

Salt Lake County Health Department

Health Regulation

#2

**DESIGN, CONSTRUCTION, AND
OPERATION OF POOLS**

**Adopted by the Salt Lake County Board of Health
September 4, 1984**

**Amended
January 4, 2007
April, 1, 2010
December 3, 2015
XXXX XX, 2024**

**Under Authority of
Utah Code Ann. §§ 26A-1-109(8), 26A-1-114, 26A-1-121(2)**

1. PURPOSE & APPLICABILITY OF REGULATION

- 1.1. The purpose of this Regulation is to regulate the design, construction, and operation of pools and their facilities and appurtenances in a way that will protect and promote the public health, safety, and welfare and prevent the spread of disease, the creation of threats, the risk of accidents, and damage to property.
- 1.2. This Regulation establishes minimum standards for the design, construction, operation and maintenance of pools. This Regulation does not regulate any pool used only by an individual, family, or members or guests of three or fewer living units.
- 1.3. This Regulation does not require a construction change in any portion of a pool facility if that portion of the pool facility was installed and maintained in compliance with the law in place as of the date of the adoption of this Regulation, August 6, 2015. Pool facilities which are not in compliance with the law as of August 6, 2015 shall apply for a variance from the applicable portions of this Regulation with the Salt Lake County Board of Health and the Utah Department of Health and Human Services.
- 1.4. Section 1.3 does not apply to a pool facility which the Department determines is dangerous, unsafe, unsanitary, or a threat or menace to life, health, or property.
- 1.5. If a pool facility or portion of a pool facility was installed and maintained in compliance with the law in effect at the time of installation but does not meet the standards set forth in this Regulation and the owner chooses or is required by the Department to construct, reconstruct, remodel, replace or renovate any portion of a pool facility, the owner shall submit a pool facility plan as outlined in ~~sections~~ 4.1.2 – 4.1.5. No swimming pool, equipment, or appurtenance that does not meet the requirements of this Regulation and the requirements of all other applicable Regulations may be installed subsequent to April 1, 2010.
- 1.6. This regulation does not regulate any private residential pool. A private residential pool that is used for swimming instruction purposes shall not be regulated as a public pool.
- 1.7. This regulation does not regulate any body of water larger than 30,000 square feet, 2,787.1 square meters, and for which the design purpose is not swimming, wading, bathing, diving, a water slide splash pool, or children's water play activities.
- 1.8. This regulation does not regulate a fountain designed for aesthetic appreciation, with no use of the basin or spray for bathing, recreational or otherwise, or which uses potable water that is not recirculated or allowed to pond in the basin.
- 1.9. This regulation does not regulate float tanks.

2. DEFINITIONS

For the purposes of this Regulation, the following terms, phrases, and words shall have the meanings herein expressed:

- 2.1. "Access barrier" shall mean a fence, wall, building wall, or combination thereof that completely encloses a pool and obstructs access.
- 2.2. "Bather load" shall mean the number of persons using a pool at any one time or specified period of time.
- 2.3. "Board" shall mean the Salt Lake County Board of Health.
- 2.4. "Cleansing shower" means the cleaning of the entire body surfaces with soap and water to remove any matter, including fecal matter that may wash off into the pool while swimming.
- 2.4. "Department" shall mean the Salt Lake County Health Department.
- 2.5. "Director" shall mean the Director of the Salt Lake County Health Department or his or her designated representative.
- 2.6. "Float tank" shall mean a tank containing a skin-temperature solution of water and Epsom salts at a specific gravity high enough to allow the user to float supine while motionless and require a deliberate effort by the user to turn over and that is designed to provide for solitary use and sensory deprivation of the user.
- 2.7. "High bather load" shall mean 90% or greater of the designed maximum bather load."
- 2.8. "Hydrotherapy pool" shall mean a special purpose pool designed primarily for and restricted to a medically prescribed therapeutic use under the continuous and direct supervision of trained medical or physiotherapy personnel.
- 2.9. "Interactive water feature" shall mean a fountain which has no ponding of water in the splash zone and consists of an underground reservoir with a recirculation system from which water is directed through sprays, jets, or other means for contact with users who wade or recreate in the fountain with the knowledge and consent of the owner.
- 2.10. "Lifeguard" shall mean an attendant who supervises the safety of bathers.
- 2.11. "Living unit" shall mean one or more rooms or spaces that are, or can be, occupied by an individual, group of individuals, or a family, temporarily or permanently for residential or overnight lodging purposes. Living units include motel and hotel rooms, condominium units, travel trailers, recreational vehicles, mobile homes, single family homes, and individual units in a multiple unit housing complex.
- 2.12. "Owner" shall mean any person who alone or jointly or severally with others:
 - 2.12.1. has legal title to any pool or pool facility with or without accompanying actual possession thereof; or

- 2.12.2. has charge, care, or control of any pool or pool facility as legal or equitable owner, lessee, or is an executor, executrix, administrator, administratrix, trustee, or guardian of the estate of the owner.
- 2.13. “Person” shall mean any individual, public or private corporation and its officers, partnership, association, firm, trustee, executor of an estate, the State or its departments, institutions, bureaus, agencies, municipal corporations, counties, cities, political subdivisions, or any legal entity recognized by law.
- 2.14 “Pool” shall mean a man-made basin, chamber, receptacle, tank, or tub which, when filled with water, creates an artificial body of water used for swimming, bathing, diving, recreational and therapeutic uses.
- 2.15. “Pool deck” shall mean the area contiguous to the outside of the pool curb, diving boards, diving towers and slides.
- 2.16. “Pool facility” shall mean a pool and any premises, building, plumbing fixtures, equipment, system, or appurtenance which are required under this Regulation and which appertains to the operation of a pool.
- 2.17. “Private residential pool” shall mean a man-made basin, chamber, receptacle, tank or tub which when filled with water creates an artificial body of water whose use is restricted to an individual, a family, or no more than three living units’ residents and guests; and does not serve four or more living units.
- 2.18. “Saturation index” shall mean a value determined by application of the formula for calculating the saturation index in Table 5, which is based on interrelation of temperature, calcium hardness, total alkalinity and pH which indicates if the pool water is corrosive, scale forming or neutral.
- 2.19 “Spa pool” shall mean a special purpose pool which uses therapy jet circulation, hot water, cold water, bubbles produced by air induction, or any combination thereof to impart a massaging effect upon a bather. “Spa pool” includes spas, whirlpools, hot tubs, or hot spas. Spa pool also includes a pool designed primarily for and restricted to a medically-prescribed therapeutic use if it is not drained, cleaned, and sanitized after each use.
- 2.20. “Special purpose pool” shall mean a pool with design and operational features that provide patrons recreational, instructional, or therapeutic activities which are different from that associated with a pool used primarily for swimming or diving. Special purpose pools include float tanks, hydrotherapy pools, wave pools, spa pools, water slides, and wading pools.
- 2.21. “Splash pool” shall mean the portion of a water slide located at the terminus of the flume or vehicle slide where sliders may safely exit the water.
- 2.22. “Splash zone” shall mean the maximum distance the water from an interactive water feature can project horizontally.

- 2.23. “Surge tank” shall mean a tank receiving the gravity flow from an overflow gutter and main drain or drains from which the circulation pump takes water which is returned to the system.
- 2.24. “Turnover” shall mean the circulation of a quantity of water equal to the pool volume through the filter and treatment facilities.
- 2.25. “Vehicle slide” shall mean the portion of a water slide which consists of a slide flume in which bathers descend riding vehicles into a splash pool.
- 2.26. “Wading pool” shall mean a special purpose pool used or designed to be used by children five years of age or younger for wading or water play activities.
- 2.27. “Water slide” shall mean a special purpose pool consisting of slide flumes upon which bathers descend into a splash pool.

3. GENERAL PROVISIONS

3.1. Jurisdiction of the Department.

- 3.1.1. This Regulation is promulgated by the Salt Lake County Board of Health as authorized by Utah Code ~~Ann.~~ § 26A-1-121(1) and Chapter 9.04, Salt Lake County Code of Ordinances, ~~Chapter 9.04~~.
- 3.1.2. The Department is empowered to enforce this Regulation in all incorporated and unincorporated areas served by the Department as authorized by Utah Code ~~Ann.~~ § 26A-1-114(1)(a) and Chapter 9.04, Salt Lake County Code of Ordinances, ~~Chapter 9.04~~.
- 3.2. It shall be unlawful for any person not to comply with any regulation promulgated by the Department, unless granted an express variance by the Salt Lake County Board of Health.
- 3.3. Compliance with this Regulation does not constitute a defense if charged with any environmental crime or violation of any local, state, or federal law.
- 3.4. Legal action taken by the Department under this Regulation does not preclude prosecution for any environmental crime that may have been committed or violation of any other local, state, or federal law.
- 3.5. Nothing in this Regulation affects or modifies in any way the obligations or liability of any person under any other regulation or provision thereof issued by the Department, any ordinance issued by Salt Lake County or any municipality located within Salt Lake County, or any state or federally issued law, including common law. However, Departmental regulations supersede other existing local and county standards, regulations and ordinances pertaining to similar subject matter that are inconsistent.

- 3.6. Verbal or contractual obligations shall not diminish or remove the owner's or other responsible person's obligation to comply with this Regulation.
- 3.7. **Severance.** If any section, sentence, clause, or phrase of this Regulation is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Regulation.

4. SUBSTANTIVE PROVISIONS

4.1. Permits and Plan Review.

4.1.1. Operational Permits.

- (i) **Permit Required.** No person shall operate a pool within the limits of Salt Lake County without written approval and a corresponding valid Hydrotherapy, Seasonal, or Year-Round Operational Permit from the Department. Operational Permits for newly constructed or remodeled pools will be issued only after an inspection of the pool by the Department indicates that construction work has been completed in accordance with approved plans.
- (ii) **Permit Application, Duration, and Renewal.**
- a. Application for an Operational Permit shall be made in writing upon forms furnished by the Department.
- b. **Permit Duration and Renewal.** Seasonal Operational Permits shall expire five months from issuance. Summer seasonal permits are issued for May to September and winter seasonal permits are issued for November to March. Year-Round Operational Permits and Hydrotherapy Operational Permits shall expire one (1) year from the date of issuance. It is the responsibility of the owner or operator to pursue their respective permit renewal through appropriate channels. The Year-Round Operational Permit and Hydrotherapy Operational Permit shall be renewable within sixty (60) calendar days prior to expiration.

4.1.2. Pool Facility Plan Review Required.

Before commencing construction of a pool facility; changing any equipment or appurtenance of any existing pool; or constructing, renovating, or remodeling any pool facility, a pool owner shall:

- (i) Submit to the Department a minimum of seven printed copies of completed pool facility design plans and specifications; as well as one copy of photo metrics for outdoor pool and deck that will be utilized at night.

- (ii) Submit to the Department a certificate from an engineer or architect licensed to practice in the State of Utah attesting that the plans and specifications meet the requirements of this Regulation and all other applicable rules and regulations.
- 4.1.3. If any changes are made to the originally approved design plans, the applicant shall submit the amended design plan drawings to the Department and obtain approval for the changes.
- 4.1.4. At least one set of plans bearing the approval stamp of the Department shall be available on the construction site at all times during construction.
- 4.1.5. Department construction approval expires one year from date of issuance whether or not construction work has been completed.
- 4.1.6. **Registered Pool Operator.**
- (i) To obtain and maintain an Operational Permit, the pool facility shall employ at least one “registered pool operator” permitted by the Department. The number of pools any one registered pool operator may supervise is dependent upon compliance history, considerations of time and distance, and the individual operator’s abilities, but in no event shall the total number of supervised pools exceed 10.
 - (ii) Registered Pool Operators shall establish practices and procedures in pool facilities that will maintain the pool’s water chemistry, prevent contamination of pools, and do all else necessary to ensure pool safety in the pool facility where they are employed.
 - (iii) **Qualifications and Application for Registered Pool Operator Permit.** To obtain a Registered Pool Operator’s Permit, the applicant shall:
 - a. Successfully complete one of the following certifications:
 - i. National Swimming Pool Foundation’s Certified Pool Operator, CPO, Certification;
 - ii. National Recreation and Parks Association Aquatic Facility Operator, AFO, Certification; or
 - iii. An equivalent certification approved by the Department.
 - b. Submit evidence of completion of an approved certification, including a passing score on the certification’s examination;
 - c. Complete the Department’s application form; and

- d. Pay to the Department the Registered Pool Operator fee as required in ~~section~~ 5.1.4 of this Regulation.
- (iv) **Registered Pool Operator Permit Expiration.** A registered pool operator permit expires on the expiration date of the operator's certification.
 - (v) **Limited Use of Title.** No person shall use the title "Operator Registered in Pool Safety" or "Registered Pool Operator" or in any way represent themselves as an "Operator Registered in Pool Safety" or as a "Registered Pool Operator" unless he or she holds a current, valid "Registered Pool Operator" permit issued by the Department.
 - (vi) **Reciprocity.** The Department may recognize course work and/or certificates and develop reciprocity agreements or similar approval agreements with educational institutions, industry, and state and local health departments provided that:
 - a. The course work or certificate has been completed within three (3) years of applying for Department's Registered Pool Operator Permit;
 - b. Certification/re-certification is achieved on a timely basis specified by the educational institution providing the course work and examination; and the applicant applies for a Registered Pool Operator permit from the Department;
 - c. The standards for certification are essentially equivalent to or higher than the requirements of this Regulation or the standards set by the Department; and
 - d. The reciprocal course and/or certificate are approved by the Department in writing.
 - (vii) **Sanitation Supervision Duties of Registered Pool Operator.**
 - a. In consultation with the Pool Owner, the Registered Pool Operator shall develop an operation, maintenance, and sanitation plan for the pool that will assure that the pool water meets the sanitation and quality standards set forth in this Regulation. The plan shall be in writing and available for inspection by the Department. The plan shall also specify who is responsible to take and record measurements. These measurement records shall include disinfectant residual levels in the pool water, pH and temperature of the pool water, pool circulation rates, quantities of chemicals and filter aid used, filter head loss, filter washing schedule, cleaning and disinfecting schedule for pool decks and dressing rooms, occurrences of fecal release in pool water or on the pool deck, bather load, and other information required by the Department. The Registered Pool Operator shall keep the records at

the facility for at least two operating seasons. At a minimum, the Registered Pool Operator shall measure and record the level of disinfectant residuals, pH, and pool water temperature prior to opening each day.

- b. Registered Pool Operator is responsible to post the completed Public Pool Data and Specifications Summary, on a Department approved form, in an easily visible location in the pump room.
- c. If the Pool water samples required in ~~section 4.23.10~~ fail bacteriological quality standards as defined in ~~section 4.23.11~~, the Department shall require the Pool owner and Registered Pool Operator to develop an acceptable plan in writing to correct the problem. The Department may also require the Registered Pool Operator to:
 - i. Measure and record the level of disinfectant residuals, pH, and pool water temperature at least four times a day;
 - ii. Obtain additional training;
 - iii. Read flow rate gauges and record the pool circulation rate four times a day; and
 - iv. Limit bather load if necessary to ensure the safety of bathers and pool water quality as required in ~~section 4.23~~.

