



Solicitation Number 21-0925
HYDROGEOLOGY, HYDROLOGY
AND
GEOTECHNICAL CONSULTING SERVICES

Due: June 8, 2021 @ 3:00 PM

STATEMENT OF INTEREST & UNDERSTANDING OF PROJECT

Ardaman & Associates, Inc. is pleased to present our response to Solicitation Number **21-0925** for **Hydrogeology, Hydrology and Geotechnical Services**. We understand that the scope of services will include providing professional services for the purposes of developing, evaluating, and providing recommendations for Water Resource projects in Lake County, including Groundwater and Surface Waters. We understand that these services may also require the involvement of a Geotechnical Engineer, Environmental/Civil Engineer, Hydrogeologist, Hydrologist, Geologist, and Environmental Scientist. We believe the information provided in this submittal will demonstrate our qualifications and abilities to provide the anticipated scope of services. When reviewing our submittal, please consider the following:

- Ardaman established in Orlando in 1959, is one of the largest geotechnical, geo-environmental and hydrogeologic firms in Florida. We dedicate our staff of nearly 400 engineers, geologists, technicians, and support personnel to providing the City of Oviedo with the level of service that you expect and deserve.
- Ardaman has provided similar hydrogeology, hydrology, and geotechnical services under continuing services contracts locally to Orange County, the City of Sanford, FDEP and the Toho Water Authority to name a few. Our geologists and engineers are very familiar with the local hydrogeologic conditions and how they affect design, development and management of water resources, landfills, hazardous materials, etc.
- Ardaman currently holds over 80 continuing contracts for public service sector clients, including local contracts with the Lake County, Orange County, Osceola County, Seminole County, City of Orlando, City of St. Cloud, City of Casselberry, and the City of Sanford among many others. Therefore, we have completely ascended the learning curve regarding such contracts.
- Ardaman's local office is the company's headquarters and is home to the largest single resource pool in the company, including nearly 150 employees, seven drill rigs, and a full suite of groundwater monitoring equipment.
- Ardaman brings to Lake County not only a substantial resource pool, but specific experience with and understanding of the County's needs and procedures.
- Ardaman's extensive local staff and equipment resources afford us the ability to provide the required services in-house, thus saving the County expenditures of cost and time associated with using specialty subconsultants.
- Ardaman has chosen to primarily serve the public sector, and we do not emphasize work with contractors and local developers as part of our business model. For this reason, we will not likely present a conflict of interest to the Lake County as we serve under this contract if the County finds itself in an adversarial situation with a contractor or local landowner. It is likely that we will be able to fully advocate for the County's interests in this type of situation.
- Most of Ardaman's local engineers and geologists (over 50) hold advanced degrees, many with doctorate degrees. Our staff includes many senior Geotechnical Engineers, Hydrogeologist, Hydrologist, Geologist, and Environmental professionals who are some of the best known and respected members in the profession. These individuals will positively represent Lake County's interests as valuable advocates.

FIRM PROFILE / FIRM HISTORY

Ardaman is a professional corporation founded in 1959 by Dr. M.E. Ardaman, and the company has continually provided services in the practice of engineering. The company was founded in Orlando but expanded to meet the needs of our client community throughout Florida and Louisiana. We currently serve from our corporate headquarters

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in Orlando, ten branch offices in Florida, and three branch offices in Louisiana. At present, Ardaman employs a staff of over 400 professional engineers, scientists, technicians, drilling personnel, technical assistants, and support staff.

Ardaman is a technically superior and fiscally sound consulting firm that has experienced a steady and healthy growth throughout its history. This reasonable growth pattern has allowed us to expand services offered to our clients while maintaining top quality. We firmly believe that the growth and reputation of our company are the direct results of the individual efforts and commitment of all our employees. Our future success depends on continuing this commitment and adhering to the highest professional standards and ideals.

Ardaman is one of Florida's largest geotechnical, materials engineering, and environmental consulting firms. From our branch and satellite offices located throughout Florida and Louisiana, we conveniently provide local experience and timely response. This broad base of experience enables our staff to satisfy the demands of any project, anywhere.

At Ardaman, we are committed to providing high-quality services that satisfy the specific needs of both the project and the client. This commitment to quality is supported by our use of the most advanced mechanical and electronic tools available, along with specialized instruments developed by Ardaman professionals for particular applications. These tools are supported by our most important asset – a dedicated and experienced staff.

