



**LOS ANGELES UNIFIED SCHOOL DISTRICT
BULLETIN**

TITLE: **Maintaining Aquatic Safety in Schools
Having Swimming Pools**

NUMBER: BUL-1454.2

ISSUER: Gerardo Loera, Executive Director
Office of Curriculum, Instruction and
School Support

DATE: October 17, 2014

ROUTING
All Locations
Local District Superintendents
Local District Directors of Social
Services
Local District Facilities Director
School Site Administrators
Athletic Coordinators
Plant Managers

POLICY: A certificated physical education teacher may provide aquatic instruction at pools only while a lifeguard is on duty. A lifeguard must be on duty whenever the physical education teacher or coach has students engaged in pool activities. Neither a coach nor a physical education teacher may serve in a dual capacity as instructor and lifeguard at any time.

MAJOR CHANGES: This Bulletin revises Bulletin No. BUL-1454.1 of the same title, dated July 18, 2006, and clarifies the District’s policy regarding safety regulations for the instructional aquatic programs conducted in elementary, secondary, and adult schools, and for interscholastic aquatic teams.

Contact persons and telephone numbers have been updated.

BACKGROUND: Aquatics are an integral part of both the elementary and the secondary physical education core curriculum. The purpose of the swimming program is to teach students the basic swimming strokes. Since the District offers classes in swimming during the school year at elementary and secondary schools and at several pools operated by the recreation departments of the city and the county, it is of the utmost importance to maintain facility inspections and to follow safety regulations in and around swimming pools. These regulations must be understood by all staff and must be taught to all students prior to in-pool activity of any kind.

Teaching young people swimming skills is important both for immediate survival and for lifelong leisure, yet activities involving water are potentially more hazardous to the well-being of participating students than most other physical education activities.

GUIDELINES: I. WATER SAFETY TEST FOR SWIMMING AND DIVING
(ATTACHMENT A)

Prior to any student using the pool or participating in an aquatics



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program the following must be adhered to and documented.

- A. Each student must pass this test before participating in the instructional swimming program or as an interscholastic swim team member. The test is used to ensure that the student has a thorough understanding of water safety procedures prior to participating in swimming or diving activities. No student is to be allowed in the water until he or she has passed the test with a score of 100 percent. Note: Students with disabilities and/or documented health issues may require test modifications (i.e.: auditory test) to pass the test.
- B. Instructors must contact Student Health and Human Services at (213) 241-3840 for specific procedures related to students with special needs or health issues.
- C. A complete explanation of general and specific local water safety procedures, including a question-and-answer session for students, should be given to all class members prior to administration of the test.
- D. To assist students with special language needs, schools are to obtain the assistance of paraprofessionals, volunteers, and peer tutors.
- E. Once a student has passed the test, the instructor must note this fact in the record and keep the completed test on file until the student moves on to another school.
- F. The test is available in English, Spanish, Korean, Armenian, Vietnamese, and Chinese on the Physical Education website.

II. POOL SAFETY INSPECTION FORM (ATTACHMENT B)

- A. During the first week of each school month, the Pool Safety Inspection Form is to be completed and signed by a plant manager/pool custodian and principal. The form is to be filed in the school administrator's office at each school site housing a pool. Submit a copy of each signed form to Dr. Janice Collins at OCISS: Physical Education Office. The forms must be kept on file at both locations for a period of five (5) years.
- B. Pictograms (item 3 on the inspection form) should be mounted on walls by the pool. Two (2) pictograms for "NO DIVING" and two (2) for "NO RUNNING" have been supplied to each pool. Requests for signage should be sent to your local ESC M & O carpentry supervisor.
- C. Deck signs (item 4 on the inspection form) should be repainted annually. Requests should be directed to the ESC Maintenance



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Office. One stencil each for painting “SHALLOW WATER,” “DEEP WATER,” “NO DIVING,” and “WALK” signs have been supplied to each pool.

- D. The Pool Safety Inspection Form is available on the Physical Education website. Note: If a pool or hydrotherapy pool is permanently closed post signage, “Do Not Enter – Pool or Hydrotherapy Pool Closed to the Public.” as appropriate.

