# AquaScore™ Quick Reference *Guide*

THE CREDIT SCORE FOR WATER QUALITY

**Aquagenuity® is a water intelligence company: the credit score for water quality.** The AquaScore™ answers one question about one location at one time: how far is the water that reaches this location from the strictest health benchmarks, based on what's actually been measured? Every score is a number from 0 to 100 plus one band word, and every number behind it carries its source and date.

## READING A SCORE

| RESULT | WHAT IT MEANS |
|---|---|
| `100` | Nothing scored is above what you'd find in pure spring water. Natural minerals and hardness don't lower the score. |
| `0` | Reserved for a detected germ such as *E. coli*. Every 0 is reviewed before it publishes. |
| `Insufficient data` | Fewer than half of the 15 core contaminants were measured within their recency windows. No data, no score: the gaps are named instead. |
| `62 · ELEVATED` | How every score prints: the number, then the band word. No codes, no ranks. |

The 15 core contaminants: arsenic, nitrate, nitrite, lead, copper, chromium-6, TTHMs, HAA5, PFOA, PFOS, PFHxS, benzene, radium, uranium and *E. coli*.

## HOW A SCORE IS MADE

1. **Resolve service areas.** A ZIP code isn't a water system. EPA's public water system service areas (v3, March 2026) are joined to 2020 Census blocks, so each system's share of a ZIP is weighted by where people live, never by land area. That puts the record down to the street level.
2. **Assemble the public record.** Federal (EPA's Unregulated Contaminant Monitoring Rule and drinking water information system), state (in Georgia, EPD's Drinking Water Watch, sample by sample) and utility (annual water quality reports). Each result keeps its source, date and statistic. A system that buys water inherits the seller's source-water results, never its pipe results.
3. **Apply recency windows.** Each contaminant has a window set from its federal monitoring period: 90 days for *E. coli*, 180 for nitrate and nitrite, 365 for disinfection byproducts, 3 years for lead and PFAS. Older results stay visible as old record and don't count toward the score.
4. **Benchmark each contaminant twice.** Against its enforceable legal limit, and against its health benchmark: the strictest published health-only level from a government health authority, most often California OEHHA's Public Health Goals. The distance between the two is the AquaGap™. The health side drives the score.
5. **Aggregate, score and band.** Ratios to the health benchmark combine so one serious problem can't be averaged away by many clean results (see "The scoring curve"). The band word states the most serious fact found. Where several systems serve one ZIP, the headline goes to the most serious finding among systems serving at least 5% of residents, and every system is scored and named underneath.

## THE SCORING CURVE

Each contaminant's level is divided by its health benchmark. Those ratios combine two ways, as the total burden and as the single worst contaminant weighted by its health severity, and the worse of the two drives the score. One serious problem can't be averaged away by many clean results.

The combined hazard maps to 0–100 on a smooth, versioned curve with fixed anchors: one high-severity contaminant at 10× its benchmark scores 50, at 100× scores 25 and at 1,000× scores 12.5. Each tenfold step above 10× halves the score, so the score never drops off a cliff and keeps telling locations apart. Only a detected *E. coli* forces 0.

Levels enter in the statistic the source reports (for example, 90th percentile or running annual average). Non-detects enter at half the reporting limit unless that limit sits at or above the benchmark; then they're excluded and listed as a blind spot. The same calculation against legal limits gives the legal track.

## THE FIVE BANDS

| BAND | DEFINED AS | COLOR |
|---|---|---|
| TRACE | Nothing scored was detected. | #207076 |
| DETECTED | Measurable amounts, all at or below their health benchmarks. | #2B8A8C |
| ELEVATED | At least one contaminant above its health benchmark. | #8A5600 |
| HIGH | At least one contaminant 10× or more above its health benchmark. | #B3311A |
| SEVERE | At least one contaminant above its enforceable legal limit. | #7A1F10 |

Bands are defined by facts in the method, not by score ranges. ELEVATED and HIGH are the AquaGap™ zone: within the law, above the health benchmark.

## THE READOUT

| PART | SHOWS |
|---|---|
| Score · Band | 0–100 and one band word |
| Finding | One factual sentence naming the driver |
| Basis | Measured, modeled or mixed; confidence; core contaminants in-window; newest sample date; method version |
| Panels | Health · Legal · Areas of concern (credible benchmarks not yet scored; never move the number) · Blind spots |

> *AquaScore describes what was measured or modeled against health benchmarks. It is not a determination that water is safe or unsafe to drink.*

Every result carries the same five steps (W.A.T.E.R.): Watch · Assess the AquaGap™ · Test · Equip · Report. The band only sets how soon to look again.

