| RUTGERS UNIVERSITY Office for Research | RUAC STANDARD OPERATING PROCEDURE | |
|---|---|---|
| **TITLE: Animal Drinking Water Testing** | | |
| **SOP Category: Veterinary** | **RUAC SOP #: 7.08** | **Page 1 of 3** |
| **Effective Date: 10/29/2024** | **Approval:** | |
| **Revisions: 7/12/2021, 9/27/2024** | | |

**SCOPE**:

This document describes the procedures to be followed when performing potable water microbiological burden testing. This SOP applies to all Animal Care Staff (ACS), ACS Supervisors (ACSS), and Veterinary Staff (VS) at the Rutgers University facilities.

**OBJECTIVE:**

The objective is to describe the testing procedures of animal drinking systems to ensure animals at Rutgers University facilities are receiving drinking water in accordance with the Guide for the Care and Use of Laboratory Animals.

**PROCEDURES:**

**A. Supplies**

1. ATP sample swabs
2. Sterile Falcon tubes – 50 ml conical tubes
3. BD BBL blue top culture swabs
4. Disposable (e.g. nitrile) gloves
5. Clean large volume container, non-grommeted cage or bucket
6. Sharpie marker pen

**B. Options for testing**

1. ATP testing – performed in-house
2. Microbiological culture - Submit to a diagnostic laboratory (no preferential order)
    i. Antech
    ii. Charles River (CRL)
    iii. IDEXX

**C. Method: Sample Collection for In-house ATP or Lab submission**

1. At least annually, water samples will be collected for evaluation of microbiological contamination by either 1) in-house ATP monitoring or 2) submission to a diagnostic lab, for colony forming unit (CFU) culture and identification, using sampling and submission instructions provided by the approved vendor.
2. Samples from 2-3 locations from each facility will be collected. Examples of sampling locations include:
    a. Water lines before and after water chlorination
    b. Bottle fill stations/ hoses

c. Unused clean water bottles - sterile or non-sterile
d. Hydropacs
e. Water line from racks closest to water source/treatment
f. Water line from racks farthest from water source/treatment
g. Random water valves from empty rack cage docking locations where water lines are not accessible
h. Water holding tanks
i. Tap water faucets

3. Disinfect external accessible surfaces of water sample source points (e.g. faucets/valves/outlets) using available facility disinfectants (e.g., Peroxigard (hydrogen peroxide), Clidox spray, Iradecon) and gloves. Follow manufacturer labeled disinfectant contact times before opening source point.
4. Open water source point and allow water to run for approximately 1 to 2 minutes prior to collecting samples.
    a. For rack water line sampling, collect pre sample water into large container
5. Carefully introduce opened sterile sample collection container (e.g. Falcon Tube) into the direct water stream, paying close attention to not touch the top of sample container or the inside of the lid to avoid sample contamination.
6. Allow container to fill without overflowing and remove from water stream.
7. Replace sample container lid or cap.
8. Securely close water source point
9. Label sample collection containers with:
    i. Date of sample collection
    ii. Location of sampling
    iii. Initials of the person collecting the sample
10. **For in-house ATP testing:**
    a. Water may be tested with available ATP testing swabs, readers, and software (e.g., Charm Sciences or Accupoint). Manufacturer instructions for sampling should be followed.
    b. Insert ATP water testing swab into the water sample and follow manufacturer instructions for exposure.
    c. Follow Manufacturer instruction for sample activation and introduction into the ATP reader device.
    d. Obtain ATP reading per manufacturer instructions
    e. Record/save results for entry/upload to software database
11. **For Diagnostic lab submission:**
    a. Collect at least 1x 50 ml of water for submission to Antech, and 2x 100 ml of water for submission to Charles River
    b. Alternatively, culture swabs (e.g., BD BBL blue top culture swabs) can be placed directly into the water stream or directly into the bottle/tank water for sample collection. Swabs are the recommended method for sampling water in containers due to possible biofilm formation.
    c. Complete diagnostic lab sample submission form.
    d. Where indicated, CFU panels should include testing for total coliforms, aerobic bacteria, and other organisms which lead to biofilm build-up.
    e. Package for mail out to lab.
12. Compile results for review by area Veterinarian.
13. Expected results are 0 (zero) ATP RLU or Negative growth on culture
14. Positive or unexpected results may be repeated for confirmation and are reported to the Attending Veterinarian.

15. Investigation into source of contamination and corrective action plan is development and implemented followed be rechecking of water. Microbiological testing may be performed as part of investigation where >0 ATP results are identified.

**Appendix:**

**Municipal Water Companies Supplying Animal Facilities**

| CAMPUS | WATER SYSTEM NAME | PWSID | WATER QUALITY REPORTS |
|---|---|---|---|
| Busch/Livingston | NJ American Water – Raritan | NJ2004002 | Busch/Livingston Water Quality Reports |
| New Brunswick | New Brunswick Water Dept. | NJ1214001 | New Brunswick Water Quality Reports |
| Camden | City of Camden | NJ0408001 | City of Camden Water Quality Reports |
| Rutgers Newark | Newark Water Dept. - Wanaque | NJ0714001/NJ1431001 | Newark Water Quality Reports |
| RBHS Newark | Newark Water Dept. - Pequannock | NJ0714001/NJ1613001 | Newark Water Quality Reports |

More current water system testing data can be found on the NJDEP WaterWatch website by entering the water systems PWSID.