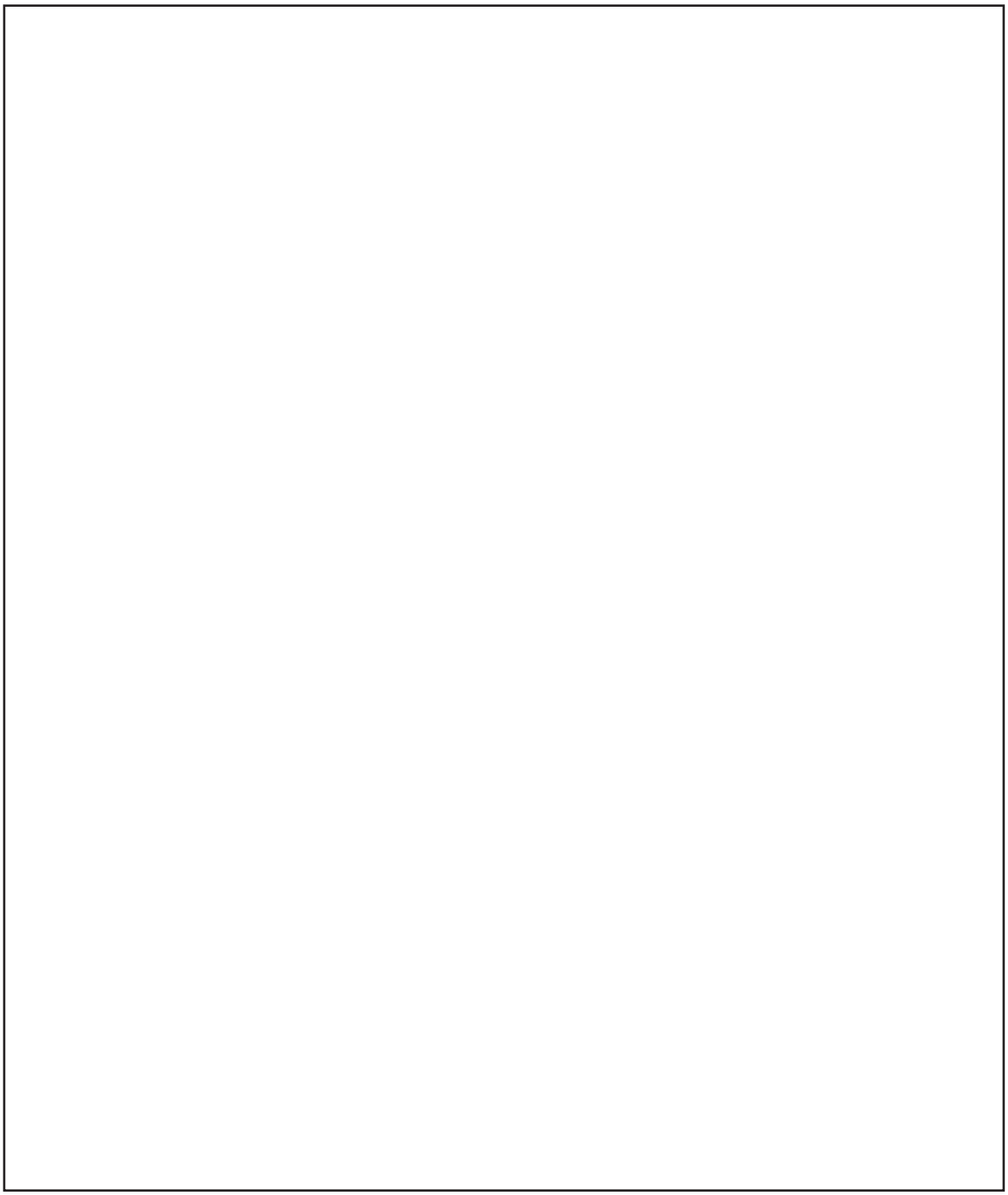
Geohydrologic Data Section Work Plan 2026

Southwest Florida Water Management District

WATERMATTERS.ORG · 1-800-423-1476



Cover Photo: Core drilling and testing operation at the ROMP 88.5 – Northeast Polk well site in Polk County, Florida. Photograph by Julie Zydek.

Geohydrologic Data Section Work Plan 2026

July 2025

Southwest Florida Water Management District
Geohydrologic Data Section

Southwest Florida Water Management District

Operations, Lands and Resource Monitoring Division
Brian Starford, P.G., Director

Data Collection Bureau
Sandie Will, P.G., Bureau Chief

Geohydrologic Data Section
Reed Putnall, Manager

Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899

For ordering information:

World Wide Web: http://www.watermatters.org/documents

Telephone: 1-800-423-1476 (FL only)

For more information on the Southwest Florida Water Management District and its mission to manage and protect water and related resources:

World Wide Web: *http://www.watermatters.org*

Telephone: 1-800-423-1476 (FL only)

Horstman, T.M., 2025, Geohydrologic Data Section Work Plan 2026: Southwest Florida Water Management District, 50 p.

Preface

The 2026 Geohydrologic Data Section Work Plan lists the projects planned by the Geohydrologic Data Section (GEO) for fiscal years 2026 to 2030. The GEO is responsible for the collection of hydrogeologic data and the oversight of monitor well construction activities at the Southwest Florida Water Management District (District). The GEO conducts exploratory core drilling and aquifer testing, and contracts private well drilling firms to construct the monitor wells to support the data collection needs for various District projects.

The Regional Observation and Monitor-well Program (ROMP), administered by the GEO, has historically been the primary source for hydrogeologic data collection. The ROMP was started in 1974 in response to the need for hydrogeologic information by the District. The focus of the ROMP is to characterize the hydrogeology and water quality of the groundwater systems that serve as the primary source of drinking water within southwestern Florida. The original design of the ROMP consisted of an inland 10-mile grid network composed of 122 well sites and a coastal transect network composed of 24 coastal monitor transects of two to three well sites each. The number of wells at a well site varies with specific regional needs; usually two to five permanent monitor wells are constructed at each site. The numbering system for both networks generally increases from south to north with ROMP-labeled wells representing the inland grid network and TR-labeled wells representing the coastal transect network. Currently, 109 inland grid network well sites are complete[1] and 24 coastal monitor transects have one or more well sites in the transect complete[1]. The need for additional ROMP inland and coastal transect well sites will depend on the future priorities of the District.

Expanded District initiatives have created the need for data from new well sites outside the original two well networks. These well sites, known as Project Support well sites, facilitate the exploration of target areas within the District such as the Southern Water Use Caution Area, Central Florida Water Initiative, and the Northern District Water Resources Assessment Project. Some well sites provide information for multiple projects, as well as enhancing the original two well networks. Currently, 233 project support well sites are complete[1].

The broad objectives at each well site are to determine the geology, hydrology, groundwater quality, hydraulic properties, and to install wells for long-term monitoring. Site activities include exploratory core drilling, aquifer testing, and well construction. These activities provide data necessary for the hydrogeologic and groundwater quality characterization of the well sites. At the completion of each well site, a summary report is generated and can be found at the District's website at *https://www.swfwmd.state.fl.us/resources/data-maps/geohydrologic-data*. The monitor wells form the backbone of the District's long-term aquifer monitoring networks, which supply critical data for the District's regional models, hydrologic conditions, and water quality reporting.

---

[1]Complete means the core drilling and testing, well construction, and/or aquifer performance testing is complete. Summary reports may still be pending.

This page intentionally left blank.

Contents

Figures

Tables

Conversion Factors

Multiply	By	To obtain
foot (ft)	0.3048	meter (m)
gallon (gal)	3.785	liter (L)
gallon (gal)	0.003785	cubic meter (m^3)
gallon (gal)	3.785	cubic decimeter (dm^3)
million gallons (Mgal)	3,785	cubic meter (m^3)
mile (mi)	1.609	kilometer (km)
ounce, avoirdupois (oz)	28.35	gram (g)

Acronyms and Abbreviations

APTs	aquifer performance tests
bls	below land surface
CFWI	Central Florida Water Initiative
CGWQMN	Coastal Groundwater Quality Monitoring Network
CME	Central Mining Equipment 85 drill rig
DCIR	Data Collection Initiative Request
District	Southwest Florida Water Management District
DMIT	Data, Monitoring, and Investigations Team
DWRM	District Wide Regulation Model
ECFTX	East-Central Florida Transient Groundwater Model Expanded
FY	Fiscal Year
GEO	Geohydrologic Data Section
HAS	Hawthorn aquifer system
LFA	lower Floridan aquifer
MFL	Minimum Flows and Levels
MCU	middle confining unit
NDM	Northern District Groundwater Flow Model
NDWRAP	Northern District Water Resources Assessment Project
ROMP	Regional Observation and Monitor-well Program
SHARP	South Hillsborough Aquifer Recharge Project
SWIMAL	Saltwater Intrusion Minimum Aquifer Level
SWUCA	Southern Water Use Caution Area
UDR	Universal Drill Rigs 200D LS drill rig
UFA	upper Floridan aquifer
UFANMN	Upper Floridan Aquifer Nutrient Monitoring Network
Work Plan	Geohydrologic Data Section Work Plan
WRMP	Well Repair and Maintenance Program

This page intentionally left blank.

Geohydrologic Data Section Work Plan 2026

Introduction

As the demand for water resources within the Southwest Florida Water Management District (District) increases, the need to monitor and evaluate the condition of the water resources also increases. The Geohydrologic Data Section (GEO) Work Plan 2026 (Work Plan) identifies current and future core drilling and testing, and well construction sites, details the required work, and prioritizes the well sites to ensure the hydrogeologic data needs of the District are being met for fiscal years (FY)[2] 2026 to 2030. As of FY2021, all well sites added to the Work Plan are vetted through the Data Governance Process to ensure they are in alignment with the District's mission, are scientifically needed, are managed with the best data collection practices, are cost-efficient, and do not have a negative impact on the operation or efficiency of the District's data collection programs. The goal of the data collected from the construction of these well sites is to improve the understanding of the hydrogeologic systems in the District.

The Work Plan is generally updated every two years. The GEO solicits information from the Water Resources, Natural Systems and Restoration, Data Collection, and Water Use Permit Bureaus about future hydrogeologic data collection and well construction requirements of the District. These future project requirements are detailed on GEO scope of work forms or work orders submitted through FootPrints prior to FY2022 and Data Collection Initiative Request (DCIR) forms after FY2022. The scope of work forms, FootPrints work orders, and DCIR forms received for the listed projects are presented in appendix A.

Data collected at the well sites identified in this Work Plan will be used for hydrologic conditions reporting, water quality monitoring, groundwater modeling, minimum flows and levels development, long-term water resource availability estimates, well field recovery monitoring and evaluating, and regulatory guidelines evaluating. The data collection objectives for each project will vary depending on the data needs in the particular area. These objectives may include: identifying the potable water thickness, locating the saltwater/freshwater interface, determining the thickness of the upper Floridan aquifer, determining the presence and groundwater quality of the lower Floridan aquifers (below middle confining units I, II, VI, and VIII), and other similar objectives. A summary of the hydrogeology of the District, and the stratigraphic and hydrologic terms used in this Work Plan are given in appendix B.

The GEO is responsible for the Well Repair and Maintenance Program (WRMP) that was implemented in FY2021. As part of the WRMP, the GEO responds to well problems and performs repairs or abandonments as required for wells the District monitors. Also, routine inspection of all District-owned monitor wells is an objective of the WRMP to ensure the integrity of the wells and the associated resource data (water quality and levels) collected from the wells.

Work Plan Organization

Projects in the Work Plan are grouped according to the data collection needs. Projects requiring the highest level of data collection are listed as Core Drilling and Testing projects (table 1). Projects requiring well construction and minimal data collection are listed as Project Support Well Construction projects. Table 2 lists all the monitor wells planned for both project types. Projects that require aquifer performance tests (APTs) are presented in table 3. Table 4 lists additional work required at ongoing well sites to complete the core drilling and testing phase or to finish the project. The core drilling and testing, monitor well construction, and APTs proposed to be completed by the GEO from FY2026 to FY2030 are what can be reasonably accomplished with the available resources. Figure 1 presents a forecast timeline of the core drilling and testing projects, the APTs, and additional work. Figure 2 presents the locations of the projects.

The number of wells identified as needing evaluation, repair, or abandonment under the WRMP is presented in table 5 and the number of District-owned monitor wells that will need inspection as part of the WRMP is presented in table 6.

Core Drilling and Testing Projects

Well construction sites selected for core drilling and testing are completed in three phases and require the highest level of data collection. The first phase includes collecting continuous rock core samples from land surface up to 3,000 feet below land surface (bls) to delineate formation boundaries, aquifers, permeable zones, and confining units. In addition, slug tests are conducted, and water quality samples are collected while core drilling to characterize the hydrogeologic

[2]The fiscal year begins October 1 and ends September 30

Table 1. Planned core drilling and testing projects for fiscal years 2026 – 2030

-, none; [bls, below land surface; CGWQMN, Coastal Groundwater Quality Monitoring Network; FAS, Floridan aquifer system; MCU I, middle confining unit I; MCU II, middle confining unit II; NDWRAP, Northern District Water Resources Assessment Project; ROMP, Regional Observation and Monitor-well Program; SWUCA, Southern Water Use Caution Area; TR, Coastal Transect; UFANMN, Upper Floridan Aquifer Nutrient Monitoring Network]

Site Number	Site Name	Project	County	Starting Fiscal Year[1]	Easement Status	Starting Depth (feet bls)	Estimated End Depth (feet bls)	Core Drilling Objective
-	Coon Wallow	CGWQMN, UFANMN	Hernando	2026	District property	0	700	Locate saltwater interface
91	Kirkland Ranch	ROMP	Pasco	2027	Not acquired	0	2,000	Locate base of the FAS
112	Rutland (Carlton Half Moon)	NDWRAP, ROMP	Sumter	2028	District property	0	2,000	Locate base of the FAS
TR 10-3	Camden Field	CGWQMN, SWUCA, ROMP	Hillsborough	2030	Not acquired	0	850	Locate saltwater interface

[1]Starting fiscal year is projected if a future site.

units encountered. Core drilling and testing can take 12 or more months to complete depending on the planned depth of data collection. The District-owned Universal Drill Rigs 200D LS (UDR) and Central Mining Equipment 85 (CME) drill rigs are used for core drilling and data collection. The current and proposed core drilling and testing projects are detailed below and listed in table 1. Refer to appendix A for more details about each project and figure 1 for the estimated timeline to complete the current and proposed core drilling and testing projects.

Phase two includes the construction of the permanent and temporary monitor wells, which is performed by private drilling firms contracted by the District. Well construction usually begins after core drilling and testing is complete. The monitor wells proposed for construction for FYs 2026 to 2030 are presented in table 2.

Phase three includes conducting APTs, which are performed after all wells are constructed. The APTs proposed for FYs 2026 to 2030 are presented in table 3. Refer to figure 1 for the estimated timeline to complete the APTs.

ROMP 75 – Auburndale

This well site is in Polk County and supports the Central Florida Water Initiative (CFWI) and the Regional Observation and Monitor-well Program (ROMP) inland 10-mile grid network. Core drilling and testing was completed to a depth of 2,810 feet bls in the top of the basal confining unit of the Floridan aquifer system in 2013. A detailed characterization of the surficial aquifer, Hawthorn aquifer system, upper Floridan aquifer, and lower Floridan aquifers was performed during core drilling at the site.

Wells have been completed in the surficial aquifer, upper Floridan aquifer, and lower Floridan aquifer below middle confining unit I. A permanent lower Floridan aquifer below middle confining unit II monitor well was completed in July 2016, as part of the 2016 CFWI Data, Monitoring, and Investigations Team (DMIT) Hydrogeologic Work Plan Update for FY2016-FY2020 (Data, Monitoring, and Investigations Team, 2016).

Additional well construction needed includes a permanent surficial aquifer well, permanent and temporary upper Floridan aquifer wells, and a temporary lower Floridan aquifer below middle confining unit I well for conducting APTs. APTs are planned in the surficial aquifer, upper Floridan aquifer, and the lower Floridan aquifer below middle confining unit I. This well site is equipped for long-term monitoring of water levels and water quality.

ROMP 88.5 – Northeast Polk

This well site is in northeastern Polk County. Well construction and testing at this location is being performed in accordance with the CFWI DMIT Hydrogeologic Annual Work Plan FY2020-FY2025 (Data, Monitoring, and Investigations Team, 2020). This site will infill the ROMP inland 10-mile grid network, and will improve the calibration of the District Wide Regulation Model (DWRM), Northern District Groundwater Flow Model (NDM), and the East-Central Florida Transient Groundwater Model Expanded (ECFTX)

model. Data collection from this site is important for monitoring the lower Floridan aquifers as it is tested as an alternative water source in Polk County. This site will provide a detailed characterization of the upper and lower Floridan aquifers, and delineate the extent of middle confining units I, II, and VIII.

Core drilling and testing started during FY2018 and ended at 2,387 feet bls in the sub-Floridan confining unit in June 2023. Monitor wells are required in the upper Floridan aquifer, lower Floridan aquifer below middle confining unit I, lower Floridan aquifer below middle confining unit II, and lower Floridan aquifer below middle confining unit VIII. The upper Floridan aquifer monitor well was completed in FY2020 and the lower Floridan aquifer below middle confining unit VIII monitor well was completed in FY2025. The monitor wells in the lower Floridan aquifer below middle confining units I and II are under construction. APTs are needed in the upper Floridan aquifer and the lower Floridan aquifer below middle confining units I and VIII. Temporary wells are needed in the upper Floridan aquifer and lower Floridan aquifers. The lower Floridan aquifer below middle confining unit I temporary well was completed in FY2025. This well site will be equipped for long-term monitoring of water levels and water quality.

Thornhill Ranch Replacement

This well site is in northeastern Polk County. Well construction and testing at this location is being performed in accordance with the CFWI DMIT Hydrogeologic Annual Work Plan FY2020-FY2025 (Data, Monitoring, and Investigations Team, 2020). This site will replace the existing Thornhill Ranch Deep well site that will be impacted by development. It will also help improve the calibration of the DWRM, NDM, and ECFTX model.

Core drilling and testing was completed to a depth of 1,002 feet bls in the middle confining unit II in September 2018. Monitor wells have been completed in the surficial aquifer, the Hawthorn aquifer system, the upper Floridan aquifer, and the lower Floridan aquifer below middle confining unit I. One APT is needed in the upper Floridan aquifer. This well site will be equipped for long-term monitoring of water levels and water quality.