Our five-to-one ratio of support to professional staff is among the best in the field for full-service geotechnical companies and further accents our philosophy of quality service. Some of the services we provide include:

- Hydrogeology and surface water hydrology
- Geotechnical engineering
- Construction materials testing and inspection
- Geoenvironmental sciences
- Building inspections and facilities engineering
- Industrial waste engineering

Ardaman owns a large inventory of field equipment, including four-wheel drive and all-terrain vehicles, a 10-foot x 20-foot barge equipped with a drill rig, an airboat, an amphibious rig, and a HET-CPT Unit. The HET-CPT Unit was developed by Ardaman engineers specifically to obtain higher quality data in Florida soils at a lower cost. Also, included are several electric piezometer probes and piezocones, a flat plate dilatometer, a vane shear device and NQ coring equipment. Over twenty drill rigs are manned by crews with extensive experience in field testing techniques, undisturbed soil sampling equipment, transducers, and computerized data acquisition systems for well pump tests, geophysical equipment and soil gas sampling and testing equipment. The firm also owns several proprietary field-testing equipment developed by the principals at Ardaman. We at Ardaman take great pride in our field and laboratory equipment. We have a formal quality control procedure which ensures that our equipment is regularly maintained and produces the highest-quality results.

PROGRAM MANAGER – Douglas Dufresne, P.G.

- 8008 S. Orange Ave., Orlando, FL 32809
- Phone: 407-855-3860
- Email: ddufresne@ardaman.com

Ardaman's primary contact for the Lake County contract will be **Douglas Dufresne, P.G.** Mr. Dufresne will oversee all the work provided under this contract, managing staff and other resources, and providing technical expertise. Mr. Dufresne will also lead hydrogeological analysis. He has provided professional geological and hydrogeological services to public sector client water and wastewater utilities, engineering companies and private industry for 30 years. Mr. Dufresne is a well-known and respected Florida hydrogeologist, and his knowledge, experience and regulatory agency familiarity will be a significant asset to the City. His expertise includes geological and hydrogeological studies, groundwater flow modeling, contaminant transport modeling, groundwater level monitoring, groundwater quality monitoring, water resource assessment, water use permitting, well and wellfield design, well construction services, aquifer performance testing, alternative water supply planning, aquifer storage and recovery, deep injection wells, environmental site assessments, and expert witness services. He has presented and published nearly 40 technical papers at several regional, national, and international conferences on various hydrogeological topics.

List no more than five projects which best illustrates qualifications relevant to the Solicitation. References must be less than five years old. LIST no more than two LAKE COUNTY GOVERNMENT PROJECTS (past, current, prime, and subcontractor) FIRST.

ARDAMAN & ASSOCIATES, INC.

PROJECT NAME: Well F8 Evaluation, Testing and Rehabilitation

Agency: City of Port St. Lucie Utility Systems Department

Address: 900 S.E. Ogden Avenue

City, State, Zip code: Port St. Lucie, FL 34983

Contact Person: Pierre Vignier

Title: Project Coordinator

Email: PVignier@CityofPSL.com

Telephone: (772) 528-2153

Project Cost: \$56,000

Contract Start and End Dates: June 2019 to January 2021

SCOPE of Project (list tasks, outlines or descriptions of items): Hydrogeological services including review and analyses of existing water quality data (chloride and conductivity), well pumping data, total wellfield pumping data, and original geophysical and video logging; well testing and remediation oversight; well testing and analyses including geophysical logging and flow logging, video logging, packer testing, aquifer performance testing, specific capacity testing, and water quality testing; and well remediation including back plugging the well, well acidization, well development, additional specific capacity testing, and final water quality testing after rehabilitation.

PROJECT NAME: SJRWMD Consumptive Use Permit Ten Year Compliance Report

Agency: City of Palm Bay Utilities Department

Address: 250 Osmosis Drive SE

City, State, Zip code: Palm Bay, FL 32909

Contact Person: Christopher Little, PE

Title: Utilities Director

Email: Christopher.Little@PalmBayFlorida.org

Telephone: (321) 508-2105

Project Cost: \$37,000

Contract Start and End Dates: September 2019 to April 2020

SCOPE of Project (list tasks, outlines or descriptions of items): Hydrogeologic services related to review and analysis of all data required for submittal to the St. Johns River Water Management District regarding the City's consumptive use permit. The City's compliance for all 24 of the CUP conditions requiring submittals was determined, and a report summarizing the findings was prepared for submittal to the SJRWMD.

PROJECT NAME: Richard McLaughlin Water Supply Well RM-3

Agency: Toho Water Authority

Address: 951 Martin Luther King Boulevard

City, State, Zip code: Kissimmee, FL 34741

Contact Person: George Eversole, PE

Title: Professional Engineer

Email: GEversole@TohoWater.com

Telephone: (407) 944-5025

Project Cost: \$58,000

Contract Start and End Dates: March 2018 to September 2019

SCOPE of Project (list tasks, outlines or descriptions of items): Hydrogeologic services including design of a 24-inch diameter 600-foot deep production well, bidding and award services, well construction administration, well drilling oversight, and well construction and testing observation. The observed testing and associated analyses included lithology, water quality sampling, well development, step-drawdown testing, constant rate discharge testing, geophysical logging, video logging, plumbness and alignment testing, and preparation of a well construction summary report.

