

Rules
Governing
the
Construction, Maintenance and Operation
of
Public Swimming Pools and Spas

Montgomery County, Alabama

Adopted February 15, 2018

Montgomery County Board of Health
Montgomery, Alabama

RULES GOVERNING THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF PUBLIC SWIMMING POOLS/SPAS

Chapter 1 - General Provisions

Chapter 2 - Definitions

Chapter 3 - Submission of Plans and Construction Permits

Chapter 4 - Operating Permits and Inspections

Chapter 5 - Water Quality, Operations, and Management

Chapter 1 General Provisions.

(1) **Purpose.** It is the intent of the Montgomery County Board of Health that these rules, in the interest of the public's public health and safety, shall define the words and terms used herein; require written approval before construction or repair of pools/spas; require permits for operation of pools/spas; set up health and sanitation standards for pools/spas; regulate the operation thereof; and provide for the enforcement of this regulation.

(2) **Statutory Authority.** The Montgomery County Board of Health is authorized to adopt and promulgate these rules under and by virtue of Sections 22-3-2(10) and 22-3-2(4), Code of Ala. 1975.

(3) **Adoption by Reference.** Chapters 3 through 6 of the document entitled the International Swimming Pool and Spa Code, 2015 version, published by the International Code Council, are hereby incorporated by reference and made a part of these rules as if set out in full and all provisions thereof are adopted as a rule of the Montgomery County Health Department. Said document is available at the office of Environmental Director, Montgomery County Health Department, 3060 Mobile Highway, Montgomery, Alabama 36108.

(a). The chapters adopted by reference herein include standards for:

1. Structure and Design.
2. Deck and Deck Equipment.
3. Diving Area Requirements.
4. Circulation Systems.
5. Electrical Requirements and Heaters.
6. Lighting.
7. Specific Safety Features.
8. Dressing Facilities.
9. Water Supply.
10. Wastewater Disposal.
11. Public Spas and Public Exercise Spas.
12. Aquatic Recreation Facilities.

(4) **Control.** Where there is inconsistency between these rules and the International Swimming Pool and Spa Code, 2015 version, published by the International Code Council, these rules control. Where these rules are silent, the International Swimming Pool and Spa Code, 2015 version, published by the International Code Council controls.

(5) **Scope.** The statute provides for the regulation of public swimming pools/spas in Montgomery County as they may affect the public's health and safety. These Rules do not apply to a residential pool serving a detached, one and two family dwellings and townhouses, not more than three stories in height. The residential pool is intended for use which is an accessory to a residential setting and available only to the household and its guests. These rules do not apply to therapeutic chambers drained, cleaned, and refilled after each individual use. These rules do not apply to natural bodies of water used for swimming.

(6) **Compliance.** Any person, firm, corporation, institution, association, club or governmental agency operating, maintaining or constructing a pool or related facilities included herein shall be responsible for compliance with these rules. These rules shall apply to public bathing places and to the design and construction of all new and remodeled pools/spas. All existing pools/spas which are not in compliance with these rules at the time of enactment shall be exempt from compliance with those provisions which do not directly endanger health and safety of swimmers, but all pools/spas when remodeled shall comply with all applicable provisions of these rules unless a variance is granted. Any variance shall be granted for a specific time period and under conditions consistent with these rules.

(7) **Other Approvals.** Approval of any pool/spa by the Montgomery County Health Department does not constitute or imply approval by any county, municipality, or other agency having planning, zoning, or other legal jurisdiction.

(8) **Effective Date.** After promulgation and adoption by the Board, these rules shall be in full force and effective on a date determined by the Board.

(9) **Severability.** The paragraphs, parts, items, and provisions of these rules are severable. Should any portion thereof be ruled unconstitutional or unenforceable by any court, the said rules shall not affect any other provisions of these rules not ruled upon.

Chapter 2 **Definitions.** For the purpose of these rules, the following words and phrases shall have the meanings ascribed to them in these rules and as ascribed by law unless the context of the rules indicate differently.

(1) "Accessible" means easily exposed for inspection and the replacement of materials and/or parts with the use of tools.

(2) "Acid" means a liquid or dry compound used to reduce the pH of swimming pool/spa water.

(3) "Activity pool" means a pool designed primarily for play activity that uses constructed features and devices including lily pad walks, flotation devices, small slide features, and similar attractions.

(4) "Air induction system" means a system whereby a volume of air is introduced into hollow ducting built into a spa floor, bench, or hydrotherapy jets.

(5) "Algae" means microscopic plant-like organisms that contain chlorophyll.

(6) "Algaecide" means a natural or synthetic substance used for killing, destroying, or controlling algae.

(7) "Alteration" means construction or renovation to an existing pool or spa other than repair that requires a permit.

(8) "Approved" means acceptable to the Health Department based on a determination of conformity with appropriate standards and good public health practice.

(9) "Approved agency" means an established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by the Health Department.

(10) "Aquatic recreation facility" means a facility that is designed for free-form aquatic play and recreation. The facilities may include, but are not limited to, wave or surf action pools, leisure rivers, sand bottom pools, vortex pools, activity pools, inner tube rides, body slides, and interactive play attractions.

(11) "Available Chlorine" means a term used in rating chlorine containing products as their total oxidizing power.

(12) "Backwash" means the process of thoroughly cleansing the filter medium and/or elements by the reverse flow of water through the filter.

(13) "Backwash Cycle" means the time required to backwash the filter medium or elements and to remove debris in the pool or spa filter.

(14) "Backwash Rate" means the rate of flow of water through a filter during the backwash cycle, normally expressed in U.S. gallons per minute per square foot of effective filter area.

(15) "Bacteria" means single-celled microorganisms of various forms, some of which can cause infections or disease.

(16) "Barrier" means a permanent fence, wall, building wall, or combination thereof that completely surrounds the pool or spa and obstructs the access to the pool or spa. The term "permanent" shall mean not being able to be removed, lifted, or relocated without the use of a tool.

(17) "Base" (also known as Alkaline) means a chemical that neutralizes acids, usually by furnishing hydroxyl ions (OH⁻). The opposite of an acid.

(18) "Bather" means a person using a pool, spa, or hot tub and adjoining deck area for the purpose of water sports, recreation, therapy, or related activities.

(19) "Bather Load" see "User Load."

(20) "Beach Entry" means sloping entry starting above the waterline at deck level and ending below the waterline. The presence of sand is not required. Also called "zero entry."

