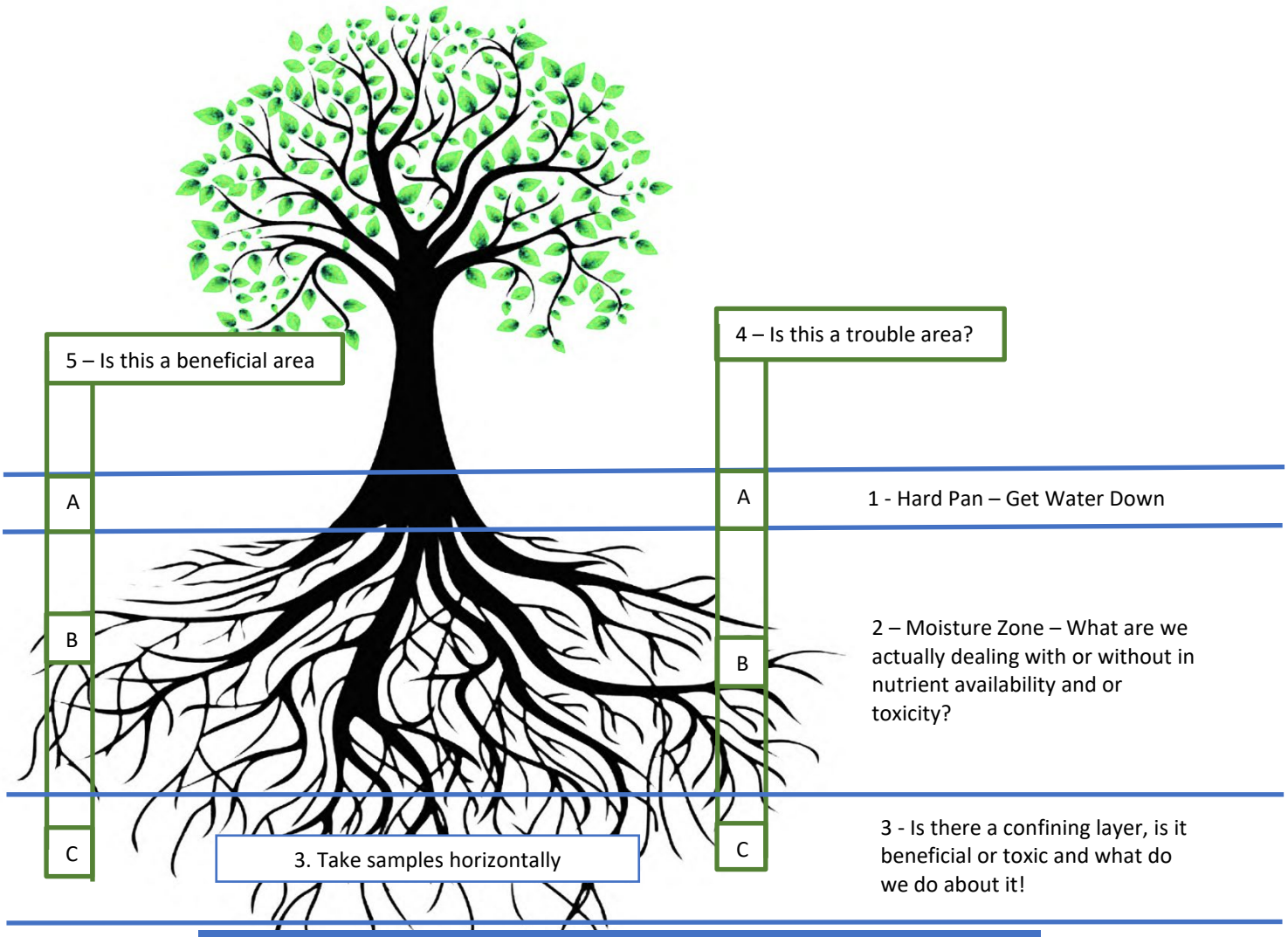
Soil Sampling Recommendations

Purpose: Improved “Legacy Test Methods” reveal stunning levels of both nutreints and toxins that are actuslly within the treated water you apply, and that have accumulated in the soil. Typically, this is nutrition from water and fertilizers that have accumulated in the soils and are no longer available with current methods of treatment, including acidification with gypsum to try supplement calcium uptake while further turning your soils into drywall. HCT’s WaterSOLV™ chemistry will break down these accommulattions and make them available to your vegetation, thereby reducing the levels in the soil, thereby restoring the porosity, pore space in your soils to operate more effectively for robust crop vitality and production. Eventuslly this will lead to replenishing soil nutrition versus putting more nutrients on top of existing nutrients that is hindering crop production and vitality. Soil and water ingredients allow us to identify the demand for treatment the liberate nutrients (minersl and metals), to detoxify solodium and chloride, to mitigate bacteria challenges faced by iron bacteria and also sulfate reducing bacteria (blkack layer, root rot). No if’s, data tell us what’s needed, the outcomes are predictable. Harvest the accummulted nutrients, grow at relatively baic pH values.

