

Alachua County Board of County Commissioners

Annual Environmental Consulting Services

Proposal for RFP# 20-171



Prepared for:

**Alachua County
Board of County Commissioners**

Prepared by:

DB Environmental, Inc.

GSE Engineering and Consulting, Inc.

eda engineers-surveyors-planners, inc.

GLE Associates, Inc.

Ecosystem Research Corporation

Advanced Environmental laboratories, Inc.

Environmental Conservation Laboratories, Inc.



April 24, 2019

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Tab 1

Letter of Interest

1 Letter of Interest

April 24, 2019

Alachua County Board of County Commissioners
Alachua County Division of Purchasing, 3rd Floor
County Administration Building
12 SE 1st Street
Gainesville, Florida 32601-6983

Reference: Annual Environmental Consulting Services, Request for Proposals (RFP) #20-171

Dear Madam or Sir,

DB Environmental, Inc. (DBE) is pleased to present this proposal to provide Annual Environmental Consulting Services to support the Alachua County Environmental Protection Department (ACEPD) and their programs and special projects. DBE, a Florida-based environmental consulting and research firm, maintains offices in Gainesville, Rockledge, and West Palm Beach. Along with our other local team members, DBE is uniquely positioned to provide comprehensive environmental consulting, environmental planning, engineering, and geohydrological support services to ACEPD.

DBE understands the mission and goals of ACEPD and that the potential environmental consulting services are diverse and require expertise in several disciplines in order to support Alachua County's hazardous materials management, air and water quality protection and monitoring programs, land conservation program, asbestos abatement program, natural resources protection, development review programs, and other special projects. DBE's scientists have designed, managed, and successfully executed a broad range of environmental projects, and are experienced, client-focused project managers. We have successfully managed a number of complex, multi-disciplinary projects, with experience reporting to numerous funding agencies and stakeholders.

DBE has the expertise to provide services in the areas of water quality monitoring, contamination assessment and remediation monitoring, modeling and environmental sampling and analysis, as well as stormwater management and wastewater treatment technologies. Our team members supplement our in-house capabilities by providing expertise in natural resources assessment and surveying, wetland delineation, ordinance and regulation development, land development regulations, Phase 1 and Phase 2 environmental assessments, air quality assessment, industrial hygiene studies, and asbestos abatement consulting. DBE also maintains a NELAP certified laboratory, which along with our subcontracted laboratories, can provide analyses of environmental media, including water, soil, sediment, air, vegetation, and biological tissues, in support of ACEPD's special projects.

DBE's senior Gainesville staff have over 15 years of project experience and extensive knowledge of the issues and programs relevant to ACEPD. We live in Alachua County and have firsthand knowledge of its outstanding natural resources and associated environmental challenges. With these challenges in mind,

we have assembled an interdisciplinary team of locally invested and motivated consultants who have the qualifications, experience and ability to support ACEPD. We look forward to the opportunity to provide comprehensive environmental consulting services to the County.

Sincerely,

DB Environmental, Inc.

A handwritten signature in black ink, appearing to read "Jim Myles". The signature is fluid and cursive, with the first name "Jim" and last name "Myles" clearly distinguishable.

Jim Myles, MS, GISP

Senior Project Manager and Associate Scientist

Proposed Primary Project Liaison

jim@dbenv.com

Tab 2

Project Understanding and Approach

2 Project Understanding and Approach

Alachua County issued a Request for Proposals (RFP# 20-171) to retain a consultant or consultants to provide comprehensive environmental consulting services, environmental planning, engineering, and geohydrological services in support of multiple County programs. DB Environmental, Inc. (DBE) is a research and consulting firm that has been providing high-quality consulting and analytical services to the environmental community since its inception in 1991. As prime respondent to this RFP, DBE will engage with the County to provide these services. DBE understands the scope and objectives of potential tasks are diverse and require expertise in a variety of disciplines, and projects under this contract will be on a task assignment basis. We have assembled a team with the experience and proven performance to provide these services.

The County has ongoing programs in air and water quality protection and monitoring, land conservation, natural resources protection, hazardous materials management, asbestos abatement, and development review, along with other initiatives. The DBE-led team provides expertise in all areas necessary to provide comprehensive support services to the County. These include environmental sampling and monitoring, modeling and analysis, stormwater and wastewater treatment, stormwater management, contamination assessment or remediation, laboratory support, Phase 1 and Phase 2 environmental assessments, air quality, industrial hygiene and asbestos abatement support, natural resources assessments (including surveying and wetland delineation), and ordinance and regulation development for land development and growth management.