(viii) **Replacement of Registered Pool Operator.** If a pool's Registered Pool Operator terminates employment, the facility shall have thirty (30) days to employ a new Registered Pool Operator or enroll an employee in a Department approved program for Registered Pool Operators. This time period may be modified by the Department for justifiable cause. The Department shall have complete discretion to determine "justifiable cause."

4.1.7 **Personal Hygiene.**

- (i) The Registered Pool Operator is responsible for the enforcement of the ~~P~~personal ~~H~~hygiene and ~~B~~behavior rules as stated in ~~section 4.25.5~~ of this Regulation.
- (ii) The facility operator and staff are also responsible for the enforcement of the following personal hygiene and behavior rules:
 - a. A bather using the facility must take a cleansing shower before entering the pool enclosure. A bather leaving the pool to use the toilet shall take a second cleansing shower before returning to the pool enclosure.

- b. The operator and lifeguards shall exclude any person having a communicable disease transmissible by water. A person having any exposed sub-epidermal tissue, including open blisters, cuts, or other lesions may not use a public pool. A person who has or has had diarrhea within the last two weeks caused by an unknown source or from any communicable or fecal-borne disease shall not enter any public pool.
- c. Any child under three years old, any child not toilet trained, and anyone who lacks control of defecation shall wear a water resistant swim diaper and waterproof swimwear. Swim diapers and water proof swimwear shall have waist and leg openings fitted such that they are in contact with the waist or leg around the entire circumference.
- d. Running, boisterous play, or rough play, except supervised water sports, are prohibited.
- e. The lifeguards and operator shall only allow diaper changing in restrooms or changing stations not at pool side.

4.2. Water Supply.

- 4.2.1. The water supply serving a pool and all pool facility plumbing fixtures, including drinking fountains, lavatories and showers, shall meet the requirements for drinking water established by the Department of Environmental Quality.
- 4.2.2. All portions of water supply, re-circulation, and distribution systems serving a pool facility shall be protected against backflow. Water introduced into the pool, either directly or through the circulation system, shall be supplied through an air gap.

4.3. Sewer System.

- 4.3.1. Each pool shall discharge waste water to a public sanitary sewer system.
- 4.3.2. Each pool shall connect to a sewer system through a properly installed air gap.
- 4.3.3. The sewer service shall be adequate to serve the pool facility.

4.4. Construction and Materials.

- 4.4.1. Each pool and the appurtenances necessary for its proper function and operation shall be constructed of materials which are inert, non-toxic to humans, impervious, enduring over time, and resist the effects of wear and deterioration from chemical, physical, radiological, and mechanical actions.
- 4.4.2. Construction of a pool shall withstand the stresses associated with the normal uses of the pool and regular maintenance.

- 4.4.3. Each pool shell shall be designed and constructed in a manner that provides a smooth, easily cleanable, non-abrasive, and slip resistant surface.
- 4.4.4. Each pool shell shall be electrically bonded to the supporting members.
- 4.4.5. Pool shell surface coatings and textures, including flexible coating materials of at least 60 mils in thickness, may be used if they are adhered to a pool shell that is constructed as provided in sections 4.4.1- 4.4.3 and is slip resistant.
- 4.4.6. Stand-alone vinyl or other flexible liners are prohibited.
- 4.4.7. Pool shell surfaces shall be free of cracks or open joints with the exception of structural expansion joints.
- 4.4.8. A pool shell constructed of materials other than concrete shall submit documentation with the plans required in section 4.1.2 that the surface material has been tested and passes by an American National Standards Institute (ANSI) accredited testing facility using one of the following standards that is appropriate to the material used;
- (i) For a fiberglass reinforced plastic spa pool, the International Association of Plumbing and Mechanical Officials (IAPMO) standard IAPMO/ANSI Z 124.7-1997;
 - (ii) For a fiberglass reinforced plastic swimming pool, the IAPMO IGC 158-2000 standard;
 - (iii) For pools built with prefabricated pool sections or pool members, the International Cast Products Association (ICPA) standard ANSI/ICPA SS-1-2001; or
 - (iv) A standard that has been approved by the Department based on whether the standard is applicable to the surface and whether it determines compliance with the requirements of this section 4.4.
- 4.4.9. Unless otherwise provided in this Regulation, vinyl or other flexible liners are prohibited.
- 4.4.10. A pool shell shall by itself withstand, without any damage to the structure, the stresses of complete emptying of the pool without shoring or additional support.
- 4.4.11. A pool shell surface shall be of a white or light pastel color.

4.5. **Bather Load.**

4.5.1. Unless otherwise provided in this Regulation, the maximum bather load capacity for each area of a pool shall be calculated as follows:

- (i) Twenty-four square feet of pool water surface area shall be provided for each bather in an indoor swimming pool during maximum load.
- (ii) Twenty square feet of pool water surface area shall be provided for each bather in an outdoor swimming pool during maximum load.

4.5.2. The Department may make additional allowance for bathers when the facility operator can demonstrate that lounging and sunbathing patrons will not adversely affect water quality due to over-loading of the pool.

4.6. **Design Detail and Structural Stability.**

4.6.1. Pools shall be designed and constructed within the limits of sound engineering practice. Design engineers may consult with the Department in reference to concepts of design variations and to areas where potential problems may exist.

4.6.2. The shape of a pool and design and location of appurtenances shall be such that the circulation of pool water and control of user's safety are not impaired. The designing architect or engineer shall designate pool shell sidewalls and end walls on pool plans.

4.6.3. All parts of the facility subject to freezing damage shall be protected from damage due to freezing.

4.7. **Depths and Floor Slopes.**

4.7.1. The horizontal slope of the floor of any portion of a pool having a water depth of less than five feet shall not be steeper than a ratio of 1 to 10.

4.7.2. The horizontal slope of the floor of any portion of a pool having a water depth greater than five feet shall be uniform, ~~shall~~ allow complete drainage, and ~~shall~~ not exceed a ratio of 1 to 3.

4.7.3. The horizontal slope of the pool bottom in diving areas shall be consistent with the requirements for minimum water depths as specified in ~~section~~ 4.9 for diving areas.

4.8. **Pool Walls.**

4.8.1. Pool walls shall be vertical or within 11° of vertical for a minimum distance equal to or greater than one half the pool depth as measured from the water line for pools with a depth less than five feet.

- 4.8.2. Pool walls shall be vertical or within 11° of vertical for a minimum distance of 2'9" below the water line in areas with a depth of five feet or greater.
- 4.8.3. Where walls form an arc to join the floors, the transitional arc from wall to floor shall:
- (i) Have its center no less than 2'9", below the normal water level in areas with a depth greater than five feet.
 - (ii) Have its center no less than 75% of the pool depth beneath the normal water level, in areas of the pool with a depth of five feet or less.
 - (iii) Be tangent to the wall.
 - (iv) Have a radius at least equal to or greater than the depth of the pool minus the vertical wall depth measured from the water line, as described in ~~sections~~ 4.7.1 – 4.7.3, minus three inches to allow draining to the main drain. Radius minimum = Pool Depth - Vertical wall depth - 3 inches where the water depth is greater than 5 feet.
 - (v) Have a radius which may not exceed a length greater than 25% of the water depth, in areas with a water depth of five feet or less.
- 4.8.4. Underwater ledges are prohibited except when approved by the Department for a special purpose pool. Underwater ledges are prohibited in areas of a pool designed for diving. Where underwater ledges are allowed, a line shall mark the extent of the ledge within 2 inches, 5.08 centimeters, of its leading edge. The line shall be at least 2 inches, 5.08 centimeters, in width and in a contrasting dark color for maximum visual distinction.
- 4.8.5. Underwater seats and benches are allowed in pools so long as they conform to the following:
- (i) Seats and benches shall be located completely inside of the perimeter shape of the pool;
 - (ii) The horizontal surface shall be a maximum of 20 inches, 51 centimeters, below the water line;
 - (iii) An unobstructed surface shall be provided that is a minimum of 10 inches, 25 centimeters, and a maximum of 20 inches front to back, and a minimum of 24 inches, 61 centimeters, wide;
 - (iv) The pool wall under the seat or bench shall be flush with the leading edge of the seat or bench and meet the requirements as described in ~~sections~~ 4.8.1, 4.8.2 and 4.8.3;

- (v) Seats and benches shall not replace the stairs or ladders required in ~~section~~ 4.10, but are allowed in conjunction with pool stairs;
- (vi) Underwater seats may be located in the deep area of the pool where diving equipment (manufactured or constructed) is installed, provided they are located outside of the minimum water envelope for diving equipment; and
- (vii) A line shall mark the extent of the seat or bench within 2 inches, 5.08 centimeters, of its leading edge. The line shall be at least 2 inches, 5.08 centimeters, in width and in a contrasting dark color for maximum visual distinction.

4.9. Diving Areas.

4.9.1. Diving boards shall be maintained in a safe working condition.

4.9.2. At least 15 feet, 4.57 meters, free and unobstructed head room shall be provided above and continue ~~on~~ beyond the diving end of a diving board for a minimum distance of 15 feet, 4.57 meters-.

4.9.3. Diving boards or platforms shall be parallel to each other and located on the same side of the pool, unless the Department determines that divers will not pose a threat to each other while diving into or exiting from the pool.

4.9.4. **Equipment Placement and Clearances.** Where diving is permitted, the diving area design, equipment placement, and clearances shall meet the minimum standards established by the U. S. Diving Rules and Regulations 2004, Appendix B, which are incorporated herein by reference.

4.9.5. Diving Board Handrails, Supports, Platforms, Ladders, and Steps.

- (i) The designing architect or engineer or the pool facility owner shall anticipate maximum loads on supports, platforms, and steps for diving boards, and ensure that supports, platforms, and steps are of substantial construction and of sufficient structural strength to safely carry the maximum anticipated loads.
- (ii) Handrails, steps, and ladders leading to diving platforms shall be maintained in safe working condition.
- (iii) Handrails shall be installed at all steps and ladders leading to diving boards more than one meter above the water.
- (iv) Platforms and diving boards which are over 1 meter high shall be designed to protect divers from falls to the deck or pool curb by the installation of guard rails.

4.9.6. **Diving Bowl.** Where diving from a height of less than 1 meter from water line is permitted, the diving bowl shall meet the minimum depths outlined in ~~Section 6~~, Figure 1, and Table 2 of ANSI/NSPI-1, 2003, which is adopted by reference, for Type VI, VII and VIII pools according to the height of the diving board above the normal water level. ANSI/NSPI pool type VI is a maximum of 26 inches, $\frac{2}{3}$ meter, above the normal water level; type VII is a maximum of 30 inches, $\frac{3}{4}$ meter, above the normal water level; and type VIII is a maximum of 39.37 inches, 1 meter, above the normal water level.

4.9.7. **Starting Platforms.** The use of a starting platform shall be restricted to competitive swimming events or supervised training for competitive swimming events.

- (i) Starting platforms shall be maintained in a safe working condition.
- (ii) When starting platforms are used for competitive swimming or training, the water depth shall be at least 4 feet deep.
- (iii) The pool staff shall remove or secure starting platforms with a lockable cone-type platform safety cover when not in use.

4.10. Ladders, Steps, and Handrails.

4.10.1. Location.

- (i) In areas of a pool where the water depth is greater than 2 feet and less than 5 feet as measured vertically from the bottom of the pool to the mean operating level of the pool water, steps or ladders shall be provided, and shall be located in the area of shallowest depth.
- (ii) In areas of a pool where the water depth is greater than 5 feet as measured vertically from the bottom of the pool to the mean operating level of the pool water, ladders or recessed steps shall be provided.
- (iii) A pool over 30 feet wide shall be equipped with steps, recessed steps, or ladders as applicable, installed on each end of both side walls.
- (iv) A pool over 30 feet wide and 75 feet or greater in length, shall have ladders or recessed steps midway on both side walls of the pool, or separated by no more than 30 feet in swimming and diving areas and 50 feet in non-swimming areas.
- (v) Ladders or recessed steps shall be located within 15 feet of the diving area end wall.
- (vi) No pool shall be equipped with fewer than 2 means of entry/exit.

4.10.2. Handrails.

- (i) Handrails shall be rigidly installed and constructed in such a way that they can only be removed with tools.
- (ii) Handrails shall be constructed of corrosion resistant materials.
- (iii) The outside diameter of handrails shall not exceed 2 inches.

4.10.3. Steps.

- (i) Steps shall have at least one handrail. The handrail shall be mounted on the deck and extend to the bottom step either attached at or cantilever to the bottom step.
- (ii) Steps shall be constructed of corrosion-resistant material, easily cleanable, and of a safe design.
- (iii) Steps leading into pools shall be of non-slip design, have a minimum run of 10 inches and a maximum rise of 12 inches.
- (iv) Steps shall have a minimum width of 18 inches as measured at the leading edge of the step.
- (v) Steps shall have a line at least ~~one~~ 1 inch in width, and be of a contrasting dark color for visual distinction within 2 inches of the leading edge of each step.

4.10.4. Ladders.

- (i) Pool ladders shall be corrosion-resistant and shall be equipped with non-slip rungs.
- (ii) Pool ladders shall be designed to provide a handhold and shall be rigidly installed and maintained in safe working condition.
- (iii) Pool ladders shall have a clearance of not more than 5 inches nor less than 3 inches between any ladder rung and the pool wall.
- (iv) Pool ladders shall have rungs with a maximum rise of 12 inches and a minimum width of 14 inches.
- (v) Pool ladders shall have a set of handrails located at the top of the course with a rail on each side.

4.10.5. Recessed Steps.

- (i) Recessed steps shall have a set of grab rails located at the top of the course with a rail on each side which extend over the coping or edge of deck.
- (ii) Recessed steps shall be readily cleanable and provide drainage into the pool to prevent the accumulation of dirt on the step.
- (iii) Recessed steps shall have a minimum run of 5 inches and a minimum width of 14 inches.

4.11. Decks and Walkways.

4.11.1. Unless otherwise provided in this Regulation, a continuous, unobstructed deck at least 5 feet wide shall extend completely around the pool. The deck is measured from the pool side edge of the coping if the coping is flush with the pool deck, or from the back of the pool curb if the coping is elevated from the pool deck. Pool curbs shall be a minimum of 12 inches wide. If the coping is elevated from the pool deck, the maximum allowed elevation difference between the top of the coping surface and the surrounding deck is 19 inches. The minimum allowed elevation is 4 inches.

