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435.01: Definitions

Board of Health means the appropriate and legally designated health authority of the city, town, or
other legally constituted governmental unit within the Commonwealth having the usual powers and
duties of the board of health of a city or a town, or his or its authorized agent or representative.
Communicable Disease means a disease which may be transmitted through the medium of water.

Department means Department of Public Health.

Operator means any person who
(a) alone or jointly or severally with others owns a public or semi-public swimming pool, wading or special purpose pool regulated by 105 CMR 435.00 or
(b) has care, charge or control of such a pool as agent or lessee of the owner or as an independent contractor.

Person means every individual, partnership, corporation, firm, association or group, including a city, town, county, or other governmental unit.

Public Pool means every swimming, wading or special purpose pool, admission to which may be gained by the general public with or without the payment of a fee.

Residential Pool means a swimming or wading pool established or maintained by an individual for his own or family's use, or for the use of personal guests of his household.

Semi-Public Pool means a swimming, wading or special purpose pool on the premises of, or used in connection with a hotel, motel, trailer court, apartment house, condominium, country club, youth club, school, camp, or similar establishment where the primary purpose of the establishment is not the operation of the swimming facilities, and where admission to the use of the pool is included in the fee or consideration paid or given for the primary use of the premises. Semi-public pool shall also mean a pool constructed and maintained by groups for the purposes of providing bathing facilities for members and guests only.

Special Purpose Pool means a unit designed for recreational and therapeutic use which is shallow in depth and not meant for swimming or diving. These pools are not drained, cleaned or refilled for each user. It may include, but not be limited to hydrojet circulation, hot water, cold water mineral baths, air induction bubbles, or any combination thereof. Industry terminology for such a pool includes but is not limited to, therapeutic pool, hydrotherapy pool, whirlpool, hot spa, hot tubs, float tanks, etc. This standard excludes residential units and facilities used or under the direct supervision and control of licensed medical personnel.

Swimming Pool means and includes every artificial pool of water having a depth of two feet or more at any point and used for swimming or bathing, located indoors or outdoors, together with the bathhouses, equipment, and appurtenances used in connection with the pool. It does not include any special purpose pool or residential pool as herein defined nor does it include any pool used primarily for baptismal purposes or the healing arts.

Wading Pool means a pool of water in a basin having a maximum depth of less than two feet intended chiefly as a wading place for children. It does not include any residential pool as herein defined.

Water Slide Flume means a recreational device that provides a descending ride into a splashdown pool, which is not designed for swimming or wading, at the base of the slide. Low friction is achieved in all designs by providing a flowing water film.

Plan Approval

(1) No person shall construct or install a swimming, wading or special purpose pool, or expand, remodel or otherwise make any change which may affect the compliance of an existing swimming, wading or special purpose pool with the requirements of 105 CMR 435.00 until the plans and specifications for the construction or change, under the stamp and signature of a Massachusetts Registered Professional Engineer or Registered Architect, have been approved in writing by the Board of Health. Nothing in 105 CMR 435.00 shall affect the authority of any person acting under appropriate sections of 780 CMR (The Massachusetts State Building Code), 527 CMR 12.00 (1996 Massachusetts Electrical Code (Amendments)) and 248 CMR (Uniform State Plumbing Code and the Massachusetts Fuel Gas Code) or applicable local ordinance or regulation.
435.02: continued

(2) All work shall conform to approved plans and specifications. Any revision or change in the approved plans and specifications which may affect the capacity or the health or safety features of the swimming, wading or special purpose pool, shall be submitted to the Board of Health for review. Approval of said change or revision of plans shall be obtained in writing before the work affected by the change is undertaken.

(3) The Board of Health shall be notified when a newly constructed, expanded, or remodeled swimming, wading or special purpose pool is ready for use. Notification shall be given at least one week prior to the completion of the project so that a date can be arranged for a final inspection. Use of such pool shall not commence before a final inspection has been made and written approval to operate has been given by the Board of Health.

435.03: Bathhouse and Sanitary Facilities

(1) The operator shall provide for each sex adequate and separate dressing and sanitary facilities located adjacent to every public swimming pool. Rooms shall be of ample size and well lighted, drained, ventilated, and so planned and constructed that good sanitation can be maintained throughout the building at all times. Bathers shall be so routed that the crossing of street shoes and wet barefoot traffic is kept to a minimum. In general, impervious materials and light colors should be used throughout.

(2) The operator of a public swimming pool shall provide showers and shall furnish hot and cold water. The minimum number of showers shall be one for each 40 bathers based on the maximum bather load, (see 105 CMR 435.27).

(3) The operator of a public swimming pool shall provide and shall maintain in a sanitary condition, for each sex, at least one water closet at convenient locations for each 40 bathers. One additional water closet shall be provided for each additional 40 bathers. For males, urinals may be substituted for up to one third of the number of water closets required. Toilets for the use of spectators shall be separated from those provided for bathers and shall be located outside the area used by bathers.

(4) The operator of a public swimming pool shall provide and shall maintain in a sanitary condition washbasins adjacent to all water closets in the proportion of at least one basin for each 60 bathers, based on the maximum bather load.

(5) The operator shall provide hose connections for flushing down the dressing rooms, bathhouse interior, and outside pool decks. It is recommended that hot water be provided at indoor pools.

(6) The operator shall provide a room designated and equipped for the emergency care of sick or injured bathers at a public swimming pool. The location of such a room shall be approved by the Board of Health. Minimum equipment shall include a cot and blanket.

(7) The operator shall provide adequate storage space for janitorial equipment and supplies and instructional equipment.

(8) The operator shall be responsible for maintaining adequate lighting in all parts of the bathhouse, toilets, pool area and pool water by sunlight or artificial lighting, or both, under all conditions of pool use. Arrangements and design of lighting shall allow lifeguards and attendants to see clearly every part of the pool, walkway, spring boards, and other appurtenances without being blinded by the lights. All lighting, including underwater pool lighting, shall be so installed to prevent glare and maintained as not to create a hazard.

(9) When provided, heating units shall be so installed as to present no hazard to bathers.

(10) All rooms housing indoor swimming pools and all bathhouses dressing rooms, shower rooms, and toilets at both indoor and outdoor pools shall be properly and adequately ventilated.
(11) Attention should be given to acoustical properties of rooms housing indoor swimming pools and bathhouses. The design and materials used in the construction should reduce reverberation of sound, so that a lifeguard's voice or a call for help may be easily heard.