The County's RFP notes that laboratory services for special projects involving sampling and analysis of environmental media will need to be provided by the consulting team. DBE maintains a NELAP certified laboratory (NELAP certification#: E83330 – see Appendix) in Rockledge, FL, that provides analytical support to commercial clients, as well as in-house analyses for DBE scientists in support of their consulting efforts.

DBE's laboratory provides specialized water and solid matrix analyses to support decision-making for some of Florida's most sensitive environments (e.g., the Florida Everglades), and due to the stakeholder scrutiny applied to the results of these investigations, we have developed extremely robust QA/QC protocols and procedures. This expertise will ensure analytical data of the highest quality is produced for ACEPD by both DBE's laboratory and its subcontract laboratories. DB Environmental, Inc. emphasizes the importance of meeting customer and regulatory requirements and will always endeavor to follow useful and practical QA/QC procedures. We are committed to ethical laboratory practices and to generating data of high and verifiable quality. DBE complies with the NELAC/TNI Standards and strives to continually optimize our management systems.

DBE field operations are guided by our Field Quality Manual (FQM), which provides sampling and documentation procedures for all projects, while recognizing that data quality objectives vary from project to project, and that acceptable sampling and analytical procedures should be specified in project documentation wherever possible. It should be noted that DBE personnel, and affiliated project team members, follow all applicable standard protocols in these Laboratory and Field Quality Manuals when

collecting, handling, analyzing, and reporting any data, even in the event that a formal QA Project Plan doesn't exist.

We understand that specific services and projects have not yet been identified by ACEPD, and that funding is not committed to specific tasks for the contract period. The period covered by contracts between the County and selected Consultants will be from the date of the fully executed contract through September 30, 2020, with an option by the County to renew for two additional two-year periods.

DBE also realizes that ACEPD often leverages grant funding from State and Federal agencies to accomplish their goals of protecting Alachua County's environment. DBE scientists have a 28-year track record of successfully obtaining environmental project grant funding from federal, state and local governmental agencies. At the request of ACEPD, DBE will assist with developing proposals to secure funding for County environmental projects.

For projects in which grant funding is either not needed or appropriate, we understand that ACEPD personnel will develop a scope of work for a task assignment or project. Senior DBE scientists subsequently will meet with ACEPD staff to review and refine the scope of services and set a schedule. DBE will then develop a proposal addressing the scope of work, identifying key staff and subconsultants if necessary, and provide a budget and a schedule of tasks to be completed. After the proposal is accepted by the County a purchase order (PO) will be issued to proceed with the work.

Senior DBE key personnel will secure the resources and select the qualified staff from our team to accomplish the desired work effort. The project manager will create a schedule of field work and other tasks to meet the agreed upon deliverable deadlines. Throughout the project, DBE project managers will provide updates to ACEPD regarding the progress of the project and any issues that may arise. The data collected from field activities will be compiled, analyzed, summarized, and conclusions or findings will be shared with ACEPD to facilitate a discussion about the results. After agreeing on the outcome and that no additional work is required, DBE will finalize the report or agreed upon deliverable. Where required, reports shall be prepared by or under the direction of a professional engineer or geologist (as appropriate) licensed in Florida with relevant experience or a qualified scientist, engineer, or environmental planner.

After ACEPD has had the opportunity to review the deliverable, DBE will ensure any necessary edits are made and comments are addressed prior to finalizing deliverables and submitting an invoice for the completed task assignment.

Senior DBE personnel in our Gainesville office have a good working relationship with ACEPD staff, based on previous work experience and contracts. Specific project experience for these DBE personnel, as well as for other DBE staff that may be assigned to ACEPD projects, is provided in the following sections, along with relevant project experience and qualifications of our team members. These members include two small business enterprises (GSE Engineering and Consulting, and EDA engineers, surveyors, and planners), indoor air quality and industrial hygiene specialists (GLE), natural resource experts (Ecosystem Research Corporation (ERC)), and two subcontract laboratories: Environmental Conservation Laboratories (ENCO) and Advanced Environmental Laboratories (AEL). A table identifying each team member's areas of expertise is provided below.

