Best Management Practices: Emergency Standards

Post-fire – Impacted Pool Water Management

Background

Studies suggest that wildfires can volatilize pollutants that are in buildings and have been sequestered by plants depositing them from the smoke and ash; these pollutants include heavy metals, polycyclic aromatic hydrocarbons (PAH), nitrites and nitrates (Stein, Brown, Hogue, Burke & Kinoshita, 2012). The deposition on the landscape has been shown to happen at much higher than ambient rates and contributes to pollutant loading in our waterways (Burke, et al., 2013; Sabin, Lim, Stolzenbach & Schiff, 2005; Stein, Brown, Hogue, Burke & Kinoshita, 2012). Evidence suggests that pools are impacted in the same way as the surrounding environment. To reduce the potential for additional contamination of our waterways post-fire, we recommend that the following steps be taken when treating pools that have been impacted by fire.

Definition

The process of managing the drainage of outdoor swimming and landscape pools affected by fire impacts after an incident.

Purpose

The purpose of this practice is to:

- Reduce the potential for nutrient, pathogen, metal, PAH, nitrite/nitrate and other pollutant loading from drainage systems into downstream receiving waters.
- Maximize water infiltration into soil.
- Minimize erosion due to discharge of impacted pool water.
- Minimize volume of impacted water discharged from pool.

Conditions where practice applies

This practice is applicable to private lands with pools that have been impacted by fire, fire suppression and/or suppression repair activities.

It applies where there is a suitable discharge location with ample intact vegetation or other applied erosion mitigation measures that will adequately disperse the energy of the discharged water to allow for infiltration of the water and its contaminants into the soil while not supporting overland flow or erosion; OR where a permit has been granted to discharge waters into a municipal sewer system (Do not discharge into the storm drain system).

This practice does not apply to pools being drained for maintenance, or due to overflow from rainwater or overfill.

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Criteria

General Application to Post-fire Impacted Pools

When evacuation orders have been lifted and it is safe to do so:

1. If pool systems will not be operational for an extended period of time due to fire damage, power outage, etc., please call your County Vector Control office to have staff come out and treat your pool to prevent mosquito breeding.

2. Once power is restored and it is safe to do so, clean debris suspended and floating on surface with pool skimmer or net, and bag any debris for disposal.

3. Brush sides and bottom of pool to loosen any contaminants that have adhered to the pool walls.

4. Vacuum pool

5. Backwash and clean filters

    a. Discharge backwash waste to a pervious surface (i.e., gravel, lawn, open space with intact vegetation, gradual enough slope (< 10%) to allow for permeation and no overland flow or erosion. If discharge volume overwhelms lands ability to absorb impacted water move discharge location.

    --OR--

    b. Discharge backwash waste to a municipal sanitary sewer with permit (Do not discharge into the storm drain system).

6. Repeat steps 2-5 as necessary to remove most particulates.

7. If harmful bacteria is of concern due to extended time spent stagnant, super-chlorinate your pool to at least 10 ppm through 1 turnover period and confirm with your local health inspector that the pool is free from bacteriological pathogens.

8. Adjust pH to between 7.2 – 7.8.

9. Adjust free chlorine to a minimum of 2.0 ppm.

10. Ensure the recirculation system is operating properly.

Total Discharge of Impacted Pool

It is not advisable to drain your pool. *If you must* drain your pool it is illegal to drain it into the storm drain systems and may only be drained into municipal sewers with a permit. Before draining pool the following conditions must be satisfied:

- Pool drain discharge area must be evaluated to ensure adequate infiltration and no overland flow or erosion.

- Pool chemistry must be de-chlorinating to 0.0 ppm and neutralize pH to 7.2 – 7.8.

If draining your pool be cautious of hydrostatic pressure on the pool basin structure which can cause it to crack or to be heaved from the ground. You may want to contact a pool service professional if this is a concern.

References

Alberta Health Services, "Reopening Your Pool After a Wildfire" (2016); https://www.albertahealthservices.ca/assets/wf/eph/wf-eh-reopening-your-pool-after-wildfire.pdf

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