(12) The operator of every swimming pool, wading or special purpose pool shall provide and maintain adequate enclosures to prevent animals and unauthorized persons from entering the pool area.

(a) All outdoor inground swimming, wading or special purpose pools constructed before October 2, 1975 shall be enclosed by a firmly secured fence of at least four feet in height. All gates into the pool area shall be self-latching with latches placed four feet above ground level or otherwise made inaccessible to children up to eight years of age.

(b) All outdoor inground swimming, wading or special purpose pools constructed after October 2, 1975 shall be enclosed by a fence six feet in height and firmly secured at ground level provided that any board or stockade fence or structure shall be at least five feet in height, but if over five feet in height, the fence shall be chain link. Such enclosure, including gates therein, shall not be less than six feet above the ground, and any gate shall be self-latching with latches placed four feet above the ground or otherwise made inaccessible from the outside to children up to eight years of age.

Such enclosure shall be constructed of such material and maintained so as not to permit any opening in said enclosure, other than a gate, wider than three inches at any point along the enclosure. (M.G.L. c. 140, § 206)

(c) All indoor swimming pools shall be enclosed by a barrier which shall extend not less than four feet above the ground. Such enclosure shall be constructed of such material and maintained so as not to permit any opening in said enclosure, other than a gate or door, wider than three inches along the enclosure. All gates and doors in the pool enclosure shall be self-closing and self-latching with latches placed at least four feet above the ground.

(d) Access to every public swimming pool by bathers shall be provided only through the bathhouse facilities.

(13) The operator shall provide sanitary drinking water facilities in accordance with 310 CMR 22.00: Drinking Water.

(14) The operator of a public swimming pool shall provide the following in association with the required toilets, showers and washbasins:

(a) Toilet paper holders, supplied with paper shall be provided at each toilet.

(b) Suitable receptacles shall be provided for paper towels and other waste materials. Such receptacles in toilet rooms for women shall be covered.

(c) Common towels shall not be permitted.

(d) Soap dispensers providing either liquid or powdered soap shall be located at each washbasin. The dispenser must be shatter-proof with no glass permitted in these units.

(e) If mirrors are provided they shall be unbreakable or of safety glass.
(2) Construction of every swimming, wading or special purpose pool shall conform with appropriate state and local building, health, plumbing and electrical code requirements.
435.05: continued

(3) No projection except ladders and grab rails shall be permitted from any pool wall or floor surface, provided that a fillspout may be constructed under the diving stand, rounded fittings projecting not more than two inches from the wall may be installed. A recessed stairway shall not be considered a projection for the purposes of 310 CMR 12.00. A safety ledge as described in 105 CMR 435.11(4) shall not be considered a projection for the purposes of 105 CMR 435.00.

(4) The finish of the walls and floors of every swimming, special purpose and wading pool shall be of concrete, cement, mortar, tile, paint, vinyl liner, fiberglass or other inert and impervious material, shall be reasonably enduring, shall be moderately smooth and free from cracks, and shall be of light color.

(5) The designing registered architect or registered professional engineer shall be responsible for certifying to the structural stability and safety of the pool.

435.06: Water Circulation and Filtration Systems

(1) All swimming, wading and special purpose pools shall be equipped and operated with a system for recirculation and purification of the pool water. This system shall be capable of maintaining the water quality standards of 105 CMR 435.28 through 435.31. The over-all recirculation and purification system shall be so designed and constructed that the entire volume of the pool can be recirculated and filtered as follows:
   (a) swimming pools - once every eight hours,
   (b) wading pools - once every four hours,
   (c) special purpose pools - once every ½ hour,
   (d) water slide flumes - once every hour.

(2) The equipment of the recirculation and purification system shall include:
   (a) a filtration system;
   (b) recirculation pumps;
   (c) hair and lint strainers;
   (d) provision for chemical feed;
   (e) provision for bactericidal treatment;
   (f) filter effluent flowmeter or meters;
   (g) balancing or float-control tank or above-rim fill-spout;
   (h) test kit(s) will be available to meet the requirements of 105 CMR 435.29 and must be capable of distinguishing free residual chlorine and combined chlorine;
   (i) all other equipment necessary to make the particular treatment process complete and efficiently operable.

(3) The maximum permissible design filtration rate for pressure or gravity filters using sand or equivalent media shall be three gallons per minute per square foot of filter surface area. High rate filters shall not exceed 15 gallons per minute per square foot unless otherwise approved by the National Sanitation Foundation. The maximum permissible design filtration rate for all types of diatomaceous earth filters shall be 1.5 gallons per minute per square foot of filter area without continuous body feed and two gallons per minute per square foot with continuous body feed. The maximum permissible design filter rate for cartridge-type filters shall be 0.375 gallons per minute per square foot of filter area. One complete set of cartridges shall be available on the premises at all times to facilitate cleaning. Any filtration system or filtration rate other than those included in 105 CMR 435.00 may only be installed or used with the written approval of the Board of Health.

(4) Suitable automatic equipment shall be provided and so installed as to permit adequate disinfection of all the pool water. Hypochlorinators shall be dependable in operation and equipped with a calibrated controlling device capable of being finely adjusted to the required rates, and shall have a feed-rate capacity of at least three pounds of chlorine per 24 hours per 10,000 gallons of pool capacity for all outdoor pools, and at least one pound of chlorine per 24 hours per 15,000 gallons of pool capacity for all indoor pools. Chlorine gas feeders and containers are prohibited.
435.06: continued

(5) Where bromine is used as a disinfectant the equipment must provide for feeding on a continuous basis.

(6) Filters, hair catchers, recirculation pumps, chemical and filter-aid feeders, chlorinators, operating valves, and other equipment shall be identified and easily accessible for operation and maintenance purposes.

(7) Where carbon dioxide (CO₂) is used as a method of pH control, the following shall be provided:
   (a) CO₂ shall be injected into the recirculation pipe. The recirculation pipe shall be of sufficient size and length to provide a minimum of five second contact time prior to bather contact.
   (b) CO₂ cylinders shall be anchored to prevent damage. Cylinders shall be inaccessible to the general public.
   (c) CO₂ cylinders should be stored in a protective enclosure at the exterior of occupied structures. If CO₂ cylinders are located in the interior of occupied structures within an enclosed space of less than 60 square feet, they shall be placed in a ventilated enclosure. A louvered fresh air intake shall be provided near the ceiling. Mechanical exhaust ventilation shall be provided at the rate of one air change every three minutes and take suction from the floor as far as practical from the door and fresh air intake. Exhausted air shall be ducted to the exterior of the building through a continuous pipe of at least 1½ inches in diameter with the point of discharge so located as not to contaminate air inlets to any rooms or structures.