(21) "Board" means the Montgomery County Board of Health as defined by Section 22-3-1, Code of Alabama, 1975, or the County Health Officer or his designee, when acting for the Board, for the purposes of these rules, the Montgomery County Health Department.

(22) "Breakpoint Chlorination" means the addition of a sufficient amount of chlorine to water to destroy the combined chlorine present.

- (23) "Broadcast" means a method of putting granular or powdered chemicals into a pool/spa by spreading them widely over the surface of the water.
- (24) "Bromine (BR₂)" means a chemical element that exists as a liquid in its elemental form or as a part of a chemical compound which is an oxidant and a biocidal agent used to disinfect pool/spa water.
- (25) "Calcification" means the formation of calcium carbonate scale on pool walls or the surface of circulation system components due to the precipitation of calcium carbonate.
- (26) "Calcium Carbonate (CaCO₃)(also known as scale) means a water-insoluble white solid that is the major component of scale.
- (27) "Calcium Chloride (CaCl₂)" means a soluble white salt used to raise the calcium hardness of pool/spa water.
- (28) "Calcium Hardness" means the amount of calcium or magnesium dissolved in water; measured by a test kit and expressed as parts per million (ppm) of equivalent calcium carbonate.
- (29) "Calcium Hypochlorite (CAOCl₂)" means a solid white form of inorganic chlorine found in both granular and tablet forms, it has a pH of approximately 11 and is 65-70 percent available chlorine. See Hypochlorite.
- (30) "Cartridge" means a depth, pleated or surface-type filter component with fixed dimensions and designed to remove suspended particles from water flowing through the filter.
- (31) "Certified Pool Operator (CPO)" means a person trained and certified by satisfactory completion of the National Swimming Pool Foundation's Swimming Pool/Spa Operator's Training Course or equal as approved by the Health Department.
- (32) "Chemical Feeder" means a floating or mechanical device for applying chemicals to the pool/spa water.
- (33) "Chloramine" means a compound formed when chlorine combines with nitrogen or ammonia which causes eye and skin irritation and has a strong, objectionable odor.
- (34) "Chlorinator/Brominator" means a device to apply or to deliver a chlorine/bromine disinfectant to water at a controlled rate.
- (35) "Chlorine (Cl₂)" means a chemical element that exists as a gas in its elemental form or as a part of a chemical compound which is an oxidant and a biocidal agent used in pool/spa water disinfection. (See also Hypochlorite.)
- (36) "Chlorine Generator" means equipment that generates chlorine, hypochlorous acid, or hypochlorite on site for disinfection and oxidation of water contaminants.
- (37) "Circulation Equipment" means the components of a circulation system.
- (38) "Circulation System" means the mechanical components which are part of a recirculation system of a pool/spa. Circulation equipment may be, but is not limited to categories of pumps, hair and lint strainers, filters, valves, gauges, meters, heaters, surface skimmers, inlet/outlet fittings, and chemical feeding devices. The components have separate functions, but when

connected to each other by piping, perform as a coordinated system for purposes of maintaining pool or spa water in a clear and sanitary condition.

(39) "Code Official" means the officer or other designated authority charged with the administration and enforcement of this code, or duly authorized representative.

(40) "Combined Chlorine" means the portion of the total chlorine existing in water in chemical combination with ammonia, nitrogen, and/or organic compounds; mostly comprised of chloramines.

(41) "Construction documents" means written, graphic, and pictorial documents prepared or assembled for describing the design, location, and physical characteristics of the elements of a project necessary for obtaining a building permit.

(42) "Corrosion" means the etching, pitting, or eating away of a material by chemical action.

(43) "County Health Department" means the Montgomery County Health Department and any officer, agent, or employee of said department authorized to act for the department with respect to enforcement and administration of these rules.

(44) "Covers" means something that covers, protects, or shelters, or a combination thereof, a swimming pool/spa.

(45) "CPO" see "Certified Pool Operator."

(46) "Cyanuric Acid ($C_3N_3O_3H_3$) (also called stabilizer, isocyanuric acid, conditioner, or triazinetrione)" means a white, granular, solid chemical that helps reduce the loss of chlorine in water due to the ultraviolet rays from sunlight.

(47) "Deck" means the area immediately adjacent to or attached to a pool/spa that is specifically constructed or installed for use by users for sitting, standing, or walking.

(48) "Deep Areas" means water depths in excess of 5 feet.

(49) "Design professional" means an individual who is registered or licensed to practice his or her respective design profession as defined by the statutory requirements of the professional registration or licensing laws of the State of Alabama or jurisdiction in which the project is to be constructed.

(50) "Design rate of flow" means the rate of flow used for design calculations in a system.

(51) "Design waterline" means the centerline of the skimmer or other point as defined by the designer of the pool or spa.

(52) "Disinfectant (also known as Sanitizer)" means an agent that destroys microorganisms that might carry disease.

(53) "Diving area" means the area of a swimming pool that is designed for diving.

(54) "Diving board" means a flexible board secured at one end that is used for diving such as a spring board or a jump board.

(55) "Diving platform" means a stationary platform designed for diving.

(56) "Diving stand" means any supporting device for a springboard, jump board or diving board.

(57) "DPD (Diethyl-P-Phenylene Diamine)" means a reagent and test method that specifically measures bromine or free available and total chlorine.

(58) "Employee" means the permit holder, individual having supervisory or management duties, and any other person working in the facility.

(59) "Exercise spa" (also known as a swim spa)" means variants of a spa in which the design and construction includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place. Exercise spas can include peripheral jetted seats intended for water therapy, heater, circulation, and filtration system, or can be a separate distinct portion of a combination spa/exercise spa and can have separate controls. These spas are of a design and size such that they have an unobstructed volume of water large enough to allow the 99th Percentile Man as specified in the Association of Pool and Spa Professionals 16 to swim or exercise in place.

(60) "Existing pool or spa" means a pool or spa constructed prior to the date of adoption of these rules, or one for which a legal building permit has been issued.

(61) "Filter" means a device that removes undissolved particles from water by recirculating the water through a porous substance such as a filter medium or elements.

(62) "Filtration" means the process of removing undissolved particles from water by recirculating the water through a porous substance such as filter medium or elements.

(63) "Flood Hazard Area" means the greater of the following two areas:

(a) The area within a flood plain subject to a 1 percent or greater chance of flooding in any year.