ROMP 46 – Baird

This well site is in southwestern Polk County. Well construction and testing at this location is being performed in accordance with the CFWI DMIT Hydrogeologic Annual Work Plan FY2020-FY2025 (Data, Monitoring, and Investigations Team, 2020). This site will infill the ROMP inland 10-mile grid network, support the Southern Water Use Caution Area (SWUCA), and will improve the calibration of the DWRM, NDM, and ECFTX model.

Core drilling and testing was completed to a depth of 2,957 feet bls in the sub-Floridan confining unit in September 2022. It provided a detailed characterization of the surficial aquifer, Hawthorn aquifer system, and Floridan aquifer system.

Monitor wells are needed in the surficial aquifer, the upper and lower Arcadia aquifers of the Hawthorn aquifer system, the Suwannee Limestone portion and the Avon Park high-permeability zone of the upper Floridan aquifer, and the lower Floridan aquifer below middle confining unit VIII. Well construction began in FY2025 and should be completed in FY2026. The surficial aquifer monitor well was completed in FY2025. APTs are needed in the surficial aquifer, the upper and lower Arcadia aquifers, and the Suwannee Limestone portion and the Avon Park high-permeability zone of the upper Floridan aquifer. Temporary wells are needed in the surficial aquifer, upper Floridan aquifer, and Hawthorn aquifer system. The surficial aquifer temporary well was completed in FY2025. This well site will be equipped for long-term monitoring of water levels and water quality.

TR 9-4 – Ruskin

This well site is in southwestern Hillsborough County and is proposed to replace the TR 9-3 – Simmons 3 (TR 9-3) well site that is expected to be impacted by a South Hillsborough Aquifer Recharge Project (SHARP) well proposed to be installed nearby. A replacement is important for data continuity because the upper Floridan aquifer monitor well at the TR 9-3 well site is one of 10 wells used for the Saltwater Intrusion Minimum Aquifer Level (SWIMAL) network, which will be important for evaluating the SWUCA recovery. This well site also supports the Coastal Groundwater Quality Monitoring Network (CGWQMN) that monitors the saltwater interface. This site is in an area with insufficient data and is critical for understanding the Hawthorn aquifer system and determining the top of the upper Floridan aquifer, which will aid in regulation permitting.

Core drilling and testing was completed to a depth of 854 feet in the saltwater/freshwater interface in September 2024. Monitor wells are required in the surficial aquifer and the upper Floridan aquifer. Well construction is anticipated to begin in FY2025 and be completed in FY2026. This well site will be equipped for long-term monitoring of water levels and water quality.

Coon Wallow

This well site is in northwestern Hernando County about 1.5 miles west of the Centralia well site. This site supports the CGWQMN and the Upper Floridan Aquifer Nutrient Monitoring Network (UFANMN). Core drilling and testing at this site will provide a detailed characterization of the saltwater interface within the upper Floridan aquifer.

Core drilling and testing is needed from land surface to the saltwater/freshwater interface. A monitor well is required in the upper Floridan aquifer to monitor the saltwater inter-

Table 2. Planned monitor well construction projects for fiscal years 2026 – 2030

[-, none; CFWI, Central Florida Water Initiative; CGWQMN, Co., County; Coastal Groundwater Quality Monitoring Network; FDOT, Florida Department of Transportation; LFA I, lower Floridan aquifer below middle confining unit I; LFA II, lower Floridan aquifer below middle confining unit II; LFA VIII, lower Floridan aquifer below middle confining unit VIII; MFL, Minimum Flows and Levels; MW, Monitor Well; NDWRAP, Northern District Water Resource Assessment Project; Perm, permanent; ROMP, Regional Observation and Monitor-well Program; ROW, right-of-way; SWUCA, Southern Water Use Caution Area; Temp, temporary; TLA, temporary license agreement; TR, Coastal Transect; UFA, upper Floridan aquifer; UFANMN, Upper Floridan Aquifer Nutrient Monitoring Network]

Site Number	Site Name	Project	County	Easement Status	Monitor Wells											
					Perm surficial	Temp surficial	Perm Hawthorn	Temp Hawthorn	Perm UFA	Temp UFA	Perm LFA I	Temp LFA I	Perm LFA II	Temp LFA II	Perm LFA VIII	Temp LFA VIII
FISCAL YEAR 2026																
ROMP 88.5	Northeast Polk	CFWI, ROMP	Polk	Acquired; TLA expires at project completion	-	-	-	-	-	1	1	-	-	-	-	1
ROMP 46	Baird	ROMP, CFWI	Polk	Acquired; TLA (Polk Co.) expires 06/13/2028	-	-	2	1	2	1	-	-	-	-	-	-
ROMP TR 9-4	Ruskin	CGWQMN, SWUCA, ROMP	Hillsborough	Acquired; TLA access expires 01/10/2025; ROW permit	1	-	-	-	1	-	-	-	-	-	-	-
-	Sugarmill Woods 2	MFL, UFANMN	Citrus	Acquired; Easement Ammendment expires 02/25/2026	-	-	-	-	1	-	-	-	-	-	-	-
-	Macarthur Tract 10-H Replacement	SWUCA	Sarasota	District property	-	-	1	-	-	-	-	-	-	-	-	-
ROMP TR 5-3	Knights Trail	SWUCA	Sarasota	Not acquired	-	-	1	-	-	-	-	-	-	-	-	-
-	Inverness DOT Replacement	MFL	Citrus	Not acquired	1	-	-	-	1	-	-	-	-	-	-	-
ROMP 86R	Woodland	ROMP	Pasco	Not acquired	1	-	-	-	1	-	-	-	-	-	-	-

Table 2. (Continued) Planned monitor well construction projects for fiscal years 2026 – 2030

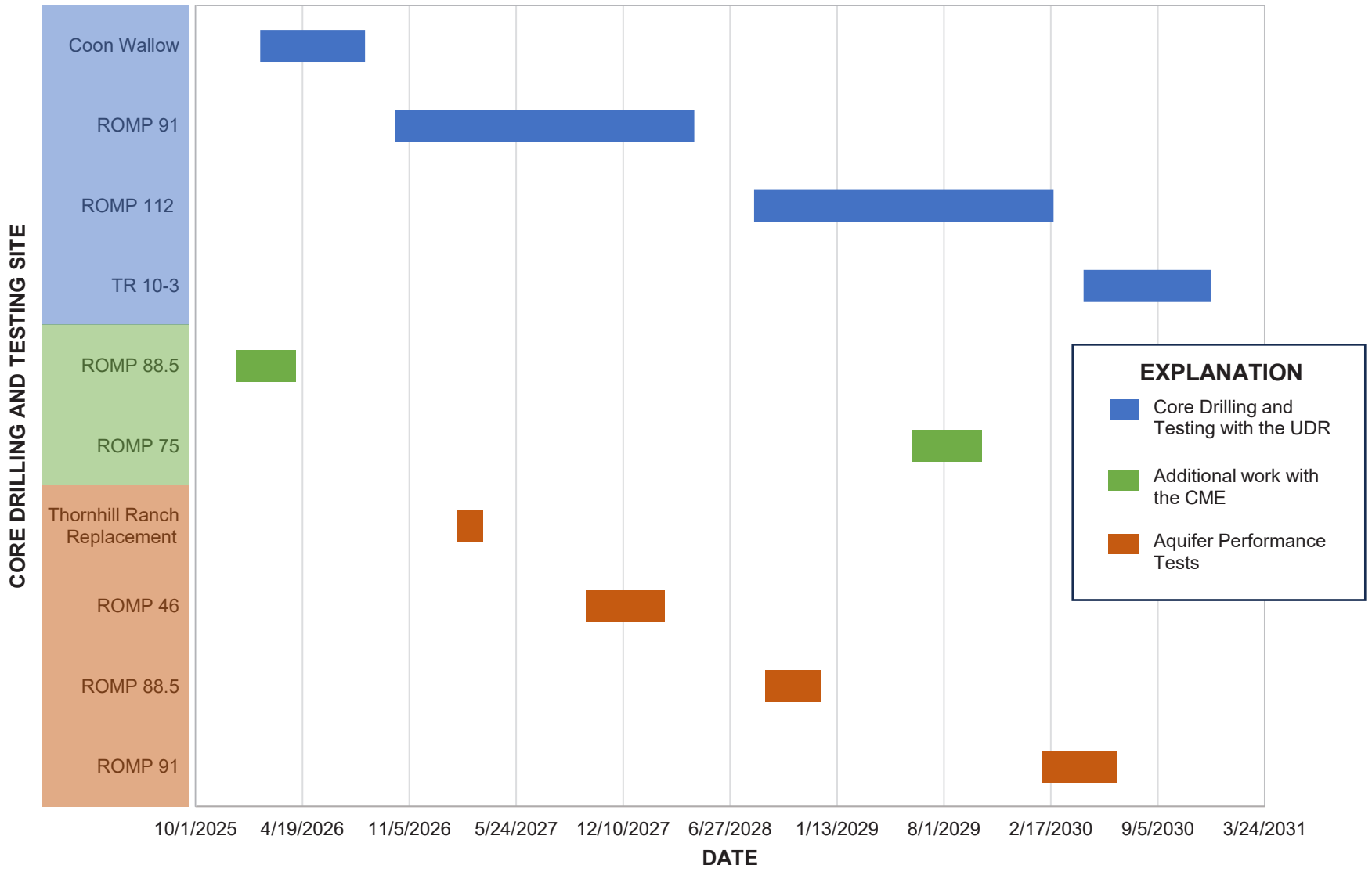
[-, none; CFWI, Central Florida Water Initiative; CGWQMN, Co., County; Coastal Groundwater Quality Monitoring Network; FDOT, Florida Department of Transportation; LFA I, lower Floridan aquifer below middle confining unit I; LFA II, lower Floridan aquifer below middle confining unit II; LFA VIII, lower Floridan aquifer below middle confining unit VIII; MFL, Minimum Flows and Levels; MW, Monitor Well; NDWRAP, Northern District Water Resource Assessment Project; Perm, permanent; ROMP, Regional Observation and Monitor-well Program; ROW, right-of-way; SWUCA, Southern Water Use Caution Area; Temp, temporary; TLA, temporary license agreement; TR, Coastal Transect; UFA, upper Floridan aquifer; UFANMN, Upper Floridan Aquifer Nutrient Monitoring Network]

Site Number	Site Name	Project	County	Easement Status	Monitor Wells											
					Perm surficial	Temp surficial	Perm Hawthorn	Temp Hawthorn	Perm UFA	Temp UFA	Perm LFA I	Temp LFA I	Perm LFA II	Temp LFA II	Perm LFA VIII	Temp LFA VIII
-	Lake Eva MW-3	CFWI	Polk	Acquired; TLA with no expiration date	1	-	-	-	-	-	-	-	-	-	-	-
TOTAL FOR FISCAL YEAR 2026					**4**	**0**	**4**	**1**	**6**	**2**	**0**	**0**	**0**	**0**	**0**	**1**
FISCAL YEAR 2027																
-	Lake Eva MW-1	CFWI	Polk	Acquired; TLA with no expiration date	-	-	-	-	1	-	-	-	-	-	-	-
-	Coon Wallow	CGWQMN, UFANMN	Hernando	District property	-	-	-	-	1	-	-	-	-	-	-	-
ROMP 51	Little Manatee River	CGWQMN, ROMP	Hillsborough	District property/FDOT access	-	-	-	-	1	-	-	-	-	-	-	-
ROMP 19X	MacArthur Tract East	ROMP	Sarasota	Acquired but need new TLA	-	-	1	-	-	-	-	-	-	-	-	-
TOTAL FOR FISCAL YEAR 2027					**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FISCAL YEAR 2028																
ROMP 91	Kirkland Ranch	NDWRAP, ROMP	Pasco	Not acquired	-	-	-	-	-	-	-	1	1	1	1	1
TOTAL FOR FISCAL YEAR 2028					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**
FISCAL YEAR 2029																
ROMP 91	Kirkland Ranch	NDWRAP, ROMP	Pasco	Not acquired	1	-	-	-	1	1	1	-	-	-	-	-
TOTAL FOR FISCAL YEAR 2029					**1**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**

Table 2. (Continued) Planned monitor well construction projects for fiscal years 2026 – 2030

[-, none; CFWI, Central Florida Water Initiative; CGWQMN, Co., County; Coastal Groundwater Quality Monitoring Network; FDOT, Florida Department of Transportation; LFA I, lower Floridan aquifer below middle confining unit I; LFA II, lower Floridan aquifer below middle confining unit II; LFA VIII, lower Floridan aquifer below middle confining unit VIII; MFL, Minimum Flows and Levels; MW, Monitor Well; NDWRAP, Northern District Water Resource Assessment Project; Perm, permanent; ROMP, Regional Observation and Monitor-well Program; ROW, right-of-way; SWUCA, Southern Water Use Caution Area; Temp, temporary; TLA, temporary license agreement; TR, Coastal Transect; UFA, upper Floridan aquifer; UFANMN, Upper Floridan Aquifer Nutrient Monitoring Network]

Site Number	Site Name	Project	County	Easement Status	Monitor Wells											
					Perm surficial	Temp surficial	Perm Hawthorn	Temp Hawthorn	Perm UFA	Temp UFA	Perm LFA I	Temp LFA I	Perm LFA II	Temp LFA II	Perm LFA VIII	Temp LFA VIII
FISCAL YEAR 2030																
ROMP 112	Rutland (Carlton Half Moon)	NDWRAP, ROMP	Sumter	District property	-	1	-	-	-	1	1	1	1	1	1	1
TOTAL FOR FISCAL YEAR 2030					**0**	**1**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
GRAND TOTAL FISCAL YEARS 2026 – 2030					**5**	**1**	**5**	**1**	**10**	**4**	**2**	**2**	**2**	**2**	**2**	**3**



[[1]Timeline forecast is based on an exploratory core drilling and testing rate of 25 feet per week (average rate from completed sites over last 12 years) plus site preparation time, an additional work (including removing rods, back-plugging, and abandoning core holes) rate of 150 feet per week, and current staff and resources; CME, Central Mining Equipment 85 drill rig; ROMP, Regional Observation and Monitor-well Program; TR, Coastal Transect; UDR, Universal Drill Rigs 200D LS drill rig]

Figure 1. Geohydrologic Data Section core drilling and testing projects forecast timeline.

Table 3. Planned aquifer performance tests for fiscal years 2026 – 2030

[-, none; ROMP, Regional Observation and Monitor-well Program; TLA, temporary license area]

Site Number	Site Name	County	Easement Status	Fiscal Year	Aquifer Performance Tests			
					Surficial	Hawthorn	Upper Floridan	Lower Floridan
-	Thornhill Ranch Replacement	Polk	Acquired; TLA expires 08/02/2027	2027	-	-	1	-
ROMP 46	Baird	Polk	Acquired; TLA Expires 06/13/2028	2028	1	2	2	-
ROMP 88.5	Northeast Polk	Polk	Acquired; TLA expires at project completion	2028	-	-	1	2
ROMP 91	Kirkland Ranch	Pasco	Not Acquired	2030	-	-	1	3
TOTAL FOR FISCAL YEARS 2026 – 2030					**1**	**2**	**5**	**5**

face. The surficial aquifer and shallow upper Floridan aquifer wells at the Centralia well site will be used in conjunction with this saltwater interface well. This well site will be equipped for long-term monitoring of water levels and water quality.

ROMP 91 – Kirkland Ranch

This well site is proposed to be in eastern Paso County. This well site is part of the ROMP inland 10-mile grid network and supports the Northern Tampa Bay recovery efforts and is ideal for monitoring the upper Floridan aquifer water levels to aid in groundwater modeling and May/September potentiometric mapping. Core drilling and testing at this site will provide a detailed characterization of the upper and lower Floridan aquifers, and delineate the extent of middle confining units I, II, and VIII.

Core drilling and testing is needed from land surface to the base of the Floridan aquifer system. Monitor wells are required in the surficial aquifer, upper Floridan aquifer, and lower Floridan aquifer below middle confining units I, II, and VIII. Temporary wells are needed in the upper Floridan aquifer and the lower Floridan aquifer below middle confining units I, II, and VIII for aquifer performance testing. This well site will be equipped for long-term monitoring of water levels and water quality.

ROMP 112 – Rutland (Carlton Half Moon)

This is an existing well site in northwestern Sumter County within the District's Gum Slough property. Prior work at this well site includes lithologic sampling from land surface to 1,026 feet bls and construction of a surficial aquifer well and upper Floridan aquifer well. This well site is part of the ROMP inland 10-mile grid network and supports the Northern District Water Resources Assessment Project (NDWRAP). Core drilling and testing at this site will provide a detailed characterization of the upper and lower Floridan aquifers, and delineate the extent of middle confining units I, II, and VIII.

Core drilling and testing is needed from land surface to the base of the Floridan aquifer system. Monitor wells are required in the lower Floridan aquifer below middle confining units I, II, and VIII, if present. Temporary wells are needed in the surficial aquifer, upper Floridan aquifer, and the lower Floridan aquifer below middle confining units I, II, and VIII, if present. This well site will be equipped for long-term monitoring of water levels and water quality.