4.11.2. Deck obstructions are allowed to accommodate diving boards, platforms, slides, steps, or ladders so long as at least 5 feet of deck area shall be provided behind the deck end of any diving board, platform, slide, step, or ladder. Other types of deck obstructions may also be allowed by the Department so long as the obstructions meet all of the following criteria:

- (i) The total pool perimeter that is obstructed equals less than 10 percent of the total pool perimeter; likewise, no more than 15 feet, 4.56 meters, of pool perimeter can be obstructed in any one location;
- (ii) Multiple obstructions shall be separated by at least ~~five~~5 feet, 1.52 meters;
- (iii) An unobstructed area of deck not less than ~~five~~5 feet, 1.52 meters, is provided around or through the obstruction and located not more than ~~fifteen~~15 feet, 4.55 meters, from the edge of the pool.
- (iv) The design of the obstruction does not endanger the health or safety of persons using the pool; and
- (v) Written approval for the obstruction is obtained from the Department prior to, or as part of, the plan review process.

4.11.3. The deck shall slope away from the pool to deck drains or floor drains at a grade of 1/4 inch to 3/8 inch per linear foot. Deck drains and floor drains shall not return water to the pool or the circulation system.

4.11.4. Decks and walkways shall be maintained free of standing water, constructed to drain away water, and shall have non-slip surfaces.

- 4.11.5. Wooden decks, walks or steps are prohibited.
- 4.11.6. Carpeting shall not be installed within 5 feet of the water side edge of the coping. Where carpeting is permitted, it shall be wet vacuumed as often as necessary to keep it clean and free from accumulated water.
- 4.11.7. Decks and walkways shall be maintained in a safe and sanitary condition, free from litter and tripping hazards.
- 4.11.8. Steps serving decks shall meet the following requirements:
- (i) Risers of steps for the deck shall be uniform and have a minimum rise of 4 inches and a maximum height of 7 inches.
 - (ii) The minimum run of steps shall be 10 inches.
 - (iii) Steps shall have a minimum width of 18 inches.

4.12. Access Barriers.

- 4.12.1. An access barrier is required and shall provide complete perimeter security of the facility, and be at least six feet in height. Openings through the fence or barrier, other than entry or exit access, when the access is open, shall not permit a sphere greater than 4 inches to pass through it at any location. Horizontal members shall be equal to or more than 45 inches apart.
- (i) If the Department determines that the safety of children is not compromised, it may exempt indoor pools from the fencing requirements.
 - (ii) The Department may grant exceptions to the height requirements in consideration of architectural and landscaping features for pools designed for hotels, motels, and apartment houses.
 - (iii) A fence or barrier that has an entrance to the facility shall be equipped with a self-closing and self-latching gate or door. Except for self-locking mechanisms, self-latching mechanisms shall be installed 54 inches, 1.37 meters, above the ground and shall be provided with hardware for locking the gate when the facility is not in use. A lock that is separate from the latch and a self-locking latch shall be installed with the lock's operable mechanism (key hole, electronic sensor, or combination dial) between 34 inches, 86.4 centimeters, and 48 inches, 1.219 meters, above the ground. All gates for the pool enclosure shall open outward from the pool.
- 4.12.2. Access to the pool shall be prohibited when the facility is not open for use.

4.13. Depth Markings and Safety Ropes.

4.13.1. Markings with numerals at least 4 inches high shall be located above the water line or within 2 inches of the coping on the vertical wall of the pool and on the deck within 16 inches of the pool side edge of the coping at one foot increments of depth, spaced at distances not greater than 25 feet apart. The markings shall provide the locations of maximum and minimum pool depth.

4.13.2. A pool with both swimming and diving areas shall have a floating safety rope separating the swimming and diving areas. An exception to this requirement is made for special activities, such as swimming contests or training exercises when the full unobstructed length of the pool is used.

- (i) The safety rope shall be securely fastened to wall anchors. Wall anchors shall be of corrosion-resistant materials and shall be recessed or have no projections that may be a safety threat if the safety rope is removed.
- (ii) The safety rope shall be marked with visible floats spaced at intervals of 7 feet or less.
- (iii) The rope shall be at least 1/2 inch in diameter, and of sufficient strength to support the loads imposed on it during normal bathing activities.

4.13.3. A pool constructed with a change in the slope of the pool floor shall have the change in slope designated by a floating safety rope and a line of demarcation on the pool floor. An exception to this requirement is made for special activities, such as swimming contests or training exercises when the full unobstructed length of the pool is used.

- (i) The floating safety rope designating a change in slope of the pool floor shall be attached at the locations on the pool wall that place it directly above and parallel to the line on the bottom of the pool. The floating safety rope shall meet the requirements of sections 4.13.2 (i), (ii), and (iii).
- (ii) A line of demarcation on the pool floor shall be marked with a contrasting dark color.
- (iii) The line shall be at least two inches in width.
- (iv) The line shall be located twelve inches toward the shallow end from the point of change in slope.

4.14. **Circulation Systems.** A pool shall contain a circulation system consisting of pumps, piping, filters, water conditioning and disinfection equipment and other related equipment. The area housing the circulation equipment must be designed with adequate working space so that all equipment may be easily disassembled, removed, and replaced for proper maintenance.

4.14.1. The circulation lines of jet systems and other forms of water agitation shall be independent and separate from circulation, filtration, and heating systems.

4.14.2. The pool may be exempt from the requirement to have a circulation system if the turnover rate requirements as specified in ~~section~~ 4.14.6 can be met by continuous introduction of fresh water and wasting of pool water under conditions satisfying all other requirements of this Regulation.

4.14.3. General Circulation System Maintenance, Materials, and Operation.

- (i) The operator shall maintain the normal water line of the pool at the overflow rim of the gutter, if an overflow gutter is used, or at the midpoint of the skimmer opening if skimmers are used whenever the pool is open for bathing. An exemption to this requirement may be granted by the Department if the pool operator can demonstrate that the safety of the bathers is not compromised.
- (ii) The circulation equipment shall be operated continuously except for periods of routine or other necessary maintenance and shall be designed to permit complete drainage of the system.
- (iii) Piping shall be of non-toxic material, resistant to corrosion and be able to withstand operating pressures.
- (iv) Plumbing shall be identified by a color code or labels.
- (v) The area housing the circulation equipment shall be designed with adequate working space so that all equipment may be easily disassembled, removed, and replaced for proper maintenance.
- (vi) Written operational instructions for the equipment in the circulation system shall be immediately available at the facility at all times.

4.14.4. Velocity.

- (i) The water velocity in discharge piping shall not exceed 10 feet per second.
- (ii) The water velocity for copper piping shall not exceed 8 feet per second.
- (iii) Suction velocity for all piping shall not exceed 6 feet per second.

4.14.5. **Rate-of-Flow Indicator.** A rate-of-flow indicator, reading in gallons per minute, shall be properly installed and located according to manufacturer recommendations. The indicator shall be located in a place and position where it can be easily read. The indicator shall be accurate to within ~~ten~~10 percent of true flow.

4.14.6. **Turnover Rate.** The circulation system shall clarify and disinfect the entire volume of pool water in 8 hours or less. The turnover rate shall be increased to provide a 6 hour turnover for a pool subjected to high bather loads.

4.14.7. **Strainers.** The circulation system shall include a strainer to prevent hair, lint, etc., from reaching the pump.

- (i) Strainers shall be corrosion-resistant with openings not more than 1/8 inch in size.
- (ii) Strainers shall provide a free flow capacity of at least ~~four~~4 times the area of the pump suction line.
- (iii) Strainers shall be readily accessible for frequent cleaning and maintained in a clean and sanitary condition.
- (iv) Each pump strainer shall be provided with necessary valves to facilitate cleaning of the system without excessive flooding.

4.14.8. **Vacuum Cleaning.** A vacuum-cleaning system shall be provided.

- (i) The number of connections provided shall facilitate access to all areas of the pool through hoses less than 50 feet in length.
- (ii) If this system is an integral part of the circulation system, connections shall be located in the walls of the pool, at least 8 inches below the water line. This requirement does not apply to vacuums operated from skimmers.

4.14.9. **Pumps.**

- (i) Pumps shall be of adequate capacity to provide the required number of turnovers of pool water as specified in ~~section~~ 4.14. Table 1.
- (ii) The pump or pumps shall be capable of providing flow adequate for the backwashing of filters.
- (iii) The pump or pumps shall supply the circulation rate of flow at a dynamic head which includes:
 - a. Fitting and friction losses;₂
 - b. An additional loss of 15 feet for rapid sand filters, vacuum diatomite filters₂, or vacuum cartridge filters;₂
 - c. An additional loss of 40 feet for pressure diatomite filters, high rate sand filters₂, or cartridge filters;₂
 - d. Pool inlet orifice loss of 15 feet.

TABLE 1: CIRCULATION

Pool Type:	Minimum Number of Wall Inlets	Minimum Number of Skimmers 3,500 sq. ft. or less	Minimum Turnover Time
1. Pool	1 per 10 ft	1 per 500 sq. ft.	Eight 8 Hours
2. Pool, High bather load	1 per 10 ft	1 per 500 sq. ft.	Six 6 Hours
3. Wading Pool	1 per 20 ft minimum of two 2 equally spaced.	See Section R392-302-19	One 1 Hour
4. Spa	1 per 20 ft.	1 per 100 sq. ft.	30 M minutes.
5. Wave	1 per 20 ft.	See section 4.17	6 Hours
6. Slide	1 per 20 ft.	See section 4.17	One 1 Hour
7. Vehicle Slide	See section 4.16.0	See section 4.17	One 1 Hour
9. Interactive Water Feature	N/A	N/A	30 minutes.

4.14.10. **Heaters.** A pool equipped with heaters shall meet the requirements for boilers and pressure vessels as required by the State of Utah Boiler and Pressure Vessel Rules, Utah Administrative Code R576-201, and shall have a fixed thermometer mounted in the pool circulation line downstream from the heater outlet. The heater shall be provided with a heat sink as required by manufacturer's instructions.

4.14.11. **Circulation Line Valves.** All circulation lines to and from the pool shall be regulated with valves in order to control the circulation flow.

- (i) All valves shall be located where they will be readily and easily accessible for maintenance and removal.
- (ii) Multiport valves shall comply with National Sanitation Foundation 50-2000-7 which is incorporated and adopted by reference.

4.14.12 **Air Induction Systems.** Each air induction system installed shall comply with the following requirements:

- (i) An air induction system shall be designed and maintained to prevent any possibility of water back-up that could cause electrical shock hazards.
- (ii) An air intake shall not introduce contaminants such as noxious chemicals, fumes, deck water, dirt, etc. into the pool.

4.15. **Inlets.** Inlets for fresh or treated water shall be located to produce uniform circulation of water and to facilitate the maintenance of a uniform disinfectant residual throughout the entire pool.

4.15.1 **Wall Inlets.**

- (i) Where wall inlets from the circulation system are used, they shall be flush with the pool wall and submerged at least 5 feet below the water line, or at the bottom of the vertical wall surface. Unless otherwise provided for in this Regulation, inlets shall be placed every 10 feet around the pool perimeter.
- (ii) Each wall inlet shall be designed as a non-adjustable orifice with sufficient head loss to ensure balancing of flow through all inlets. The return loop piping shall be sized to provide less than 2.5 feet of head loss to the most distant orifice to ensure approximately equal flow through all orifices.
- (iii) The Department may grant an exemption to the inlet placement requirements on a case by case basis for inlet designs that can be demonstrated to produce uniform mixing of pool water.
- (iv) To ensure thorough chemical distribution if a pool has a width greater than 50 feet, the Department may require floor inlets to be installed at the center of the pool width in addition to the required wall inlets.

4.15.2 **Floor Inlets.** If floor inlets from the circulation system are used, they shall be:

- (i) Spaced a maximum of 15 feet from each other and the distance from floor inlets to the pool wall shall not exceed 7.5 feet if there are no inlets on that wall. If there are wall inlets the floor inlets must be at least 15 feet from that pool wall;
- (ii) Flush with the floor;
- (iii) Designed such that the flow can be adjusted to provide sufficient head loss to ensure balancing of flow through all inlets; and
- (iv) Designed such that the flow cannot be adjusted without the use of a special tool.

4.15.3 **Return Supply Piping.** The return supply piping loop shall be sized to provide less than 2.5 feet of head loss to the most distant orifice in the loop to ensure approximately equal flow through all orifices.

4.16 Outlets.

4.16.1 Each pool whose construction is commenced after Dec. 19, 2009, shall have a minimum of two outlets with each outlet being separated by at least ~~three~~ 3 feet and not more than 30 feet apart measured from the center of the drain cover outlet which meet the following design criteria:

- (i) **Protective Grating.** The grates or covers of all submerged suction outlets shall comply with the requirements of ANSI/APSP-16 2011. Outlets shall have a protective grate securely fastened in such a way that the use of tools is required to remove it. A pool may not operate with broken, damaged or missing drain grates or covers.
- (ii) Outlets shall be constructed so that if one of the outlets is completely obstructed, the remaining outlet(s) and related piping will be capable of handling 100 percent of the maximum design circulation flow.
- (iii) Outlets shall have pipe diameters of equal size and connected to pipes of equal diameter. The tee feeding to the common suction line from the outlets must be located approximately midway between outlets.
- (iv) The outlet system shall be constructed to ensure that no outlet can be cut out of the suction line by a valve or other means.
- (v) At least one of the outlets shall be located in the deepest area of the pool to permit the pool to be completely and easily emptied.
- (vi) The outermost main drain outlets shall be located within 15 feet from side walls.
- (vii) Devices or methods used for draining pools shall prevent overcharging the sanitary sewer.
- (viii) Multiple pumps may utilize the same outlets, provided the outlets are sized to accommodate 100 percent of the total combined designed flow from all pumps and that the flow characteristics of the system shall meet the requirements of ~~section~~ 4.16.1.
- (ix) No feature or circulation pump shall be connected to less than two outlets unless the pump is connected to a gravity drain system or the pump is connected to an unblockable drain.

4.16.2 **Existing Pools.** Notwithstanding ~~sections~~ 1.3 – 1.5 of this Regulation, the circulation system on existing pools that do not meet the current requirements of ~~section~~ 4.16.1 shall have all suction outlets equipped with grates or covers which comply with the requirements of ANSI/APSP-16 2011. Pools with single main drains shall be additionally retrofitted using any of the following means:

- (i) **Safety vacuum release system:** A safety vacuum release system which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17-2002 or ASTM standard F2387.
 - a. To ensure proper operation, the Registered Pool Operator shall inspect and test the vacuum release system at least once a week but no less often than established by the manufacturer.
 - b. The Registered Pool Operator shall test the vacuum release system in a manner specified by the manufacturer.
 - c. The Registered Pool Operator shall log all inspections, tests, and maintenance and retain the records for a minimum of two years (2) for review by the Department upon request.
 - d. The vacuum release system shall include a suitable notification system to alert patrons and the pool operator in the event the system has inactivated the circulation system. The pool operator shall submit to the Department for approval the design of the notification system prior to installation. The system shall activate a continuous clearly audible alarm that can be heard in all areas of the pool or a continuous visible alarm that can be seen in all areas of the pool. An easily readable sign shall be posted next to the sound or visible alarm source. The sign shall state, "DO NOT USE THE POOL IF THIS ALARM IS ACTIVATED," and provide the phone number of the responsible party.
 - e. No operator shall allow the use of a pool that has a single drain with a safety vacuum release system if the safety vacuum release system is not functioning properly.
- (ii) **Installation of dual main drains:** Both outlets shall meet the requirements listed in ~~section~~ 4.16.1 except 4.16.1(vi).
- (iii) **Gravity drainage system:** A gravity drainage system where the pump draws from a surge or collector tank rather than directly from the pool drain.
- (iv) **Unblockable drain:** A drain of a size and shape that a human body cannot sufficiently block to create a suction entrapment hazard.
- (v) **Other systems:** Any other system determined by the Department to be equally effective as, or better than, the systems described in ~~sections~~ (i) through (iv) at preventing or eliminating the risk of injury or death associated with pool drainage systems.

