



PLANNING AND ASSET MANAGEMENT

Groundwater Solutions

Achieve your water quality and supply goals with Black & Veatch



BLACK & VEATCH

Cycle-Wide Expertise In Groundwater Resources

Solutions

Black & Veatch delivers groundwater solutions from sourcing and disposal to reclamation and reuse that:

- Build water supply resilience
- Comply with regulatory requirements
- Meet water quality targets
- Optimize operations
- Promote business growth and investment
- Protect lives and property

Services

- Resource planning and optimization
- Hydrogeologic and geologic investigations
- Data collection and analytics
- Testing
- Design
- Permitting
- Procurement
- Construction

Modeling

Our expertise encompasses all types of:

- Evaluations – flow, contaminant and leachate migration rates; pumping programs in multi-aquifer systems; well monitoring; saltwater
- Conditions – siltstone, alluvial bedrock, fossil sandstone aquifer, glacial outwash, carbonate and unconsolidated soils, fine sand
- Software – interfaces with flow and contaminant transport codes including MODFLOW, MODPAT, MT3DMS, FEMWATER; and SEEP/W, HST3D, SUTRA and MOC for analysis

Well/Wellfield Development and Operations

Our expertise includes wellfield planning and optimization, investigations, site work, drilling, design testing, permitting, reporting and operations & maintenance. We are experienced in:

- New, relocation, expansion and protection projects
- Fresh and brackish water wells
- Horizontal and directional drilling
- All geological formations
- All capacities and types – production, collector, injection, irrigation, monitoring, and rehabilitated wells
- Smart wellfields – using data collection and analytical technology to optimize operations

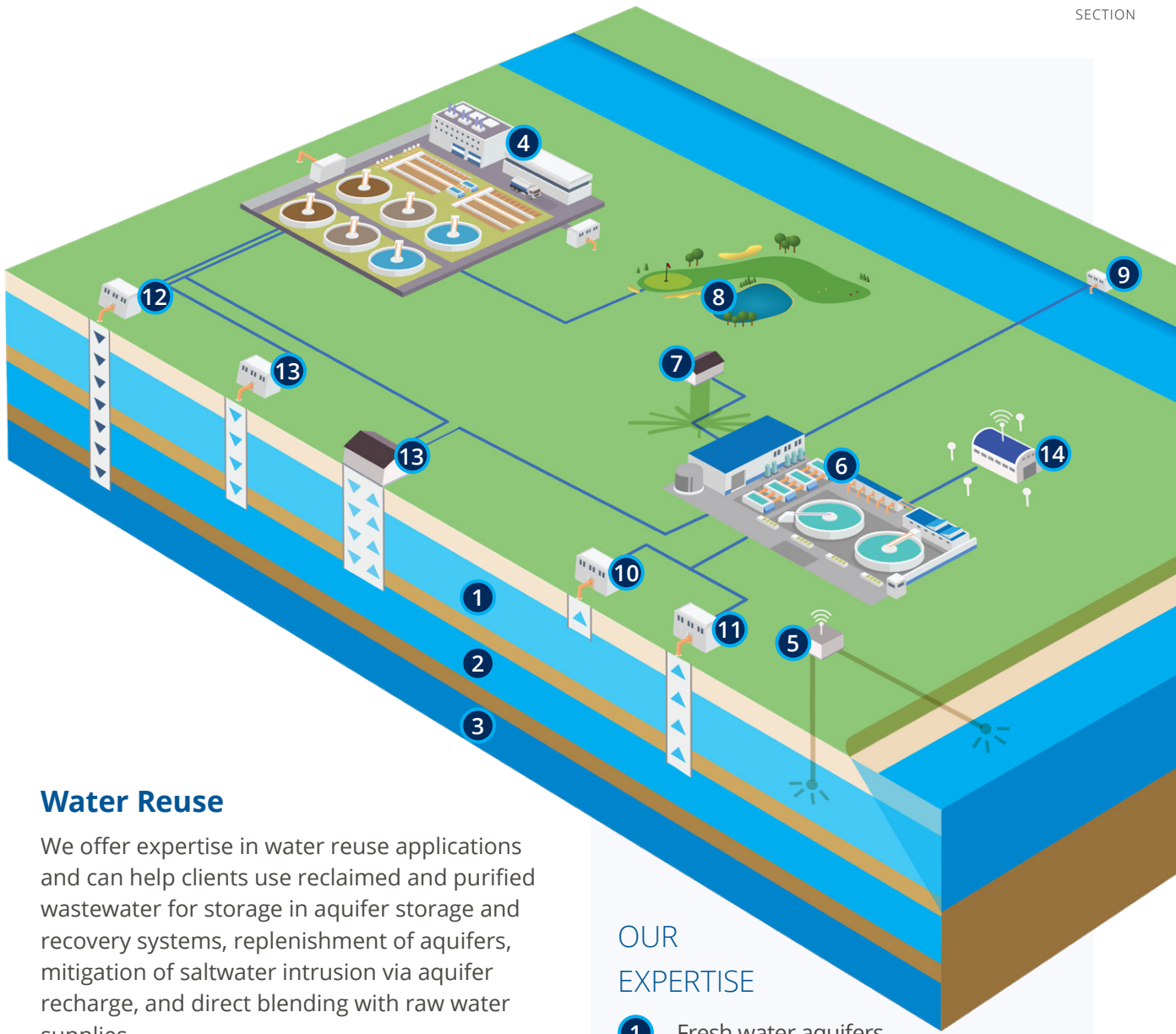
Aquifer Management

We protect, recharge and maximize the yield of aquifers. Our expertise includes:

- Smart wellfield applications
- Replenishing and recharging aquifers through reclaimed and purified effluent
- Storage and wellfield operation solutions to mitigate drought, extraction-rate and single-source risks
- Saltwater intrusion and sea-level rise assessment, monitoring and mitigation
- Deep well injection for disposal of concentrate and industrial and municipal wastewater

Remediation

We provide comprehensive services, including site investigations, feasibility studies, detailed design and project implementation, to remediate contaminated sites. Our experience includes contracts with the U.S. Environmental Protection Agency, Department of Defense and Department of Energy.



Water Reuse

We offer expertise in water reuse applications and can help clients use reclaimed and purified wastewater for storage in aquifer storage and recovery systems, replenishment of aquifers, mitigation of saltwater intrusion via aquifer recharge, and direct blending with raw water supplies.

Groundwater and Surface Water Interface

We have expertise in surface water and stormwater management, including detention structures and underground drainage systems, to offset allocation from groundwater resources.

OUR EXPERTISE

- ① Fresh water aquifers
- ② Brackish water aquifers
- ③ Disposal zones
- ④ Wastewater treatment plants
- ⑤ Saltwater intrusion/sea-level monitors
- ⑥ Water treatment plants
- ⑦ Horizontal collection wells
- ⑧ Industrial reuse facilities
- ⑨ Intake facilities
- ⑩ Freshwater production wells
- ⑪ Brackish water production wells
- ⑫ Injection wells (Class I & II)
- ⑬ Aquifer storage and recovery/
Aquifer recharge systems
- ⑭ Smart wellfields

Water

For more information, visit us at
bv.com/water