(b) The area designated as a flood hazard area on a community's flood hazard map, or otherwise legally designated.

(64) "Floor" means the interior bottom surface of a pool/spa.

(65) "Flow Meter" means a device that measures pressure differential across a calibrated orifice and indicates the rate of flow at that point, usually given in gallons per minute or liters per minute.

(66) "Flow Rate" means the quantity of water flowing past a designated point within a specified time, such as the number of gallons per minute (gpm).

(67) "Flume" means a trough-like or tubular structure, generally recognized as a water slide that directs the path of travel and the rate of descent by the rider.

(68) "Free Available Chlorine" means that portion of the total chlorine remaining in chlorinated water that is not combined with ammonia or nitrogen compounds and will react chemically with undesirable or pathogenic organisms.

(69) "Gunite" means a dry mixture of cement and sand, sprayed onto contoured and supported surfaces to build a pool/spa. Water is added to the dry mixture at the nozzle.

(70) "Gutter" means an overflow trough in the perimeter wall of a pool that is a component of the circulation system or flows to waste.

(71) "Hair and Lint Strainer" means a device attached on or in front of a pump to which the influent line (suction line) is connected for the purpose of entrapping lint, hair, or other debris that could damage the pump.

(72) "Handhold" means that portion of a pool or spa structure or a specific element that is at or above the design waterline that users in the pool grasp onto for support.

(73) "Handrail" means a support device that is intended to be gripped by a user for the purpose of resting or steadying, typically located within or at exits to the pool or spa or as part of a set of steps.

(74) "Health Department" means the Montgomery County Health Department.

(75) "Heater" means a fossil-fueled, electric or solar device to heat the water of a pool/spa.

(76) "Hydrochloric Acid (HCL) (also known as Muriatic Acid)" means a strong acid used to reduce the pH and the total alkalinity and to clean scale or "acid wash" surfaces. It is also generated in the reaction of chlorine gas and water.

(77) "Hypochlorite" means a family of chemical compounds including calcium hypochlorite, lithium hypochlorite, sodium hypochlorite, etc., found in various forms for use as a chlorine carrier in pool/spa water.

(78) "Hydrotherapy Jet" means a fitting that blends air and water, creating a high-velocity turbulent stream of air enriched water.

(79) "Jump Board" means a manufactured diving board that has a coil spring, leaf spring, or comparable device located beneath the board that is activated by the force exerted by jumping on the board's end.

(80) "Label" means an identification applied to a product by the manufacturer that contains the name of the manufacturer, the function and performance characteristics of the product or material, and the name and identification of an approved agency and that indicates that the representative sample of the product or material has been tested and evaluated by an approved agency.

(81) "Labeled" means equipment, materials, or products to which has been affixed a label, seal, symbol, or other identifying mark of a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation that maintains periodic inspection of the production of the above-labeled items and whose labeling indicates either that the equipment, material, or product meets identified standards or has been tested and found suitable for a specified purpose.

(82) "Ladder" means a structure for ingress and egress that usually consists of two long parallel side pieces joined at intervals by crosspieces such as treads. Types of ladders are defined in the International Swimming Pool and Spa Code definitions.

(83) "Lifeline" means an anchored line thrown to aid in rescue.

(84) "Listed" means equipment, materials, products, or services included in a list published by an organization acceptable to the Health Department and concerned with the evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluations of services and whose listing states either that the equipment, material, product, or service meets identified standards or has been tested and found suitable for a specified purpose.

(85) "Maintained Illumination" means the value, in foot-candles or equivalent units, below which the average illuminance on the specified surface with new lamps is not allowed to fall. Maintained illumination equals the average illuminance on the specified surface with new lamps, multiplied by the light loss factor (LLF), to account for the reduction in lamp intensity over time.

(86) "Muriatic Acid" see Hydrochloric Acid.

(87) "Negative Edge" see "Vanishing edge."

(88) "Nonentry Area" means an area of the deck from which entry into the pool or spa is prohibited.

(89) "Organic Waste" means perspiration, urine, saliva, suntan oil, cosmetics, lotions, dead skin, and similar debris introduced to water by bathers and the environment.

(90) "Overflow gutter" means the gutter around the top perimeter of the pool or spa, which is used to skim the surface.

(91) "Owner" means any person, agent, firm, or corporation having a legal or equitable interest in the property.

(92) "Permit" means an official document or certificate that is issued by the Health Department which authorizes a person to operate a public swimming pool/spa.

(93) "Person" means includes any individual, partnership, corporation, association, or other legal entity.

(94) "Person in Charge" means the individual present at a facility who is the apparent supervisor at the time of the inspection. If no individual is the apparent supervisor, then any employee present is the person in charge.

(95) "pH" means the negative logarithm of the hydrogen-ion concentration of a water solution. A measure of the degree of acidity or alkalinity of a solution. A pH below 7.0 is considered acid. A pH above 7.0 is considered alkaline.

(96) "Plaster" means a type of interior finish (a mixture of white cement and aggregate, which can be tinted or colored) which is applied to a concrete pool/spa; also called Marcite or Marblite.

(97) "Potable Water" means any water which is bacteriologically safe and otherwise suitable for drinking.

(98) "Power Safety Cover" means a pool cover that is placed over the water area, and is opened and closed with a motorized mechanism activated by a control switch.

(99) "PPM" means an abbreviation for Parts Per Million.

(100) "Pre-Coat" means the coating of filter aid on the septum of diatomaceous earth type filter at the beginning of each filter cycle.

(101) "Pre-Coat Feeder" means a chemical feeder designed to inject diatomaceous earth into a filter in sufficient quantity to coat the filter septa at the start of a filter run.

(102) "Pressure Test" means a check for the rate of water flow; also a test for leaks in the system.

(103) "PSI" means abbreviation for pounds per square inch (psi). A U.S. unit of measure for pressure or head.

(104) "Public Swimming Pool" means a structure, chamber, or tank containing an artificial body of water used by the public for swimming, diving, wading, recreation, or therapy, together with buildings, appurtenances, and equipment used in connection with the body of water, regardless of whether a fee is charged for its use. A pool, other than a residential pool, that is intended to be used for swimming or bathing and is operated by an owner, lessee, operator, licensee, or concessionaire, regardless of whether a fee is charged for use. The term includes but is not limited to schools, hotel, motels, camps, RV and mobile home parks, apartments, boarding houses, athletic clubs, condominiums, homeowner's association pools, or other membership facility pools/spas. These rules do not apply to a private pool/spa serving two or fewer living units and used only by the residents of the units and their guest.