PROJECT NAME: Hydrogeologic Consulting and Groundwater Modeling

Agency: City of Sanford Department of Utilities

Address: 300 N. Park Avenue

City, State, Zip code: Sanford, FL 32771

Contact Person: Mack McKinley, PE

Title: Water Resource Engineer

Email: Mack.McKinley@SanfordFl.gov

Telephone: (407) 702-9106

Project Cost: \$45,000

Contract Start and End Dates: August 2018 to August 2020

SCOPE of Project (list tasks, outlines or descriptions of items): Hydrogeologic services included groundwater flow modeling and contaminant transport modeling, regulatory meetings and presentations, hydrogeologic consulting involving the geologic and hydrogeologic components and processes, water supply assessment, water quality sample analyses, and production well design.

PROJECT NAME: Southside Wastewater Treatment System Quarterly Monitoring Reports

Agency: City of St. Cloud

Address: 5701 Michigan Avenue

City, State, Zip code: St. Cloud, FL 34772

Contact Person: Erik Dabrowski

Title: Wastewater Treatment Superintendent

Email: EDabrowski@StCloud.org

Telephone: (407) 957-7340

Project Cost: \$33,000

Contract Start and End Dates: October 2019 to September 2020

SCOPE of Project (list tasks, outlines or descriptions of items): Hydrogeologic services include groundwater sampling of seven monitoring wells on a quarterly basis from the St. Cloud golf course and the sprayfield. The environmental scientist uses specialized field instruments that are maintained and calibrated before each sampling event. Field parameters are collected for each location including pH, conductivity, turbidity, temperature, and dissolved oxygen. Water quality samples are collected, and sent to an analytical laboratory for a range of parameters. Once results are obtained from the laboratory, the data are plotted with the historical data and trends are evaluated for each parameter at each well. A qualitative and quantitative report is prepared for submittal to the Florida Department of Environmental Protection.

DOUGLAS P. DUFRESNE, P.G.
PROJECT DIRECTOR / SENIOR HYDROGEOLOGIST

ARDAMAN & ASSOCIATES, INC., ORLANDO

EDUCATION

B.S., Earth Sciences, University of New Orleans, 1984
M.S., Geology, University of Florida, 1988

REGISTRATION

Professional Geologist, Florida, No. 1527
Registered Geologist, Georgia, No. 2008
Professional Geoscientist, Louisiana, No. 699

EXPERIENCE

Mr. Douglas Dufresne, with Ardaman & Associates, Inc., has provided professional geological and hydrogeological services to municipalities, water and wastewater utilities, engineering companies, and private industry for over 32 years. Services he provided include geological and hydrogeological studies, groundwater flow modeling, contaminant transport modeling, groundwater monitoring, water resource assessment, water use permitting, well and wellfield design, well construction observation services, aquifer performance testing, alternative water supply planning, aquifer storage and recovery, deep injection wells, environmental site assessments, and expert witness services. He has presented and published over 40 technical papers at several regional, national, and international conferences on various hydrogeological topics.

City of Port St. Lucie, FL – Well F8 Evaluation, Testing and Rehabilitation

Mr. Dufresne was Project Director for the project with a construction cost of \$262,000, which included hydrogeological services including review and analyses of existing water quality data (chloride and conductivity), well pumping data, total wellfield pumping data, and original geophysical and video logging; well testing and remediation oversight; well testing and analyses including geophysical logging and flow logging, video logging, packer testing, aquifer performance testing, specific capacity testing, and water quality testing; and well remediation including back plugging the well, well acidization, well development, additional specific capacity testing, and final water quality testing after rehabilitation.

City of Palm Bay, FL – SJRWMD Consumptive Use Permit Ten Year Compliance Report

Mr. Dufresne was the Project Director for the project, which included the hydrogeologic services related to review and analysis of all data required for submittal to the St. Johns River Water Management District regarding the City's consumptive use permit. The City's compliance for all 24 of the CUP conditions requiring submittals was determined, and a report summarizing the findings was prepared for submittal to the SJRWMD.

