

SUMMER 2017
Data Collection Report
Soil & Water Consulting



Coyote Springs Golf Club



SOIL and WATER CONSULTING

Course Name: Coyote Springs Golf Club

Date of Visit: June 28, 2017

	<u>6/9/16</u>	<u>9/22/16</u>	<u>3/25/17</u>	<u>6/28/17</u>
Humidity/Air Temperature	10%/100°	33%/85°	54%/83°	9%/105°
Greens Temperature	79°	72°	58°	73°
Fairway Temperature	78°	72°	58°	75°

	Acceptable Range For Water Sample	Hole #6 <u>6/9/16</u>	Hole #6 <u>9/22/16</u>	Hole #1 <u>3/25/17</u>	Hole #4 <u>6/28/17</u>
EC	<2.25 mmhos/cm	0.76	0.77	0.81	0.79
Sodium		89.22	81.08	86.14	82.81
Calcium	20 - 60 ppm	42.63	47.39	50.97	43.43
Magnesium	10 - 25 ppm	18.44	21.23	22.44	21.22
Potassium	5 - 20 ppm	11.75	13.63	18.46	11.87
Sulfur	30 - 90 ppm	90.12	100.80	110.94	102.81
Bicarbonate	<120 ppm	278.79	236.13	285.09	258.46
Boron	<0.67 ppm	0.35	0.33	0.36	0.35
Chloride	<177 ppm	30.64	36.59	29.45	31.15



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TEE	Acceptable Range For Alkaline Soils Sample	6 6/9/16	6 9/22/16	1 3/25/17	4 6/28/17
Organic Matter (Humus)	2 - 3%	0.69	1.04	1.02	0.98
Sulfur	12 - 16 ppm	34.00	22.00	28.00	87.00
Olsen - Phosphorus	13 - 20 ppm	13.00	16.00	15.00	24.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	4,132.00	4,230.00	4,488.00	4,746.00
Magnesium	>7% base saturation or at least 200 lbs/acre	17.90%/666	16.67%/614	15.96%/588	14.59%/590
Potassium - TEC of 0 - 35	100 ppm	471.00	434.00	286.00	397.00
Copper	>0.8 ppm	0.35	0.49	0.24	0.71
Manganese	>1 ppm	1.00	1.00	<1	1.00
Zinc	>1 - 2 ppm	0.61	0.98	0.53	1.45

FAIRWAY	Acceptable Range For Alkaline Soils Sample	6 6/9/16	6 9/22/16	1 3/25/17	4 6/28/17
Organic Matter (Humus)	2 - 3%	0.53	1.32	0.93	1.06
Sulfur	12 - 16 ppm	28.00	49.00	29.00	65.00
Olsen - Phosphorus	13 - 20 ppm	22.00	59.00	25.00	45.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	4,218.00	3,964.00	4,152.00	4,768.00
Magnesium	>7% base saturation or at least 200 lbs/acre	18.30%/698	17.28%/628	17.71%/624	16.98%/714
Potassium - TEC of 0 - 35	100 ppm	478.00	471.00	329.00	428.00
Copper	>0.8 ppm	0.22	0.32	<0.2	0.26
Manganese	>1 ppm	<1	<1	<1	1.00
Zinc	>1 - 2 ppm	0.47	0.75	0.53	0.81

GREEN	Acceptable Range For Alkaline Soils Sample	6 6/9/16	6 9/22/16	1 3/25/17	4 6/28/17
Organic Matter (Humus)	2 - 3%	0.59	0.72	0.59	0.88
Sulfur	12 - 16 ppm	25.00	21.00	22.00	44.00
Olsen - Phosphorus	13 - 20 ppm	17.00	22.00	10.00	25.00
Calcium - TEC of 6 - 12	1,000 lbs/acre	3,658.00	3,664.00	3,044.00	3,416.00
Magnesium	>7% base saturation or at least 200 lbs/acre	12.48%/352	12.27%/340	12.58%/294	12.81%/348
Potassium - TEC of 0 - 35	150 ppm	183.00	141.00	131.00	188.00
Copper	>0.8 ppm	0.89	0.91	0.90	0.83
Manganese	4 ppm or more	1.00	1.00	2.00	3.00
Zinc	>1 - 2 ppm	2.60	2.19	2.68	3.03



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TEE	Acceptable Range For Saturated Paste Sample	1,10 (avg) 3/25/17	4,13 (avg) 6/28/17
Nitrate - Ryegrass	5 - 10 ppm	<0.5	<2.1
Phosphorus	2 - 10 ppm	2.38	2.90
Potassium	40 - 100 ppm	32.37	41.42
Calcium	60 - 200 ppm	57.78	46.88
Magnesium	20 - 70 ppm	30.75	20.87
Sodium	0 - 30 ppm	105.77	172.43
Soluble Salts	<1,920 ppm	549.00	715.00
Bicarbonate	<60 ppm	374.60	192.79
Chloride	<1,000 ppm	33.00	82.00
SAR	<4%	2.81	5.16

