1.0 INTRODUCTION

In 2007 and 2008, the South Florida Water Management District (SFWMD or District) conducted small-scale aquifer performance tests and a records review to acquire additional hydraulic data for the surficial aquifer system (SAS) in the Kissimmee Basin Planning Area (KPA) to support development of the East Central Florida Transient (ECFT) groundwater model concurrently under development. During model development, it was determined that additional hydraulic data (e.g., hydraulic conductivity values) were needed to support calibration of the ECFT model, specifically for the SAS in the KPA. The District conducted short-term (less than 4 hours in duration) aquifer performance tests at 15 monitor wells completed in the SAS, and the results were provided to ECFT modeling personnel. In addition, published test data were reviewed and provided to the modeling group.

Fieldwork for this project was conducted by SFWMD employees John Janzen and Brian Collins from November 2007 through July 2008. The ECFT modeling group, consisting of SFWMD employees Jefferson Giddings, Hope Barton, and David Butler, provided guidance and assistance with database searches and prioritization of test sites.

In 2014, the KPA was officially divided into two basins and addressed in separate water supply plans, the Upper Kissimmee Basin (UKB) and Lower Kissimmee Basin (LKB). The UKB was subsequently included in the 2014 Central Florida Water Initiative Regional Water Supply Plan Coordination Area. The ECFT model is currently being revised to include both the UKB and LKB.

2.0 SITE DESCRIPTION

The KPA is located in Central Florida and extends from southern Orange County, south along the Kissimmee Chain of Lakes and Kissimmee River, to the north shore of Lake Okeechobee (Figure 1). The area includes portions of Orange, Osceola, Polk, Highlands, Okeechobee, and Glades counties. Covering approximately 3,488 square miles within the Lake Okeechobee watershed, the KPA encompasses more than two dozen lakes in the Kissimmee Chain of Lakes, their tributary streams, and associated marshes (SFWMD, 2014).

Three major hydrogeologic units underlie the KPA: the SAS, the intermediate confining unit (ICU), and the Floridan aquifer system (FAS). The unconfined SAS ranges from less than 10 to 150 feet thick within the northern part of the KPA, thickening to the south and southwest (SFWMD, 2014). The thickness of SAS sediments reaches almost 300 feet in Polk County along the Lake Wales Ridge. The SAS is primarily recharged by rainfall, and interacts with surface water features such as rivers, canals, wetlands, and lakes. The SAS consists mainly of undifferentiated fine- to medium-grained quartz sand interbedded with discontinuous beds of silt, clay, and shell that range from Pliocene to Recent in age.
Figure 1. Kissimmee Basin Planning Area and Aquifer Test Well Locations.
3.0 WELL INVENTORY AND SITE PRIORITIZATION

The methodology used for site selection included developing an inventory of prospective test monitor wells screened in the SAS, conducting site inspections to assess suitability for conducting aquifer tests, and prioritization of candidate sites with the ECFT modeling group personnel. A monitor well inventory was developed by including wells that are part of the SFWMD “paired well program” within an area inclusive of the KPA and a 5-mile buffer zone (project area). The paired wells program includes a series of sites with multi-zoned well clusters completed in the SAS, Upper Floridan aquifer (UFA), and ICU for potential evaluation of the hydraulic connection between the aquifers. Wells were installed by the SFWMD or the United States Geological Survey (USGS), and some had Supervisory Control and Data Acquisition (SCADA) water level monitoring systems installed. A search of the District’s DBHYDRO environmental database was conducted in December 2007 for paired wells in the project area and associated well characteristics, including location coordinates, depth, screened interval, casing diameter, and previous hydraulic tests. Forty-four paired well clusters with SAS wells were identified at 35 sites within the project area, with 9 sites having multiple wells completed in the SAS. Additionally, six SAS wells not included in the paired wells program were added to the site inventory by the ECFT modeling group for a total of 50 wells completed in the SAS included in the prospective test well inventory (Table 1).

Site visits to each well were conducted to assess suitability (based on depth, diameter, and physical locations) for aquifer tests. The site visits included a visual inspection to assess physical accessibility and to confirm well locations and construction details, including well depth. Sites with SCADA monitoring systems were noted. The site visits resulted in elimination of seven wells from the well inventory: two were not found and five were not readily available for access due to environmentally sensitive areas or access agreement requirements. Well construction details for all wells, including wells completed in the ICU and UFA, were assessed. The resulting site inventory contained 35 candidate wells at 28 sites.

Concurrent with development of the well inventory, a search of published and non-published SAS aquifer test data in DBHYDRO and the Southwest Florida Water Management District (SWFWMD) District-wide Regional Model (DWRM) database files was conducted. At the ECFT modeling group’s request, the search included aquifer tests within the ICU. In addition, various publications not listed in the aforementioned databases were reviewed. Results were found for 52 tests of the SAS and 8 tests of the ICU for a total of 60 published tests. Thirteen of the tests were aquifer performance tests, 46 were slug tests, and one was a specific capacity test. Prior test results, locations, and data sources are presented in Figure 1 and Table 2.

A summary of the site inventory findings, including monitor wells suitable for testing and published aquifer tests, were provided to the ECFT modeling group for test prioritization. Wells were prioritized based on spatial arrangement to minimize data gaps. Wells with screen intervals in the upper part of the SAS (less than 50 feet below ground surface) were prioritized as representative of the shallowest model layer in the SAS. Fifteen wells at 15 sites were identified for aquifer testing.
Table 1. Prospective Test Well Inventory.