Toho Water Authority, Kissimmee, FL – Richard McLaughlin Water Supply Well RM-3

Mr. Dufresne was the Senior Hydrogeologist for the project, which included design of a 24-inch diameter 600-foot deep production well, bidding and award services, well construction administration, well drilling oversight, and well construction and testing observation. The observed testing and associated analyses included lithology, water quality sampling, well development, step-drawdown testing, constant rate discharge testing, geophysical logging, video logging, plumbness and alignment testing, and preparation of a well construction summary report.

City of Sanford, FL – Hydrogeologic Consulting and Groundwater Modeling

Mr. Dufresne was Project Director for the project with hydrogeologic services including groundwater flow modeling and contaminant transport modeling, regulatory meetings and presentations, hydrogeologic consulting involving the geologic and hydrogeologic components and processes, water supply assessment, water quality sample analyses, production well design, bidding and award services, well construction administration, well drilling oversight, and well

construction and testing observation. The observed testing and associated analyses included lithology, water quality sampling, well development, step-drawdown testing, constant rate discharge testing, geophysical logging, video logging, plumbness and alignment testing, and preparation of a well construction summary report.

City of Palm Bay, FL – South Regional WTP Expansion Well SRO-4

Mr. Dufresne was the Senior Hydrogeologist for the project, which included the design, bidding, and construction observation of one Floridan aquifer well. The brackish production well was constructed with 321 feet of 24-inch well casing and 529 feet of open hole for a total depth of 850 feet. The well went through testing and analyses including video logging, geophysical logging, well development, step-drawdown testing, aquifer performance testing, plumbness and alignment testing, and water quality testing.

Baha Mar, Nassau, Bahamas – Cooling Wells System and Ground Water Study

Mr. Dufresne was the Senior Project Manager for the cooling wells system project with a construction cost of over \$5 million, which included preliminary design, production well and injection well design, field construction services, permitting, construction management, and testing. Once test wells were constructed and tested, a groundwater flow model was constructed to simulate the potential impact of the cooling well system in operation with 47.5 MGD of cool seawater withdrawn from the production zone and warmed return seawater injected into the disposal zone. A ground water study was also conducted to assist in the development of the resort stormwater management system.

City of North Miami Beach, FL – Norwood-Oeffler WTP Raw Water Supply Wells

Mr. Dufresne was Senior Hydrogeologist and Project Manager for the project with a construction cost of \$1.66 million, which included the expansion of the Biscayne aquifer wellfield and Floridan aquifer wellfield. Tasks included groundwater modeling, production well design, field construction services, permitting, construction management, and testing. The wellfield expansion included five (5) Biscayne aquifer production wells each with a total depth of less than 100 feet and capacity of 2,800 gpm and two (2) deep Floridan aquifer wells each with a total depth of 1,250 feet and capacity of 1,700 gpm, with an overall capacity of 25 MGD.

City of Port St. Lucie, FL – Southwest Wellfield Program

Mr. Dufresne was Senior Project Manager for the project with a construction cost of \$850,000, which included wellfield location services, well services, preparation and simulation of a regional groundwater flow model, and the modification of the City's water use permit. A 72-hour constant rate discharge test was performed to determine the wellfield hydrogeologic parameters for an 11-county regional groundwater flow model to increase the allocation of the City's water use permit.

City of Palm Bay, FL – South Regional Deep Injection Well

Mr. Dufresne was Senior Hydrogeologist and Project Manager for the project with a construction cost of \$5 million, which included design, permitting, construction observation, construction management services, and final reporting of the completed deep injection well system. The deep injection well was designed with 24-inch injection casing to a depth of 2,086 feet and total depth of 3,000 feet, and was permitted for disposal of 9.5 MGD of non-hazardous reverse osmosis concentrate through an 18-inch O.D. FRP tubing. The monitoring system designed, permitted, and constructed for this project included a dual-zone monitor well, which monitors groundwater at an upper zone of 1,627 to 1,660 ft bls and a lower zone of 1,805 to 1,855 ft bls.

Toho Water Authority – Well Condition Survey

Ardaman prepared a well condition survey for the Toho Water Authority which included data collection and analysis of their 35 active potable water supply wells. This evaluation included the gathering of existing information on the wells and analysis of the data gathered in order to aid Toho in the prioritization of well rehabilitation or replacement efforts in the future. Ardaman requested from Toho all pertinent well data which may be obtained from well completion reports, well construction summary reports, maintenance records, water use permit information, and other technical well reports. Particular data analyses included well age, well production, static and pumping water levels, pump rates, specific capacity, well efficiency, and well problems.

City of Palm Bay, FL – Well Condition Survey

Ardaman prepared a well condition survey for the City of Palm Bay which included data collection and analysis of their 41 active potable water supply wells. This evaluation included the gathering of existing information on the wells and analysis of the data gathered in order to aid Palm Bay in the prioritization of well rehabilitation or replacement efforts in the future. Ardaman requested all pertinent well data which may be obtained from well completion reports, well construction summary reports, maintenance records, water use permit information, and other technical well reports. Particular data analyses included well age, well production, static and pumping water levels, pump rates, specific capacity, well efficiency, and well problems.