4.16.3 The pool owner shall retrofit by Dec. 19, 2009, each pool circulation system on existing pools that do not meet the requirements of ~~Section~~ 4.16.2.

4.17. **Overflow Gutters and Skimming Devices.** Unless otherwise provided in this Regulation, a pool having a surface area of over 3,500 square feet shall have overflow gutters. A pool having a surface area of 3,500 square feet or less shall have either overflow gutters or skimmers.

4.17.1. **Overflow Gutter Systems.** Overflow shall be designed and constructed in compliance with the following requirements:

- (i) Overflow gutters shall extend completely around the pool, except at steps, ramps, or recessed ladders.
- (ii) The gutter system shall be capable of continuously removing pool water at 100 percent of the maximum flow rate.
- (iii) The gutter system shall be connected to the circulation system by means of a surge tank.
- (iv) The opening into the gutter beneath the coping or grating shall be at least 3 inches, in height and depth.
- (v) Gutters shall be designed to prevent entrapment of any part of a bather's body. The edge shall be rounded to be used as a handhold and shall be no thicker than 2.5 inches, for the top 2 inches. Gutter outlet pipes shall be at least 2 inches in diameter. The outlet grates must have unobstructed openings equal to at least one and one-half times the cross sectional area of the outlet pipe.

4.17.2. **Skimmer Systems.** Skimmers, if provided, shall be designed and constructed in compliance with the following requirements:

- (i) Skimmers shall comply with National Sanitation Foundation NSF 50-2007 standards or equivalent. Skimmers are permitted on any pool with a surface area equal to or less than 3,500 square feet, 325.15 square meters. At least one skimming device shall be provided for each 500 square feet, 46.45 square meters, of water surface area or fraction thereof. Where two or more skimmers are required they shall be spaced to provide an effective skimming action over the entire surface of the pool.
- (ii) Skimmers shall be built into the pool wall.
- (iii) The piping and other components of a skimmer system shall be designed for a total capacity of at least 80 percent of the maximum flow rate of the circulation system.

- (iv) Skimmers shall be designed with a minimum flow rate of 25 gallons per minute and a maximum flow rate of 55 gallons per minute. Alternatively, skimmers may also be designed with a minimum of 3.125 gallons to 6.875 gallons per lineal inch of weir. A higher maximum flow may be allowed through a skimmer up to the skimmer's NSF rating if the piping is designed to accommodate the higher flow rates.
- (v) Each skimmer weir shall be automatically adjustable and shall operate freely with continuous action to variations in water line over a range of at least four inches. The weir shall operate at all flow variations. Skimmers shall be installed with the normal operating level of the pool water at the mid-point of the skimmer opening or in accordance with the manufacturer's instructions.
- (vi) An easily removable and cleanable basket or screen through which all overflow water passes, shall be provided to trap large solids.
- (vii) The skimmer system shall be provided with a device to prevent air-lock in the suction line. These devices may include an equalizer pipe, surge tank, or other arrangement that will assure a sufficient amount of water for pump suction in the event the pool water drops below the weir level. If an equalizer pipe is used, the following requirements shall be met:
 - a. The equalizer pipe shall be sized to meet the capacity requirements for the filter and pump.
 - b. The equalizer pipe shall not be less than two inches in diameter.
 - c. The equalizer pipe shall be located at least one foot below a valve or equivalent device that will remain tightly closed under normal operating conditions. In a shallow pool where an equalizer pipe cannot be submerged at least one foot below the skimmer valve, the equalizer pipe shall be connected to a separate dedicated outlet with an anti-entrapment outlet cover in the floor of the pool.
 - d. The equalizer pipe shall be protected with a cover or grate that meets the requirements of ANSI/APSP-16 2011 and is sized to accommodate the design flow.
- (viii) The skimmer weir, float valves, check valves, and basket shall be maintained in a clean and sanitary condition and in good repair.
- (ix) The overhang of the coping, decking, or other material shall not exceed 2 inches, nor be less than 1 inch, beyond the pool wall. An overhang may be up to a maximum of 3 inches to accommodate an automatic pool cover track system

4.18. **Filtration.** A pool shall use a rapid sand filter, hi-rate sand filter, diatomaceous earth filter, or cartridge filter.

4.18.1. **General Filtration System Design.** The filtration system shall be designed to allow the operator to determine the relative clarity of discharge backwash water from the filter. The filtration system shall also provide for isolation of individual filters for backwashing or other service. Filtration systems shall comply with NSF 50-2007.

4.18.2. **Rapid Sand Filters.**

- (i) Rapid sand filters shall be designed for a filter rate of ~~three~~ 3 gallons or less, per minute per square foot of bed area at time of maximum head loss. The filter bed surface area shall be sufficient to meet the design rate of flow required by ~~section~~ 4.14, Table 1, for required turnover.
- (ii) The filtration system shall be provided with influent pressure, vacuum, or compound gauges to indicate the condition of the filters. Air-relief valves shall be provided at or near the high point of the filter or piping system.
- (iii) An air-relief valve shall be provided at or near the high point of the filter.
- (iv) The filter system shall be provided with an influent pressure gauge.
- (v) The filtration system shall be designed with necessary valves and piping to permit:
 - a. Filtering of all pool water;
 - b. Individual backwashing of filters to a sanitary sewer at a minimum rate of 15 gallons per minute per square foot of filter area;
 - c. Isolation of individual filters;
 - d. Complete drainage of all parts of the system; and
 - e. Necessary maintenance, operation and inspection in a convenient manner.
- (vi) **Pressure Type Rapid Sand Filters.** Each pressure type filter tank shall be provided with an access opening of at least a standard size 11 inches by 15 inch manhole with a cover.

4.18.3 **Hi-Rate Sand Filters.** Hi-rate sand filters shall comply with the following:

- (i) Hi-rate sand filters shall be designed for a filter rate of less than 18 gallons per minute per square foot of filter surface area. Minimum flow rates shall be at least 13 gallons per minute per square foot of bed area. The filter surface area shall be sufficient to meet the design rate of flow required by ~~section~~ 4.194.9 or 4.28 for required turn over. The minimum flow rate requirement may be reduced to a rate no less than 10 gallons per minute per square foot

of bed area where a multiple filter system is provided, and where the system includes a valve or other means after the filters which is designed to regulate the back flow rate and to ensure that adequate back wash flow can be achieved through each filter per the filter manufacturer's requirements.

- (ii) The filter tank and all components shall be installed in accordance with the manufacturer's recommendations.
- (iii) The filtration system shall be designed with necessary valves and piping to permit:
 - a. Filtering of all pool water;
 - b. Individual backwashing of filters to a sanitary sewer at a minimum rate of 15 gallons per minute per square foot of filter area;
 - c. Isolation of individual filters;
 - d. Complete drainage of all parts of the system; and
 - e. Necessary maintenance, operation and inspection in a convenient manner.
- (iv) An air-relief valve shall be provided at or near the high point of the filter.
- (v) The filter system shall be provided with an influent pressure gauge.

4.18.4. Vacuum or Pressure Type Pre-coat Media Filter Requirements. Vacuum or pressure type pre-coat media filters shall comply with the following:

- (i) The filtering area shall be compatible with the design pump capacity as required by ~~section~~ 4.14.9. The design rate of filtration shall not exceed 2.0 gallons per minute per square foot, 7.57 liters per 929 square centimeters, of effective filtering surface without continuous body feed, nor greater than 2.5 gallons per minute per square foot, 9.46 liters per 929 square centimeters, with continuous body feed.
- (ii) Where body feed is provided, the feeder device shall be accurate to within 10 percent, shall be capable of continual feeding within a calibrated range, and shall be adjustable from two to six parts per million. The device shall feed at the design capacity of the circulation pump.
- (iii) Where fabric is used, filtering area shall be determined on the basis of effective filtering surfaces.
- (iv) The filter and all component parts shall be designed and constructed of materials which will withstand normal continuous use without significant

deformation, deterioration, corrosion, or wear which could adversely affect filter operations.

- (v) If a pre-coat media filter is supplied with a potable water supply, then the water shall be delivered through an air gap.
- (vi) The filter plant shall be provided with influent pressure, vacuum, or compound gauges to indicate the condition of the filter. In vacuum-type filter installations where the circulating pump is rated at two horsepower or higher, an adjustable high vacuum automatic shut-off device shall be provided to prevent damage to the pump. Air-relief valves shall be provided at or near the high point of the filter system.
- (vii) A filter shall be designed to facilitate cleaning by one or more of the following methods: backwashing, air-bump-assist backwashing, automatic or manual water spray, or agitation.
- (viii) The filtration system shall provide for complete and rapid draining of the filter.
- (ix) Diatomaceous earth filter backwash water shall discharge to the sanitary sewer system through a separation tank. The separation tank shall have a precautionary statement warning the user not to start up the filter pump without first opening the air relief valve.
- (x) Personal protection equipment suitable for preventing inhalation of diatomaceous earth or other filter aids shall be provided.
- (xi) The Department may waive National Sanitation Foundation, NSF 50-2007, standards for pre-coat media filters and approve site-built or custom-built vacuum pre-coat media filters, if the pre-coat media filter elements are easily accessible for cleaning by hand hosing after each filtering cycle. Site-built or custom-built vacuum pre-coat media filters shall comply with all design requirements as specified in part ~~section~~ 4.18.4.
- (xii) Any design which provides the equivalent washing effectiveness as determined by the Department may be acceptable. Where the Department determines that a potential cross-connection exists, a hose bib in the vicinity of the filter to facilitate the washing operation shall be equipped with a vacuum breaker listed by the International Association of Plumbing and Mechanical Officials, IAPMO, the American Society of Sanitary Engineering, A.S.S.E., or other nationally recognized standard.

4.18.5. **Cartridge Filters.** Vacuum or pressure type cartridge filters shall comply with the following:

- (i) Cartridge filters shall be designed for a filter rate of less than 0.375 gallons per minute per square foot of effective filter area. The filter surface area

shall be sufficient to meet the design rate of flow required by ~~section~~ 4.14.9 for required turnover.

- (ii) The filter and all component parts shall be designed and constructed of materials which will withstand normal continuous use without significant deformation, deterioration, corrosion or wear which could adversely affect filter operations. The filter element shall be constructed of polyester fiber only.
- (iii) The filter shall be fitted with influent and effluent pressure gauges, vacuum, or compound gauges to indicate the condition of the filter. In vacuum type filter installations where the circulating pump is rated at two horsepower or higher, an adjustable high vacuum automatic shut-off shall be provided to prevent damage to the pump. Air-relief valves shall be provided at or near the high point of the filtration system.
- (iv) Cleaning of cartridge type filters shall be accomplished in accordance with the manufacturer's recommendations.

4.19. **Disinfectant and Chemical Feeders.**

4.19.1. A pool shall be equipped with a disinfectant feeder or feeders which conform to the National Sanitation Foundation, NSF 50-2007, standards relating to adjusted output rate chemical-feeding equipment and flow through chemical feeding equipment for swimming pools, or be deemed equivalent by the Department.

4.19.2. Where compressed chlorine gas is used, the following additional features shall be provided:

- (i) Chlorine and chlorinating equipment shall be located in a secure, well-ventilated enclosure separate from other equipment systems or equipment rooms. Such enclosures shall not be below ground level. If an enclosure is a room within a building, it shall be provided with vents near the floor which terminate at a location out-of-doors. Enclosures shall be located to prevent contamination of air inlets to any buildings and areas used by people. Forced air ventilation capable of providing at least one complete air change per minute, shall be provided for enclosures.
- (ii) Substances which are incompatible with chlorine shall not be kept in the chlorine enclosure.
- (iii) Chlorine cylinders shall be secured. An approved valve stem wrench shall be maintained on the chlorine cylinder so the supply can be shut off quickly in case of emergency. Valve protection hoods and cap nuts shall be kept in place except when the cylinder is connected.
- (iv) Doors to chlorine gas and equipment rooms shall be labeled “DANGER CHLORINE GAS” in letters at least four inches in height and display the

United States Department of Transportation placard and I.D. number for chlorine gas.

- (v) The chlorinator shall be designed so that leaking chlorine gas will be vented to the out-of-doors.
- (vi) The chlorinator shall be a solution feed type, capable of delivering chlorine at its maximum rate without releasing chlorine gas to the atmosphere. Injector water shall be furnished from the pool circulation system with necessary water pressure increases supplied by a booster pump. The booster shall be interlocked with both the pool circulation pump and with a flow switch on the return line.
- (vii) Chlorine feed lines shall not carry pressurized chlorine gas.
- (viii) An unbreakable bottle of ammonium hydroxide, of approximately 28 percent solution in water, shall be readily available for chlorine leak detection.
- (ix) A self-contained breathing apparatus approved by NIOSH for entering environments that are immediately dangerous to life or health (IDLH) shall be available and shall have a minimum capacity of fifteen minutes. The breathing apparatus shall be kept in a closed cabinet located outside of the room in which the chlorinator is maintained, and shall be accessible at all times without use of a key or lock combination.
- (x) The RPO shall demonstrate to the Department through training documentation, that all persons who operate, or handle gas chlorine equipment are knowledgeable about safety and proper equipment handling practices to protect themselves, staff members, and the public from accidental exposure to chlorine gas.
- (xi) The facility operator or his designee shall immediately notify the ~~Salt Lake County Health~~ Department of any inadvertent escape of chlorine gas.

4.19.3. Each bactericidal agent shall be registered by the U.S. Environmental Protection Agency for use in swimming pools.

4.19.4. Positive displacement pumps and piping used to apply chemicals to the water shall be sized, designed, and constructed of materials which can be cleaned and maintained free from clogging at all times. Materials used for such equipment and piping shall be resistant to the effects of the chemicals in use.

4.19.5. Chemical feed pumps shall be wired electrically to the main circulation pump and be dependent upon the operation of the main circulation pump. If a chemical feed pump has an independent timer, the main circulation pump and chemical feed pump timer shall be interlocked.

4.19.6. Where oxidation-reduction potential (ORP) controllers are used, the operator shall perform water testing, calibration checks, inspection, cleaning of sensor probes, and chemical injectors in accordance with the manufacturer's recommendations. If specific manufacturer's recommendations are not made, the operator shall perform these tasks at least weekly.