III. EMPLOYEE REQUEST FOR CORRECTION OF SAFETY HAZARD (ATTACHMENT C)

- A. This is a NCR form titled “Los Angeles Unified School District Employee Request for Correction of Safety Hazard,” used by employees to report a safety hazard to the site administrator.
- B. The use of this form is mandatory following each monthly pool inspection that detects any hazards in need of corrections. Only one hazard per form is to be listed.
- C. Copies of the “Los Angeles Unified School District Employee Request for Correction of Safety Hazard” are available from the Office of Environmental Health and Safety (213) 241-3199.
- D. This form must be filled out and given to the site administrator who will proceed to fill out the bottom portion of the “Los Angeles Unified School District Employee Request for Correction of Safety Hazard,” and section “IV” below.

IV. SAFETY OR FIRE HAZARD REPORT (ATTACHMENT D)

- A. The Safety or Fire Hazard Report (Form 28.115) is to be completed by the principal to request the correction of safety or fire hazards on District sites.
- B. The use of this form is mandatory following each monthly pool inspection that detects any hazards in need of corrections. Only one hazard per form is to be listed. Additional forms with other individual hazards may be sent as needed to the Office of Environmental Health and Safety.
- C. Copies of the Safety or Fire Hazard Report (Form 28.115) are available from the Office of Environmental Health and Safety (213) 241-3199.

V. DIVING

- A. Instructional aquatic classes may begin the teaching of diving only after the students have mastered the basic strokes of swimming and the techniques of floating. Diving instruction must be conducted off the sides of the pool.
- B. Race diving used in recreational swimming and interscholastic



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practice and competition must be done only at the deep end of the pool. All starting blocks used for race diving must be installed at the deep end of the pool. The blocks must have fixed mountings for the vertical supports and standing platforms and must be removed from the pool deck when not in use for interscholastic practice or competition. This is a national aquatic practice established by the Aquatic Council of the American Association for Health, Physical Education, Recreation and Dance.

VI. STAFF RESPONSIBILITIES

- A. Certificated Physical Education Teacher (ATTACHMENTS A & E)
The certificated physical education teacher is responsible for the use of the pool during the instructional day; a lifeguard must also be on duty. A teacher may not serve in a dual capacity as teacher and lifeguard. The instructor:
1. Plans and conducts instruction in swimming and water safety skills.
 2. Confirms that each student has passed the Water Safety Test with 100% accuracy and administers the test to students who have not prior to allowing students into any pool. Provides students with disabilities and/or documented health issues with modifications (i.e.: an auditory test) to pass the test.
 3. Contact school nurse and adaptive physical education coordinator (213.241.6200) regarding guidelines for mainstreaming students with disabilities and/or documented health issues prior to allowing students into any pool.
 4. Record and keep the completed test on file until the student moves on to another school.
 5. Confirms that each student has submitted the swimming permission slip (ATTACHMENT E) prior to participating in the swimming program.
 6. Organizes and maintains a safe pool environment.
 7. Ensures that students follow safety guidelines.
 8. Ensures that anyone afflicted with an infectious disease or wearing bandages shall be excluded from all water contact activities.
 9. Is responsible for insuring that every person is out of the pool before leaving the pool area.
 10. Is appropriately attired in aquatic clothing, swim suit, whistle, pool shoes, and cover-up if desired.
 11. Is ready and willing to enter the water to teach, assist, or rescue a student.



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12. Demonstrates safety consciousness by example.

B. Lifeguard

Lifeguard service, as described in Section 116028, Health and Safety Code, shall be provided at public swimming pools. The lifeguard’s sole responsibility is surveillance. Lifeguards serving in this capacity shall have no teaching responsibilities or other duties, which could distract them from supervising the safety of individuals within the pool area designated for lifeguard supervision. Based on the recommendation of the American Lifeguard Association two certified lifeguards, who are at least eighteen years of age, shall be on duty at all times when the pool is open to ensure appropriate supervision of individuals within the pool area designated for lifeguard supervision. Once the facility reaches a capacity of 50 individuals within the pool area designated for lifeguard supervision, a lifeguard will be added for every additional 25 persons to maintain adequate surveillance. The lifeguard:

1. Enforces regulations at a district swimming pool to prevent accidents.
2. Rescues persons in danger of drowning, properly cares for a suspected spinal injury in the water, and administers cardiopulmonary resuscitation and first aid when needed.
3. Performs related lifeguard duties as assigned.