Sarasota County, FL – 2016 Annual Report Sarasota County Injection and ASR Well Systems

Mr. Dufresne was the Project Director for the project that involved the annual reporting of five deep injection well systems with six deep injection wells and one aquifer storage and recovery system (ASR) within Sarasota County for submittal to the Florida Department of Environmental Protection. The report summarized the required monitoring parameters and analyzed the results for the annual reporting.

City of Port St. Lucie, FL – James E. Anderson Wellfield Expansion

Mr. Dufresne was Senior Project Manager for the project with a construction cost of \$3.73 million, which included preliminary design, production well and blend well design, bidding and award, field construction services, permitting, construction management, and testing. The wellfield expansion included seven (7) deep Floridan aquifer production wells each with a capacity of 1,800 gpm and one (1) deep Floridan aquifer blend well with a capacity of 1,000 gpm, with a total wellfield capacity of 19.6 MGD. The deep Floridan aquifer production wells had well casings set at approximately 850 feet below land surface (bls) and total depths of 1350 feet bls. The blend well had a casing depth of 765 feet bls and a total depth of 951 feet bls.

City of Palm Bay, FL – Exploratory Well Program

Provided hydrogeological services to the City of Palm Bay related to the Exploratory Well Program. Mr. Dufresne, Project Manager, provided the necessary professional services for the construction of exploratory, test/production and monitoring wells for the reverse osmosis water treatment plant to be located on the South Regional Water Treatment Facility site.

City of Palm Bay, FL – South Regional Deep Injection Well Permitting and Construction Management

Mr. Dufresne was Project Manager and he provided hydrogeological services to the City of Palm Bay for the deep injection well permitting and construction management for the South Regional RO Water Treatment Plant.

City of Palm Bay, FL – Water Use Permit Renewal

Mr. Dufresne provided hydrogeological services for the City of Palm Bay's consumptive use permit renewal. The groundwater flow model constructed for the renewal was used to show there would be no adverse conditions to Floridan aquifer withdrawals or surficial aquifer withdrawals. The City was issued a 20-year permit from the St. Johns River Water Management District.

City of Palm Bay, FL – Groundwater Resources Development Study

Mr. Dufresne provided hydrogeological services for the City of Palm Bay for water supply planning to evaluate the existing surficial aquifer as a primary water source for the Palm Bay Utility Corporation and to evaluate the potential use of the Floridan aquifer for a future water supply in conjunction with a reverse osmosis water treatment plant.

City of Bartow, FL – Wellfield Expansion and Water Use Permitting

Mr. Dufresne was the Project Manager for the wellfield expansion and water use permitting. These services included the selection of wellfield site; the design, bidding, and construction supervision of four Floridan aquifer production wells along with associated piping, vertical turbine pumps, electrical, controls, and housing. The test/production well was thoroughly developed to produce the necessary water efficiently and at a higher quality. The results of the well testing

were used to modify the City's water use permit with the Southwest Florida Water Management District (SWFWMD). A three-dimensional groundwater flow model was used as part of the supporting documentation to the SWFWMD. The model indicated that there were no adverse impacts to the environment or existing legal users with the proposed withdrawals and the City received their water use permit.

City of Port St. Lucie, FL - Exploratory Well Test Program for RO Water Treatment Facility

Mr. Dufresne was the Project Hydrogeologist for the project, which included the design, bidding, and construction observation of two Floridan aquifer wells. The exploratory well was constructed with 600 feet of well casing and 1250 feet of open hole for a total depth of 1850 feet. Next the test/production well was constructed with 650 feet of casing and 700 feet of open hole for a total depth of 1350 feet. Both wells went through testing including video logging, geophysical logging, step-drawdown testing, water quality testing, and a 72-hour aquifer performance test.

City of Port St. Lucie, FL - Alternative Water Supply Study

Mr. Dufresne was the Project Manager for the project, which included a safe yield of the surficial aquifer and whether it could provide the raw water capacity for near-term demands, identification of potential areas within the City service area for future raw water supply development, and an evaluation of other sources of water such as the Floridan aquifer and surface water. The quantity and quality of water from all sources investigated were analyzed along with the potential for adverse impacts. The study also involved construction of a detailed groundwater flow model in order to determine potential impacts to wetlands and existing legal-users for potential wellfield expansion.

