Collier County™
POLLUTION CONTROL
LIVE GREEN. SAVE BLUE.

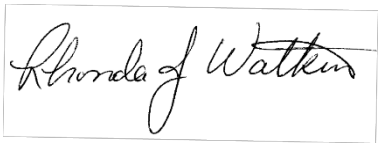
Tuesday, October 22, 2019

Andrew Potts
Basin Infrastructure and Ops Analyst
Big Cypress Basin, SFWMD
2660 N. Horseshoe Drive Suite 101A
Naples, FL 34104

Dear Andrew,

Please find below the FY19 Groundwater Report that satisfies Task 2 of South Florida Water Management District's Purchase Order #PO 4500110299. The report includes a summary of program activities, problems encountered, and exceedances of groundwater standards. The electronic data deliverables were provided to you on a portable flash drive. If you have any questions, please contact me at (239) 252-2502 or Rhonda.Watkins@colliercountyfl.gov.

Sincerely,



Rhonda J. Watkins
Principal Environmental Specialist

I. Introduction

This report satisfies the requirements of Task 2 of Purchase Order 4500110299 between Collier County Pollution Control and the South Florida Water Management District for the collection and analyses of groundwater quality samples in Collier County.

II. Scope of Work

Forty-eight ground water wells are monitored semi-annually; once during the dry season (February-April) and once during the wet season (July-September). These sites are listed in Appendix A. An additional three, randomly selected, residential drinking water wells (surficial aquifer) are also sampled semi-annually. See Figure 1 for a map of the sampling station locations. All the samples collected are analyzed for the parameters listed in Appendix B.

III. Program Activities

Purging and sampling of wells followed the Collier County Pollution Control Field Sampling Quality Manual; Florida Department of Environmental Protection's (FDEP) Standard Operating Procedures (SOPs) *DEP-SOP-001/01FS 2200 Groundwater Sampling*; and the SOPs referenced therein.

All chemical parameters for this project were analyzed by the Collier County Pollution Control Laboratory (CCPCL) or PACE Analytical, Inc., (PACE) laboratory. All laboratories held current National Environmental Laboratory Accreditation Program (NELAP) certification for all the parameters being analyzed for this project. Physical measurements of pH, dissolved oxygen, specific conductance, and temperature were obtained during well purging and stabilization using a Yellow Springs Instrument (YSI) ProDSS multi-probe and flow-through cell. Field turbidity measurements were also obtained as part of the purge stabilization process using a HF Scientific MicroTPW portable field meter. However, the turbidity readings provided in the data reports are those obtained through laboratory analysis.

For the random well monitoring portion of the contract, wells were randomly selected from the county's well permit records. Letters of intent were sent to the property owners requesting their voluntary participation in the project. To be considered for sampling, each well was required to have a spigot at the well-head to prevent any potential sample contamination from the on-site treatment system. Samples were collected directly from the spigot. Copies of the laboratory results and explanation of the results were sent to the well owners.

