



Client: CanyonGate Country Club

Spring 2024 Report

	<u>3/17/22</u>	<u>3/14/23</u>	<u>4/9/24</u>
Humidity/Air Temperature	10%/68°	rainy/60°	15%/74°
Greens Temperature	(avg)45.1°	(avg)51.65°	(avg)56°
Fairway Temperature	(avg)50°	(avg)51.5°	(avg)57°

WATER	Acceptable Range For Water Sample	Hole #9 3/17/22	Hole #9 Pond 3/14/23	Hole #18 4/9/24
pH	6.0-6.5	7.03	7.77	7.15
EC	<2.25 mmhos/cm	0.91	0.99	0.94
Sodium		88.13	93.06	86.61
Calcium	20 - 60 ppm	71.19	75.09	72.68
Magnesium	10 - 25 ppm	24.33	26.96	22.09
Potassium	5 - 20 ppm	4.52	4.92	4.71
Sulfur	30 - 90 ppm	204.27	238.81	210.29
Bicarbonate	<120 ppm	192.22	171.27	169.89
Boron	<0.67 ppm	0.13	0.11	0.14
Chloride	<177 ppm	91.91	102.47	93.95



SOIL AND WATER CONSULTING

TEE	Acceptable Range For Tissue Sample	18 4/9/24
Nitrogen	3.34%-5.10%	4.63
Phosphorus	0.35% - 0.55%	0.63
Potassium	2.0% - 3.42%	2.39
Calcium	0.25%-0.5%	0.59
Magnesium	0.16%-0.32%	0.30
Sodium	229-1107 ppm	1,021.20

FAIRWAY	Acceptable Range For Tissue Sample	18 4/9/24
Nitrogen	3.34%-5.10%	4.60
Phosphorus	0.35% - 0.55%	0.55
Potassium	2.0% - 3.42%	2.43
Calcium	0.25%-0.5%	0.56
Magnesium	0.16%-0.32%	0.26
Sodium	229-1107 ppm	1,181.80

GREENS	Acceptable Range For Tissue Sample	9,18(avg) 4/9/24
Nitrogen	3.0%-6.5%	3.89
Phosphorus	0.2%-0.55%	0.53
Potassium	0.86%-2.55%	1.85
Calcium	0.21%-0.50%	0.60
Magnesium	0.09%-0.22%	0.27
Sodium	506- 2264 ppm	935.30

TEES	Acceptable Range For Alkaline Soils Sample	9,18(avg) 3/24/21	9,18(avg) 4/9/24
Organic Matter (Humus)	2 - 3%	4.82	4.05
Sulfur	12 - 16 ppm	76.00	58.00
Olsen - Phosphorus	13 - 20 ppm	35.50	19.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	4,495.00	4,198.00
Magnesium	>7% base saturation or at least 200 lbs/acre	23.09%/972	22.37%/868
Potassium - TEC of 0 - 35	100 ppm	422.00	302.50
Manganese	>50 ppm	19.50	26.50

FAIRWAYS	Acceptable Range For Alkaline Soils Sample	9,18(avg) 3/24/21	9,18(avg) 4/9/24
Organic Matter (Humus)	2 - 3%	6.26	8.39
Sulfur	12 - 16 ppm	106.50	77.50
Olsen - Phosphorus	13 - 20 ppm	89.50	67.50
Calcium - TEC of 6 - 12	1,000 lbs/acre	5,306.00	4,658.00
Magnesium	>7% base saturation or at least 200 lbs/acre	21.99%/1,018	21.76%/896
Potassium - TEC of 0 - 35	100 ppm	242.50	219.00
Manganese	>50 ppm	14.00	16.00

GREENS	Acceptable Range For Alkaline Soils Sample	9,18(avg) 3/24/21	9,18(avg) 4/9/24
Organic Matter (Humus)	2 - 3%	0.61	0.53
Sulfur	12 - 16 ppm	26.50	52.00
Olsen - Phosphorus	13 - 20 ppm	5.00	<2.0
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,548.00	1,818.00
Magnesium	>7% base saturation or at least 200 lbs/acre	11.88%/138	13.24%/188
Potassium - TEC of 0 - 35	150 ppm	59.00	71.00
Manganese	>50 ppm	18.50	26.50

TEES	Acceptable Range For Saturated Paste Sample	9 3/24/21	18 4/9/24
Nitrate - Bermudagrass	10 -15 ppm	1.30	3.30
Phosphorus	2 - 10 ppm	2.40	4.67
Potassium	40 - 100 ppm	21.72	19.31
Calcium	60 - 200 ppm	114.25	107.56
Magnesium	20 - 70 ppm	53.10	48.31
Sodium	0 - 30 ppm	61.89	75.40
Soluble Salts	<1,920 ppm	671.00	730.00
Bicarbonate	<60 ppm	208.99	185.32
Chloride	<1,000 ppm	115.00	108.00
SAR	<4%	1.20	1.52

FAIRWAYS	Acceptable Range For Saturated Paste Sample	9 3/24/21	18 4/9/24
Nitrate - Bermudagrass	10 -15 ppm	20.90	3.60
Phosphorus	2 - 10 ppm	3.25	3.03
Potassium	40 - 100 ppm	31.65	27.03
Calcium	60 - 200 ppm	147.23	78.50
Magnesium	20 - 70 ppm	58.55	34.40
Sodium	0 - 30 ppm	62.18	68.25
Soluble Salts	<1,920 ppm	774.00	585.00
Bicarbonate	<60 ppm	210.14	194.54
Chloride	<1,000 ppm	112.00	68.00
SAR	<4%	1.10	1.62

GREENS	Acceptable Range For Saturated Paste Sample	9,18(avg) 3/24/21	9,18(avg) 4/9/24
Nitrate - Dominator Bentgrass	1-3 ppm	<0.5	<0.5
Phosphorus	2 - 7 ppm	2.03	1.61
Potassium	25-40 ppm	20.76	30.27
Calcium	50- 75 ppm	53.95	71.63
Magnesium	15-30 ppm	15.04	23.07
Sodium	0 - 30 ppm	36.62	62.85
Soluble Salts	<1,000 ppm	341.00	522.00
Bicarbonate	<60 ppm	86.61	78.12
Chloride	<200 ppm	26.00	44.00
SAR	<4%	1.13	1.66

Nutrient Deficiencies

		P	K	Mn
TEE	9	21	290	25
TEE	18	18	315	28
FAIRWAY	9	76	199	11
FAIRWAY	18	59	239	21
GREEN	9	< 2	78	35
GREEN	18	< 2	64	18

Phosphorus can be added in the form of 11-55-00 at a rate of 3 pounds of product per 1,000 sq ft until soils test say there is adequate P in the greens

Potassium can be added in the form of 0-0-50 at a rate of 2 pounds of product per 1,000 sq ft two times in the next three months

Manganese can be added in the form of Manganese Oxide or Sulfate at a rate of 3 pounds of product per 1,000 sq ft in May and June. (must be watered in thoroughly)

Comments and Next Level Cultural Practices

- Poa annua on the greens is increasing. It is easy to get behind when there are two major projects going on. Poa Cure is a very good option.
- Verti-cutting and topdressing on a regular basis will enhance the bentgrass and help top crowd out the incoming poa annua. It will also help with the top “mat” layer on the greens that is developing. It is more difficult to maintain these greens because they have different sod, seed and combinations thereof. Cultural practices will help to make the uneven more even.
- Look at the subtle differences between these same holes and areas sampled 3 years ago. I would recommend no P of Mg on tees and fairways for a long time!