435.07: Construction Materials

(1) All construction materials including piping shall be non-toxic and should be resistant to corrosion and stresses to which they may be subjected.

(2) It is recommended that provisions be made to permit complete dewatering of all piping and equipment.

435.08: Inlets and Outlets

(1) Inlets for fresh or recirculated water in swimming, wading and special purpose pools should be located to produce, so far as possible, uniform circulation of water and the maintenance of uniform chlorine or other approved disinfectant residual throughout the entire pool. Inlets for the recirculation system shall be submerged, individually adjustable, and shall be designed and installed to reduce the escape of chlorine or other disinfectant.

(2) An over the rim fill spout, if used as a fresh water inlet, shall be located under the diving board, adjacent to a ladder or otherwise properly shielded so as not to create a hazard. Its open end shall have no sharp edges and shall not protrude more than two inches beyond the edge of the pool and shall be at least six inches above the maximum possible water level.

(3) All swimming, wading and special purpose pools shall be constructed in the following manner:
   (a) Return inlet(s) and suction outlet(s) from the recirculation system shall be designed so as to not constitute a hazard to the bather. Where skimmers are used, the inlet(s) shall be located so as to help bring floating particles within the range of the skimmers.
   (b) A main drain suction outlet(s) shall be provided in the lowest point of the pool floor. At least two main drains shall be provided for every swimming or wading pool more than 30 feet wide. The spacing of the main drain(s) or suction outlet(s) shall not be greater than 20 feet apart across from the deepest section of the pool nor more than 15 feet from the nearest side wall. All outlets shall be covered with suitable protective covers or grates which have been tested and approved by a nationally recognized testing laboratory. The main drain suction outlet(s) and outlet drain cover(s) shall, except skimmers, be installed in a way that they cannot be removed without the use of tools; the total velocity through grate openings shall not exceed two feet per second; the open area in the grates shall be of such design as to prevent physical entrapment of fingers, toes, etc. The system shall provide at least one antivortex main drain outlet. In depths of four feet six inches or less, the antivortex drain shall not provide a tripping or stubbing hazard to the feet.
(c) If the suction outlet is a single (such as a vacuum cleaner system) or if there are multiple suction outlets which can be isolated by valves, then each suction outlet shall be protected against user entrapment by either an antivortex cover or other means.

(d) A minimum of two suction outlets shall be provided for each pump in the suction outlet system, separated by a minimum of three feet or located on two different planes, i.e. one on the bottom and one on the vertical wall or one each on two separate vertical walls. These suction outlets shall be plumbed such that water is drawn through them simultaneously through a common line to the pump.

(e) The spacing of the return inlets shall be no greater than 20 feet on center. In no case shall there be less than two such inlets per 600 square feet, or fraction thereof. The total velocity through the inlets shall not exceed 15 feet per second.

(4) All swimming, wading and special purpose pools with any type of suction outlet cover(s), including those used for main drains, hydrotherapy or automatic cleaning outlets, which are missing, broken, loose, create an obstruction or are secured in such a way that the cover can be removed without the use of tools (excluding skimmers or gutters) shall be immediately closed for use until such repairs have been made to eliminate the hazard.

(5) All special purpose and wading pools shall, by July 1, 1998 install an emergency shut off pump switch, in an accessible location, prominently marked and within plain sight at the special purpose or wading pool.

435.09: Cross Connection

Potable water supplying any public, semi-public, wading or special purpose pool, either directly or to the recirculation system, shall be supplied through an air gap. In addition, no piping arrangement shall exist that will permit sewage, wastewater or any water of unknown or questionable quality to enter the pool or pool piping system.

435.10: Skimming Facilities

(1) All swimming, wading and special purpose pools shall be designed so that approximately 50% of the recirculation rate shall be drawn from the top surface of the pool.

(2) When skimming devices, or deck drains for water-level deck-type swimming and wading pools are not used, an overflow channel shall extend completely around every swimming and wading pool. The channel, channel outlets and piping shall be capable of removing at least 50% of the recirculated water and shall be equipped to carry away sputum and other floating matter in an effective way. The channel shall be so designed as to accomplish the following results:

(a) provide effective skimming action over the entire pool surface;

(b) intercept, in addition to the normal overflow, all splash water to prevent flooding or washing of the walkways around the pool;

(c) prevent, so far as possible, waters that have entered the channel from being washed back into the pool;

(d) provide for easy inspection and cleaning; and

(e) present no accident hazard to bathers.

Outlet openings of gratings in the overflow channel shall be at least twice the area of the outlet piping. Drainage from the channels can be returned to the pool water recirculation system ahead of the filters (ordinarily at the balancing tanks or at pump suction), provided that, unless channels are self cleaning, provisions shall be made for diverting the channel water to waste when cleaning the channel or walkway.

The overflow channel should provide an acceptable hand hold for bathers and should not be less than three inches deep.

(3) In all swimming, wading and special purpose pools where skimming devices are used they shall satisfy the following requirements:

(a) At least one shall be provided for each 500 square feet, or major portion thereof, of pool surface area. When surface skimmers are used in special purpose pools as the sole overflow system, one surface skimmer should be provided for each 100 square feet.

(b) Each shall be automatically adjustable to variations in water level over a range of at least three inches.
435.10:  continued

(c) Each shall be designed with a weir length which permits a flow of not less than 20 gallons per minute per lineal foot of weir.
(d) Each shall be provided with an easily removable and cleanable basket or screen through which all overflow water must pass to trap solids.
(e) Each shall be equipped with a throttling device for balancing purposes.
(f) Each shall be designed for a flow-through rate of at least 30 gallons per minute. The total design capacity of all skimmers in any pool shall be approximately 50% of the required filter flow of the recirculation system.
(g) Each shall be of substantial, durable, and corrosion resistant material. The freeboard around any pool in which skimming devices are used shall be no more than six inches, unless a hand hold is provided.