Area of Expertise	Team							
		DB Environmental, Laboratories, Inc.	GSE Engineering and Consulting, Inc. ¹	eda engineers- surveyors- planners, inc. ¹	GLE Associates, Inc.	Ecosystem Research Corporation	Environmental Conservation Laboratories, Inc.	Advanced Environmental Laboratories, Inc.
Monitoring, modeling and environmental sampling and analysis	X	X	X					
Stormwater management	X	X						
Water quality monitoring	X	X						
Wastewater treatment technologies	X	X						
Laboratory services	X	X					X	X
Contamination assessment or remediation	X	X	X					
Phase 1 and Phase 2 environmental assessments	X		X		X			
Air quality monitoring and air pollution control technologies	X				X			
Indoor air quality assessment	X				X			
Asbestos abatement consulting	X				X			
Industrial hygiene studies	X				X			
Ordinance and regulation development	X			X				
Land development regulations	X			X				
Natural resources assessment or surveying	X					X		
Wetland delineation	X					X		

¹Alachua County Certified Small Business Enterprise

Tab 3

Qualifications and Staff

3 Qualifications and Staff

3.1 DB Environmental, Inc.

DB Environmental, Inc., (DBE) was established in 1991 to provide environmental consulting and research services for government and private clients. DBE was founded by Thomas DeBusk and Forrest Dierberg, Ph.D., and currently serves clients from three Florida offices (Rockledge, Gainesville and West Palm Beach) with a staff of 30 scientists, chemists, field specialists, and support personnel, including a certified Geographic Information Systems Professional (GISP). DBE has a long history of successful research and development on nutrient control technologies and water resource management. DBE's scientists have performed innumerable hydraulic, hydrologic, ecological and biogeochemical assessments of aquatic systems.

DBE's Principals have over 60 years combined experience assessing Florida's wetlands, lakes and rivers.

Since 1977, DBE's scientists have performed extensive studies on Florida's lakes (e.g., Lake Okeechobee, Lake Lawne, Mullet Lake, Lake Poinsett, Lake Winder, Lake Beauty, Lake Tohopekaliga, Lake Washington, Lake June, Lake Trafford), wetlands (e.g., Everglades Stormwater Treatment Areas [STAs], Reedy Creek Swamp, Orlando Easterly Wetlands, St. Johns River Marsh), and rivers/lagoons/bays (e.g., St. Johns River, Indian River Lagoon, Tampa Bay). These efforts have included the development of nutrient budgets, assessing stormwater impacts, evaluating the importance of internal loading, characterizing sediment conditions and trophic state, reviewing minimum flows and water levels, and deploying innovative in-lake and watershed nutrient control technologies. From a scientific and management standpoint, many of these studies have represented pioneering efforts. For example, in the late 1970s, Dr. Dierberg performed sentinel work on nitrogen (N) and phosphorus (P) cycling in natural wetlands used to treat domestic wastewaters. He was the first investigator to carefully quantify the principal transformations, sources and sinks for N and P in forested wetlands used for water treatment.



DBE is uniquely qualified to solve challenging water resources problems.

We have designed, installed, and maintained experimental platforms in numerous lakes, wetlands, and stormwater detention areas throughout south and central Florida. These platforms range in size and complexity from small, static enclosures to sophisticated serial and parallel flow-through mesocosms powered by solar panel arrays. Projects utilizing these research platforms include hydraulic tracer, nutrient and toxicant removal, and sediment-to-water

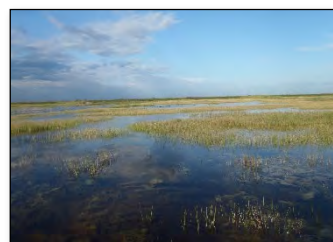


column nutrient flux studies. Results from these pilot-scale platforms have proven invaluable in guiding our clients' large-scale resource management decisions.

Sediments play a dominant role in cycling and storage of nutrients, metals, organic chemicals, and oxygen-demanding substances, and therefore are a critical component to be considered in managing water resources. DBE has developed and optimized field and laboratory techniques for evaluating and predicting the sediment uptake/release of these chemicals in canals, lakes, and wetlands. Based on these approaches, technically feasible and cost-effective recommendations have been made with respect to dredging, dry-down, aeration, and chemical and biological alternatives for managing sediments and mitigating constituent fluxes.

DBE's strong scientific expertise has led to the development of several innovative approaches for controlling pollutant loadings to natural systems. For example, DBE's research in South Florida in the late 1990's demonstrated that submerged aquatic vegetation (SAV) communities can be markedly superior to other plant communities (e.g., emergent macrophytes) in achieving low water column P concentrations.

Based in part on DBE's research findings, the South Florida Water Management District has established submerged aquatic vegetation (SAV) in approximately 50% of the footprint of the Everglades STAs, the largest complex of man-made treatment wetlands in the world.



Our reputation as technical experts and effective problem-solvers has resulted in multi-year contracts as "third-party" evaluators of nutrient control and other environmental technologies. We have performed this service for the Walt Disney Company's worldwide operations for the past 22 years and have provided rigorous testing and technical review of chemical and biological water treatment technologies (e.g., bioaugmentation products) for the St. Johns River Water Management District for four years.