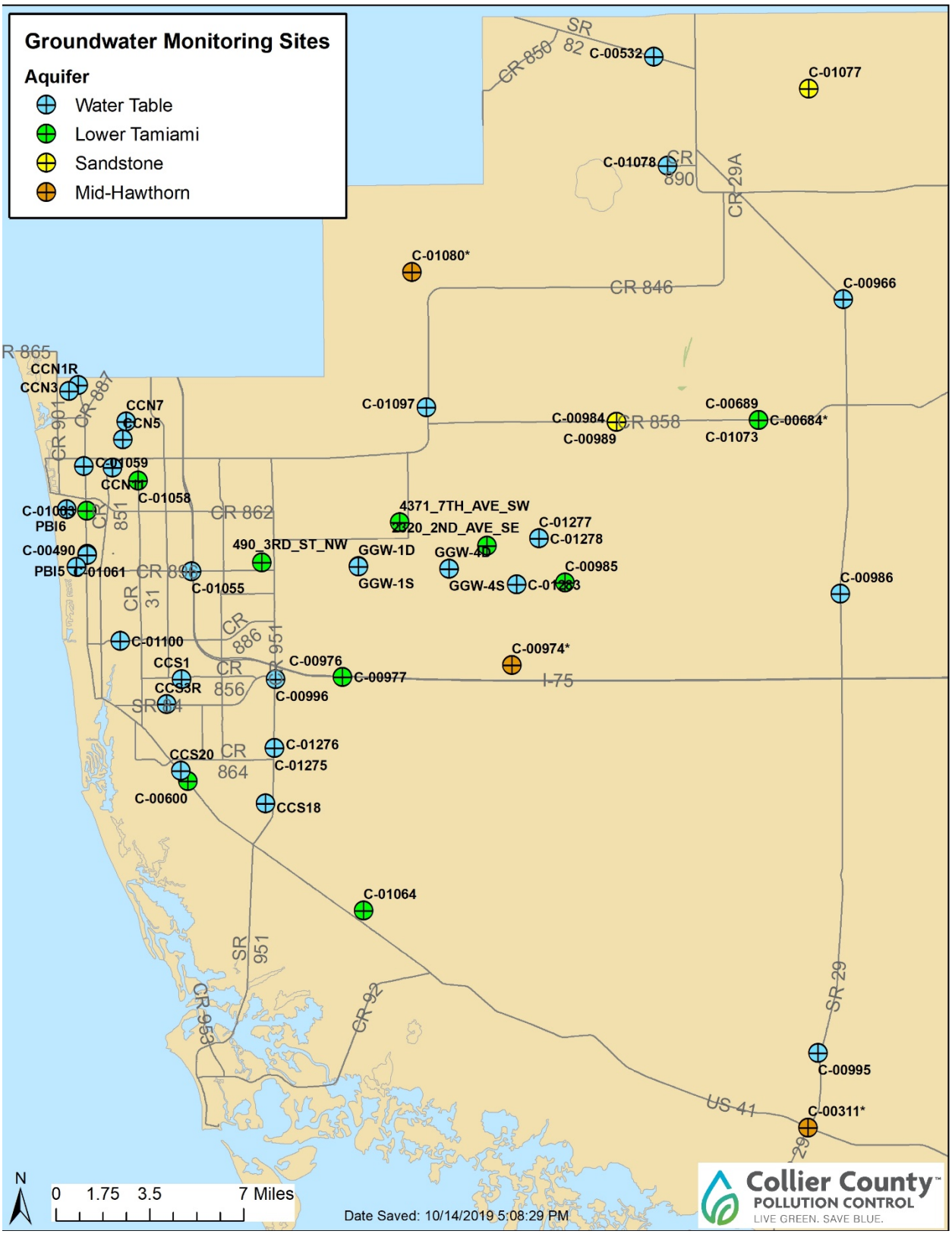


Figure 1. Groundwater Monitoring Sites

IV. Problems Encountered

Please see Appendix C for the sampling and laboratory analytical status of each well.

A. Well CCS20 appears to have collapsed and is filled with soil. An attempt to re-develop the well to its original depth was unsuccessful. This well will likely need to be abandoned. A new well will need to be drilled in its place if samples of the Water Table aquifer in this location are desirable.

B. Some metals and all total phosphorus samples analyzed during the dry season were "Y" qualified due to improper preservation in the laboratory. Any metals that were still within holding time were reanalyzed with proper preservation. The total phosphorus samples could not be reanalyzed.

C. Between the dry season and wet Season of FY19, the Florida Department of Environmental Protection's (FDEP's) Quality Assurance section updated their interpretation of holding times that are measured in "days". Sulfide analyzed by PACE Analytical, Inc. during the wet season of FY19 was in conflict with this recent interpretation for holding times. Therefore, most of the sulfide data for the wet season sampling were "Q" qualified because they were analyzed outside the acceptable holding time. PACE has been notified of this new holding time interpretation in writing.

V. Data Validity

The data provided in this report have been checked for accuracy and completeness and the Collier County Pollution Control attests to the validity of these results. All data qualifiers follow Florida Administrative Code (FAC) 62-160 Table 1.

All CCPCL and PACE data have been submitted using the ADaPT software and the quality control checks provided in the software were applied. Calibration logs for field instruments were reviewed and all associated data that were outside the quality control criteria were qualified using a "J" flag in the electronic data report.

The field data deliverable is now formatted to include the Florida Department of Environmental Protection's Watershed Information Network (WIN) database required fields.

VI. Exceedances

Appendix D provides a list of all FY19 groundwater results that were in exceedance of the Primary and Secondary Drinking Water Standards, Florida Administrative Code (FAC) Chapter 62-550. These standards were adopted and referenced as the state's ground water

quality standards by FAC Chapter 62-520. Table 1 shows the frequency of exceedances in each aquifer.

Table 1. Frequency of Groundwater Exceedances by Aquifer in FY19

Water Table	
Arsenic	12%
Chloride	7%
Iron	61%
Manganese	7%
pH	27%
Residues- Filterable (TDS)	34%
Sodium	3%
Lower Tamiami	
Chloride	19%
Iron	45%
Residues- Filterable (TDS)	45%
Sodium	13%
Sulfate	6%
Sandstone	
Chloride	38%
Residues- Filterable (TDS)	75%
Sodium	75%
Mid-Hawthorn	
Chloride	50%
Residues- Filterable (TDS)	75%
Sodium	75%
Sulfate	38%