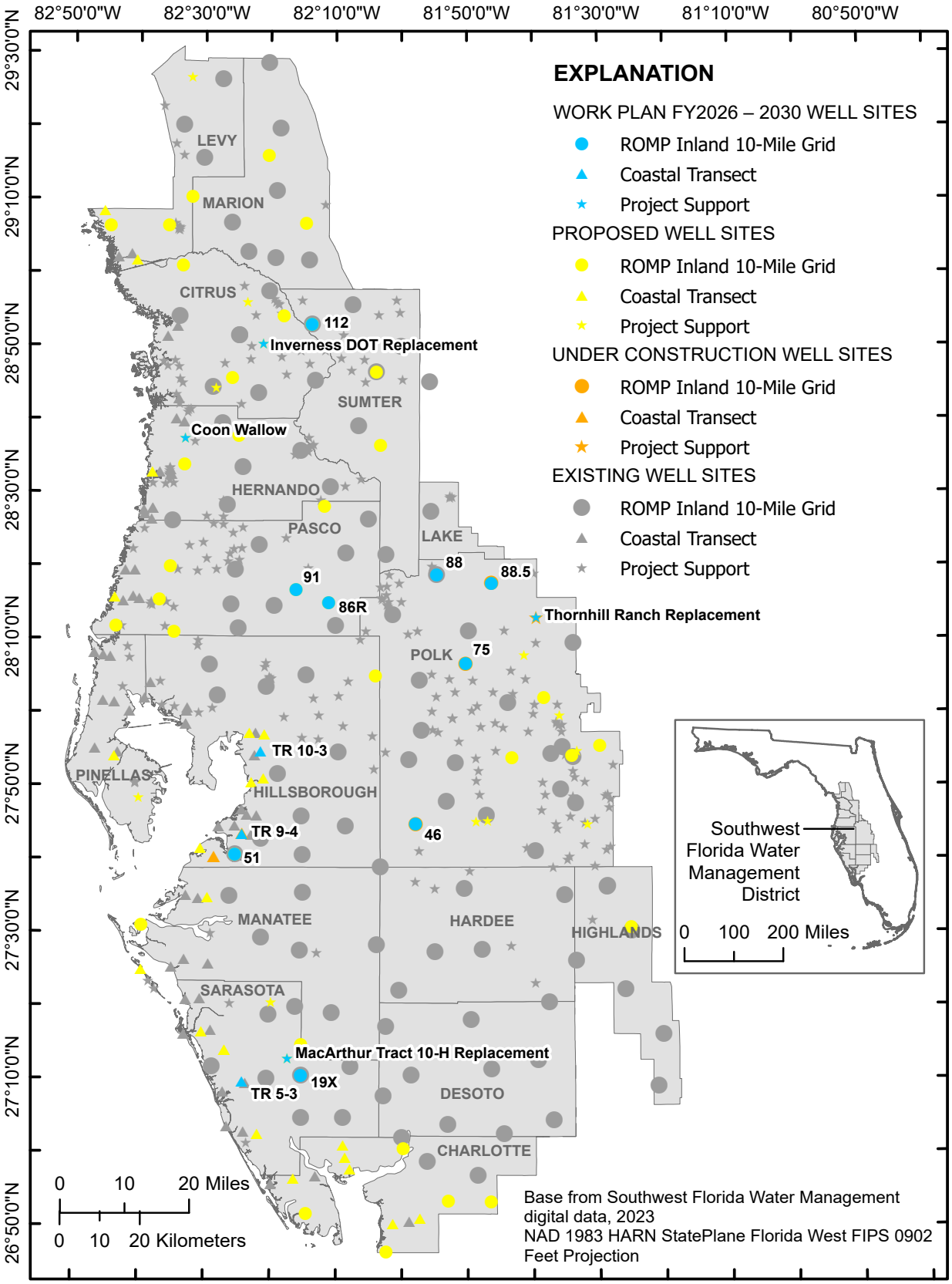
TR 10-3 – Camden Field

This well site is in west-central Hillsborough County. This well site is part of the ROMP coastal transect network and will assist in completing a coastal transect of existing wells to monitor the saltwater interface. Also, this well site is in an ideal location to provide data affects from a nearby SHARP well and it supports the SWUCA.

Core drilling and testing is needed from land surface to the saltwater/freshwater interface and will provide a detailed characterization of the surficial aquifer, Hawthorn aquifer system, and upper Floridan aquifer. Monitor wells are required in the surficial aquifer and the upper Floridan aquifer. This well site will be equipped for long-term monitoring of water levels and water quality.

Project Support Well Construction Projects

Project support well construction sites require well construction and minimal hydrogeologic data collection. The data



[FIPS, Federal Information Processing Standard; FY, fiscal year; HARN, High Accuracy Reference Network; NAD, North American Datum; ROMP, Regional Observation and Monitor-well Program; TR, Coastal Transect]

Figure 2. Geohydrologic Data Section core drilling and well construction sites.

collection work typically is limited to split-spoon sampling, drill cuttings collection, and geophysical logging. These well sites are typically completed in two to three weeks from the start of construction because of the limited data collection activities. Some well sites are included in more than one District project. The monitor wells planned for each project are presented in table 2.

Central Florida Water Initiative

The CFWI is a water supply planning effort to review existing and projected water use demands in a five-county region of Central Florida. The boundaries of the St. Johns River Water Management District, the South Florida Water Management District, and the Southwest Florida Water Management District meet in the area of southern Lake, Orange, Osceola, Seminole, and Polk Counties. This project involves the collaborative efforts of the three water management districts to determine the sustainable limits of the Floridan aquifer system and study alternative sources of water to address central Florida's current and long-term water supply needs (Central Florida Water Initiative, 2024).

The DMIT was created to identify existing hydrologic data currently collected within the CFWI boundaries and to make recommendations for future monitoring activities in the CFWI region. The DMIT produced a Hydrogeologic Work Plan, which was updated in February 2020, that identifies and lists monitoring requirements for wetlands, the surficial aquifer, the upper Floridan aquifer, and the lower Floridan aquifers. Well sites requiring coring and testing, well installation and/or aquifer performance testing include ROMP 88.5 – Northeast Polk, Thornhill Ranch Replacement, and ROMP 46 – Baird, which are discussed in the previous section. Most CFWI sites will also provide data for the Minimum Flows and Levels (MFL) project, which is explained in the next section (Data, Monitoring, and Investigations Team, 2020).

Minimum Flows and Levels

This project involves the establishment of MFLs for lakes, wetlands, rivers, and aquifers to identify the minimum flow and level at which further withdrawals would be significantly harmful to the water resources or ecology of the area (Southwest Florida Water Management District, 2024). Rivers, streams, springs, and estuaries require the establishment of minimum flows; and lakes, wetlands, and aquifers require the establishment of minimum levels. These projects typically require split-spoon sample collection and the construction of surficial aquifer and/or upper Floridan aquifer monitor wells.

Coastal Groundwater Quality Monitoring Network

The CGWQMN is a network of wells used to monitor the groundwater quality in areas of the District that are susceptible to saltwater intrusion and/or upwelling of mineralized water (Kraft, 2011). Proposed projects that will be included in this network include: Coon Wallow and TR 10-3 – Camden Field.

Protecting the District's monitor well assets and associated data integrity and ongoing groundwater data collection network build-out for coastal saltwater intrusion will increase in effort and importance (Southwest Florida Water Management District, 2024). Therefore, additional upper Floridan aquifer well sites may need to be added to existing transect sites in the future.

Upper Floridan Aquifer Nutrient Monitoring Network

The UFANMN is a network of wells used to monitor nutrients in groundwater basins of major springs within the District. The network is mostly made up of existing monitor wells and private wells volunteered by homeowners for sampling. Water quality from these well sites will support the springs restoration initiatives in the northern portion of the District. Proposed projects that will be included in this network include Coon Wallow.

Protecting the District's monitor well assets and associated data integrity and ongoing groundwater data collection network build-out for springs basins will increase in effort and importance (Southwest Florida Water Management District, 2024). Therefore, additional upper Floridan aquifer wells may need to be added in the future.

Well Sites Requiring Additional Work

Additional work is required at ongoing well sites to complete the core drilling and testing phase or to finish the project. This work can include removing core rods and temporary casing from core holes, back-plugging monitor wells or core holes, and abandoning core holes. Approximately 6,600 feet of core rods and temporary casing need to be removed from core holes and 5,200 feet of open hole needs to be back-plugged or abandoned at existing core drilling and testing well sites. Table 4 lists the work required at two core drilling and testing well sites for FYs 2026 to 2030 and figure 1 presents an estimated timeline to complete the work.

Well Repair and Maintenance Program

The WRMP was established to routinely assess District monitor wells and perform necessary repairs, modifications, or abandonments as needed. Since the 1970s, hundreds of monitor wells have been constructed or acquired by the GEO within the District as part of the ROMP and other support projects. Many of these wells are now 30 to 40 years old and repair and maintenance are needed to maintain the integrity of these wells. Wells acquired by the District after they were constructed may need to be modified to comply with the District's

Table 4. Additional work required at ongoing Geohydrologic Data section well sites for fiscal years 2026 – 2030

[-, none; ROMP, Regional Observation and Monitor-well Program; TLA, temporary license agreement]

Site Number	Site Name	County	Easement Status	Number of Back-plugs needed	Number of Abandonments Needed	Summary of Work
ROMP 88.5	Northeast Polk	Polk	Acquired; TLA expires at project completion	1	-	Remove 100 feet of temporary casing, 923 feet of core rods, and back-plug core hole
ROMP 75	Auburndale	Polk	Easement expires 2041	-	1	Remove 2,450 feet of temporary casing, 3,174 feet of core rods, and back-plug core hole

Table 5. Well repair requests received by the Geohydrologic Data Section as of March 2025

Total Number of Well Repair Requests	Completed Well Repair Requests	Pending Repairs	Percent Completed
413	220	193	53

Table 6. District-owned monitor wells needing inspection per the Well Repair and Maintenance Program as of March 2025

District-owned Monitor Wells	Number of Wells Inspected	Total Number of Wells Pending Inspection	Percent Completed
1,962	1,648	314	84

well construction standards and to ensure there is no cross-connection of aquifers. Monitor wells that are damaged by vehicles or vandalism and wells in the way of road construction projects may require repair, replacement, or abandonment.

Historically, the GEO has responded to well problems and performed repairs or abandonments on an as-needed basis and when work loads permit. The WRMP ensures a proactive approach by routinely inspecting and maintaining the District's monitor wells to avoid failing wells and allow continuous collection of accurate data. A full-time employee was requested and approved in the FY2026 Business Plan (Southwest Florida Water Management District, 2024) to help facilitate the WRMP.

Table 5 shows the number of well repair requests received by the GEO as of March 2025 and percent completed. Table 6 shows the number of District-owned monitor wells that require routine inspection and maintenance by the GEO as part of the WRMP and percent completed. The backlog of repair requests will need to be worked on while incorporating a certain number of routine inspections and maintenance during FY2026 to FY2030. Appendix C presents additional metrics for the WRMP.

Summary and Conclusions

Groundwater demand continues to increase throughout the District. The potential to adversely affect the water resources increases as a result of this demand. Hydrogeologic data and thorough monitoring are necessary to ensure that sound management decisions can be made.

The GEO's data collection programs and monitor well networks serve as the District's primary source for hydrogeologic data. This Work Plan identifies the hydrogeologic data collection and well construction activities planned for FY2026 to FY2030. Construction of 39 wells are planned to support District projects during those fiscal years.

Projects requiring extensive data collection are grouped as core drilling and testing projects. Five ongoing core drilling and testing projects (ROMP 75 – Auburndale, ROMP 88.5 – Northeast Polk, Thornhill Ranch Replacement, ROMP 46 – Baird, and ROMP TR 9-4 – Ruskin) will be completed and four new core drilling and testing projects will be started. The construction of 28 wells and completion of 13 aquifer performance tests are planned for these projects from FY2026 to FY2030. These projects support District regional projects including the CFWI, CGWQMN, NDWRAP, ROMP, SWUCA, and UFANMN.

Projects that require monitor well construction but minimal data collection are grouped as project support well construction projects. The construction of 11 monitor wells are planned for these projects from FY2026 to FY2030. The project support well construction projects aid District regional projects including the CFWI, CGWQMN, MFL, ROMP, SWUCA, and UFANMN.

Selected References

Central Florida Water Initiative, 2024, What is CFWI: *https://cfiwater.com/what_is_CFWI.html* (accessed December 19, 2024).

Data, Monitoring, and Investigations Team, 2016, DMIT Hydrogeologic Annual Work Plan for FY2016–2020, 21 p.

Data, Monitoring, and Investigations Team, 2020, DMIT Hydrogeologic Annual Work Plan for FY2020–2025, 23 p.

Kraft, Carol, 2011, Coastal Groundwater Quality Monitoring Network/Water-Use Permit Network Report Volume VI: Brooksville, Florida, Southwest Florida Water Management District, 146 p.

Southwest Florida Water Management District, 2024, Strategic Plan 2024–2028: Brooksville, Florida, Southwest Florida Water Management District, 23 p.

Southwest Florida Water Management District, 2024, FY2026 Business Plan Executive Summary: Brooksville, Florida, Southwest Florida Water Management District, 27 p.

This page intentionally left blank.

Appendix A. Work Requests

ROMP Site Scope of Work Checklist

Site Information

Name ROMP 75 - Auburndale **County** Polk

Project Regional Observation and Monitor-well Program **STR** 29/27/25

Is this an exsting District well site? ◉ No ○ Yes **Lat/Long** 28 06 31.7 / 81 50 13.9

Geologic Sampling ○ No ◉ Yes

Depth of exploration:

- ☐ to top of rock
- ☐ to saltwater/freshwater interface
- ☐ 50 feet into middle confining unit I
- ☒ 50 feet into middle confining unit II
- ☐ 50 feet into middle confining unit VI
- ☐ to the base of the Floridan aquifer system
- ☐ Other (please specify in comments)

Well Construction ○ No ◉ Yes

The primary long-term use for the well(s) will be:

- ☒ Water Level Monitoring
- ☒ Water Quality Monitoring
- ☐ Other (please specify in comments)

Check all aquifers that require long-term monitoring:

- ☒ surficial aquifer
- ☐ Peace River aquifer (PZ1)
- ☒ upper Arcadia aquifer (PZ2)
- ☐ lower Arcadia aquifer (PZ3)
- ☒ Upper Floridan aquifer
- ☐ Lower Floridan aquifer below MCU I
- ☒ Lower Floridan aquifer below MCU II
- ☐ Lower Floridan aquifer below MCU VI
- ☐ Other (please specify in comments)

Aquifer Performance Testing ○ No ◉ Yes

	parameters to be tested		
surficial aquifer:	☒ T	☒ S	
Peace River aquifer (PZ1):	☐ T	☐ S	☐ L
upper Arcadia aquifer (PZ2):	☒ T	☒ S	☒ L
lower Arcadia aquifer (PZ3):	☐ T	☐ S	☐ L
Upper Floridan aquifer:	☒ T	☒ S	☒ L
Lower Floridan aquifer below MCU I:	☐ T	☐ S	☐ L
Lower Floridan aquifer below MCU II:	☐ T	☐ S	☐ L
Lower Floridan aquifer below MCU VI:	☐ T	☐ S	

An APT may not be possible if water quality if poor

Other Data Collection ◉ No ○ Yes

- ☐ Geophysical Logging
- ☐ Video Logging
- ☐ Flow Logging
- ☐ Sonic Logging
- ☐ Other (please specify in comments)

Comments:

Wells and APTs needed for all aquifers present in the HAS.
I suspect we should look at the Lower Floridan at this site. But I will defer to M Barcelo on this.

☐ **No changes** ☒ **Changes noted above** ☐ **New Site** **Initial:** MHB

Well Site Scope of Work Checklist

Is this an exsting District well site? ◉ No ○ Yes Date 3/9/2021

Site Name ROMP 88.5

Project Central Florida Water Initiative/P005

County Polk

STR TBD

Justification (cost/benefit) Described on Page 2

Lat/Long TBD

PIMS Project No. (if applicable)

Geologic Sampling ○ No ◉ Yes

Depth of exploration:

- ☐ to top of rock
- ☐ to saltwater/freshwater interface
- ☐ 50 feet into middle confining unit I
- ☐ 50 feet into middle confining unit II
- ☐ 50 feet into middle confining unit VI
- ☒ to the base of the Floridan aquifer system
- ☐ Other (please specify in comments)

Well Construction ○ No ◉ Yes

The primary long-term use for the well(s) will be:

- ☒ Water Level Monitoring
- ☒ Water Quality Monitoring
- ☐ Other (please specify in comments)

Check all aquifers that require long-term monitoring:

- ☒ surficial aquifer
- ☐ Peace River aquifer (PZ1)
- ☐ upper Arcadia aquifer (PZ2)
- ☐ lower Arcadia aquifer (PZ3)
- ☒ Upper Floridan aquifer
- ☒ Lower Floridan aquifer below MCU I
- ☒ Lower Floridan aquifer below MCU II
- ☐ Lower Floridan aquifer below MCU VI
- ☐ Other (please specify in comments)

Aquifer Performance Testing ○ No ◉ Yes

	parameters to be tested		
surficial aquifer:	☐ T	☐ S	
Peace River aquifer (PZ1):	☐ T	☐ S	☐ L
upper Arcadia aquifer (PZ2):	☐ T	☐ S	☐ L
lower Arcadia aquifer (PZ3):	☐ T	☐ S	☐ L
Upper Floridan aquifer:	☒ T	☒ S	☒ L
Lower Floridan aquifer below MCU I:	☒ T	☒ S	☒ L
Lower Floridan aquifer below MCU II:	☒ T	☒ S	☒ L
Lower Floridan aquifer below MCU VI:	☐ T	☐ S	

An APT may not be possible if water quality if poor

Other Data Collection ○ No ◉ Yes

- ☒ Geophysical Logging
- ☒ Video Logging
- ☒ Flow Logging
- ☐ Sonic Logging
- ☐ Other (please specify in comments)

Comments:

Geologic sampling: Exploratory drilling to determine presence of both middle confining units I and II and the glauconite marker unit. Water quality, water level and hydraulic property profiling is necessary to determine presence of both middle confining units I and II and the glauconite marker unit.

☐ **No changes** ☐ **Changes noted above** ☒ **New Site** **Initial:** JGP

Justification for the work required (cost and benefit):

Purpose and Scope:
This is a new ROMP site located in an area that is critical toward establishing the geographic extent of middle confining units I and II, the glauconite marker unit (GMU), and the extent of the Lower Floridan aquifers below these confining units. This site will be a "full ROMP site" with a surficial aquifer well, Upper Floridan aquifer well, Lower Floridan aquifer well below middle confining unit I, Lower Floridan aquifer well below middle confining unit IIa, and a Lower Floridan aquifer well below the GMU (Lower Floridan aquifer IIb), for a total of 5 monitor wells. Exploration will be conducted to the degree necessary to define the boundaries of the middle confining units I and II, the GMU, and the Lower Floridan aquifers I, IIa, and IIb. Discrete zone testing for water quality and water level should be conducted to assist in defining these boundaries and to characterize the water supply potential of the aquifers. Exploration will extend to the base of the Floridan aquifer system.

Wells will be constructed in the surficial aquifer, Upper Florida aquifer, Lower Floridan aquifers below middle confining units I and II, and Lower Floridan aquifer below the GMU. Additional temporary wells in the Lower Floridan aquifers below middle confining units I, IIa, and below the GMU may be constructed in order to conduct multi-well aquifer performance tests. Multi-well aquifer performance tests are essential in this region to determine the sustainablilty of water quality for the Upper Floridan and the Lower Floridan aquifers below each unit. The multi-well aquifer performance tests will also determine the leakance coefficients between the surficial aquifer and the Upper Floridan, the Upper Floridan and the Lower Floridan below middle confining unit I and between the Lower Floridan aquifers below middle confining units I and II.

