

<u>3/4/25</u>	
Humidity/Air Temperature	39%/65°
Greens Temperature	(avg)56°
Fairway Temperature	(avg)55°

WATER	Acceptable Range For Water Sample	Lakes Hole #1 3/4/25
pH	6.0-6.5	7.62
EC	<2.25 mmhos/cm	1.64
Nitrate	5-50 ppm	3.74
Sodium		223.02
Calcium	20 - 60 ppm	87.53
Magnesium	10 - 25 ppm	31.41
Potassium	5 - 20 ppm	21.49
Sulfur	30 - 90 ppm	236.13
Bicarbonate	<120 ppm	247.70
Boron	<0.67 ppm	0.32
Chloride	<177 ppm	316.42



LAKES COURSE GREEN	Lakes Green #1 0-1"	Lakes Green Below 1"	Topdressing Sand	WCS&G USGA Sand 3/3/2025	<u>USGA Recommendations</u>
	3/4/25	3/4/25	3/4/25		
Clay	0.20	1.20	0.50	0.30	<= 3.0%
Silt	1.80	3.10	0.60	0.90	<= 5.0%
Sand	89.30	94.80	98.80	98.60	94 - 100%
Gravel	8.70	0.90	0.10	0.20	
Organic Material	13.46	0.66	0.14	0.17	
<u>Sieve #:</u>					
Fine Gravel 10	8.70	0.90	0.10	0.20	2.0mm <= 3.0%
Very Coarse Sand 18	6.10	10.20	2.40	5.80	2.0mm + 1.0mm <= 10%
Coarse Sand 35	24.70	32.50	9.50	37.80	
Medium Sand 60	45.10	36.80	61.80	44.20	0.5mm + 0.25mm >= 60%
Fine Sand 100	11.10	10.90	21.70	8.60	0.15mm <= 20%
Very Fine Sand 140	1.70	2.90	3.10	1.90	0.106mm + 0.053mm <= 5.0%
Very Fine Sand 270	0.60	1.50	0.30	0.30	
Infiltration Rate	n/r	1.2"	n/r	n/r	

ALL TEES	Acceptable Range For Alkaline Soils Sample	1(avg) 3/4/25
Organic Matter (Humus)	2 - 3%	1.63
Sulfur	12 - 16 ppm	68.00
Olsen - Phosphorus	13 - 20 ppm	16.33
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,012.67
Magnesium	>7% base saturation or at least 200 lbs/acre	17.01%/488
Potassium - TEC of 0 - 35	100 ppm	281.00
Manganese	>50 ppm	37.67

ALL FAIRWAYS	Acceptable Range For Alkaline Soils Sample	1(avg) 3/4/25
Organic Matter (Humus)	2 - 3%	3.71
Sulfur	12 - 16 ppm	176.33
Olsen - Phosphorus	13 - 20 ppm	24.67
Calcium - TEC of 6 - 12	1,000 lbs/acre	5,121.33
Magnesium	>7% base saturation or at least 200 lbs/acre	18.31%/1,002.6
Potassium - TEC of 0 - 35	100 ppm	613.00
Manganese	>50 ppm	62.67

ALL GREENS	Acceptable Range For Alkaline Soils Sample	1(avg) 3/4/25
Organic Matter (Humus)	2 - 3%	0.80
Sulfur	12 - 16 ppm	36.67
Olsen - Phosphorus	13 - 20 ppm	14.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	1,600.67
Magnesium	>7% base saturation or at least 200 lbs/acre	18.94%/339.33
Potassium - TEC of 0 - 35	150 ppm	309.00
Manganese	>50 ppm	41.33

LAKES TEE	Acceptable Range For Saturated Paste Sample	1 3/4/25
Nitrate - Bermudagrass	10-15 ppm	0.80
Phosphorus	2 - 10 ppm	2.60
Potassium	40 - 100 ppm	57.06
Calcium	60 - 200 ppm	140.16
Magnesium	20 - 70 ppm	58.51
Sodium	0 - 30 ppm	520.31
Soluble Salts	<1,920 ppm	1,702.00
Bicarbonate	<60 ppm	349.01
Chloride	<1,000 ppm	490.00
SAR	<4%	9.31

LAKES FAIRWAY	Acceptable Range For Saturated Paste Sample	1 3/4/25
Nitrate - Bermudagrass	10-15 ppm	<0.5
Phosphorus	2 - 10 ppm	3.88
Potassium	40 - 100 ppm	51.74
Calcium	60 - 200 ppm	77.72
Magnesium	20 - 70 ppm	31.83
Sodium	0 - 30 ppm	373.11
Soluble Salts	<1,920 ppm	1,222.00
Bicarbonate	<60 ppm	273.79
Chloride	<1,000 ppm	280.00
SAR	<4%	9.00

LAKES GREEN	Acceptable Range For Saturated Paste Sample	1 3/4/25
Nitrate -Tifeagle Bermudagrass	1-3 ppm	<0.5
Phosphorus	2-7 ppm	4.09
Potassium	25-40 ppm	42.55
Calcium	50- 75 ppm	56.82
Magnesium	15-30 ppm	26.02
Sodium	0 - 30 ppm	309.72
Soluble Salts	<1,000 ppm	961.00
Bicarbonate	<60 ppm	175.89
Chloride	<200 ppm	204.00
SAR	<4%	8.54

Nutrient Deficiencies

			Na
LAKES COURSE	TEE	1	371
DUNES COURSE	TEE	1	266
ARROYO COURSE	TE	1	239
LAKES COURSE	FAIRWAY	1	679
DUNES COURSE	FAIRWAY	1	1249
ARROYO COURSE	FAIRWAY	1	501
LAKES COURSE	GREEN	1	214
DUNES COURSE	GREEN	1	228
ARROYO COURSE	GREEN	1	268

Calcium can be added in the form of Calcium at a rate of 10 pounds of product per 1,000 sq ft monthly, on 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 monthly, on greens

Comments and Next Level Cultural Practices

- The irrigation water has three difficult things to deal with- Sodium, Chloride and Bicarbonates at very high levels. Although, warm season grasses can tolerate it more than cool season grasses, it can cause severe conditions in hard to grow areas like traffic areas and poorly drained sections of the course.
- I don't work with any other courses in your area that use the **Ewing USGA Sand** product, so I can't compare it to anything to check consistency in quality control at the plant. I would recommend that you switch to the **WCS&G PHX USGA Sand**. I have included that in this report.
- On the picture of the core sample from Lakes Course Green #1, there are darker colored layers lower in the profile. It would be nice to have information on the original mix used in the renovation. (any amendments added to the sand? Profile, Peat, etc.) Because the greens are still considered "young" I always recommend using the same base sand that they were built out of.
- Spraying acid-based products like **Blast** or **pHacid** will help the above fertility recommendations for the greens to remediate sodium levels in the sandier areas.