Sample Norm Chart

Lifeguards	Persons in Designated Pool Area
2	1-74
3	75
4	100

Note: At no time shall the number of persons in the designated pool area exceed the maximum capacity.

Additional duties when the pool is not in use:

1. Checks air temperature and chemical content and temperature of water, and bring nonstandard conditions to the attention of persons responsible for pool maintenance.
2. Inspects pool equipment and reports unsanitary, hazardous, or unsafe conditions to pool supervisors or certificated personnel.
3. Performs minor emergency repair, maintenance, and clean-up work required to prevent accidents and to maintain maximum health condition.
4. Answers inquiries and gives information to the public regarding swimming programs and special events.



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B. Plant Manager/Pool Custodian

1. The plant manager/pool custodian shall be responsible for maintaining water quality, including filtration, chlorination and heating by (a) testing for chlorine and pH every two hours and maintaining a record, using the water test log provided by maintenance and operations, in the pool/hydrotherapy pool area and (b) maintaining water temperature at approximately 80° F. Chlorine residual may range from 1.0 p.p.m. minimum to 3.0 p.p.m. maximum. Note: If cyanuric acid or a chlorinated isocyanurate is used, a free chlorine residual of at least 1.5 p.p.m. shall be maintained throughout the pool. PH acceptable range is from 7.2 to 8.0 (recommended range is 7.4-7.6).
2. If a student complains to the teacher or the school nurse of eye irritation as a result of pool use, the teacher or school nurse shall confer with the plant manager/pool custodian to check the chemical levels. If the chemical levels of the pool meet the above criteria, no further action is indicated. If chemical levels are out of range, plant manager/pool custodian shall take immediate action to bring pool chemicals to proper range.
3. The plant manager/pool custodian shall report mechanical problems in the operation of the pool to the Maintenance and Operations Service Call Unit at (213) 745-1600.
4. Completes Pool Safety Inspection Form (Attachment B) during the first week of each school month and file as indicated on the form.
5. Contact Jim King, Maintenance and Operations Swimming Pool Technical Supervisor at (213) 241-6435 for assistance with any technical concerns related to the operation of the pool such as:
 - a. Training/Certification
 - b. Chemical Supplies
 - c. Small Contained Chemical Spills (See section VII, E)
6. For assistance with equipment breakdowns & repairs contact Maintenance and Operations' Service Call Unit at (213) 745-1600.
7. For more information regarding hydrotherapy pools contact the Related Services office at (213) 241-6200.

VII. REQUIRED CERTIFICATIONS

- A. Certificated Physical Education Teacher: The California Health and Safety Code, Division 104, Part 10, Section 116033 (formerly Section 24100.1), requires that certificated individuals responsible



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for swimming instruction shall possess current certificates from an American Red Cross or YMCA of the U.S.A. lifeguard training program or have equivalent qualifications, as determined by the Department of Public Health. In addition, these persons shall be certified in standard first aid and cardiopulmonary resuscitation (CPR) and have either Safety Training for Swim Coaches or Community Water Safety certificates. These must be renewed every three years. Note: The American Red Cross Lifeguarding course includes standard first aid and cardiopulmonary resuscitation (CPR)/ Automated External Defibrillators (AED) and must be renewed every two years.

- B. Lifeguard: The California Health and Safety Code, Division 104, Part 10, Section 116028 requires that a lifeguard possess a current American Red Cross Lifeguard Training Course Certificate or have equivalent certification, any time the pool area is in use.
- C. The school principal completes the District Principal Online Certification to certify, once each semester, that District safety regulations (related to lifeguards, the student safety test, pool signage, pool inspections, etc.) for the instructional aquatic programs and interscholastic aquatic teams as identified in this bulletin have been met. This online aquatic safety certification is due on designated dates in November and March.