<table>
<thead>
<tr>
<th>County</th>
<th>Station</th>
<th>Site Name</th>
<th>Paired Well</th>
<th>SAS Thickness (ft)</th>
<th>Recon. Conducted</th>
<th>Measured Well Depth¹ (ft)</th>
<th>Well Depth² (ft)</th>
<th>Top of Screen or Open Hole³ (ft)</th>
<th>Well Casing Diameter ³ (in.)</th>
<th>Test Requested⁴</th>
<th>Test Conducted</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlands</td>
<td>HIS-1</td>
<td>S-82</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>32.1</td>
<td>110.0</td>
<td>ND</td>
<td>4 (ND)</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Okeechobee</td>
<td>OKS-100</td>
<td>Kiss River ASR Site</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>110.0</td>
<td>ND</td>
<td>4 (40.0)</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>Disney_G</td>
<td>Disney</td>
<td>N</td>
<td>ND</td>
<td>Y</td>
<td>6.0</td>
<td>18.0</td>
<td>ND</td>
<td>2 (ND)</td>
<td>N</td>
<td>N</td>
<td>Water column too thin to test</td>
</tr>
<tr>
<td>Orange</td>
<td>MossPk_S</td>
<td>Moss Park</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>28.5</td>
<td>29.0</td>
<td>26.0</td>
<td>4 (steel)</td>
<td>ND</td>
<td>N</td>
<td>Previously tested (Adamski, 2004)</td>
</tr>
<tr>
<td>Orange</td>
<td>ORS-1(GW-1)</td>
<td>Skylake</td>
<td>Y</td>
<td>31</td>
<td>Y</td>
<td>31.0</td>
<td>30.0</td>
<td>20.0</td>
<td>4 (10.0)</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>ORS-2</td>
<td>AIR19</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>33.0</td>
<td>30.0</td>
<td>20.0</td>
<td>4 (10.0)</td>
<td>N</td>
<td>N</td>
<td>On Orlando Union Commission Right-of-Way</td>
</tr>
<tr>
<td>Orange</td>
<td>ORS-3(GW-1)</td>
<td>R D Keene (ORF-61)</td>
<td>Y</td>
<td>70</td>
<td>Y</td>
<td>53.3</td>
<td>51.0</td>
<td>22.0</td>
<td>6 (Screen)</td>
<td>N</td>
<td>N</td>
<td>Previously tested (SFWMD, 2012)</td>
</tr>
<tr>
<td>Orange</td>
<td>ORS-4</td>
<td>Reedy Creek</td>
<td>Y</td>
<td>30</td>
<td>N</td>
<td>ND</td>
<td>30.0</td>
<td>20.0</td>
<td>4 (10.0)</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>ORS-5(GW-1)</td>
<td>TM Ranch</td>
<td>Y</td>
<td>33</td>
<td>Y</td>
<td>32.6</td>
<td>30.0</td>
<td>20.0</td>
<td>4 (10.0)</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>ORS-0029 (GW-1)</td>
<td>SW15</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>22.8</td>
<td>30.0</td>
<td>20.0</td>
<td>4 (ND)</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>TB1_G</td>
<td>Tibet Butler</td>
<td>Y</td>
<td>30</td>
<td>N</td>
<td>ND</td>
<td>30.0</td>
<td>20.0</td>
<td>2 (10.0)</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>TB2_G</td>
<td>Tibet Butler</td>
<td>Y</td>
<td>30</td>
<td>N</td>
<td>ND</td>
<td>30.0</td>
<td>20.0</td>
<td>2 (10.0)</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>TB3_G</td>
<td>Tibet Butler</td>
<td>Y</td>
<td>30</td>
<td>N</td>
<td>ND</td>
<td>30.0</td>
<td>20.0</td>
<td>2 (10.0)</td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>TURLAK_G</td>
<td>Turkey Lake</td>
<td>Y</td>
<td>60</td>
<td>Y</td>
<td>56.1</td>
<td>ND</td>
<td>ND</td>
<td>4 (steel)</td>
<td>ND</td>
<td>Y</td>
<td>Previously tested (Adamski, 2004)</td>
</tr>
<tr>
<td>Osceola</td>
<td>ALL1W2</td>
<td>Alligator Lake</td>
<td>N</td>
<td>ND</td>
<td>Y</td>
<td>22.6</td>
<td>20.0</td>
<td>15.0</td>
<td>2 (5.0)</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>ALL2W2</td>
<td>Alligator Lake</td>
<td>N</td>
<td>ND</td>
<td>Y</td>
<td>22.5</td>
<td>20.0</td>
<td>15.0</td>
<td>2 (5.0)</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>IC-SAS(GW-1)</td>
<td>Intercension City</td>
<td>Y</td>
<td>30</td>
<td>Y</td>
<td>32.4</td>
<td>20.0</td>
<td>ND</td>
<td>2 (ND)</td>
<td>N</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>KIRCOF_G (GW-1)</td>
<td>Kircoff WR</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>29.1</td>
<td>30.0</td>
<td>ND</td>
<td>2 (ND)</td>
<td>N</td>
<td>N</td>
<td>In wildlife refuge</td>
</tr>
<tr>
<td>Osceola</td>
<td>MR-0162 (GW-1)</td>
<td>Kiss. FS</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>8.7</td>
<td>8.0</td>
<td>ND</td>
<td>2.5 (steel)</td>
<td>ND</td>
<td>N</td>
<td>Kissimmee Field Station</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSF53_GW1</td>
<td>Southport</td>
<td>Y</td>
<td>40</td>
<td>Y</td>
<td>23.1</td>
<td>24.4</td>
<td>ND</td>
<td>2 (ND)</td>
<td>Y</td>
<td>Y</td>
<td>Screen in upper SAS</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSF53_GW2</td>
<td>Southport</td>
<td>Y</td>
<td>40</td>
<td>Y</td>
<td>55.6</td>
<td>57.8</td>
<td>ND</td>
<td>2 (ND)</td>
<td>N</td>
<td>N</td>
<td>Top of ICU does not appear consistent with lithology</td>
</tr>
<tr>
<td>County</td>
<td>Station</td>
<td>Site Name</td>
<td>Paired Well</td>
<td>SAS Thickness (ft)</td>
<td>Recon. Conducted</td>
<td>Measured Well Depth¹ (ft)</td>
<td>Well Depth² (ft)</td>
<td>Top of Screen or Open Hole³ (ft)</td>
<td>Well Casing Diameter³ (in.)</td>
<td>Screen or Length (ft)</td>
<td>Test Requested⁴</td>
<td>Test Conducted</td>
</tr>
<tr>
<td>--------</td>
<td>---------------</td>
<td>-----------------</td>
<td>-------------</td>
<td>--------------------</td>
<td>-----------------</td>
<td>--------------------------</td>
<td>-----------------</td>
<td>----------------------------------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSF62_GW1</td>
<td>Turnpike S</td>
<td>Y</td>
<td>180</td>
<td>Y</td>
<td>26.4</td>
<td>28.0</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSF62_GW2</td>
<td>Turnpike S</td>
<td>Y</td>
<td>189</td>
<td>Y</td>
<td>62.8</td>
<td>62.9</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-64S (GW-1)</td>
<td>Cypress Ck.</td>
<td>Y</td>
<td>210</td>
<td>Y</td>
<td>22.5</td>
<td>29.4</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-64D (GW-2)</td>
<td>Cypress Ck.</td>
<td>Y</td>
<td>210</td>
<td>Y</td>
<td>99.0</td>
<td>102.2</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-66S (GW-1)</td>
<td>Chicken Ranch</td>
<td>Y</td>
<td>180</td>
<td>Y</td>
<td>30.8</td>
<td>31.2</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-66 (GW-2)</td>
<td>Chicken Ranch</td>
<td>Y</td>
<td>180</td>
<td>Y</td>
<td>81.0</td>
<td>79.2</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-70S (GW-1)</td>
<td>St. Cloud</td>
<td>Y</td>
<td>30</td>
<td>Y</td>
<td>25.3</td>
<td>26.5</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-70 (GW-2)</td>
<td>St. Cloud</td>
<td>Y</td>
<td>30</td>
<td>Y</td>
<td>26.4</td>
<td>55.1</td>
<td>ND</td>
<td>2</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-71 (GW-2)</td>
<td>Kiss. FS</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>26.7</td>
<td>25.0</td>
<td>ND</td>
<td>4</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-77</td>
<td>Lake Marian</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>31.7</td>
<td>30.0</td>
<td>20.0</td>
<td>4</td>
<td>10.0</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-72</td>
<td>S65</td>
<td>Y</td>
<td>170</td>
<td>Y</td>
<td>120.0</td>
<td>120.0</td>
<td>105.0</td>
<td>4</td>
<td>15.0</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-73</td>
<td>S65</td>
<td>Y</td>
<td>170</td>
<td>Y</td>
<td>29.0</td>
<td>27.0</td>
<td>14.0</td>
<td>4</td>
<td>15.0</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-76 (GW-1)</td>
<td>Yehaw</td>
<td>Y</td>
<td>110</td>
<td>Y</td>
<td>33.0</td>
<td>30.0</td>
<td>20.0</td>
<td>4</td>
<td>10.0</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-101</td>
<td>Oak Island</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>18.7</td>
<td>15.0</td>
<td>10.0</td>
<td>4</td>
<td>5</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>OSS-102</td>
<td>Oak Island</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>46.0</td>
<td>45.0</td>
<td>40.0</td>
<td>4</td>
<td>5</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>Poince_g</td>
<td>Poinciana Blvd</td>
<td>N</td>
<td>ND</td>
<td>N</td>
<td>ND</td>
<td>11.4</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>County</td>
<td>Station</td>
<td>Site Name</td>
<td>Paired Well</td>
<td>SAS Thickness (ft)</td>
<td>Recon. Conducted</td>
<td>Measured Well Depth¹ (ft)</td>
<td>Well Depth² (ft)</td>
<td>Top of Screen or Open Hole³ (ft)</td>
<td>Well Casing Diameter ³ (in.)</td>
<td>Screen or Length (ft)</td>
<td>Test Requested⁴</td>
<td>Test Conducted</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>-----------------</td>
<td>-------------</td>
<td>--------------------</td>
<td>-----------------</td>
<td>---------------------------</td>
<td>----------------</td>
<td>---------------------------------</td>
<td>--------------------------</td>
<td>----------------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Osceola</td>
<td>REEDGW10_</td>
<td>Reedy Ck near CR532</td>
<td>N</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>WR6_GW1</td>
<td>Walker Ranch</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>19.6</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>WR8_GW1</td>
<td>Walker Ranch</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>23.0</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Osceola</td>
<td>WR9_GW1</td>
<td>Walker Ranch</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>21.9</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>P-49</td>
<td>Near Frostproof</td>
<td>N</td>
<td>ND</td>
<td>Y</td>
<td>10.8</td>
<td>17.0</td>
<td>ND</td>
<td>6 (steel)</td>
<td>ND</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-2</td>
<td>S65A</td>
<td>Y</td>
<td>70</td>
<td>N</td>
<td>NM</td>
<td>30.0</td>
<td>20.0</td>
<td>4</td>
<td>10.0</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-4</td>
<td>River Ranch</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>NM</td>
<td>18.8</td>
<td>9.00</td>
<td>4</td>
<td>10.0</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-5</td>
<td>River Ranch</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>NM</td>
<td>117.0</td>
<td>97.0</td>
<td>4</td>
<td>20.0</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>POS_6</td>
<td>Snively</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>38.7</td>
<td>38.0</td>
<td>29.0</td>
<td>4</td>
<td>10.0</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-7</td>
<td>Snively</td>
<td>Y</td>
<td>ND</td>
<td>Y</td>
<td>111.0</td>
<td>100.0</td>
<td>101.0</td>
<td>4</td>
<td>10.0</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-11</td>
<td>Walker Ranch</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>10.0</td>
<td>5.0</td>
<td>2</td>
<td>5.0</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-12</td>
<td>Walker Ranch</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>36.0</td>
<td>26.0</td>
<td>2</td>
<td>10.0</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Polk</td>
<td>POS-13</td>
<td>Walker Ranch</td>
<td>Y</td>
<td>ND</td>
<td>N</td>
<td>NM</td>
<td>122.0</td>
<td>108.0</td>
<td>2</td>
<td>14.0</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