435.11:  Pool Slopes and Dimensions

(1) The minimum depth of water in swimming pools to be used for swimming purposes shall be not less than three feet. In any part of the pool less than five feet in depth, slopes in the pool floor shall remain constant and shall not exceed one foot vertical in 12 feet horizontal. Exception may be made by the Board of Health for pools built principally for instruction, or in a recessed area of the main swimming pool where the pool is of any irregular shape, such as the leg of a "T", "L", or "Z".

(2) In special purpose pools the maximum operational water depth shall be four feet measured from the waterline. The maximum depth of any seat or bench shall be two feet measured from the waterline.

(3) Walls of swimming pools shall be vertical or shall have a maximum vertical slope of one foot horizontal to five feet vertical. When pools are used for competitive swimming the walls shall be vertical for a minimum water depth of three feet six inches. When coved construction is used to join the walls and bottom of any pool the following shall apply:
   (a) At depths of from three feet to four feet six inches, the maximum radius of coving shall be 12 inches.
   (b) At depths greater than four feet six inches, the radius of coving joining the wall and floor at any point shall be equal to not more than the depth of the pool at that point minus two feet six inches. No ledges or any other abrupt change in the wall slope shall be allowed except for reasonable fillets or coving where the wall joins the pool bottom. Plane surfaces tangent to allowable coving may be used in lieu of curves.

(4) Notwithstanding the provisions of 105 CMR 435.11(3), a safety ledge not more than four inches in width and located about four feet six inches below the pool water surface may be permitted, provided it is sloped slightly toward the center of the pool to prevent dirt accumulation.

435.12:  Water Depth Markings

(1) The water depth of every swimming pool shall be plainly marked on the pool deck at the edge of the pool and on the vertical pool walls, at or above the water surface. Where depth markings cannot be placed on the vertical walls above the water level, other means shall be used so that the markings are clearly visible to persons in the pool. Markings shall be in dark colors, a minimum of four inches high, spaced at one-foot depth intervals in the shallow portion of the pool to a depth of five feet, and then at appropriate places of not more than 25 foot intervals around the deep portion of the pool. When non-swimmers use a pool, a polyethylene line with floats shall separate the non-swimmer area from deeper water.

(2) All painted swimming, wading and special purpose pools constructed, or drained after the effective date of these regulations shall have the boundary line between the shallow and deep areas marked with a four-inch stripe of contrasting color on the floor and walls of the pool. Ledges and step edges shall also be marked with a four-inch stripe of contrasting color.
435.12: continued

(3) All tiled swimming, wading and special purpose pools constructed or drained after the effective date of these regulations for routine re-grouting or tile work shall have a boundary line between the shallow and deep areas installed with a four inch stripe of contrasting color on the floor and walls of the pool. Ledges and step edges shall also be marked with a four inch stripe of contrasting color.

435.13: Walkways and Decks

(1) Walkways shall be continuous around the pool with a minimum width of four feet of unobstructed clear distance including a curb at the pool edge, if such a curb is used. Walkways of a width of eight feet are desirable. A minimum of three feet walk width shall be provided around any piece of diving equipment. All walks, decks, and terraces shall have a minimum slope of ¼ inch per foot toward adequate drains or points at which the water will have a free unobstructed flow away from the pool to approved points of disposal.

(2) All walkway and deck surfaces shall be furnished with a slip resistant non-abrasive surface.

435.14: Ladders and Steps

(1) A minimum of one ladder shall be provided for each 75 feet of swimming pool perimeter, and not less than two such devices shall be provided at any pool. If step-holes are provided in lieu of ladders, they shall be readily cleanable and sloped slightly, or provided with drainholes, to prevent accumulation of dirt. A suitable handrail extending to the pool deck or curb shall be provided at each side of each ladder or step-holes. Recessed stairsteps may be substituted for ladders or step holes. A suitable handrail shall be provided at one side or in the center of stairsteps.

(2) For each special purpose pool a minimum of one handrail or ladder equivalent shall be provided, or there shall be a deck designed to facilitate safe entry or exit.

435.15: Diving

(1) Diving equipment shall be rigidly constructed and properly anchored with sufficient bracing to insure stability under the heaviest reasonable load. Diving boards shall be of sound construction, free from splinters or dangerous cracks, and shall be capable of supporting the heaviest load under conditions of reasonable use. Diving boards and platforms shall be covered or finished with durable non-slip material.

(2) Diving areas constructed or approved for construction prior to April 1, 1998 shall conform with the requirements of 105 CMR 435.00 in effect at the time of construction and/or approval.

(3) No diving board or platform more than one meter above the pool water level shall be permitted for general public use in any swimming pool. At least 13 feet of free and unobstructed head room shall be provided above diving boards and platforms. This distance shall be measured from the center of the front end of the board and shall extend horizontally at least eight feet behind, eight feet to each side, and 16 feet ahead of the front of the diving board.

(4) Diving areas approved for competitive diving shall be in compliance with the standards of the Federation Internationale DeNation Ameteur (FINA), U.S. Diving, Inc., or the National College Athletic Association (NCAA).

(5) Platforms and diving equipment which are one meter or higher shall be protected with guard rails. The required guard rails shall extend at least 30 inches above the diving board and extend to the edge of the pool wall. All platform or diving equipment higher than one meter shall have guard rails which extend at least 36 inches above the diving board and extend to the edge of the pool wall.

435.16: Water Source

Water to be used in any swimming, wading or special purpose pool shall be obtained from a source approved by the Board of Health.
435.17: Pool Supervision

(1) All public and semi-public swimming pools when open for use shall be under the management of a supervisor, who shall be responsible for all phases of the pool operation. The pool supervisor may be the property owner, a facility employee or an employee of a contracted pool service. The pool supervisor shall be available to respond to mechanical and maintenance problems, and to detect the potential of such problems before they occur. It is not required that the pool supervisor be on the premises at all times. The pool supervisor shall be:
   (a) at least 21 years of age,
   (b) knowledgeable of 105 CMR 435.00, and
   (c) responsible for all phases of the operation.

(2) Effective January 1, 1999 the pool supervisor of all public and semi-public swimming pools shall have successfully completed a course in the safe and effective operation and maintenance of swimming pools as evidenced by certification as a Pool Operator from the YMCA, the National Swimming Pool Foundation, or from any other organization providing equivalent training, subject to the approval of the Department.

