Collier County™
POLLUTION CONTROL
LIVE GREEN. SAVE BLUE.

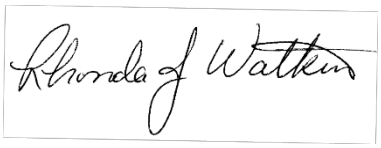
Friday, November 02, 2018

Lisa Koehler
Basin Administrator
Big Cypress Basin, SFWMD
2660 N. Horseshoe Drive Suite 101A
Naples, FL 34104

Dear Lisa,

Please find below the FY18 Groundwater Report that satisfies Task 2 of South Florida Water Management District's Purchase Order #PO 4500104372. The report includes a summary of program activities, problems encountered, and exceedances of groundwater standards. The electronic data deliverables were placed on the SFWMD ftp site (ftp://ftp.sfwmd.gov/incoming/). 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 4500104372 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 (August-October). 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.

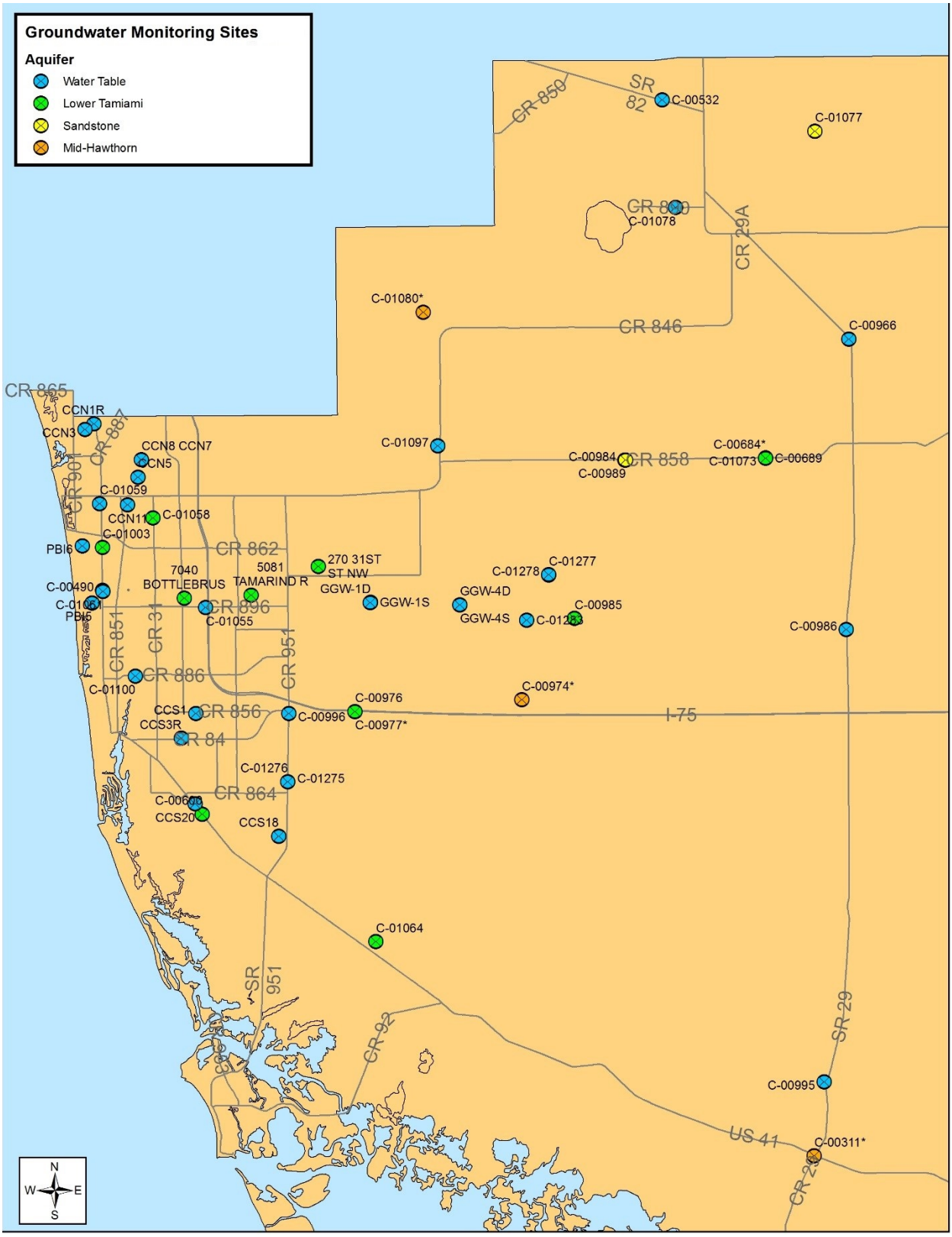


Figure 1. Groundwater Monitoring Sites

IV. Problems Encountered

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

A. Well CCN7 was sampled in place of well CCN8 during both dry and wet seasons. CCN8, which was mistakenly abandoned, was next to CCN7 in Imperial Golf Course. Although CCN8 was 43 ft. deep and CCN7 is 18.05 ft. deep, both wells represent the water table aquifer.

B. Access to well C-01077 continues to present problems each time this well is sampled. High water levels during the wet season and lack of maintenance of access roads (private agriculture roads) are creating issues that could lead to potential vehicle damage. If conditions persist, this Sandstone aquifer well may have to be dropped from the network.

C. Well C-00311 was scheduled to be sampled on 07/02/18, but upon arrival the riser pipe was found to be broken off above the shear valve. This well is artesian, but the shear valve kept the well from discharging. USGS was notified of the damage and they were not able to complete repairs until early September. The well was sampled on 09/19/18. There were no indications that the well was compromised and samples were unaffected.