## HOW IT'S BEEN USED

**Georgia.** Six water systems serving 4,106,368 people are published on the public coverage register. Each is scored from its utility's and EPA's records through 2025 (method 2.1.0), not from tap samples.

| WATER SYSTEM | AQUASCORE™ (VS. HEALTH BENCHMARKS) | LEGAL SCORE (VS. FEDERAL LIMITS) |
|---|---|---|
| Gwinnett County DWR | 97 · DETECTED | 96 |
| City of Atlanta | 62 · ELEVATED | 96 |
| Fulton County (North Fulton) | 57 · ELEVATED | 96 |
| DeKalb County DWM | 37 · HIGH | 97 |
| City of Savannah (Main) | 23 · HIGH | 96 |
| Cobb County Water System | 16 · HIGH | 92 |

**How to read it:** the same records are rated twice. Against federal legal limits, all six score 92 to 97: they're within the law. Against health benchmarks, three score HIGH, meaning at least one contaminant sits 10 times or more above its health benchmark. That distance between legal and healthy is the AquaGap™. Five more Georgia systems are scored and in review.

In Atlanta, the driver is lead at the 90th percentile of sampled homes: 1.4 ppb (2024), 7× the 0.2 ppb health benchmark and within the legal limit. In College Park (ZIP 30337), it's PFOA in purchased water: 3.6 ppt, under the 4 ppt legal limit and 518× the health benchmark.

**Nationwide.** The national run loaded all 49,342 U.S. community water systems, serving about 332 million people. Federal datasets alone were too thin to score a single one, which is why state sample records, utility reports and Guardian tap samples feed the score. We add water systems as each state's sample records are loaded, and the coverage register dates every one.

**The AquaRights Index™.** The AquaScore is the Index's public-record measure of the right to safety, population-weighted by Census block group.

**Before the 2.0 rebuild.** Georgia Aquarium was a paying partner. IBM® and The Weather Channel® demonstrated Aquagenuity's earlier platform live through the IBM Call for Code Global Challenge on UN World Environment Day 2020. Ocean Visions, a collaborative of MIT, Stanford, the Smithsonian, Georgia Aquarium and the United Nations, named Aquagenuity one of seven technologies saving the world's waterways.

## KNOWN LIMITS, AND WHAT'S NEXT

- **The last mile.** The public record stops at the street. Service lines and home plumbing can change what comes out of a tap, which is why Test is on every result and Guardians of H2O™ sample at the tap.
- **Blind spots.** Some lab reporting limits sit above the health benchmark (PFOA reports to 4 ppt; its benchmark is 0.007 ppt), so a non-detect can't show the water is below the benchmark.
- **Calibration.** The curve's constant is interim and will be re-fit on the national run, alongside a published error rate for modeled scores against measured tap results. Severity weights and the non-detect convention are provisional.
- **Review.** An independent science panel is forming to review every constant. Every change bumps the method version and is logged publicly.

## FOR STUDENTS AND RESEARCHERS

Scores are built from 2020 Census blocks, so they roll up cleanly to block group, tract, ZIP, county and state, and join to community data at the same geography. Exports carry `aquascore, band, band_rank, band_label, basis, method_version`.

| SPRING 2027 CHALLENGE | ONE WAY TO USE THE AQUASCORE |
|---|---|
| Water and health | Score, band and recency as features in a model that flags a likely water problem before it reaches the tap |
| Water and energy | Join scores to Georgia power plant locations and test whether the AquaGap differs nearby |
| Water, AI and data centers | The 15 core contaminants and coverage count as the checklist for a pre-build community baseline |
| Water and climate | Scores and old-record gaps before and after a flood, drought or heat event |
| Water and community | Overlay scores with community indicators at tract or block group level; coverage itself is an equity question |
| Water and technology | Design how a family reads the readout and acts on W.A.T.E.R. |

## RESOURCES, ALL PUBLIC

- `aquagenuity.com/methodology` · method 2.1.0, the full reference table and the public changelog
- `aquagenuity.com/coverage` · every rated water system, both views, dated
- `aquagenuity.com/papers/how-the-aquascore-works` · Position Paper No. 2
- `aquagenuity.com/papers/the-last-mile` · Position Paper No. 3
- `aquagenuity.com/sources` · data sources and citations
- `aquagenuity.com/aquascore/guide` · this guide online

**Public data used:** U.S. EPA, Public Water System Service Areas v3 (March 2026) · U.S. Census Bureau, 2020 ZCTA-to-block relationship file · U.S. EPA, UCMR 3, 4 and 5 occurrence data · U.S. EPA, SDWIS · Georgia EPD, Drinking Water Watch · utility annual water quality reports (Atlanta, East Point, College Park, Gwinnett, DeKalb, Cobb, Fulton, Savannah; 2025 data) · California OEHHA, Public Health Goals · 40 CFR 141.153. Questions: hello@aquagenuity.com

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