VIII. SAFETY PROCEDURES

- A. Procedures to Follow in the Event of a Fecal Spill in the Pool:
Notify the plant manager/pool custodian, principal, and Jim King, Maintenance and Operations Swimming Pool Technical Supervisor at (213) 241-6435. Schools shall follow instructions in ATTACHMENT F.
- B. General Rules
A list of safety rules shall be formulated for each facility. General safety rules shall include, but are not limited to, the following:
 - 1. Students are not to be in or near the pool unless the instructor is present.
 - 2. Running, jumping or diving are prohibited.
 - 3. Spectators in the pool area are to be quiet and must remain at a distance from the edge of the pool.
- C. Posting of Rules and Signage
The required safety rules and signage (i.e: pictograms, shallow water, etc.) shall be posted prominently in the pool area. Emergency Procedures, Emergency Numbers, First Aid and Cardiopulmonary resuscitation (CPR), must be posted on walls.
- D. Pool Covers



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Nonweight bearing pool covers are prohibited at all times.

E. Chemical Spills

Always contact the Office of Environmental Health and Safety (213) 241-3199. Call 911 to report uncontained spills, large spills, or visible fumes.

**RELATED
RESOURCES:**

California Code of Regulations, Title 22, Sections 65501-65551
California Health and Safety Code, Division 104, Part 10, Chapter 5

ASSISTANCE:

For assistance or further information, please contact:
Chad Fenwick, Physical Education Adviser, at (213) 241-4556
Dr. Janice Collins, Physical Education Administrator, at (213) 241-4134
Dr. Susan Tandberg, Director of Curriculum, Instruction, and School Support at (213) 241-5333.



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Attachment A

OFFICE OF CURRICULUM, INSTRUCTION, AND SCHOOL SUPPORT

Student's Name: _____ **School:** _____ **Period:** _____

Grade: ____ **Physical Education Instructor** _____ **Date:** _____

WATER SAFETY TEST FOR SWIMMING AND DIVING

(To Be Completed By Student & Signed By Instructor)

The purpose of this test is to determine the student's knowledge of safety precautions necessary for swimming and diving. ALL STUDENTS must pass this safety test with a score of 100 PERCENT before participation is allowed in the instructional swim program or on an interscholastic swim team. Note: Students with disabilities and/or documented health issues may require modifications (i.e.: an auditory test) to pass the test.

DIRECTIONS: Complete the following statements by printing the correct word or words in the spaces provided.

1. Immediately report all accidents to your _____.
2. Never enter the water or pool area until a _____ is on duty and you have received permission from the teacher.
3. Only _____ person is allowed on the diving board at a time.
4. Diving is never allowed in _____ water.
5. Running, shoving, cutting corners, and other dangerous action are _____ allowed in the pool area.
6. When using diving board, you may only bounce _____ before you dive.
7. Do not call for _____ unless in trouble.
8. Drowning can occur any place where there is _____.
9. Permanent paralysis (not being able to move) due to spinal cord injuries may result from striking your _____ against the bottom or side of the pool or from striking it against some object in the pool.
10. In diving, the parts of the body that provide good protection for the head are the _____ and the _____.
11. Lifeguards protect lives. Do not talk to the _____ when they are on duty.
12. Always swim in a safe _____ away from diving boards and platforms.
13. Pool ladders and steps are to be used only to _____ and _____ the pool.
14. Each _____ is responsible for his or her own personal safety and the safety of others.



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DIRECTIONS: Read the question in the left-hand column. Then find the statement in the right-hand column that best answers the question. Put the letter of the best answer in the space between the parentheses in front of the question.