DBE's broad expertise in both chemical and biological nutrient control has led to our participation in some of the largest and most environmentally significant projects in the world.

In addition to our continuing role in supporting Everglades restoration research, DBE assisted the Chinese government with designing large treatment wetlands to improve water quality for their South-North water transfer project. This project, similar in magnitude to the Three Gorges Dam, entails transferring water from the Yangtze River in east-central China to water-starved regions to the north. Our efforts on this project also included identification and prioritization of appropriate watershed pollution control activities.



3.1.1 Key DBE personnel who will provide support for ACEPD environmental projects

Jim Myles, MS, GISP, Senior Project Manager and Associate Scientist, has over 15 years of experience performing and managing environmental monitoring and water resource management projects, including 11 years with the ACEPD. Mr. Myles has strong problem-solving skills, which he has successfully applied to many complex projects involving tracking sources and fate of pollutants (nutrients, fecal coliforms, petroleum products, arsenic, creosote, dioxins, furans, etc.) in surface waters, groundwater, soils and sediments. Mr. Myles is accomplished at developing custom databases, and in organizing and analyzing large geospatial datasets in the ArcGIS platform. He is well-versed in relevant surface water and groundwater Standard Operating Procedures and has applied these protocols to water quality investigations and hydraulic studies designed to pinpoint contaminant sources and their fate in Florida's environments.

Kevin Grace, MS, Office Manager (Gainesville) and Associate Scientist, has designed, conducted, and supervised a wide range of environmental research projects in Florida since 1997. He has managed several multi-year research programs that couple field-scale vegetation and soil surveys with targeted mesocosm and laboratory experiments tailored to understand and improve treatment of stormwater and agricultural drainage waters. He has broad expertise in soils, vegetation (macrophyte and algal), and water quality investigations in aquatic systems. His most recent publication focused on the role of submerged aquatic vegetation in sediment nutrient recycling within stormwater treatment wetlands.

Mr. Grace also has a strong analytical background and has designed and implemented field monitoring programs for stormwater and municipal wastewater treatment systems, as well as lakes, streams and wetlands. He has conducted numerous assessments for monitoring pollution in both urban and agricultural settings. Mr. Grace has provided technical review of proposed changes to state water quality standards, and presented original research to Florida Department of Environmental Protection (FDEP) staff during the Triennial Review process for these changes. At the request of Alachua County Environmental Protection Department (ACEPD), Mr. Grace has led field investigations on numerous occasions and presented these findings to the Orange Creek Basin Working Group. He was also an invited participant in the County's Stormwater Management Program Master Plan Task Force.

Thomas DeBusk is co-founder and President of DB Environmental, Inc. He is an internationally recognized expert on the design and optimization of wetland, macrophyte and algal-based treatment systems. He has published widely and is a frequent lecturer on innovative watershed management concepts. Mr. DeBusk has served as a water resources consultant to governmental agencies and private industries in the Americas, Europe and Asia, and has managed over a dozen large (\$1MM+) multi-disciplinary research investigations.

Gavin Wilson, Field Operations Manager, provides strong field and analytical technical expertise to DBE's team. Mr. Wilson has recently overseen the successful startup and daily operations of a 19 million gallon-per-day hybrid (chemical and wetland) phosphorus removal facility in St. John's County. With over 26 years of technical environmental experience, Mr. Wilson brings an invaluable skill set to DBE's clients, as he has broad expertise with a variety of environmental monitoring and control instruments. He also

possesses strong problem-solving skills: for both DBE and his prior employers, Mr. Wilson was the key staff “troubleshooter” for optimization and repair of mechanical equipment and instrumentation.

Nancy Chan, MS, Laboratory Manager, has 18 years of laboratory management experience. With a MS in Industrial Chemistry, she has a broad understanding of the laboratory analyses associated with environmental waters, soils, and biological tissues. She has extensive knowledge of specialized laboratory tests, such as phosphorus fractionations and phosphorus uptake capacity on solid samples, and analysis of enzyme activity on surface water and periphyton. Since 2000, under Nancy’s management, DBE’s laboratory has successfully completed ten NELAC and eight South Florida Water Management District (SFWMD) inspections and implemented the latest NELAC/TNI requirements. She also has served as a lead Quality Assurance/Quality Control (QA/QC) officer, ensuring that DBE’s laboratory meets current QA/QC requirements.

