



**Division of Research
Comparative Medicine**

Date Released: 2/2016

Version: 2

Date Last Revised: 8/4/2016

SOP #505

Aquatic Turtle System Maintenance/Sanitization

SCOPE: This SOP is applicable to all Comparative Medicine (CM) personnel responsible for the maintenance of the turtle tanks in room 110.

SOP OWNER: Facility Manager

PURPOSE: To outline the general in-house maintenance for the turtle tanks.

LOCATION: 35A, room 110.

Approved by: Sylvia Gografe, DVM, PhD Director Comparative Medicine

References

1. *Guide for the Care and Use of Laboratory Animals*. National Research Council; National Academy Press, Washington, D.C., 2011
2. Public Health Service Policy on Humane Care and Use of Laboratory Animals. OLAW (NIH) 2015
3. *Laboratory Animal Medicine*. JG Fox, LC Anderson, G Otto, KR Pritchett-Corning and MT Whary, Academic Press, 3rd Edition, San Diego, CA, 2015
4. *Red-Eared Sliders*. Katrina Smith, TFH Publications, Inc, Neptune City, NJ, 2011

I. RESPONSIBILITIES

- A. Attending Veterinarian (AV) and Director

1. Directs CM personnel regarding personal protective equipment.
2. Assures that CM personnel is appropriately trained and adhere to procedures as outlined in this SOP.
- B. Training Coordinator/Administrative Assistant
 1. Assures that CM personnel is appropriately trained and adhere to procedures as outlined in this SOP.
- C. Facilities Manager (FM)
 1. Assures that responsible Animal Care Technicians are appropriately trained and implement procedures as delineated in this SOP.
- D. Animal Care Technician (ACT)
 1. Adhere to procedures as outlined in this SOP or as directed by Facility Manager and/or AV.
 2. Document all activities as outlined below in section Recordkeeping.

II. GENERAL

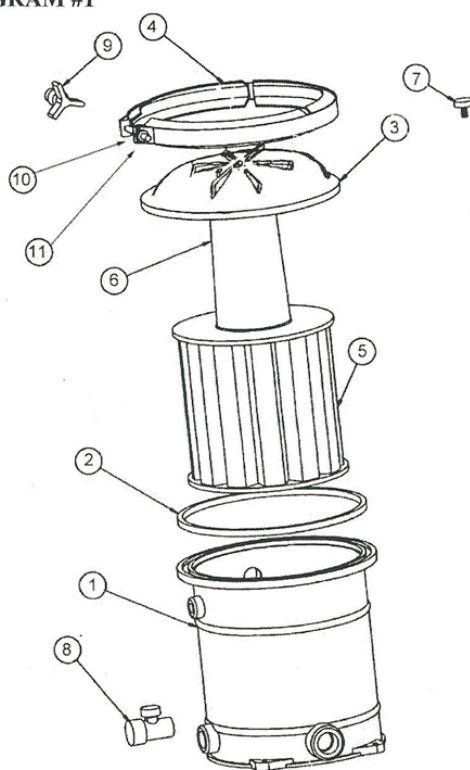
- A. **NOTE:** do not use any detergents or chemicals to clean anything that will come in contact with the tanks or turtles except: 10% bleach (mixed daily), 3% peroxide, or 1:50 diluted chlorhexidine. Always rinse thoroughly!
- B. Rinse any nets and/or brushes thoroughly prior to use. Use nets and brushes designated for turtle use only. After use, place all nets and brushes into disinfectant (Netsoak).

III. PROCEDURE

- A. Daily
 1. Inspect the tank water. Water depth should be at least two times the width of the largest turtle's carapace, and the level will be marked with a non-toxic marking on the inside of the tank. Add dechlorinated water if needed. Remove any floating debris with designated net. If there is any build up on the tank sides or bottom, scrub with the designated tank brush. If there is debris at the bottom of the tank, use the siphon to suck it out into the sink or scoop it out with the designated net.
 2. If the water is discolored or smelly, see section *B.2.i How to Clean Your Filter* below on how to remove filter and replace the carbon in the filter.
 3. Inspect the filter. If there is a detritus build-up or the water flow appears restricted, see section *B.2.i How to Clean Your Filter* below on how to remove and clean the filter.
 4. **Note:** Turn lights off prior to moving them into the vertical position to avoid damaging your eyes. Inspect the lights. Wipe as needed and report any bulb issues.
 5. Inspect the pump for normal operation.
 6. Check the system for leaks.