- | | |
|---|--|
| <p>(E) 1. Why is it dangerous to run in dressing rooms, at entrances to the pool, or on the pool deck?</p> <p>() 2. Why is horseplay (recklessness, fooling around) very dangerous in or around a pool?</p> <p>() 3. Why are safety signs and rules posted in pool areas?</p> <p>() 4. Why is it dangerous to dive into the shallow (low-water) end of a pool?</p> <p>() 5. Why is diving from the side of the diving boards an unsafe practice?</p> <p>() 6. Why shouldn't you try difficult dives which you see others do?</p> <p>() 7. What must you do if you find the diving board is out of adjustments or in need of repair?</p> <p>() 8. Why is talking with lifeguards not permitted?</p> <p>() 9. What is the danger of non-swimmers sitting or playing on safety-cord lines?</p> <p>() 10. Who is responsible for personal safety and the safety of others?</p> <p>() 11. What is required before you may enter the water?</p> | <p>A. There is danger of diving into swimmers and hitting the sides of the pool.</p> <p>B. Each student is responsible for personal safety and the safety of others.</p> <p>C. To remind you of unsafe acts and unsafe conditions which can cause serious accidents?</p> <p>D. Tell the instructor.</p> <p>E. Water causes surfaces to become slippery, a condition which in turn causes people to slip and fall.</p> <p>F. Their attention is taken away from watching the swimmers.</p> <p>G. Because you bump into others and cause serious accidents or injuries.</p> <p>H. They may be pushed into water that is over their heads and be in danger.</p> <p>I. A serious injury could result from hitting the bottom of the pool.</p> <p>J. There is danger in injuring yourself whenever you try to do something you have not yet been taught to do.</p> <p>K. A lifeguard must be on duty and a teacher must be present.</p> |
|---|--|

I have received and understood the instruction on swimming and diving safety. I promise to follow all safety rules, and if I am ever in doubt about any of these rules, I will get the necessary information from my teacher.

SIGNED (Student's Signature) _____ **DATE:** _____

THIS IS TO CERTIFY that: _____

Print Name of Student Above

Has been given safety instructions for swimming and diving and has satisfactorily passed this written safety test with a score of 100%.

SIGNED (Instructor's Signature) _____ **DATE:** _____

ANSWER KEY— STUDENT WATER SAFETY TEST FOR SWIMMING AND DIVING



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Fill in the blank:

1. Instructor
2. Lifeguard
3. One
4. Shallow
5. Never
6. Once
7. Help
8. Water
9. Head
10. Hands and Arms
11. Lifeguards
12. Place
13. Enter and Exit
14. Student

Matching:

1. E
2. G
3. C
4. I
5. A
6. J
7. D
8. F
9. H
10. B
11. K



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Attachment B

**OFFICE OF CURRICULUM, INSTRUCTION AND SCHOOL SUPPORT
POOL SAFETY INSPECTION FORM
(To Be Completed By Plant Manager/Pool Custodian & Signed By Principal)**

School: _____ ESC _____

This checklist is to be used for each pool inspection. The form is to be completed, and filed in the school administrator’s office during the first week of each school month and a copy sent to OCISS: Physical Education Office. Write a number “1” in the **NO** column if the situation can be corrected immediately by site personnel. Write a number “2” if correction requires District funds such as A & I. Hazards should be reported on Attachment D (Form 28.115) and sent to the Office of Environmental Health and Safety (213) 241-3199.

INSPECTION ITEMS	YES	NO	COMMENT
1. Pool rules visibly posted.			
2. Emergency procedures visibly posted.			
3. Pictograms on walls. (NO DIVING, NO RUNNING)			
4. Signs on wall and deck (SHALLOW WATER, DEEP WATER)			
5. Exits clearly marked, easily accessible, and not obstructed.			
6. Self-closing/latching doors and/or gates to egress unlocked during hours of use and locked during nonoperational hours.			
7. Fire extinguisher location clearly marked.			
8. First-aid kit fully stocked and location clearly marked.			
9. Back board and blanket readily available.			
10. Shepherd’s crook mounted vertically at lifeguard station.			