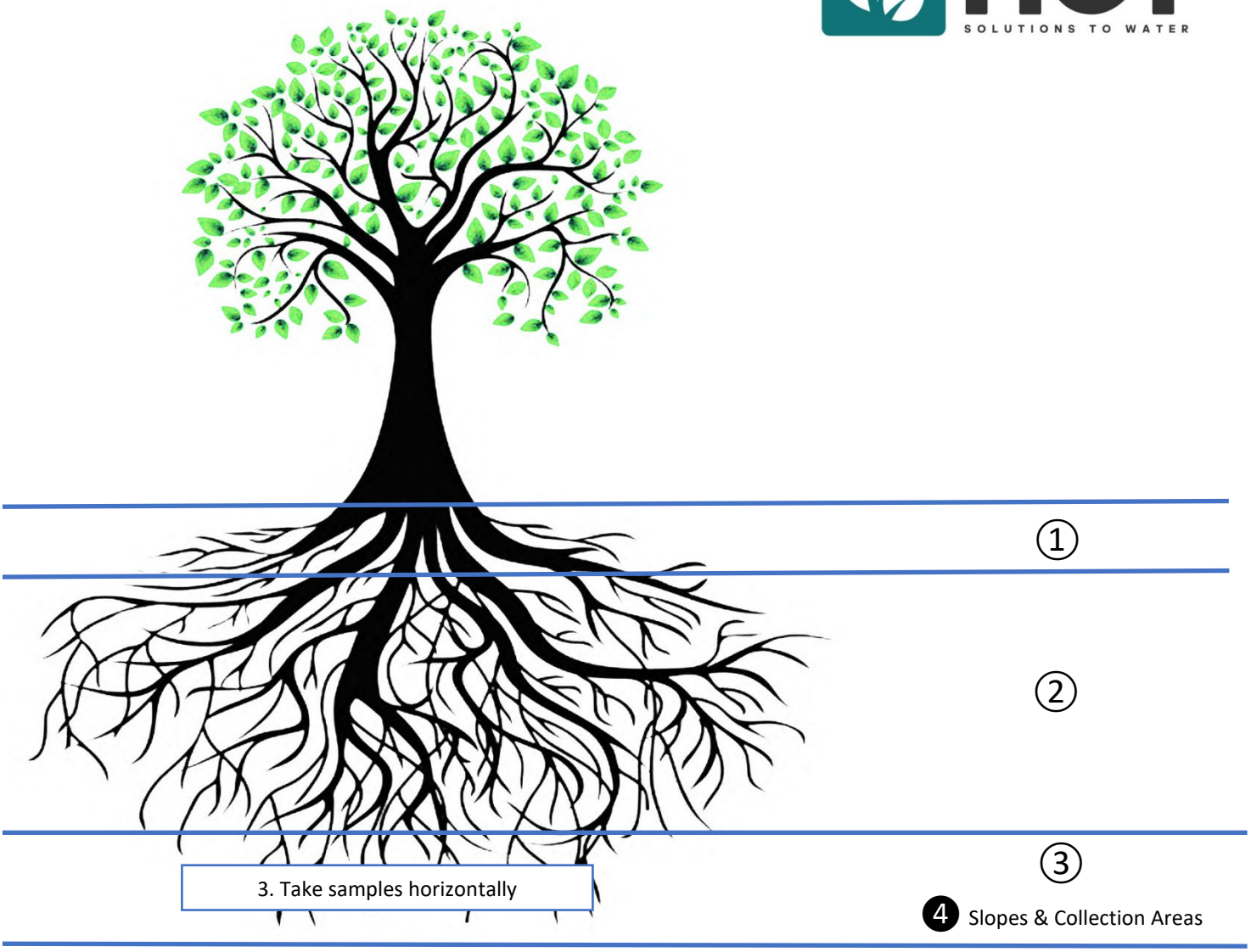


Sample Sizes

Water: 32 fl. ounces for each Irrigation Water
Bac T Test: 6 fl. ounces (this in not coliform or E.coli testing)
Soil: 1 qt. size container for each soil

Be sure to label each with date, location, depth range, characteristic (cake, confining, Moisture Zone, other, and desired outcome of data. See spreadsheet hereto.

Soil Hindering Culprits



1. It usually starts with evaporative salts – minerals, metals from the water (TDS/EC), then nutrient additives, evaporating to dryness and forming crystals. Not much different than water spots on your windows, iron discoloration from your sprinklers. The more and longer it goes on, the wetting and sequestering agents added, usually make it worse, then it becomes a nest, a breeding ground for bacteria, biofilms and toxic bio-gasses (H2S). Your next tendency is gypsum and even more acid. That's more food for the bacteria and you're actually producing plaster, drywall, also it competes for water. These evaporative crystals are now insoluble to the sulfuric acid, not broken down, accumulate and cement the soils, further promoting biological toxicity. You can see how bad it might really be by doing a Total Digestion of your soil. The same test used to quantify compost and manure. Shocking how much calcium, iron and aluminum is usually there.
2. This is the feeding zone, if moist, where vegetation obtains its energy drink, loaded with all the right nutrients. Essential is all the minerals and metals are in an available state - water, oxygen and the detoxification of sodium, chloride, bio-films and bi-toxins