Justification:
1. This site is located within Polk County which is part of the Central Florida Water Initiative (CFWI) region. The Lower Floridan aquifers have been identified in the CFWI Regional Water Supply Plan as an alternative water supply as a non-traditional groundwater source. Increased withdrawals from the Lower Floridan aquifers are anticipated due to the expectation of meeting water supply demands within the CFWI region through non-traditional water supply sources.
2. This site has been identified in the Data, Monitoring and Investigations Team (DMIT) FY2015-FY2020 Work plan. The DMIT is a subgroup of the CFWI and has identified this location as a key site to collect water levels and water quality data in the Lower Floridan aquifers below middle confining units I and II and the Lower Floridan aquifer below the GMU (IIb).
3. This site will refine the hydraulic properties of the Lower Floridan aquifers below middle confining units I, and II, and the Lower Floridan aquifer below the GMU (IIb) for use in the District Wide Regulatory Model (DWRM), Northern District Model (NDM), East Central Florida Transient Expanded Model (ECFTX) and future modeling efforts.
4. This site will improve the calibration of the DWRM, NDM, ECFTX and future modeling efforts.
5. This site will be used for collecting long-term water levels for the Lower Floridan aquifers below middle confining units I, II, and the Lower Floridan aquifer below the GMU (IIb).
6. This site will improve current knowledge of the extent of middle confining units I and II, and the glauconite marker unit within the region of the WMD jurisdictional boundary.
The unit boundaries, hydraulic test data, and long-term monitoring will be utilized by the District, local water users and the CFWI. Data collection will be key in the determination of the health of the resource in northern Polk County as future water supply demands from the Lower Floridan aquifers within this region grows.

Benefits:
Expansion of data collection in this region will help manage and protect the resource. These data will allow the District to forecast limitation in groundwater supply so cost-effective solutions can be properly planned. This will prevent unanticipated impacts that will need to be resolved with water users of the region under a recover strategy. These data will also contribute to the prevention of environmental impacts that may not be able to be recovered or mitigated once experienced.

Supported Projects:
Data- Aquifer Exploration & Monitor Well Drilling Program (ROMP) Districtwide Initiatives (C005)
CFWI- Data, Monitoring and Investigations Team
CFWI- Expansion of East Central Florida Transient Model
Hydrogeological Investigation of the Lower Floridan Aquifer in Polk County (P280)
District Wide Regulatory Model - (P625)
MFL Technical Support- Northern District WRAP (P876)
Potentially Supported projects:
WUP- Water Use Permitting Program (M002)
Regional Water Supply Plan
Water Quality Monitoring Network
Hydrologic Conditions Reporting

Geohydrologic Data Request for Well Construction, Modification, Testing

Work Request Number	492	**Submitted On**	10/30/2017
Priority	Normal	**Submitted At**	14:05:22
Status	Assigned	**Last Edited On**	10/30/2017
Submitted By	jpatterson	**Last Edited At**	14:05:23
Assignees	Manager		

Description

Entered on 10/30/2017 at 2:05:22 PM EDT (GMT-0400) by Jason Patterson:
[no Description entered]

Well Site Name	Thornhill Ranch	**Name of Project**	Thornhill Ranch Well Replacement
Is this an Existing District Well Site?	YES	**County**	Polk

Description of Work

Construct a new Upper Florida aquifer well and surficial aquifer well and abandon the existing Thornhill Ranch Upper Floridan and surficial aquifer well. Geologic sampling is required at this site. The exploration depth should extend to the bottom of the Upper Floridan aquifer. Long term water level data will be collected at both wells and will need to begin before abandoning the existing wells.

Is New Well Construction Required?	YES	**Select Aquifers that Require Long-Term Monitoring:**	surficial aquifer Upper Floridan aquifer
Is Exploratory Data Required?	YES	**Depth of Exploration for Lithologic**	50 feet into middle confining unit II

Exploratory Data Comments

Depth of exploration is not determined. Exploration is necessary until the bottom of the Upper Floridan aquifer is reached.

Is Aquifer Performance Testing Required?	YES	**Select Aquifers that Require Testing**	Upper Floridan aquifer

Aquifier Testing Comments

An Aquifer Performance Test for the Upper Floridan aquifer is required.

Logging, Other Data Collection Needs	YES	**Select All Other that Apply**	Geophysical Logging
I have read the TERMS OF REQUEST	Yes	**Request Type**	Well Construction, Modification, Testing
Priority Explanation	Replace Existing Thornhill Ranch wells	**PIMS Project Number**	TMWR

Justification (Cost-Benefit)

Data collection began at Thornhill Ranch Deep in 1983 and in 1986 for the Thornhill Ranch Shallow well. The next closest well pairing for monitoring the Upper Floridan aquifer and the surficial aquifer is located approximately 3.5 miles north of the site. Data collection within this area of Polk County is sparse and the well cluster is necessary to support the minimum options requirement set forth by the Central Florida Water Initiative's (CFWI) Data, Monitoring and Investigations Team (DMIT). The proposed wells should be constructed and recording daily water levels before abandoning the existing wells in order to have overlapping data.

Do You Know the SID(s)?	Yes	**SID #1**	17715
STR for SID #1	19/26/27	**Lattitude for SID #1**	28 12 04.50
Longitude for SID #1	81 39 16.02	**Enter SID #2 ?**	Yes
SID #2	17714	**STR for SID #2**	19/26/27
Lattitude for SID #2	28 12 04.50	**Longitude for SID #2**	81 39 16.00
The Primary Long-Term Use for the Well(s) will be	Water Level Monitoring Water Quality Monitoring	**Is Existing Well Modification Required?**	Yes
Well Modification Type	Backplugging		

Well Modification Comments

Wells need to be properly abandoned once water level collection begins at the replacement wells.

Transmissivity	Monitoring	**Storativity**	Montoring
Leakance	Monitoring	**Lithologic Sampling Required?**	Yes
Water Quality Profile Required?	No	**Water Level Profile Required?**	Yes
Master Ticket Number	492	**Last Name**	Patterson
First Name	Jason	**Email Address**	jason.patterson@swfwmd.state.fl.us
User ID	JPATTERSON	**Call Back Number**	4234

Data Collection Bureau Initiative Request Section I *(To be completed by requestor)*

For instructions, refer to guidance documentation. After completing, route this form to requestor's Manager and Bureau Chief for approvals. Upon receipt, forward approvals and this completed form to data.maps@watermatters.org. Contact DCB data stewards for assistance.

Requestor: Ron Basso	**Date:** 3/21/2022
Sponsor: Ron Basso	
Project/Network Name: Saltwater Intrusion Minimum Aquifer Levels	**Project/Network Number:** SWIMAL (P628)
Anticipated Begin Date: 10/1/2022	**Anticipated End Date:** **9/30/2023**
Associated Permit Numbers:	

Data Collection Stewardship Category:
☐ Geospatial (MGIS) ☐ Land Survey
x Geohydrologic x Hydrologic
x Water Quality ☐ **Other**

Area of Responsibility Linkages:
☐ Flood Protection x Natural Systems
☐ Water Quality x Water Supply

Initiative Request Description:
Add another ROMP site (TR9-4) to replace the existing TR9-3 Avon Park monitor well that is currently one of 10 SWIMAL wells. The Saltwater Intrusion Minimum Aquifer Level is a composite UFA water level comprised of a weighted average of 10 monitor wells in the MIA of the SWUCA. A SHARP injection well (RW-5) is proposed to be installed about 1,200 feet from the existing TR9-3 site. It will be important to substitute the new Avon Park Fm well at TR9-4 site for the existing one at TR9-3 since its water levels will likely be locally influenced by nearby injection. It will be vital to have a period of overlap between the two wells prior to injection so that a statistical relation can be developed to hindcast an average 1990-1999 water level at the new TR9-4 Avon Park well. This overlap should be as long as possible to develop the best statistical fit but include a minimum of one to two years if possible.

District/Business Purpose, Benefits, and Key Stakeholders:
The new site will support the continuity of the original SWIMAL network and composite level. The wells are referenced along with the minimum aquifer level in administrative rules. The new site will serve as an additional background site to monitor water levels and water quality outside the immediate influence of SHARP injection. The SWIMAL level will be a significant "barometer" to evaluate the effectiveness of the SWUCA recovery plan in 2025.

Data Collection Frequency and Duration:
Hourly, but not real time, on an ongoing basis for water levels. Quarterly or bi-annually for water quality as part of the coastal saltwater intrusion network.

Geographic Coverage:
The new location is near Ruskin, Florida in southwest Hillsborough County.

Easement or License Agreement or Permitting Details:
A parcel has been donated by Hillsborough County at a location about 1.5 miles southeast of the existing TR9-3 site.

Data Collection Entity (describe who will be responsible for the data collection):

Responsible Entity	Task Type	Entity Type
Data Collection Bureau	Water levels and Water quality	x Staff ☐ Contractor
Data Collection Bureau	Coring and Instillation of Monitoring Wells	x Staff x` Contractor
		☐ Staff ☐ Contractor
		☐ Staff ☐ Contractor

Assumptions and Dependencies:

- Hillsborough County may fund the cost of the new site (TR9-4).
- Availability of Hydrologic Data Section staff to install monitoring equipment. Assumed multiple sensors can be connected to one datalogger and telemetry setup.

Business Risks:

- **High – if not implemented, the SWIMAL and background water level and water quality conditions may be artificially affected by SHARP injection – thus negating the intent of the SWIMAL well monitoring and assessment of recovery in the SWUCA area.**

Other Options:

- **none**

Data Collection Bureau Initiative Requirements Section II (To Be Completed by DCB Staff)

Initiative Request Description:
Perform exploratory core drilling and testing to locate the depth of the 1,000 mg/L chloride concentration. Construct 1 Avon Park/UFA saltwater interface monitor well, construct 1 Suwannee Fm/UFA monitor well, construct 1 surficial aquifer monitor well.

DCWG Investment Classification
☐ Operational: Recurring/No workload issue
x Significant: Ad hoc//Workload Issue

Initiative Priority
xHigh ☐ Medium ☐ Low

Initiative Complexity:
Fairly complex – may require drilling staff to operate UDR drill rig and CME drill rig simultaneously. Could potentially require hiring of temporary worker to assist with labor requirements on CME. .

Coordination with Real Estate and/or WUP:
Real Estate staff needed to work with Hillsborough County staff to locate and acquire a suitable location for temporary construction easement and permanent well site.

Proposed Solution:
District staff will perform exploratory core drilling and testing with District-owned CME drill rig to delineate aquifers and locate 1,000 mg/L chloride depth. Staff will design required permanent monitor wells. Private sector well drilling contractors will be contracted to construct the permanent monitor wells.

Proposed Solution Components (see addendum for costs breakdown):

Well Construction:

- 1 surficial monitor well
- 1 Suwannee Formation/UFA monitor well
- 1 Avon Park Formation/UFA SWI monitor well

Monitoring Equipment:

- Hydrologic Data Monitoring Equipment – see Data Monitoring Equipment and Parts & Supplies Costs table below

Monitoring Labor Effort:

- Water Quality Monitoring – 2 wells monitored 3x/year as part of saltwater intrusion network; surficial well would not be monitored for WQ.
- Hydrologic Data – 3 wells continuous monitoring – 4 hrs/year operation, 1.5 hrs/yr maintenance

Other:

- Laboratory Analysis – Analysis of standard saltwater intrusion network analyte list for 2 wells sampled 3x/year.

Initiative Risks: No risks for water quality monitoring.

DCB Workload Assessment: **GEO Section** – 2 drilling staff and 1 hydrogeologist will be assigned to conduct exploratory drilling to locate the depth of the salt-water interface. This work can be accomplished with existing staff utilizing the District-owned CME core drilling rig. One drilling staff will oversee a private well drilling company contracted to construct the permanent wells. **Water quality monitoring** – the additional of 2 wells sampled 3x per year will not result in a significant or undue burden on existing workloads; these wells will be added to groundwater network runs already established in the geographic area.

Costs (to update values for labor, equipment and other columns from addendum calculations, right click in cell and select 'Update Field')

Well Construction	Monitoring Equipment	Monitoring Labor	Other	Total
322,750	6,582	1,180	$534.12 (Lab analysis)	**$ 331,046.12**

Funding

Budgeted	Budget Transfer Required?
☐ Yes ☐ No	☐ Yes ☐ No

Financial Assumptions and Dependencies:
Hydrologic Data – funds for equipment will need to be budgeted in the year construction is anticipated.

DCB Data Collection Bureau Initiative Request Dispensation

Referred to Governance?	Governance Meeting Date	Final Approval Status
☐ Yes ☐ No		☐ Approved ☐ Denied

Governance Related Comments:

Addendum: **To be completed separately by each DCB section involved in the request.** **To update values in total column, right click in cell and select 'Update Field'**

Well Construction Costs

Description	Total Cost
1 Permanent Surficial Aquifer Monitor Well (TD 50 feet bls)	**$5,000**
1 Permanent UFA Suwannee Limestone Monitor Well (TD 375 feet bls)	**$93,750**

1 Permanent UFA Avon Park Formation SWI Monitor Well (TD 800 feet bls)	**$224,000**
	$
Total Wellsite Construction	**$322,750**

Assumption(s):

Data Monitoring Equipment and Parts & Supplies Costs:

Description	Cost/Item	Quantity	Total Cost
Equipment Shelters	$289	3	**$867**
Data Logger	$2,100	1	**$2,100**
Sensors	$1,138	3	**$3,414**
Power Supply	$201	1	**$201**
Telemetry	$0	0	**$0**
Overall Equipment Cost			**$6,582**

Assumption(s):

Labor Costs:

Labor Description	Hours Required	Labor Cost/hr	# of Stations	# of Events	Total Cost
Water Quality Monitoring	4	$23	2	3	**$552**
Hydrologic Data Monitoring Equipment Installation (no telemetry)	7	$	3	1	**$215**
Hydrologic Data O&M	5.5	$	3		**$413**
Overall Labor					**$1,180**

Assumption(s): Hydrologic Data = 11 hrs installation, 4 hrs annual operation, 1.5 hrs annual maintenance for all 3 wells.

Other Costs:

Description	Qty Required	Cost/Item	# of Stations	# of Events	Total Cost
Laboratory Analysis	1	$89.02	2	3	**$534.12**
Overall Other Cost					**$534.12**

Assumption(s):

Well Site Scope of Work Checklist

Is this an exsting District well site? ◯ No ◉ Yes Date _____

Site Name ROMP 46 - Baird

Project

County Polk

STR 31/31/24

Justification (cost/benefit) Described on Page 2

Lat/Long 27 44 24.3 / 81 57 02.6

PIMS Project No. (if applicable)

Geologic Sampling ◯ No ◉ Yes

Depth of exploration:

- ☐ to top of rock
- ☐ to saltwater/freshwater interface
- ☐ 50 feet into middle confining unit I
- ☒ 50 feet into middle confining unit II
- ☐ 50 feet into middle confining unit VI
- ☐ to the base of the Floridan aquifer system
- ☐ Other (please specify in comments)

Well Construction ◯ No ◉ Yes

The primary long-term use for the well(s) will be:

- ☒ Water Level Monitoring
- ☒ Water Quality Monitoring
- ☐ Other (please specify in comments)

Check all aquifers that require long-term monitoring:

- ☒ surficial aquifer
- ☐ Peace River aquifer (PZ1)
- ☒ upper Arcadia aquifer (PZ2)
- ☒ lower Arcadia aquifer (PZ3)
- ☒ Upper Floridan aquifer
- ☐ Lower Floridan aquifer below MCU I
- ☐ Lower Floridan aquifer below MCU II
- ☐ Lower Floridan aquifer below MCU VI
- ☐ Other (please specify in comments)

Aquifer Performance Testing ◯ No ◉ Yes

	parameters to be tested		
surficial aquifer:	☒ T	☒ S	
Peace River aquifer (PZ1):	☐ T	☐ S	☐ L
upper Arcadia aquifer (PZ2):	☒ T	☒ S	☒ L
lower Arcadia aquifer (PZ3):	☒ T	☒ S	☒ L
Upper Floridan aquifer:	☒ T	☒ S	☒ L
Lower Floridan aquifer below MCU I:	☐ T	☐ S	☐ L
Lower Floridan aquifer below MCU II:	☐ T	☐ S	☐ L
Lower Floridan aquifer below MCU VI:	☐ T	☐ S	

An APT may not be possible if water quality if poor

Other Data Collection ◉ No ◯ Yes

- ☐ Geophysical Logging
- ☐ Video Logging
- ☐ Flow Logging
- ☐ Sonic Logging
- ☐ Other (please specify in comments)

Comments:

This site has been acquired.

Wells and ATPs need for all aquifers present in the HAS.

☐ **No changes** ☐ **Changes noted above** ☐ **New Site** **Initial:** _____

Geohydrologic Data Request for Well Construction, Modification, Testing

Work Request Number	562	**Submitted On**	08/14/2019
Priority	Normal	**Submitted At**	11:55:42
Status	Assigned	**Last Edited On**	08/14/2019
Submitted By	ddewitt	**Last Edited At**	11:55:45
Assignees	Manager		

Description

Entered on 08/14/2019 at 11:55:42 AM EDT (GMT-0400) by Dave Dewitt:
[no Description entered]

Well Site Name	Saltwater interface monitor we ll at Coon Wallow	**Name of Project**	ROMP
Is this an Existing District Well Site?	NO	**Is the Well Site Already Acquired?**	YES
County	Hernando		

Description of Work

Core drilling and testing needed to identify the depth to the saltwater interface inland of the Chassahowitzka Swamp in coastal Hernando County. A single Upper Floridan aquifer monitor well will be constructed following test drilling.

Is New Well Construction Required?	YES	**Select Aquifers that Require Long-Term Monitoring:**	Upper Floridan aquifer
Is Exploratory Data Required?	YES	**Depth of Exploration for Lithologic**	to saltwater/freshwater interf ace
Is Aquifer Performance Testing Required?	NO	**Logging, Other Data Collection Needs**	YES
Select All Other that Apply	Geophysical Logging	**I have read the TERMS OF REQUEST**	Yes
Request Type	Well Construction, Modificatio n, Testing	**Priority Explanation**	Requested work will be include d in the GEO workplan and sche duled accordingly
PIMS Project Number	C005		

Justification (Cost-Benefit)

Addition of this saltwater interface monitoring site was discussed during the 2019 GEO Workplan meeting with members of the Resource Evaluation section and the WQMP. An apparent gap in groundwater-quality monitoring had been identified between the recently completed TR 19-3 site and the two TR-20 transect sites to the north. This new well site will close that gap in the coastal interface monitoring, and will aid in delineating the subsurface saline water for tracking saltwater intrusion in the coastal margin of Hernando County.

The Primary Long-Term Use for the Well(s) will be	Water Level and Quality Monitoring	**Is Existing Well Modification Required?**	No
Lithologic Sampling Required?	Yes	**Water Quality Profile Required?**	Yes
Depth of Exploration for Water Quality	to saltwater/freshwater interf ace	**Water Level Profile Required?**	Yes
Depth of Exploration for Water Level	to saltwater/freshwater interf ace	**Hydrologic Profile (Slug Test) Required?**	No
Master Ticket Number	562	**Last Name**	Dewitt
First Name	Dave	**Email Address**	dave.dewitt@swfwmd.state.fl.us
User ID	DDEWITT	**Call Back Number**	4512

Data Collection Bureau Initiative Request

Page 1

Note: Hover over each field for tips to fill out form.

