Washington State Department of Health (DOH)

Topic: Pool Contamination Guidelines

Feces and Vomit

Pool and spa operators should be aware that fecal matter (stool) or vomit in the pool poses a potential health risk for all pool users. If contamination should occur, the following is a general guide developed for pool operators by (DOH). When applying these disinfecting procedures, use unstabilized forms of chlorine (bleach or cal hypo) rather than stabilized forms of chlorine (dichlor or trichlor).

Step 1 - Evacuation.
Instruct bathers to exit the pool. Close the pool until all steps in this guideline are completed. Somewhat different guidelines are developed by CDC on their healthy swimming website, found at www.cdc.gov/healthyswimming which may also be applied.

Step 2 - Evaluation.
Determine (if possible) who contaminated the pool.

a) **Go to Step 3 if all of these conditions are met:**
The stool is intact, easily picked up, or a victim vomits but illness is not suspected.

b) **Go to Step 4 if one or more of these conditions is met:**
The stool is loose, the stool is not easily picked up, or illness is suspected when a victim is vomiting.

Step 3 – Removal and Disinfection Procedures for Conditions Listed in Step 2a.

a) Remove as much of the feces or vomitus as possible. Use of leaf catchers or leaf rakes is helpful.
b) Vacuum the remaining visible material.
c) Small material that is floating on the surface and cannot be removed by use of leaf catchers or leaf rakes should be pushed toward the overflow or skimmers until all visible material is removed.
d) Spot disinfect the area of contamination with a small quantity of available disinfectant.
   * Mix one oz. of calcium hypochlorite (or 4 to 5 oz. of bleach) to a couple gallons of water applying the solution to affected area.
   * Brush the walls and bottom of the pool in the contaminated area.
e) **Wait approximately 30 minutes** to ensure chlorine levels and pH levels meet the requirements outlined in the water recreation facility regulations, especially in the area where chemicals have been added.
f) Backwash the filter. (Pool operators with vacuum DE [diatomaceous earth] filters may use the **Vacuum DE Filter Option** on the reverse page.)
g) Reopen the pool.

Step 4 – Removal and Disinfection Procedures for Conditions Listed in Step 2b.

a) Follow all the measures outlined in Steps 3 a, b, and c above.
b) Swimming pools; raise the chlorine to a minimum maintained free chlorine residual of 10 PPM and let the water recirculate for a minimum of 25.5 hours. (Refer to the **High Chlorine Dosage Worksheet** on the reverse page if the pool cannot be closed for 25.5 hours.) Spas and wading pools; it is recommended that spas (and small wading pools) be drained, the sides and bottom cleaned, brushed with 100 PPM chlorine, refilled and balanced.
c) Backwash the filter.
d) Reopen the pool.

Step 5 – Recordkeeping.
When incidents of contamination occur document what you did to correct the situation. Maintain this record with your daily operating records. An **Incident Report** section is provided on the reverse side of this guide.

Blood

If an incident occurs resulting in minor cuts and scrapes to a bather, verify that disinfection levels met rules at the time of the incident.
If there is a serious injury resulting in significant blood loss in the pool, follow the procedures outlined in Steps 1, 3 d, e, g, and

Note: For incidents resulting in feces, vomitus, blood, or other bodily fluids on the pool deck or in the locker rooms, refer to Washington State Department of Labor and Industries for proper bloodborne pathogens precautions and procedures.

HIGH CHLORINE DOSAGE WORKSHEET

Use only after contamination of pool by feces or vomitus.
Complete the worksheet and keep it in your log book under the incident date.

CAUTION:

- You are using this worksheet because your pool has been contaminated by feces or vomitus AND the responsible person is ill or suspected to be ill, OR the stool or vomitus is loose or spread into a large area.
- Use this sheet only if the pool cannot be closed for 25.5 hours (see Step 4b on the other side of this guide).
- Be aware that you will be trying to reach a high chlorine residual. After determining the needed chlorine level, you should contact your swimming pool equipment supplier to ensure this level will not have a harmful effect on the pool or equipment.
- Do not use this procedure unless you are familiar with calculating and reaching high chlorine residuals.
- Do not use this procedure unless you understand how to use your chlorine test kit to accurately read high chlorine residuals.
- Do not use this procedure unless you can quickly lower high free chlorine residuals to less than 10 PPM.

Time and Concentration Calculation:
Use this chart to determine the amount of time you wish to keep the pool closed and the <u>minimum</u> concentration of chlorine necessary for that time to ensure bacteria from the incident are killed. Times different from the chart can be calculated by using the formula: 15,300 ÷ T = C **or** 15,300 ÷ Time in minutes = the Concentration of chlorine in PPM.

TIME	6 HOURS	8 HOURS	10 HOURS	12 HOURS	16 HOURS	20 HOURS
CHLORINE	45 PPM	32 PPM	26 PPM	22 PPM	16 PPM	13 PPM

Amount of Chlorine Needed:
The amount of chlorine needed to achieve the PPM you have determined will depend on: 1) the volume of water in your pool and, 2) the concentration of the chlorine you are using. Read the product information with the chlorine you are using, or contact your pool equipment supplier. You might consider using chlorine made for shocking which would dissipate quickly. The pool cannot be opened until the free chlorine level is below 10 PPM.

Bromine pools: Use chlorine to obtain the high dosage.

****

VACUUM DE FILTER OPTION

Facilities that take a significant time to backwash may choose this option in lieu of Steps 3 f and g, (<u>not suitable for Step 4 conditions</u>):

- Increase the free available chlorine (FAC) in your filter tank to 20 PPM.
- Reopen the pool.
- Backwash your filter at the end of the day.

****

CONTAMINATION INCIDENT REPORT

Date of Incident: ___/___/___. Material in the pool was (check one): ☐stool ☐vomit. Material was ☐intact ☐spread into the pool. The person responsible: ☐was ill ☐was not ill ☐was not found. Free chlorine level at the time of the incident: ____ PPM. ☐The pool was not closed. ☐The pool was closed for _____ hours and the free chlorine level was maintained at _____PPM. The amount and type of chlorine added: _____ (lbs., ounces, quarts) of _____. The pool was closed at _____☐AM/☐PM on ___/___/___. The pool was reopened at _____ ☐AM/☐PM on ___/___/___. The free chlorine level at the time of opening was ____PPM (pools with a free chlorine level above 6 PPM cannot be opened).

Signed: _____