(a) Public pools shall be further classified and defined as follows:

1. "Class A, Competition Pool" means a pool intended for use for accredited competitive aquatic events such as Federation Internationale De Natation (FINA), USA Swimming, USA Diving, USA Synchronized Swimming, USA Water Polo, National Collegiate Athletic Association (NCAA), or the National Federation of State High School Associations (NFHS).

2. "Class B, Public Pool" means a pool intended for public recreational use that is not identified in the other classifications of public pools.

3. "Class C, Semi-Public Pool" means a pool operated solely for and in conjunction with lodgings such as hotels, motels, apartments, or condominiums.

4. "Class D-1, Wave Action Pool" means a pool designed to simulate breaking or cyclic waves for purposes of general play or surfing.

5. "Class D-2, Activity Pool" means a pool designed for casual water play ranging from simple splashing activity to the use of attractions placed in the pool for recreation.

6. "Class D-3, Catch Pool" means a body of water located at the termination of a manufactured waterslide attraction. The body of water is provided for the purpose of terminating the slide action and providing a means for exit to a deck or walkway area.

7. "Class D-4, Leisure River" means a manufactured stream of water of near-constant depth in which the water is moved by pumps or other means of propulsion to provide a river-like flow that transports bathers over a defined path that may include water features and play devices.

8. "Class D-5, Vortex Pool" means a circular pool equipped with a method of transporting water in the pool for the purpose of propelling riders at speeds dictated by the velocity of the moving stream of water.

9. "Class D-6, Interactive Play Attraction" means a manufactured water play device or a combination of water-based play devices in which water flow volumes, pressures, or patterns can be varied by the bather without negatively influencing the hydraulic conditions for other connected devices. These attractions incorporate devices or activities such as slides, climbing and crawling structures, visual effects, user-actuated mechanical devices, and other elements of bather-driven and bather-controlled play.

10. "Class E" means pools used for instruction, play, or therapy and with temperatures above 86°F (30°C).

11. "Class F" means wading pools and are covered within the scope of this code as set forth in Section 405 of the 2015 International Swimming Pool and Spa Code.

(b) Public pools are either a diving or nondiving type. Diving types of public pools are classified into types as an indication of the suitability of a pool for use with diving equipment.

1. "Types VI-IX" means public pools suitable for the installation of diving equipment by type.

2. "Type O" means a nondiving public pool.

(105) "Pump" means a mechanical device, usually powered by an electric motor, which causes hydraulic flow and pressure for the purpose of filtration, heating, and circulation of pool/spa water.

(106) "Pump Curve" means a graph of performance characteristics of a given pump under a varying power flow, and resistance factors. Used in checking and choosing a pump.

(107) "Pump Strainer (also known as Lint Strainer, Pump Pot, or Hair and Lint Trap)" means a container installed in the pump suction line with a removable basket, designed to protect the pump from debris in the water flow.

(108) "Recessed treads" means a series of vertically spaced cavities in a pool or spa wall creating tread areas for step holes.

(109) "Recirculation System" see "Circulation system."

(110) "Remodeling" means the activity of restoring all or part of a pool/spa structure, and its component parts, back into good condition, including extensive rebuilding and/or replacing of worn and broken parts or components.

(111) "Repair" means the restoration to good or sound condition of any part of a pool or spa for the purpose of its maintenance or to correct damage.

(112) "Residential" means for purposes of this code, detached, one- and two-family dwellings and townhouses, not more than three stories in height.

(113) "Residential Swimming Pool" or "Residential Pool" means a pool intended for use which is an accessory to a residential setting and available only to the household and its guests. All other pools shall be considered public pools for purposes of this code.

(114) "Return Inlet" means the aperture or fitting through which the water under positive pressure returns into a pool/spa.

(115) "Ring Buoy" means a ring-shaped floating buoy capable of supporting a user, usually attached to a throwing line that is U.S. Coast Guard approved.

(116) "Rope and Float Line" means a continuous line not less than $\frac{1}{4}$ inch (6 mm) in diameter that is supported by buoys and attached to opposite sides of a pool to separate the deep and shallow ends.

(117) "Runout" means a continuation of water slide flume surface where riders are intended to decelerate and come to a stop.

(118) "Sand Filter" means a device that uses sand, or sand and gravel as the filter medium.

(119) "Sanitizer" see Disinfectant.

(120) "Safety cover" means a structure, fabric, or assembly, along with attendant appurtenances and anchoring mechanisms, that is temporarily placed or installed over an entire pool, spa, or hot tub and secured in place after all bathers are absent from the water.

(121) "Scale" means calcium carbonate (CaCO_3) deposits that can be found deposited in the filter, heater, or on the pool tile and wall. Generally caused by high calcium hardness, total alkalinity, temperature, and/or pH.

(122) "Sewage" means any liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

(123) "Shall" means a mandatory requirement.

(124) "Shallow Areas" means portions of a pool/spa with water depths less than 5 feet.

(125) "Shock Treatment" means the practice of adding significant amounts of an oxidizing chemical to destroy ammonia and nitrogenous and organic contaminants in water.

(126) "Skimmers" means a device installed in the pool/spa that permits the removal of floating debris and surface water to the filter.

(127) "Slip Resistant" means a surface that has been so treated or constructed as to significantly reduce the chance of a bather slipping. The surface should not be an abrasion hazard.

(128) "Slope" means an inclined surface.

(129) "Slope Break" means the point where the slope of the pool floor changes to a greater slope.

(130) "Soda Ash (also Sodium Carbonate)" means a white powder used to raise pH of the water.

(131) "Sodium Bisulfate (also Dry Acid)" means a granule used to lower pH and/or the total alkalinity in water.

(132) "Sodium Carbonate (Na_2CO_3) (also known as Soda Ash)" means a white, water soluble solid used to raise the pH and alkalinity of pool water.

(133) "Sodium Hypochlorite (NaOCl)" means a clear liquid form of an inorganic chlorine compound obtainable in concentrations of 10 percent to 15 percent available chlorine for swimming pool products.

(134) "Spa" means a product intended for the immersion of persons in temperature-controlled water circulated in a closed system, and not intended to be drained and filled with each use. A spa usually includes a filter; an electric, solar, or gas heater; a pump or pumps, and a control; and can also include other equipment, such as lights, blowers, and water-sanitizing equipment.

