

## **The *Virginia Graeme Baker Pool & Spa Safety Act***

The *Virginia Graeme Baker Pool & Spa Safety Act* (P&SS Act) was enacted by Congress and signed by President Bush on December 19, 2007. Designed to prevent the tragic and hidden hazard of drain entrapments and eviscerations in pools and spas, the law became effective on December 19, 2008.

Under the law, all public pools and spas must have ANSI/ASME A112.19.8 performance standard, or the successor standard ANSI/APSP-16 2011 compliant drain covers installed and a second anti-entrapment system installed, when there is a single main drain other than an unblockable drain.

The *Virginia Graeme Baker Pool & Spa Safety Act* (P&SS Act) takes its name from Virginia Graeme Baker, a young girl who drowned after she was trapped under water by the powerful suction from a hot tub drain.

A twin and the youngest of five, 7-year-old Graeme, as her family called her, was the daughter of Nancy and James Baker IV, the son of former Secretary of State James Baker III. A member of her community swim and diving team, Graeme was able to swim without assistance since she was 3 years old.

In June 2002, Graeme became stuck to a hot tub drain and was unable to pull herself free. Efforts by her mother to pull Graeme from the drain proved unsuccessful. Two men who eventually freed Graeme from the spa pulled so hard that the drain cover broke from the force. Graeme died from drowning, but the real cause of her death was suction entrapment due to a faulty drain cover.

After her tragic death, her mother, Nancy Baker, worked tirelessly to advocate for pool and spa safety. Mrs. Baker, her family and Safe Kids Worldwide actively lobbied Congress to win support for a law to require anti-entrapment drain covers and other safety devices, as needed. The statute, which was sponsored by U.S. Rep. Debbie Wasserman Schultz of Florida, was signed into law by the President in December 2007.

The Consumer Product Safety Commission (CPSC) has established a deadline for compliance of May 28, 2012.

As required by the Virginia Graeme Baker Pool and Spa Safety Act, Public Law 110-440, 121 STAT. 1794 (2007), 15 U.S.C. Sec. 8001, all public swimming pools shall have a secondary means installed to prevent entrapment or evisceration of the public swimming pool patrons. The secondary means may be any of the following and shall be submitted to the director for plan approval prior to installation in a public swimming pool:

- (i) A second main drain;
- (ii) A gravity flow drainage system;
- (iii) An unblockable outlet cover with a compatible sump; or
- (iv) A SVRS that is properly installed.

All public pools/spas must be equipped with new ASME/ANSI A112.19.8-2007 or successor standard compliant drain covers.

Pools/spas operating off of a single main drain, other than an unblockable drain, must also add one or more of the following options:

- a safety vacuum release system (SVRS), or
- a suction-limiting vent system, or
- a gravity drainage system, or
- an automatic pump shut-off system, or
- disable the drain, or
- any other system determined by the Commission to be equally effective as or better than the others listed above.

Multiple Drains consist of, at a minimum, two fully submerged suction outlets per pump, with drain cover centers at least 3 feet apart (measured 'on center').

One drain = total system flow (plus a secondary anti-entrapment system if the single main drain is not unblockable)

Two drains = each rated at total system flow

Three drains = each rated at 1/2 total system flow

Four drains = each rated at 1/3 total system flow

Flow rate per cover = total system flow/(# of drains – 1)

In addition to having a drain cover or other anti-entrapment device that complies with ASME/ANSI A112.19.8-2007 or ANSI/APSP-16 2011 standard, public pools and spas with single, blockable main drains must have an additional layer of protection using one of the following systems or devices.

1. SAFETY VACUUM RELEASE SYSTEM (SVRS) - A safety vacuum release system, which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17 or ASTM standard F2387.

2. SUCTION-LIMITING VENT SYSTEM - A suction-limiting vent system with a tamper resistant atmospheric opening also called an atmospheric vent. It is a pipe teed to the suction side of the circulation system on one end and open to the atmosphere on the opposite end. The pipe is normally full of water equal to the same height as the pool. When a blockage occurs at the main drain, air is introduced into the suction line thus causing the pump to lose prime and relieving the suction forces at the main drain (suction outlet).

### 3. GRAVITY POOLS

A gravity drainage system utilizes a collector tank and has a separate water storage vessel from which the pool circulation pump draws water. Water moves from the pool to the collector tank due to atmospheric pressure, gravity, and the displacement of water by bathers, which removes the need for direct suction at the pool. This type of system is also referred to as a reservoir, surge tank or surge pit.

Pools with gravity drain systems automatically fall into the category of having a second anti-entrapment system, so ensuring that the existing covers are compliant with ASME/ANSI A112.19.8 or ANSI/APSP-16 2011 replacing them with compliant covers is all that is required.

The flow rate formula remains the same in gravity pools with multiple drains.

### 4. AUTOMATIC PUMP SHUT-OFF SYSTEM

An automatic pump shut-off system is a device that would sense a drain blockage and automatically shut off the pump system.

- Some safety vacuum release systems may meet this definition.
- One pump motor manufacturer has developed a circuit board for its motors that monitors current to the motor and shuts the pump off when a noticeable change in current occurs, possibly caused by an entrapped bather.
- The National Electrical Code (NEC) article number 680.40 has a requirement for an emergency stop switch for the pump to be located within 5 feet of a public spa in case of bather entrapment. However, this switch is manually operated and would require the presence of another person to activate the switch and therefore would not qualify as “an automatic pump shut-off system” under the VGB Act.

### 5. DRAIN DISABLEMENT

This is the only option that eliminates rather than mitigates the hazard.

Turning the drain off does not satisfy “drain disablement” pursuant to the VGB Act. You would need some type of “device or system” that disables the drain. To satisfy the definition of drain disablement, the drain/outlet would need to be physically removed from the system which could include one of the following options:

- Fill the sump with concrete, in effect, filling the outlet piping as long as another source(s) of water for the suction side of the pump is (are) available, such as skimmers.
- Cut and cap the piping in the equipment room in such a way that it cannot be reinstalled.
- Re-plumb the suction line from the drain to the pressure side of the pump to create a return line and reverse the flow.

A therapy pool at a rehabilitation center limited at all times to the center’s patients and not open to the public generally would not be subject to the requirements of the Act.



Portage County Combined General Health District  
705 Oakwood Street, 2<sup>nd</sup> Floor  
Ravenna, Ohio 44266  
330-296-9919  
[www.co.portage.oh.us/pchd/](http://www.co.portage.oh.us/pchd/)