¹ All depths are from top of casing.
² Data from DBHYDRO.
³ PVC unless noted otherwise.
⁴ Test requested by ECFT modeling group.
ND = no data; NM = not measured.
Table 2. Prior Test Results.

<table>
<thead>
<tr>
<th>County</th>
<th>Station</th>
<th>Site Name</th>
<th>X Coordinates (ft)</th>
<th>Y Coordinates (ft)</th>
<th>Paired Well</th>
<th>Hydraulic Conductivity (ft/d)</th>
<th>Transmissivity (ft²/d)</th>
<th>Storativity</th>
<th>Test Type</th>
<th>Duration of Test (hr)</th>
<th>Analysis Method</th>
<th>SAS Thickness (ft)</th>
<th>Top Screen</th>
<th>Bottom Screen</th>
<th>Reference</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osceola</td>
<td>N/A</td>
<td>OS-12</td>
<td>493608.651</td>
<td>3096433.848</td>
<td>N</td>
<td>20</td>
<td>400</td>
<td>ND</td>
<td>AP</td>
<td>14</td>
<td>Jacob (1946)</td>
<td>87</td>
<td>70</td>
<td>90</td>
<td>Planert and Aucott (1985)</td>
<td>Test result was previously included in ECFT Model</td>
</tr>
<tr>
<td>Osceola</td>
<td>N/A</td>
<td>OS-13</td>
<td>493238.097</td>
<td>3116034.750</td>
<td>N</td>
<td>100</td>
<td>200</td>
<td>0.0001</td>
<td>AP</td>
<td>ND</td>
<td>Jacob (1946)</td>
<td>75</td>
<td>55</td>
<td>75</td>
<td>Planert and Aucott (1985)</td>
<td>Test result was previously included in ECFT Model</td>
</tr>
<tr>
<td>Okeechobee</td>
<td>W-16946</td>
<td>OKS82</td>
<td>752582.557</td>
<td>1077750.605</td>
<td>N</td>
<td>26</td>
<td>1578</td>
<td>0.0001318</td>
<td>AP</td>
<td>ND</td>
<td>Average of 3 solution methods</td>
<td>158-178</td>
<td>117</td>
<td>178</td>
<td>DBHYDRO One monitor well, report not found</td>
<td></td>
</tr>
<tr>
<td>Okeechobee</td>
<td>W-16950</td>
<td>OKS83</td>
<td>666880.919</td>
<td>1077536.373</td>
<td>N</td>
<td>8</td>
<td>82</td>
<td>0.000015026</td>
<td>AP</td>
<td>ND</td>
<td>Average of 5 solution methods</td>
<td>ND</td>
<td>128</td>
<td>138</td>
<td>DBHYDRO One monitor well, report not found</td>
<td></td>
</tr>
<tr>
<td>Okeechobee</td>
<td>W-16970</td>
<td>OKS90</td>
<td>702383.885</td>
<td>1113206.040</td>
<td>N</td>
<td>28</td>
<td>847</td>
<td>0.0000729</td>
<td>AP</td>
<td>ND</td>
<td>Average of 5 solution methods</td>
<td>ND</td>
<td>170</td>
<td>200</td>
<td>DBHYDRO Two monitor wells, report not found</td>
<td></td>
</tr>
<tr>
<td>Okeechobee</td>
<td>W-16969</td>
<td>OKS95</td>
<td>733349.674</td>
<td>1134155.958</td>
<td>N</td>
<td>43</td>
<td>2926</td>
<td>0.0001122</td>
<td>AP</td>
<td>ND</td>
<td>Average of 6 solution methods</td>
<td>ND</td>
<td>167</td>
<td>237</td>
<td>DBHYDRO Two monitor wells, report not found</td>
<td></td>
</tr>
<tr>
<td>Highlands</td>
<td>ROMP28</td>
<td>W-17000</td>
<td>515233.035</td>
<td>1103529.156</td>
<td>N</td>
<td>38</td>
<td>7720</td>
<td>ND</td>
<td>AP</td>
<td>20</td>
<td>ND</td>
<td>203</td>
<td>40</td>
<td>200</td>
<td>DeWitt et al. (1998)</td>
<td>3 monitor wells</td>
</tr>
<tr>
<td>Polk</td>
<td>W-16305</td>
<td>ROMP55</td>
<td>477890.053</td>
<td>1255949.720</td>
<td>N</td>
<td>ND</td>
<td>1900</td>
<td>0.29</td>
<td>AP</td>
<td>ND</td>
<td>ND</td>
<td>97</td>
<td>0</td>
<td>109</td>
<td>Decker (1988)</td>
<td>2 monitor wells</td>
</tr>
<tr>
<td>Polk</td>
<td>KREFFD</td>
<td>KREFFD</td>
<td>597669.418</td>
<td>1241470.254</td>
<td>N</td>
<td>ND</td>
<td>514.9</td>
<td>0.00000008B</td>
<td>S</td>
<td>N/A</td>
<td>Cooper et al (1967)</td>
<td>ND</td>
<td>105</td>
<td>115</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-FD</td>
</tr>
<tr>
<td>Polk</td>
<td>KREFFM</td>
<td>KREFFM</td>
<td>597673.631</td>
<td>1241463.482</td>
<td>N</td>
<td>6.05</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>20</td>
<td>35</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-FS</td>
</tr>
<tr>
<td>Polk</td>
<td>KREFFS</td>
<td>KREFFS</td>
<td>597659.024</td>
<td>1241489.153</td>
<td>N</td>
<td>14.88</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>10</td>
<td>15</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-F15</td>
</tr>
<tr>
<td>Polk</td>
<td>KRENNC</td>
<td>KRENNC</td>
<td>598889.41</td>
<td>1242081.749</td>
<td>N</td>
<td>0.07</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>40</td>
<td>50</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-NMDC</td>
</tr>
<tr>
<td>Polk</td>
<td>KRENND</td>
<td>KRENND</td>
<td>598893.622</td>
<td>1242073.866</td>
<td>N</td>
<td>ND</td>
<td>1004</td>
<td>0.00000008B</td>
<td>S</td>
<td>N/A</td>
<td>Cooper et al (1967)</td>
<td>ND</td>
<td>100</td>
<td>110</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-ND</td>
</tr>
<tr>
<td>Polk</td>
<td>KRENNM1</td>
<td>KRENNM1</td>
<td>598884.662</td>
<td>1242090.642</td>
<td>N</td>
<td>14.73</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>15</td>
<td>30</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-NS</td>
</tr>
<tr>
<td>Polk</td>
<td>KRENNM2</td>
<td>KRENNM2</td>
<td>598895.855</td>
<td>1242064.775</td>
<td>N</td>
<td>ND</td>
<td>299</td>
<td>0.00001</td>
<td>S</td>
<td>N/A</td>
<td>Cooper et al (1967)</td>
<td>ND</td>
<td>66</td>
<td>76</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-NM</td>
</tr>
<tr>
<td>Polk</td>
<td>KRENNS</td>
<td>KRENNS</td>
<td>598881.261</td>
<td>1242099.836</td>
<td>N</td>
<td>24.45</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>10</td>
<td>15</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-E-N15</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFFFD</td>
<td>KRFFFD</td>
<td>593384.019</td>
<td>1255485.447</td>
<td>N</td>
<td>ND</td>
<td>56.4</td>
<td>0.082</td>
<td>S</td>
<td>N/A</td>
<td>Cooper et al (1967)</td>
<td>ND</td>
<td>93</td>
<td>108</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-F-FD</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFFFM</td>
<td>KRFFFM</td>
<td>593375.498</td>
<td>1255492.63</td>
<td>N</td>
<td>5.72</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>15</td>
<td>30</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-F-FMD</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFFFS</td>
<td>KRFFFS</td>
<td>593369.224</td>
<td>1255500.517</td>
<td>N</td>
<td>12.81</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>10</td>
<td>15</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-F-FS</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFFNC</td>
<td>KRFFNC</td>
<td>593828.103</td>
<td>1255811.774</td>
<td>N</td>
<td>0.06</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>15</td>
<td>30</td>
<td>Butler (1999)</td>
<td>Old well name is PZ-KRR96-F-FNMD, test report labeled KRRFNC</td>
</tr>
<tr>
<td>County</td>
<td>Station</td>
<td>Site Name</td>
<td>X Coordinates (ft)</td>
<td>Y Coordinates (ft)</td>
<td>Paired Well</td>
<td>Hydraulic Conductivity (ft/d)</td>
<td>Transmissivity (ft²/d)</td>
<td>Storativity</td>
<td>Test Type</td>
<td>Duration of Test (hr)</td>
<td>Analysis Method</td>
<td>SAS Thickness (ft)</td>
<td>Top Screen*</td>
<td>Bottom Screen*</td>
<td>Reference</td>
<td>Comments</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>-----------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>-------------</td>
<td>-----------------------------</td>
<td>-----------------------</td>
<td>--------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>----------------</td>
<td>---------------------</td>
<td>------------</td>
<td>---------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFNND</td>
<td>KRFNND</td>
<td>59385.11</td>
<td>125573.011</td>
<td>N</td>
<td>ND</td>
<td>315</td>
<td>0.0005</td>
<td>S</td>
<td>N/A</td>