(a) "Public Spa" means a spa other than a permanent residential spa or portable residential spa which is intended to be used for bathing and is operated by an owner, licensee, or concessionaire, regardless of whether a fee is charged for use.

(b) "Self-Contained Spa" means a factory-built spa in which all control, water heating, and water-circulating equipment is an integral part of the product. Self-contained spas may be permanently wired or cord connected.

(c) "Non-self Contained Spa" means a factory-built spa in which the water heating and circulating equipment is not an integral part of the product. Nonself-contained spas may employ separate components such as an individual filter, pump, heater, and controls, or they can employ assembled combinations of various components.

(135) "Spray Pool" means a pool or basin occupied by construction features that spray water in various arrays for the purpose of wetting the persons playing in the spray streams.

(136) "Steps, Ladders, and Recessed Treads" means pool/spa ingress and egress that may be used independently or in conjunction with one another.

(137) "Submerged Vacuum Fitting" means a fitting intended to provide a point of connection for suction side automatic swimming pool, spa, and hot tub cleaners.

(138) "Suction Outlet" means a submerged fitting, fitting assembly, cover/grate, and related components that provide a localized low-pressure area for the transfer of water from a swimming pool, spa, or hot tub. Submerged suction outlets have also been referred to as main drains.

(139) "Surface Skimming System" means a device or system installed in the pool or spa that permits the removal of floating debris and surface water to the filter.

(140) "Surge Capacity" means the storage volume in a surge tank, gutter, and plumbing lines.

(141) "Surge Tank" means a storage vessel within the pool recirculating system used to contain the water displaced by bathers.

(142) "Swimout" means an underwater seat area that is placed completely outside of the perimeter shape of the pool. Where located at the deep end, swimouts are permitted to be used as the deep-end means of entry or exit to the pool.

(143) "Superchlorination" means the practice of adding a sufficient amount of chlorinating chemical to kill algae and microorganisms, eliminate slime, destroy odors, or improve the ability to maintain a disinfectant residual.

(144) "Test Kit" means a device used to monitor specific chemical residual or demands in pool/spa water.

(145) "Timer" means a mechanical device that automatically controls the periods that a pump, filter, heater, blower, and other electrical devices are operated.

(146) "Total Alkalinity" is the measure of the ability of the water to maintain a desirable pH when acid is added to the water. This value is usually expressed as the equivalent amount of the calcium carbonate (CaCO₃) in either mg/L or ppm.

(147) "Total Chlorine" means the sum of both the free available and combined chlorines.

(148) "Total Dissolved Solids (TDS)" means a measure of the total amount of dissolved matter in water, e.g. calcium, magnesium, carbonates, bicarbonates, metallic compounds, etc.

(149) "Tube Ride" means a gravity flow attraction found at a waterpark designed to convey riders on an inner-tube-like device through a series of chutes, channels, flumes, or pools.

(150) "Turbidity" means the cloudy condition of the water due to the presence of extremely fine particulate materials in suspension that interfere with the passage of light and restricts visibility.

(151) "Turnover Rate" means the period of time, usually in hours, required to circulate a volume of water equal to the pool or spa capacity.

(152) "Underwater Ledge" means a narrow shelf projecting from the side of a vertical structure whose dimensions are defined in the appropriate standard.

(153) "Underwater Light" means a fixture designed to illuminate a pool/spa from beneath the water surface.

(154) "Underwater Seat" means an underwater ledge that is placed completely inside the perimeter shape of the pool, generally located in the shallow end of the pool.

(155) "User Load (also known as Swimmer Load, Bather Load)" means the number of users in the water at a given moment or during a specific period of time. Maximum allowable user loads are often regulated in public pools and spas.

(156) "Vacuum" means the reduction of atmospheric pressure within a pipe, tank, pump, or other vessel.

(157) "Valve" means any device in a pipe that can partially or totally obstruct the flow of water or permit flow in one direction only.

(158) "Vanishing Edge" means a water-feature detail in which water flows over the edge of at least one of the pool walls and is collected in a catch basin. Also called "Negative edge."

(159) "Velocity" means the speed at which a liquid flows between two specified points, expressed in feet per second.

(160) "Waste Water Disposal System" means all water disposal systems approved by state or local authority, such as a storm sewer, sanitary sewer, open pit, leach field, or irrigation system.

(161) "Waterline" see "Design waterline."

(162) "Wave Pool Caisson" means a large chamber used in wave generation. This chamber houses pulsing water and air surges in the wave generation process and is not meant for human occupancy.

(163) "Zero Entry" see "Beach Entry."

Chapter 3 Submission of Plans and Construction Permits.

Prior to construction, remodeling, or alteration of a permanently installed pool/spa, plans and specifications shall be submitted to the Montgomery County Health Department for review and approval.

(1) **Application.** Upon request, the Health Department shall provide the necessary application form for plan submittal of pool/spa installations, alterations, or modifications.

(2) **Submission of Plans.**

(a) Four (4) sets of plans and specifications shall be submitted to the Health Department and shall be prepared by a professional engineer or architect registered in the State of Alabama.

(b) The registration number/seal of the engineer/architect shall appear on every set of plans. Plans shall include a certification by the architect or engineer that the public swimming pool/spa design and construction meets the specifications listed in the 2015 International Swimming Pool and Spa Code published by the International Code Council.

(c) If approved, plans and specifications will be stamped with the Health Department stamp of approval and three sets returned to the applicant. One copy of approved plans and specifications will be retained in the files of the Health Department. The applicant shall then forward the stamped copies of the approved plans to the Building Department, City of Montgomery or other local municipalities for review and compliance with local ordinances.

(d) At least one set of plans bearing the Health Department approval stamp shall be available on the job site at all times.

(3) **Plan Details.**

(a) Plans shall be drawn to scale and shall include the following:

1. One plan review.
2. One longitudinal section.
3. One transverse section through the main drain.
4. One overall plan showing the pool in relation to other facilities in the area (site plan).
5. One detailed view of the equipment room layout.
6. One vicinity map.
7. One piping schematic showing piping, pipe size, inlets, main drains, skimmers, gutter outlets, vacuum fittings, and all other appurtenances connected to the pool/spa piping system.
8. Legal address of the facility.
9. Location of facility if different from legal address.
10. Owner's name, address, and telephone number.
11. Surface area and perimeter of pool/spa.
12. Pool/spa volume, turnover time, flow rate, filter rate/unit area and type of filter.
13. Manufacturer, make, and model numbers of the pump, filter, and automatic chemical feed apparatus, and pump curve showing design flow rate and head. Manufacturer specification sheets may also be provided for equipment.
14. Source of water used at the pool/spa and location of over the rim spout.
15. Hose bibb location.
16. Proposed lighting.
17. Means of disposing backwash water.
18. Details on all safety equipment (emergency phone and emergency shutoff switch) and signage.
19. Related facilities, i.e., bathhouse, toilets, floor drains, drinking fountains, etc.