City of Daytona Beach, FL – Hydrologic and Wetlands Monitoring for CUP #8834

Mr. Dufresne was the Senior Project Manager/Senior Hydrogeologist for the project which established hydrologic monitoring stations, profile wetland transects, and establish photo monitoring stations at eighteen (18) monitoring sites. The project included review and selection of long term monitoring equipment, construction of monitoring stations, soil collection and description along wetland transects, vegetation description, and installation of survey monuments. Once six (6) months of hydrologic data were collected, a report detailing the monitoring stations, the water level data, rainfall data, soil profile information, and wetland data, was prepared and submitted to the St. Johns River Water Management District.

City of Deltona, FL – Hydrologic and Wetlands Monitoring for CUP #8658

Mr. Dufresne was the Senior Project Manager/Senior Hydrogeologist for the project which established hydrologic monitoring stations, profile wetland transects, and establish photo monitoring stations at ten (10) monitoring sites. The project included review and selection of long term monitoring equipment, construction of monitoring stations, soil collection and description along wetland transects, vegetation description, and installation of survey monuments. The initial hydrologic data were collected and a Baseline Report detailing the monitoring stations, the water level data, rainfall data, soil profile information, and wetland data, was prepared and submitted to the St. Johns River Water Management District.

Utilities Commission City of New Smyrna Beach – Wetland and Hydrologic Monitoring for SR 44 & Samsula Wellfields

Mr. Dufresne was the Project Hydrogeologist for the project which established a total of thirty (30) hydrologic monitoring stations. Fourteen (14) of these stations monitor water levels in wetlands, fourteen (14) of these monitor ground water levels in uplands, and two (2) monitor the Floridan aquifer potentiometric surface elevation. The wetland monitoring stations included profile wetland transects, soil survey, and established photo monitoring stations.

PROFESSIONAL AFFILIATIONS:

American Association of Petroleum Geologists – Division of Environmental Geosciences
American Water Works Association – past Groundwater Committee, Source Water Protection Committee
National Ground Water Association (Association of Ground Water Scientists and Engineers)
American Institute of Professional Geologists
Florida Ground Water Association

PRESENTATIONS/PUBLICATIONS:

- “Leaching Study for Select Process and Non-Process Waters Relative to Future Disposal Through a Deep Injection Well” presented at the Florida Association of Water Quality Control, June 2019 and report published by Florida Industrial and Phosphate Research Institute 16-01-210, April 2019.
- “Prioritizing Well Rehabilitation with a Well Condition Survey” presented at the Florida Water Resources Conference, Orlando, Florida, April 2016, and published in FWPCOA, FSAWWA, and FWEA Florida Water Resources Journal, Volume 67, No. 10, October 2016, pp 8-12.
- “Aquifer Use Protection for a Deep Cooling Wells System” presented at Florida Association for Water Quality Control, Naples, Florida, June 2014.
- “Brackish Groundwater Supply and Injection Well Considerations” presented at American Water Works Association Brackish Water Workshop Orlando, Florida, September 2012.
- “Concentrate/Brine Disposal Options” presented at American Water Works Association Brackish Water Workshop Tampa, Florida, August 2012.
- “Deep Well Injection of Process Water – Is it Possible in Florida?” presented at the Florida Association for Water Quality Control, Naples, Florida June 2012.
- “Evaluating Wellfield Efficiency: A Step to a Greener Utility” presented at the Florida Section American Water Works Association Conference, Orlando, Florida, November 2011, and awarded the Best Paper of the Fall 2011 Conference.
- “Developing Better Regional Groundwater Flow Models with Effective Use of Step-Drawdown Test Results,” published in FWPCOA, FSAWWA, and FWEA Florida Water Resources Journal, Volume 63, No. 2, February 2011, pp 36-43.
- “Saving Source Water Through Suitable Site Selection: An ASR Answer” presented at the Florida Section American Water Works Association Conference, Orlando, Florida, November 2010.
- “Why Monitor Drawdown, Drainage, and Drought?” published in American Water Works Association Opflow, Volume 35, No. 10, October 2009, pp 24-27.
- “Alternative Water Supply Meeting Today’s and Tomorrow’s Water Supply Needs,” presented at the Emerging Issues in Water Resources in Florida and the Southeast Region conference by the Florida Association of Professional Geologists and the American Institute of Professional Geologists (FAPG/AIPG), St. Augustine, Florida, May 2009.
- “Successful Delineation of Stored Water through Electrical Resistivity Surface Geophysical Method for a Shallow Aquifer Storage and Recovery System,” presented at the Emerging Issues in Water Resources in Florida and the Southeast Region conference by the Florida Association of Professional Geologists and the American Institute of Professional Geologists (FAPG/AIPG), St. Augustine, Florida, May 2009.
- “Why Do We Monitor – Drawdown, or Drainage and Drought?” presented at the 2008 American Water Works Association Annual Conference and Exposition, Atlanta, Georgia, June 2008
- Dufresne, D.P. and Christopher, J.E. 2008. “City of Port St. Lucie, Florida: Proactive Approach to Alternative Water Supply Planning,” presented at the Florida Water Resources Conference in the Integrated Water Resources Strategies Workshop, Tampa, Florida, May 2008.
- “Providing Accurate Groundwater Quality Models in Southeast Florida,” presented at the Florida Water Resources Conference in the Integrated Water Quality Modeling Workshop, Tampa, Florida, May 2008.
- “The Use of Step-Drawdown Tests for the Development of Better Regional Groundwater Flow Models,” Florida Section American Water Works Association Conference, Orlando, Florida, November 2007.
- Dufresne, D.P., J. Adame. 2007. “Shallow Aquifer Storage and Recovery for Conservation and Use of Reclaimed Water,” presented at the 2007 American Water Works Association Annual Conference and Exposition, Toronto, Ontario, June 2007.
- “Water Conservation and Reuse,” presented at the Growth Management and Environmental Permitting Short Course, Orlando, Florida, February 2006 and the Environmental Permitting Summer School, Marco Island, Florida, July 2005.
- Dufresne, D.P., A. Perez. 2005. “Well Acidization for Increased Specific Capacity and Energy Cost Savings.” Presented at the 2005 American Water Works Association Annual Conference and Exposition, San Francisco, California, June 2005.
- Dufresne, D.P., R. Nipper. 2004. “Finding the Zone: A Deep Injection Well Expedition,” presented at the 2004 Florida