<td>Cooper et al (1967)</td>
<td>ND</td>
<td>60</td>
<td>65</td>
<td>Butler (1999)</td>
<td>Old well name is P2-KRR96-F-F-ND</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFNNM</td>
<td>KRFNNM</td>
<td>59384.923</td>
<td>125579.157</td>
<td>N</td>
<td>8.98</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>95</td>
<td>110</td>
<td>Butler (1999)</td>
<td>Old well name is P2-KRR96-F-FNM</td>
</tr>
<tr>
<td>Polk</td>
<td>KRFNNS</td>
<td>KRFNNS</td>
<td>59384.078</td>
<td>125580.665</td>
<td>N</td>
<td>13.42</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>10</td>
<td>15</td>
<td>Butler (1999)</td>
<td>Old well name is P2-KRR96-F-F-N5</td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>Lake Oliver</td>
<td>146687.64</td>
<td>448447.602</td>
<td>N</td>
<td>4</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>ND</td>
<td>63</td>
<td>33</td>
<td>38</td>
<td>Adamski and German (2004)</td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>MOSSPK_S</td>
<td>Moss Pl.</td>
<td>59478</td>
<td>Y</td>
<td>0.2</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>51</td>
<td>26</td>
<td>29</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>OR0716</td>
<td>ORF-61</td>
<td>150036.147</td>
<td>N</td>
<td>20</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>54*</td>
<td>20</td>
<td>30</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>OR0719</td>
<td>ORF-61</td>
<td>150036.147</td>
<td>N</td>
<td>6</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>34*</td>
<td>22</td>
<td>32</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>OR0720</td>
<td>ORF-61</td>
<td>150036.147</td>
<td>N</td>
<td>3</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>34*</td>
<td>22</td>
<td>32</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>OR0721</td>
<td>ORF-61</td>
<td>150036.147</td>
<td>N</td>
<td>30</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>69*</td>
<td>15</td>
<td>25</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>OR0722</td>
<td>ORF-61</td>
<td>150036.147</td>
<td>N</td>
<td>4</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>45*</td>
<td>20</td>
<td>30</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>ORS-3</td>
<td>RD KEENE (ORF-61)</td>
<td>484300.536</td>
<td>Y</td>
<td>ND</td>
<td>22.8</td>
<td>0.05753</td>
<td>AP</td>
<td>4.5</td>
<td>Theis (1935)</td>
<td>55</td>
<td>20</td>
<td>50</td>
<td>SFWMD (2012)</td>
<td>1 monitor well</td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>S. or Pk</td>
<td>147761.874</td>
<td>534421.496</td>
<td>N</td>
<td>0.4</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>35*</td>
<td>19</td>
<td>29</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>Tibet B</td>
<td>149387.807</td>
<td>481891.6214</td>
<td>N</td>
<td>3</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>50*</td>
<td>14</td>
<td>24</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>TURLAK_GW1</td>
<td>Turkey Lake</td>
<td>503052.186</td>
<td>Y</td>
<td>0.05</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>60</td>
<td>44</td>
<td>54</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>N/A</td>
<td>TURLAK_GW2</td>
<td>Turkey Lake</td>
<td>503052.186</td>
<td>Y</td>
<td>0.05</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>ND</td>
<td>60</td>
<td>44</td>
<td>54</td>
<td>Adamski and German (2004)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>N/A</td>
<td>TOHO1-3</td>
<td>TOHO1-3</td>
<td>555543.674</td>
<td>N</td>
<td>7.2</td>
<td>ND</td>
<td>0.011</td>
<td>AP</td>
<td>72</td>
<td>Hantush (1961)</td>
<td>110</td>
<td>74</td>
<td>84</td>
<td>Valdez (2000)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>N/A</td>
<td>TOHO1-4</td>
<td>TOHO1-4</td>
<td>555543.674</td>
<td>N</td>
<td>8</td>
<td>570</td>
<td>ND</td>
<td>SC</td>
<td>ND</td>
<td>Specific Capacity</td>
<td>ND</td>
<td>20</td>
<td>30</td>
<td>Valdez (2000)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO3_GW1</td>
<td>TOHO3</td>
<td>TOHO3</td>
<td>539245.271</td>
<td>N</td>
<td>1.8</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>36</td>
<td>46</td>
<td>Valdez (2000)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO3_GW2</td>
<td>TOHO3</td>
<td>TOHO3</td>
<td>539245.271</td>
<td>N</td>
<td>0.6</td>
<td>32</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>20</td>
<td>30</td>
<td>Valdez (2000)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO4_GW1</td>
<td>TOHO4</td>
<td>TOHO4</td>
<td>530178.158</td>
<td>N</td>
<td>1.6</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>20</td>
<td>30</td>
<td>Valdez (2000)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO5_GW2</td>
<td>TOHO5</td>
<td>TOHO5</td>
<td>514587.761</td>
<td>N</td>
<td>0.9</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>24</td>
<td>34</td>
<td>Valdez (2000)</td>
<td></td>
</tr>
<tr>
<td>County</td>
<td>Station</td>
<td>Site Name</td>
<td>X Coordinates (ft)</td>
<td>Y Coordinates (ft)</td>
<td>Paired Well</td>
<td>Hydraulic Conductivity (ft/d)</td>
<td>Transmissivity (ft²/d)</td>
<td>Storativity</td>
<td>Test Type</td>
<td>Duration of Test (hr)</td>
<td>Analysis Method</td>
<td>SAS Thickness (ft)</td>
<td>Top Screen*</td>
<td>Bottom Screen*</td>
<td>Reference</td>
<td>Comments</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>-----------</td>
<td>--------------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>-------------------------------</td>
<td>------------------------</td>
<td>--------------</td>
<td>-----------</td>
<td>----------------------</td>
<td>-------------------------------------</td>
<td>-------------------</td>
<td>-------------</td>
<td>---------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO5_GW1 TOHO5</td>
<td>514587.761</td>
<td>1405459.133</td>
<td>N 0.3</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 74 84</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH06_GW1 TOHO6</td>
<td>519440.85</td>
<td>1403599.79</td>
<td>N 1.3</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 20 30</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH07_GW TOHO7</td>
<td>519679.682</td>
<td>1440603.499</td>
<td>N 0.5</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 20 30</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH09_GW TOHO9</td>
<td>543543.118</td>
<td>1440509.124</td>
<td>N 0.8</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 20 30</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO10_GW TOHO10</td>
<td>543295.397</td>
<td>1406485.471</td>
<td>N 2.8</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 16 26</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH012_GW TOHO12</td>
<td>561669.444</td>
<td>1453805.971</td>
<td>N 1.1</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 20 30</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH013_GW TOHO13</td>
<td>575792.782</td>
<td>1434265.951</td>
<td>N 0.8</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 20 30</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH014_GW TOHO14</td>
<td>569848.856</td>
<td>1385256.092</td>
<td>N 3.4</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND 20 30</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOH016_W1 TOHO16</td>
<td>568717.724</td>
<td>1393533.633</td>
<td>N 1.0</td>
<td>ND</td>
<td>ND</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>48 15 25</td>
<td>Valdez (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Wells Screened in the Intermediate Confining Unit**