(3) The pool supervisor shall ensure that on-site pool personnel are adequately trained in the safe, sanitary and effective operation of the pool and its equipment. Training may be in the form of verbal and/or written instruction. The training must include at a minimum the following:
   (a) an explanation of the filtration and recirculation system;
   (b) pool water disinfection and control agents;
   (c) pool water chemistry and testing;
   (d) record keeping as required by 105 CMR 435.21(5);
   (e) water quality chemicals;
   (f) proper health and safety precautions when handling pool chemicals and equipment;
   (g) cross connection control; and
   (h) first aid and safety equipment

(4) If required by the Board of Health, there shall be at least one trained person on the premises at all times that the pool is open. This individual may be the pool supervisor, a lifeguard, a pool attendant or any other trained person. The board when determining whether there is a need for the trained person, and the minimum training or certification requirements for this person, shall take into account the size and capacity of the pool(s), the average attendance, the complexity of the disinfection equipment, and the facility’s history of compliance with the regulations.

(5) The pool supervisor shall conduct a site visit to the pool at least once a week to ensure the pool is being operated in a safe and sanitary manner. The pool supervisor shall record the findings of his/her site visit in the records required to be maintained by 105 CMR 435.21(5).


(1) No person shall operate or maintain any swimming, wading or special purpose pool without obtaining a permit from the Board of Health on a form prescribed by the Commissioner of Public Health. The permit shall state the method of water treatment, the number of trained lifeguards required and the maximum number of people allowed in the water at any time (see 105 CMR 435.27). The permit shall be subject to the requirements of 105 CMR 435.00 and to any regulations as may be adopted by the Board of Health, provided, however, that said local board of health regulations shall not be applicable to a state owned or operated swimming, wading or special purpose pool. A Board of Health may issue a permit with any desired restrictions for the use of any swimming, wading or special purpose pool which fails to meet the requirements for design or construction if the pool was in use prior to April 30, 1964 and if such failure does not materially impair the safety or sanitary operation of the pool.

(2) The operator shall post the permit in a conspicuous location near the swimming, wading or special purpose pool.

(3) All permits shall expire no more than 12 months following the date of issue, and may be revoked for cause at any time by the Board of Health (see 105 CMR 435.42). The Board of Health may issue a permit for less than one year in those instances where there is only seasonal use of the swimming, wading or special purpose pool.
435.21: continued

(4) Application for a permit shall be made to the Board of Health at least 15 days before the expiration of a permit, or otherwise at least 15 days before the opening of the swimming, wading or special purpose pool.

(5) The operator shall maintain a current written record of all data pertaining to the operation and condition of the pool and s/he shall keep it available for inspection by the Board of Health at all reasonable times. The record shall include daily attendance, amounts and types of chemicals used daily, results of chemical and bacteriological tests, dates and times of emptying and cleaning the pool and backwashing of filters, the daily number of hours of operation of purification equipment, and any other pertinent information which the Board of Health may require. The records shall be initialed by the person making the required tests.

435.22: Health Regulations; Signs

(1) No person having a communicable disease shall be employed or work at a swimming, wading or special purpose pool.

(2) The following regulations shall be enforced by the operator:
   (a) No bather shall enter the pool unless he first takes a cleansing shower.
   (b) No bather shall wear a bathing suit that is unclean.
   (c) No person suffering from a fever, cough, cold, inflammation of the eyes, nasal or ear discharges, or any communicable disease shall be allowed the use of the pool.
   (d) No person with sores or other evidence of skin disease, or who is wearing a bandage or medical covering of any kind, shall be allowed the use of the pool.
   (e) No person shall spit in or in any other way contaminate the pool, or its floors, walkways, aisles, or dressing rooms.
   (f) No glass, with the exception of shatterproof light shields, shall be permitted in the pool or on walkways within eight feet of the pool.
   (g) No person shall bring or throw into the pool any object that may in any way carry contamination or endanger the safety of bathers.

(3) The operator shall cause a sign to be placed at the entrance of the pool enclosure, or on a wall of the dressing room where one is provided, which reads substantially as follows:

"All persons are required to take a cleansing shower bath before entering the pool."
"No person with a communicable disease is allowed to use the pool."

(4) The operator of special purpose pools shall include on the sign required in 105 CMR 435.22(3) the following warnings:
   (a) Do not use when alone.
   (b) Do not use while under the influence of alcohol, anticoagulants, antihistamines, vasoconstrictors, vasodilators, stimulants, hypnotics, narcotics or tranquilizers.
   (c) Elderly persons, pregnant women, and persons suffering from heart disease, diabetes, high or low blood pressure should not use this pool until they consult with their physician.
   (d) Do not use the pool when the water temperature is greater than 104°F.
   (e) Observe a reasonable time limit (e.g., ten minutes), then shower, cool down, and, if you wish, return for another brief stay. Long exposure may result in nausea, dizziness or fainting.
   (f) The use of oils and body lotion by bathers is prohibited.

(5) The operator of special purpose pools shall provide a permanently mounted clock, with a large dial, located as to be easily readable by bathers at the pool.
(1) The operator shall provide one or more lifeguards 16 years of age or older if the Board of Health determines that they are necessary for the safe use of the swimming or wading pool. The Board, when determining whether there is a need for one or more lifeguards and the number of on-duty lifeguards to be present at the pool at any one time, shall take into account the size, shape and capacity of the swimming or wading pool. As a guideline, it is suggested that one lifeguard be provided for each 25 bathers. All lifeguards shall hold the following certifications:
   (a) a current Red Cross Lifeguard Training Certificate, or Royal Bronze Medallion, or Boy Scouts of America Lifeguard Certificate or National Y.M.C.A. Life guard Certificate or an equivalent certification, provided however, that no such alternative certification shall be deemed equivalent unless it shall contain all of the minimum requirements mandated or required by one or more of the foregoing certification programs; and
   (b) a current American Red Cross CPR Certificate for the Professional Rescuer or American Heart Association CPR Certificate for the Health Care Provider, or National Safety Council CPR Training; and
   (c) a Red Cross Standard First Aid Certificate, or a Red Cross Community First Aid and Safety Certificate (which certification may be evidenced by a notation on the back of any Red Cross Lifeguard Training Certificate), or National Safety Council First Aid Training, Level 2, or an equivalent certification, provided however, that no such alternative certification shall be deemed equivalent unless it shall contain all of the minimum requirements of one of the foregoing certification programs.