4.20. Safety and Lifesaving Requirements.

4.20.1. **Lifeguards Required.** Lifeguard service shall be provided at all times the pool is open to the public if direct fees are charged or if public funds support the operation of the pool. If a pool is normally exempt from the requirement to provide lifeguard services but is used for some purpose that would require lifeguard services, then lifeguard services are required during the period of that use.

4.20.2. A lifeguard shall:

- (i) Be trained and certified by the American Red Cross, Ellis and Associates, or an equivalent program as approved by the Department in Standard Level First Aid, C.P.R. for professional rescuers, and Life Guarding; and
- (ii) Have full authority to enforce all rules of safety and sanitation.

4.20.3. A lifeguard shall not have any other duties to perform other than the supervision and safety of bathers while he or she is assigned life guarding duties.

4.20.4. Where lifeguard service is required, the number of lifeguards shall be sufficient to allow for continuous supervision of all bathers, and surveillance over total pool floor areas.

4.20.5. Lifeguards shall be relieved in the rotation of lifeguarding responsibilities at least every 30 minutes with a work break of at least 10 minutes every hour.

4.20.6. **Elevated Lifeguard Station.** Areas of a public pool with water depth greater than six feet or a width greater than forty feet and a depth greater than four feet where a lifeguard is required shall provide for a minimum number of elevated lifeguard chairs in accordance with Table 2. Lifeguard chairs shall be located to provide a clear unobstructed view of the pool bottom by lifeguards on duty.

4.20.7. Where lifeguard service is required, the facility shall have a readily accessible area designated and equipped for emergency first aid care.

4.20.8. **Lifesaving and Safety Equipment.** A pool shall have at least one unit of lifesaving equipment. One unit of lifesaving equipment shall consist of the following: a Coast Guard-approved ring buoy with an attached rope equal in length to the maximum width of the pool plus 10 feet and a life pole or shepherd's crook type pole with blunted ends and a minimum length of 12 feet. The facility operator may substitute a rescue tube for a ring buoy where lifeguard service is provided. Additional units shall be provided at the rate of one for each 2,000 square feet, of surface area or

fraction thereof. The operator of a pool that has lifeguard services shall provide at least one backboard designed with straps and head stabilization capability. See Table 2 below.

TABLE 2: SAFETY EQUIPMENT AND SIGNS

	POOLS WITH LIFEGUARD	POOLS WITH NO LIFEGUARD
Elevated Chairs:	1 per 2,000 sq. ft. of surface area or fraction thereof	None
Backboard:	1 per Facility	None
Room for Emergency Care:	1 per Facility	None
Ring Buoy with an attached rope equal in length to the maximum width of the pool plus 10 feet:	1 per 2,000 sq. ft. or fraction.	1 per 2,000 sq. ft. or fraction-
Rescue Tube (Used as a substitute for ring buoys when lifeguards are present.):	1 per 2,000 sq. ft. or fraction.	None
Life Pole or Shepherds Crook:	1 per 2,000 sq. ft. or fraction.	1 per 2,000 sq. ft. or fraction-
First Aid Kit:	1 per Facility	1 per Facility

4.20.9. Lifesaving equipment shall be mounted in readily accessible, conspicuous places around the pool deck. It shall be maintained in good repair and operable condition. Lifesaving equipment may not be used or removed by anyone for any reason other than its intended purpose.

4.20.10. **First Aid Kit.** A public pool shall be equipped with a first aid kit which includes a minimum of the following items:

- (i) 2 Units eye dressing packet;
- (ii) 2 Units triangular bandages;
- (iii) 1 CPR shield;
- (iv) 1 scissors;
- (v) 1 tweezers;

- (vi) 6 pairs disposable medical exam gloves; and
- (vii) Assorted types and sizes of the following: self- adhesive bandages, compresses, roller type bandages, and bandage tape.

4.20.11. The operator shall keep the first-aid kit filled, available, and ready for use.

4.21 **Lighting, Ventilation, and Electrical Requirements.**

4.21.1. **Lighting.** An outdoor pool shall not be used for night swimming without underwater lighting. The Department may approve an outdoor pool for night swimming if the operator can demonstrate to the Department that a 6 inch diameter black disk on a white background placed in the deepest part of the pool can be clearly observed from the pool at night. The Department shall keep a record of this approval on file. The pool operator shall keep a record of this approval on file at the facility.

4.21.2. **Illumination.** Where night swimming is permitted, artificial lighting shall be provided so that all areas of the pool are visible. Underwater lights shall provide illumination equivalent to 0.5 watt of incandescent lamp light per square foot, of pool water surface area. Underwater lighting requirement maybe waived if overhead lighting provides a minimum of 15 foot candle illumination over the entire pool surface.

4.21.3. **Deck Lighting.** Where night swimming is permitted, area lighting shall be provided for the deck areas and directed away from the pool surface as practical to reduce glare. The luminance shall be at least 5 horizontal foot candles of light per square foot of deck area, but less than the luminance level for the pool shell.

4.21.4. **Electrical.** Electrical wiring shall conform to Article 680 of the National Electrical Code, as adopted by Utah Administrative Code R156-56-701 (b). Wiring shall not be routed under a pool or within the area extending 5 feet horizontally from the inside wall of the pool. The Department may deny the installation and use of any electrical appliance, device, or fixture, except in the following circumstances:

- (i) For underwater lighting,
- (ii) Electrically powered automatic pool shell covers, and
- (iii) Competitive judging, timing, and recording apparatus.

4.21.5. **Ventilation.** Buildings containing indoor pools, pool equipment rooms, access spaces, bathhouses, dressing rooms, shower rooms, and toilet spaces shall be ventilated in accordance with American Society of Heating, Refrigeration, and Air-Conditioning Engineers Standard 62.1-2004, which is incorporated ~~herein~~ and adopted by reference.

4.21.6. If any part of the equipment room is below grade, access by stairway and suitable drainage, by sump pump if necessary, shall be provided. If an open stairwell is used, ventilation through a fully louvered door and a permanently open louvered vent on at least one side of the room is required. Enclosed stairways shall have louvered vents on three sides of the room or an exhaust fan.

4.22. Dressing Rooms – General Construction and Design.

4.22.1. A pool facility shall provide patrons with access to a dressing room that meets the requirements of this Regulation.

4.22.2. All areas and sanitary fixtures within dressing rooms shall be maintained in good repair and in a clean and sanitary condition. Dressing rooms shall be equipped with minimum fixtures as required in ~~section~~ 4.22.9. The Department may exclude any bathers from the total number of bathers used to calculate the fixtures required in ~~section~~ 4.22.9 who have private use fixtures available within 150 feet of the pool.

4.22.3. A separate dressing room with required shower areas shall be provided for each gender. The entrances and exits shall be designed to break the line of sight into the dressing areas from other locations.

4.22.4. Dressing rooms shall be constructed of materials that have smooth surfaces, and are impervious to moisture.

4.22.5. Dressing room floor surfaces shall be non-slip, slope to a drain and be constructed to prevent accumulation of water. Carpeting shall be prohibited on dressing room floors. Junctions between walls and floors shall be coved.

4.22.6. Partitions between dressing cubicles shall be raised at least 10 inches above the floor or shall be placed on continuous raised masonry or concrete bases at least ~~four~~4 inches high.

4.22.7. Lockers shall be set either on solid masonry bases four inches high or on legs elevating the bottom locker at least 10 inches above the floor. Lockers shall have louvers for ventilation.

4.22.8. A dressing room shall exit to the shallowest area of the pool. The dressing room exit door and the pool edge shall be separated by at least 10 feet and be connected by an easily cleanable walkway.

4.22.9. A dressing room shall have a minimum number of sanitary fixtures in accordance with Table 4-3. The minimum number of toilets and showers for dressing room fixtures shall be based upon the designed maximum bather load. Required numbers of fixtures shall be based upon 50 percent of the total number of bathers being male and 50 percent being female, except where the facility is used exclusively by one gender.

TABLE 3: SANITARY FIXTURE MINIMUM REQUIREMENT

TOILETS*	
Male	Female
1: 1 to 25	1: 1 to 25
2: 26 to 75	2: 26 to 75
3: 76 to 125	3: 76 to 125
4: 126 to 200	4: 126 to 200
5: 201 to 300	5: 201 to 300
6: 301 to 400	6: 301 to 400
Over 400, add one fixture for each additional 200 males or 150 females.	
*Where urinals are provided, one toilet less than the number specified shall be provided for each urinal installed, except the number of toilets in such cases shall not be reduced to less than one half of the minimum specified.	

- 4.22.10. Hand sinks shall be provided on the basis of one for each toilet up to four, then one for each two additional toilets.
- 4.22.11. Soap shall be dispensed at all hand sinks and showers. Soap dispensers shall be constructed of metal or plastic. Use of bar soap shall be prohibited.
- 4.22.12. Fixtures shall be maintained in good repair and designed so that they may be readily cleaned. Fixtures shall be cleaned and sanitized as needed.
- 4.22.13. One shower head for each gender shall be provided for each 50 bathers or fraction thereof.
- 4.22.14. Potable water shall be provided at all shower heads. Water heaters and thermostatically controlled mixing valves shall be inaccessible to bathers and shall be capable of providing 2 gallons per minute of 90° Fahrenheit water to each shower head for each bather.
- 4.22.15. At least one covered waste can shall be provided in each restroom.
- 4.23. **Disinfection and Quality of Water.**
 - 4.23.1. **Disinfection Process.** A pool shall be continuously disinfected by a process which:
 - (i) Is registered with the United States Environmental Protection Agency as a disinfecting process or disinfectant product for water.

- (ii) Imparts a disinfectant residual which may be easily and accurately measured by a field test procedure appropriate to the disinfectant in use. The active disinfecting agent used shall meet the concentration levels listed in Table 4 for all circumstances, bather loads, and the pH level of the water.
- (iii) Is compatible for use with other chemicals normally used in pool water treatment.
- (iv) Does not create harmful or deleterious effects on bathers if used according to manufacturer's specifications.
- (v) Does not create an undue safety threat if handled, stored and used according to manufacturer's specifications.
- (vi) The active disinfecting agent used shall meet the concentration levels listed in Table 4 for all circumstances, bather loads, and the pH level of the water.

4.23.2. **Testing Kit.** An easy to operate pool-side disinfectant testing kit, compatible with the disinfectant in use and accurate to within 0.5 ppm, shall be provided at each Ppool.

- (i) If chlorine is the disinfectant used, it shall be tested by the diethyl-p-phenylene diamine, leuco crystal violet test or other test method approved by the Department.
- (ii) If cyanuric acid or stabilized chlorine is used, a testing kit for cyanuric acid, accurate to within 10.0 ppm shall be provided.
- (iii) Expired test kit reagents shall not be used.

4.23.3. If cyanuric acid is used to stabilize the free residual chlorine, or if one of the chlorinated isocyanurate compounds is used as the disinfecting chemical, the concentration of cyanuric acid in the water shall be at least 10 ppm, but shall not exceed 100 ppm.

4.23.4. The difference between the total chlorine and the free chlorine in a pool shall not be greater than 0.5 ppm. If the concentration of combined residual chlorine is greater than 0.5 ppm the pool water shall be breakpoint chlorinated to oxidize and reduce the concentration of combined chlorines.

4.23.5. Total dissolved solids shall not exceed 1,500 ppm over the startup total dissolved solids of the pool water.

4.23.6. Total alkalinity shall be with the range from 100-125 ppm for plaster lined pools, 80-150 ppm for a spa pool lined with plaster, and 125-150 ppm for a pool lined with other approved construction materials.

4.23.7. A calcium hardness of at least 200 ppm shall be maintained.

- 4.23.8. The saturation index value of the pool water shall be within the range of positive 0.3 and minus 0.3. The saturation index shall be calculated in accordance with Table 5.

TABLE 4: DISINFECTANT LEVELS AND CHEMICAL PARAMETERS

	POOLS	SPAS	SPECIAL PURPOSE
Stabilized Cl ₂ (ppm)			
pH 7.2 to 7.6	2.0*	3.0*	2.0*
pH 7.7 to 8.0	3.0*	5.0*	3.0*
Non Stabilized Cl ₂ (ppm)			
pH 7.2 to 7.6	1.0*	2.0*	2.0*
pH 7.7 to 8.0	2.0*	3.0*	3.0*
Bromine (ppm)	4.0*	4.0*	4.0*
Iodine (ppm)	1.0	1.0	1.0
UV + H ₂ O ₂ (ppm)	40.0*	40.0*	40.0*
pH	7.2 to 7.8	7.2 to 7.8	7.2 to 7.8
Total Dissolved Solids over startup TDS (ppm)	1,500	1,500	1,500
Cyanuric Acid (ppm)	<100	<100	<100
Calcium Hardness (ppm)	200*	200*	200*
Total Alkalinity (ppm) (plaster pools) 125 to 150 (painted or fiberglass pools)	100 to 125	80 to 150	100 to 125
Saturation Index (see Table 5)	+/- 0.3	+/- 0.3	+/- 0.3
Chloramines (combined Cl ₂ residual, ppm)	0.5	0.5	0.5

*Minimum Value

- 4.23.9. **Water Clarity.** The water shall have sufficient clarity at all times so that the drain grates or covers in the deepest part of the pool are readily visible. The facility shall be closed immediately if this requirement is not met.
- 4.23.10. **Pool Water Sampling and Testing.** A water sample shall be collected from a pool at least once per month or as otherwise directed by the Department while it is in use and shall be submitted to a laboratory approved by the Department to perform Safe Drinking Water Program testing. A seasonal public pool during the off season and any public pool while it is temporarily closed, if the pool is closed for an interval exceeding half of that particular month, are exempt from the requirement for monthly sampling.
- (i) The operator or Department shall have the laboratory analyze the sample for total coliform and heterotrophic plate count using methods allowed under Utah Administrative Code ~~Rule~~ 444-14.
 - (ii) The testing laboratory shall promptly report the results of such analysis to the Department and to the facility operator within five working days. When

requested, the lab or the Department shall mail the results of such analysis to the Utah Department of Health and Human Services.

4.23.11. A pool water sample fails bacteriological quality standards if it:

- (i) Contains more than 200 bacteria per milliliter, as determined by the heterotrophic plate count;
- (ii) Shows a positive test for presence of coliform or contains more than 1.0 coliform organisms per 100 milliliters.

4.23.12. Not more than 1 of 5 samples may fail bacteriological quality standards. Failure of any bacteriological water quality sample shall require submission of a second sample within one lab receiving day after the sample report has been received.

4.23.13. **Pool Water Temperatures.**

- (i) Pool water temperatures for general use should be within the range of 82° Fahrenheit to 86° Fahrenheit.
- (ii) The water in a pool dedicated primarily for swim training and high exertion activities shall be within the temperature range of 78° Fahrenheit to 82° Fahrenheit to reduce the safety threat associated with hyperthermia.
- (iii) The minimum water temperature for a pool is 78° Fahrenheit.
- (iv) The Department may approve the pool water temperature requirements for a special purpose pool including a cold plunge pool, but shall not approve any temperatures above 104° Fahrenheit, the maximum hot water temperatures allowed for a spa pool.