- Section American Water Works Association Annual Conference, Orlando, Florida, November 2004.
- Dufresne, D.P., R. Nipper. 2004. "Exploratory Well Testing for Future Deep Injection," presented at the American Water Resources Association Annual Conference, Orlando, Florida, November 2004.
- Dufresne, D.P., C.W. Drake, W.B. Lafrenz, W.H. Bulmer. 2004. "Testing for Potential Wetland Impacts in the Green Swamp; A Wellfield Expansion Adventure," presented at the 2004 American Water Works Association Annual Conference and Exposition, Orlando, Florida, June 2004.
- Lafrenz, W.B., W.H. Bulmer, D.P. Dufresne. 2003. "Establishing an Aquifer Storage and Recovery System in a Shallow Coastal Aquifer." NGWA – AGWSE Technical Interactive Presentation. Annual Meeting. Orlando, Florida. December 2003.
- Dufresne, D.P., V.C. Davis, W.B. Lafrenz, A.L. Perez. 2003. "Preparing for a Coastal Aquifer Wellfield Expansion – Updating a Saline Water Intrusion Monitoring Program". NGWA-AGWSE Technical Interactive Presentation. Annual Meeting. Orlando, Florida. December 2003.
- "Reuse from a Rainy Day – Conservation of Reclaimed Water using Aquifer Storage and Recovery," presented at the 2002 Florida Section American Water Works Association Annual Conference; Palm Harbor, Florida, November 2002.
- "Aquifer Performance Testing of the Prolific Biscayne Aquifer for Wellfield Expansion," presented at the 77th Annual Florida Water Resources Conference; FSAWWA, FWEA, and FWPCOA; Orlando, Florida, April 2002.
- "Groundwater Model Construction and Calibration for the Prolific Biscayne Aquifer – Problems and Unique Solutions," was presented at the international conference MODFLOW 2001 and Other Modeling Odysseys; Golden, Colorado, September 2001.
- "Hydrologic Testing and Modeling Methods for Restoring Impacted Wetlands," presented at the 76th Annual Florida Water Resources Conference; FSAWWA, FWEA, and FWPCOA; Jacksonville, Florida, April 2001.
- "Broward County Integrated Water Resources Plan Phase II Pump Test," presented at the 2001 Florida Ground Water Association Convention; Orlando, Florida, January 2001.
- "Irrigation Impacts to Surficial Aquifer Systems – A Source Water Protection Issue," presented at 2000 American Water Works Association Annual Conference and Exposition, Denver, Colorado, June 2000.
- "Water Quality Degradation of the Surficial Aquifer via Stormwater Drainage – A Source Water Protection Issue," presented at the 75th Annual Florida Water Resources Conference; FSAWWA, FWEA and FWPCOA; Tampa, Florida, April 2000.
- "Tracking of Major Ion Concentrations in Aquifer Systems for Source Water Protection and Safe – Yield Consumption," presented at the 1999 Florida Section American Water Works Association Annual Conference; Orlando, Florida, December 1999.
- "Floridan Aquifer Cavern Investigation and Production Well Construction/Testing" received an Honorable Mention Award in the 1999 Florida Institute of Consulting Engineers' Engineering Excellence Awards competition. It was presented at the National Ground Water Association – Southeast Focus Conference, Tampa, Florida, June 1999, and the 2000 Florida Ground Water Association Convention, Orlando, Florida, January 2000.
- "Developing Efficiency – A Key to Productive Water Wells," prepared for the 74th Annual Florida Water Resources Conference, Tallahassee, Florida, April 1999, and presented at the 2001 Florida Ground Water Association Convention, Orlando, Florida, January 2001.
- "Regional Groundwater Flow Model Construction and Wellfield Site Selection in a Karst Area, Lake City, Florida," published in Engineering Geology an International Journal, Issue 52 (1999), pp 129-139.
- "Successes and Limitations of MODFLOW for Rapid Infiltration Basin Analyses," presented at the international conference MODFLOW '98, Golden, Colorado, October 1998.
- "Understanding Groundwater Mounds – A Key to Successful Design, Operation, and Maintenance of Rapid Infiltration Basins," presented at the 73rd Annual Florida Water Resources Conference; FSAWWA, FWEA and FWPCOA; Fort Lauderdale, Florida, April 1998.
- "The Development of Better Calibrated Groundwater Flow Models with the Use of More Time Dependent Data," presented at the 1997 American Water Works Association Annual Conference and Exposition, Atlanta, Georgia, June 1997.
- "Wellfield Site Selection and Groundwater Flow Model Construction of the Karst Area in Lake City, Columbia County, Florida," presented at the 6th Multidisciplinary Conference on Sinkholes, and the Engineering and Environmental