(b) Plan notes such as "fence by owner" or "deck to be under separate contract" shall not be acceptable as a substitute for details and scale drawings.

(4) **Issuance of Construction Permit.** Permits for the construction of new pools/spas or for changes in construction on any existing pool/spa will be issued by the City of Montgomery Building Department, or other municipality, only after approval of plans and specifications by the Health Department. No contracts for swimming pools/spas or public bathing places, construction or alteration, shall be allowed and no construction work shall be commenced, until a construction permit has been issued.

(a) No person shall begin construction of any pool/spa or bathing place without:

1. Submitting an application with fee and complete plans and specifications to the Health Department.
2. Receiving a stamped plan approval from the Health Department and a construction permit from the City of Montgomery Building Department or other local municipality.

(b) No person shall deviate from the approved or conditionally approved plans and specifications during the construction or alteration of a facility without prior written approval from the Health Department.

(c) If upon initial inspection, the Health Department finds that a public pool/spa was not constructed or modified in basic accordance with the approved plans and specifications, the Department shall give written notice to the applicant that the operation permit will not be issued, citing the deficiencies or noncomplying items that constitute the reasons for not

issuing the operation permit. An applicant who fails to correct the deficiencies or noncomplying items shall be denied an operation permit.

Chapter 4 Operating Permits and Inspections.

(1) **Permit Required.** It shall be unlawful for any person to operate a public swimming pool/spa in Montgomery County unless such person possesses a valid permit issued by the Health Department for operation of such a facility. Only persons who comply with the provisions of these rules shall be entitled to receive and retain such a permit. Permits shall not be transferable with respect to person, facility, or location. The permit shall be kept posted by the proprietor in a conspicuous place within the facility, but shall remain the property of the Health Department. The permit shall be revocable for violation of these rules.

(2) **Issuance of Operating Permits.**

(a) Any person desiring to operate a swimming pool/spa shall make written application and remit permit fee for the operational permit on forms provided by the Health Department. Such application shall include the name and address of each applicant, the location and type of the proposed facility, and the signature of each applicant. Permits shall automatically expire on the date designated by the Health Department, and shall be renewable each year upon written application from the operator and payment of fee.

(b) Prior to approval of an application for a permit, the Health Department shall inspect the proposed facility to determine compliance with the requirements for these rules.

(c) The Health Department shall issue an operational permit to the applicant if the inspection reveals that the proposed facility complies with the requirements of these rules, including proof of certification of the CPO.

(3) **Permit Denials, Suspensions, and Revocations.** The Health Department's denial, suspension, and/or revocation of a permit shall be governed by the Alabama Administrative Procedure Act, § 41-22-1, et seq., Code of Alabama, 1975. The Health Department shall fulfill any request for license or permit within 28 calendar days after receiving the application or notify the applicant of the reason for failure to issue the license or permit.

(4) **Hearings.** Contested case hearings shall be provided in accordance with the Alabama Administrative Procedure Act, § 41-22-1, et seq., Code of Alabama, 1975, and the State Board of Health's Contested Case Hearing Rules, Chapter 420-1-3. Informal settlement conferences may be conducted as provided in the State Board of Health's Contested Case Hearing Rules, Chapter 420-1-3.

(5) **Suspension of Permits.**

(a) Permits may be suspended temporarily by the Health Department for failure of the permit holder to comply with the requirements of these rules or for repeated or critical violations of any of the requirements of these rules.

(b) Notwithstanding the other provisions of these rules, whenever the Health Department finds unsanitary or other conditions in the operation of a swimming pool/spa, which may adversely impact the health of the public, the Health Department may do any or all of the following:

1. Issue a written notice to the permit holder or operator citing such conditions, specifying the corrective action to be taken.

2. Issue an order to immediately suspend or revoke the pool/spa's operational permit. Any person to whom such order is issued shall comply immediately therewith and all swimming pool/spa operations shall be immediately discontinued. Such an order shall state the cause for the action.

(c) The Health Department shall end the suspension at any time if reasons for the suspension no longer exist. Any person whose permit has been suspended may, at any time, make a request for a reinspection for the purpose of reinstatement of the permit.

(6) **Revocation of Permits.** The Health Department may, after providing opportunity for hearing, revoke a permit for serious or repeated violations of any of the requirements of these rules or for interference with the Health Department's authorized representative in the performance of his or her duty or for failure to comply with the provisions of a notice of permit suspension.

(7) **Application after Revocation.** Whenever a revocation of a permit has become final, the holder of the revoked permit may make written application for a new permit after 90 days from the date of revocation. The applicant shall demonstrate compliance with the requirements of these rules and shall specifically set forth any change in circumstances that would justify issuance of an operational permit.

(8) **Variance.**

(a) In order to avoid undue hardships and promote the effective and reasonable application and enforcement of these rules, the Board may grant variances from requirements of these rules in accordance with such procedures and conditions as it may prescribe. Written request for a variance to these rules shall be submitted and considered and may be granted pursuant to Rule 420-1-2-.09 Ala. Admin. Code.

(b) Any person may submit a request in writing to extend a prior or existing variance. The person shall demonstrate need for continuation of the variance.

(c) A variance, if granted, is not transferable from one person to another or from one site to another.

(9) **Opening Inspections.**

(a) Prior to the opening of a pool/spa for seasonal use, pool/spa facilities shall be prepared for use. Swimming pool/spa water shall be filtered and disinfected to meet the water quality standards prescribed herein. The owner shall notify the Health Department when the pool/spa is ready for use.

(b) A representative of the Health Department shall inspect the facilities prior to issuing the operational permit and authorizing the annual use of pool/spa.

(c) If an inspection reveals a condition not in compliance, a representative of the Health Department may order the owner or operator of the pool/spa to prohibit any individual from using it until adequate corrections are made and an operational permit is issued.