Appendix A
Station Names

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer
C-00311*	25.91073	-81.36497	4	450	Mid-Hawthorn
C-00490	26.22061	-81.80033	2	71	Lower Tamiami
C-00532	26.49212	-81.45981	4	13	Water Table
C-00600	26.09751	-81.73882	4	52	Lower Tamiami
C-00684*	26.29509	-81.39595	4	490	Mid-Hawthorn
C-00689	26.29503	-81.39590	4	265	Sandstone
C-00966	26.36076	-81.34512	6	40	Water Table
C-00974*	26.16144	-81.54414	6	460	Mid-Hawthorn
C-00976	26.15455	-81.64602	6	40	Water Table
C-00977	26.15455	-81.64602	6	140	Lower Tamiami
C-00984	26.29376	-81.48174	6	40	Water Table
C-00986	26.20074	-81.34631	6	40	Water Table
C-00995	25.95146	-81.35902	2	37	Water Table
C-00996	26.15325	-81.68632	4	24	Water Table
C-01003	26.24410	-81.80062	4	61	Lower Tamiami
C-01055	26.21139	-81.73732	4	25	Water Table
C-01058	26.26047	-81.76987	4	80	Lower Tamiami
C-01059	26.26822	-81.80247	4	25	Water Table
C-01064	26.02782	-81.63253	4	120	Lower Tamiami
C-01073	26.29506	-81.39589	4	160	Lower Tamiami
C-01077	26.47511	-81.36628	4	210	Sandstone
C-01078	26.43294	-81.45130	4	38	Water Table
C-01080*	26.37469	-81.60542	4	309	Mid-Hawthorn
C-01097	26.30108	-81.59621	4	18	Water Table
C-01100	26.17345	-81.78002	4	20	Water Table
C-01275	26.11573	-81.68668	2	118	Lower Tamiami
C-01276	26.11575	-81.68668	2	15	Water Table
C-01277	26.23030	-81.52810	2	133	Lower Tamiami
C-01278	26.23032	-81.52809	2	13	Water Table
C-01283	26.20519	-81.54130	4	40	Water Table
CCN1	26.31224	-81.80631	2	18	Water Table
CCN3	26.30902	-81.81172	2	14	Water Table
CCS1	26.15294	-81.74300	2	15	Water Table
CCS3	26.13934	-81.75183	2	15	Water Table
GGW-1D	26.21468	-81.63681	4	61	Lower Tamiami
GGW-1S	26.21465	-81.63682	4	15	Water Table
GGW-4D	26.21363	-81.58222	4	77	Lower Tamiami
GGW-4S	26.21361	-81.58223	4	16	Water Table
C-00985	26.20632	-81.51226	6	160	Lower Tamiami
C-00989	26.29374	-81.48138	6	270	Sandstone

Appendix A
Station Names

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer
C-01061	26.21996	-81.80019	4	25	Water Table
CCN11	26.26758	-81.78540	2	12	Water Table
CCN5	26.28293	-81.77914	2	17	Water Table
CCN7	26.29266	-81.77720	2	18.05	Water Table
CCS18	26.08567	-81.69196	2	9	Water Table
CCS20	26.10321	-81.74303	2	11	Water Table
PBI5	26.21356	-81.80671	2	13	Water Table
PBI6	26.24482	-81.81283	2	12	Water Table
2320_2ND_AVE_SE	26.22619	-81.55938	4	98	Lower Tamiami
490_3RD_ST_NW	26.23878	-81.61207	4	110	Lower Tamiami
4371_7TH_AVE_SW	26.21652	-81.69490	4	60	Lower Tamiami

* Artesian

Appendix B
Parameters and Sampling Frequency

Frequency	Parameter	Method
Semi-annually	Alkalinity	SM18 2320 B
Semi-annually	Ammonia	EPA 350.1 No Distillation (NH3)
Semi-annually	Arsenic (total)	EPA 200.8 (As)
Semi-annually	Barium (total)	EPA 200.8 (Ba)
Semi-annually	Cadmium (total)	EPA 200.8 (Cd)
Semi-annually	Calcium	EPA 200.7 (Ca)
Semi-annually	Chloride	EPA 300.0 (Chloride)
Semi-annually	Chromium (total)	EPA 200.8 (Cr)
Semi-annually	Copper (total)	EPA 200.8 (Cu)
Semi-annually	E. Coli*	Colilert/QT 2000
Semi-annually	Fluoride	EPA 300.0 (Fluoride)
Semi-annually	Hardness (total)	SM18 2340 B
Semi-annually	Iron	EPA 200.7 (Fe)
Semi-annually	Lead (total)	EPA 200.8 (Pb)
Semi-annually	Magnesium (total)	EPA 200.7 (Mg)
Semi-annually	Manganese (total)	EPA 200.8 (Mn)
Semi-annually	Nickel (total)	EPA 200.8 (Ni)
Semi-annually	Nitrate	EPA 300.0 (Nitrate (N))
Semi-annually	Nitrate/Nitrite (NOX)	NO2+NO3
Semi-annually	Nitrite	EPA 300.0 (Nitrite (N))
Semi-annually	Ortho-phosphate	SM18 4500-P E (Orthophosphate)
Semi-annually	Potassium	EPA 200.7 (K)
Semi-annually	Selenium (total)	EPA 200.8 (Se)
Semi-annually	Silver (total)	EPA 200.8 (Ag)
Semi-annually	Sodium	EPA 200.7 (Na)
Semi-annually	Strontium (total)	EPA 200.7 (Sr)
Semi-annually	Sulfate	EPA 300.0 (Sulfate)
Semi-annually	Sulfide	SM18 4500-S E
Semi-annually	Total Dissolved Solids	SM18 2540 C
Semi-annually	Residues- Nonfilterable (TSS)	SM18 2540 D
Semi-annually	Total Kjeldahl Nitrogen	EPA 351.2
Semi-annually	Total Nitrogen	TKN+NO3+NO2
Semi-annually	Total Phosphorus	EPA 200.8 (Phosphorus)
Semi-annually	Turbidity	SM18 2130B
Semi-annually	Zinc	EPA 200.8 (Zn)