<table>
<thead>
<tr>
<th>Highlands</th>
<th>ROMP28</th>
<th>W-17000</th>
<th>515233.035</th>
<th>1103529.156</th>
<th>N</th>
<th>ND</th>
<th>162</th>
<th>0.0002</th>
<th>AP</th>
<th>35</th>
<th>ND</th>
<th>203</th>
<th>370</th>
<th>430</th>
<th>DeWitt et al. (1998)</th>
<th>ICU Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlands</td>
<td>ROMP29A</td>
<td>W-1835</td>
<td>519839.061</td>
<td>1512171.933</td>
<td>N</td>
<td>0.038</td>
<td>N/A</td>
<td>N/A</td>
<td>S</td>
<td>N/A</td>
<td>Butler (1999)</td>
<td>190</td>
<td>Various</td>
<td>Various</td>
<td>Mallams (2004)</td>
<td>ICU-Average of 3 tests, DBHYDRO notes results should not be used quantitatively</td>
</tr>
<tr>
<td>Orange</td>
<td>ORH-1</td>
<td>RD KEENE (ORF-61)</td>
<td>484377.191</td>
<td>1504604.675</td>
<td>N</td>
<td>0.038</td>
<td>N/A</td>
<td>N/A</td>
<td>S</td>
<td>NA</td>
<td>Bouwer and Rice (1976)</td>
<td>55</td>
<td>60</td>
<td>92</td>
<td>SFWMD (2012)</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO1_GW2 TOHO1</td>
<td>555547.647</td>
<td>1386041.739</td>
<td>N</td>
<td>9.4</td>
<td>ND</td>
<td>0.0091</td>
<td>AP</td>
<td>72</td>
<td>Hantush (1963)</td>
<td>ND</td>
<td>108</td>
<td>118</td>
<td>Valdez (2000)</td>
<td>Completed in ICU according to DBHYDRO</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO8_GW TOHO8</td>
<td>523957</td>
<td>1440281</td>
<td>N</td>
<td>0.3</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>53</td>
<td>63</td>
<td>Valdez (2000)</td>
<td>Completed in ICU according to DBHYDRO</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO15_GW TOHO15</td>
<td>572732.818</td>
<td>1401045.647</td>
<td>N</td>
<td>1.0</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>66</td>
<td>76</td>
<td>Valdez (2000)</td>
<td>Completed in ICU according to DBHYDRO</td>
<td></td>
</tr>
<tr>
<td>Osceola</td>
<td>TOHO16_W2 TOHO16-2</td>
<td>568717.724</td>
<td>1393533.633</td>
<td>N</td>
<td>1.0</td>
<td>ND</td>
<td>ND</td>
<td>S</td>
<td>N/A</td>
<td>Bouwer and Rice (1976)</td>
<td>ND</td>
<td>65</td>
<td>75</td>
<td>Valdez (2000)</td>
<td>Completed in ICU according to DBHYDRO</td>
<td></td>
</tr>
<tr>
<td>Polk</td>
<td>W-16305 ROMP55</td>
<td>477890.053</td>
<td>1255949.720</td>
<td>N</td>
<td>0.000405</td>
<td>5013</td>
<td>0.00013</td>
<td>AP</td>
<td>36</td>
<td>ND</td>
<td>97</td>
<td>109</td>
<td>205</td>
<td>Decker (1988)</td>
<td>ICU Test</td>
<td></td>
</tr>
</tbody>
</table>