TABLE 5: CHEMICAL VALUES AND FORMULA FOR CALCULATING SATURATION INDEX

Formula for Calculating the Saturation Index: $SI = pH + TF + CF + AF - TDSF$
 where SI means saturation index, TF means temperature factor, CF means calcium factor, AF means alkalinity factor, TDSF means Total Dissolved Solids factor.

Temperature		Calcium Hardness		Total Alkalinity		Total Dissolved Solids	
deg. F	TF	ppm	CF	ppm	AF	mg/l	TDSF
32	0.0	5	0.3	5	0.7	0 to 999	12.1
37	0.1	25	1.0	25	1.4	1000 to 1999	12.2
46	0.2	50	1.3	50	1.7	2000 to 2999	12.3
53	0.3	75	1.5	75	1.9	3000 to 3999	12.4
60	0.4	100	1.6	100	2.0	4000 to 4999	12.5
66	0.5	150	1.8	150	2.2	5000 to 5999	12.55
76	0.6	200	1.9	200	2.3	6000 to 6999	12.6
84	0.7	300	2.1	300	2.5	7000 to 7999	12.65
94	0.8	400	2.2	400	2.6	Ea. Add. 1000	Add .05
105	0.9	800	2.5	800	2.9		
128	1.0	1,000	2.6	1,000	3.0		

If the SATURATION INDEX is 0, the water is chemically in balance.

If the INDEX is a minus value, corrosive tendencies are indicated.

If the INDEX is a positive value, scale-forming tendencies are indicated.

EXAMPLE: Assume the following factors:

pH 7.5, Temperature 80 degrees F, 19 degrees C, Calcium Hardness 235

Total Alkalinity 100, and Total Dissolved Solids 999

1- pH - 7.5

2- TF - 0.7

3- CF - 1.9

4- AF - 2.0

TOTAL: $7.5 + 0.7 + 1.9 + 2.0 - 12.1 = 0.0$

This water is balanced.

4.24. Cleaning Pools.

4.24.1. The operator shall clean the bottom of the pool as often as needed to keep the pool free of visible dirt.

4.24.2. The pool water surface shall be cleaned as often as needed to keep the pool free of visible scum or floating matter.

4.24.3. Pool shell surfaces, handrails, floors, walls, and ceilings of rooms enclosing pools, dressing rooms and equipment rooms, shall be kept clean, sanitary, and in good repair.

4.24.4. After a fecal or bodily fluid incident occurs, the operator shall follow the Centers for Disease Control (CDC) guidelines “Fecal Accident Response Recommendations for Pool Staff and Notice to Readers—Revised Guidance for Responding to Fecal Accidents in Disinfected Swimming Venues”.

- (i) The operator shall include in the records information about all fecal matter releases; date, time, and where the fecal matter was discovered; whether the fecal matter was loose or solid; and the responses taken. The operator shall maintain the records for a minimum of two years.
- (ii) The required CDC control protocol for hyper chlorination for a loose fecal release may be altered if an operator is able to achieve a 99.9 percent kill or removal of cryptosporidium oocysts in the entire pool system by another method such as ultraviolet light, ozone, or enhanced filtration prior to allowing bathers to reenter the pool.

4.25. **Signage.**

4.25.1. Unless otherwise provided, a sign shall be posted in the immediate vicinity of the pool stating the location of the nearest telephone, and providing emergency telephone numbers, which shall include the name and phone number of the nearest police, fire and rescue unit, ambulance service, and nearest hospital.

4.25.2. If a telephone is not available at poolside, emergency telephone numbers shall be provided in a form that can be taken to a telephone.

4.25.3. Where no lifeguard service is provided in accordance with ~~section~~ 4.20.1, a warning sign shall be placed in plain view and state: “WARNING – NO LIFEGUARD ON DUTY. BATHERS SHOULD NOT SWIM ALONE.” Printed in four inch high letters. In addition the sign shall also state: “CHILDREN 14 AND UNDER SHOULD NOT USE POOL WITHOUT RESPONSIBLE ADULT SUPERVISION.”

4.25.4. Areas of a pool where diving is not permitted shall have the words "NO DIVING" printed in block letters, or the international “No Diving” icon, or both. The block letters or icons shall be at least 4 inches in height, in a contrasting color on the deck, and located within 16 inches of the pool side edge of the coping stone.

- (i) The spacing between each warning shall be no greater than 25 feet.
- (ii) Where the icon is used alone, at least one “NO DIVING” sign shall be posted in plain view within the enclosure.

4.25.5. **Personal Hygiene and Behavior Signage.** Legible and clearly visible placards stating the following rules of personal hygiene and behavior shall be posted in the pool enclosure, dressing rooms, and life guard rooms where applicable.

- (i) A bather using the facility must take a cleansing shower before entering the pool enclosure. A bather leaving the pool to use the toilet must take a second cleansing shower before returning to the pool enclosure.
- (ii) A person having a communicable disease transmissible by water shall be excluded from pools. A person having any exposed sub-epidermal tissue, including open blisters, cuts, or other lesions may not use a pool. A person who has or has had diarrhea within the last two weeks caused by an unknown source or from any communicable or fecal-borne disease may not enter any public pool.
- (iii) Any child under three years old, any child not toilet trained, and anyone who lacks control of defecation shall wear a water resistant swim diaper and waterproof swimwear. Swim diapers and waterproof swimwear shall have waist and leg openings fitted such that they are in contact with the waist or leg around the entire circumference.
- (iv) Running, boisterous or rough play, except supervised water sports is prohibited.
- (v) Diapers shall be changed in restrooms or changing stations not at poolside. The person or persons who change the diaper must wash their hands thoroughly with soap before returning to the pool. The diapered person must undergo a cleansing shower before returning to the pool.

4.26. Pool Facility.

- 4.26.1. Visitors, spectators, or animals shall not be allowed within 10 feet of the pool edge. Service animals are exempt from this requirement.
- 4.26.2. Food or drink shall be prohibited within ten feet of the pool edge. All beverages within the pool compound shall be in non-breakable containers.
- 4.26.3. Trash containers shall be provided and the entire area shall be kept free of litter and maintained in a clean, sanitary condition.
- 4.26.4. Diapers shall only be changed in restrooms or changing stations.
- 4.26.5. Persons who change the diaper shall wash their hands thoroughly with soap before returning to the pool. The diapered person shall undergo a cleansing shower before returning to the pool.

4.27. Cryptosporidiosis.

- 4.27.1. The Director may issue cryptosporidiosis watches or cryptosporidiosis warnings as methods of intervention for likely or indicated outbreaks of cryptosporidiosis.

4.27.2. If the Director issues a restriction on the use of public pools by certain persons as part of the cryptosporidium warning the operator shall restrict persons within that segment of the population from using the facility.

4.27.3. If the Department determines that a pool is a cryptosporidiosis threat to public health, the Department may order the pool to close. The owner or operator of the pool shall not reopen until the Department rescinds the closure order.

4.27.4 Cryptosporidiosis Watches.

- (i) The Director may issue a cryptosporidiosis watch if there is a heightened likelihood of a cryptosporidiosis outbreak.
- (ii) When a cryptosporidiosis watch has been issued, the operator of any public pool shall post a notice sign that meets the requirements of this section, the standard for "notice" signs established in ANSI Z535.2-2002, which is adopted by reference, and the approval of the Department to assure compliance with this section and the ANSI standard. An Adobe Acrobat.pdf version of the sign that meets the requirements of this section and the ANSI standard for 10-foot viewing is available from the Department. The notice sign shall be placed so that all patrons are alerted to the cryptosporidium-targeted requirements prior to deciding whether to use the swimming pool. The sign shall be at least 17 inches, 43 centimeters, wide by 11 inches, 28 centimeters, high. The sign may need to be larger, depending on the placement of the sign, to meet the ANSI standard.
 - a. Centered immediately below the blue panel shall appear the words "CRYPTO DISEASE PREVENTION" in capital letters.
 - b. The body of the notice sign shall be in upper case letters at least 1.0 centimeters high and include the following four bulleted statements in black letters:
 - All with diarrhea in the past 2 weeks shall not use the pool.
 - All users must shower with soap to remove all fecal material prior to pool entry and after using the toilet or a diaper change.
 - All less than 3 years or who wear diapers must wear a swim diaper and waterproof swimwear. Diapers may only be changed in restrooms or changing stations.
 - Keep pool water out of your mouth.

4.27.5. **Cryptosporidiosis Warnings.** The Director may issue a cryptosporidiosis warning if there have been reports of cryptosporidiosis above the background level reported for the disease.

- (i) When a cryptosporidiosis warning has been issued, the operator of any public pool shall post a notice sign that meets the requirements of ~~section~~ 4.27.4.
- (ii) The Director shall include the geographic area and pool type covered in the warning and may restrict certain persons from using public pools.
- (iii) Each operator of a public pool subject to the warning shall, at a minimum, implement the following cryptosporidium counter measures:
 - a. Maintain the disinfectant concentration within the range between two ppm (four ppm for bromine) and five ppm (10 ppm for bromine) unless the label on the product states otherwise;
 - b. Maintain the pH between 7.2 and 7.5; and
 - c. Shall reduce the maximum cyanuric acid level to 30 ppm.
- (iv) The owner or operator of a public pool shall implement any additional cryptosporidium countermeasures listed below to achieve at least a 99.9 percent destruction or removal of cryptosporidium oocysts twice weekly, except as provided in ~~section~~ 4.24.4(ii).
- (v) Shall achieve Hyperchlorination using sodium hypochlorite or calcium hypochlorite to achieve a concentration multiplied by time (CT) value of 15,300 mg/l minutes. Table 6 lists examples of chlorine concentrations and time periods that may be used to achieve the required CT value. The operator shall not allow anyone to use the pool if the chlorine concentration exceeds the Environmental Protection Agency maximum reentry concentration listed on the product's label, but in no case if the concentration exceeds five mg/l. The operator of any public pool not required to have a lifeguard in ~~section~~ 4.20.1 shall hyperchlorinate at least once weekly.
- (vi) A full flow ultraviolet treatment system shall meet the requirements of NSF/ANSI 50-2007, which is incorporated by reference. The owner or operator shall ensure that the system is installed and operated according to the manufacturer's recommendations. The owner or operator shall obtain, from the manufacturer of the system, documentation of third-party challenge testing that the system can achieve a single pass 99.9 percent inactivation of cryptosporidium or the bacteriophage MS2 at the pool design flow rate and during normal operating conditions. The owner or operator shall maintain and make available for inspection the manufacturer's documentation.
- (vii) An ozone treatment system that achieves a CT value of 7.4 and a flow-through rate at least four times the volume of the pool every three and a half days. The system shall meet the requirements of National Sanitation

Foundation standard NSF/ANSI 50-2007, which is incorporated by reference. The owner or operator shall ensure that the system is installed and operated according to the manufacturer's recommendations.

- (viii) A cryptosporidium oocyst-targeted filter system installed and operated according to the manufacturer's recommendations. The filter shall meet the requirements of ~~section~~ 4.18. The owner or operator shall obtain from the manufacturer of the system documentation of third-party challenge testing that the system can achieve a single pass 99 percent reduction of particles in the range of 4 to 6 microns or cryptosporidium oocysts at the pool design flow rate and normal operating conditions. The owner or operator shall maintain and make available for inspection the manufacturer's documentation.
 - a. A system approved by the Department. The Department's approval of a system for use as an alternative shall be based on the system's documented ability to:
 - i. Achieve cryptosporidium removal or inactivation to a level at least equivalent to the requirements in 4.27.5 (iii)
 - ii. Assure safety for swimmers and pool operators; and
 - iii. Comply with all other applicable rules and federal regulations.

TABLE 6: CHLORINE CONCENTRATION AND CONTACT TIME TO ACHIEVE CT = 15,300

Chlorine Concentration	Contact Time
1.0 mg/l	15,300 minutes (255 hours)
10 mg/l	1,530 minutes (25.5 hours)
20 mg/l	765 minutes (12.75 hours)

- 4.28. **Special Purpose Pools.** Special purpose pools shall meet all applicable requirements of all Sections in addition to those of this Section as they apply to special design features and uses of special purpose pools.
 - 4.28.1. Special purpose pool projects shall require consultation with the ~~health d~~Department in order that consideration can be given to areas where potential problems may exist and before deviations from some of the requirements are approved.
 - 4.28.2. The Department shall require such measures as deemed necessary to assure the health and safety of special purpose pool patrons.
 - 4.28.3. **Hydrotherapy Pools.**

- (i) A hydrotherapy pool shall at all times comply with ~~Health Regulation #2 section 4.1.6, 4.25.1, and 4.25.2~~ Registered Pool Operator, ~~section 4.23~~ Disinfection and Quality of Water, and ~~section 4.24~~ Cleaning Pools unless it is drained, cleaned, and sanitized after each individual use.
- (ii) A hydrotherapy pool shall not be required to meet all other requirements of ~~Health Regulation #2~~this Regulation; only if the use of the hydrotherapy pool is restricted to therapeutic uses and is under the continuous and direct supervision of licensed medical or physiotherapy personnel.
- (iii) The Department may enter and examine the use of hydrotherapy pools to respond to complaints, to assure that use of the pool is being properly supervised, to examine records of testing and sampling, and to take samples to assure that water quality and cleanliness are maintained.
- (iv) The Director may grant an exception to ~~section 4.28.2 (i)~~ if the operator of the hydrotherapy pool can demonstrate that the exception will not compromise pool sanitation or the health or safety of users.

4.28.4 Interactive Water Feature.

- (i) All parts of the interactive water feature shall be designed, constructed, maintained, and operated so there are no slip, fall, or other safety threats and shall meet the standards of the construction code adopted by the Utah Legislature, ~~Section Utah Code § 58-56-4~~.
- (ii) Interactive water feature nozzles that spray from the ground level shall be flush with the ground, with openings no greater than one-half inch in diameter. Spray devices that extend above ground level shall be high enough to be clearly visible and shall not create a tripping hazard.
- (iii) Waters discharged from all interactive water feature fountain or spray features shall not pond on the feature floor and shall flow by gravity through a main drain fitting to a below grade sump or collection system which discharges to a collector tank.
- (iv) All interactive water feature foggers and misters that produce finely atomized mists shall be supplied directly from a potable water source and not from the underground reservoir.
- (v) A continuous, unobstructed deck at least 3 feet wide as measured from the edge of the splash zone shall extend completely around the interactive water feature. Areas adjacent to the splash zone shall be sloped away from the interactive water feature to deck drains or other approved surface water disposal systems at a minimum of two percent.
- (vi) The interactive water feature shall have an automated oxidation reduction potential (ORP) and pH controller installed and in operation whenever the

feature is open for use. The controller shall be capable of maintaining disinfection and pH levels within the requirements for special purpose pools listed in Table 4. In addition, an approved secondary disinfection system shall be installed and in operation whenever the feature is open for use.