*Only analyzed in private, potable wells

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Actual Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
C-00311*	25.91073	-81.36497	4	450	Closed system cannot determine	Mid-Hawthorn	03/05/2019	07/16/2019	
C-00490	26.22061	-81.80033	2	71	74.9	Lower Tamiami	03/21/2019	08/26/2019	
C-00532	26.49212	-81.45981	4	13	12.31	Water Table	02/06/2019	07/09/2019	
C-00600	26.09751	-81.73882	4	52	49.29	Lower Tamiami	03/04/2019	07/16/2019	
C-00684*	26.29509	-81.39595	4	490	Closed system cannot determine	Mid-Hawthorn	02/27/2019	08/13/2019	
C-00689	26.29503	-81.39590	4	265	265	Sandstone	02/27/2019	08/13/2019	
C-00966	26.36076	-81.34512	6	40	29.3	Water Table	02/07/2019	07/18/2019	
C-00974*	26.16144	-81.54414	6	460	Closed system cannot determine	Mid-Hawthorn	03/21/2019	09/10/2019	
C-00976	26.15455	-81.64602	6	40	37.12	Water Table	02/19/2019	07/25/2019	
C-00977	26.15455	-81.64602	6	140	130.5	Lower Tamiami	02/19/2019	07/25/2019	
C-00984	26.29376	-81.48174	6	40	42.6	Water Table	03/18/2019	07/30/2019	
C-00985	26.20632	-81.51226	6	160	173.04	Lower Tamiami	03/18/2019	07/30/2019	
C-00986	26.20074	-81.34631	6	40	39.53	Water Table	02/07/2019	08/01/2019	
C-00989	26.29374	-81.48138	6	270	Closed system cannot determine	Sandstone	03/18/2019	07/30/2019	
C-00995	25.95146	-81.35902	2	37	29.68	Water Table	03/05/2019	07/18/2019	
C-00996	26.15325	-81.68632	4	24	23.15	Water Table	04/04/2019	08/01/2019	
C-01003	26.24410	-81.80062	4	61	53.15	Lower Tamiami	03/21/2019	08/12/2019	
C-01055	26.21139	-81.73732	4	25	19.9	Water Table	03/21/2019	07/31/2019	
C-01058	26.26047	-81.76987	4	80	71.39	Lower Tamiami	04/04/2019	08/26/2019	
C-01059	26.26822	-81.80247	4	25	15.12	Water Table	03/11/2019	07/31/2019	
C-01061	26.21996	-81.80019	4	25	20.62	Water Table	03/21/2019	09/09/2019	
C-01064	26.02782	-81.63253	4	120	103.59	Lower Tamiami	03/04/2019	08/01/2019	
C-01073	26.29506	-81.39589	4	160	140.87	Lower Tamiami	02/27/2019	08/13/2019	

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Actual Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
C-01077	26.47511	-81.36628	4	210	Closed system cannot determine	Sandstone	02/04/2019	07/09/2019	
C-01078	26.43294	-81.45130	4	38	23.48	Water Table	02/06/2019	07/15/2019	
C-01080*	26.37469	-81.60542	4	309	Closed system cannot determine	Mid-Hawthorn	02/20/2019	07/25/2019	
C-01097	26.30108	-81.59621	4	18	18.03	Water Table	03/06/2019	07/25/2019	
C-01100	26.17345	-81.78002	4	20	14.04	Water Table	04/04/2019	08/26/2019	
C-01275	26.11573	-81.68668	2	118	116.55	Lower Tamiami	02/28/2019	08/01/2019	
C-01276	26.11575	-81.68668	2	15	20.39	Water Table	02/28/2019	08/01/2019	
C-01277	26.23030	-81.52810	2	133	133.8	Lower Tamiami	03/20/2019	08/20/2019	
C-01278	26.23032	-81.52809	2	13	10.92	Water Table	03/20/2019	08/20/2019	
C-01283	26.20519	-81.54130	4	40	40.05	Water Table	03/06/2019	09/10/2019	
CCN11	26.26758	-81.78540	2	12	15.71	Water Table	03/20/2019	08/20/2019	
CCN1R	26.31224	-81.80631	2	18	20.13	Water Table	03/11/2019	08/20/2019	
CCN3	26.30902	-81.81172	2	14	14.58	Water Table	03/11/2019	08/12/2019	
CCN5	26.28293	-81.77914	2	17	17.17	Water Table	03/20/2019	08/20/2019	Sulfide was not analyzed during the wet season due to sample being improperly preserved.
CCN7	26.29266	-81.77720	2	18.05	18.05	Water Table	03/20/2019	08/20/2019	
CCS1	26.15294	-81.74300	2	15	15.2	Water Table	03/14/2019	09/09/2019	
CCS18	26.08567	-81.69196	2	9	12.07	Water Table	03/06/2019	08/26/2019	
CCS20	26.10321	-81.74303	2	11		Water Table	No Sample	No Sample	Unable to collect sample in dry and wet seasons. Well appears to be collapsed. Attempt to develop well was unsuccessful.
CCS3R	26.13934	-81.75183	2	15	20.1	Water Table	02/19/2019	07/25/2019	
GGW-1D	26.21468	-81.63681	4	61	65.38	Lower Tamiami	03/14/2019	07/29/2019	
GGW-1S	26.21465	-81.63682	4	15	14.94	Water Table	03/14/2019	07/29/2019	
GGW-4D	26.21363	-81.58222	4	77	96	Lower Tamiami	03/14/2019	07/29/2019	