(2) If no lifeguards are required by the Board of Health, a warning sign shall be posted in a conspicuous location and shall state "WARNING-NO LIFEGUARD ON DUTY" in easy to read, legible letters which are at least four inches, (ten cm) high. In addition, there shall be signs which are readily visible stating "CHILDREN UNDER AGE 16 SHOULD NOT USE SWIMMING POOL WITHOUT AN ADULT IN ATTENDANCE" and "ADULTS SHOULD NOT SWIM ALONE."

(3) The number of trained lifeguards determined necessary by the Board of Health in accordance with 105 CMR 435.23(1) shall be in constant attendance during bathing hours and no bather shall be admitted to the swimming pool unless this number of lifeguards is present.

(4) All lifeguards while on duty shall wear a red or bright orange bathing suit. Any shirt or jacket worn as an outer garment by a lifeguard shall also be red or bright orange and have the word GUARD printed in 4" lettering on the back. An orange hat or sun helmet shall be worn by all lifeguards out-of-doors while on duty. A sunblock or other skin protection should be made available to all lifeguards.

(5) The operator shall provide whistles and bull horns or other appropriate voice amplification devices to all lifeguards on duty.

(6) All lifeguards shall direct their attention to all persons in their assigned areas while on duty. For swimming pools with a bather load capacity of greater than 75, it is recommended that lifeguards be isolated from pool crowds by occupying elevated seats on stands high enough to give them complete and unobstructed views of persons in their assigned areas.

435.24: Safety Equipment

For each 2000 square feet of water surface area or fraction thereof, the operator shall provide, in readily accessible locations, at least one Ring Buoy, U.S. Coast Guard approved, with a ½ inch polyethylene rope attached, no less in length than 1½ times the width of the pool. At those swimming pools that are staffed by lifeguards, there shall also be one Rescue Tube located at each lifeguard station. A backboard with straps shall also be readily available at each swimming pool which is attended by a lifeguard. In addition, all outdoor, inground swimming pools shall be equipped with a rescue hook.
435.25: First Aid Equipment and Emergency Communication

(1) The operator shall provide a first-aid kit consisting of the following items and such other additional items or quantities of items as may deemed necessary by the Board of Health: 35 1" bandaids; ten 3" x 3" sterile gauze pads; two 5" x 5" surgipads; one 8" x 10" surgipad; two 2" soft roller bandages; two 3" soft roller bandages; one ½" roll of hypoallergenic tape; one triangular bandage; one scissors; one tweezers; one rescue blanket; 12 antiseptic wipes; two disposable instant ice packs; one sterile isotonic buffered eye wash; two pairs of one-size-fits-all latex gloves; and one micro-shield or pocket mask with a one way valve.

(2) An emergency communication system which at a minimum would allow convenient, immediate and toll-free communication with emergency medical services, local police, state police and the local fire department, must be in working order and available at each pool. The telephone numbers of the emergency medical services, local police, state police and fire department, as well any instructions necessary to operate the communication system, shall be posted in a conspicuous place near the communication device or station. The location of the emergency communication device must be in an area that is unlocked and available to both the staff and the public at all times.

435.26: Waste Water and Backwash Water Disposal

(1) No waste water resulting from draining of a swimming, wading or special purpose pool or backwash water may be discharged on the watershed of a public surface water supply without prior approval of the Department of Environmental Protection. Any waste water resulting from draining a swimming, wading or special purpose pool shall be dechlorinated prior to its discharging.

(2) No waste water resulting from draining a swimming, wading or special purpose pool or backwash water may be discharged into a storm drain without approval of the agency having control over such facilities.

(3) Waste water resulting from draining a swimming, wading or special purpose pool or backwash water may be discharged to a subsurface disposal system if it is specifically designed for that purpose and approved by the appropriate agency.

(4) Diatomaceous earth filter backwash water must be discharged through a separation tank.

435.27: Bather Load Capacity

(1) For the purpose of computing bather load capacity, those portions of the swimming pool five feet or less in depth shall be designated as "non-swimmer" areas. Portions of the pool over five feet in depth shall be designated as the "swimming" area.

(2) In order to compute swimmer and bather capacity, swimming and wading pool areas shall be determined as follows:

(a) 15 square feet of pool water surface area shall be provided in the non-swimmer area for each non-swimmer expected at time of maximum load.

(b) 20 square feet shall be provided in the swimming area for each swimmer expected at time of maximum load.

(c) 300 square feet of pool water surface area shall be reserved around each diving board or diving platform and this area shall not be included in computing the area of the swimming area.

(d) 100 square feet of pool water surface area shall be reserved around each slide and this area shall not be included in computing the area of the swimming area.

(e) The bather load capacity shall be stated on the permit. (see 105 CMR 435.21(1)).

(3) The Board of Health may make additional allowance for bathers in cases of swimming pools with extensive deck areas used by patrons for lounging or sunbathing. These allowances shall be based on studies of actual swimming pool use in areas within the jurisdiction of the Board of Health.

(4) Ten square feet of water surface area per bather shall be used in computing the bather load capacity for special purpose pools.
435.28: Bacterial Quality

The Board of Health may cause samples of swimming, wading, or special purpose pool water for bacteriological analysis to be taken from the pool whenever it considers it necessary. All samples shall be collected, dechlorinated and examined in accordance with the procedure outlined in the latest edition of the Standard Methods for the Examination of Water and Waste Water (APHA). The bacteriological quality of the water from the pool shall meet the following standards: No sample shall:

1. contain more than 200 bacteria per milliliter, as determined by the standard (35°C) agar plate count, or show a positive test (confirmed test) for coliform organisms in any of the five 10-milliliter portions of a sample or more than 1.0 coliform organism per 50 milliliters when the membrane filter test is used; and

2. show a positive test (confirmed test) for pseudomonas aeruginosa organisms in any of the five 10 milliliter portions of a sample or more than 1.0 pseudomonas aeruginosa organisms per 100 milliliters when the membrane filter test is used.