Forrest E. Dierberg, Ph.D (B.S. Education, M.S. Public Health, Ph.D. Environmental Science), has more than 40 years’ experience as an environmental chemist focused on the biogeochemistry of nutrients and metals in Florida lakes, canals, and wetlands. He has developed and conducted countless laboratory incubations and assays on the uptake and release of nutrients, oxygen-demanding substances, and mercury (Hg) to and from soils, sediments, and plants. Dr. Dierberg has also utilized chemicals in field studies for inhibiting P release from P-enriched soils and tracing the hydraulics of surface water as it moves through large-scale wetlands. He has reported findings of his laboratory and field-scale studies at numerous scientific meetings, including as an invited speaker and session moderator, as well as in peer-reviewed journals.

3.2 DBE workload and ability to satisfy the County requirements

In addition to key personnel listed above, DBE has numerous field, laboratory and project management staff who can be available to assist on ACEPD projects, on an as-needed basis. When selected by ACEPD for a work order, our team’s Project Manager will provide a proposed staffing schedule (with level-of-effort details), along with an SBE Utilization Plan, which will conform to the specific project and schedule requirements. Project-specific work will be apportioned among the firms in our team, and among individuals within each firm, based on the specific discipline and level of effort required for a specific work order. An availability chart for Team member key personnel is provided on the following page.

In addition to the personnel and analytical laboratory support noted in the above sections, DBE has extensive resources to support our field efforts for ACEPD. These include boats (three airboats, two skiffs with outboard motors), GIS and survey gear, monitoring instrumentation (EXO data sondes, various hand-held and remotely-monitored instruments), and soil collection devices. These resources are shared among DBE’s three Florida offices, and are typically available for project needs at a specific location within a half-day’s time.

Core Team	Availability
DB Environmental, Inc.	
Jim Myles, MS, GISP, Sr. Project Manager/Primary Project Liaison	60–75%
Kevin Grace, MS, Associate Scientist/Alternate Project Liaison	60–75%
Tom DeBusk, Scientific Lead	30–40%
Gavin Wilson, Field Operations Manager	40–50%
Nancy Chan, MS, Laboratory Manager	40–50%
Forest Dierberg, Ph.D., Principal Investigator	20–30%
Kimberly Hellman, MS, Data analyst	20–30%
John Juston, Ph.D., Modeler	10–20%
Mike Jerauld, MS, Sr. Project Manager	10–20%
Michelle Kharbanda, BS, Senior Administrator	10–20%
Janelle Potts, BS, QA/QC officer	10–20%
Jaimee Henry, BS, Chemist	10–20%
Karen Hileman, BS, Field Research Assistant	10–20%
Terry Auter, BS, Senior Field Research Assistant	5–10%
David Haselow, BS, Senior Field Research Assistant	5–10%
Samantha Colios, BS, Field Research Assistant	5–10%
Ian Eyeington, BS, Field Research Assistant	5–10%
Aubrey Frye, BS, Field Research Assistant	5–10%
Tom Prevratil, BS, Field Research Assistant	5–10%
Alexis Broyles, BS, Chemist	5–10%
GSE Engineering & Consulting, Inc.	
Jay Nordqvist, P.E. CEO, Principal Engineer	10%
eda engineers-surveyors-planners, inc.	
Clay Sweger, AICP, LEED AP, Principal/Director of Planning	10%
Onelia Lazzari, AICP, Senior Planner	5%
Sergio Reyes, PE, Director of Engineering	5%
Jared Rogers, PSM, Director of Surveying	5%
GLE Associates, Inc.	
Paul Zak, North Florida Operations Manager	10%
Roy Gray, Project Manager	5%
Michael D. Harrell, Project Manager	5%
John K. Hansen, PG, Senior Geologist	5%
Artiom Chacon, Project Manager	5%
Adam Springer, PG, Project Manager	5%
Ecosystem Research Corporation	
Peter Wallace	10%
Advanced Environmental Laboratories, Inc.	
Todd Romero, Laboratory Manager	10%
Environmental Conservation Laboratories, Inc.	
Matthew J. Foti, Ph.D., Laboratory Manager	10%

3.3 DBE Primary and Alternate Liaison to the County

DBE's proposed Project Manager, Jim Myles, has been selected based on his technical background and expertise in ACEPD mission areas and technical activities. Mr. Myles will direct all technical and administrative aspects of the contract and serve as the primary point of contact for ACEPD. His responsibilities will include team task assignments, monitoring and reporting of technical progress, allocation and monitoring of project budgets, and integration of team contributions into deliverable products. Mr. Kevin Grace, manager of DBE's Gainesville office, will act as the alternate liaison. DBE will draw upon the expertise and staff of our team of companies, since ACEPD may request tasks in content areas where one company has a preferred expertise. Execution of each task will draw upon the full expertise of our combined companies' staff.

