



SOIL AND WATER CONSULTING

Data Collection Report

Summer 2019

Date of Collection: 6/20/19

Client: Tucson Country Club



Testing Results

	<u>6/2/17</u>	<u>6/3/18</u>	<u>6/20/19</u>
Humidity/Air Temperature	20%/90°	7%/105°	7%/100°
Greens Temperature	82°	83.3°	76.25°
Fairway Temperature	80°	84.3°	79.15°

WATER	Acceptable Range For Water Sample	Hole #4 <u>6/2/17</u>	Effluent Lake <u>6/3/18</u>	Hole #15 <u>6/20/19</u>
EC	<2.25 mmhos/cm	0.37	1.27	0.26
Sodium		37.46	138.90	27.84
Calcium	20 - 60 ppm	32.68	84.37	24.08
Magnesium	10 - 25 ppm	1.80	17.57	2.26
Potassium	5 - 20 ppm	3.06	15.91	2.51
Sulfur	30 - 90 ppm	28.66	170.37	25.22
Bicarbonate	<120 ppm	131.41	246.85	101.87
Boron	<0.67 ppm	0.06	0.21	<0.05
Chloride	<177 ppm	14.98	163.40	10.89

TEE	Acceptable Range For Tissue Sample	15 <u>6/20/19</u>
Nitrogen	3.34%-5.10%	5.12
Phosphorus	0.35% - 0.55%	0.53
Potassium	2.0% - 3.42%	2.42
Calcium	0.25%-0.5%	0.70
Magnesium	0.16%-0.32%	0.19
Sodium	229-1107 ppm	2,330.00

FAIRWAY	Acceptable Range For Tissue Sample	15 <u>6/20/19</u>
Nitrogen	3.34%-5.10%	3.80
Phosphorus	0.35% - 0.55%	0.60
Potassium	2.0% - 3.42%	2.57
Calcium	0.25%-0.5%	0.55
Magnesium	0.16%-0.32%	0.17
Sodium	229-1107 ppm	1,560.00

GREENS	Acceptable Range For Tissue Sample	6,15 (avg) <u>6/20/19</u>
Nitrogen	3.0%-6.5%	4.73
Phosphorus	0.2%-0.55%	0.65
Potassium	0.86%-2.55%	2.15
Calcium	0.21%-0.50%	0.78
Magnesium	0.09%-0.22%	0.31
Sodium	506- 2264 ppm	650.50

TEES	Acceptable Range For Alkaline Soils Sample	4 6/2/17	3,12(avg) 6/3/18	6,15(avg) 6/20/19
Organic Matter (Humus)	2 - 3%	2.49	2.62	2.75
Sulfur	12 - 16 ppm	35.00	16.50	34.00
Olsen - Phosphorus	13 - 20 ppm	14.00	12.50	14.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	4,572.00	3,131.00	2,942.00
Magnesium	>7% base saturation or at least 200 lbs/acre	8.24%/286	8.18%/194	9.62%/226
Potassium - TEC of 0 - 35	100 ppm	193.00	151.50	203.00
Manganese	>50 ppm	n/a	39.00	52.50

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	4 6/2/17	3,12(avg) 6/3/18	6,15(avg) 6/20/19
Organic Matter (Humus)	2 - 3%	3.64	3.90	3.52
Sulfur	12 - 16 ppm	53.00	44.00	28.00
Olsen - Phosphorus	13 - 20 ppm	27.00	30.00	16.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,394.00	3,260.00	2,988.00
Magnesium	>7% base saturation or at least 200 lbs/acre	10.31%/290	10.65%/292	10.59%/270
Potassium - TEC of 0 - 35	100 ppm	269.00	299.00	367.00
Manganese	>50 ppm	n/a	30.00	42.50

GREENS	Acceptable Range For Alkaline Soils Sample	4 6/2/17	3,12(avg) 6/3/18	6,15(avg) 6/20/19
Organic Matter (Humus)	2 - 3%	0.62	0.85	0.73
Sulfur	12 - 16 ppm	11.00	18.50	12.50
Olsen - Phosphorus	13 - 20 ppm	11.00	13.00	11.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	2,232.00	1,782.00	1,083.00
Magnesium	>7% base saturation or at least 200 lbs/acre	8.62%/162	10.37%/165	11.38%/229
Potassium - TEC of 0 - 35	150 ppm	370.00	334.50	253.50
Manganese	>50 ppm	n/a	56.50	55.00

TEE	Acceptable Range For Saturated Paste Sample	3 6/3/18	15 6/20/19
Nitrate -Ryegrass	5 - 10 ppm	<0.5	55.20
Phosphorus	2 - 10 ppm	2.91	1.47
Potassium	40 - 100 ppm	33.49	69.80
Calcium	60 - 200 ppm	80.04	119.38
Magnesium	20 - 70 ppm	11.30	19.63
Sodium	0 - 30 ppm	127.43	219.27
Soluble Salts	<1,920 ppm	547.00	1,111.00
Bicarbonate	<60 ppm	290.41	366.06
Chloride	<1,000 ppm	71.00	110.00
SAR	<4%	3.53	4.90

FAIRWAY	Acceptable Range For Saturated Paste Sample	3 6/3/18	15 6/20/19
Nitrate - Ryegrass	5 - 10 ppm	3.30	24.50
Phosphorus	2 - 10 ppm	3.48	3.79
Potassium	40 - 100 ppm	58.19	66.89
Calcium	60 - 200 ppm	98.55	56.82
Magnesium	20 - 70 ppm	15.35	11.36
Sodium	0 - 30 ppm	221.79	161.95
Soluble Salts	<1,920 ppm	846.00	670.00
Bicarbonate	<60 ppm	241.60	219.64
Chloride	<1,000 ppm	132.00	72.00
SAR	<4%	5.49	5.13

GREENS	Acceptable Range For Saturated Paste Sample	3,12 (avg) 6/3/18	6,15 (avg) 6/20/19
Nitrate - Bentgrass/Poa	1-3 ppm	<0.5	1.55
Phosphorus	2 - 7 ppm	3.22	2.60
Potassium	25-40 ppm	42.78	82.03
Calcium	50- 75 ppm	40.75	57.67
Magnesium	15-30 ppm	8.81	11.94
Sodium	0 - 30 ppm	85.46	66.40
Soluble Salts	<1,000 ppm	422.50	505.00
Bicarbonate	<60 ppm	153.75	192.80
Chloride	<200 ppm	60.50	49.00
SAR	<4%	3.12	2.08