# *Soil and Plant Laboratory, Inc.*

*www.soilandplantlaboratory.com*

LANDSCAPE TROUBLESHOOTING EXAMPLE REPORT

**BACKGROUND**

The sample received was described as representing the top 6-18 inches of site soil taken from around 2-4 year old trees and shrubs including Redwoods displaying leaf chlorosis and in need of recommendations. An anaerobic aroma was noted at 12-14 inches in depth.

**ANALYTICAL RESULTS**

Reaction is neutral and in the range preferred by most plants. Lime from carbonate is absent. Potentially troublesome salinity, sodium, and boron are safely low and the SAR value indicates calcium and magnesium adequately balance soluble sodium.

Available nutrient levels show low nitrogen and fair sulfate. All other major and minor nutrients are well supplied with none present in excess or in need of attention. The two decimal value listed below each element value is a sufficiency factor with 1.0 being the midpoint of the adequate range.

**COMMENTS**

Insufficient nitrogen and sulfate nutrition could be contributing to the chlorosis being experienced however, established plantings do not demand optimal nitrogen nutrition. Disease could very well be involved given the anaerobic conditions observed and chlorosis would be an initial sign of poor root health.

Sulfur Coated Urea is recommended to provide an upfront boost of nitrogen while maintaining a sufficient level for about 3 months time without pushing growth necessarily to prevent escalating any symptoms due to disease. Be sure to properly manage irrigations so that saturated conditions do not remain in the rootzone by allowing the topsoil and areas around the crown to dry out sufficiently before applying more water. If saturated conditions persist, consider installing French drains to help drain excess water from the root zone or bore holes to improve aeration.

Disease diagnosis by our pathologist may be in order if conditions do not improve. Please contact us for proper sampling guidelines.

**RECOMMENDATIONS**

Uniformly broadcast Sulfur Coated Urea (32-0-0) at a rate of 7 pounds per 1000 square feet and water in.

**MAINTENANCE**

Nitrogen will be adequately available for about 3 months by using the slow release Sulfur Coated Urea. Periodic nitrogen fertilization may be accomplished by using the same rate of 7 pounds of Sulfur Coated Urea per 1000 square feet. In the fall a complete fertilizer such as 12-12-12 should be applied at a rate of 8 pounds per 1000 square feet to maintain an adequate supply of phosphorus and potassium.

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**SOIL FERTILITY AND MICRONUTRIENT ANALYSIS**
**AO1 (partial) or A17 (full)**

| Sample # | Half Sat% / TEC | pH Qual Lime | ECe | Parts Per Million Parts Dry Soil: $NO_3$ N | $NH_4$ N | $PO_4$ P | K | Ca | Mg | Cu | Zn | Mn | Fe | Sat Ext: ppm B | meq/l $SO_4$ | meq/l Na (SAR) | Sample Description / Log Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 7.0 | 0.8 | 5 | 5 | 47 | 250 | 2080 | 420 | 3.3 | 6 | 24 | 120 | 0.11 | 2.1 | 1.9 | Site Soil 6-18" |
| | 144 | None | | 0.2 | | 1.6 | 1.2 | 0.9 | 1.3 | 1.1 | 0.8 | 1.5 | 1.7 | 0.4 | 0.7( | 1.2) | |

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed.
The value below sodium (Na) result is the SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity.
Sat.ext. method for salinity (ECe as dS/m), Boron (B), Sulfate (SO4), and Sodium (Na). Major elements, Nitrogen(N),Potassium(K),
Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu),
Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. TEC(listed below Half Sat.) = Est.Total Exchangeable Cations (meq/kg).