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 FY18 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 FY18

Water Table	
Arsenic	11%
Chloride	8%
Iron	60%
Manganese	8%
pH	29%
Residues- Filterable (TDS)	34%
Sodium	6%
Lower Tamiami	
Chloride	20%
Iron	30%
Residues- Filterable (TDS)	50%
Sodium	13%
Sulfate	10%
Sandstone	
Chloride	22%
Residues- Filterable (TDS)	44%
Sodium	44%
Mid-Hawthorn	
Chloride	50%
Residues- Filterable (TDS)	75%
Sodium	75%
Sulfate	50%

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
CCN8 (CCN7)	26.29266	-81.77720	2	43 (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
5931_DOGWOOD_WAY	26.20712	-81.72663	4	80	Lower Tamiami
2770_22ND_AVE_NE	26.26963	-81.55190	4	90	Lower Tamiami
345_14TH_AVE_NE	26.25610	-81.60074	4	140	Sandstone

* 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	SM18 4500-P E (Phosphorus - Total)
Semi-annually	Turbidity	SM18 2130 B
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)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
C-00311	25.91073	-81.36497	4	450	Mid-Hawthorn	2/14/2018	9/19/2018	No alkalinity was analyzed during wet season due to laboratory error.
C-00490	26.22061	-81.80033	2	71	Lower Tamiami	2/22/2018	8/27/2018	
C-00532	26.49212	-81.45981	4	13	Water Table	3/07/2018	7/18/2018	
C-00600	26.09751	-81.73882	4	52	Lower Tamiami	2/14/2018	7/19/2018	
C-00684	26.29509	-81.39595	4	490	Mid-Hawthorn	2/05/2018	7/12/2018	
C-00689	26.29503	-81.39590	4	265	Sandstone	2/05/2018	7/12/2018	
C-00966	26.36076	-81.34512	6	40	Water Table	2/01/2018	7/24/2018	
C-00974	26.16144	-81.54414	6	460	Mid-Hawthorn	3/28/2018	8/22/2018	
C-00976	26.15455	-81.64602	6	40	Water Table	3/12/2018	8/06/2018	
C-00977	26.15455	-81.64602	6	140	Lower Tamiami	3/12/2018	8/06/2018	
C-00984	26.29376	-81.48174	6	40	Water Table	3/06/2018	8/30/2018	
C-00985	26.20632	-81.51226	6	160	Lower Tamiami	3/06/2018	8/30/2018	
C-00986	26.20074	-81.34631	6	40	Water Table	3/07/2018	7/23/2018	