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INSPECTION ITEMS	YES	NO	COMMENT
11. Two (2) life buoys with lines attached.			
12. Phone with outside line in pool area to call fire, police, or ambulance.			
13. Emergency phone numbers posted.			
14. Non-slip surfaces on deck and locker-room floors.			
15. Lane Dividers on reels or hung on wall brackets when not in use.			
16. Decking in good condition with good drainage and free of debris and pool equipment.			
17. Starting platforms securely anchored at the deep end of the pool (used only during interscholastic swim meets and removed when meet is over).			
18. Bleachers or benches in good condition.			
19. Equipment properly stored on shelves and in cabinets in storeroom.			
20. All lights in pool area and locker rooms operating.			
21. Diving board securely mounted with side rails and mounting steps.			
22. Safety guidelines include a lifeguard with nondual duties when the pool is open.			
23. No use of non-weight bearing pool covers. These are prohibited.			
Other:			

Inspected by: _____ Date: _____

Principal's Signature: _____ Date: _____



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Attachment C

**OFFICE OF CURRICULUM, INSTRUCTION, AND SCHOOL SUPPORT
EMPLOYEE REQUEST FOR CORRECTION OF SAFETY HAZARD**

(To Be Completed By Employee & Principal)

This form is to be completed when a hazard or dangerous situation has been noted by an employee. It is the responsibility of the Site Administrator to ensure that follow-up and corrective measures are taken.

EMPLOYEE

To: _____
Site Administrator's Name

This is a request that the following safety hazard be investigated and/or corrected.

Department: _____ Bldg. _____ Room _____

Location of hazard: _____

Description of hazard: _____

Were measures/actions taken to temporarily control the hazard? Yes No

If yes, what? _____

If no, give reason _____

Signed: _____
Employee _____
Date

SITE-ADMINISTRATOR

- 1. Recommendation: _____
- 2. A Safety of Fire Hazard Report, form 28.115 (Attachment D) has been forwarded to the Office of Environmental Health and Safety, 333 S. Beaudry Ave., 28th Floor, Los Angeles, CA 90017 (213) 241-3199
- 3. Referred to the Plant Manager for immediate action.
- 4. Referred to Maintenance and Operations Areas.
- 5. Other (specify) _____

Signed: _____
Principal _____
Date



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Attachment D

SAFETY OR FIRE HAZARD REPORT

KEEP A COPY FOR YOUR FILES

(To Be Completed By Principal)

TO: Office of Environmental Health and Safety, 333 S. Beaudry Ave., 28th Floor, Los Angeles, CA 90017 Phone: (213) 241-3199.

It is requested that the following safety or fire hazard be corrected. (Report only ONE item per form.) (Items reported on Fire Department or Cal/OSHA inspections need not be listed.)

School or Facility: _____

Building: _____ Room#: _____ Grounds Location: _____

Description of Hazard:

Temporary controls have been established for the abatement of this hazard.

Principal Signature

Date

SAFETY SECTION RECOMMENDATION:

Supervisor, Employee Safety Education and Accident Prevention Section

Date

TO: _____

The above hazard appears to be in your area of responsibility. Please indicate below what action is contemplated and return one copy to the Employee Safety Section.

- 1. Funds for the above project have been authorized. Date: _____
2. Work on this project will be initiated on our about. Date: _____
3. Work on this request has been completed. Date: _____

Signed: _____



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Attachment F



LOS ANGELES COUNTY ♦ DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH
Bureau of Environmental Protection
Recreational Waters Program
5050 Commerce Drive, Baldwin Park, CA 91706
(626) 430-5360 Fax (626) 813-3016



Instructions for Management of Fecal Accidents at Public Pools

1. For both formed-stool and diarrheal/loose stool fecal accidents - direct everyone to leave the pool. Close the pool. Do not allow anyone to enter the contaminated pool until all decontamination procedures have been completed. If you have multiple pools that use the same filter, close all pools.
2. For both formed-stool and diarrheal/loose stool fecal accidents - remove as much of the fecal material as possible using a net or scoop and dispose of it in a sanitary manner. Clean and disinfect the net or scoop (e.g., after cleaning, leave the net or scoop immersed in the pool during the disinfection period). Vacuuming stool from the pool is not recommended. If the pool is vacuumed, waste should be directed directly to a sanitary sewer and not through the filtration system of the pool.

