains a copy of the annual water quality report obtained from the City of Tampa Water Department, and all facility records of animal drinking test results performed for current year.

III. MONITORING DRINKING WATER USING a LUMINOMETER

1. At least quarterly, while performing microbiological monitoring of sanitation procedures, a water sample(s) will be obtained from an animal drinking water source identified within the facility (e.g., water bottle filling station, sink, or automatic watering zone) and tested for the presence of adenosine triphosphate (ATP).
2. The luminometer[®] uses a process called bioluminescence to detect the presence of ATP. ATP is a biochemical present in all organisms, is useful in detecting the presence or absence of organic matter (i.e., living or dead microorganisms), and is a good indicator of water quality.
3. **A different water source will be tested each quarter** in facilities with multiple animal drinking water sources.
4. **For each drinking water system zone**, samples will be collected from the farthest point possible from the zone's solenoid or manual water valve or manifold.

5. The NeoGen® AccuPoint Luminometer is used to test water for the presence of ATP, please see **SOP #1164 Neogen® AccuPoint Luminometer**.
6. Sampling Procedure
 - a. Water Sampler
 1. Select the correct site to be tested. A water droplet icon on the display indicates to use the water sampler option.
 2. Take the sample by dipping the water sampler into the liquid.
 3. Hold the sampler vertically and fully depress to activate. Note: the sampler must be held vertically.
 4. Mix for 2 seconds, but do not shake the sampler. Place in instrument immediately
 5. The results will appear after 15-20 seconds. Pass will display in green with a check mark. A fail reading will display in red with an X.
7. Press the eject button to remove the sampler from the reader component. Used swabs are non-toxic and may be disposed of in non-hazardous trash.
8. **Optimal results are obtained when swabs are read within one minute (However, if a sample is taken and not activated, the sample can be read within 2hrs)**
9. Test Failure Follow-up:
 - a. **Facility Managers will be notified of failed tests.**
 - b. **Facility Managers are responsible for investigating and correcting the cause of failed tests.** After corrective actions are complete additional samples of the same water source(s) will be retested. All retests will be conducted no more than 5 days after the failed test. If corrective actions require equipment repairs, the retest period may be extended.
 - c. If the retest fails, Facility Managers will consult the Assistant Director to reassess the cause of the failure and adequacy of corrective actions taken.
10. Data:
 - a. The data file created during the download using AccuPoint, will be automatically saved but must be connected to a designated computer source to upload from the unit.
 - b. The Assistant Director will update and maintain results of testing.

IV. WATER TESTING BY THIRD PARTY AFFILIATE

1. The Assistant Director may submit water samples to a third party environmental testing laboratory (e.g., IDEXX and Advanced Environmental Laboratories Inc.) to determine heterotrophic plate count (HPC), total coliform count (TCC), pH, turbidity, heterotrophic plate count, coliforms, pseudomonas aeruginosa, and total residual chlorine as needed or in response to unsatisfactory quarterly Neogen testing.
2. At least one sample from each animal housing location will be collected for testing.

Sample Collection

1. A sample is required for each test requested (TCC & HPC).
2. Samples are collected and submitted in a sterile container by appropriate methods.

3. Sample bags are sterile and contain a chlorine neutralizer (white tablet). **DO NOT TOUCH THE OPENING OR INSIDE SURFACES OF THE BAG. DO NOT REMOVE THE WHITE TABLET.**
4. Before collecting the sample **remove any aerators or other devices from the faucet or hose bib.**
5. **Flush line or the water manifold by running water for at least 5 minutes.**
6. **Do not to rinse the sample container** or closure.
7. **Adjust water flow** to the diameter of a pencil.
8. **DO NOT ALLOW FAUCET TO TOUCH THE INNER SURFACES** of the container.
9. **Fill sample to the upper fill line of the container.**
10. **Label the sample** with the location/ site and date using waterproof ink.
11. **All samples must be stored in a cooler with an ice pack(s) or in a refrigerator if unable to sample immediately.** DO NOT use wet ice. Samples are only valid up to 30 hours after collection. Placing the submittal form in a plastic bag in the cooler will prevent the paper from getting wet in transit. Do not store samples in a hot vehicle or in sunlight.

Sample Submission

1. **Up to 7 sample points may be submitted per submission form.**
2. **Submit a separate submission form for each type of testing requested.** Samples for HPC on one form, samples for total coliform on another form.
3. Samples will be evaluated using an onsite environmental laboratory technician as contracted by Environmental Health and Safety or shipped to offsite testing lab as directed by management.

Test Results

1. Test results are reviewed and maintained by the Assistant Director.
2. When results of retesting the water sample/system are out of normal limits, the Assistant Director or their designee will be responsible for evaluating the water system and flushing procedures, and taking appropriate corrective action(s) until the system is within appropriate range
3. Retesting and corrective action(s) should be documented and maintained by the Assistant Director with the water quality reports/records.

Approved:

Date: