

Dewatering in Swimming Pools:

Techniques, Benefits, and Best Practices

By Derek Pay

Dewatering is a crucial process in pool maintenance and construction that ensures the structural integrity, cleanliness, and longevity of swimming pools. Whether you're a pool owner, contractor, or maintenance professional, understanding the purpose and methods of dewatering can help prevent costly damage and maintain optimal pool conditions.

WHAT IS DEWATERING?

Dewatering refers to the process of removing groundwater from the area surrounding a swimming pool (see Fig. 1). Dewatering is commonly used during pool construction, repairs, or when draining a pool for maintenance. Without proper dewatering, excessive groundwater pressure can cause significant issues, including pool wall collapse, structural cracks, or even pool shell 'floating,' where the entire structure lifts out of place.

WHY IS DEWATERING IMPORTANT?

Groundwater pressure is a natural force that can exert immense upward pressure on an empty or partially drained

pool. This is particularly common in regions with high ground water tables. Effective dewatering ensures that:

- The pool structure remains stable during draining.
- Hydrostatic pressure is managed to prevent pool 'floating' or 'pop-out'.
- Pool repairs or resurfacing projects can be conducted safely.

COMMON DEWATERING METHODS

Choosing the right dewatering method depends on factors such as soil conditions, water table levels, and pool design. Here are some commonly used techniques:



Fig. 1: A pool excavation in definite need of dewatering.



Fig. 2: Sump pump style pipe installed near pool base with pump inside removing ground water.



Fig. 3: Pool with ground water — hydrostatic relief valves in floor relieving hydrostatic pressure and allowing ground water to come up into shell.



Fig. 4: Trash pumps around pool for dewatering with well points used to successfully drain ground water during construction phase.

1. **Sump Pump Systems:** A sump pump is installed in a strategically placed pit near the pool's base to continuously remove groundwater. This method is ideal for long-term dewatering needs, especially in areas with persistent groundwater issues (see Fig. 2).
2. **Hydrostatic Relief Valves:** These pressure relief valves are installed in the pool floor during construction. When groundwater pressure rises, the valves automatically open to release excess water into the pool, preventing structural damage (see Fig. 3).
3. **Well Point Systems:** This method uses a series of small well points installed around the pool perimeter. Water is drawn out of the well points using a vacuum pump, effectively lowering the surrounding water table (see Fig. 4).

It is important that water discharged from well points or sump pumps is directed away from the pool and into an area that can accommodate the increased volume of water (see Fig. 5).
4. **French Drains:** A French drain is a gravel-filled trench with a perforated pipe that redirects groundwater away from the pool area. It's commonly used in combination with other dewatering methods.

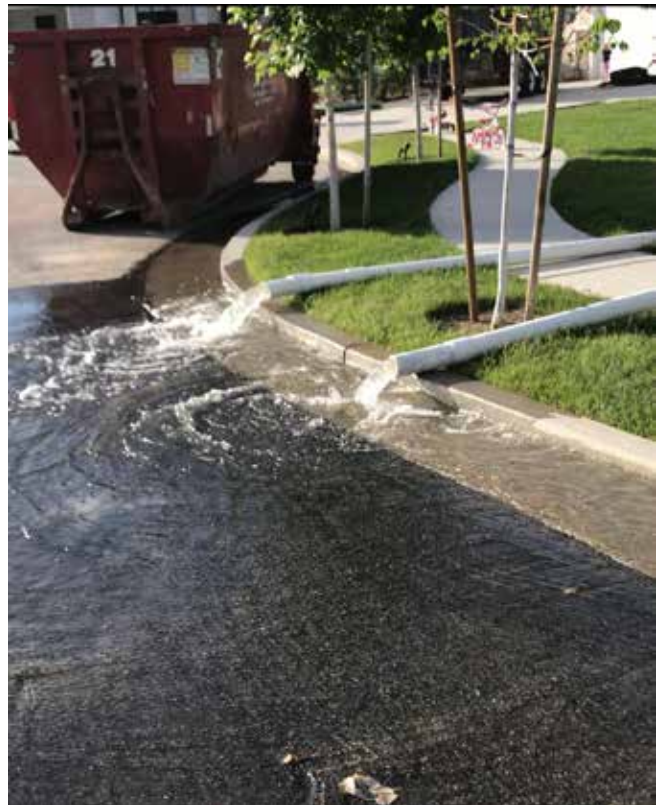


Fig. 5: Water discharged away from pool construction, allowing ground water levels to decrease.

BEST PRACTICES FOR SUCCESSFUL DEWATERING

To ensure effective dewatering, consider the following best practices:

- **Pre-Assessment:** As construction begins and water is encountered, or before draining a pool, assess the groundwater conditions and soil type to determine the appropriate dewatering strategy.
- **Monitor Water Levels:** Regularly check groundwater levels during the dewatering process to ensure conditions remain stable. Water can cause damage; monitoring levels is key to reducing pool damage and maintaining the safety of others during construction. Heavy rainfall may quickly increase the ground water level.
- **Install Backup Systems:** In areas with unpredictable weather or rising groundwater tables, consider installing backup pumps or additional relief valves for added protection.
- **Consult Professionals:** If you're unsure about your pool's structural risks, consulting an experienced pool contractor or geotechnical engineer can prevent costly mistakes (see Fig. 6).

CONCLUSION

Dewatering is a vital aspect of construction and pool maintenance, especially in regions with high groundwater levels. By understanding the techniques and best practices for dewatering, contractors and pool owners can safeguard their investment and ensure the longevity of their swimming pools. Whether you're preparing for a new pool, major renovation, or simply conducting routine maintenance, proper dewatering strategies are key to protecting your pool from water-related damage.



Fig. 6: Not an ideal way to effectively deal with ground water levels.



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