

# Stratification of Swimming Pool Chemicals

## *onBalance*

Remember the old days, when lifeguards closed the pool for periodic breaks, during which they topped off the pool with fresh water and double-checked the chemical balance? When fresh water was splashing across the surface it could be important for them to draw the test sample from elbow-deep water in order to acquire test water that was representative of the entire pool. It has become an industry standard to reach elbow deep and a foot or more out from the side to grab a water sample. It has also been a standard practice that is often ignored, sometimes because the water is too cold in the winter, or because people don't want to get their arms or sleeves wet, or because it just takes too long.

How important is it to grab the deeper sample? We decided to test 45 pools. For this first rendition, we selected only those pools which:

- Had regular, working circulation cycles
- Had not had fresh water added to the pool surface recently
- Had not had a recent addition of chemicals

We retrieved samples from each pool from (a) right off the surface, (b) elbow deep and over a foot out and (c) from just above the main drain.

We then analyzed each sample for pH, Total Alkalinity, Calcium Hardness and Cyanuric Acid. We used laboratory equipment that can determine pH to a precision level of 0.1 pH units, TA to 2 ppm, CH to 2 ppm and CyA to 10 ppm, all in extended ranges compared to poolside methods.

What did we find? Check out these graphs on the back. The results indicate that in a pool that is regularly circulated (not stagnant), and absent recent changes such as unblended fresh water or treatment chemicals, it doesn't make a significant difference whether the sample is taken right off the surface or elbow deep (or even off the bottom!)

*Keep in mind that the gridlines are fairly close (for example, 0.2 pH units per horizontal line on the pH graph), so one line difference is negligible.*

---

Find us online at:



[poolhelp.com](http://poolhelp.com)

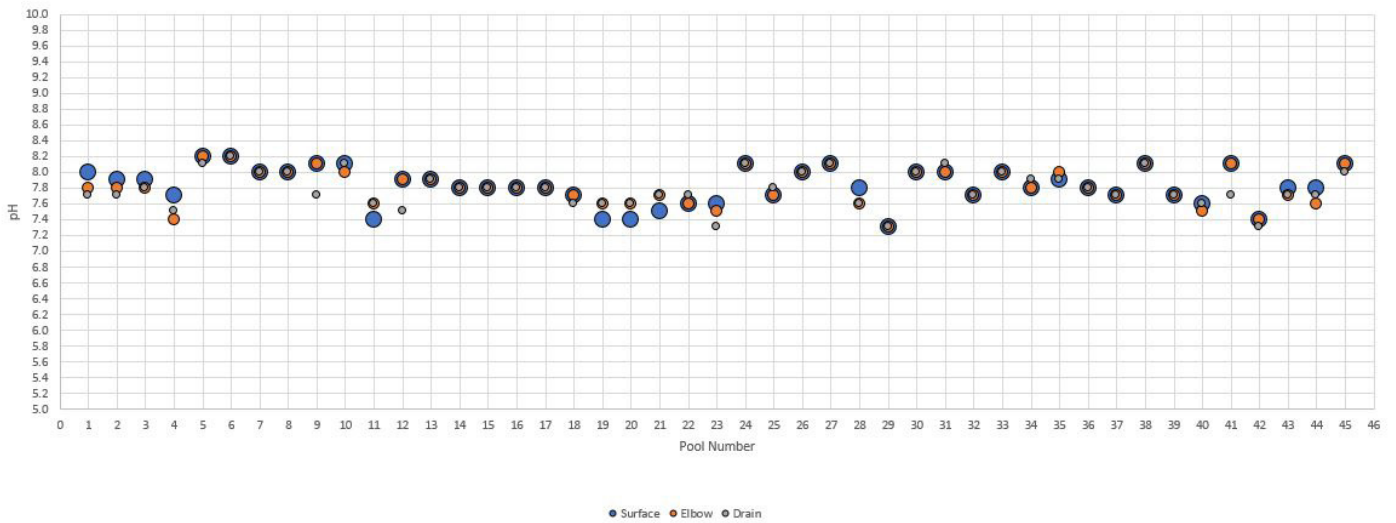


[facebook.com/onbalacepools](https://facebook.com/onbalacepools)

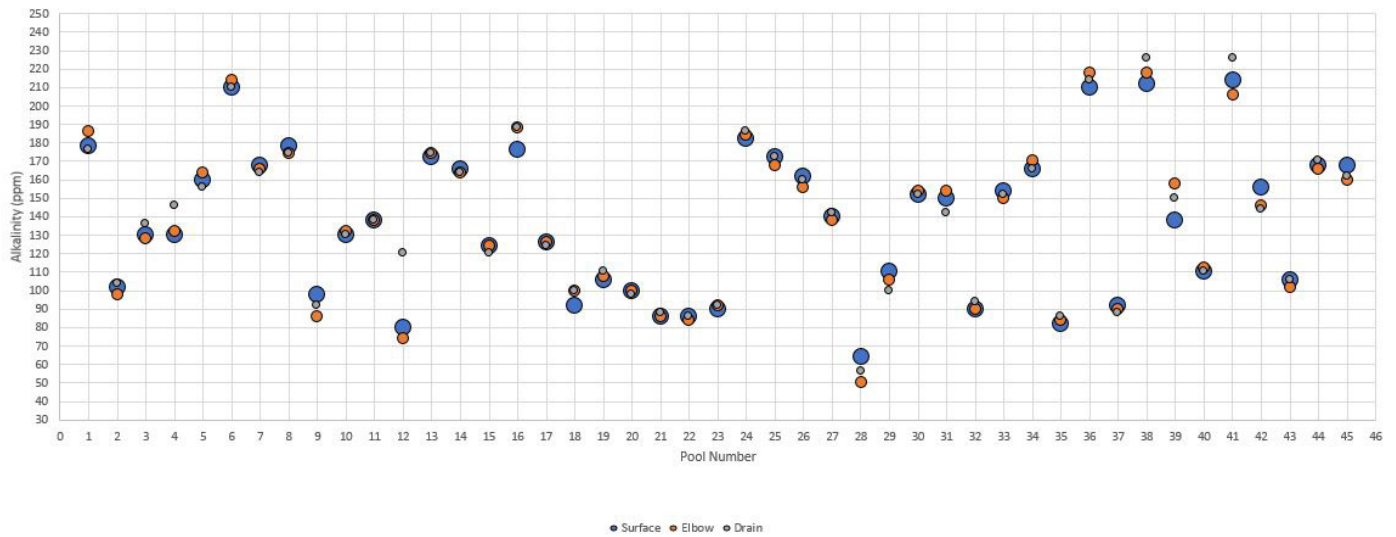


[youtube.com](http://youtube.com)

## Stratification of pH



## Stratification of Alkalinity



## Stratification of Calcium Hardness