Requestor: Hua Zhang

Date: 10/28/2024

Project/Network Name: East Pasco ROMP site - LFA

Project/Network Number: ROMP

Anticipated Begin Date: 1/6/2025

Anticipated End Date: mm/dd/yyyy

Associated Permit Numbers:

Data Collection Stewardship Category: Geohydrologic, Hydrologic

Area of Responsibility Linkages: Water Supply, Natural Systems

Initiative Request Description

The request is to develop a ROMP site extend to the lower Floridan aquifer(s) in eastern Pasco near St. Leo. This request will involve site acquisition, well drilling, installation of water level recording instrumentation and ongoing data collection.

District/Business Purpose	District/Business Benefits	Stakeholders
There is a general lack of LFA geohydrological and water quality information in the area. To meet the increasing water demand from population growth in Pasco County, TBW is exploring the construction of a new LFA wellfield in their 2023 Master Water plan. The	The ROMP site will allow the District to further understand the hydrogeology and water quality within the southern portion of the Brooksville Ridge, an area of hydrogeologic and lithologic complexity. The ROMP site will be used for potentiometric mapping, help	TBW, Pasco County P417 – Groundwater Modeling support M002 – Water Use Permitting Z663 -Data- Hydrologic Data-Groundwater P883 – Northern Tampa Bay Recovery

Data Collection Frequency and Duration: Collect hourly water levels. At minimum, daily data collection

Geographic Coverage (Must attach a map with scale.): Eastern Pasco County between St. Leo and Dade City

Easement/License/Permit Agreement Details:

Data Collection Entity *(Describe who will be responsible for the data collection):*

Responsible Entity	Task Type		
Geohydrologic	well construction and geohydrologic data collection	☑ Staff	☑ Contractor
Hydrologic	data collection equipment installation and monitoring	☑ Staff	☐ Contractor
Water Quality	water quality sampling, data management and analysis	☑ Staff	☐ Contractor
		☐ Staff	☐ Contractor
		☐ Staff	☐ Contractor
		☐ Staff	☐ Contractor

Assumptions and Dependencies:

If the drilling result indicate that there are freshwater available in the LFA II or LFA VIII, additional monitoring wells will be needed.

Business Risks: Medium — There is a possibility of loss of property if not implemented.

Other Options:

EasternPasco.pptx

Attach email approval from requestor's manager and bureau chief and map with scale before submitting

Cancel

Next

Data Collection Bureau Initiative Request

Page 2

194

Requester:Hua Zhang

Date:10/28/2024

Project/Network Name:East Pasco ROMP site - LFA

Project/Network Number:ROMP

Geologic Sampling ○ No ◉ Yes

Depth of exploration:

- ☐ to top of rock
- ☐ to saltwater/freshwater interface
- ☐ 50 feet into middle confining unit I
- ☐ 50 feet into middle confining unit II
- ☐ 50 feet into middle confining unit VIII
- ☐ 50 feet into middle confining unit VI
- ☑ to the base of the Floridan aquifer
- ☐ Other (please specify in comments)

Well Construction ○ No ◉ Yes

The primary long-term use for the well(s) will be:

- ☑ Water level monitoring
- ☑ Water quality monitoring
- ☐ Other (please specify in comments)

Check all aquifers that require long-term monitoring:

- ☑ surficial aquifer
- ☐ Peace River aquifer
- ☐ upper Arcadia aquifer
- ☐ lower Arcadia aquifer
- ☑ Upper Floridan aquifer (Suwannee)
- ☐ Upper Floridan aquifer (Ocala)
- ☐ Upper Floridan aquifer (Avon Park)
- ☑ Lower Floridan aquifer below MCU I
- ☐ Lower Floridan aquifer below MCU II
- ☐ Lower Floridan aquifer below MCU VIII
- ☐ Lower Floridan aquifer below MCU VI

Aquifer Performance Testing ○ No ◉ Yes

Parameters to be tested:

☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☑ T	☑ S	☑ L	Lower Floridan aquifer below MCU I
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	

Other Data Collection ○ No ◉ Yes

- ☑ Geophysical logging
- ☑ Video logging
- ☑ Sonic logging
- ☐ Other (please specify in comments)

Comments:

Data Collection Bureau Initiative Request

Note: Hover over each field for tips to fill out form.

Page 1

* Requestor: Hua Zhang

Date: 3/27/2025

Project/Network Name: East Pasco ROMP site - LFA - Additional

Project/Network Number: ROMP

* Anticipated Begin Date: 7/1/2025

Anticipated End Date: mm/dd/yyyy

Associated Permit Numbers:

* Data Collection Stewardship Category: Geohydrologic, Water Quality

Area of Responsibility Linkages: Water Supply, Natural Systems

* Initiative Request Description

This request is to expand upon a previously approved DCIR for this site to extend to all the lower Floridan aquifer(s) in eastern Pasco near St. Leo. This request will involve site acquisition, well drilling, installation of water level recording instrumentation and ongoing data collection. NOTE: This is a second request for this site. The first request was approved by ITDG and requested exploration to the base of the Floridan aquifer, a SA monitor well, a UFA

District/Business Purpose

There is a general lack of LFA geohydrological and water quality information in the area. To meet the increasing water demand from population growth in Pasco County, TBW is exploring the construction of a new LFA wellfield in their 2023 Master Water plan. The

District/Business Benefits

The ROMP site will allow the District to further understand the hydrogeology and water quality within the southern portion of the Brooksville Ridge, an area of hydrogeologic and lithologic complexity. The ROMP site will be used for potentiometric mapping, help

Stakeholders

TBW, Pasco County

P417 – Groundwater Modeling support
M002 – Water Use Permitting
Z663 -Data- Hydrologic Data-Groundwater
P883 – Northern Tampa Bay Recovery

Data Collection Frequency and Duration: Collect hourly water levels. At minimum, daily data collection

Geographic Coverage (Must attach a map with scale.): Eastern Pasco County between St. Leo and Dade City

Easement/License/Permit Agreement Details:

Data Collection Entity *(Describe who will be responsible for the data collection):*

Responsible Entity	Task Type	
Geohydrologic	well construction and geohydrologic data collection	☑ Staff ☑ Contractor
Hydrologic	data collection equipment installation and monitoring	☐ Staff ☐ Contractor
Water Quality	water quality sampling, data management and analysis	☐ Staff ☐ Contractor
		☐ Staff ☐ Contractor
		☐ Staff ☐ Contractor
		☐ Staff ☐ Contractor

Assumptions and Dependencies:

Business Risks: Medium — There is a possibility of loss of property if not implemented.

Other Options:

There is nothing attached.

Attach email approval from requestor's manager and bureau chief and map with scale before submitting.

Cancel

Next

Data Collection Bureau Initiative Request

Page 2

199

Requester:Hua Zhang
Project/Network Name:East Pasco ROMP site - LFA - Additional

Date:3/27/2025
Project/Network Number:ROMP

Geologic Sampling ○ No ◉ Yes

Depth of exploration:

- ☐ to top of rock
- ☐ to saltwater/freshwater interface
- ☐ 50 feet into middle confining unit I
- ☐ 50 feet into middle confining unit II
- ☐ 50 feet into middle confining unit VIII
- ☐ 50 feet into middle confining unit VI
- ☐ to the base of the Floridan aquifer
- ☐ Other (please specify in comments)

Well Construction ○ No ◉ Yes

The primary long-term use for the well(s) will be:

- ☑ Water level monitoring
- ☑ Water quality monitoring
- ☐ Other (please specify in comments)

Check all aquifers that require long-term monitoring:

- ☐ surficial aquifer
- ☐ Peace River aquifer
- ☐ upper Arcadia aquifer
- ☐ lower Arcadia aquifer
- ☐ Upper Floridan aquifer (Suwannee)
- ☑ Upper Floridan aquifer (Ocala)
- ☑ Upper Floridan aquifer (Avon Park)
- ☐ Lower Floridan aquifer below MCU I
- ☑ Lower Floridan aquifer below MCU II
- ☑ Lower Floridan aquifer below MCU VIII
- ☐ Lower Floridan aquifer below MCU VI

Aquifer Performance Testing ○ No ◉ Yes

Parameters to be tested:

☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☐ T	☐ S	☐ L	
☑ T	☑ S	☑ L	Upper Floridan aquifer
☐ T	☐ S	☐ L	
☑ T	☑ S	☑ L	Lower Floridan aquifer below MCU II
☑ T	☑ S	☑ L	Lower Floridan aquifer below MCU VIII
☐ T	☐ S	☐ L	

Other Data Collection ○ No ◉ Yes

- ☑ Geophysical logging
- ☑ Video logging
- ☑ Sonic logging
- ☐ Other (please specify in comments)

Comments:

The upper Floridan aquifer requires one composite monitor well including the Suwannee, Ocala, and Avon Park and not separate monitor wells for each formation. Also, the upper Floridan aquifer APT will be composite and the pumped well should be fully penetrating (open to all three formations).

NOTE: This is a second request for this site. The first request was approved by ITDG and requested exploration to the base of the Floridan aquifer, a SA monitor well and monitoring, a UFA Suwannee monitor well and monitoring (but as noted above will be a composite UFA), and a LFA I monitor well, monitoring, and APT.

Cancel

Next

Data Collection Bureau Initiative Request Section I *(To be completed by requestor)*

For instructions, refer to guidance documentation. After completing, route this form to requestor's Manager and Bureau Chief for approvals. Upon receipt, forward approvals and this completed form to data.maps@watermatters.org. Contact DCB data stewards for assistance.

Requestor: Cortney Cameron, Environmental Flows & Levels Sec.	**Date:** 10/17/2022
Sponsor: Geohydrologic Data Section	
Project/Network Name: Northern District WRAP	**Project/Network Number:** P876
Anticipated Begin Date: ASAP	**Anticipated End Date:** Ongoing
Associated Permit Numbers:	

Data Collection Stewardship Category:

☐ Geospatial (MGIS) ☐ Land Survey
X **Geohydrologic** X **Hydrologic**
X **Water Quality** ☐ Other

Area of Responsibility Linkages:

☐ Flood Protection X **Natural Systems**
☐ Water Quality X **Water Supply**

Initiative Request Description: This proposal is for expanded construction at the existing ROMP 112 site, which is currently comprised of surficial and Upper Floridan aquifer wells. Exploration will confirm the presence or absence of middle confining unit I (MCU I). This confirmation will help delineate the westward extent of MCU I and the Lower Floridan aquifer below MCU I (LFA I) in this area. The site is ideal as it exists near the current extrapolated edge of MCU I based on existing data and would close a data "gap." If the MCU I/LFA I is present, the site will also provide data regarding hydraulic parameters and water quality of the LFA I, which are not well-defined in this area. Exploration will also delineate and provide similar data for deeper Lower Floridan aquifers LFA II and LFA VIII, which are also poorly defined in this area, and could be targeted for alternative water supply development in years to come. The proposed location for this ROMP site is on District-owned property and therefore does not require an easement or access agreement.

District/Business Purpose, Benefits, and Key Stakeholders:

- Hydrogeologic and hydrologic data from this site will support LFA parameterization and calibration for several regional groundwater models, which have been constrained by data availability. These models include the Central Springs Model (P300), ECFTX (P284), and District-Wide Regulatory Model (P625), as the site falls within their model domains.
- These groundwater models are used to support regional water supply planning (P466), the establishment and assessment of minimum flows and levels (MFLs), and water use permitting evaluations (M002).
- The site is near several waterbodies with established or scheduled MFLs, including Tsala Apopka Lake and Lake Panasoffkee (P256), Gum Slough (B824), and the Withlacoochee River (B223). The data will aid MFL evaluations, reevaluations, and assessments.
- The site is near an area of special interest due to ongoing growth in the region, including the southwestward expansion of the Villages, and associated anticipated LFA withdrawals.

Data Collection Frequency and Duration:

- Water levels: Hourly, but not real time, on an ongoing basis.
- Water quality: Quarterly for the LFA and at least annually for the UFA, on an ongoing basis.

Geographic Coverage: Inverness (Sumter County), approximately -82.22814, 28.88051

Easement or License Agreement or Permitting Details: The proposed site is located on District property adjacent to existing wells.

Data Collection Entity (describe who will be responsible for the data collection):

Responsible Entity	Task Type	Entity Type
Geohydrologic	Stratigraphy, Hydraulic Properties (T, S, L)	X Staff ☐ Contractor
Hydrologic	Water Levels	X Staff ☐ Contractor
Water Quality	Water Quality Monitoring	X Staff ☐ Contractor

Assumptions and Dependencies:

- The existing Tsala Apopka Lake 2 nested well site, on District-owned property, serves as a good candidate for the location of or upgrade to a ROMP site. This excludes access issues and provides opportunities to consolidate monitoring efforts associated with the proposed site.

Business Risks:

- Medium – Without this data, staff will continue to rely on existing data to infer the extent of MCUI in this area, as well as properties of LFAI. Groundwater modelling of the LFA in this area will be associated with more uncertainty relative to if the data were collected, particularly since the proposed site closes a data "gap" regarding MCUI/LFAI.

Other Options:

- Rely on extrapolated or modelled LFA water levels and parameters based on the District's existing LFA well network and regional groundwater models results.
- Construct the well at a later date.

Data Collection Bureau Initiative Requirements Section II (To Be Completed by DCB Staff)

Initiative Request Description:
Geohydrologic Data deep exploration, well construction, and aquifer pump testing at an existing ROMP site in Sumter County (ROMP 112 – Rutland).

DCWG Investment Classification		**Initiative Priority**
☐ Operational: Recurring/No workload issue ✓ Significant: Ad hoc//Workload Issue		☐High ✓ Medium ☐ Low
Approved Through Requestor's Leadership ✓Yes ☐ No	**Initiative Complexity**: High: Wireline coring with hydraulic/WQ packer testing, well construction design/oversight, and conduct aquifer performance tests	**Coordination with Real Estate and/or WUP** Little to none; proposed well site is located on District-owned property

Proposed Solution:
1. Utilize GEO Section staff and equipment to perform exploratory core drilling and testing to base of Floridan aquifer system (sub-Floridan confining unit) and design permanent monitors and temporary pump wells for all aquifers 2. Contract private well drilling contractor(s) to construct all wells with GEO staff oversight 3. Utilize GEO Section staff and equipment to conduct aquifer pump tests of all aquifers 4. Contract private well drilling contractor(s) to abandon all temporary wells 5. Add permanent wells to appropriate monitoring network and begin WL and WQ monitoring once necessary monitoring equipment have been installed on well(s)

Proposed Solution Components (see addendum for costs breakdown):

Well Construction:

- Surf Aq - 1 temporary pump well
- U Fldn Aq – 1 temporary pump well
- L Fldn Aq I – 1 permanent monitor and 1 temporary pump well
- L Fldn Aq II – 1 permanent monitor and 1 temporary pump well
- L Fldn Aq VIII – 1 permanent monitor and 1 temporary pump well

Monitoring Equipment:

- Includes datalogger for >2 sensors, electronics enclosure, 3 well (PT) sensors, 3 equipment shelters, power supply (battery, solar panel, regulator)

Monitoring Labor Effort:

- WQ sample collection quarterly from 4 wells
- Hydro Data - 7 hours installation, 4 hours annual labor, 1.5 hour maintenance labor (All included in costs section below.) Installation labor ($245), annual operation ($140), annual O&M ($53)

Other:

- In-house laboratory analysis of quarterly samples from 3 LFA wells and annual samples from the UFA well

Initiative Risks:

DCB Workload Assessment:
WQ – the addition of 1 day of work per quarter for 2 technicians for this type of routine sampling can be assumed without the need for additional overtime, equipment, or staff.

Hydro Data
Installation 7 hours
Annual Operation 4 hours
Annual Maintenance 1.5 hour

Costs (to update values for labor, equipment and other columns from addendum calculations, right click in cell and select 'Update Field')

Well Construction	Monitoring Equipment	Monitoring Labor	Other	Total
Error! Reference source not found.2,810,200			$1,157	$

Funding

Budgeted	Budget Transfer Required?
☐ Yes X No	☐ Yes ☐ No

Financial Assumptions and Dependencies:
Hydrologic data collection equipment could be budgeted in future years after project is approved and for the year well construction is anticipated to be complete. Effort assumes budget requests for construction and equipment are approved.

DCB Data Collection Bureau Initiative Request Dispensation

Referred to Governance?	Governance Meeting Date	Final Approval Status
☐ Yes ☐ No		☐ Approved ☐ Denied

Governance Related Comments:

Addendum: To be completed separately by each DCB section involved in the request. **To update values in total column, right click in cell and select 'Update Field'**

Well Construction Costs (Cost Estimated 10/14/2022 mtg)

Description	Labor and Materials Cost/Foot	Estimated Total Depth (Feet)	Total Cost
Surf Aq Temporary Pump Well	$110	20	**$2,200**
U Fldn Aq Temporary Pump Well	$250	350	**$87,500**
L Fldn Aq I Monitor	$290	700	**$203,000**
L Fldn Aq I Temporary Pump Well	$300	700	**$210,000**
L Fldn Aq II Monitor	$350	1350	**$472,500**
L Fldn Aq II Temporary Pump Well	$360	1350	**$486,000**

L Fldn Aq VIII Monitor	$350	1900	**$665,000**
L Fldn Aq VIII Temporary Pump Well	$360	1900	**$684,000**
Total Wellsite Construction			**$2,810,200**

Assumption(s):

Data Monitoring Equipment and Parts & Supplies Costs:

Description	Cost/Item	Quantity	Total Cost
Campbell datalogger (CR1000X)	$1,750	1	$1,750
Pressure Transducer (WL Sensor)	$1,138	3	$3,414
Equipment Shelter	$550	3	$1,650
Electronics Enclosure	$350	1	$350
Power Supply (Battery, Solar Panel, Regulator)	$201	1	$201
Overall Equipment Cost			**$7,365**

Assumption(s):

Labor Costs:

Labor Description	Hours Required	Labor Cost/hr	# of Stations	# of Events	Total Cost
WQ Labor (Annually)	20	$23		4	**$1,840**
Hydro Data Installation (one-time cost)	7	$35			**$245**
Hydro Data Operation (Annually)	4	$35			**$140**
Hydro Data Maintenance (Annually)	1.5	$35			**$53**
Overall Labor					**$2,278**

Assumption(s):

Other Costs:

Description	Qty Required	Cost/Item	# of Stations	# of Events	Total Cost
Laboratory Analysis	1	89		13	**$1,157**
Overall Other Cost					**$1,157**

Assumption(s):

Data Collection Bureau Initiative Request Section I *(To be completed by requestor)*

For instructions, refer to guidance documentation. After completing, route this form to requestor's Manager and Bureau Chief for approvals. Upon receipt, forward approvals and this completed form to data.maps@watermatters.org. Contact DCB data stewards for assistance.

