APPENDIX

Table A-1. Conversion Factors for SI and Non-SI Units

To convert Column 1 into Column 2, multiply by	Column 1 SI Unit	Column 2 Non-SI unit	To convert Column 2 into Column 1, multiply by
	Length		
0.621	kilometer, km	mile, mi	1.609
3.28	meter, m	foot, ft	0.305
0.00394	millimeter, mm	inch, in.	25.4
0.394	centimeter, cm	inch, in.	2.54
	Area		
2.47	hectare, ha	acre, ac	0.405
247	sq.km, km^2	acre, ac	0.00405
0.000247	sq. meter, m^2	acre, ac	4,047
10.76	sq. meter, m^2	sq. foot, ft^2	0.0929
	Volume		
0.00973	cubic meter, m^3	acre-inch, ac-in.	102.8
0.00081	cubic meter, m^3	acre-foot, ac-ft	1234
0.81	cubic kilometers, km^3	million acre-feet, maf	1.234
0.265	liter, L	gallon, gal	3.785
	Mass		
0.0022	gram, g	pound, lb	454
0.0011	kilogram, kg	ton (US), ton	907
2.205	kilogram, kg	pound, lb	0.454
1.102	tonne, t	ton (US), ton	0.907
	Yield		
0.893	kg/ha	pounds per acre, lb/ac	1.12
893	tonne/ha	pounds per acre, lb/ac	0.00112
	tonne/ha	US ton per acre, ton/ac	

(*continued*)

Table A-1. Conversion Factors for SI and Non-SI Units (*Continued*)

To convert Column 1 into Column 2, multiply by	Column 1 SI Unit	Column 2 Non-SI unit	To convert Column 2 into Column 1, multiply by
	Rate		
264×10^{-6}	m^3/day	million gallons per day, mgd	3,785
0.107	L/ha	gallons per acre, gal/ac	9.35
2.24	m/sec	miles per hour, mi/hr	0.447
	Pressure		
9.9	megapascal, MPa	atmosphere, atm	0.101
10	megapascal, MPa	bar	0.1
0.0209	pascal, Pa	pound per square foot, lb/ft^2	47.9
0.000145	pascal, Pa	pound per square inch, psi	6,900
0.00987	kilopascal, kPa	atmosphere, atm	101.3
	Electrical Conductivity		
10	Siemen/m, S/m	millimho/cm, mmho/cm	0.1
1	decisiemen/m, dS/m	millimho/cm, mmho/cm	1
0.001	decisiemen/m, dS/m	micromho/cm, umho/cm	1,000
1	millisiemen/cm,mS/cm	micromho/cm, umho/cm	1
	Water Measurement		
0.00973	m^3	ac-in.	102.8
0.00981	m^3/hr	cfs	101.9
35.59	m^3/sec	cfs	0.028
4.4	m^3/hr	gal/min	0.227
8.11	ha-m	ac-ft	0.1233
0.00081	m^3	ac-ft	1234
97.28	ha-m	ac-in.	0.0103
0.0821	ha-cm	ac-ft	12.33
0.000328	m^3/ha	ac-ft/ac	3,047
3.279	m^3/m^2	ac-ft/ac	0.305
0.264	L/min	gpm	3.788
	Concentration		
1	centimole/kg	meq/100g	1
0.1	g/kg	%	10
1	mg/kg	ppm	1
0.1335	g/L	ounce/gal	7.489
0.00835	g/L	lb/gal	119.8

Table A-2. Chemical Conversion Units

To convert Column 1 into Column 2, multiply by	Chemical Conversions for Ions		To convert Column 2 into Column 1, multiply by
	Column 1 milligram/Liter	Column 2 milliequivalent/Liter	
0.0499	mg/L Ca	meq/L Ca	20.04
0.0823	mg/L Mg	meq/L Mg	12.15
0.0435	mg/L Na	meq/L Na	22.99
0.0256	mg/L K	meq/L K	39.1
0.0164	mg/L HCO_3	meq/L HCO_3	61.02
0.033	mg/L CO_3	meq/L CO_3	30
0.0282	mg/L Cl	meq/L Cl	35.45
0.0208	mg/L SO_4	meq/L SO_4	48.03
0.0161	mg/L NO_3	meq/L NO_3	62
0.0554	mg/L NH_4	meq/L NH_4	18.04

To convert Column 1 into Column 2, multiply by	Chemical Conversions for Ions		To convert Column 2 into Column 1, multiply by
	Column 1 milligram/Liter	Column 2 millimole/Liter	
0.025	mg/L Ca	mM/L Ca	40.08
0.0411	mg/L Mg	mM/L Mg	24.31
0.0435	mg/L Na	mM/L Na	22.99
0.0256	mg/L K	mM/L K	39.1
0.0164	mg/L HCO_3	mM/L HCO_3	61.02
0.0167	mg/L CO_3	mM/L CO_3	60
0.0282	mg/L Cl	mM/L Cl	35.45
0.0104	mg/L SO_4	mM/L SO_4	97.06
0.0161	mg/L NO_3	mM/L NO_3	62.01
0.0554	mg/L NH_4	mM/L NH_4	18.04

Table A-3. Other Useful Conversions

mg/L TDS = EC dS/m × 640
mg/L TDS = EC dS/m × 735 (preferred for Colorado River water)
lbs/ac-ft TDS = mg/L TDS × 2.72
tons/ac-ft TDS = mg/L TDS × 0.00136
atm osmotic pressure = EC dS/m × 0.36
1 ac = 43,560 sq ft
1 mi = 5,280 ft
1 ac-ft soil = 4 million lbs (approx.)
1 ton/ac = 20.8 g/sq ft
1 g/sq ft = 96 lb/ac
1 lb/ac = 0.0104 g/sq ft
1 cu ft = 7.48 gals
1 gal = 8.345 lb
cfs = 448.8 gpm
1 cfs/24 hr = 1.98 ac-ft
1 mgd = 3.07 ac-ft/24 hr
1 mgd = 1.547 cu ft/sec
1 mgd = 694.4 gpm
1 ac-ft = 325,851 gal
1 atm = 14.7 psi
1 psi = 14.22 kg/sq cm
1 bar = 14.5 psi
1 bar = 1,023 cm water

Table A-4. Soil Water

Soil texture	Field capacity or water holding capacity (inches water per ft soil)	Available soil moisture (inches water per ft soil)
Sand	1.2	0.7
Loamy sand	1.9	1.1
Sandy loam	2.5	1.4
Loam	3.2	1.8
Silt loam	3.6	1.8
Sandy clay loam	3.5	1.3
Sandy clay	3.4	1.6
Clay loam	3.8	1.7
Silty clay loam	4.3	1.9
Silty clay	4.8	2.4
Clay	4.8	2.2