



Soil and Plant Laboratory, Inc.

www.soilandplantlaboratory.com

IRRIGATION WATER SAMPLE REPORT

BACKGROUND

The sample received was to be tested for agricultural suitability as an irrigation source.

ANALYTICAL RESULTS

The chloride and sodium levels are just slightly high which could potentially lead to the burning of some plants as a result of foliar uptake. If irrigation avoids foliar contact, then just very sensitive plants might have some difficulty from root uptake. The adjusted sodium adsorption ratio (RNA) is high as a reflection of low calcium and magnesium presence. This will increase the potential for salt accumulation that may adversely affect soil permeability. Salinity is safely low.

The moderately alkaline pH of the water is higher than the equilibrium reaction pH_c indicating this water will leave a residue upon evaporation. The moderately high bicarbonate level will also tend to raise the soil pH toward alkalinity. Precipitation could become a concern with efficient operation of small orifice irrigation equipment as well as being an aesthetic concern as the precipitate accumulates on wetted hardscape.

Potentially troublesome boron, fluoride, and aluminum are favorably low. A significant, but not excess level of zinc is present with the other micronutrients are low.

RECOMMENDATIONS

If the plants to be irrigated do not have some tolerance to sodium and chloride then some degree of blending with better water should be considered. Periodic applications of gypsum would help insure use of this does not upset the sodium balance in the soil. This would be important to monitor to be sure it does not impair structure.

The slightly high bicarbonate level may be mitigated by using a 93% sulfuric acid treatment at a rate of 12 fluid ounces per 1000 gallons (1:10666). This treatment requires full adherence to OSHA guidelines for handling a corrosive material. Soil pH may also be managed by using acidifying fertilizers such as ammonium sulfate or soil sulfur.



Soil and Plant Laboratory, Inc.

www.soilandplantlaboratory.com

IRRIGATION WATER EXAMPLE REPORT

AGRICULTURAL SUITABILITY (A71)

CATIONS				ANIONS			
		ppm	meq/l			ppm	meq/l
Sodium	Na	143	6.22	Chloride	Cl	145	4.08
Calcium	Ca	29	1.45	Sulfate	SO ₄	33	0.69
Magnesium	Mg	17	1.40	Bicarbonate	HCO ₃	322	5.28
Potassium	K	6	0.15	Carbonate	CO ₃	3	0.10
Ammonium	NH ₄	1	0.06	Nitrate	NO ₃	1	0.02
				Phosphate	PO ₄	0	0.00
SUM OF CATIONS			9.28	SUM OF ANIONS			10.17

Hydrogen Ion Activity	pH	8.1	Copper	Cu	< 0.02
Equilibrium Reaction	pHc	7.39	Zinc	Zn	0.60
Electrical Conductivity	ECw	0.97	Manganese	Mn	0.12
	dS/m		Iron	Fe	0.13
Adj Na Adsorption Ratio	RNa	5.80	Boron	B	0.26
			Fluoride	F	0.24
			Aluminum	Al	0.03
			Molybdenum	Mo	< 0.02

ppm - parts per million parts water

meq/l - milliequivalents per liter