



Why Sample for Water Quality?

Water quality refers to the kind and amount of salts present in the water and their effects on the arena soil over time. If levels of calcium, magnesium, and sodium, as well as chlorides, sulfates, and bicarbonates, as a group or alone, are too high; it can negatively impact soil characteristics and performance.

A breakdown of soil structure is a major effect of elevated sodium. Soil aggregates/micro-aggregates are bonded by calcium and magnesium. High levels of dissolved sodium tend to displace these bonding elements and disperse the soil aggregates. As sodium increases, dispersion increases and soil structure declines. Soil dispersion caused by sodium can make soils run together, crust easier, and can limit water penetration. A high level of carbonates/bicarbonates can create issues with soil crusting, cementations and clodding, development of hard pan layers, and reduces the plasticity of clay minerals.

How to Take Irrigation Water Quality Samples

Levels and specific makeup of dissolved substances in irrigation water influence the ground/soil performance. Water analyses can only be as accurate as the sample taken.

Guidelines for collecting water quality sample:

- Containers and Handling
 - Sample early in the week to avoid having the sample sit in a lab over the weekend.
 - Samples should be collected in clean, plastic bottles (at least 20 oz) with a screw cap. Do not use glass bottles.
 - Soda-pop bottles or the heavier-grade drinking water bottles work well. Do not use the lighter/flimsier water bottles as they may burst or leak during shipment.
 - Rinse the plastic bottle and cap 3 times with the water you are sampling to eliminate any contamination.
 - Fill the bottle full but leaving 2+air/head space from the top and then cap tightly.
 - Wipe the bottle dry. Clearly identify each container with a simple sample identification using a permanent marker.
 - Tape the bottle cap shut so that it doesn't leak during shipment. It is a good idea to also place the sample bottle within a 1 gallon ziplock bag for extra leak protection.
 - When mailing, place bottles in a box and pack with a loose, soft packing material to prevent crushing.
 - Prepare a submittal/transmittal letter indicating what the sample represents (that it is a rodeo arena), the venue name, full contact information including email, and any other pertinent details and include that within the shipping box.

- It is best to send water samples with expedited delivery for best test results. If the sample can't be sent immediately, refrigerate it before sending to the laboratory. Keep good records of the date and location of each sample.
- Sample collection procedure:
 - Let the water run for 15-20 minutes before collecting sample.
 - For municipal water supply, collect sample at the point/faucet of the filling station+where water is obtained for watering the arena.
 - For well water, take the sample at the pump so that residues from the lines do not contaminate the sample.
 - For surface water sources (ponds, lakes, tanks, and reservoirs) collect water from a faucet near the pumping station.
 - If not possible to collect water sample from pump station or faucet, then samples may alternatively be taken directly from the surface water source, with the sample/s taken below the surface.
 - obtain sample by attaching a clean bottle to a pole or extension, immerse container upside down (without lid) and then once put at desired depth then turn pole so that bottle is right side up (the air escapes and the water sample enters). Collect sub-samples from many areas and then mix the several sub-samples into a composite+and fill a single sample bottle from it, which is sent to the laboratory.

Send sample(s) to:

**Environmental Technical Services
Attn: Michael DePew
835 Herricksville Rd
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