Requestor: Robert Peterson	**Date:** 10/22/2021
Sponsor: Ted Gates	
Project/Network Name: ROMP TR 10-3/CGWQMN/SHARP	**Project/Network Number:** CGWQMN P078, SHARP II N855

Anticipated Begin Date: 01/03/2022	**Anticipated End Date:** **06/03/2022**	**Associated Permit Numbers:**

Data Collection Stewardship Category: ☐ Geospatial (MGIS) ☐ Land Survey X Geohydrologic X Hydrologic X Water Quality ☐ **Other**	**Area of Responsibility Linkages:** ☐ Flood Protection ☐ Natural Systems X Water Quality X Water Supply

Initiative Request Description:
Conduct exploratory core drilling and monitor well construction on the ROMP TR 10-3 well site easement located at Simmons Bower county park in the Progress Village area of Tampa, in association with the SHARP RW-2 groundwater recharge site which is approximately 8/10 mi. southwest of the TR 10-3 site. A suite of permanent monitoring wells needs to include an Avon Park-Upper Floridan monitor with a similar aquifer interval to that of the RW-2 injection well.

District/Business Purpose, Benefits, and Key Stakeholders:
The SHARP/SHARE CFI projects are a major initiative for groundwater recharge in the SWUCA and MIA regions of southern Hillsborough County that necessitates infill and expansion of the current monitoring available through existing well sites. The TR 10-3 site is in a favorable location to provide both groundwater level and water-quality data affected by the SHARP in support of Hillsborough County and the District.

Data Collection Frequency and Duration:

Hourly/daily continuous groundwater levels monitoring and periodic water-quality sample collections (triennial), ongoing in duration.

Geographic Coverage:
Central and southern Hillsborough County, coastal margin of Tampa Bay in the SWUCA.

Easement or License Agreement or Permitting Details:
Existing ROMP perpetual easement in place on the county park property

Data Collection Entity (describe who will be responsible for the data collection):

Responsible Entity	Task Type	Entity Type
Geohydrologic Data section	Drilling and well construction	X Staff ☐ Contractor
Hydrologic Data section	Instrumenting wells and levels	X Staff ☐ Contractor
Water Quality Monitoring section	Periodic sample collections	X Staff ☐ Contractor
		☐ Staff ☐ Contractor

Assumptions and Dependencies:
Availability of core drilling rig and crew, dependent on revising drilling schedules for other sites. Availability of Hydrologic Data Section staff to install monitoring equipment. Assumed multiple sensors can be connected to one datalogger and telemetry setup.

Business Risks: **Medium: Revision of drilling schedules for other sites could delay construction** **Coordination with other Division(s) in the District required.**
Other Options: **Group the TR 10-3 site with other additional site requests pending for the SHARP**

Data Collection Bureau Initiative Requirements Section II (To Be Completed by DCB Staff)

Initiative Request Description: 1. Exploratory core drilling and testing to locate the 1,000 milligram/liter chloride concentration (saltwater interface). 2. Design and construction of three monitor wells for long-term monitoring of the surficial and Upper Floridan aquifer water levels and water quality.

DCWG Investment Classification ✓ Operational: Recurring/No workload issue ☐ Significant: Ad hoc//Workload Issue	**Initiative Priority** ☐High ☐ Medium ☐ Low
Initiative Complexity: High. GEO staff will use core drilling rig to locate the SW Interface and design monitor wells. Next RFB must be initiated to contract with a private well drilling contractor to construct the proposed permanent monitor wells.	**Coordination with Real Estate and/or WUP**: GEO staff working with Real Estate staff to procure a temporary construction easement near an existing permanent wellsite located within a Hillsborough County park.

Proposed Solution:

Proposed Solution Components (see addendum for costs breakdown):

Well Construction:

- GEO staff will use core drilling rig to locate the SW Interface and design monitor wells. Next RFB must be initiated to contract with a private well drilling contractor to construct the three proposed permanent monitor wells.

Monitoring Equipment:

- Hydrologic Data Monitoring Equipment – see Data Monitoring Equipment and Parts & Supplies Costs table below

Monitoring Labor Effort:

- Water Quality Monitoring – 2 wells monitored 3x/year as part of saltwater intrusion network; surficial well would not be monitored for WQ.
- Hydrologic Data – 3 wells continuous monitoring – 4 hrs/year operation, 1.5 hrs/yr maintenance

Other:

- Laboratory Analysis – Analysis of standard saltwater intrusion network analyte list for 2 wells sampled 3x/year.

Initiative Risks: No risks for water quality monitoring.

DCB Workload Assessment: GEO: staff can begin core drilling and testing at the TR10-3 Simmons Bower Park site in October 2022. Core drilling and testing is estimated to take approximately 5 months to complete (February 28, 2023). Monitor well construction should begin in March 2023 and be completed in 3 months (May 30, 2023). Water quality monitoring – the additional of 2 wells sampled 3x per year will not result in a significant or undue burden on existing workloads; these wells will be added to groundwater network runs already established in the geographic area.

Costs (to update values for labor, equipment and other columns from addendum calculations, right click in cell and select 'Update Field')

Well Construction	Monitoring Equipment	Monitoring Labor	Other	Total

$236,5000	7,245	**Error! Reference source not found.**458	$534.12	**$ 269,237.12**

Funding	
Budgeted	**Budget Transfer Required?**
☐ Yes ☐ No	☐ Yes ☐ No

Financial Assumptions and Dependencies:
Hydrologic Data – Estimated equipment costs added to GENOPER budget on 3/18/22 but may need to re-budget in FY24, since TR 9-4 was decided by RMD to be the higher priority on 3/22/22 and these funds could be used to accomplish that monitoring install first.

DCB Data Collection Bureau Initiative Request Dispensation		
Referred to Governance?	**Governance Meeting Date**	**Final Approval Status**
☐ Yes ☐ No		☐ Approved ☐ Denied

Governance Related Comments:

Addendum: To be completed separately by each DCB section involved in the request. **To update values in total column, right click in cell and select 'Update Field'**

Well Construction Costs (Updated 10/19/2022 mtg)

Description	Total Cost
Surficial Monitor	**$ 2,500**
Permanent UFA Suwannee Limestone Monitor (375 feet bls)	**$ 90,000**
Permanent UFA Avon Park Formation Monitor (600 feet bls)	**$ 144,000**
	$
Total Wellsite Construction	**$236,500**

Assumption(s):

Data Monitoring Equipment and Parts & Supplies Costs:

Description	Cost/Item	Quantity	Total Cost
Equipment Shelters	$289	3	**$867**
Data Logger	$2,100	1	**$2,100**
Sensors	$1,138	3	**$3,414**
Power Supply	$201	1	**$201**

Telemetry	$663	1	**$663**
Overall Equipment Cost			**$7,245**

Assumption(s):

Labor Costs:

Labor Description	Hours Required	Labor Cost/hr	# of Stations	# of Events	Total Cost
Water Quality Monitoring	4	$23	2	3	**$552**
Hydrologic Data Monitoring Equipment Installation	8	$	3	1	**$245**
Hydrologic Data O&M	5.5	$	3		**$458**
Overall Labor					**$1,255**

Assumption(s): Hydrologic Data = 8 hrs installation, 4 hrs annual operation, 1.5 hrs annual maintenance for all 3 wells.

Other Costs:

Description	Qty Required	Cost/Item	# of Stations	# of Events	Total Cost
Laboratory Analysis	1	S89.02	2	3	**$534.12**
Overall Other Cost					**$534.12**

Assumption(s):

Appendix B. General Hydrogeology of the Southwest Florida Water Management District

[modified from Hydrostratigraphic Framework of the Southwest Florida Water Management District: Technical Report of the Regional Observation and Monitor-well Program (LaRoche and Horstman, 2024)]

Introduction

There has been a lot of variation in nomenclature conventions used to describe the aquifers and confining units underlying Florida. Although uniform guidelines for hydrostratigraphic nomenclature have not been formally adopted nationwide, the United States Geological Survey (Laney and Davidson, 1986) recognized the importance of consistent hydrostratigraphic terminology and their definitions for effective scientific communication and developed uniform nomenclature guidelines for designating and naming aquifers that is consistent with the stratigraphic nomenclature recommendations of the North American Stratigraphic Code (North American Commission on Stratigraphic Nomenclature, 2021). The District's hydrostratigraphic nomenclature convention (based on Miller [1986]) is consistent with the aquifer nomenclature guidelines of Laney and Davidson (1986) to appropriately rank and name the hydrogeologic units underlying the District. A comparison of the nomenclature convention used by the District and other published conventions is in figure B1.

Hydrostratigraphic Framework

The District is underlain by several aquifers of varying productivity, water quality, and regional extent. Generally, these aquifers include, in descending order: the undifferentiated surficial aquifer, the Peace River aquifer, the upper Arcadia aquifer, the lower Arcadia aquifer, the upper Floridan aquifer, the lower Floridan aquifer below middle confining unit I (herein referred to as lower Floridan aquifer I), the lower Floridan aquifer below middle confining unit II (herein referred to as lower Floridan aquifer II), the lower Floridan aquifer below middle confining unit VIII (herein referred to as lower Floridan aquifer VIII), and rarely the lower Floridan aquifer below middle confining unit VI (herein referred to as lower Floridan aquifer VI) (fig. B2). The undifferentiated surficial aquifer is present throughout most of the central and southern District but is not a major source of water. The Peace River, upper Arcadia, and lower Arcadia aquifers compose the Hawthorn (formerly intermediate) aquifer system and are present throughout much of the southern portion of the District (fig. B3). The upper and lower Floridan aquifers compose the Floridan aquifer system and underlie all of Florida and parts of Georgia, Alabama, and South Carolina (Miller, 1986). The upper Floridan aquifer contains most of the fresh water underlying the District and is the primary water source in the District. The lower Floridan aquifer I contains fresh water in some areas and is withdrawn in parts of northeastern Sumter County at this time. The lower Floridan aquifers II and VIII commonly contain non-potable water and are not major water sources historically but are being investigated as alternative water sources in Polk County.

Surficial aquifer

The undifferentiated surficial aquifer (where present) is the uppermost aquifer within the District and mostly consists of undifferentiated sand, but may also contain shell, gravel, and clay. It contains water under unconfined (water table) conditions and is delineated where basal confinement is present. The undifferentiated surficial aquifer is absent in all or parts of Hillsborough, Pasco, Hernando, Sumter, Citrus, Marion, and Levy counties where basal clay is absent or very thin and breached by sinkholes or fractures that precludes characterization as a laterally extensive and functional surficial aquifer because of a lack of hydraulic continuity (Arthur and others, 2008). The undifferentiated surficial aquifer can be greater than 250 feet thick along the Lake Wales Ridge and Intraridge Valley in parts of Polk and Highlands counties (fig. B3). In two areas of Florida where surficial deposits are thick, highly permeable, and extensively used as a water source, they have been given aquifer names such as the sand-and-gravel aquifer in the westernmost panhandle and the Biscayne aquifer in southeastern Florida (Miller, 1986). These aquifers grade laterally into thin sands that are called the undifferentiated surficial aquifer (Miller, 1986). Although these three uppermost aquifers are often collectively referred to as the surficial aquifer system, they do not conform to the definition of an aquifer system because they are not separated at least locally by confining units that impede groundwater movement (Poland and others, 1972). Therefore, the District identifies them as aquifers.

Hawthorn aquifer system

The Hawthorn aquifer system is present only in the southern part of the District and pinches out north of central Hillsborough County (fig. B3). The Hawthorn aquifer system within the District contains up to three aquifers: the Peace River aquifer, the upper Arcadia aquifer, and the lower Arcadia aquifer (fig. B2). The Hawthorn aquifer system thickness generally ranges from about 50 feet in the northern portion to about 300 feet in the southern portion of where it is present in the District. At any location, the top of the Hawthorn aquifer system coincides with the top of the uppermost aquifer present, and the bottom coincides with the base of the lowermost aquifer present. Where no aquifers are present, the Hawthorn sediments are confining and pinch out north of central Pasco County. This aquifer system has inappropriately been referred to as the intermediate aquifer system and the aquifers within it have inaccurately been ranked as zones 1, 2, and 3. However, the District has made considerable progress in correcting the preceding naming, ranking, and vertical boundary errors based on aquifer nomenclature guidelines proposed by Laney and Davidson (1986) and the North American Stratigraphic Code (North American Commission on Stratigraphic Nomenclature, 2021). DeWitt and Mallams (2007) proposed the revised name of Hawthorn aquifer system and its aquifers as the Peace River

A

WYRICK 1960	LICHTLER 1960	CLARKE 1964	LEVE 1966	WOLANSKY 1978	MILLER 1980	BOGGESS 1986; ARTHUR AND OTHERS 2008	SWFWMD PRESENT
nonartesian aquifer	Shallow aquifer	water-table aquifer	shallow aquifer system	unconfined aquifer	surficial aquifer	surficial aquifer system	surficial aquifer
confining unit	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*

Not to scale

[SWFWMD, Southwest Florida Water Management District]

B

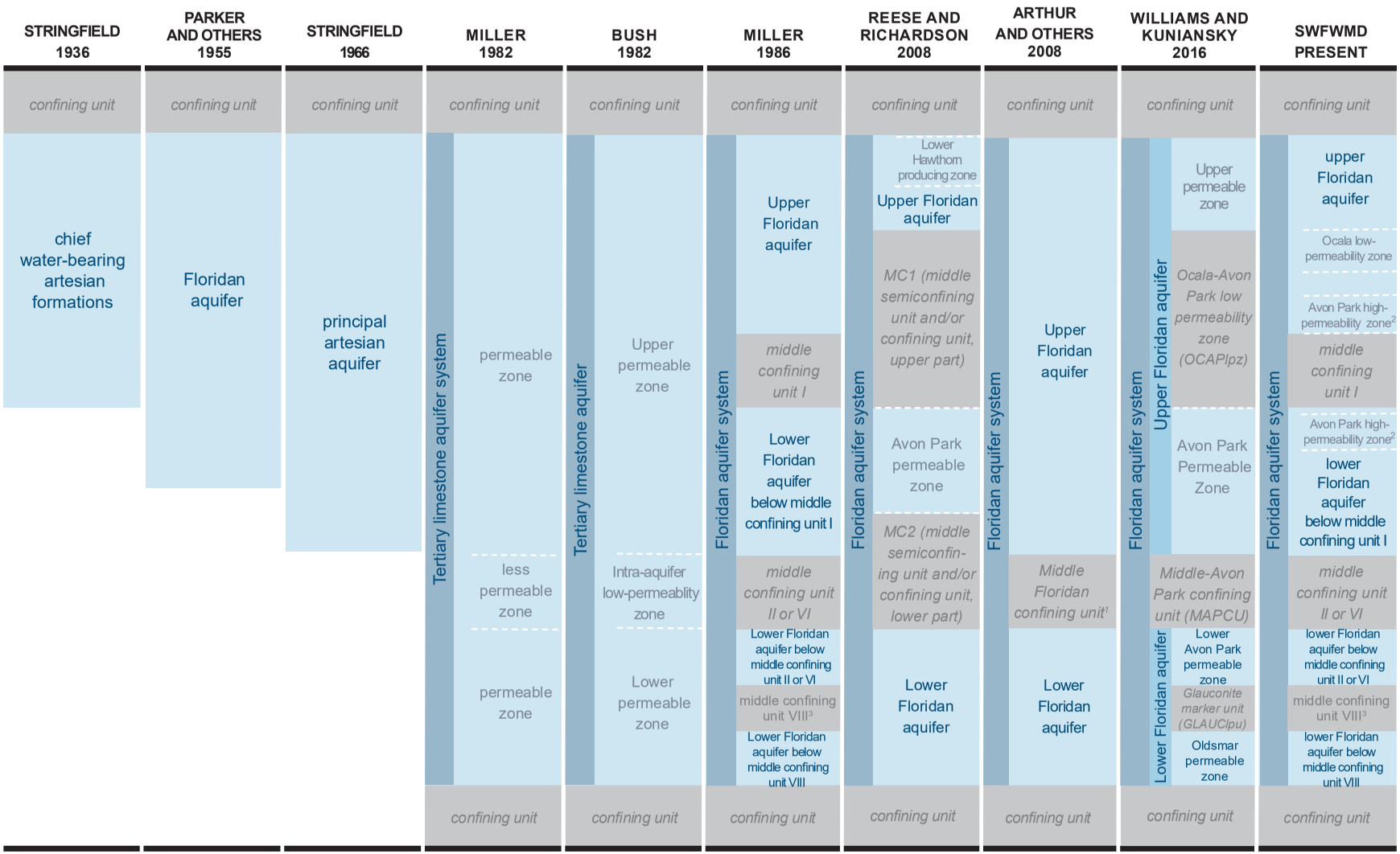
SPROUL AND OTHERS 1972	JOYNER, SUTCLIFFE 1976	WEDDERBURN AND OTHERS 1982	WOLANSKY 1983	BARR 1996	TORRES AND OTHERS 2001	KNOCHENMUS 2006	ARTHUR AND OTHERS 2008	SWFWMD PRESENT
confining unit	*confining unit*	Hawthorn Aquifer System: *confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*
sandstone aquifer	Zone 1	Sandstone aquifer	Intermediate aquifers: Tamiami - upper Hawthorn aquifer	Intermediate aquifer system: Permeable Zone 1	Intermediate aquifer system: Tamiami/ Peace River zone (PZ1)	Intermediate aquifer system: Zone 1	Intermediate aquifer system / intermediate confining unit: zones/ aquifers were not delineated	Hawthorn aquifer system: Peace River aquifer
confining unit	*confining unit*	*confining unit*		*confining unit*	*confining unit*	*confining unit*		*confining unit*
upper Hawthorn aquifer	Zone 2	mid-Hawthorn aquifer		Permeable Zone 2	Upper Arcadia zone (PZ2)	Zone 2		upper Arcadia aquifer
confining unit	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*		*confining unit*
lower Hawthorn aquifer	Zone 3	FAS: lower Hawthorn / Tampa producing zone	Lower Hawthorn - upper Tampa aquifer	Permeable Zone 3	Lower Arcadia zone (PZ3)	Zone 3		lower Arcadia aquifer
confining unit	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*	*confining unit*