(10) **Inspection Frequency.** Swimming pools/spas shall have an opening inspection prior to receiving an operational permit. Inspections of swimming pools/spas shall be performed as often as necessary for the enforcement of these rules.

(11) **Access.** The Health Department, after proper identification, shall be permitted to enter any swimming pool/spa and related component at any reasonable time for the purpose of making inspections to determine compliance with these rules. The Health Department shall be permitted to examine the records of the facility, operator logs, and to obtain information pertaining to swimming pool/spa supplies purchased, received, or used.

(12) **Reports of Inspections.** Whenever an inspection of a facility is made, the findings shall be recorded on the inspection report form. The inspection report form shall summarize the requirements of these rules. Inspection remarks shall be written and shall state the corrections to be made. A copy of the inspection report shall be kept on the premises and made available to the public if requested. Also, a copy of the inspection report shall be filed with the records of the Health Department. The completed inspection report form is a public document that shall be made available for public disclosure to any person who requests it according to law.

(13) **Correction of Violations.**

(a) If an imminent health hazard exists, the facility shall immediately cease operations. Operations shall not be resumed until authorized by the Health Department. Reasons for immediate permit suspension include, but are not limited to, the following:

1. A condition of the pool/spa equipment, structure, area, or enclosure which jeopardizes the health or safety of the persons using or operating the pool/spa.
2. The lack of properly functioning equipment or material for recirculating, treating, or testing the pool water (i.e. pump or sanitizing equipment not functioning, no approved test kit).
3. The lack of a CPO.
4. The presence of a pollutant or hazardous object or substance in the pool/spa.
5. Failure to meet water quality standards prescribed herein (i.e. sanitizer residual, pH, and turbidity).

(b) Whenever a swimming pool/spa is required to cease operations due to lack of, or excess, sanitizer, pH range, and/or turbidity, the CPO may reopen the swimming pool/spa once these violation(s) are corrected. **See Chapter 5 (2)** for documentation requirements.

(c) If a swimming pool/spa is required to cease operations for reasons other than those listed in subsection (b) above, the permit holder shall not resume operations until it is shown on reinspection by the Health Department that the conditions responsible for the order to cease operations no longer exist. Opportunity for re-inspection shall be offered within a reasonable time.

Chapter 5 Water Quality, Operations and Management.

(1) **Certified Pool Operator.** Public pools/spas shall be maintained under the supervision and direction of a CPO who shall be responsible for the sanitation, safety, and proper maintenance of the pool/spa and all physical and mechanical equipment and records. A copy of the CPO certification document shall be kept on site and made available for inspection by the Health Department. A pool

shall not operate unless under the supervision and direction of a CPO. Operators of pools/spas shall be certified (see definition) and have knowledge of pool/spa operation and regulations pertaining to pools/spas. Training can be obtained by completion of the National Swimming Pool Foundation's Swimming Pool/Spa Operator's Training Course, Aquatic Training Institute's Certified Pool and Spa Technician Course, or state or local training course, if approved by the Montgomery County Health Department. If during the term of the Operation Permit, the CPO responsible for the facility changes, then the pool/spa proprietor or owner shall notify the Health Department immediately of the change.

(2) **Water Quality.** Operators of public swimming pools/spas shall keep records pertaining to the operation and maintenance of the pool/spa which they operate. If, at any time, testing indicates that the water does not conform with the minimum or maximum limits set out in Tables 1 and 2 (pertaining to disinfectant residual and pH), the operator shall immediately close the spa/pool to the public until requirements are satisfied. If a pool/spa is reopened by the CPO after Health Department closure, the CPO must document date, time, and corrective action(s) of reopening. A CPO may only reopen a swimming pool/spa after Health Department closure according to **Chapter 4 (13)**. The Health Department shall be notified by phone when the pool/spa has been reopened.

(3) **Operation Records.** A log consisting of a written record of all operations influencing sanitation of the swimming pool/spa shall be maintained daily during periods in which the pool/spa is open for use.

(4) **Test Frequencies.** Records shall include at least the following information:

(a) **Checked Daily:**

1. Test results for sanitizer and pH
2. Flow rate
3. Water temperature of heated pool/spa
4. Turbidity-by visual inspection of operator

(b) **Checked Weekly:**

1. Total alkalinity
2. Cyanuric acid
3. Calcium hardness

(c) **As Performed:**

1. Date and time of filter backwash
2. Maintenance and/or equipment malfunction including filter cleaning
3. Dates that the pool/spa was emptied and/or cleaned
4. Periods of recirculation equipment operation and/or malfunction and repair

(d) All records and reports shall be kept available for inspection by the Health Department for a period of at least 1 year.

(5) **Test Kit.** Every public pool/spa shall have a chemical test kit available for the determination of pH, chlorine or bromine residuals, cyanuric acid (if used), total alkalinity, and calcium hardness. The test kit shall be capable of measuring at least pH and disinfectant residual ranges, as detailed in Tables 1 and 2. The method used in determining the free available chlorine residual shall be such that chloramines or other chlorine compounds that may be present in the pool/spa do not affect the determination. A DPD, N,N diethyl-p-phenylenediamine kit shall be used.

(6) **Chemical Safety.**

(a) No disinfectant chemical or any other treatment chemical that is toxic or irritating to humans may be added to the pool/spa from the deck of the pool/spa while it is in use. If chemical additions are made from the deck, the pool/spa shall be closed from use for at least one-half hour. The operator shall test the pool/spa water as appropriate before allowing use of the swimming pool/spa. The chemical addition and test results shall be recorded in the pool/spa records.

(b) Chemicals shall be stored and handled in accordance with the manufacturer's recommendations.

(c) Chemical storage containers shall be clearly labeled.

(7) **Equipment Storage Area.** Storage area shall be enclosed by fencing or walls and shall be secured to prevent easy access. Floors shall be concrete or other suitable material having a smooth slip resistant finish. Floors shall be graded to drain. Enclosed equipment rooms shall have adequate ventilation. The size of the equipment room shall provide working space to perform routine operations and equipment service.

(8) **Operations and Maintenance.**

(a) **Abandonment.** A pool/spa which is not in use or for which no operation permit is in effect shall be maintained by the owner in a condition which prevents creating a hazard to the public's health or safety.

(b) **Algae Accumulation.** Walls and floors of pools/spas and surrounding walks, scum gutters, and skimmer inlets shall be kept free of algae and other accumulations.