7. Inspect enrichment devices for sharp edges, and remove any hazards.
 8. Check water temperature. It should be 72-78 degrees Fahrenheit. If the temperature is too low or high, compare it to the air temperature via the Edstrom Watchdog system and alert a supervisor.
 9. If any issues are found, mark it in the health/environment check sheet and alert the FM and AV.
- B. Weekly or more often
1. If any of the enrichment materials appear dirty or grimy, rinse them off.
 2. Clean the filter
 - i. HOW TO CLEAN YOUR FILTER
 - a. See diagram below

DIAGRAM #1



Item #	Description	Part#
1	Housing	IS02580
2	O-Ring	IS02419
3	Filter Lid	IS02584
4	Stainless Steel Clamp Ring	IS02552
5	Cartridge (100 Micron for Model 522)	IS02418
	Cartridge (25 Micron for Models 530 & 533)	IS02330
6	1.5 lbs Activated Carbon	IS02456
7	Vent Knob	IS02445
8	Drain Valve	IS01950
9	Clamp Knob	IS02554
10	T-Bolt	IS02553
11	T-Bolt Nut	IS02432

- b. Stop the pump to stop the water flow to the Nu-Clear Filter. Shut off any valves.

- c. Drain water as need from the filter and plumbing by placing a bucket under the *Drain Valve (8)* at the bottom of the front of the filter. Open the *Vent Knob (7)* and the valve on the *Drain Valve (8)* and allow the water to drain out of the plumbing as well as several inches below the top of the filter body.
 - d. Remove the *Stainless Steel Clamp Ring (4)* by turning the *Clamp Knob (9)* until the Clamp Ring Latch releases from the *T-Bolt (10)*. If the *Stainless Steel Clamp Ring (4)* has not released, then insert a blade screw driver under the U-segment of the Clamp Ring Latch and twist to loosen the *Ring*.
 - e. Pull firmly (straight up) on the *Vent Knob (7)* to remove the *Filter Lid (3)*.
 - f. Remove the *Cartridge (5)*.
 - g. Remove the *Premium Activated Carbon (6)* from center of cartridge. Replace the *Premium Activated Carbon (6)* if needed (monthly).
 - h. Rinse the *Cartridge (5)* according to water parameters. If parameters are off, rinse the cartridge using a strong stream of tap water directed between pleats. If parameters are within the guidelines, fill a 5 gallon bucket with the current tank water, submerge cartridge 5 times to rinse in order to maintain the biofilter.
 - i. Replace the *Cartridge (5)* in the Nu-Clear Filter and press down firmly to seat it over the bottom pilot.
 - j. Replace the *Premium Activated Carbon (6)* in the center of the *Cartridge (5)*.
 - k. Make sure the *O-Ring (2)* is seated evenly in the groove in the *Housing (1)* and then re-install the *Filter Lid (3)*.
 - l. Reinstall the *Stainless Steel Clamp Ring (4)* around the *Filter Lid (3)*. Engage the *T-Bolt (10)* in the Clamp Ring Latch and tighten with the *Clamp Knob (9)*.
 - m. Open any in/out valves and start pump so water flows thru the Nu-Clear Filter while using the *Vent Knob (7)* to purge any air trapped under the lid (*then re-tighten*).
- C. Monthly or more often
- 1. Clean pump.
 - i. Remove pump from system
 - ii. Remove filter and rinse the debris off with plain tap water.
 - iii. Remove impeller housing cover
 - iv. Remove impeller and magnet, inspect for damage, and rinse with plain tap water.
 - v. Rinse out impeller housing with plain tap water and reassemble pump. Reinstall the pump in the system.
- D. Biannually or more often

1. Replace the UVB light bulbs and update the "Date Replaced" label on the corresponding bulb.
2. Oil the pump
 - i. Disconnect from power
 - ii. Lubricate the motor's sleeve bearings 2-3 drops of SAE 20 weight non-detergent oil, oil holes located on top of each motor
 - iii. Dissolve any lime with Lime Off and rinse thoroughly.
 - iv. Reconnect power
- E. When a tank is emptied of occupants
 1. Start by draining the entire tank. Remove and rinse *Cartridge (5)* by using a strong stream of tap water directed between pleats Replace filter.
 2. *Premium Activated Carbon (6)* filter and any additional media will not be reused for new arrivals. After removing *Cartridge (5)*, dispose of old *Premium Activated Carbon (6)* filter and replace.
 3. Drain and scrub tank and enrichment thoroughly with designated brush.
 4. Rinse tank and enrichment devices
 5. Refill tank with a 10% bleach solution, making sure the enrichment devices are fully submerged. Turn on pump to cycle bleach water through the system.
 6. Drain after 24 hours and rinse tank and enrichment devices.
 - i. After the tank of bleach water is drained, refill halfway with fresh water and run pump for 10 minutes. Repeat 2 more times.
 7. If a new shipment of animals is expected, refill tank with fresh water and treat with dechlorinator. Replace the charcoal filter and any biofilter media. Run the system for 24-48 hours prior to animal arrival.
 8. If a new shipment is not expected, keep the tank drained and cover the tank with a clean tarp.
- I. **RECORDKEEPING**
 - A. Complete daily check sheet and sign the task calendar.
 - B. If any discrepancies are found, note them in the *Animal Health and Environment Concerns* binder and alert the FM and AV.

Review Date	Revision Date	Revision Number	Description of Revision
8/4/16	8/4/16	2	Clarified the cleaning process