




Analysis Report For:				Copy To:		
						
LAB ID:	SAMPLE ID:	REPORT DATE:	DATE SAMPLED	SAMPLE TYPE	INTENDED USE	COUNTY
W22365	WPLE210102	1/11/2021	1/2/2021	Irrigation Water	Greenhouse	

**WATER ANALYSIS
Irrigation Water Report (WH02)**

Analysis	Result	Units	Level of concern
pH	8.0	-	Below 5.0 or above 7.0
Total Alkalinity as CaCO ₃	291.5	mg/L	Below 30 or above 100
Bicarbonate (HCO ₃) Alkalinity	355.7	mg/L	-
Carbonate (CO ₃) Alkalinity	0.0	mg/L	-
Hardness as CaCO ₃	306.0	mg/L	Below 50 or above 150
Electrical Conductivity (EC)	2.54	mmhos/cm	Above 1.0 for plugs or above 1.5 for others
Total Dissolved Solids (TDS)	1622.6	mg/L	Above 640 for plugs/seedlings or above 960 for others
Nitrate-Nitrogen (NO ₃ -N)	100.8	mg/L	Consider in overall fertility program
Ammonium-Nitrogen (NH ₄ -N)	< 1.00	mg/L	Consider in overall fertility program
Phosphorus (P)	17.25	mg/L	Above 5.0 may cause micronutrient deficiencies
Potassium (K)	479.31	mg/L	Consider in overall fertility program
Calcium (Ca)	58.70	mg/L	Below 40 or above 100
Magnesium (Mg)	38.73	mg/L	Below 25
Iron (Fe)	0.51	mg/L	Above 0.30 for micro-irrigation or above 5 for plant toxicity
Manganese (Mn)	0.04	mg/L	Above 0.05 for micro-irrigation or above 2 for plant toxicity
Zinc (Zn)	0.14	mg/L	Above 0.30 toxic to most plants
Copper (Cu)	0.75	mg/L	Above 0.20 toxic to some plants
Boron (B)	0.25	mg/L	Above 0.50 for sensitive plants, above 2 for most plants
Molybdenum (Mo)	0.020	mg/L	Above 0.05 toxic to some plants
Sulfur (S)	38.8	mg/L	Below 10 may require addition of S fertilizer
Chloride (Cl)	257.11	mg/L	Above 30 for sensitive plants, above 100 for most plants
Sodium (Na)	110.90	mg/L	Above 50
Sodium Adsorption Ratio (SAR)	2.76	-	Above 2.0

The above results and interpretations are applicable to raw irrigation water used for greenhouse or high tunnel production only. Level of concern for each parameter are general; some plants have water quality tolerances that differ from those listed here. A brief description of each parameter is provided on the back of this report. Additional information about irrigation water quality may be found on the Penn State Water Quality Extension website, <http://extension.psu.edu/natural-resources/water/agriculture>