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Actual Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
GGW-4S	26.21361	-81.58223	4	16	15.73	Water Table	03/14/2019	07/29/2019	
PBI5	26.21356	-81.80671	2	13	14.85	Water Table	03/11/2019	08/12/2019	
PBI6	26.24482	-81.81283	2	12	15.3	Water Table	03/11/2019	08/12/2019	
2320_2ND_AVE_SE	26.22619	-81.55938	4	98	Closed system cannot determine	Lower Tamiami	04/02/2019	09/09/2019	
4371_7TH_AVE_SW	26.23878	-81.61207	4	110	Closed system cannot determine	Lower Tamiami	04/02/2019	09/09/2019	
490_3RD_ST_NW	26.21652	-81.69490	4	60	Closed system cannot determine	Lower Tamiami	04/02/2019	09/09/2019	

Appendix D
FY19 Exceedances

Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
CCN11	3/20/2019 12:41	Water Table	Arsenic	38.2	ug/L		0.05	10	
CCN11	8/20/2019 12:47	Water Table	Arsenic	34.6	ug/L		0.05	10	
CCN5	3/20/2019 11:36	Water Table	Arsenic	70.1	ug/L		0.1	10	
CCN5	8/20/2019 9:37	Water Table	Arsenic	54.7	ug/L		0.05	10	
CCN7	3/20/2019 9:46	Water Table	Arsenic	39.2	ug/L		0.05	10	
CCN7	8/20/2019 10:42	Water Table	Arsenic	59.4	ug/L		0.05	10	
CCN7	8/20/2019 10:50	Water Table	Arsenic	62.6	ug/L		0.05	10	
C-00311	3/5/2019 10:36	Mid-Hawthorn	Chloride	460	mg/L		0.5		250
C-00311	7/16/2019 10:15	Mid-Hawthorn	Chloride	441	mg/L		0.5		250
C-00974	3/21/2019 10:52	Mid-Hawthorn	Chloride	2110	mg/L		1.25		250
C-00974	9/10/2019 11:21	Mid-Hawthorn	Chloride	2020	mg/L		1.25		250
C-00977	2/19/2019 10:04	Lower Tamiami	Chloride	544	mg/L		0.5		250
C-00977	7/25/2019 9:52	Lower Tamiami	Chloride	555	mg/L		0.5		250
C-01064	3/4/2019 9:54	Lower Tamiami	Chloride	275	mg/L		0.25		250
C-01064	8/1/2019 9:33	Lower Tamiami	Chloride	327	mg/L		0.5		250
C-01077	2/4/2019 11:10	Sandstone	Chloride	379	mg/L		0.5		250
C-01077	2/4/2019 11:14	Sandstone	Chloride	376	mg/L		0.5		250
C-01077	7/9/2019 10:52	Sandstone	Chloride	407	mg/L		0.5		250

Appendix D
FY19 Exceedances

Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-01275	2/28/2019 10:29	Lower Tamiami	Chloride	1540	mg/L		1.25		250
C-01275	8/1/2019 10:13	Lower Tamiami	Chloride	1850	mg/L		1.25		250
C-01276	2/28/2019 11:03	Water Table	Chloride	303	mg/L		0.5		250
C-01276	8/1/2019 9:02	Water Table	Chloride	268	mg/L		0.5		250
CCN11	8/20/2019 12:47	Water Table	Chloride	298	mg/L		0.25		250
CCN5	8/20/2019 9:37	Water Table	Chloride	260	mg/L		0.5		250
2320_2ND_AVE_SE	4/2/2019 11:05	Lower Tamiami	Iron	593	ug/L		5		300
2320_2ND_AVE_SE	9/9/2019 10:07	Lower Tamiami	Iron	655	ug/L		5		300
490_3RD_ST_NW	4/2/2019 10:05	Lower Tamiami	Iron	1750	ug/L		5		300
490_3RD_ST_NW	9/9/2019 11:05	Lower Tamiami	Iron	2050	ug/L		5		300
C-00490	3/21/2019 11:02	Lower Tamiami	Iron	1030	ug/L		30		300
C-00490	8/26/2019 12:16	Lower Tamiami	Iron	1190	ug/L		5		300
C-00532	2/6/2019 9:38	Water Table	Iron	581	ug/L	Y	5		300
C-00532	7/9/2019 12:54	Water Table	Iron	464	ug/L		10		300
C-00600	3/4/2019 11:35	Lower Tamiami	Iron	713	ug/L		5		300
C-00600	7/16/2019 12:01	Lower Tamiami	Iron	844	ug/L		5		300
C-00966	2/7/2019 11:30	Water Table	Iron	1340	ug/L	Y	5		300
C-00966	7/18/2019 10:02	Water Table	Iron	3090	ug/L		5		300

