



# SOIL AND WATER CONSULTING

## Data Collection Report

Spring 2018

Date of Collection: 3/7/18

Client: Coyote Springs Golf Club



# Testing Results

|                          | <u>3/24/16</u> | <u>3/25/17</u> | <u>3/7/18</u> |
|--------------------------|----------------|----------------|---------------|
| Humidity/Air Temperature | 15%/70°        | 54%/83°        | 15%/63°       |
| Greens Temperature       | 57.8°          | 58°            | 42°           |
| Fairway Temperature      | 57.4°          | 58°            | 47.3°         |

|             | <u>Acceptable Range<br/>For Water Sample</u> | <u>Hole #5<br/>3/24/16</u> | <u>Hole #1<br/>3/25/17</u> | <u>Hole #9<br/>3/7/18</u> |
|-------------|----------------------------------------------|----------------------------|----------------------------|---------------------------|
| EC          | <2.25 mmhos/cm                               | 0.79                       | 0.81                       | 0.79                      |
| Sodium      |                                              | 84.04                      | 86.14                      | 84.09                     |
| Calcium     | 20 - 60 ppm                                  | 48.50                      | 50.97                      | 50.08                     |
| Magnesium   | 10 - 25 ppm                                  | 19.93                      | 22.44                      | 21.85                     |
| Potassium   | 5 - 20 ppm                                   | 10.68                      | 18.46                      | 12.39                     |
| Sulfur      | 30 - 90 ppm                                  | 99.60                      | 110.94                     | 104.13                    |
| Bicarbonate | <120 ppm                                     | 311.00                     | 285.09                     | 312.19                    |
| Boron       | <0.67 ppm                                    | 0.33                       | 0.36                       | 0.40                      |
| Chloride    | <177 ppm                                     | 31.83                      | 29.45                      | 34.04                     |

| <b>TEE</b> | <b>Acceptable Range<br/>For Tissue Sample</b> | <b>9<br/>3/7/18</b> |
|------------|-----------------------------------------------|---------------------|
| Nitrogen   | 3.34%-5.10%                                   | 2.84                |
| Phosphorus | 0.35% - 0.55%                                 | 0.37                |
| Potassium  | 2.0% - 3.42%                                  | 2.01                |
| Calcium    | 0.25%-0.5%                                    | 0.76                |
| Magnesium  | 0.16%-0.32%                                   | 0.30                |
| Sodium     | 229-1107 ppm                                  | 1,130.00            |

| <b>FAIRWAY</b> | <b>Acceptable Range<br/>For Tissue Sample</b> | <b>9<br/>3/7/18</b> |
|----------------|-----------------------------------------------|---------------------|
| Nitrogen       | 3.34%-5.10%                                   | 3.00                |
| Phosphorus     | 0.35% - 0.55%                                 | 0.36                |
| Potassium      | 2.0% - 3.42%                                  | 2.04                |
| Calcium        | 0.25%-0.5%                                    | 0.63                |
| Magnesium      | 0.16%-0.32%                                   | 0.24                |
| Sodium         | 229-1107 ppm                                  | 1,390.00            |

| <b>GREENS</b> | <b>Acceptable Range<br/>For Tissue Sample</b> | <b>9,18 (avg)<br/>3/7/18</b> |
|---------------|-----------------------------------------------|------------------------------|
| Nitrogen      | 3.0%-6.5%                                     | 2.58                         |
| Phosphorus    | 0.2%-0.55%                                    | 0.29                         |
| Potassium     | 0.86%-2.55%                                   | 1.68                         |
| Calcium       | 0.21%-0.50%                                   | 0.59                         |
| Magnesium     | 0.09%-0.22%                                   | 0.19                         |
| Sodium        | 506- 2264 ppm                                 | 1,535.00                     |

| <b>TEES</b>               | <b>Acceptable Range For<br/>Alkaline Soils Sample</b> | <b>5<br/>3/24/16</b> | <b>1<br/>3/25/17</b> | <b>9,18(avg)<br/>3/7/18</b> |
|---------------------------|-------------------------------------------------------|----------------------|----------------------|-----------------------------|
| Organic Matter (Humus)    | 2 - 3%                                                | 0.43                 | 1.02                 | 0.80                        |
| Sulfur                    | 12 - 16 ppm                                           | 19.00                | 28.00                | 19.00                       |
| Olsen - Phosphorus        | 13 - 20 ppm                                           | 8.00                 | 15.00                | 12.00                       |
| Calcium - TEC of 6 - 12   | 1,000 lbs/acre                                        | 4,512.00             | 4,488.00             | 4,085.00                    |
| Magnesium                 | >7% base saturation or at<br>least 200 lbs/acre       | 15.59%/586           | 15.96%/588           | 15.87%/524                  |
| Potassium - TEC of 0 - 35 | 100 ppm                                               | 391.00               | 286.00               | 243.00                      |
| Manganese                 | >50 ppm                                               | <1                   | <1                   | 12.00                       |

