**Procedures for applying pesticide formulation to retention ponds**

**Treatment equipment**

* Contaminant pads
* Warning signs
* Pesticide formulation
* Chemical mixing sheets
* Balance
* Plastic cylinders [for <1 container volume of pesticide]
* 1 jon boat (with load rating of at least 750 pounds) or bucket boom
* 1 trolling motor (set at 12” depth)
* 2 batteries (trolling motor, pressurized tank)
* 5-gallon buckets
* 1 30-gal pressurized sprayer tank
* 1 PVC boom-in-basket or pontoon boom attached to 150’ sprayer hose or PVC boom attached to Z Boat
* 4 5-gal carboy of well or tap water for pressurized tank rinsing
* 1 3-gal sprayer
* 2-3 100-150’ lengths of ¼” braided nylon rope
* Decontaminant tank
* Generator and gas [to run pump]
* Scrub brushes
* Nitrile or rubber gloves
* Rubber boots
* Apron or Tyvek coverall
* Eye protection (safety goggles, face shield) and eye wash bottle
* Absorbent or kitty litter, shovel, and trash bags (MDNR)
* Safety Station (see 2022 MDNR\_Chemical Treatment\_Safety station pump SOP)

**Personal Protection Equipment (PPE) procedures**

1. Personnel should wear nitrile or rubber gloves, rubber boots or waders, eye protection, and apron as a barrier to concentrated pesticide.
2. PPE should be changed between sampling sites.
3. If traveling between sites, PPE should be stored in plastic or rubber containers in pick-up bed [not in passenger space].
4. Disposable PPE can be disposed as residential trash.
5. After use, non-disposable PPE (e.g., rubber boots or waders) should be rinsed with tap water to remove sediment from equipment then triple rinsed with well or tap water.
6. If contaminated, clothing should be laundered separately with heavy-duty laundry soap twice in hot water. A third empty cycle in hot water should be run thru machine after clothes have been cleaned. If clothing is completely saturated in pesticide, do not launder; double-bag and dispose of clothing.

**Chemical mixing for large ponds**

1. Fill 30-gal pressurized tank one-third full, 4 5-gal carboys and 1 sprayer with tap or well water [may be done day before treatment].
2. Set-up booms or Z Boat at edge of pond water.
3. Set-up containment equipment.
4. Place warning signs around pond to be treated.
5. Review chemical mixing sheet for the volume of water and pesticide to treat pond.
6. Transport pesticide containers to containment pad in 5-gal bucket to mixing station.
7. Pour volume of pesticide needed to treat pond into pressurized tank.
8. Tripe rinse each pesticide container into the pressurized tank.
9. Fill tank with tap or well water to total treatment volume.
10. Close lid and attach tank to battery to initiate pressurization and keep solution agitated. Close value for hose and turn-on pump to agitate solution for about 10-30 minutes prior to initiating chemical application.
11. Begin treatment of ponds as soon as solution is well-mixed in tank.

**Chemical delivery for ponds using Bucket or Pontoon boom or Z Boat**

1. Review ‘flight plan’ or delivery path for pond.
2. Position treatment crew around pond. Crew members should have rope to pull boom basket or be positioned at tank and be ready to deploy 100-150’ hose.
3. Crew supervising chemical delivery should notify flight captain when ready for treatment to begin.
4. Launch boat or boom.
5. When crew ready, one crew member will open value of tank.
6. Second crew member will observe solution flowing out of tank before dropping bucket into pond.
7. Follow flight plan to deliver chemical.
8. When pressure drops due to emptying of tank, turn off tank.
9. Remove lid from tank.
10. Using sprayer, rinse sides of tank with tap or well water.
11. Fill tank with 5-gal of tap or well water using one of 5-gal carboys.
12. Follow flight plan to deliver rinsate.
13. Repeat tank draining procedure, rinse procedure, and rinsate delivery two additional times.
14. Decontaminate equipment, as needed.

**Sampling gear clean-up between sampling locations and for gear storage**

1. Rinse sampling gear with well or tap water in pond or on containment pond, brushing off all sediment particles or debris. Triple rinse with well or tap water.
2. Air dry. Place in sun for 24 hrs after use.
3. Store cleaned equipment as directed by manuals.

**Transfer of data**

1. Document field operations associated with sample collection on field sampling sheets or field notebooks.
2. Scan data and email or mail data sheets/notebooks to CERC.
3. Transfer any digital photographs of the sample sites and collection.

*Trolling motor and battery*



*Boat treatment rig*

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*Pressurized tank and battery; carboys and sprayer for rinsing tank*



*Boom for boat rig*

*Boom-in-a-bucket*

*Containment Pad- Large ponds*



*Containment Pad- Small ponds*