Not to scale

[FAS, Floridan aquifer system; PZ, permeable zone; SWFWMD, Southwest Florida Water Management District]

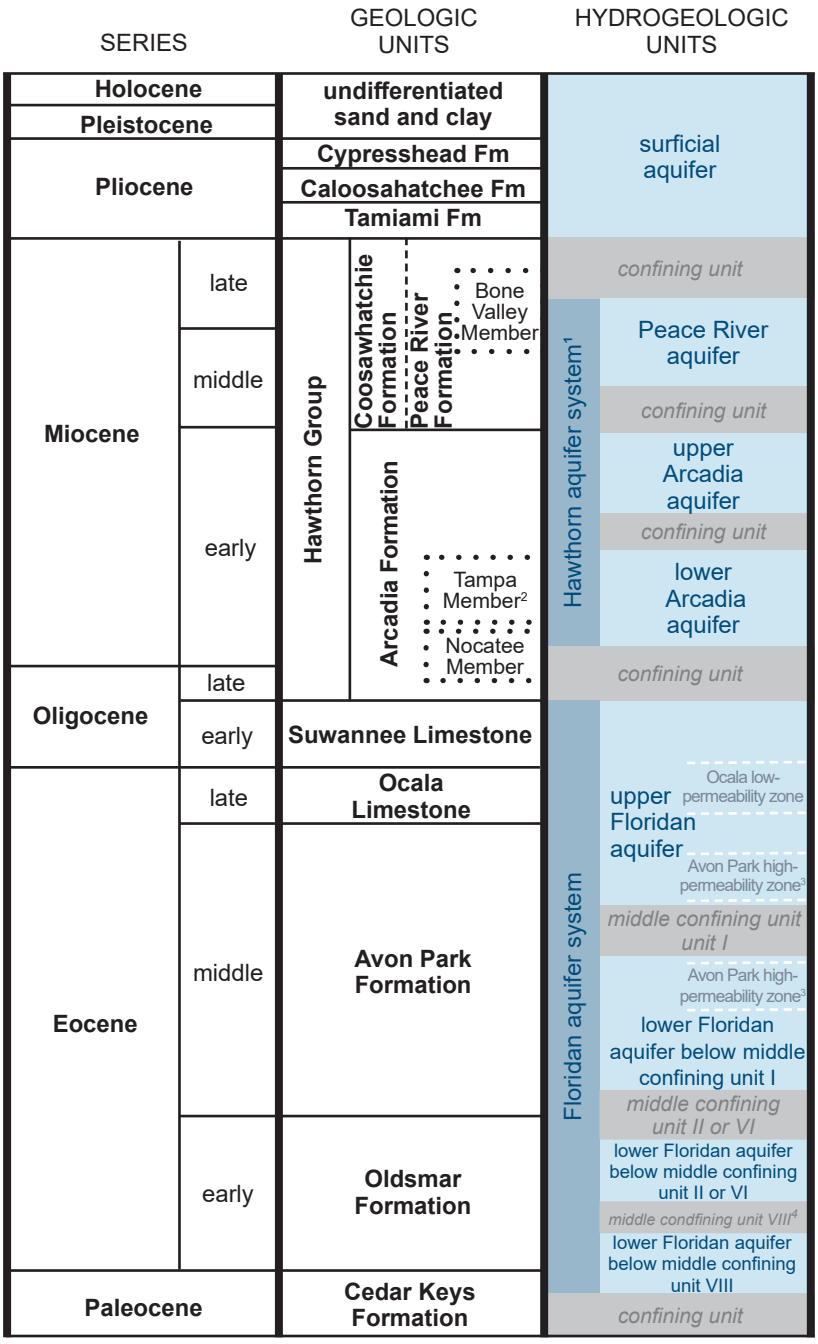
Figure B1. Nomenclature of (*A*), the surficial aquifer, (*B*), the Hawthorn aquifer system, and (*C*), the Floridan aquifer system used by the Southwest Florida Water Management District compared to nomenclature in previously published reports.

C



[Terms shown are for hydrogeologic units present within the Southwest Florida Water Management District (SWFWMD); [1]Arthur and others acknowledge existence of the middle confining unit I within the Southwest Florida Water Management but do not map it for Special Publication 68; [2]The Avon Park high-permeability zone (SWFWMD fracture zone) crosses middle confining unit I in central Polk County; therefore, it occurs above the middle confining unit I in northern Polk and below the middle confining unit I in southern Polk; [3]The middle confining unit VIII of Miller (1986) in south Florida was extended across the entire peninsula based on new data in Williams and Kuniansky (2015) and reidentified as the Glauconite marker unit]

Figure B1. (Continued) Nomenclature of (*A*), the surficial aquifer, (*B*), the Hawthorn aquifer system, and (*C*), the Floridan aquifer system used by the Southwest Florida Water Management District compared to nomenclature in previously published reports.



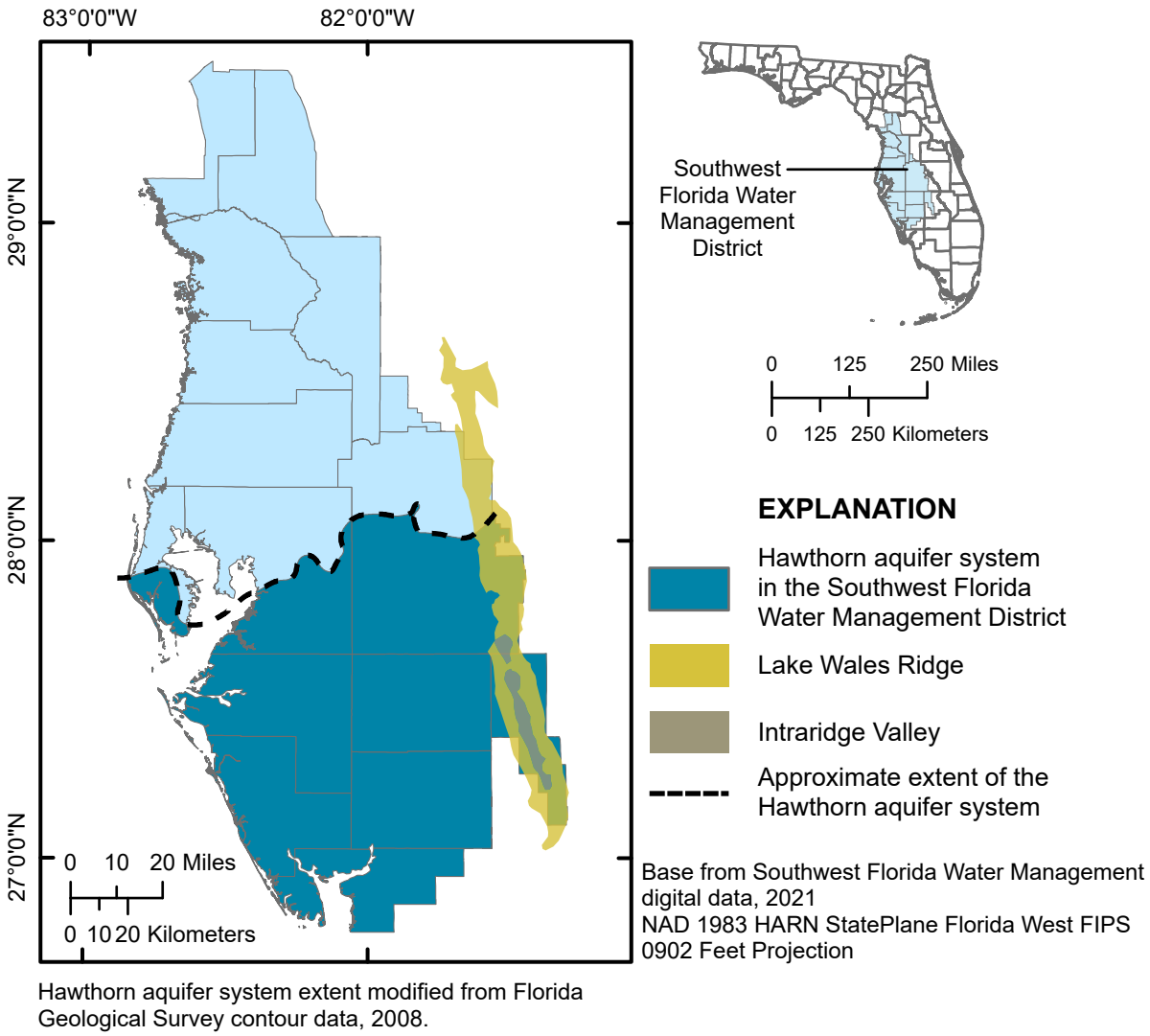
Not to scale

[FM, Formation; [1]The Hawthorn aquifer system was previously referred to as the Intermediate aquifer system; [2]The upper Floridan aquifer includes the Tampa Limestone where confinement is not present. [3]The Avon Park high-permeability zone (SWFWMD fracture zone) crosses middle confining unit I in central Polk County; therefore, it occurs above the middle confining unit I in northern Polk and below the middle confining unit I in southern Polk; [4]The middle confining unit VIII of Miller (1986) was extended beyond the original extent in south Florida based on new data]

aquifer, the upper Arcadia aquifer, and the lower Arcadia aquifer. The Hawthorn aquifer system is entirely within the Hawthorn Group, which contains highly variable deposits of siliciclastics, phosphates, various clays, and carbonates (fig. B2). The groundwater within the Hawthorn aquifer system is under confined conditions. A chart correlating past and present nomenclature used for the Hawthorn aquifer system and its aquifers is in figure B1.

Floridan aquifer system

The Floridan aquifer system underlies all of Florida and parts of Georgia, Alabama, and South Carolina (Miller, 1986). The Floridan aquifer system thickness ranges from about 1,800 feet in the northern portion of the District to more than 2,500 feet in the southern portion of the District. Within the District, generally four of the eight subregional middle confining units delineated by Miller (1986) are encountered. Where present, these units divide the Floridan aquifer system into the upper Floridan aquifer and separate lower Floridan aquifers



[FIPS, Federal Information Processing System; HARN, High Accuracy Reference Network; N, north; NAD, North American Datum; W, west]

Figure B3. The extent of the Hawthorn aquifer system and the location of the Lake Wales Ridge within the Southwest Florida Water Management District.

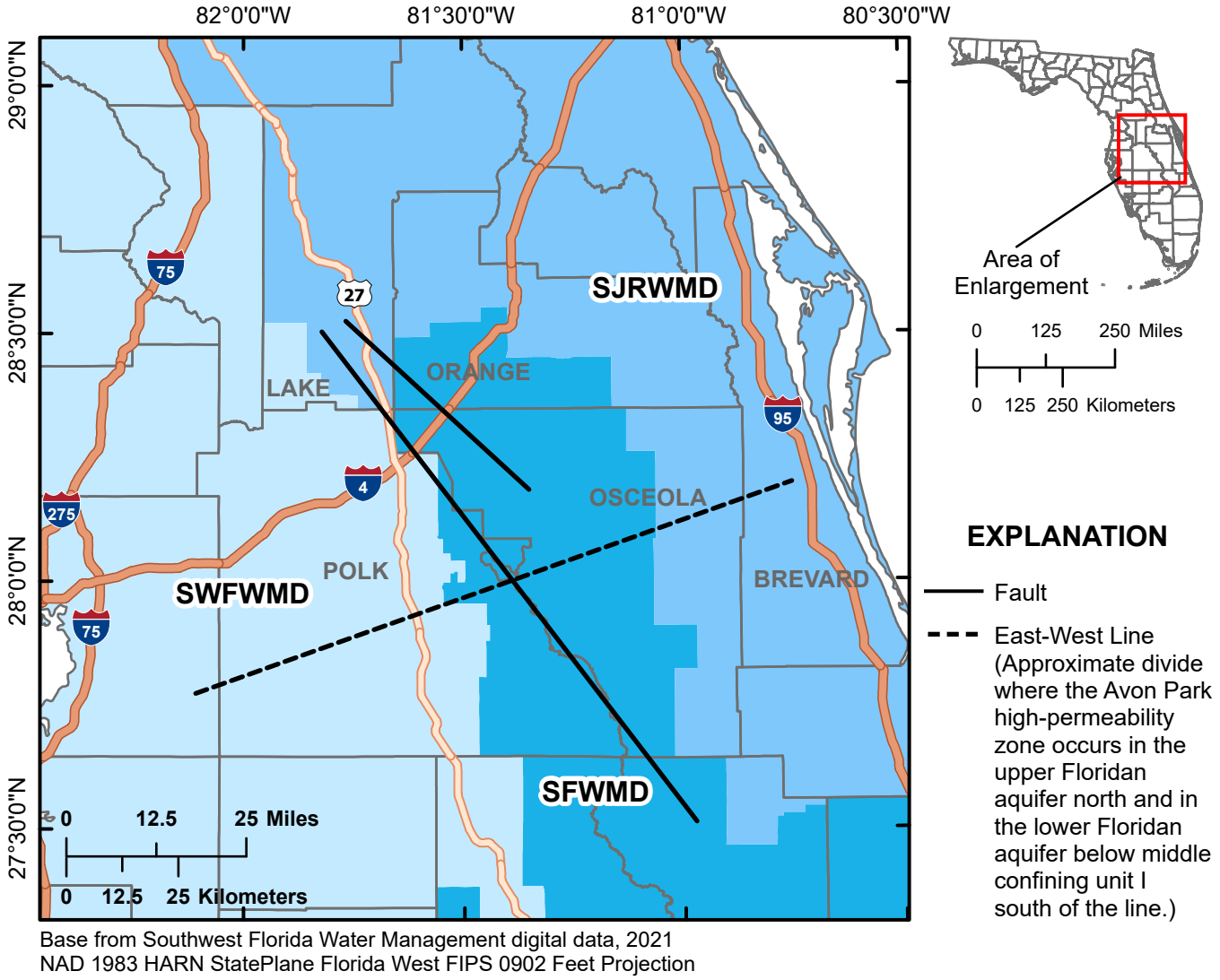
(figs. B1 and B2). The four subregional middle confining units include middle confining unit I, middle confining unit II, middle confining unit VI, and middle confining unit VIII.

Upper Floridan aquifer

The upper Floridan aquifer is the most important source of groundwater in the District. The upper Floridan aquifer contains groundwater under confined conditions except in large parts of the northern District where the confining unit is absent. This is because the clays that compose the confining unit in this region are absent or discontinuous because of erosion, or are substantially breached by karst features. As a result, the upper Floridan aquifer becomes regionally unconfined and the uppermost aquifer in the northern part of the District.

Laney and Davidson (1986) referred to regionally mappable units within aquifers that have permeability that is not characteristic of the entire aquifer, whether higher or lower, as zones. The District identifies two zones that are present regionally within the District: the Ocala low-permeability zone and the Avon Park high-permeability zone. These zones are present throughout the southern part of the District but are mostly absent north of Pasco County where active and relict karst processes increase the permeability of the carbonates in the Ocala Limestone or where the carbonates are not dense and brittle for fractures to form in the Avon Park Formation. The Ocala low-permeability zone occurs exclusively within the upper Floridan aquifer and generally coincides with the Ocala Limestone (fig. B2). The lower permeability is attributed to the finer grained texture of the Ocala Limestone relative to adjacent formations. Many aquifer performance

tests across this zone and a statistical investigation of long-term water level data that assessed 26 monitor-well sites confirm the Ocala low-permeability zone is not a confining unit anywhere it exists (Ron Basso and Cortney Cameron, written commun., 2018). The higher permeability of the Avon Park high-permeability zone is attributed to secondary porosity from fractured and vugular dolostone. Comprehensive regional mapping using data collected from ROMP sites shows the Avon Park high-permeability zone crosses middle confining unit I of Miller (1986) along a general east-west line through central Polk County and likely Osceola and Brevard counties (fig. B4). Therefore, it occurs in the upper Floridan aquifer north of the east-west line and in the lower Floridan aquifer I south of the east-west line. The high-permeability zone gradually passes through middle confining unit I across approximately 30 miles and hydraulic testing and long-term water level monitoring show that confinement is not disrupted. The fractures that distinguish this high-permeability zone within the aquifers are secondary porosity features that formed after the primary carbonate units were deposited. As a result, the fractures are independent of the carbonate units and may cross aquifer boundaries where conditions are favorable for rock fracture.



Base from Southwest Florida Water Management digital data, 2021
NAD 1983 HARN StatePlane Florida West FIPS 0902 Feet Projection

[FIPS, Federal Information Processing System; HARN, High Accuracy Reference Network; N, north; NAD, North American Datum; SFWMD, South Florida Water Management District; SJRWMD, St. Johns River Water Management District, SRWMD, Suwannee River Water Management District; SWFWMD, Southwest Florida Water Management District; W, west]

Figure B4. The approximated line where the Avon Park high-permeability zone crosses the middle confining unit I and is in the upper Floridan aquifer north of the line and in the lower Floridan aquifer below middle confining unit I south of the line.

Lower Floridan aquifers

The lower Floridan aquifers are present in permeable rock below any of the subregional middle confining units that are encountered. The base of the upper Floridan aquifer is the top of the shallowest subregional middle confining unit and the permeable rock below is considered a distinct lower Floridan aquifer below the subregional middle confining unit encountered. In west-central Florida and most of the District, very low permeability evaporitic dolostones of middle confining unit II (Miller, 1986) separate the upper and lower Floridan aquifers. In east-central Florida, at a higher elevation, low permeability micritic limestone and fine-grained dolomitic limestone of middle confining unit I (Miller, 1986) separate the upper and lower Floridan aquifers and is present exclusively within the upper part of the Avon Park Formation. In rare parts of the southernmost portion of the District, the evaporitic dolostones of middle confining unit VI can be present. Where no middle confining unit exists, only the upper Floridan aquifer is present.

In a narrow northwest-trending band in central peninsular Florida, the middle confining unit II is overlapped and separated from the middle confining unit I by a few hundred feet of permeable rock (Miller, 1986). This is verified at numerous ROMP sites in the overlap region. Where this overlap is encountered, the base of the upper Floridan aquifer is the top of the middle confining unit I and at least two lower Floridan aquifers are present. The permeable rock between the middle confining unit I and middle confining unit II is the lower Floridan aquifer I. The permeable rock below middle confining unit II is the lower Floridan aquifer II.

The middle confining unit VIII of Miller (1986) was originally mapped in south and east-central Florida within early Eocene rocks (Oldsmar Formation) above the Boulder Zone based on available data. Williams and Kuniansky (2016) extended the middle confining unit VIII across the entire peninsula as the ‘Glauconite marker unit’ based on the thin ‘glauconite marker horizon’ of Reese and Richardson (2008), which is an extension of the ‘glauconite marker bed’ described by Duncan and others (1994). Reese and Richardson (2008) extended the ‘glauconite marker bed’ by correlating gamma-ray curves from wells used by Duncan and others (1994) and wells beyond the original study area. Williams and Kuniansky (2016) further extended the ‘glauconite marker horizon’ beyond the middle confining unit VIII extent of Miller (1986) by coupling a gamma-ray peak with a low-resistivity response as a result of glauconite that is found in the Oldsmar Formation. The permeable rock below the middle confining unit VIII is the lower Floridan aquifer VIII.