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C-00989	26.29374	-81.48138	6	270	Sandstone	3/06/2018	8/30/2018	
C-00995	25.95146	-81.35902	2	37	Water Table	2/14/2018	7/23/2018	
C-00996	26.15325	-81.68632	4	24	Water Table	3/12/2018	7/26/2018	
C-01003	26.24410	-81.80062	4	61	Lower Tamiami	3/09/2018	8/29/2018	
C-01055	26.21139	-81.73732	4	25	Water Table	3/12/2018	7/24/2018	
C-01058	26.26047	-81.76987	4	80	Lower Tamiami	2/12/2018	8/29/2018	
C-01059	26.26822	-81.80247	4	25	Water Table	2/12/2018	8/20/2018	
C-01061	26.21996	-81.80019	4	25	Water Table	3/09/2018	8/29/2018	
C-01064	26.02782	-81.63253	4	120	Lower Tamiami	3/16/2018	7/25/2018	
C-01073	26.29506	-81.39589	4	160	Lower Tamiami	2/05/2018	7/12/2018	
C-01077	26.47511	-81.36628	4	210	Sandstone	3/29/2018	7/02/2018	
C-01078	26.43294	-81.45130	4	38	Water Table	2/01/2018	7/18/2018	
C-01080	26.37469	-81.60542	4	309	Mid-Hawthorn	2/12/2018	7/23/2018	

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Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
C-01097	26.30108	-81.59621	4	18	Water Table	2/12/2018	8/13/2018	
C-01100	26.17345	-81.78002	4	20	Water Table	2/28/2018	8/10/2018	
C-01275	26.11573	-81.68668	2	118	Lower Tamiami	2/28/2018	7/26/2018	
C-01276	26.11575	-81.68668	2	15	Water Table	2/28/2018	7/06/2018	Wet season sulfide sample was not analyzed because the shipping company failed to deliver the sample overnight to the contract laboratory. The sample was received outside of the acceptable preservation temperature.
C-01277	26.23030	-81.52810	2	133	Lower Tamiami	2/07/2018	8/21/2018	
C-01278	26.23032	-81.52809	2	13	Water Table	2/07/2018	8/21/2018	
C-01283	26.20519	-81.54130	4	40	Water Table	2/07/2018	8/13/2018	
CCN11	26.26758	-81.78540	2	12	Water Table	3/19/2018	7/24/2018	
CCN1R	26.31224	-81.80631	2	18	Water Table	2/12/2018	8/20/2018	Dry season nitrate and nitrite were analyzed outside of the acceptable holding time
CCN3	26.30902	-81.81172	2	14	Water Table	2/12/2018	8/20/2018	Dry season nitrate and nitrite were analyzed outside of the acceptable holding time

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
CCN5	26.28293	-81.77914	2	17	Water Table	3/28/2018	8/27/2018	
~~CCN8~~ CCN7	26.29266	-81.77720	2	~~43~~(18.05)	Water Table	3/26/2018	8/20/2018	
CCS1	26.15294	-81.74300	2	15	Water Table	3/26/2018	8/06/2018	
CCS18	26.08567	-81.69196	2	9	Water Table	3/16/2018	8/24/2018	
CCS20	26.10321	-81.74303	2	11	Water Table	3/15/2018	8/21/2018	
CCS3R	26.13934	-81.75183	2	15	Water Table	3/15/2018	7/19/2018	
GGW-1D	26.21468	-81.63681	4	61	Lower Tamiami	3/20/2018	7/31/2018	
GGW-1S	26.21465	-81.63682	4	15	Water Table	3/20/2018	7/31/2018	
GGW-4D	26.21363	-81.58222	4	77	Lower Tamiami	3/20/2018	7/31/2018	
GGW-4S	26.21361	-81.58223	4	16	Water Table	3/20/2018	7/31/2018	
PBI5	26.21356	-81.80671	2	13	Water Table	2/22/2018	8/27/2018	
PBI6	26.24482	-81.81283	2	12	Water Table	2/22/2018	8/27/2018	
2770_22ND_AVE_NE	26.26963	-81.55190	4	90	Lower Tamiami	3/27/2018	9/04/2018	