| <b>FAIRWAYS</b>           | <b>Acceptable Range For<br/>Alkaline Soils Sample</b> | <b>5<br/>3/24/16</b> | <b>1<br/>3/25/17</b> | <b>9,18(avg)<br/>3/7/18</b> |
|---------------------------|-------------------------------------------------------|----------------------|----------------------|-----------------------------|
| Organic Matter (Humus)    | 2 - 3%                                                | 0.33                 | 0.93                 | 0.89                        |
| Sulfur                    | 12 - 16 ppm                                           | 37.00                | 29.00                | 18.00                       |
| Olsen - Phosphorus        | 13 - 20 ppm                                           | 16.00                | 25.00                | 21.00                       |
| Calcium - TEC of 6 - 12   | 1,000 lbs/acre                                        | 4,420.00             | 4,152.00             | 4,059.00                    |
| Magnesium                 | >7% base saturation or at<br>least 200 lbs/acre       | 17.08%/662           | 17.71%/624           | 17.05%/578                  |
| Potassium - TEC of 0 - 35 | 100 ppm                                               | 496.00               | 329.00               | 298.50                      |
| Manganese                 | >50 ppm                                               | <1                   | <1                   | 10.50                       |

| <b>GREENS</b>             | <b>Acceptable Range For<br/>Alkaline Soils Sample</b> | <b>5<br/>3/24/16</b> | <b>1<br/>3/25/17</b> | <b>9,18(avg)<br/>3/7/18</b> |
|---------------------------|-------------------------------------------------------|----------------------|----------------------|-----------------------------|
| Organic Matter (Humus)    | 2 - 3%                                                | 0.27                 | 0.59                 | 0.95                        |
| Sulfur                    | 12 - 16 ppm                                           | 25.00                | 22.00                | 19.00                       |
| Olsen - Phosphorus        | 13 - 20 ppm                                           | 19.00                | 10.00                | 14.00                       |
| Calcium - TEC of 6 - 12   | 1,000 lbs/acre                                        | 3,228.00             | 3,044.00             | 3,316.00                    |
| Magnesium                 | >7% base saturation or at<br>least 200 lbs/acre       | 12.45%/320           | 12.58%/294           | 12.09%/300                  |
| Potassium - TEC of 0 - 35 | 150 ppm                                               | 233.00               | 131.00               | 109.50                      |
| Manganese                 | >50 ppm                                               | 1.00                 | 2.00                 | 22.00                       |

| <b>TEE</b>         | <b>Acceptable Range For<br/>Saturated Paste Sample</b> | <b>1,10 (avg)<br/>3/25/17</b> | <b>9<br/>3/7/18</b> |
|--------------------|--------------------------------------------------------|-------------------------------|---------------------|
| Nitrate - Ryegrass | 5 - 10 ppm                                             | <0.5                          | <0.5                |
| Phosphorus         | 2 - 10 ppm                                             | 2.38                          | 2.00                |
| Potassium          | 40 - 100 ppm                                           | 32.37                         | 24.20               |
| Calcium            | 60 - 200 ppm                                           | 57.78                         | 48.42               |
| Magnesium          | 20 - 70 ppm                                            | 30.75                         | 20.75               |
| Sodium             | 0 - 30 ppm                                             | 105.77                        | 69.03               |
| Soluble Salts      | <1,920 ppm                                             | 549.00                        | 342.00              |
| Bicarbonate        | <60 ppm                                                | 374.60                        | 165.95              |
| Chloride           | <1,000 ppm                                             | 33.00                         | 14.00               |
| SAR                | <4%                                                    | 2.81                          | 2.09                |

| <b>FAIRWAY</b>     | <b>Acceptable Range For<br/>Saturated Paste Sample</b> | <b>1,10 (avg)<br/>3/25/17</b> | <b>9<br/>3/7/18</b> |
|--------------------|--------------------------------------------------------|-------------------------------|---------------------|
| Nitrate - Ryegrass | 5 - 10 ppm                                             | <0.5                          | <0.5                |
| Phosphorus         | 2 - 10 ppm                                             | 3.99                          | 2.98                |
| Potassium          | 40 - 100 ppm                                           | 42.91                         | 16.67               |
| Calcium            | 60 - 200 ppm                                           | 69.25                         | 53.46               |
| Magnesium          | 20 - 70 ppm                                            | 36.27                         | 24.05               |
| Sodium             | 0 - 30 ppm                                             | 104.32                        | 75.32               |
| Soluble Salts      | <1,920 ppm                                             | 569.50                        | 385.00              |
| Bicarbonate        | <60 ppm                                                | 420.97                        | 200.11              |
| Chloride           | <1,000 ppm                                             | 30.00                         | 17.00               |
| SAR                | <4%                                                    | 2.54                          | 2.15                |

| <b>GREEN</b>        | <b>Acceptable Range For<br/>Saturated Paste Sample</b> | <b>1,10 (avg)<br/>3/25/17</b> | <b>9<br/>3/7/18</b> |
|---------------------|--------------------------------------------------------|-------------------------------|---------------------|
| Nitrate - Bentgrass | 1-3 ppm                                                | <0.5                          | <0.5                |
| Phosphorus          | 2 - 7 ppm                                              | 2.42                          | 2.76                |
| Potassium           | 25-40 ppm                                              | 18.22                         | 13.32               |
| Calcium             | 50- 75 ppm                                             | 35.14                         | 44.65               |
| Magnesium           | 15-30 ppm                                              | 13.66                         | 15.42               |
| Sodium              | 0 - 30 ppm                                             | 63.65                         | 46.15               |
| Soluble Salts       | <1,000 ppm                                             | 326.50                        | 307.00              |
| Bicarbonate         | <60 ppm                                                | 189.13                        | 187.91              |
| Chloride            | <200 ppm                                               | 21.00                         | 11.00               |
| SAR                 | <4%                                                    | 2.32                          | 1.52                |