Initially, the origin and stratigraphic rank of the ‘Glauconite marker unit’ being mapped in the District was unclear, and the permeable rock below it was informally referred to as the lower Floridan aquifer below middle confining unit II-B. After further review, the ‘Glauconite marker unit’ in the District correlates (chronologically, lithologically, and hydraulically) to the middle confining unit VIII of Miller (1986); therefore, the name was adopted to be consistent with the established Floridan aquifer system framework of Miller (1986) that the District hydrostratigraphic conceptualization is based.

In parts of the District where the middle confining unit I, middle confining unit II, and middle confining unit VIII overlap, three distinct lower Floridan aquifers are present if separated by permeable rock. At present, an area in north-central Polk County and an area in southwestern Polk County, no permeable rock is encountered between the middle confining units II and VIII; therefore, no lower Floridan aquifer II is present.

Selected References

Arthur, J.D., Fischler, C., Kromhout, C., Clayton, J.M., Kelley, M., Lee, R.A., O’Sullivan, M., Green, R.C., and Werner, C.L., 2008, Hydrogeologic Framework of the Southwest Florida Water Management District: Florida Geological Survey Bulletin No. 68, 102 p. *http://fldeploc.dep.state.fl.us/geodb_query/fgs_doi.asp?searchCode=B68*

Barr, G.L., 1996, Hydrogeology of the Surficial and Intermediate Aquifer Systems in Sarasota and Adjacent Counties, Florida: U.S. Geological Survey Water-Resources Investigations Report 96-4063, 87 p. *https://doi.org/10.3133/wri964063*

Boggess, D.M., and Watkins, F.A., Jr., 1986, Surficial aquifer system in eastern Lee County, Florida: U.S. Geological Survey Water-Resources Investigations Report 85-4161, 59 p. *https://doi.org/10.3133/wri854161*

Bush, P. W., 1982, Predevelopment Flow in the Tertiary limestone aquifer, southeastern United States; A Regional Analysis from Digital Modeling: U.S. Geological Survey Water-Resources Investigations 82-905, 56 p. *https://pubs.usgs.gov/of/1982/0905/report.pdf*

Clarke, W.E., Musgrove, R.M., Menke, G.C., and Cagle, J.W., Jr., 1964, Water resources of Alachua, Bradford, Clay, and Union Counties, Florida: Florida Geological Survey Report of Investigations 35, 170 p. *https://pubs.usgs.gov/publication/70047481*

Dewitt, D.J., and Mallams, J.L., 2007, The Hawthorn Aquifer System: A Proposal for Hydrostratigraphic Nomenclature Revision in Southwest Florida, in Geological Society of America Southeastern Section Conference, 56th Annual Meeting, Savannah, GA., Geological Society of America Abstracts with Programs, vol. 39, no. 2, p. 89. *https://gsa.confex.com/gsa/2007SE/webprogram/Paper118860.html*

Duncan, J.G., Evans III, W.L., and Taylor, K.L., 1994, Geologic framework of the Lower Floridan aquifer system, Brevard County, Florida: Florida Geological Survey Bulletin 64, 90 p.*https://publicfiles.dep.state.fl.us/FGS/FGS_Publications/B/B64.pdf*

International Subcommission on Stratigraphic Classification, 1994, International Stratigraphic Guide: A Guide to Stratigraphic Classification, Terminology, and Procedure (2d ed.), Amos Salvador, editor: Boulder, CO, Geological Society of America, Inc., 201 p. https://stratigraphy.org/guide/

Joyner, B.F., and Sutcliffe, H. Jr., 1976, Water Resources of the Myakka River Basin Area, Southwest Florida: U.S. Geological Survey Water-Resources Investigation 76-58, 87 p. *https://www.manatee.wateratlas.usf.edu/upload/documents/Water%20Resources%20of%20the%20Myakka%20River%20Basin%20Area,%20Southwest%20Florida.pdf*

Knochenmus, L.A., 2006, Regional Evaluation of the Hydrogeologic Framework, Hydraulic Properties, and Chemical Characteristics of the Intermediate Aquifer System Underlying Southern West-Central Florida: U.S. Geological Survey Scientific Investigations Report 2006-5013, 52 p. *https://doi.org/10.3133/sir20065013*

Laney, R.L., and Davidson, C.B., 1986, Aquifer-Nomenclature Guidelines: U.S. Geological Survey Open-File Report 86-534, 60 p. *https://pubs.usgs.gov/publication/ofr86534*

LaRoche, J.J., and Horstman, T.M., 2024, Hydrostratigraphic Framework of the Southwest Florida Water Management District: Technical Report of the Regional Observation and Monitor-well Program: Brooksville, Florida, Geohydrologic Data Section, Southwest Florida Water Management District, 49 p.

Leve, G.L., 1966, Ground water in Duval and Nassau Counties, Florida: Florida Geological Survey Report of Investigations 43, 91 p. *http://fldeploc.dep.state.fl.us/geodb_query/fgs_doi.asp?searchCode=RI43*

Lichtler, W.F., 1960, Geology and ground-water resources of Martin County, Florida: Florida Geological Survey Report of Investigations 23, 149 p. *https://ufdcimages.uflib.ufl.edu/UF/00/00/12/07/00001/UF00001207.pdf*

Lohman, S. W., and others, 1972, Definitions of selected ground-water terms – revisions and conceptual refinements: U.S. Geological Survey Water-Supply Paper 1988, 21 p. *https://doi.org/10.3133/wsp1988*

Mallams, J.L., and Dewitt, D.J., 2007, Aquifer as the Fundamental Unit in Hydrostratigraphy and its Impact on Florida Nomenclature, in Geological Society of America Southeastern Section Conference, 56th Annual Meeting, Savannah, GA., Geological Society of America Abstracts with Programs, vol. 39, no. 2, p. 88. *https://gsa.confex.com/gsa/2007SE/webprogram/Paper118805.html*

Meinzer, O. E., 1923, The occurrence of ground water in the United States: U.S. Geological Survey Water-Supply Paper 489, 321 p. *https://doi.org/10.3133/wsp489*

Miller, J. A., 1982, Geology and configuration of the base of the Tertiary limestone aquifer system, southeastern United States: U.S. Geological Survey Water-Resources Investigations 81-1176, 1 map sheet. *https://pubs.usgs.gov/of/1981/1176/plate-1.pdf*

Miller, J. A., 1986, Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina: U.S. Geological Survey Professional Paper 1403-B., 91 p. *https://doi.org/10.3133/pp1403B*

Miller, J. A., 1990, Ground Water Atlas of the United States: Segment 6, Alabama, Florida, Georgia, South Carolina: U.S. Geological Survey Hydrologic Investigations Atlas 730-G, 28 p. *https://doi.org/10.3133/ha730G*

Miller, W.L., 1980, Geologic aspects of the surficial aquifer in the Upper East Coast planning area, southeast Florida: U.S. Geological Survey Water-Resources Investigations Report 80-586, scale 1:62,500, 2 sheets.

North American Commission on Stratigraphic Nomenclature, 2005, North American Stratigraphic Code (2005), American Association of Petroleum Geologists Bulletin, v. 89, no. 11, p. 1547-1591. *https://ngmdb.usgs.gov/Info/NACSN/05_1547.pdf*

North American Commission on Stratigraphic Nomenclature, 2021, North American Stratigraphic Code (2021), Stratigraphy, v. 18, no. 3, p. 153-204. *https://ngmdb.usgs.gov/Geolex/resources/docs/NACSN_Code_2021.pdf*

Parker, G.G., Ferguson, G. E., Love, S.K., and others, 1955, Water resources of southeastern Florida: U.S. Geological Survey Water-Supply Paper 1255, 965 p. *https://pubs.usgs.gov/wsp/1255/report.pdf*

Poland, J. F., Lofgren, B. E., and Riley, F. s., 1972, Glossary of selected terms useful in studies of the mechanics of aquifer systems and land subsidence due to fluid withdrawal: U.S. Geological Survey Water-Supply Paper 2025, 9 p. *https://pubs.usgs.gov/wsp/2025/report.pdf*

Reese, R.S., and Richardson, Emily, 2008, Synthesis of the Hydrogeologic Framework of the Floridan Aquifer System and Delineation of a Major Avon Park Permeable Zone in Central and Southern Florida: U.S. Geological Survey Scientific Investigations Report 2007-5207, 60 p., 4 pls., plus apps. (on CD). *https://doi.org/10.3133/sir20075207*

Seaber, P.R., 1988, Hydrostratigraphic units; in, Back, W., Rosenschein, J.R., and Seaber, P.R., Hydrogeology: The Geology of North America, Geological Society of America, Vol. O-2, p. 9-14. *https://doi.org/10.1130/DNAG-GNA-O2.9*

Sproul, C.R., Boggess, D.H., and Woodward, H.J., 1972, Saline-water intrusion from deep artesian sources in the McGregor Isles area of Lee County, Florida: Florida Bureau of Geology Information Circular 75, 30 p. *http://publicfiles.dep.state.fl.us/FGS/FGS_Publications/IC/IC75PRIDE/FSGS%20IC%20No.75%201972.pdf*

Stringfield, V.T., 1936, Artesian water in the Floridan peninsula: U.S. Geological Survey Water-Supply Paper 773-C, p. C115-C195. *https://pubs.usgs.gov/wsp/0773c/report.pdf*

Stringfield, V. T., 1966, Artesian water in Tertiary limestone in the Southeastern States: U.S. Geological Survey Professional Paper 517, 226 p. *https://pubs.usgs.gov/pp/0517/report.pdf*

Torres, A.E., Sacks, L.A., Yobbi, D.K., Knochenmus, L.A., and Katz, B.G., 2001, Hydrogeological Framework and Geochemistry of the Intermediate Aquifer System in Parts of Charlotte, De Soto, and Sarasota Counties, Florida: U.S. Geological Survey Water-Resources Investigations Report 01-4015, 81 p. *https://doi.org/10.3133/wri014015*

Wedderburn, L.A., Knapp, M.S., Waltz, D.P., and Burns, W.S., 1982, Hydrogeologic Reconnaissance of Lee County, Florida: South Florida Water Management District Technical Publication 82-1, pts. 1, 2, and 3, 192 p. *https://www.sfwmd.gov/sites/default/files/documents/cuptech_sfwmd_techpub_82_01_lee.pdf*

Williams, L.J., and Kuniansky, E.L., 2016, Revised Hydrogeologic Framework of the Floridan Aquifer System in Florida and Parts of Georgia, Alabama, and South Carolina (ver. 1.1, March 2016): U.S. Geological Survey Professional Paper 1807, 140 p., 23 pls., *http://dx.doi.org/10.3133/pp1807*.

Wolansky, R.M., 1978, Feasibility of water-supply development from the unconfined aquifer in Charlotte County, Florida: U.S. Geological Survey Water-Resources Investigations Report 78-26, 34 p. *https://pubs.usgs.gov/wri/1978/0026/report.pdf*

Wolansky, R.M., 1983, Hydrogeology of the Sarasota-Port Charlotte Area, Florida: U.S. Geological Survey Water-Resources Investigations Report 82-4089, 54 p. *https://pubs.usgs.gov/wri/1982/4089/report.pdf*

Wyrick, G.G., 1960, Ground-water resources of Volusia County, Florida: Florida Geological Survey Report of Investigations 22, 65 p. *http://ufdcimages.uflib.ufl.edu/UF/00/00/12/06/00001/UF00001206.pdf*

Appendix C. Well Repair and Maintenance Program Metrics

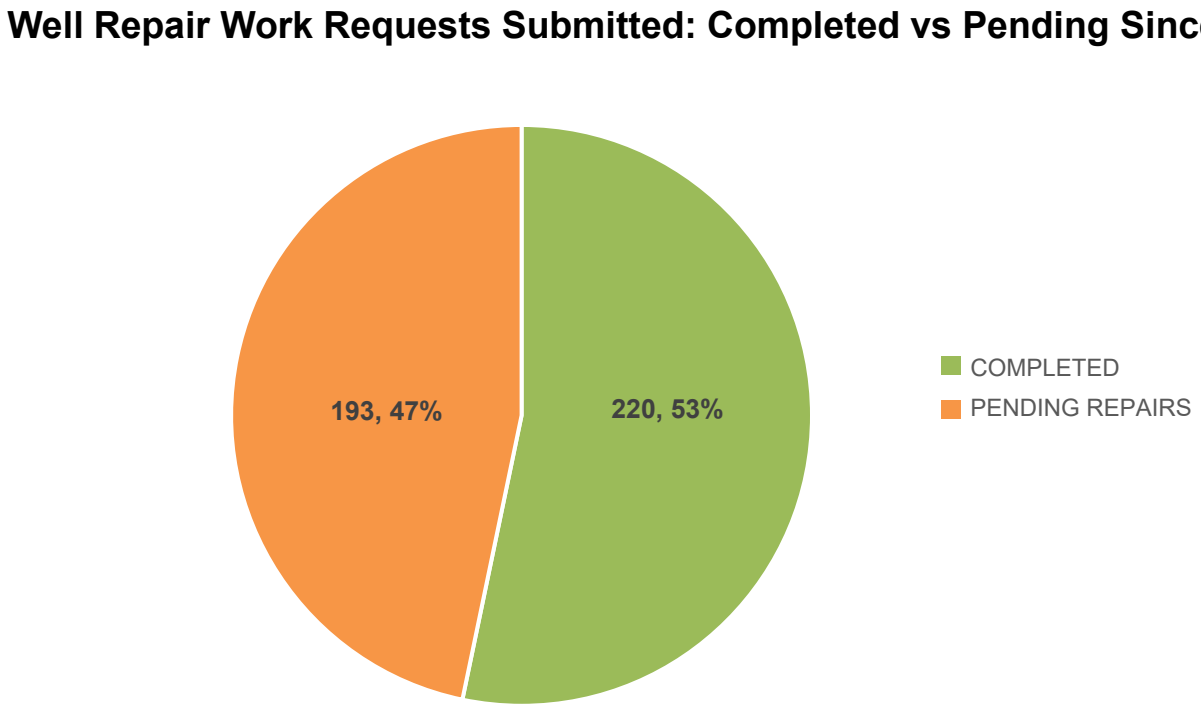
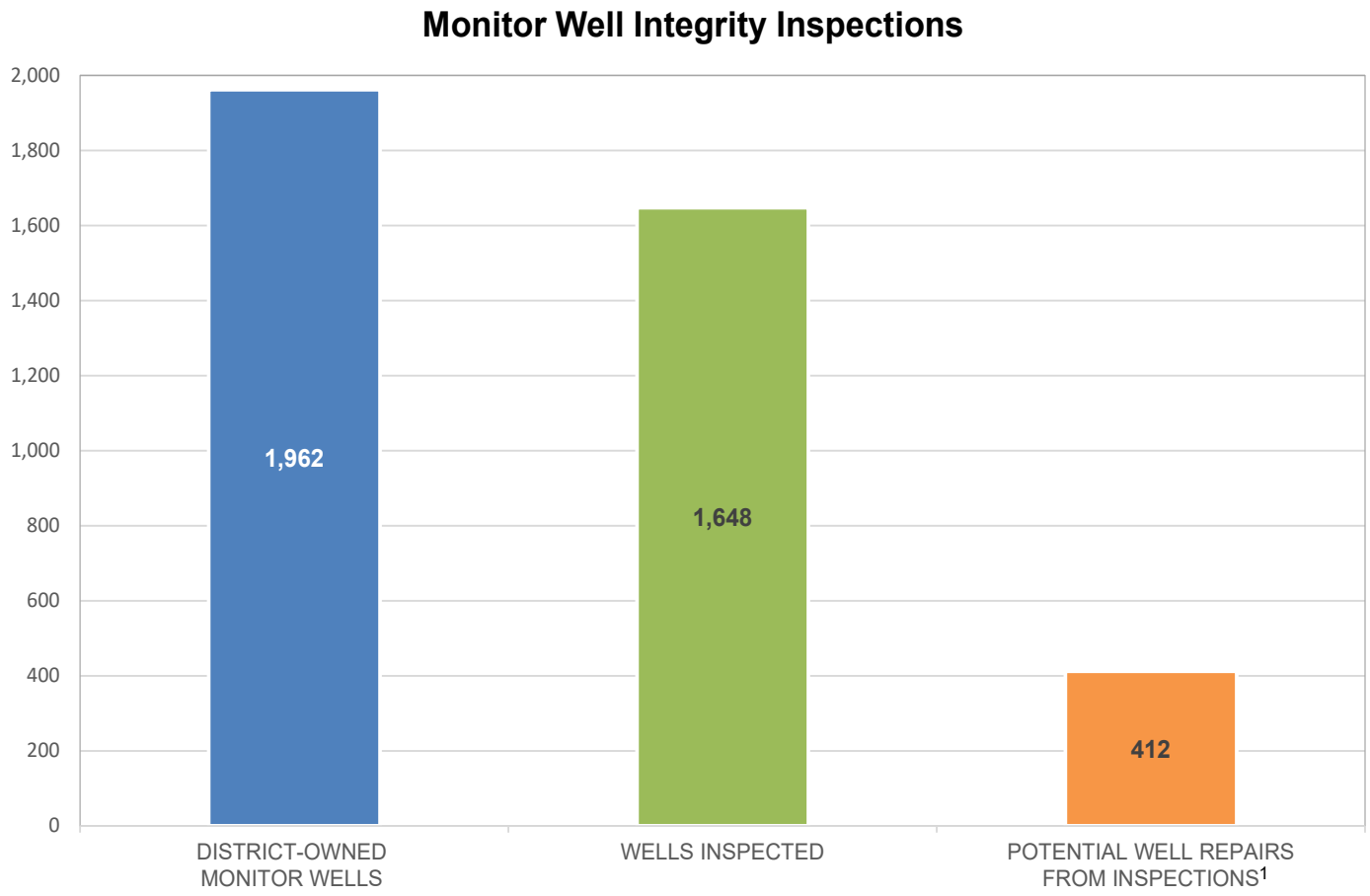


Figure C1. Well repair work requests received by the Geohydrologic Data section.



[1]Based on 25 percent of total well inspections resulting in a repair.

Figure C2. Monitor well integrity inspections performed and the number of potential well repairs after reviewing the inspections.

This page intentionally left blank.