FAIRWAY	Acceptable Range For Saturated Paste Sample	1,10 (avg) 3/25/17	4,13 (avg) 6/28/17
Nitrate - Ryegrass	5 - 10 ppm	<0.5	<0.5
Phosphorus	2 - 10 ppm	3.99	3.42
Potassium	40 - 100 ppm	42.91	41.93
Calcium	60 - 200 ppm	69.25	47.69
Magnesium	20 - 70 ppm	36.27	22.73
Sodium	0 - 30 ppm	104.32	192.21
Soluble Salts	<1,920 ppm	569.50	695.50
Bicarbonate	<60 ppm	420.97	217.20
Chloride	<1,000 ppm	30.00	75.50
SAR	<4%	2.54	5.76

GREEN	Acceptable Range For Saturated Paste Sample	1,10 (avg) 3/25/17	4,13 (avg) 6/28/17
Nitrate - Bentgrass	1-3 ppm	<0.5	1.15
Phosphorus	2 - 7 ppm	2.42	2.97
Potassium	25-40 ppm	18.22	29.00
Calcium	50- 75 ppm	35.14	33.78
Magnesium	15-30 ppm	13.66	14.28
Sodium	0 - 30 ppm	63.65	111.05
Soluble Salts	<1,000 ppm	326.50	488.00
Bicarbonate	<60 ppm	189.13	141.54
Chloride	<200 ppm	21.00	55.50
SAR	<4%	2.32	4.02



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TEE	Acceptable Range For Tissue Sample	4,13 (avg) 6/28/17
Nitrogen	3.34%-5.10%	2.98
Phosphorus	0.35% - 0.55%	0.54
Potassium	2.0% - 3.42%	2.16
Calcium	0.25%-0.5%	0.70
Magnesium	0.16%-0.32%	0.38
Sodium	229-1107 ppm	1,775.00

FAIRWAY	Acceptable Range For Tissue Sample	4,13 (avg) 6/28/17
Nitrogen	3.34%-5.10%	3.25
Phosphorus	0.35% - 0.55%	0.59
Potassium	2.0% - 3.42%	2.39
Calcium	0.25%-0.5%	0.57
Magnesium	0.16%-0.32%	0.36
Sodium	229-1107 ppm	2,115.00

GREEN	Acceptable Range For Tissue Sample	4,13 (avg) 6/28/17
Nitrogen	3.0%-6.5%	4.10
Phosphorus	0.2%-0.55%	0.62
Potassium	0.86%-2.55%	2.20
Calcium	0.21%-0.50%	0.62
Magnesium	0.09%-0.22%	0.32
Sodium	506- 2264 ppm	2,155.00



RECOMMENDATIONS



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Thoughts on the course visit

The picture below was of the rough on #13. It was a topic of discussion during my visit. The rough was a little off color. Spring was cool and slow to warm up this year. Then on the first day of Summer Las Vegas and Southern California were both setting high temperature records. Ryegrass, especially, has seemed to not know quite what to do this year. A suggestion I had was to lower the rough height as to expose the leaves underneath- almost like what you would do after winter to clip off desiccated grass and expose the greener parts of the plant. When we did that in a spot with scissors it did seem to have a better color. Then after mowing you could spray your Impact 7 and iron spray to help it along. Other than that, the ryegrass seemed to be in good condition after the April 0-0-50 application.

With regards to the greens, we discussed some of the traditionally dry spots on mounds and edges. There are a couple reasons for them: One is that these greens have some severe undulation and the construction was not perfect. In these mounded areas there is most likely more sand and therefore those areas stay droughty. Also, the greens need verti-cutting, topdressing and the occasional dethatching. I would recommend looking into use of the Graden at the next aerification. That will help with hydrophobic areas. You have begun a verti-cutting program but that takes time to get that consistent. Weekly verti-cutting throughout the growing season is very beneficial on "A" series bentgrass. You have inherited healthy grass, but you can fine tune your cultural practices to support the turf for the long term.



Notes from the visit

- Greens Mowing Height- 0.130"
- Recent Greens fertility was Impact 7, Kelp, Floratine Spray program.
- Fairway mowing height- 0.500"
- Recent Fairway fertility was Impact 7, Iron, 0-0-50 (April), Humic Acid.
- Look into Graden on the greens at least in the dry spot areas.
- Lower the rough height now and then spray the Iron, Impact 7, etc.

Fertilizer and Product Recommendations

Tee & Fairways

Potassium- 100 pounds of product per acre prior to September 1st.

Greens (Monthly Applications)

Calcium- 5 pounds of product per 1,000 square feet. (Gypsum)

Potassium- 2 pounds of product per 1,000 square feet (0-0-50)