- (vii) A sign shall be posted in the immediate vicinity of the interactive water feature stating that pets are prohibited.
- (viii) If night operation of the interactive water feature is proposed, light shall be provided on the pool deck and the water feature area as outlined in 4.21.3.
- (ix) **Hydraulics.**
 - a. The interactive water feature filter system shall be capable of filtering and treating the entire water volume of the water feature within 30-minutes.
 - b. The interactive water feature filter system shall draft from the collector tank and return filtered and treated water to the tank via a minimum of four equally spaced inlet fittings. The flow rate through these fittings shall not exceed 20 gpm.
 - c. The interactive water feature recirculation system shall be on a separate loop and not directly interconnected with the interactive water feature pump.
 - d. The suction intake of the interactive water feature pump in the underground reservoir shall be located adjacent to the circulation return line and shall be located to maximize uniform circulation of the tank.
 - e. The interactive water feature pump shall draft from the collector tank.
 - f. An automatic water level controller shall be provided for the interactive water feature, and the drinking water line that supplies the feature shall be protected from any backflow by an air gap.
 - g. The flow rate through the feature nozzles of the interactive water features shall be such as not to harm the patrons and shall not exceed 20 feet per second. The minimum size of the interactive water feature sump or collector tank shall be equal to the volume of 3 minutes of the combined flow of all feature pumps and the filter pump. Access lids or doors shall be provided to the sump or collector tank. The lids or doors shall be sized to allow easy maintenance and shall provide security from unauthorized access.

Stairs or a ladder shall be provided as needed to ensure safe entry into the tank for cleaning and inspection.

- h. The suction intake from the interactive water feature recirculation pump shall be located in the lowest portion of the underground reservoir.
 - i. A filter circulation system shall be provided for the interactive water feature and shall be separate from the feature pump system except that both systems can draw water from a common drain pipe if the drain and pipe are sized to handle the flow of all pumps.
 - j. A means of vacuuming and completely draining the interactive water feature tank shall be provided.
- (x) An interactive water feature is exempt from:
- a. The wall requirement of ~~section~~ 4.8 of this Regulation;
 - b. The ladder, recessed step, stair, and handrail requirements of ~~section~~ 4.10 of this Regulation;
 - c. The access barrier requirements of ~~section~~ 4.12 of this Regulation;
 - d. The vacuum cleaning requirements of ~~section~~ 4.14.8 of this Regulation;
 - e. The inlet requirements of ~~section~~ 4.15 of this Regulation;
 - f. The outlet requirements of ~~section~~ 4.16 of this Regulation;
 - g. The overflow gutter and skimming device requirements of ~~section~~ 4.17 of this Regulation;
 - h. The safety and lifesaving requirements of ~~section~~ 4.20 of this Regulation, except that an interactive water feature shall be equipped with a first aid kit as required by ~~section~~ 4.20.11;
 - i. The dressing room requirements of ~~section~~ 4.22 of this Regulation as long as provided restrooms are available; and
 - j. The pool water temperature requirements of ~~section~~ 4.23.13 of this Regulation.

4.28.5 Spa Pools.

- (i) A spa pool shall have a maximum depth of 4 feet. The ~~d~~Department may grant exceptions to the maximum depth requirement for a spa pool designed for special purposes, such as instruction, treatment, or therapy.
- (ii) The ~~d~~Department may exempt a spa pool from the depth marking requirement if the spa pool owner can successfully demonstrate to the ~~d~~Department that bather safety is not compromised by the elimination of the markings.
- (iii) **Bather Load Capacity.** The maximum bather load of a spa pool shall be ~~ten~~10 square feet of pool water surface area for each bather.
- (iv) **Spa Design.** The spa's bottom step shall have a rise of 14" from the spa floor if it serves as a bench or seat.
- (v) **Spa Turnover.** A spa pool shall have a minimum of one turnover every 30 minutes.
- (vi) The circulation lines of jet systems and other forms of water agitation used in a spa shall be independent and separate from the circulation, filtration, and heating systems.
- (vii) Filtration system inlets shall be wall type inlets shall be spaced a minimum of one per 20 feet, or fraction thereof, of spa perimeter.
- (viii) One skimmer shall be provided for each 100 square feet of surface area or fraction thereof.
- (ix) A spa pool shall be equipped with oxidation reduction potential controllers which monitor chemical demands, including pH and disinfectant demands, and regulate the amount of chemicals fed into the pool circulation system. A spa pool constructed and approved prior to September 16, 1996 is exempt from this requirement if it is ~~able to~~ can meet bacteriological quality as required in ~~section~~ 4.23.12.
- (x) Total alkalinity for a spa pool lined with plaster shall range from 80 – 150. Total alkalinity for a spa pool lined with another approved lining shall range from 125 – 150.
- (xi) An easily legible caution sign shall be mounted adjacent to the entrance to the spa or hot tub and shall contain the following information:
 - a. The word "CAUTION" centered at the top of the sign in large, bold letters at least two inches in height.

- b. Elderly persons and those suffering from heart disease, diabetes or high blood pressure should consult a physician before using the spa pool.
 - c. Persons suffering from a communicable disease transmissible via water may not use the spa pool.
 - d. Persons using prescription medications should consult a physician before using the spa.
 - e. Individuals under the influence of alcohol or other impairing chemical substances shall not use the spa pool.
 - f. Bathers should not use the spa pool alone.
 - g. Pregnant women should not use the spa pool without consulting their physicians.
 - h. Persons should not spend more than fifteen minutes in the spa in any one session.
 - i. Children under the age of 14 shall be accompanied and supervised by at least one responsible adult over the age of 18 years, when lifeguards are not on duty.
 - j. Children under the age of five years are prohibited from bathing in a spa or hot tub.
 - k. Running or engaging in unsafe activities or horseplay in or around the spa is prohibited.
- (xii) Water jets and air induction ports on spa pools shall be controlled by an automatic timer which limits the duration of their use to 15 minutes per each cycle of operation. The operator shall mount the timer switch in a location which requires the bather to exit the spa before the timer can be reset for another 15 minute cycle or part thereof.
- (xiii) A spa pool's water temperature shall not exceed 104° F. Children under the age of five years shall be prohibited from bathing in a spa or hot tub.
- (xiv) **Construction and Materials.** The spa pool shell surface may be of a color other than white or light pastel color.
- (xv) **Decks and Walkways.**
- a. Wooden decks, walks, or steps shall be prohibited.

- b. The Department may grant exceptions for deck construction materials for spa pools or other applications where sealed, clear-heart redwood is used.
 - c. A pool deck may be included as part of the spa deck if the pools are separated by a minimum of 5 feet. The Department may grant an exception to deck and pool separation requirements if a spa pool and another pool are constructed adjacent to each other and share a common pool sidewall which separates the two pools. The common pool side wall may not exceed ~~twelve~~12 inches in width.
 - d. A continuous, unobstructed deck at least ~~three~~3 feet wide shall be provided around at least 25% or more of the spa. This width may include the coping stone.
- (xvi) **Outlets.** Multiple spa outlets shall be spaced at least 3 feet apart from each other as measured from the centers of the drain covers or grates or a third drain shall be provided and that the separation distance between individual outlets shall be at the maximum possible setting.
 - (xvii) The Department may exempt an acrylic or fiberglass spa from the requirement to locate outlets at the deepest point in the pool if the outlets are located on side walls within three inches of the pool floor, and a wet-vacuum is available on site to remove any water left in the pool after draining.
 - (xviii) **Lifeguarding and Lifesaving Equipment Requirements.** A spa pool is exempt from the lifeguarding and lifesaving equipment requirement specified in 4.20.1 through 4.20.10, except for the first aid kit.
 - (xix) A spa pool must be equipped with at least one handrail for each 50 feet of perimeter, or portion thereof, to designate the point of entry and exit. Points of entry and exit shall be evenly spaced around the perimeter of the spa pool and afford unobstructed entry and exit.

4.28.6 Wading Pools.

- (i) A wading pool shall have a minimum of one turnover per hour and have a separate circulation system.
- (ii) A wading pool shall provide inlets around its perimeter at a minimum of one per 20 feet or fraction thereof where wall inlets are utilized.
- (iii) A wading pool shall have a minimum of two equally spaced wall inlets,
- (iv) A wading pool shall have drainage to the sanitary sewer through a quick opening valve to facilitate emptying the wading pool should accidental bowel discharge or other contamination occur.

- (v) A wading pool shall have no connection between the overflow gutters and the main drain.
- (vi) A wading pool shall have the equalizer pipe to draw water from its own individual outlet.
- (vii) The deck of a wading pool may be included as part of adjacent pool decks.
- (viii) A wading pool shall not exceed a maximum water depth of two feet.

4.28.7 Water Slide.

- (i) **Maximum Bather load.** Fifty square feet of pool water surface area shall be provided for each bather in a splash pool during maximum load.
- (ii) **Circulation and Reservoirs.** Splash pool circulation systems and overflow reservoirs shall meet the following requirements:
 - a. Splash pool overflow reservoirs shall have sufficient volume to contain at least two minutes of flow from the splash pool overflow. Splash pool overflow reservoirs shall have enough water to ensure that the splash pool will maintain a constant water depth.
 - b. The circulation and filtration equipment of a splash pool shall be sized to turn over the entire system's water at least once every hour.
 - c. Splash pool overflow reservoirs shall circulate water through the water treatment system and return when flume supply service pumps are turned off.
 - d. Flume pumps and motors shall be sized, as specified by the flume manufacturer, and must meet all National Sanitation Foundation, NSF 50 2007, Section 6 standards for pool pumps.
 - e. Flume supply service pumps shall have check valves on all suction lines
 - f. The water slide's splash pool and the overflow reservoir shall be designed to prohibit bather entrapment as water flows from the splash pool to the overflow reservoir.
 - g. Perimeter overflow gutters are not required directly under slide flumes or along the weirs which separate splash pools and splash pool overflow reservoirs.
 - h. Pump reservoir areas shall be accessible for cleaning and maintenance.

(iii) **Splash Pool and Walkway Dimensions.** Splash pools shall meet the following depth requirements:

- a. The depth of a water slide's splash pool at the end of a horizontally oriented slide flume exit shall be at least 3 feet but may be required to be deeper if the design incorporates special features that may increase risks to bathers as determined by the Department.
- b. The depth of a water slide's splash pool shall be maintained in front of the flume for a distance of at least 20 feet from which point the splash pool floor may have a constant slope upward. Slopes shall not be designed or constructed steeper than a 1 to 10 ratio.
- c. The Department may waive minimum depth and distance requirements for a splash pool and approve a special exit system if the designer can demonstrate to the Department that safe exit from the flume into the splash pool can be assured.
- d. A walkway with a minimum width of four feet shall be provided between the splash pool deck and the top of the flume.
- e. Stairways serving the slide shall not retain standing water. Stairways must have non-slip surfaces and shall conform to the requirements of applicable building codes.

(iv) **Slide Flume Requirements.**

- a. Flumes within enclosed slides shall be designed to prevent accumulation of hazardous concentrations of toxic chemical fumes.
- b. All curves, turns, and tunnels within the path of a slide flume shall be designed so that body contact with the flume or tunnel does not present an injury hazard. The slide flume shall be banked to keep the slider's body safely inside the flume.
- c. The flume shall be free of hazards including joints and mechanical attachments, separations, splinters, holes, cracks, or abrasive characteristics. Wall thickness of flumes shall be thick enough so that the continuous and combined action of hydrostatic, dynamic, and static loads and normal environmental deterioration will not cause structural failures which could result in injury. The facility operator or owner shall insure that repairs or patchwork maintains original designed levels of safety and structural integrity. All repairs shall be performed in accordance with manufacturer's guidelines.
- d. A distance between the side of a slide flume exit and a splash pool side wall shall be at least 4 feet.

- e. A distance between nearest sides of adjacent slide flume exits shall be at least 6 feet.
- f. The distance between a slide flume exit and the opposite end of the splash pool, excluding steps, shall be at least 20 feet.
- g. Multiple-flume slides shall have parallel exits or be constructed so that the projected path of their centerlines do not intersect within a distance of less than 8 feet beyond the point of forward momentum of the heaviest bather permitted by the engineered-design.
- h. A slide flume exit shall provide safe entry into the splash pool. Design features for safe entry into the splash pool include a water backup and a deceleration distance adequate to reduce the slider's exit velocity to a safe speed. Other methods to ensure slider safety may be approved if demonstrated to the Department.
- i. Fifty Square feet of pool water surface shall be provided for each bather in a slide plunge pool during maximum load.

(v) **Vehicle Slide.**

- a. **Vehicles.** Vehicles, including toboggans, sleds, inflatable tubes, and mats shall be designed and manufactured of materials which will not injure or harm riders.
- b. A vehicle slide shall maintain the following clearances:
 - i. The distance between the side of the flume exit and the splash pool side wall shall be at least 6 feet.
 - ii. The distance between nearest sides of adjacent vehicle slide flume exits shall be at least 8 feet.
 - iii. The distance between the flume exit and the opposite end of the splash pool, excluding steps, shall be long enough to provide clear, unobstructed travel for at least 8 feet beyond the point of forward momentum of the heaviest bather permitted by the engineered-design.
- c. The operating water depth of a vehicle slide splash pool, at the flume exit, shall be a minimum of 3'6". This depth shall be maintained to the point at which forward travel of the vehicle ends. From the point at which forward travel ends, the floor shall have a constant upward slope to the pool exit at a ratio not to exceed 1 to 10.
- d. The Department may waive minimum depth and distance requirements for a vehicle slide's splash pool and approve a special

exit system if the designer can demonstrate to the Department that safe exit from the flume into the splash pool can be assured.

- (vi) **Signage.** A sign shall be mounted adjacent to the entrance to a water slide that states at least the following warnings:
- a. The word “CAUTION” centered at the top of the sign in large bold letters at least two inches in height.
 - b. No running, standing, kneeling, tumbling, or stopping on flumes, or in tunnel.
 - c. No head-first sliding at any time.
 - d. The use of a slide while under the influence of alcohol or impairing drugs is prohibited.
 - e. Only one person at a time may travel the slide.
 - f. Obey instructions of lifeguards and other staff at all times.
 - g. Keep all parts of the body within the flume.
 - h. Leave the splash pool promptly after exiting from the slide.

4.28.8 **Wave Pools.** Circulation and filtration systems shall be operated at a minimum of one turnover every 6 hours.

4.29 Closing of a Pool.

4.29.1 Any pool that fails to meet the requirements of this Regulation or is found to be a threat to the public health, safety, or welfare may be closed by the Department under ~~sections~~ 5.4, 7.3 and 7.4.4 of this Regulation.

4.29.2 **Placard.** Notice of such closure shall be designated by a placard posted by the Department in a conspicuous place and by written notice delivered to the facility.