Appendix D
FY19 Exceedances

Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-00984	3/18/2019 12:12	Water Table	Iron	3520	ug/L		5		300
C-00984	7/30/2019 11:28	Water Table	Iron	3620	ug/L		5		300
C-00986	8/1/2019 11:53	Water Table	Iron	452	ug/L		5		300
C-00995	3/5/2019 11:26	Water Table	Iron	451	ug/L	J	5		300
C-00995	7/18/2019 11:24	Water Table	Iron	465	ug/L		5		300
C-00996	4/4/2019 12:15	Water Table	Iron	1180	ug/L		5		300
C-00996	8/1/2019 11:43	Water Table	Iron	1430	ug/L		5		300
C-01003	3/21/2019 9:53	Lower Tamiami	Iron	3180	ug/L		5		300
C-01003	8/12/2019 12:59	Lower Tamiami	Iron	2770	ug/L		5		300
C-01055	3/21/2019 13:01	Water Table	Iron	2970	ug/L		5		300
C-01055	7/31/2019 10:49	Water Table	Iron	3010	ug/L		5		300
C-01059	3/11/2019 13:47	Water Table	Iron	8190	ug/L		5		300
C-01059	7/31/2019 9:35	Water Table	Iron	6820	ug/L		5		300
C-01061	3/21/2019 12:24	Water Table	Iron	313	ug/L		5		300
C-01064	3/4/2019 9:54	Lower Tamiami	Iron	3350	ug/L		5		300
C-01064	8/1/2019 9:33	Lower Tamiami	Iron	3280	ug/L		5		300
C-01078	2/6/2019 11:11	Water Table	Iron	2220	ug/L	Y	5		300
C-01078	7/15/2019 11:01	Water Table	Iron	2720	ug/L		5		300
C-01078	7/15/2019 11:07	Water Table	Iron	2610	ug/L		5		300
C-01097	3/6/2019 11:29	Water Table	Iron	3560	ug/L		5		300
C-01097	7/25/2019 13:01	Water Table	Iron	3240	ug/L		5		300
CCN11	3/20/2019 12:41	Water Table	Iron	3310	ug/L		5		300

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FY19 Exceedances

Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
CCN11	8/20/2019 12:47	Water Table	Iron	3250	ug/L		5		300
CCN1R	8/20/2019 11:49	Water Table	Iron	329	ug/L		5		300
CCN5	3/20/2019 11:36	Water Table	Iron	1890	ug/L		10		300
CCN5	8/20/2019 9:37	Water Table	Iron	3380	ug/L		5		300
CCS1	3/14/2019 13:48	Water Table	Iron	4070	ug/L		5		300
CCS1	9/9/2019 14:13	Water Table	Iron	5010	ug/L		5		300
CCS18	3/6/2019 12:52	Water Table	Iron	1460	ug/L		5		300
CCS18	8/26/2019 10:52	Water Table	Iron	1430	ug/L		5		300
GGW-1D	3/14/2019 12:37	Lower Tamiami	Iron	659	ug/L		5		300
GGW-1D	7/29/2019 11:50	Lower Tamiami	Iron	662	ug/L		5		300
GGW-1S	3/14/2019 11:36	Water Table	Iron	994	ug/L		5		300
GGW-1S	7/29/2019 12:39	Water Table	Iron	1590	ug/L		5		300
GGW-4S	3/14/2019 10:32	Water Table	Iron	693	ug/L		5		300
GGW-4S	7/29/2019 10:44	Water Table	Iron	961	ug/L		5		300
PBI5	3/11/2019 9:27	Water Table	Iron	3770	ug/L		5		300
PBI5	8/12/2019 9:08	Water Table	Iron	5700	ug/L		10		300
CCN11	3/20/2019 12:41	Water Table	Manganese	86.4	ug/L		0.075		50
CCN11	8/20/2019 12:47	Water Table	Manganese	148	ug/L		0.075		50
CCN5	3/20/2019 11:36	Water Table	Manganese	2190	ug/L		0.15		50
CCN5	8/20/2019 9:37	Water Table	Manganese	3237	ug/L		3.75		50
C-00532	2/6/2019 9:38	Water Table	pH	6.08	SU				6.5 – 8.5
C-00532	7/9/2019 12:54	Water Table	pH	6.17	SU				6.5 – 8.5
C-01059	7/31/2019 9:35	Water Table	pH	6.48	SU				6.5 – 8.5

