State of Wisconsin
Department of Natural Resources
Manual Code # 9183.1 Boat, Gear, and Equipment Decontamination and Disinfection Protocol

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Rescinds and replaces: 9183.1 Date 04-10-2015 Approved by OMT: 04-10-2015

I. SCOPE

This manual code applies to all Department of Natural Resources employees moving boats, gear, and equipment between waterbodies and/or crossing a barrier while moving from downstream to upstream on the same waterbody or a connected waterbody, whether or not the presence of aquatic invasive species is known. This manual code outlines the minimum requirements to be followed by employees, and **does not preclude employees from taking additional actions.**

Employees will require any agents or service providers through the specific contract or agreement confering that agency status or engaging that service provision to follow this manual code. Compliance with this manual code may be considered reasonable precautions as defined by s. NR 40.02(44), Wis. Adm. Code. Manual Code 9183.1 was developed in 2007 to provide department employees boat and gear disinfection guidelines. Based on new research and discoveries, Manual Code 9183.1 was amended in 2015 to improve the department decontamination/disinfection policy. This manual code will be effective on ~~insert date~~. 6/16/16.

Employees are advised to include this manual code and associated BMPs requirements in applicable permits where allowed by the underlying regulatory authority or agreed to with the permitte. Each permitting program is subject to its own statutory and code standards that must be assessed when considering decontamination/disinfection requirements.

II. POLICY

It is the department's policy to follow proper protocol for decontamination/disinfection to ensure that employees are minimizing or eliminating the risk of spreading aquatic invasive species and/or pathogens through work activities, and to comply with ch. NR 40, Wis. Adm. Code, s. NR19.055, Wis. Adm. Code, and ch. 23, Wis. Stats.

III. DEFINITIONS

"Agent" a department or agency of this or another state, federal agency, county, town, corporation or individual that has been expressly delegated by statute, rule or written contract to act under full or partial authority of the department.
"Aquatic invasive species" has the meaning given in s. NR 40.02 (3m), Wis. Adm. Code, that aquatic invasive species are any invasive species that dwells in water or wetlands.
"Barrier" is a natural or human made structure which does not allow the migration of aquatic organisms up to the 100 year event. Examples include dams or waterfalls. Dams with locks are excluded from this definition as they allow for migration.
"Connected waterbody" A series of lakes or flowages which have a connection which is commonly navigated by motorized craft and which have a common water level shall be considered a single connected waterbody.

"Decontamination" is the process of removing invasive species or materials that may contin or transmit invasive species.
"Disinfection" is a method of decontamination that destroys or kills all forms of an invasive species that may be present, whether or not the presence is known.
"Employee" An employee is any person who receives remuneration for services rendered to the state under an employer-employee relationship (e.g. permanent classified, limited term employee (LTE), project, seasonal, unclassified employees).
"**Invasive species**" has the meaning given it in s. 23.22(1)(c), Wis. Stats., and s. NR 40.02 (24), Wis. Adm. Code, where "invasive species" means nonnative species including hybrids, cultivars, sub specific taxa, and genetically modified variants whose introduction causes or is likely to cause economic or environmental harm or harm to human health, and includes individual specimens, eggs, larvae, seeds, propagules and any other viable life-stages of such species. For "invasive species" fish, s. NR 40.04 (12a), Wis. Adm. Code, includes all nonnative species, but excludes established nonnative fish species.
"Locks" a device used for raising and lowering boats, ships, and other watercraft between stretches of water or different levels on river and canal waterways.
"Service provider" includes contractors, volunteers, intern, any non-DNR employee that requires access to networks, Information systems, data or facilities.
"Waterbody" means any spring, stream, pond, lake, or wetland.

IV. PROCEDURE

A. The following decontamination and disinfection steps are to be taken every time a boat, equipment, or gear is moved between waterbodies, wetlands, and/or crosses a barrier while moving from downstream to upstream on the same waterbody.
   1. Decontamination: The following processes must be used to clean equipment prior to moving boats, gear, and equipment from a waterbody.
      a. Inspect and manually or mechanically (preferably using a stiff bristled brush) remove aquatic plants, animals, and mud from your boat, trailer, equipment, boots, and gear.
      b. Drain all water from your boat, motor, live well, bilge, and transom wells, as well as from your equipment and gear, including but not limited to tracked vehicles, barges, silt or turbidity curtain, hoses, sheet pile and pumps.
      c. Dispose of unwanted plants and animals in an appropriate way (e.g. compost, bag and landfill, etc.). Disposal methods must ensure that no living plants, animals, or propagules are transported to other waterbodies, or rereleased into the waterbodies they came from.
   2. Disinfection: One of the below disinfection processes (a. – d.) must be used following decontamination. When working in wetlands on foot, disinfection is mandatory after returning to the vehicle and employees must be cognizant of open waters. **When working in waterbodies known to contain specific invasive species, it is mandatory to use a disinfection method that is effective for that species. See the BMPs for information on species-specific disinfection.** To determine what invasive species are present, follow the guidance on the manual code website: http://dnr.wi.gov/topic/Invasives/disinfection.html. The best disfection methods should be used when a species is suspected, but not yet confirmed. When there are no specific AIS listed on the web site for the waterbody, and there are no other AIS

suspected where work or an activity will be conducted, compliance with any of the disinfection methods below (IV.2.a.-IV.2.d.) is sufficient.

a. Store dry for 5 consecutive days after cleaning with soap and water and/or high pressure water;
b. Wash with ~212° F water (steam) or ≥140 ° F water;
c. Apply a 500 ppm Chlorine (sodium hypochlorite) solution for 10-minute contact time. Household bleach is generally 5.25% sodium hypochlorite so mix 1.22 fl oz or 2.44 tablespoons per gallon water. Consult the chlorine directions in the B MP document for guidance on measuring products with different sodium hypochlorite concentrations: https://dnrx.wisconsin.gov/swims/downloadDocument.do?id=126473962 or
d. Apply a 2:100 solution (2.7 ounces or 5.4 tablespoons per gallon water) of Virkon Aquatic® for 20 minute contact time.