* All depths are in feet below top of casing.
* AP = aquifer performance test, single well or multiple wells; bls = below land surface; HK = hydraulic conductivity (estimate based on an aquifer thickness of 50 feet); N/A = not applicable; ND = no data; S = slug; SC = specific conductivity test; T = transmissivity.
4.0 WELL DEVELOPMENT

Well development was conducted prior to testing to remove any excess sediment that accumulated inside the well casings and within filter packs, and to assess pumping equipment most suitable for aquifer tests. Prior development information on wells selected for testing was not available, and several of the wells were found to have substantial sediment accumulation at the bottom of the well casing during the site visits. The field team mobilized to sites with pumping equipment suitable for a variety of well production capabilities, including the following:

- Geotech Geopump 2 peristaltic pump (battery powered), which generally pumped 0.25 to 2 gallons per minute (gpm);
- Geotech Geosquirt purge pump (downhole, battery powered), which pumped 1 to 3 gpm;
- Grundfos Ready Flow 2 (downhole electrical), which pumped 2 to 10 gpm;
- Honda WX15 centrifugal pump (gasoline), which pumped 2 to 20 gpm; and
- Honda WB20X centrifugal pump (gasoline), which pumped 20 to 50 gpm.

At most sites, well development was performed during separate site visits prior to pump tests to optimize field logistics, and allow for water table recovery prior to the aquifer tests.