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FY19 Exceedances

Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-01061	3/21/2019 12:24	Water Table	pH	5.70	SU				6.5 – 8.5
C-01061	9/9/2019 10:38	Water Table	pH	5.67	SU				6.5 – 8.5
C-01078	2/6/2019 11:11	Water Table	pH	6.17	SU				6.5 – 8.5
C-01078	7/15/2019 11:01	Water Table	pH	6.00	SU				6.5 – 8.5
C-01078	7/15/2019 11:07	Water Table	pH	6.00	SU				6.5 – 8.5
CCN11	3/20/2019 12:41	Water Table	pH	6.32	SU				6.5 – 8.5
CCN3	3/11/2019 12:04	Water Table	pH	6.31	SU				6.5 – 8.5
CCN3	8/12/2019 10:45	Water Table	pH	6.25	SU				6.5 – 8.5
CCN5	3/20/2019 11:36	Water Table	pH	6.40	SU				6.5 – 8.5
CCN5	8/20/2019 9:37	Water Table	pH	6.35	SU				6.5 – 8.5
CCN5	9/9/2019 12:10	Water Table	pH	6.24	SU				6.5 – 8.5
PBI6	3/11/2019 10:15	Water Table	pH	6.33	SU				6.5 – 8.5
PBI6	8/12/2019 9:57	Water Table	pH	6.22	SU				6.5 – 8.5
4371_7TH_AVE_SW	9/9/2019 11:53	Lower Tamiami	Residues- Filterable (TDS)	512	mg/L		20		500
C-00311	3/5/2019 10:36	Mid-Hawthorn	Residues- Filterable (TDS)	1340	mg/L		2		500
C-00311	7/16/2019 10:15	Mid-Hawthorn	Residues- Filterable (TDS)	1320	mg/L		20		500
C-00600	3/4/2019 11:35	Lower Tamiami	Residues- Filterable (TDS)	501	mg/L		2		500
C-00684	2/27/2019 12:39	Mid-Hawthorn	Residues- Filterable (TDS)	2430	mg/L	JQ	2		500
C-00684	8/13/2019 12:52	Mid-Hawthorn	Residues- Filterable (TDS)	2440	mg/L		20		500
C-00974	3/21/2019 10:52	Mid-Hawthorn	Residues- Filterable (TDS)	4200	mg/L	J	2		500

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Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-00974	9/10/2019 11:21	Mid-Hawthorn	Residues- Filterable (TDS)	4150	mg/L		20		500
C-00977	2/19/2019 10:04	Lower Tamiami	Residues- Filterable (TDS)	1480	mg/L	J	2		500
C-00977	7/25/2019 9:52	Lower Tamiami	Residues- Filterable (TDS)	1530	mg/L		20		500
C-00989	3/18/2019 11:25	Sandstone	Residues- Filterable (TDS)	806	mg/L		2		500
C-00989	7/30/2019 10:32	Sandstone	Residues- Filterable (TDS)	844	mg/L		20		500
C-00989	7/30/2019 10:37	Sandstone	Residues- Filterable (TDS)	832	mg/L		20		500
C-01058	4/4/2019 8:52	Lower Tamiami	Residues- Filterable (TDS)	684	mg/L	J	2		500
C-01058	8/26/2019 10:20	Lower Tamiami	Residues- Filterable (TDS)	690	mg/L		20		500
C-01064	3/4/2019 9:54	Lower Tamiami	Residues- Filterable (TDS)	910	mg/L	J	2		500
C-01064	8/1/2019 9:33	Lower Tamiami	Residues- Filterable (TDS)	1030	mg/L		20		500
C-01073	2/27/2019 10:39	Lower Tamiami	Residues- Filterable (TDS)	557	mg/L	Q	2		500
C-01073	8/13/2019 13:22	Lower Tamiami	Residues- Filterable (TDS)	547	mg/L		20		500
C-01077	2/4/2019 11:10	Sandstone	Residues- Filterable (TDS)	1070	mg/L	J	2		500
C-01077	2/4/2019 11:14	Sandstone	Residues- Filterable (TDS)	1080	mg/L	J	2		500
C-01077	7/9/2019 10:52	Sandstone	Residues- Filterable (TDS)	1050	mg/L		20		500