Formed stool in pool

3. Raise the free chlorine concentration to 2.0 ppm (mg/L) and ensure the pH is between 7.2 and 7.5 and the water temperature is about 77 °F (25 °C).
4. Maintain the free available chlorine concentration at 2 ppm and the pH at 7.2 - 7.5 for at least **25 minutes**. This is equivalent to a CT value of 50. (For a definition of CT see notation "A" below)

If the pool is using stabilized chlorine or contains cyanuric acid check the cyanuric acid level. If the cyanuric acid level is greater than 50 ppm the pool should be drained and filled with fresh water until the cyanuric acid level is below 50 ppm. Maintain the free available chlorine concentration at 2 ppm and the pH at 7.2 - 7.5 for at least **2 hours**. This is equivalent to a CT value of 240.
5. Ensure that the filtration system is operating during the entire disinfection process and the free available chlorine concentration and pH are maintained at the proper levels.
6. The pool may be reopened after the disinfection process is completed and the free available chlorine concentration is below 5.0 ppm and the pH between 7.2 and 7.8.

Diarrhea or loose stool in pool

3. Raise the free chlorine concentration to 20 ppm (mg/L) and ensure the pH is between 7.2 and 7.5 and the water temperature is about 77 °F (25 °C).
4. Maintain the free available chlorine concentration at 20 ppm and the pH at 7.2 - 7.5 for at least **12.75 hours**. This is equivalent to a CT value of 15,300. (For a definition of CT see notation "A" below)

If the pool is using stabilized chlorine or contains cyanuric acid check the cyanuric acid level. If the cyanuric acid level is greater than 50 ppm the pool should be drained and filled with fresh water until the cyanuric acid level is below 50 ppm. Maintain the free available chlorine concentration at 20 ppm and the pH at 7.2 - 7.5 for at least **60 hours**. This is equivalent to a CT value of 72,000.
5. Ensure that the filtration system is operating during the entire disinfection process and the free available chlorine concentration and pH are maintained at the proper levels.
6. After the disinfection process is completed, the filter should be thoroughly backwashed to a sanitary sewer. The pool may be reopened after the free available chlorine concentration is below 5.0 ppm and the pH between 7.2 and 7.8.



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Attachment F

7. Establish a fecal accident log. Document each fecal accident by recording the following information:
 - Date
 - Time of the event
 - Formed stool or diarrhea
 - Free available chlorine concentration and pH at the time of observation of the event
 - Free available chlorine and pH before reopening the pool
 - Contact time
 - Procedures followed to respond to the fecal accident, including the process used to increase the free chlorine residual if necessary.
8. In the event of contamination with vomitus in a pool, the procedures for a “formed stool” should be followed.

Important Notes!

- A. CT inactivation value (or contact time) refers to concentration (C) of free chlorine in ppm multiplied by time (T) in minutes at a specific pH and temperature. Any combination of chlorine concentration and time may be used to arrive at a particular CT value. For example, a chlorine concentration of 10 ppm for 1,000 minutes has a CT value of 10,000 and is equivalent to a chlorine concentration of 20 ppm for 500 minutes. Both have a CT value of 10,000.
- B. Fecal accident pool closure procedures are based on recommendations by the Centers for Disease Control and Prevention. (<http://www.cdc.gov>)
- C. Short-time closure is based on the inactivation of 99.9% of Giardia cysts derived from the EPA’s Disinfection Profiling and Benchmarking Guidance Manual. Long-time closure is based on the inactivation of 99.9% of Cryptosporidium oocysts.
- D. The impact of chlorine stabilizers (pools with cyanuric acid) on pathogen inactivation is unclear and warrants further investigation. Stabilized chlorine includes compounds such as dichlor and trichlor. Laboratory studies suggest that Crypto inactivation may not be achieved in the presence of 50 ppm of cyanuric acid even after 24 hours at 40 ppm free available chlorine, pH at 6.5 and a temperature of 77 ° F (25° C).
- E. Many conventional test kits cannot measure free available chlorine in the range that includes 20 ppm. Use a chlorine test kit that can measure in this range or use a conventional kit and make dilutions using chlorine-free water.
- F. High levels of chlorine may damage pool equipment. Exercise caution or consult with an experienced aquatic professional.
- G. Non-chlorine disinfectants are not addressed in this procedure and should not be used.
- H. If the pool is low volume, such as a small pool, spa pool or wading pool, the pool may be drained. The pool should be refilled, the water balanced and the proper CT value achieved before being reopened.
- I. ppm = parts per million or mg/L