

ANALYSIS FOR:			ADDITIONAL COPY TO:		
John Smith Greenroof America 111 Plant Lane Sedum PA 11111					
LAB ID	SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	DATE RECEIVED	DATE COMPLETED
SMOTEST	TOP GROW 1	Multi-course extensive	4/1/2008	4/3/2008	4/10/2008

Green Roof Media Saturated Media Extract Analysis¹

Analysis	Units ²	Result	Desirable Range ³	Comments
pH		8.3	6.5 - 7.8	pH levels greater than 7.8 may reduce plant coverage
Soluble Salts	(mmhos/cm)	0.57	0.4 - 0.8	Salt levels greater than 0.8 mmhos/cm and less than 3 mmhos/cm may not be toxic, but indicate potential for nutrient runoff. Salt levels greater than 3 mmhos/cm may negatively impact plant growth.
Nitrate-N (NO ₃ -N)	mg/L	3.5	1 - 4+	Nitrate-N levels may fluctuate throughout the year due to environmental changes, particularly in early spring. Levels should be maintained close to the desirable range listed during the active growing season. Nitrate-N levels greater than 4 mg/L may not be toxic but can contribute to nutrient runoff.
Ammonia-N (NH ₄ -N)	mg/L	0.4	0.4 - 1.5+	Ammonium-N levels greater than 1.5 mg/L may not be toxic but can contribute to nutrient runoff
Nitrate-N + Ammonia-N	mg/L	3.9	1.4 - 4	Excess nitrogen encourages weed growth and runoff contamination without improving plant coverage
Phosphorus (P)	mg/L	8	2.2 - 5+	High phosphorus levels are not toxic but may contribute to nutrient runoff
Potassium (K)	mg/L	34	7.5 - 20+	
Calcium (Ca)	mg/L	157	40 - 180	
Magnesium (Mg)	mg/L	29	10 - 55+	
Boron (B)	mg/L	0.18	0.04 - 0.2+	High boron levels are toxic to most plants
Copper (Cu)	mg/L	0.8	0.5 - 3	
Iron (Fe)	mg/L	23.2	15 - 40+	Iron levels between 40 and 60 mg/L may not be toxic but can contribute to nutrient runoff. Levels greater than 60 mg/L may negatively impact plant growth.
Manganese (Mn)	mg/L	2.0	1 - 4+	Manganese levels between 4 and 17 mg/L may not be toxic but can contribute to nutrient runoff. Levels greater than 17 may negatively impact plant growth.
Sodium (Na)	mg/L	16	0 - 20	High levels of sodium may promote growth of moss and clover.
Zinc (Zn)	mg/L	6.7	1.2 - 10	Zinc levels greater than 12 mg/L may negatively impact plant growth.

¹Modified (DTPA) Saturated Media Extract Method, Recommended Chemical Soil Test Procedures for the North Central Region

²mg/L = mg/liter of extract

³Desirable ranges listed are based on a survey of actively growing established extensive (single, multi-course and multi-layer) green roofs. When establishing extensive sites, higher nitrogen levels are recommended. Similarly, desirable ranges listed are generally appropriate for maintaining and establishing intensive media sites but higher levels of nitrogen are recommended.