435.29: Chemical Standards

1. Swimming, wading and special purpose pool water shall be treated in accordance with the following tables:

<table>
<thead>
<tr>
<th>Type of Disinfection</th>
<th>pH</th>
<th>Alkalinity (ppm/mg/l)</th>
<th>Residual Chlorine (ppm/mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>7.2-7.8</td>
<td>50-150</td>
<td>1.0-3.0 Free 0.0-0.2 Combined</td>
</tr>
<tr>
<td>Bromine</td>
<td>7.2-7.8</td>
<td>50-150</td>
<td>2.0-6.0</td>
</tr>
</tbody>
</table>

Other equally effective disinfectants registered with the United States Environmental Protection Agency as an approved disinfectant, may be used as a substitute for chlorine or bromine, subject to the approval of the local Board of Health.

2. Tests for residual disinfectant shall be made four times daily, once during the peak load by the pool operator, or more often if required by the Board of Health.

3. Hydrogen-Ion Concentration (pH): Tests for hydrogen-ion concentration (pH) shall be made simultaneously with the residual disinfectant test by the pool operator of each swimming pool, and whenever else the Board of Health considers it necessary.

4. Alkalinity and calcium hardness: Tests for alkalinity and calcium hardness shall be made weekly by the pool operator of each pool and whenever else the Board of Health considers it necessary.

5. If cyanuric acid is used to stabilize the free available residual chlorine, or if one of the chlorinated isocyanurate compounds is used as the disinfecting chemical, the concentration of cyanuric acid in the water should be at least 30 mg/l, but shall not exceed 100 mg/l.

6. When electronic monitoring devices are used in conjunction with chlorine or bromine disinfection at a swimming, wading or special purpose pool, the operator shall check the disinfectant, pH and alkalinity levels manually at least once every 24 hours.

435.30: Water Testing Equipment

1. The operator shall provide and use a DPD test kit for measuring the concentration of chlorine or bromine and an appropriate test kit for measuring pH, alkalinity, and cyanuric acid levels at each swimming, wading and special purpose pool. The test kit shall be maintained in good repair together with an adequate supply of reagents that are no more than one year old. The requirements of 105 CMR 435.29 will not be superseded by the use of automatic equipment.
435.30: continued

(2) An accurate unbreakable thermometer (± 1°F) shall be provided at each special purpose pool to determine water temperature.

435.31: Water Clarity

At all times any swimming, wading or special purpose pool is in use, the water shall be sufficiently clear to permit a black disc six inches in diameter on a white field, when placed on the bottom of the pool at the deepest point, to be clearly visible from the sidewalks of the pool at all distances up to ten yards measured from a line drawn across the pool through said disc.

435.32: Water Quality Maintenance

(1) Clarity and cleanliness of the water in a swimming, wading or special purpose pool shall be maintained by a continuous recirculation of the water through an appropriate filtration system approved by the Board of Health. The following minimum turnover rates shall be maintained:
   (a) swimming pools—once every eight hours,
   (b) wading pools—once every four hours,
   (c) special purpose pools—once every ½ hour.

(2) The operator of a special purpose pool shall cause the pool to be drained, cleaned, and refilled a minimum of once every 14 days.

435.33: Maximum Operating Temperatures For Special Purpose Pools

(1) At no time shall the water temperature in special purpose pools exceed 104°F.

(2) A thermostatic control for water temperature which ensures compliance with 105 CMR 435.33(1) shall be provided at each special purpose pool. The thermostatic control shall only be accessible to the pool operator.

(3) Water temperature shall be determined when the pH and residual disinfectant are tested.

435.34: Closure of Pool

(1) The operator shall be familiar with the provisions of 105 CMR 435.000 and every other applicable law and regulation pertaining to swimming, wading and special purpose pools including testing equipment and safe handling of chemicals.

(2) If at any time the swimming, wading or special purpose pool water does not conform with the requirements set forth in 105 CMR 435.28 through 435.31, the operator shall immediately close the pool until the pool water conforms with those standards.

435.35: Water Slide Flumes

(1) Standards of water quality for water slide flumes shall conform with the requirements set forth in 105 CMR 435.28 through 435.30.

(2) Clarity and cleanliness of the water shall be maintained by a continuous recirculation of the water through an appropriate filtration system approved by the Board of Health. A turnover rate of at least once per hour shall be maintained.

(3) The operator of any water slide flume shall be familiar with the provisions of 105 CMR 435.000 and every other applicable law and regulation pertaining to water slide flumes.

(4) If at any time the water does not conform with the requirements set forth in 105 CMR 435.35(1), the operator shall immediately close the water slide flume until the water conforms with those standards.
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435.35: continued

(5) A flume shall be perpendicular to the splash down pool wall for a distance of at least ten feet from the exit end of the flume. The last ten feet of the flume shall have a slope which is not steeper than 1 in 10.

(6) The distance between the side of a flume terminus and a splash down pool side wall shall be at least five feet unless the flume terminus is designed to move sliders away from the wall and the distance to an adjacent flume is at least eight feet. The distance between sides of adjacent flume terminuses shall be at least five feet. The distance between a flume terminus and the opposite side of the splash down pool shall be at least 25 feet and steps shall not infringe upon this area.

(7) A flume shall terminate between a depth of six inches below the splash down pool operating water level and two inches above the water surface.

(8) The construction dimensions and the mechanical attachment of the flume components shall be such that the surface of the flume is smooth and continuous for its entire length.

(9) Each flume shall have a distinctive line or marking to indicate the starting zone in which only one rider at a time is permitted. This line shall be in accordance with the manufacturer’s specifications or 30 feet, whichever is the longer distance. A sign shall be posted at the top of the slide warning all sliders not to proceed down the slide until the slider in front has passed this line.

435.36: Splash Down Pools

(1) The splash down pool operating water depth at the end of the flume shall be between 2 ½ and 3 ½ feet. This depth shall be maintained in front of the flume for a distance of at least ten feet, from which the splash down pool floor may have a constant slope upward to a minimum water depth of two feet. This slope shall not be steeper than 1 vertical in 12 horizontal. The bottom shall slope to the main drain at least two inches in ten feet.

(2) A surge storage area shall be provided, which will contain the water used for pumping onto the slide during periods when the slide is not in use, except where the splash down pool is a swimming pool where the water elevation will not be lowered by more than one inch when the flume pumps are in operation.

(3) Where a swimming pool is used as a splash down pool the area where the slide exits shall be roped off from the area of the pool used for swimming and bathing. Distances to any roping shall comply with the clearances specified in 105 CMR 435.35(6).