Well development generally consisted of alternately pumping wells at the pump’s highest rate and surging with a rubber gasket on a polyvinylchloride (PVC) surge rod. Wells were pumped for approximately 5 minutes followed by 5 minutes of surging, for three cycles, and then pumped for periods of 1 to 2 hours, with the exception of wells that were pumped dry. Wells with low production that quickly pumped dry and wells with relatively good water quality were not surged. For wells that were not pumped dry, development was deemed complete when development parameters, including specific conductance (SPC), pH, and temperature were stabilized, and turbidity was less than 50 nephelometric turbidity units (NTU).

5.0 AQUIFER PERFORMANCE TESTS

SFWMD staff performed short-term aquifer performance tests on the 15 selected wells from April 16, 2008 through July 31, 2008. For each test, an In-Situ Hermit 3000 data logger recorded the results from PXD-261 pressure transducers, which were installed in each well to continuously collect water level data during each test. PXD-261 pressure transducers also were installed in paired wells completed in adjacent aquifers if available. Static water levels were measured manually before and after each test. Drawdown tests were performed for a minimum of 1 hour and until the drawdown curves leveled off, after which pumps were turned off and the recovery test initiated. Recovery data were recorded until each well neared background conditions after pumping, typically within 30 minutes to 2 hours after turning off the pump. Three wells (OSS-53, OSF-62, and OSS-66) did not have usable drawdown curves due to pump cavitation, and the drawdown test was not run for the entire period. A summary of test parameters, including pumping rates, well drawdowns, test duration, and well development details, is presented in Table 3.
Table 3. Aquifer Test Parameters.

<table>
<thead>
<tr>
<th>Well</th>
<th>Site</th>
<th>Test Date</th>
<th>Well Diameter (in.)</th>
<th>Screen Int.* (ft)</th>
<th>Depth to Water* (ft)</th>
<th>Pump Rate (gpm)</th>
<th>Pump Type</th>
<th>Feet of Drawdown</th>
<th>Drawdown Time (min.)</th>
<th>Recovery Time (min.)</th>
<th>Development Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL1W2</td>
<td>Alligator Lake</td>
<td>5/14/2008</td>
<td>2</td>
<td>13-23</td>
<td>7.31</td>
<td>4.3</td>
<td>Small G 400 Hz</td>
<td>1.813</td>
<td>103</td>
<td>104</td>
<td>Developed 1:51 until clear on 4/29/2008</td>
</tr>
<tr>
<td>ALL2W2</td>
<td>Alligator Lake</td>
<td>6/24/2008</td>
<td>2</td>
<td>12-22</td>
<td>8.01</td>
<td>5.3</td>
<td>Small G 400 Hz</td>
<td>4.124</td>
<td>102</td>
<td>73</td>
<td>Developed 1:43 until clear on 5/07/2008</td>
</tr>
<tr>
<td>ORS-29</td>
<td>SW15</td>
<td>6/11/2008</td>
<td>4</td>
<td>13-23</td>
<td>12.14</td>
<td>0.25</td>
<td>Peristaltic</td>
<td>3.8</td>
<td>102</td>
<td>103</td>
<td>Pumped dry in 3 minutes at 1 gpm on 5/21/2008</td>
</tr>
<tr>
<td>OSS-64</td>
<td>Cypress Lake</td>
<td>6/23/2008</td>
<td>2</td>
<td>13-23</td>
<td>15.19</td>
<td>1.74</td>
<td>Small G 225Hz</td>
<td>3.85</td>
<td>101</td>
<td>78</td>
<td>Pumped dry in 8 minutes at 2.5 gpm on 4/30/2008</td>
</tr>
<tr>
<td>OSS-66</td>
<td>Chicken Ranch</td>
<td>7/30/2008</td>
<td>2</td>
<td>21-31</td>
<td>6.93</td>
<td>2.8</td>
<td>Small C</td>
<td>17</td>
<td>N/A</td>
<td>104</td>
<td>Pumped and surged for 1:34 on 5/15/2008. Much cavitation during drawdown test</td>
</tr>
<tr>
<td>OSS-73</td>
<td>S65</td>
<td>7/31/2008</td>
<td>4</td>
<td>?-27</td>
<td>11.28</td>
<td>16.7</td>
<td>Small C</td>
<td>11.5</td>
<td>101</td>
<td>103</td>
<td>Pumped dry in 12 minutes at 20 gpm on 4/21/2008</td>
</tr>
<tr>
<td>OSS-76</td>
<td>Yeehaw</td>
<td>4/16/2008</td>
<td>4</td>
<td>20-30</td>
<td>4.32</td>
<td>50</td>
<td>Large C</td>
<td>10.9</td>
<td>109</td>
<td>104</td>
<td>Pumped dry in 9 minutes at 13 gpm on 1/30/2008</td>
</tr>
<tr>
<td>OSS-77</td>
<td>Lake Marian</td>
<td>5/18/2008</td>
<td>4</td>
<td>22-32</td>
<td>9.21</td>
<td>18</td>
<td>Small C</td>
<td>14.4</td>
<td>101</td>
<td>80</td>
<td>Pumped and surged for 1 hour on 4/30/2008</td>
</tr>
<tr>
<td>POS-4</td>
<td>River Ranch</td>
<td>6/24/2008</td>
<td>4</td>
<td>9-19</td>
<td>6.66</td>
<td>2.6</td>
<td>Small G 225 Hz</td>
<td>4.3</td>
<td>101</td>
<td>15</td>
<td>Pumped 17 minutes at 1 gpm on 4/9/2008</td>
</tr>
</tbody>
</table>

* In feet below top of casing.
N/A = not applicable; Small C = small centrifugal; Large C = large centrifugal; Small G = small Grundfos.
6.0 AQUIFER TEST ANALYSIS AND RESULTS

Once the field component of the task was complete, data were downloaded and graphed; displacement and drawdown data were formatted for input into Aqtesolv Pro (Version 4.5) for analysis. Various analytical solutions appropriate for single well tests with unconfined aquifers and wells with full or partial penetration were used, including Moench (1997), Cooper-Jacob (1946), and Neuman (1974). The solution with the best curve fit was chosen for the final test result. All of the final solutions selected were analyzed using the Moench (1997) solution for partially penetrating wells. In general, the curve fits were good and there was consistency between the drawdown and recovery curves, with high confidence in most tests results. The three wells mentioned earlier (OSS-53, OSF-62, and OSS-66) did not have usable drawdown curves due to pump cavitation, and the recovery curve was used for analysis. Four wells (ORS-5, ORS-29, OSS-64, and OSS-77) only had one usable curve, either drawdown or recovery. Test results, including estimated transmissivity, drawdown and recovery times, test used, and final hydraulic conductivity, are shown Table 4.