including hydrogen sulfide gas, sulfurous wastes and slime barriers. Available nutrition with actual site treated water defines what the watered soil likely has to offer- provided you can get the water throughout the soil and roots. This is difficult to do when layers 1 and 3 are not in check – 1 hindering infiltration, 3 harboring toxins and gasses.
3. If it exists, the confining layer, this is where everything may have accumulated and likely became toxic – holding bio toxins, sodium and chloride. If the toxins are there, we need to treat them so they don't damage the plant. We have to get chemistry to the layer, through the upper layers, so at some point the treatment may need to be boosted. Keep in mind sodium is very soluble for the plant to access after oxygen, water and nitrogen. Confining layers hold sodium, perpetuate chloride complexes and bio-toxins. It's important to get them treated, liberate the nutrients, cause soil pore space, infiltration and the potential for flushing where needed.
4. Other – Slopes -vs- Depressions and collection areas. You'll see lower areas then to grow better unless they go biologically bad! This is because runoff TDS/EC – nutrition, and water, even from rain, collects in those areas. The tendency, over tie, the soils get saturated and then toxic. On the slopes, as the water dries, the evaporate salts form quicker, surface hardpan / cake occurs, and it's similar to putting mortar on block. The aggressive nature of WaterSOLV™ chemistry is designed to gradually medicate these conditions, sustainably, and to the benefit of both the soil and the vegetation.