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
345_14TH_AVE_NE	26.25610	-81.60074	4	140	Sandstone	3/27/2018	9/04/2018	
5931_DOGWOOD_WAY	26.20712	-81.72663	4	80	Lower Tamiami	3/27/2018	9/04/2018	

Appendix D
FY18 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	3/19/2018	Water Table	Arsenic	211	ug/L		0.1	10	
CCN11	7/24/2018	Water Table	Arsenic	62.8	ug/L		0.1	10	
CCN5	3/28/2018	Water Table	Arsenic	81.9	ug/L		0.1	10	
CCN5	8/27/2018	Water Table	Arsenic	171	ug/L		0.1	10	
CCN7	8/20/2018	Water Table	Arsenic	24.6	ug/L		0.1	10	
CCN7	8/20/2018	Water Table	Arsenic	25.6	ug/L		0.1	10	
CCS18	3/16/2018	Water Table	Arsenic	16.4	ug/L		0.1	10	
C-00311	2/14/2018	Mid-Hawthorn	Chloride	455	mg/L		0.5		250
C-00311	9/19/2018	Mid-Hawthorn	Chloride	472	mg/L	J	0.5		250
C-00974	3/28/2018	Mid-Hawthorn	Chloride	1930	mg/L		1.25		250
C-00974	8/22/2018	Mid-Hawthorn	Chloride	3770	mg/L		12.5		250
C-00977	8/6/2018	Lower Tamiami	Chloride	480	mg/L		0.5		250

Appendix D
FY18 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-01064	3/16/2018	Lower Tamiami	Chloride	333	mg/L		0.25		250
C-01064	7/25/2018	Lower Tamiami	Chloride	336	mg/L		0.25		250
C-01077	3/29/2018	Sandstone	Chloride	337	mg/L		0.25		250
C-01077	7/2/2018	Sandstone	Chloride	377	mg/L		0.5		250
C-01275	2/28/2018	Lower Tamiami	Chloride	1340	mg/L		125		250
C-01275	7/26/2018	Lower Tamiami	Chloride	1810	mg/L		1.25		250
C-01275	7/26/2018	Lower Tamiami	Chloride	1770	mg/L		1.25		250
C-01276	2/28/2018	Water Table	Chloride	256	mg/L		12.5		250
CCN11	7/24/2018	Water Table	Chloride	313	mg/L		0.5		250
PBI6	2/22/2018	Water Table	Chloride	271	mg/L		0.25		250
PBI6	2/22/2018	Water Table	Chloride	271	mg/L		0.25		250
PBI6	8/27/2018	Water Table	Chloride	298	mg/L		0.25		250
C-00490	2/22/2018	Lower Tamiami	Iron	1230	ug/L		1.98		300

Appendix D
FY18 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-00490	8/27/2018	Lower Tamiami	Iron	1310	ug/L		5		300
C-00532	3/7/2018	Water Table	Iron	386	ug/L		1.98		300
C-00532	7/18/2018	Water Table	Iron	531	ug/L		5		300
C-00600	2/14/2018	Lower Tamiami	Iron	380	ug/L		1.98		300
C-00600	7/19/2018	Lower Tamiami	Iron	691	ug/L		5		300
C-00966	2/1/2018	Water Table	Iron	3200	ug/L		1.98		300
C-00966	7/24/2018	Water Table	Iron	4010	ug/L		5		300
C-00984	3/6/2018	Water Table	Iron	3740	ug/L		1.98		300
C-00984	8/30/2018	Water Table	Iron	3620	ug/L		5		300
C-00986	7/23/2018	Water Table	Iron	560	ug/L		5		300
C-00996	3/12/2018	Water Table	Iron	358	ug/L		1.98		300
C-00996	7/26/2018	Water Table	Iron	1500	ug/L		5		300