435.37: New and Innovative Equipment and Procedures

The use of any new and innovative equipment or disinfection methods other than those described herein is prohibited unless approved in writing by the Department.

The Department may approve innovative equipment and operating procedures if it can be demonstrated by the applicant that their use will achieve the intent of 105 CMR 435.000 to provide a reasonable safe environment and that any hazard to public health is not greater than that of other approved equipment and procedures.

435.38: General Sanitation

All swimming, wading and special purpose pools and all bathhouses, grounds and appurtenances shall be maintained in good repair and in a safe and sanitary manner.

435.41: General Administration

The provisions of 105 CMR 400.000 shall govern the administration and enforcement of 105 CMR 435.00 except as supplemented by 105 CMR 435.42 through 435.47.
435.42: Orders: Service and Content

(1) If an examination as provided for in 105 CMR 400.100 reveals that a swimming, wading or special purpose pool does not comply with the provisions of 105 CMR 435.000, the Board of Health may order the owner to comply with the violated provision.

(2) If an examination reveals the existence of a health or safety hazard at any swimming, wading or special purpose pool, the Board of Health, may, as it considers necessary, issue an order which revokes or suspends a permit. Such an order shall be complied with in accordance with its directions and no person shall be permitted to enter the water of the swimming, wading or special purpose pool, unless and until the permit has been reissued or the order has been revoked in writing by the Board of Health.

(3) Every order authorized by 105 CMR 435.000 shall be in writing. All orders shall be served on the owner or his agent;
   (a) personally, by any person authorized to serve civil process, or
   (b) by leaving a copy of the order at his last and usual place of abode, or
   (c) by sending him a copy of the order by registered or certified mail, return receipt requested, if he is within the Commonwealth, or
   (d) if his last and usual place of abode is unknown or outside the Commonwealth, by posting a copy of the order in a conspicuous place on or about the swimming, wading or special purpose pool or portion thereof affected.

(4) Subject to the emergency provision of 105 CMR 400.200(B) and to the provisions of 105 CMR 435.42(2), any order issued under the provisions of 105 CMR 435.000 shall:
   (a) include a statement of the violation or defect, and may suggest action which if taken will effect compliance with 105 CMR 435.000, and
   (b) inform the person to whom it is directed of his right to a hearing and of his responsibility to request the hearing, and to whom the request shall be made.

435.43: Hearing

(1) The person or persons to whom any order has been served pursuant to 105 CMR 435.000 may request a hearing before the Board of Health by filing with the Board of Health within seven days after the day the order was served, a written petition requesting a hearing on the matter. Upon receipt of such petition the Board of Health shall set a time and a place for such a hearing and shall inform the petitioner thereof in writing. The hearing shall be commenced not later than ten days after the day on which the petition was filed, provided, that on application of the petitioner the Board of Health may postpone the date of the hearing for a reasonable time beyond such ten-day period if in the judgment of the Board of Health the petitioner has submitted a good and sufficient reason for such postponement.

(2) At the hearing the petitioner shall be given an opportunity to be heard and to show why the order should be modified or withdrawn.

(3) After the hearing the Board of Health shall sustain, modify or withdraw the order and shall inform the petitioner in writing of its decision. If the Board of Health sustains or modifies the order, it shall be carried out within the time period allotted in the original order or in the modification.

(4) Every notice, order, or other record prepared by the Board of Health in connection with the hearing shall be entered as a matter of public record in the office of the Board of Health.

(5) If a written petition for a hearing is not filed in the office of the Board of Health within seven days after an order has been issued, or if after a hearing, the order has been sustained in any part, each day's failure to comply with the order as issued or modified shall constitute an additional offense. (see 105 CMR 435.45).
Any person aggrieved by the final decision of the Board of Health with respect to the denial of plan approval; variance request; the denial, revocation of, or failure to renew a license; or with respect to any order issued under the provisions of 105 CMR 435.000 may seek relief from any court of competent jurisdiction, as provided by the laws of the Commonwealth.

(1) Any person who operates or maintains a swimming, wading or special purpose pool without the unexpired and unrevoked written permission of the Board of Health shall upon conviction be fined not less than $250 nor more than $500. Each day's violation will constitute a separate offense.

(2) Any person who shall violate any provision of 105 CMR 435.000 for which penalty is not otherwise provided in any of the General Laws or in any other provisions of 105 CMR 435.000 or 105 CMR 400.000 shall upon conviction be fined not less than $50 nor more than $500. Each day's violation will constitute a separate offense.

(3) Any person who shall fail to comply with any order issued pursuant to the provisions of 105 CMR 435.00 shall upon conviction be fined not less than $50 or more than $500. Each day's failure to comply with an order shall constitute a separate violation.

Variances may be granted only as follows: The Board of Health may vary the application of any provisions of 105 CMR 435.00 with respect to any particular case when, in its opinion

(a) the enforcement thereof would do manifest injustice; and

(b) the applicant has proved that the same degree of protection required under 105 CMR 435.00 can be achieved without strict application of the particular provision.

Every request for a variance shall be made in writing and shall state the specific variance sought and the reasons therefore. Any variance granted by the Board of Health shall be in writing. Any denial of a variance shall also be in writing and shall contain a brief statement of the reasons for the denial. A copy of each variance shall be conspicuously posted for 30 days following its issuance; and shall be available to the public at all reasonable hours in the office of the city or town clerk or the office of the Board of Health while it is in effect. Notice of the grant of each variance shall be filed with the Department of Public Health, which shall approve, disapprove, or modify the variance within 30 days from receipt thereof. If the Department fails to comment within 30 days, its approval will be presumed. No work shall be done under any variance until the Department approves it or 30 days elapse without its comment, unless the Board of Health or the Department certifies in writing that an emergency exists.

Any variance or other modification authorized to be made by 105 CMR 435.000 may be subject to such qualification, revocation, suspension, expiration as the Board of Health expresses in its grant. A variance or other modification authorized to be made by 105 CMR 435.000 may otherwise be revoked, modified, or suspended, in whole or in part, only after the holder thereof has been notified in writing and has been given an opportunity to be heard, in conformity with the requirements for an order and hearing of 105 CMR 435.42 and 435.43.
## Appendix A

### Swimming Pool Testing Records

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| Free Chlorine | Combined Chlorine | Total Alkalinity (60-150 ppm) | S.C.P.
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<th>Testing</th>
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