3.4 Subconsultants' Qualifications and Resumes

3.4.1 GSE Engineering & Consulting, Inc.

GSE's mission is to provide professional, competent, and timely engineering consulting services to meet the needs and exceed expectations of our clients and other stakeholders. GSE strives to provide sensible solutions for our client's technical challenges. Established in 2007, GSE Engineering & Consulting, Inc. is located at 5590 SW 64th Street, Suite B in Gainesville, Florida. GSE provides services throughout the State of Florida.



Engineering & Consulting, Inc.

GSE principal and senior staff offers our clients the benefit of 100+ years of geotechnical, structural, and environmental consulting and design services experience. GSE's principal and senior engineers have worked extensively on a wide range of small and large governmental, institutional, commercial, and industrial projects supported by technically qualified, in house staff, and subconsultants to provide clients with timely cost effective professional services.

GSE participates in both public and private projects. Our clients include private corporations, developers, City/County/State and Federal governments, schools, architects, contractors, engineers, insurance companies, and attorneys. GSE holds continuing services contracts with multiple governmental agencies.

GSE provides engineering and consulting related services in the geotechnical, structural, environmental, and construction material testing disciplines. Below are lists of our expertise in the different disciplines within GSE:

Geotechnical

- Geotechnical Explorations for Foundation Design
- Preliminary Due Diligence Geotechnical Explorations
- Geotechnical Explorations for Roadway and Pavement Design
- Geotechnical Explorations for Storm Water Management Design
- Geophysical Investigations
- Forensic Geotechnical Explorations
- Sinkhole/Subsidence Evaluations

- Slope Stability Evaluations
- Asphalt Pavement Evaluations and Construction Inspection
- Pressure Grouting Design and Field Monitoring
- Foundation Construction Inspection
- Expert Witness Support
- Document Peer Review

Structural

- Structural Design Services
- Structural and Threshold Inspection
- Forensic Evaluations
- Existing Structure Analysis
- Retrofit Structural Design
- Cause and Origin Assessments
- Expert Witness Support
- Document Peer Review

Environmental

- Phase I & II Environmental Site Assessments
- Soil and Groundwater Environmental Site Assessments
- Tank Closures
- Transaction Screening Process
- Vapor Encroachment Screening
- Regulatory Compliance
- Expert Witness Support
- Document Peer Review

Construction Material Testing

- Concrete Cylinder Sampling & Testing
- Mortar & Grout Sampling & Testing
- Soil and Asphalt Field Density Testing
- Mass Grading Inspection
- Site Preparation Inspection
- Foundation Construction Inspection
- Structural Steel Inspection
- Rebar Inspection
- Construction Monitoring and Inspection
- Subgrade Inspection
- Roadway Inspection
- Concrete and Asphalt Coring

Soil & Material Laboratory Testing Services

- Soil and Aggregate Classification Testing
- Modified and Standard Proctors
- Limerock Bearing Ratio (LBR)
- Concrete Compressive Strength

- Rock and Concrete Core Compressive Strength
- Mortar/Grout Compressive Strength

3.4.1.1 Key GSE personnel who will provide support for ACEPD environmental projects

Joakim (Jay) Nordqvist, P.E., Principal Engineer/ QA/QC Coordinator, has a very broad based knowledge of the construction and environmental industry having been involved in geotechnical, environmental, and construction related work for over 30 years. His primary professional focus has been in the environmental consulting area of practice. Mr. Nordqvist has been Principal-In-Charge for hundreds of contamination assessments, for both private and governmental clients. These have ranged from preliminary to full delineation assessments and remediation including petroleum products, metals, and other hazardous materials, including chlorinated solvents. Mr. Nordqvist has been a leader on projects including natural resources, indoor air quality, vapor intrusion, storage tank compliance, water and wastewater, septic tanks, SPCC plans, microbial growth, and building condition assessments. Through this diverse experience, he has developed the ability to understand client needs and identify and assign appropriate resources to accomplish stakeholder goals in a professional and ethical manner. Mr. Nordqvist also has the lead role in maintaining and improving on the internal QA/QC program for GSE.

3.4.2 **eda engineers- surveyors- planners, inc.**



As a certified Minority Owned Small Business in Alachua County and a State of Florida recognized Disadvantaged Business Enterprise, **eda** has provided professional civil engineering, planning, and surveying services in the state of Florida since 1976. Our firm's experience includes hundreds of projects performed under municipal continuing services contracts, and our team is prepared to provide ACEPD with the same level of quality and attentiveness for their prospective projects. Our team's engineers, surveyors, and planners routinely work under multiple continuing services contracts (including a contract with Alachua County) and have completed numerous projects similar in scope to those outlined in this Request for Proposals (RFP).