Appendix D
FY18 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-01003	3/9/2018	Lower Tamiami	Iron	6020	ug/L		1.98		300
C-01003	8/29/2018	Lower Tamiami	Iron	3080	ug/L		5		300
C-01055	3/12/2018	Water Table	Iron	2660	ug/L		1.98		300
C-01055	7/24/2018	Water Table	Iron	3380	ug/L		5		300
C-01059	2/12/2018	Water Table	Iron	11100	ug/L	!	1.98		300
C-01059	8/20/2018	Water Table	Iron	11900	ug/L		5		300
C-01061	3/9/2018	Water Table	Iron	304	ug/L		1.98		300
C-01061	8/29/2018	Water Table	Iron	1090	ug/L		5		300
C-01064	3/16/2018	Lower Tamiami	Iron	2140	ug/L		1.98		300
C-01064	7/25/2018	Lower Tamiami	Iron	2940	ug/L		5		300
C-01078	2/1/2018	Water Table	Iron	2080	ug/L		1.98		300
C-01078	2/1/2018	Water Table	Iron	1940	ug/L		1.98		300

Appendix D
FY18 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-01078	7/18/2018	Water Table	Iron	4370	ug/L		5		300
C-01097	2/12/2018	Water Table	Iron	1920	ug/L		1.98		300
C-01097	8/13/2018	Water Table	Iron	3900	ug/L		5		300
C-01100	3/15/2018	Water Table	Iron	530	ug/L		1.98		300
C-01100	3/15/2018	Water Table	Iron	551	ug/L		1.98		300
C-01100	8/10/2018	Water Table	Iron	386	ug/L		5		300
CCN11	3/19/2018	Water Table	Iron	2630	ug/L		1.98		300
CCN11	7/24/2018	Water Table	Iron	4220	ug/L		5		300
CCN5	3/28/2018	Water Table	Iron	1800	ug/L		1.98		300
CCN5	8/27/2018	Water Table	Iron	1220	ug/L		5		300
CCS1	3/26/2018	Water Table	Iron	10700	ug/L	!	1.98		300
CCS1	8/6/2018	Water Table	Iron	2410	ug/L		5		300

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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
CCS18	3/16/2018	Water Table	Iron	7810	ug/L		1.98		300
CCS18	8/24/2018	Water Table	Iron	789	ug/L		5		300
CCS3R	3/15/2018	Water Table	Iron	538	ug/L		1.98		300
GGW-1D	7/31/2018	Lower Tamiami	Iron	751	ug/L		5		300
GGW-1S	3/20/2018	Water Table	Iron	553	ug/L		1.98		300
GGW-1S	7/31/2018	Water Table	Iron	1700	ug/L		5		300
GGW-4S	7/31/2018	Water Table	Iron	822	ug/L		5		300
PBI5	2/22/2018	Water Table	Iron	2200	ug/L		1.98		300
PBI5	8/27/2018	Water Table	Iron	3780	ug/L		5		300
CCN11	3/19/2018	Water Table	Manganese	74.4	ug/L		0.1		50
CCN11	7/24/2018	Water Table	Manganese	136	ug/L		0.075		50
CCN5	3/28/2018	Water Table	Manganese	2530	ug/L		0.1		50

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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	8/27/2018	Water Table	Manganese	2460	ug/L		0.075		50
CCS18	3/16/2018	Water Table	Manganese	71.2	ug/L		0.1		50
C-00532	3/7/2018	Water Table	pH	5.62	SU				6.5 – 8.5
C-00532	7/18/2018	Water Table	pH	6.12	SU				6.5 – 8.5
C-01059	8/20/2018	Water Table	pH	6.45	SU				6.5 – 8.5
C-01061	3/9/2018	Water Table	pH	5.69	SU				6.5 – 8.5
C-01061	8/29/2018	Water Table	pH	5.9	SU				6.5 – 8.5
C-01078	2/1/2018	Water Table	pH	6.18	SU				6.5 – 8.5
C-01078	2/1/2018	Water Table	pH	6.18	SU				6.5 – 8.5
C-01078	7/18/2018	Water Table	pH	6.23	SU				6.5 – 8.5
CCN11	3/19/2018	Water Table	pH	6.32	SU				6.5 – 8.5
CCN11	7/24/2018	Water Table	pH	6.34	SU				6.5 – 8.5

