



SOIL AND WATER CONSULTING

Data Collection Report

Spring 2019

Date of Collection: 3/4/19

Client: Tucson Country Club



Testing Results

	<u>3/20/17</u>	<u>3/3/18</u>	<u>3/4/19</u>
Humidity/Air Temperature	20%/92°	8%/80°	35%/74°
Greens Temperature	78°	62°	52.15°
Fairway Temperature	79°	60.7°	52.5°

WATER	Acceptable Range For Water Sample	Hole #1 <u>3/20/17</u>	Potable Lake <u>3/3/18</u>	Effluent Lake <u>3/3/18</u>	Hole #5 <u>3/4/19</u>
EC	<2.25 mmhos/cm	0.33	0.37	0.36	0.41
Sodium		29.04	45.00	53.32	59.34
Calcium	20 - 60 ppm	32.35	33.89	22.67	20.61
Magnesium	10 - 25 ppm	2.64	1.99	1.67	1.50
Potassium	5 - 20 ppm	3.55	4.31	2.29	2.28
Sulfur	30 - 90 ppm	29.10	26.10	20.57	28.10
Bicarbonate	<120 ppm	118.79	151.01	155.37	138.37
Boron	<0.67 ppm	0.05	0.08	0.10	0.08
Chloride	<177 ppm	12.25	16.85	15.66	32.00

TEE	Acceptable Range For Tissue Sample	5 <u>3/4/19</u>
Nitrogen	3.34%-5.10%	4.96
Phosphorus	0.35% - 0.55%	0.50
Potassium	2.0% - 3.42%	2.68
Calcium	0.25%-0.5%	0.38
Magnesium	0.16%-0.32%	0.16
Sodium	229-1107 ppm	806.00

FAIRWAY	Acceptable Range For Tissue Sample	5 <u>3/4/19</u>
Nitrogen	3.34%-5.10%	5.94
Phosphorus	0.35% - 0.55%	0.47
Potassium	2.0% - 3.42%	3.09
Calcium	0.25%-0.5%	0.25
Magnesium	0.16%-0.32%	0.15
Sodium	229-1107 ppm	958.00

GREENS	Acceptable Range For Tissue Sample	5,14 (avg) <u>3/4/19</u>
Nitrogen	3.0%-6.5%	4.45
Phosphorus	0.2%-0.55%	0.50
Potassium	0.86%-2.55%	2.36
Calcium	0.21%-0.50%	0.37
Magnesium	0.09%-0.22%	0.16
Sodium	506- 2264 ppm	764.00

TEES	Acceptable Range For Alkaline Soils Sample	1 3/20/17	9,18(avg) 3/3/18	5,14(avg) 3/4/19
Organic Matter (Humus)	2 - 3%	2.56	3.07	3.31
Sulfur	12 - 16 ppm	17.00	23.50	17.50
Olsen - Phosphorus	13 - 20 ppm	19.00	11.00	11.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,360.00	4,518.00	4,508.00
Magnesium	>7% base saturation or at least 200 lbs/acre	9.71%/246	6.9%/227	8.51%/286
Potassium - TEC of 0 - 35	100 ppm	116.00	172.50	183.00
Manganese	>50 ppm	n/a	50.00	42.50

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	1 3/20/17	9,18(avg) 3/3/18	5,14(avg) 3/4/19
Organic Matter (Humus)	2 - 3%	2.37	3.61	4.61
Sulfur	12 - 16 ppm	23.00	28.00	14.50
Olsen - Phosphorus	13 - 20 ppm	34.00	29.00	24.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,054.00	3,699.00	3,923.00
Magnesium	>7% base saturation or at least 200 lbs/acre	10.23%/250	8.92%/261	9.79%/305
Potassium - TEC of 0 - 35	100 ppm	229.00	278.00	283.00
Manganese	>50 ppm	n/a	41.00	21.50

GREENS	Acceptable Range For Alkaline Soils Sample	1 3/20/17	9,18(avg) 3/3/18	5,14(avg) 3/4/19
Organic Matter (Humus)	2 - 3%	0.80	0.91	0.79
Sulfur	12 - 16 ppm	11.00	4.00	10.00
Olsen - Phosphorus	13 - 20 ppm	17.00	18.50	17.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	2,134.00	2,105.00	2,126.00
Magnesium	>7% base saturation or at least 200 lbs/acre	9.40%/166	10.33%/179	10.88%/204
Potassium - TEC of 0 - 35	150 ppm	284.00	276.00	387.50
Manganese	>50 ppm	n/a	60.50	65.00

TEE	Acceptable Range For Saturated Paste Sample	9 3/3/18	5 3/4/19
Nitrate - Ryegrass	5 - 10 ppm	9.10	13.90
Phosphorus	2 - 10 ppm	0.95	1.03
Potassium	40 - 100 ppm	11.33	11.10
Calcium	60 - 200 ppm	42.22	37.49
Magnesium	20 - 70 ppm	4.43	5.60
Sodium	0 - 30 ppm	45.05	68.29
Soluble Salts	<1,920 ppm	275.00	308.00
Bicarbonate	<60 ppm	90.29	97.62
Chloride	<1,000 ppm	17.00	23.00
SAR	<4%	1.76	2.75

FAIRWAY	Acceptable Range For Saturated Paste Sample	9 3/3/18	5 3/4/19
Nitrate - Ryegrass	5 - 10 ppm	4.20	11.70
Phosphorus	2 - 10 ppm	0.55	2.41
Potassium	40 - 100 ppm	25.41	24.99
Calcium	60 - 200 ppm	61.14	31.80
Magnesium	20 - 70 ppm	18.09	5.98
Sodium	0 - 30 ppm	39.80	66.40
Soluble Salts	<1,920 ppm	401.00	277.00
Bicarbonate	<60 ppm	185.47	109.82
Chloride	<1,000 ppm	32.00	22.00
SAR	<4%	1.15	2.83

GREENS	Acceptable Range For Saturated Paste Sample	9,18 (avg) 3/3/18	5,14(avg) 3/4/19
Nitrate - Bentgrass/Poa	1-3 ppm	3.00	2.40
Phosphorus	2 - 7 ppm	2.42	3.84
Potassium	25-40 ppm	14.23	14.82
Calcium	50- 75 ppm	14.02	10.01
Magnesium	15-30 ppm	3.14	3.05
Sodium	0 - 30 ppm	25.60	29.52
Soluble Salts	<1,000 ppm	148.50	131.00
Bicarbonate	<60 ppm	91.52	61.01
Chloride	<200 ppm	8.00	9.00
SAR	<4%	1.61	2.12