B. Safety Precautions for disinfectant use:

1. All employees who handle steam cleaners shall:
   a. Wear heat resistant gloves.
   b. Depending on the type of steamer used, nse additional heat resistant personal protective equipment (PPE) as recommended.
   c. Refer to the equipment's operation manual for recommended PPE.
2. All employees who handle, mix, or use chlorine solution shall:
   a. Receive and be required to read a copy of the product Safety Data Sheet.
   b. Wear nitrile gloves.
   c. Have an emergency eyewash station or eye wash solution readily available in the immediate area. A permanent is preferred, but a temporary is acceptable.
   d. Wear eye protection meeting ANSI Z87 (safety glasses) while mixing and spraying solution. Safety sunglasses are acceptable.
   e. Stay upwind from the spray.
3. All employees who handle, mix, or use Virkon® Aquatic shall:
   a. Follow the same precautions listed above for the handling of chlorine solution and also splash goggles and/or a face shield while mixing and spraying solution.
   b. All employees who choose to wear a dust mask respirator when handling Virkon® Aquatic in powder form, may do so in compliance with the DNR Respiratory Protection Program Handbook MC 9180.5 Voluntary Use requirements. Specifically, Appendix D. Review entire DNR Respiratory Protection Handbook MC 9180.5 (http://intranet.dnr.state.wi.us/int/mb/hBooks/HB9180-5.pdf). These employees mnst complete the Dust-Mask Respirator Voluntary Use Agreement: http://intranet.dnr.state.wi.ns/formscatalog/ffDispFormImage.aspx?FormID=13869.
   c. Be aware that sulfamic acid is an active ingredient in Virkon® Aqnatic. Employees with allergies to sulfamic acids should consult a physician.
4. Employees working with agents, service providers, or applicable permitees, will require through permit, contracts or agreement, compliance with disinfection safety practices that meet applicable state and federal laws.

C. Special Instructions and Supplemental Information

1. Disinfection measures are not needed for law enforcement or fire suppression equipment in emergency situations.

2. In cases where boats and gear return to state hatcheries, disinfection should be done in a location away from ponds and water supplies to prevent disinfectant or untreated water from entering those areas.
3. Every effort should be made to keep debris, disinfection solution, and rinse water out of surface waters, as well as potential transport routes (e.g. ditches, storm drains, etc.). Rinse water should be obtained from a clean source (i.e. municipal, bottled, well, etc.).
4. For chlorine solution:
   a. Once mixed with water, chlorine breaks down within 24 hours and more quickly in sunlight and when in contact with organic material. Because of this, chlorine solutions must be mixed the same day they are to be used.
   b. Chlorine solutions are corrosive to metal and rubber.
   c. Chlorine solutions are toxic to fish at the required concentration, so rinse equipment after disinfection or neutralize the chlorine solution. To neutralize, spray sodium thiosulfate in an 800 ppm solution (3 grams per gallon of water) on all surfaces of equipment after the disinfection period is over. Rinse with clean water to remove any remaining sodium thiosulfate. Use the same safety measures for sodium thiosulfate as required for chlorine solution.
5. For Virkon® Aquatic solution:
   a. Virkon® Aquatic solutions are stable for seven days, but will gradually lose activity over time, especially in the presence of organic debris and UV light. Therefore, remove all sediment from equipment before disinfection, soak equipment when possible, and mix solutions once per week. Virkon® Aquatic concentration test strips are available.
   b. Virkon® Aquatic is not corrosive at the working concentration according to product labeling.
   c. Because Virkon® Aquatic contains an acid, it should not be mixed with alkaline compounds such as chlorine solutions. A clean water rinse should be applied between treatments if both methods are used.
   d. Virkon ® Aquatic does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
   e. Virkon-S is not recommended for use in aquaculture and its label will no longer carry EPA approval for aquaculture claims.

D. Sources of disinfectants and personal protective equipment (PPE) for state employees:
1. State employees should check WISBUY: (https://solutions.sciquest.com/apps/Router/Login?OrgName=WisconsinMarketPlace&tmstmp=1410786596784) to see if the product needed is available from one of the contracts.
2. If the product cannot be obtained from a contract on WISBUY, check VendorNet at: (http://vendornet.state.wi.us/vendornet/procman/prob2b.asp), to see if there is a contract that can supply the product.
3. If there is no mandatory contract or contract of convenience that can supply the products, state employees should follow the guidelines found on the DNR Purchasing Website. (http://intranet.dnr.state.wi.us/int/at/fn/pc/how/index.html)
4. Employees needing assistance navigating the systems above may contact one of the DNR the Best Management Practices document Agents at: (http://intranet.dnr.state.wi.us/int/at/fn/staff/pa/index.html)

5. See the Best Management Practices document for additional guidance and supporting references: https://dnrx.wisconsin.gov/swims/downloadDocument.do?id=113967385.

E. Further information on decontamination safety and the efficacy of disinfection methods can be found within the manual code supplemental documents located at the following link: : http://dnr.wi.gov/topic/Invasives/disinfection.htinl. Information on this page will be updated independently from manual code revisions whenever new information on decontamination methods becomes available