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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
CCN3	2/12/2018	Water Table	pH	6.38	SU				6.5 – 8.5
CCN3	8/20/2018	Water Table	pH	6.32	SU				6.5 – 8.5
CCN5	3/28/2018	Water Table	pH	6.38	SU				6.5 – 8.5
CCN5	8/27/2018	Water Table	pH	6.42	SU				6.5 – 8.5
PBI5	2/22/2018	Water Table	pH	6.36	SU				6.5 – 8.5
PBI6	2/22/2018	Water Table	pH	6.22	SU				6.5 – 8.5
PBI6	2/22/2018	Water Table	pH	6.22	SU				6.5 – 8.5
PBI6	8/27/2018	Water Table	pH	6.23	SU				6.5 – 8.5
5931_DOGWOOD_WAY	3/27/2018	Lower Tamiami	Residues-Filterable (TDS)	592	mg/L		2		500
5931_DOGWOOD_WAY	9/4/2018	Lower Tamiami	Residues-Filterable (TDS)	625	mg/L		2		500
C-00311	2/14/2018	Mid-Hawthorn	Residues-Filterable (TDS)	1310	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
C-00311	9/19/2018	Mid-Hawthorn	Residues-Filterable (TDS)	1330	mg/L		2		500
C-00684	2/5/2018	Mid-Hawthorn	Residues-Filterable (TDS)	2340	mg/L		2		500
C-00684	7/12/2018	Mid-Hawthorn	Residues-Filterable (TDS)	2400	mg/L		2		500
C-00974	3/28/2018	Mid-Hawthorn	Residues-Filterable (TDS)	4090	mg/L		2		500
C-00974	8/22/2018	Mid-Hawthorn	Residues-Filterable (TDS)	4040	mg/L	J	2		500
C-00977	3/12/2018	Lower Tamiami	Residues-Filterable (TDS)	700	mg/L		2		500
C-00977	8/6/2018	Lower Tamiami	Residues-Filterable (TDS)	1380	mg/L	J	2		500
C-00989	3/6/2018	Sandstone	Residues-Filterable (TDS)	790	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
C-00989	8/30/2018	Sandstone	Residues-Filterable (TDS)	782	mg/L		2		500
C-01058	2/12/2018	Lower Tamiami	Residues-Filterable (TDS)	659	mg/L		2		500
C-01058	8/29/2018	Lower Tamiami	Residues-Filterable (TDS)	679	mg/L		2		500
C-01064	3/16/2018	Lower Tamiami	Residues-Filterable (TDS)	934	mg/L		2		500
C-01064	7/25/2018	Lower Tamiami	Residues-Filterable (TDS)	932	mg/L		2		500
C-01073	2/5/2018	Lower Tamiami	Residues-Filterable (TDS)	540	mg/L		2		500
C-01073	7/12/2018	Lower Tamiami	Residues-Filterable (TDS)	536	mg/L		2		500
C-01077	3/29/2018	Sandstone	Residues-Filterable (TDS)	982	mg/L		2		500