We have a successful record of accomplishments in executing multiple, concurrent projects and continuing services contracts. **eda** sustains a high rate of repeat clientele due to our successful efforts to work as an extension of our client's staff, and our ability to collaborate in-house and across disciplines throughout project phases. **eda** maintains a number of continuing services contracts:

CLIENT	CONTRACT TERM	CLIENT	CONTRACT TERM
Alachua County (Surveying)	Since 1992	Gainesville Regional Utilities	Since 1998
City of Gainesville	Since 2014	City of Alachua	Since 2008
City of Newberry	Since 2016	City of Hawthorne	Since 2017
City of Waldo	Since 2017	City of Cedar Key Water and Sewer District	Since 2016
Gainesville Community Redevelopment Agency	Since 2014	Gainesville Regional Airport / AECOM	Since 2015

WORKING WITH MUNICIPALITIES

eda currently serves a wide variety of public sector clients throughout Florida. Many of our service contracts are long standing with Alachua County (1992), and Gainesville Regional Utilities (1998). It is this longevity that demonstrates that **eda** has consistently provided quality services to our clients on a continual basis.

Through our experience working for our public sector clients, we have learned how best to meet their consulting needs and provide value beyond a specific project. We work closely with our clients and are often operating as an extension of their staff. In some cases, we have assisted by providing on-site and on-the-spot recommendations that address a situation encountered in the field by city or county field crews. In other cases, it may be by using our understanding of internal city and county processes to achieve a desired outcome more efficiently.

SURVEYING AND MAPPING

eda has been providing surveying and mapping services for over 40 years, including services provided directly to Alachua County government for the past 26 years. Our survey department currently employs registered surveyors with over 80 years combined experience. This experience and expert knowledge allows **eda** to provide the highest quality surveying services. All surveys prepared by **eda** are accurate, professionally prepared, and always meet or exceed all industry standards set by state and federal agencies. detection equipment. Knowing the location of underground utilities is an asset to civil engineers and developers to assist in making appropriate design decisions. This added service benefits not only our clients but other surveying and engineering firms that frequently contract with **eda** for this unique service.



In addition, **eda** provides specialized underground utility location services through the use of advanced ground penetrating radar (GPR) equipment and electronic detection equipment.

In the past 2 years, **eda** has provided the following surveys, among others, to Alachua County:

- Tower Road Topographic Survey
- CR 241 Topographic Survey
- NW 91st Street Topographic Survey
- Canterbury Equestrian Center Boundary Survey
- Conservation Easements (Multiple)
- Little Hatchet Creek Boundary Survey
- Little Santa Fe to Lake Alto Canal Special Purpose Survey

ROADWAY DESIGN

eda's engineers have extensive experience in roadway design and permitting. This experience and expertise come from the variety of past projects that **eda** has successfully completed. Past roadway design projects include, but are not limited to, local roads and subdivisions, county road and intersection improvements, and state and local right-of-way.

URBAN PLANNING SERVICES

eda provides expert urban planning services to our many public and private sector clients. Our projects range from large to small with each client treated as a top priority. Our approach to planning is one of collaboration – with other professional disciplines, regulatory agencies, the public, and most importantly,

the client. This commitment to collaboration has proven time and again to produce quality projects that suit the client's needs and those of the communities in which we work.

eda provides a number of planning services including, but not limited to:

- Due Diligence Services
- Master Planning
- Comprehensive Plan Amendments
- Zoning Assistance
- Evaluation & Appraisal Reports (EAR)
- Special Use Permits & Special Exceptions
- Land Development Code Amendments
- Development Entitlement
- Expert Witness Testimony

ENVIRONMENTAL ENGINEERING AND PLANNING

eda's engineers have the demonstrated ability to balance environmental concerns, regulatory mandates, and economic constraints in order to develop effective solutions to even the most complex stormwater issues. Our team has extensive experience addressing the many challenges of stormwater management for both large and small projects.

FACILITY ENGINEERING

Facility engineering is a cornerstone of **eda's** host of civil engineering services provided to our clients. As seen in our list of continuing service contracts within the public sector, our engineers have extensive experience in providing a diverse range of services to municipal clients. These services include feasibility studies and reports, utility and stormwater design and permitting, site assessments, and related civil engineering design. In addition, **eda** staff includes a LEED® Accredited Professional with background in projects designed for energy efficiency.

CONSTRUCTION ENGINEERING & INSPECTION SERVICES

eda provides construction engineering inspection (CEI) services to its public and private sector clients. These services, which typically accompany other civil engineering design services, are provided by licensed civil engineers with years of related experience. Therefore, **eda** engineers will help guide the project from initial design and permitting phases through construction and completion. MOT (Maintenance of Traffic) Services can also be provided.