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FY19 Exceedances

Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-01100	4/4/2019 10:22	Water Table	Residues- Filterable (TDS)	536	mg/L		2		500
C-01100	8/26/2019 13:48	Water Table	Residues- Filterable (TDS)	562	mg/L		20		500
C-01275	2/28/2019 10:29	Lower Tamiami	Residues- Filterable (TDS)	3340	mg/L	J	2		500
C-01275	8/1/2019 10:13	Lower Tamiami	Residues- Filterable (TDS)	3280	mg/L		20		500
C-01276	2/28/2019 11:03	Water Table	Residues- Filterable (TDS)	1120	mg/L	J	2		500
C-01276	8/1/2019 9:02	Water Table	Residues- Filterable (TDS)	1070	mg/L	J	20		500
C-01283	3/6/2019 9:48	Water Table	Residues- Filterable (TDS)	500	mg/L		2		500
C-01283	3/6/2019 9:55	Water Table	Residues- Filterable (TDS)	500	mg/L		2		500
C-01283	9/10/2019 12:08	Water Table	Residues- Filterable (TDS)	514	mg/L		20		500
CCN11	3/20/2019 12:41	Water Table	Residues- Filterable (TDS)	645	mg/L		2		500
CCN11	8/20/2019 12:47	Water Table	Residues- Filterable (TDS)	898	mg/L		20		500
CCN1R	3/11/2019 11:19	Water Table	Residues- Filterable (TDS)	634	mg/L		2		500
CCN3	3/11/2019 12:04	Water Table	Residues- Filterable (TDS)	528	mg/L		2		500
CCN3	8/12/2019 10:45	Water Table	Residues- Filterable (TDS)	565	mg/L		20		500
CCN5	3/20/2019 11:36	Water Table	Residues- Filterable (TDS)	746	mg/L		2		500

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Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
CCN5	8/20/2019 9:37	Water Table	Residues- Filterable (TDS)	980	mg/L		20		500
CCS3R	2/19/2019 11:42	Water Table	Residues- Filterable (TDS)	609	mg/L		2		500
CCS3R	7/25/2019 13:04	Water Table	Residues- Filterable (TDS)	510	mg/L		20		500
GGW-1D	3/14/2019 12:37	Lower Tamiami	Residues- Filterable (TDS)	578	mg/L		2		500
GGW-1D	7/29/2019 11:50	Lower Tamiami	Residues- Filterable (TDS)	592	mg/L		20		500
PBI5	3/11/2019 9:27	Water Table	Residues- Filterable (TDS)	511	mg/L		2		500
PBI5	8/12/2019 9:08	Water Table	Residues- Filterable (TDS)	609	mg/L		20		500
PBI6	3/11/2019 10:15	Water Table	Residues- Filterable (TDS)	742	mg/L		2		500
PBI6	8/12/2019 9:57	Water Table	Residues- Filterable (TDS)	662	mg/L		20		500
C-00311	3/5/2019 10:36	Mid-Hawthorn	Sodium	425	mg/L		0.75	160	
C-00311	7/16/2019 10:15	Mid-Hawthorn	Sodium	421	mg/L		0.75	160	
C-00684	2/27/2019 12:39	Mid-Hawthorn	Sodium	389	mg/L	Y	0.25	160	
C-00684	8/13/2019 12:52	Mid-Hawthorn	Sodium	358	mg/L		0.75	160	
C-00974	3/21/2019 10:52	Mid-Hawthorn	Sodium	1120	mg/L		1.5	160	
C-00974	9/10/2019 11:21	Mid-Hawthorn	Sodium	1050	mg/L		1.5	160	

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Well #	Date Collected	Aquifer	Analyte Name	Result	Result Units	Lab Qualifiers	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-00977	2/19/2019 10:04	Lower Tamiami	Sodium	326	mg/L	Y	0.25	160	
C-00977	7/25/2019 9:52	Lower Tamiami	Sodium	312	mg/L		0.75	160	
C-00989	3/18/2019 11:25	Sandstone	Sodium	229	mg/L		0.75	160	
C-00989	7/30/2019 10:32	Sandstone	Sodium	240	mg/L		0.75	160	
C-00989	7/30/2019 10:37	Sandstone	Sodium	239	mg/L		0.75	160	
C-01077	2/4/2019 11:10	Sandstone	Sodium	189	mg/L	Y	0.25	160	
C-01077	2/4/2019 11:14	Sandstone	Sodium	187	mg/L	Y	0.25	160	
C-01077	7/9/2019 10:52	Sandstone	Sodium	191	mg/L		0.75	160	
C-01275	2/28/2019 10:29	Lower Tamiami	Sodium	797	mg/L		0.75	160	
C-01275	8/1/2019 10:13	Lower Tamiami	Sodium	849	mg/L		1.5	160	
C-01276	2/28/2019 11:03	Water Table	Sodium	161	mg/L		0.75	160	
CCN11	8/20/2019 12:47	Water Table	Sodium	172	mg/L		0.75	160	
C-00684	2/27/2019 12:39	Mid-Hawthorn	Sulfate	1390	mg/L		0.5		250
C-00974	3/21/2019 10:52	Mid-Hawthorn	Sulfate	500	mg/L		1.25		250
C-00974	9/10/2019 11:21	Mid-Hawthorn	Sulfate	429	mg/L		1.25		250
C-01275	2/28/2019 10:29	Lower Tamiami	Sulfate	421	mg/L		1.25		250
C-01275	8/1/2019 10:13	Lower Tamiami	Sulfate	581	mg/L		1.25		250