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FY18 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-01077	7/2/2018	Sandstone	Residues-Filterable (TDS)	1060	mg/L		2		500
C-01100	3/15/2018	Water Table	Residues-Filterable (TDS)	511	mg/L		2		500
C-01100	3/15/2018	Water Table	Residues-Filterable (TDS)	516	mg/L		2		500
C-01100	8/10/2018	Water Table	Residues-Filterable (TDS)	549	mg/L		2		500
C-01275	2/28/2018	Lower Tamiami	Residues-Filterable (TDS)	3070	mg/L		2		500
C-01275	7/26/2018	Lower Tamiami	Residues-Filterable (TDS)	3230	mg/L		2		500
C-01275	7/26/2018	Lower Tamiami	Residues-Filterable (TDS)	3220	mg/L		2		500
C-01276	2/28/2018	Water Table	Residues-Filterable (TDS)	1020	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
C-01276	7/6/2018	Water Table	Residues-Filterable (TDS)	1020	mg/L		2		500
CCN11	3/19/2018	Water Table	Residues-Filterable (TDS)	687	mg/L		2		500
CCN11	7/24/2018	Water Table	Residues-Filterable (TDS)	992	mg/L		2		500
CCN3	8/20/2018	Water Table	Residues-Filterable (TDS)	557	mg/L		2		500
CCN5	3/28/2018	Water Table	Residues-Filterable (TDS)	730	mg/L		2		500
CCN5	8/27/2018	Water Table	Residues-Filterable (TDS)	860	mg/L		2		500
CCN7	8/20/2018	Water Table	Residues-Filterable (TDS)	508	mg/L		2		500
CCN7	8/20/2018	Water Table	Residues-Filterable (TDS)	512	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
CCS1	3/26/2018	Water Table	Residues-Filterable (TDS)	580	mg/L		2		500
CCS18	3/16/2018	Water Table	Residues-Filterable (TDS)	582	mg/L		2		500
CCS20	8/21/2018	Water Table	Residues-Filterable (TDS)	529	mg/L		2		500
CCS3R	3/15/2018	Water Table	Residues-Filterable (TDS)	533	mg/L		2		500
CCS3R	7/19/2018	Water Table	Residues-Filterable (TDS)	500	mg/L		2		500
GGW-1D	3/20/2018	Lower Tamiami	Residues-Filterable (TDS)	570	mg/L		2		500
GGW-1D	7/31/2018	Lower Tamiami	Residues-Filterable (TDS)	578	mg/L		2		500
PBI5	8/27/2018	Water Table	Residues-Filterable (TDS)	540	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
PBI6	2/22/2018	Water Table	Residues-Filterable (TDS)	868	mg/L		2		500
PBI6	2/22/2018	Water Table	Residues-Filterable (TDS)	854	mg/L		2		500
PBI6	8/27/2018	Water Table	Residues-Filterable (TDS)	891	mg/L		2		500
C-00311	2/14/2018	Mid-Hawthorn	Sodium	407	mg/L		0.38		160
C-00311	9/19/2018	Mid-Hawthorn	Sodium	418	mg/L		0.25	160	
C-00684	2/5/2018	Mid-Hawthorn	Sodium	377	mg/L		0.38		160
C-00684	7/12/2018	Mid-Hawthorn	Sodium	368	mg/L		0.25	160	
C-00974	3/28/2018	Mid-Hawthorn	Sodium	1100	mg/L		0.76		160
C-00974	8/22/2018	Mid-Hawthorn	Sodium	1140	mg/L		0.5	160	
C-00977	8/6/2018	Lower Tamiami	Sodium	253	mg/L		0.25	160	
C-00989	3/6/2018	Sandstone	Sodium	221	mg/L		0.38		160
C-00989	8/30/2018	Sandstone	Sodium	226	mg/L		0.25	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-01077	3/29/2018	Sandstone	Sodium	174	mg/L		0.38		160
C-01077	7/2/2018	Sandstone	Sodium	197	mg/L		0.25	160	
C-01275	2/28/2018	Lower Tamiami	Sodium	723	mg/L		0.38		160
C-01275	7/26/2018	Lower Tamiami	Sodium	839	mg/L		0.25	160	
C-01275	7/26/2018	Lower Tamiami	Sodium	813	mg/L		0.25	160	
CCN11	7/24/2018	Water Table	Sodium	176	mg/L		0.25	160	
PBI6	2/22/2018	Water Table	Sodium	184	mg/L		0.38		160
PBI6	2/22/2018	Water Table	Sodium	179	mg/L		0.38		160
PBI6	8/27/2018	Water Table	Sodium	222	mg/L		0.25	160	
C-00684	2/5/2018	Mid-Hawthorn	Sulfate	1510	mg/L		2.5		250
C-00684	7/12/2018	Mid-Hawthorn	Sulfate	1730	mg/L		2.5		250
C-00974	3/28/2018	Mid-Hawthorn	Sulfate	437	mg/L		1.2		250
C-00974	8/22/2018	Mid-Hawthorn	Sulfate	912	mg/L		12.5		250

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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-01275	2/28/2018	Lower Tamiami	Sulfate	437	mg/L		12.5		250
C-01275	7/26/2018	Lower Tamiami	Sulfate	513	mg/L		1.25		250
C-01275	7/26/2018	Lower Tamiami	Sulfate	505	mg/L		1.25		250