Lithology logs of 7 of the 15 tested wells were available for review. Five of the borings described the tested intervals as quartz sand, one as medium to coarse sand, and one as medium to fine sand. Lithology descriptions were not available for the two tests with lowest hydraulic conductivity results (ORS-29 and ORS-1).

7.0 SUMMARY AND CONCLUSIONS

In 2007 and 2008, an aquifer testing program was conducted for the SAS in the KPA and a 5-mile buffer zone to provide hydraulic data in support of developing the ECFT model. Site accessibility and well construction at 50 monitor wells were evaluated for suitability for testing; of those, 15 were prioritized for testing based on spatial arrangement to minimize data gaps and screen intervals. Fifteen short-term aquifer tests were conducted and analyzed using Aqtesolv Pro (Version 4.5) software. Transmissivity values ranging from 21 to 2,085 square feet per day were obtained. Using an average aquifer thickness of 50 feet, calculated hydraulic conductivity estimates ranged from 0.4 to 39 feet per day. The best drawdown and recovery curve matches were found with the Moench (1997) solution method, which was used to provide final transmissivity estimates. Additionally, published test data were provided for 52 monitor wells completed in the SAS and 8 monitor wells completed in the ICU.
Table 4. Aquifer Test Results.

<table>
<thead>
<tr>
<th>Well</th>
<th>Site</th>
<th>b</th>
<th>Drawdown Analysis Method</th>
<th>Recovery Analysis Method</th>
<th>Drawdown Transmissivity (ft²/d)</th>
<th>Recovery Transmissivity (ft²/d)</th>
<th>Final Transmissivity (ft²/d)</th>
<th>Final Hydraulic Conductivity (K) (ft/d)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>All1W2</td>
<td>Alligator Lake</td>
<td>50</td>
<td>Moench¹</td>
<td>Moench</td>
<td>1,970</td>
<td>1,935</td>
<td>1,935</td>
<td>39</td>
<td>Recovery is best fit</td>
</tr>
<tr>
<td>ALL2W2</td>
<td>Alligator Lake</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>927</td>
<td>1134</td>
<td>927</td>
<td>19</td>
<td>Drawdown is best fit</td>
</tr>
<tr>
<td>IC-SAS</td>
<td>Intercession City</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>484</td>
<td>630</td>
<td>630</td>
<td>13</td>
<td>Good drawdown and recovery match</td>
</tr>
<tr>
<td>ORS-1</td>
<td>Skylake</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>63</td>
<td>64</td>
<td>63</td>
<td>1.3</td>
<td>Good drawdown and recovery match</td>
</tr>
<tr>
<td>ORS-5</td>
<td>TM Ranch</td>
<td>50</td>
<td>Moench</td>
<td>ND</td>
<td>2,085</td>
<td>1,326</td>
<td>2,085</td>
<td>42</td>
<td>Drawdown has good fit, recovery poor fit</td>
</tr>
<tr>
<td>ORS-29</td>
<td>SW15</td>
<td>50</td>
<td>Moench</td>
<td>ND</td>
<td>21</td>
<td>ND</td>
<td>21</td>
<td>0.4</td>
<td>Recovery curve is poor fit</td>
</tr>
<tr>
<td>OSF-53</td>
<td>Southport</td>
<td>50</td>
<td>N/A</td>
<td>Moench</td>
<td>N/A</td>
<td>1,123</td>
<td>1,123</td>
<td>22</td>
<td>Good recovery match, drawdown not used due to cavitation</td>
</tr>
<tr>
<td>OSF-62</td>
<td>South Turnpike</td>
<td>50</td>
<td>N/A</td>
<td>Moench</td>
<td>N/A</td>
<td>117</td>
<td>117</td>
<td>2.3</td>
<td>Good recovery match, drawdown not used due to cavitation</td>
</tr>
<tr>
<td>OSS-64</td>
<td>Cypress Lake</td>
<td>50</td>
<td>Moench</td>
<td>N/A</td>
<td>146</td>
<td>N/A</td>
<td>146</td>
<td>2.9</td>
<td>Failed recovery test</td>
</tr>
<tr>
<td>OSS-66</td>
<td>Chicken Ranch</td>
<td>50</td>
<td>N/A</td>
<td>Moench</td>
<td>N/A</td>
<td>188</td>
<td>188</td>
<td>3.8</td>
<td>Good recovery curve, cavitation during pump test Well too sandy for downhole pumps</td>
</tr>
<tr>
<td>OSS-73</td>
<td>565</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>386</td>
<td>357</td>
<td>386</td>
<td>7.1</td>
<td>Good drawdown and recovery match</td>
</tr>
<tr>
<td>OSS-76</td>
<td>Yeehaw</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>1,498</td>
<td>1,112</td>
<td>1,498</td>
<td>30</td>
<td>Drawdown is best fit</td>
</tr>
<tr>
<td>OSS-77</td>
<td>Lake Marian</td>
<td>50</td>
<td>Neuman²</td>
<td>Moench</td>
<td>282</td>
<td>430</td>
<td>430</td>
<td>8.6</td>
<td>Good recovery curve, poor drawdown curve</td>
</tr>
<tr>
<td>POS-4</td>
<td>River Ranch</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>316</td>
<td>310</td>
<td>310</td>
<td>6.2</td>
<td>Good drawdown and recovery match</td>
</tr>
<tr>
<td>POS-6</td>
<td>Snively</td>
<td>50</td>
<td>Moench</td>
<td>Moench</td>
<td>1,307</td>
<td>1,275</td>
<td>1,307</td>
<td>26</td>
<td>Drawdown is best fit, good drawdown and recovery match</td>
</tr>
</tbody>
</table>

b = saturated thickness of SAS; N/A = not applicable; ND = no data.
Note: Hydraulic conductivity estimates shown are calculated using an assumed aquifer thickness of 50 feet.

¹ Moench (1997) solution used for unconfined aquifers. Assumes full or partial penetration, homogeneous, isotropic aquifer. Includes wellbore storage and skin effect estimation.
8.0 REFERENCES


HydroSOLVE, Inc. 2007. AQTESOLV Pro (Version 4.5) software. Reston, VA.


Theis, C.V. 1935. The relations between the lower of the Piezometric Surface and the rate and duration of discharge of a well using groundwater storage. American Geophysical Union Transactions 16:519-524.