4.29.3 No pool closed and placarded shall be used by humans for bathing or swimming, or for instructional purposes in swimming, diving, or other aquatic activities until written approval is received from the Department.

4.29.4 No person shall deface or remove a placard from any public swimming pool that has been closed by the Department. The Department shall remove such placard whenever the violation(s) upon which closing was based has been remedied.

5. LICENSES, PERMITS, & REGULATORY FEES

5.1 The Department may establish and collect appropriate fees for licenses and permits as set out in this Regulation. The Department may collect appropriate fees as set out in this Regulation for the performance of services, including plan reviews. If information on a license or permit application changes, the applicant shall notify the Department in writing within 20 calendar days.

5.1.1 **Seasonal Operational Permit Fee.** Applicants for a Seasonal Operational Permit required in ~~section~~ 4.1.1 of this Regulation shall be required to remit a Seasonal Operational Permit Fee of an amount as provided for or as approved by the Director or Department's Fee Schedule, upon application and at a time of renewal.

5.1.2 **Year-Round Operational Permit Fee.** Applicants for a Year-Round Operational Permit required in ~~section~~ 4.1.1 of this Regulation shall remit to the Department a Year-Round Operational Permit Fee of an amount as provided for or as approved by the Director or Department's Fee Schedule, upon application and at a time of renewal.

5.1.3 **Hydrotherapy Operation Permit Fee.** Applicants for a Hydrotherapy Operational Permit required in 4.1.1 of this Regulation must remit to the Department a Hydrotherapy Operational Permit Fee of an amount as provided for or as approved by the Director or Department's Fee Schedule, upon application at time of renewal.

5.1.4 **Pool Facility Plan Review Fee.** A Pool Facility Plan Review Fee of an amount as provided for or as approved by the Director or Department's Fee Schedule, upon application.

5.1.5 **Registered Pool Operator Permit Fee.** Applicants for a Registered Pool Operator Permit required in ~~section~~ 4.1.6 of this Regulation shall remit to the Department a Registered Pool Operator Permit Fee of an amount as provided for or as approved by the Director or Department's Fee Schedule.

5.1.6 **Pool Follow-Up Inspection Fee.** The Department will charge a follow-up fee when conditions found during an inspection, including construction or pre-opening inspection, or during any sampling require a follow-up inspection to ensure compliance. The permit holder shall remit a Pool Follow-Up Inspection Fee of an amount as provided for or as approved by the Director or Department's Fee Schedule.

5.2. Late Fees.

5.2.1. The Department may impose upon any party subject to this Regulation penalties and charges for failure to timely pay service and license or permit fees as set out in this Regulation. Attorney's fees and collection fees may also be applied.

- 5.2.2. Fees unpaid to the Health Department after one month of the due date will be assessed a penalty of 10% of the outstanding balance. Failure to pay the fees and additional charges after two months of the due date will be assessed an additional penalty of 15% of the outstanding balance including previous penalties. Failure to pay the fees and additional charges after 100 days of the due date will result in suspension of the permit and the right to operate. A ~~\$40.00~~ charge will be assessed for each returned check.
- 5.3. Unless otherwise provided for in this Regulation or approved by the ~~Salt Lake County Board of Health~~ in the Department's Fee Standard, all fees collected by the Department are non-refundable. All licenses and permits issued by the Department are non-transferable.
- 5.4. Suspension or Revocation of License or Permit.** The Department may also suspend or revoke licenses and permits or require closure for any of the following reasons:
- 5.4.1. Failure to post the Operational Permit in a location visible to pool facility users;
- 5.4.2. Submission of incorrect or false information in the application, plans or specifications submitted to the Department;
- 5.4.3. Failure to operate or maintain the pool in accordance with the application, report, plans or specifications approved by the Department;
- 5.4.4. Failure to submit pool water samples to the Department in accordance with this Regulation;
- 5.4.5. Failure of the owner or operator of a ~~P~~pool establishment to permit or allow the Department to conduct inspections as necessary to determine compliance with this Regulation;
- 5.4.6. Failure to replace existing facilities and equipment with facilities and equipment that comply with this Regulation if the Department directs the replacement in accordance with ~~section~~ 1.3 of this Regulation;
- 5.4.7. Operation of the pool in a way that causes or creates a threat to the public health, safety, or the environment;
- 5.4.8. Violation of this Regulation or any other restrictions or requirements adopted by the ~~Salt Lake County Board of Health~~;
- 5.4.9. Violation of any condition upon which the license or permit was issued;
- 5.4.10. Failure to pay the license or permit fees or any late fees after 100 days of the due date; or
- 5.4.11. Failure to supply updated information as required by the Department.

5.4.12. Failure to comply with Federal, State and Local licensing requirements permitting, and certifications.

5.5. PROGRESSIVE PERMIT SUSPENSION AND REVOCATION.

- 5.5.1 Receipt of the first permit suspension shall result in suspension of pool establishment operations until the Department has verified that identified violations of this Regulation have been corrected.
- 5.5.2 Receipt of a second permit suspension shall result in suspension of pool establishment operations for a period of a minimum of seven days.
- 5.5.3 Receipt of a third permit suspension within a year may result in the pool establishment permit being revoked. The owner of the said pool establishment may be restricted from operating the pool establishment for a minimum of thirty (30) days in the operational period for a seasonal pool and ninety (90) days for a year round pool, or hydrotherapy pool at which time the owner may be required to make a new application and submit a plan review, as if the pool establishment was a new establishment. Additional permit requirements may be imposed by the Department to address the violations that led to the revocation.
- 5.5.4 If violations are found, as identified in ~~section 5.4~~ the Department may revoke a permit without using the progressive permit suspension provisions stated in 5.5.1, 5.5.2 and 5.5.3.

6. INSPECTIONS & INVESTIGATIONS

6.1. The Department, by the Director, has the authority to perform inspections, investigations, reviews, and other similar actions as necessary of any public or private pool; and may take samples and make analyses of pool water.

6.2. Authority for Department to Enter Premises.

- 6.2.1. **Regulated Commercial Premises.** Upon presenting proper identification, authorized representatives of the Department may enter upon the premises of properties regulated by the Department to perform routine inspections to ensure compliance with rules, standards, regulations, and ordinances adopted by the Department, the Utah Departments of Health and Human Services & Department of Environmental Quality, county or municipal governing bodies, or the Utah ~~Division of Occupational and Professional Licensing~~.
- 6.2.2. **Private Dwellings.** Inspections of private dwellings are made by consent of owner or otherwise responsible party or upon a warrant issued by a court.

6.2.3. **Consent by License or Permit:** The Department may require licensees or permittees to consent to access for inspections as part of their license or permit. Failure to allow access for inspections as set out in the license or permit may result in the suspension or revocation of the license or permit.

6.3. The owner or other responsible person may request information gathered by the Department during an investigation, inspection, or review as authorized by the Government Records Access and Management Act.

7. **ENFORCEMENT MECHANISMS.** If the Department has investigated or inspected any property or facility and believes the property owner or other responsible party is in violation of this Regulation or the Department has other reasonable grounds to believe that there has been a violation of any part of this Regulation or that the property owner or otherwise responsible party is not in compliance with this Regulation, the Department may take civil enforcement action as authorized by statute, rule, ordinance, and regulation and may also refer the matter for criminal prosecution. Civil enforcement may involve court or administrative actions, injunctive actions, and closures and may involve cost recovery, penalties, and other remedies. Civil and criminal actions may be brought simultaneously. A person does not need to be first adjudged liable in a civil matter before facing criminal charges.

7.1. **Criminal Enforcement Actions.** The Department may recommend criminal prosecution for environmental violations either alone or in conjunction with civil enforcement. Criminal prosecutions for environmental violations of state or federal law may be filed by the District Attorney, Utah Attorney General, United States Department of Justice, or other enforcement entity. Factors that the Department may consider in recommending criminal enforcement include the following factors and any other relevant factors.

7.1.1. The nature and seriousness of the offense including the immediacy of the threat of danger to the life or safety of another or the harm or threatened harm to human health or environment;

7.1.2. The degree to which the violation was designed to provide economic gain or cost avoidance or it involved a pattern of conduct or a common attitude of illegal conduct;

7.1.3. The degree to which the offender is a known violator and has avoided prior actions by the Department;

7.1.4. The degree to which prosecution might deter future violations;

7.1.5. The person's actual culpability in connection with the offense including the presence in connection with the offense including the presence of criminal intent;

7.1.6. The person's willingness to cooperate in the investigation including whether the violator has attempted to conceal evidence or prosecution of others;

- 7.1.7. The appropriateness of referring the case to other agencies having prosecutorial interest; and
- 7.1.8. Possibilities of civil remedies which would be more appropriate than initiating the criminal justice process.

7.2. **Civil Enforcement Actions.**

- 7.2.1. The Department may request that the District Attorney bring an action to restrain or enjoin actions in violation of public health, environmental laws, and other laws or abate conditions in violation of such laws.

7.3. **Administrative Actions.**

- 7.3.1. The Department may, at its discretion, issue a Notice of Violation & Order of Compliance (NOV).
- 7.3.2. **Service of NOV.** The Department may provide notice to the owner of the property or otherwise responsible person by sending the NOV via first class mail to the last known address of the owner of the property or other responsible person. If notice is returned undeliverable, the owner of the property or other responsible person may be personally served or be given notice by other methods reasonably calculated to give actual notice to the owner or other responsible party.
- 7.3.3. **Contents of NOV.** The NOV shall:
 - (i) Describe the property and the persons believed to be in violation;
 - (ii) Describe the violation;
 - (iii) Describe remedial action that will comply with the provisions of this Regulation;
 - (iv) Set a reasonable time for the performance of any required remedial action(s);
 - (v) Describe the procedure to contest the NOV and the time limits for such a contest; and
 - (vi) Notify the owner or other responsible person that if no written contest is filed within the time required, the NOV will become final and unappealable to any administrative entity or court.
- 7.3.4. **Challenging an NOV.** As detailed in the Department's Adjudicative Hearing Procedures, a party aggrieved by an NOV may request a departmental conference, ~~departmental hearing~~, or departmental appeal in writing within ten (10) days of the date of the NOV.

7.3.5. Departmental Conference, Settlement Agreements, and Stipulations & Orders.

- (i) After issuance of the NOV, the alleged violator has the option to request and attend a Departmental Conference to discuss the NOV and settlement with the Department. No hearing officer will be present. The process of requesting a Departmental Conference are more fully described in the Department's Adjudicative Hearing Procedures.
- (ii) If the parties agree to a settlement, the Department will prepare, in conjunction with the District Attorney's Office, a binding Settlement Agreement or Stipulation & Consent Order which may require the payment of penalties and the costs of investigation. Parties may also agree to a settlement at any time subsequent to the Departmental Conference. After signing a Settlement Agreement or Stipulation & Consent Decree, the parties waive all rights to further department and court hearings or appeals. Settlement Agreements or Stipulation & Consent orders may be enforced in state courts.

7.3.6. Hearings & Appeals. Parties Aggrieved by an NOV may also request a ~~Departmental Hearing~~ or a Departmental Appeal. A hearing officer is present at these proceedings and makes a written determination. The methods of challenging an NOV are more fully described in the Department's Adjudicative Hearing Procedures. ~~Departmental Hearing Orders and Departmental Appeal Orders~~ may be appealed to the entities and within the time limits set out in the Department's Adjudicative Hearing Procedures.

7.3.7. Failing to respond to an NOV. If a party fails to respond to an NOV within the required time, the NOV becomes a final order unappealable to any administrative entity or court. The Department may then enforce the order in state court.

7.4. Additional Administrative Enforcement Authority.

7.4.1. The Department may declare unsanitary conditions a threat and cause every threat affecting the public health to be abated.

7.4.2. **Variiances.** Any variances allowed by the Department to the requirements of this Regulation shall be only by written approval of the ~~Salt Lake County Board of Health~~.

7.4.3. **Exercise of Physical Control.** The Department may establish, maintain, and exercise physical control over property and over individuals as the Department finds necessary for the protection of the public health including but not limited to closing theaters, schools, and other public or private places and prohibit public gatherings. The physical control shall be effective immediately. Any person to whom the physical control is directed shall comply immediately; but upon proper written petition to the Director, shall be granted a hearing within forty-eight hours. After the hearing and depending upon the findings as to whether the

person has complied with the provisions of this Regulation, the Director shall continue the order in effect or modify or revoke it.

- 7.4.4. **Emergency Enforcement.** If the Director finds that an emergency exists that requires immediate action to protect the public health or safety, he or she may without notice or hearing issue an order declaring the existence of an emergency and requiring that action be taken as he or she deems necessary to meet the emergency. The order shall be effective immediately. Any person to whom the order is directed shall comply and abate the threat immediately; but, upon proper written petition the Director, shall be granted a hearing within forty-eight hours. After the hearing and depending upon the findings as to whether the person has complied with the provisions of these regulations, the Director shall continue the order in effect or modify or revoke it. If circumstances warrant because of the seriousness of the threat, the Department may act to correct or abate the emergency without issuance of an order or directive or without waiting for the expiration of compliance time previously given in an order.

8. CRIMINAL, CIVIL & ADMINISTRATIVE PENALTIES

8.1. Criminal Penalties.

- 8.1.1. Any person who is found guilty by a court of violating any of the provisions of this Regulation, either by failing to do the acts required herein or by doing a prohibited act, is guilty of a class B misdemeanor, pursuant to Utah Code ~~Ann.~~ § 26A-1-123-(2010).
- 8.1.2. Each day such violation is committed or permitted to continue shall constitute a separate violation.
- 8.1.3. Each similar subsequent violation occurring within two years of the initial violation may constitute a class A misdemeanor.

8.2. Civil & Administrative Penalties.

- 8.2.1. Penalties may be included in a Settlement Agreement or Stipulation & Consent Order. Penalties may be assessed according to the following factors:
- (i) The violator's history of compliance or non-compliance;
 - (ii) The violator's economic benefit of non-compliance;
 - (iii) The documented costs associated with environmental or health damage;
 - (iv) The violator's degree of willfulness or negligence; and
 - (v) The violator's good faith efforts to comply and cooperate.

8.2.2. The Department may multiply the penalty by the number of days the violation occurred

8.3. Recovery of Investigation & Abatement Costs

8.3.1. The Department may recover its inspection, investigative and abatement expenses and costs from owners or other responsible person.

8.3.2. The Department may record a judgment lien on a violator’s property to recover its expenses and costs.

9. EFFECTIVE DATE

9.1. This Regulation shall become effective upon its adoption by the ~~Salt Lake County~~ Board of Health.

APPROVED AND ADOPTED this _____ day of _____, 201524.

SALT LAKE COUNTY BOARD OF HEALTH

By: _____
~~Kelly Christensen, Chair~~
Dan Eckersley, Chair

ATTEST:

~~GARY L. EDWARDS, M.S.~~
DOROTHY ADAMS, MPA, LEHS
Executive Director
Salt Lake County Health Department