Impacts of Karst, Springfield, Missouri, April 1997.

Dufresne, D.P. and C.W. Drake, 1997, "Wellfield Site Selection and Groundwater Flow Model Construction of the Karst Area in Lake City, Columbia County, Florida:" The Engineering Geology and Hydrogeology of Karst Terrains, A.A. Balkema Publishers, Rotterdam, Netherlands, pp. 227-233.

"Planning Before Filling," presented to the American Society of Civil Engineering, Florida Section, September 1989. This paper addressed methane production and recovery in landfills.

"Distribution of Palygorskite, MgO, and Other Related Minerals in a North Florida Phosphorite," presented to the Florida Academy of Sciences, May 1988. This paper addressed mineralogical associations that are adverse to phosphate processing and suggested possible solutions for the phosphate industry.

"Separation of Dolomite from the South Florida Phosphate Rock - Phase II, Final Report," Florida Institute of Phosphate Research, July 1987. Wrote the Mineralogical Studies section of the report.

SHORT COURSES/SEMINARS:

Well Development, Testing, and Rehabilitation, FWPCOA Region V Short School, **Course Instructor**, January 15, 2020

Aquifer Storage and Recovery (ASR) Development and Challenges, FWPCOA Region V Short School, **Course Instructor**, November 3, 2015

Brackish Groundwater Supply Wells and Brine Injection Wells, FSAWWA Brackish Water Workshop, **Course Instructor**, September 26, 2012

Concentrate/Brine Disposal Options, FSAWWA Brackish Water Workshop, **Course Instructor**, August 23, 2012

Florida Water Conservation Coordinator Training, UF TREEO Center, 2011

Well Maintenance and Rehabilitation, FWPCOA Region V Short School, **Course Instructor**, 2010

Advanced Groundwater Vistas and PEST, 2008

Aquifer Storage and Recovery, FWPCOA Region V Short School, **Course Instructor**, 2007 to 2009

Well Rehabs, FWPCOA Region V Short School, **Course Instructor**, 2007 to 2008

Well Location, Drilling, and Operations, AWWA ACE 2004 Workshop, **Course Instructor**, 2004

Wells and Wellfield Management, FW&PCOA, **Course Instructor**, 1996 to 2006

MT3DMS Workshop, A Modular 3-Dimensional Multi-Species Transport Model, IGWMC, 1998

Princeton Remediation Course, 1996

Standard Operating Procedures for Phase I Site Assessments, TREEO, 1994

Estimating Seasonal High Water Tables, SCS, 1992

Applied 2D Flow and Transport Modeling on Microcomputers, 1991

OSHA Health and Safety Training Refresher, 1991 to 2009

OSHA Training for Hazardous Waste Site Supervisor, 1990

OSHA Health and Safety Training for Hazardous Waste Site Investigation, 1989

Radon Certification Measurement Training Course, HRS, 1989

Design, Construction & Performance of Liner Systems for Environmental Protection, TREEO, 1989



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