(c) **Draining and Refilling Spa.** Spas shall be drained and refilled with fresh water as often as necessary based on bather load.

(d) **Cleaning.** All parts and facilities of pools/spas and bathhouses shall be kept clean, in good repair, and free of safety hazards. Visible sediments and scum shall be removed at least daily.

(e) **Accidents.** Reports of serious accidents or deaths occurring on the pool/spa premises shall be reported to the Health Department immediately. All accident records and reports shall be kept available for inspection by the Health Department for a period of at least 1 year. For fecal and vomit accidents, the Health Department recommends following the procedures for a fecal and vomit accident outlined by the Centers for Disease Control. All fecal and vomit accidents shall be documented on the operational log along with the corrective action taken by the CPO.

(f) **Procedures for When Infection is Suspected.** When the Health Department has reasonable cause to suspect possible disease transmission by any public swimming pool/spa they shall make any investigation as indicated and shall take appropriate action. The Health Department may require any reasonable corrective action up to and including immediate closure.

(g) **Lifesaving Equipment.** Public Pool Classes A, B, and C shall be provided with the lifesaving equipment 1, 2, and 3 below. Such lifesaving equipment shall be visually conspicuous and conveniently located at all times.

1. **Accessory pole.** A swimming pool accessory pole not less than 12 feet in length and

including a body hook shall be provided.

2. **Throwing Rope.** A throwing rope attached to a ring buoy or similar flotation device shall be provided. The rope shall not be less than ¼ inch in diameter and shall not have a length less than 1 ½ times the maximum width of the pool or 50 feet whichever is less. A ring buoy shall have an outside diameter of not less than 15 inches and be Coast Guard approved.

3. **Rope Float and Line.** Where a pool has a water depth ranging from less than 5 feet to greater than 5 feet, a rope and float line shall be located 1 foot horizontally from the 5 foot depth location, toward the shallow end of the pool. Rope and float lines should be securely fastened to wall anchors made of corrosion-resistant materials. Wall anchors shall be of recessed type and shall not have projections that will constitute a hazard when the rope and float line is removed.

(h) **First Aid Kit.** Pools covered by this chapter shall be provided with first aid equipment, including a first aid kit. First aid equipment and kits shall be located in an accessible location.

(9) **Emergency Telephone Signs.** A sign indicating the location of the nearest landline telephone that can be used to call emergency services shall be posted within sight of the main entry into a pool facility. The sign shall indicate telephone numbers, including area code, which can be called for emergency services including, but not limited to, police, fire, ambulance, and rescue services. If 911 telephone service is available for any of those services, 911 shall be indicated next to the telephone number for such service. The sign shall include the street address and city where the pool is located. The nearest landline telephone indicated by the sign shall be one that can be used free of charge to call for emergency services. A sign with the telephone number and address information required by this section shall be posted within sight of the landline telephone.

(10) **Emergency Shutoff Switch.** Signs shall be posted that clearly indicate the location of the pump emergency shutoff switch. Such switch shall be clearly identified as the pump emergency shutoff switch.

(11) **Pool Rules and Regulations .** Rules and regulations for pool safety shall be easily readable, simply stated, conspicuously posted, printed with a minimum of 1 inch lettering with a contrasting background and shall include, but is not limited to, the following:

- (a) In case of emergencies, dial 911 or other emergency number.
- (b) Hours of operation.
- (c) Peak occupancy.
- (d) Do not swim if you have open wounds.
- (e) Do not swim if you are ill with diarrhea and have had diarrhea within the past 2 weeks.
- (f) Shower before entering the water.
- (g) No glass in the pool or on the deck.
- (h) Diaper changing on the deck is prohibited.
- (i) No animals in the pool or on the deck, except service animals, if applicable.
- (j) Children must be supervised by a responsible adult (parent or caregiver) up to minimum age established by the aquatic facility.
- (k) No diving. (Pools with diving wells may amend signage requirement to read that diving is not allowed in all pools except for the diving well.)

(12) **Spa Rules and Regulations.** Rules and regulations for spa safety shall be posted near the spa and in addition to the requirements listed above for pools and shall include but is not limited to the following:

- (a) Do not use spa if water temperature exceeds 104° F.
- (b) Pregnant women and people with heart disease, high blood pressure, or other health problems should not use spas without prior consultation with a healthcare provider.
- (c) Children under age 5 and people using alcohol or drugs that cause drowsiness shall not use spas.
- (d) Children under 14 years of age shall be supervised by an adult.
- (e) Use of spa when alone is prohibited (if no lifeguards on site).

**TABLE 1
SWIMMING POOL AND WATER QUALITY PARAMETERS**

	Parameters	Minimum	Ideal	Maximum
a)	Free chlorine Bromine	1.0 ppm 2.0 ppm	3.0 – 5.0 ppm 4.0 – 6.0 ppm	10.0 ppm 10.0 ppm
b)	Combined chlorine	0 ppm	0 ppm	0.2 ppm
c)	pH	7.2	7.4 – 7.6	7.8
d)	Total Alkalinity As CaCO	60 ppm	80 – 100 ppm	180 ppm
e)	Cyanuric Acid	0	30 – 50 ppm	100 ppm
f)	Calcium hardness	150 ppm	200 – 400 ppm	1000 ppm
g)	Water temperature (heated pools)		Personal preference	104°F
h)	Total Dissolved Solids	NA	NA	1550 ppm
i)	Turbidity (water clarity) *			

* The main drain and pool floor must be clearly visible from the pool deck.

**TABLE 2
SPA WATER QUALITY PARAMETERS**

	Parameters	Minimum	Ideal	Maximum
a)	Free chlorine Bromine	2.0 ppm 2.0 ppm	3.0 – 5.0 ppm 4.0 – 6.0 ppm	10.0 ppm 10.0 ppm
b)	Combined chlorine	0 ppm	0 ppm	0.5 ppm
c)	pH	7.2	7.4 – 7.6	7.8
d)	Total Alkalinity As CaCO	120 ppm		150 ppm
e)	Cyanuric Acid	0	30 ppm	100 ppm
f)	Calcium hardness (Recommended)	150 ppm	150 – 250 ppm	800 ppm
g)	Water temperature			104°F
h)	Total Dissolved Solids	NA	NA	1550 ppm
i)	Turbidity (water clarity)*			

*The main drain and spa floor must be clearly visible from the spa deck.