BIDDING AND CONSTRUCTION ADMINISTRATION

eda typically provides bidding and construction administration services for the majority of our projects. It has been our experience that involvement by the engineers and planners during construction helps to ensure design and permit compliance and an overall high quality of project completion. Services include:



- Technical Specifications
- Bidding Assistance
- Coordination Meetings
- Shop Drawing Reviews
- Change Order Administration
- Construction Observation
- Construction/Contract Administration Services
- Record Drawing Review
- Certification of Completion

3.4.2.1 Key **eda** personnel who will provide support for ACEPD environmental projects

SERGIO REYES, PE : Mr. Reyes is the President of eda and will serve as Civil Engineering Project Manager for all Alachua County projects and lead any facility engineering, public works, capital improvement plans, feasibility studies, and bid preparation required under this contract. Having over 35 years of combined experience in Florida, he has worked closely with public and private sector clients to provide solutions to their civil engineering design and permitting needs, with projects ranging from sidewalks to power plants. His experience and familiarity throughout the region provide a strong foundation for tasks such as feasibility studies and project design. Mr. Reyes is currently the Project Manager for annual contracts with multiple public sector clients, including the University of Florida, Alachua County, City of Alachua, City of Gainesville, Gainesville Regional Utilities, City of Newberry, and the Cedar Key Water and Sewer District.

CLAY SWEGER, AICP, LEED AP: As the Director of Planning at eda, Mr. Sweger provides full-service land planning functions to the firm. His educational training, professional certifications, and prior experience as a municipal and county planner will provide Alachua County with a broad range of resources in the field of urban planning and permitting. Mr. Sweger has been involved in a wide variety of land planning projects, including master plans, large and small scale land use change applications, planned development applications, code and comprehensive plan text amendments, and rezoning requests throughout Florida. He regularly acts as project manager to obtain necessary permits from regulatory agencies throughout the region. Mr. Sweger has extensive public sector experience, including several projects with the University of Florida, City of Hawthorne, City of Gainesville, City of Waldo, Gainesville Regional Utilities and City of Alachua as a planning consultant. He regularly works closely with our team of civil engineers in the project design phase with particular attention focused on planning design principles and compliance with local code criteria.

JARED ROGERS, PSM: Mr. Rogers is the Director of Surveying at eda, utilizing his 15 years of experience to perform all aspects of surveying services, as well as coordination of eda field crews, one-on-one communication with clients, and project scheduling. As President and owner of Dynamic Land Solutions for five years before merging with eda, he has performed all types of surveying activities throughout Florida, including topographic, right-of-way, boundary, underground utility locations using Ground Penetrating Radar, specific purpose surveying, and construction stakeout. Rogers also oversees **eda's** long-standing continuing services contract with Alachua County for surveying and mapping, performing surveys for the County on a routine basis.

3.4.3 GLE Associates, Inc.



GLE has provided environmental services on a wide variety of projects throughout the United States to numerous public entities. Projects have ranged from preliminary environmental investigations and assessments to complex \$8,000,000 facility remediation/renovations. Each project is managed by a single point of contact, helping to ensure that the project stays within budget and on schedule. With 70% of our work for public agencies, GLE understands the time constraints under which public agencies operate. We also understand the importance of meeting scheduled deadlines. GLE has an excellent record in report turn-

around time. Our experience working on many small projects insures that we are familiar with short notice, and our firm prides ourselves in being nimble and responsive to our customers. **GLE's efficient cost and scheduling process has led to a high rate of repeat business.**

Asbestos Consulting Services

GLE has offered complete asbestos consulting services since 1989. GLE has a long history conducting asbestos services and is the recognized leader in Florida for asbestos management. Our staff of asbestos consultants, EPA-AHERA certified building inspectors, contractor supervisors, management planners, designers, project managers and industrial hygienists has extensive experience providing cost-effective asbestos management services to public sector clients. Asbestos management services offered by GLE include:

- Abatement Project Management
- Drawings and Specifications
- Ambient Air Monitoring (using NIOSH 582 trained industrial hygiene technicians)
- Contract Administration/Estimating
- Facility Surveys and Inspections
- Laboratory Analyses
- Operations & Maintenance Plans
- Risk Management/Hazard Assessments
- Training of Custodial & Maintenance Personnel
- Employee Awareness Training
- Cost Recovery Services
- Respiratory Protection Programs

Indoor Air Quality (IAQ)

GLE provides IAQ services to evaluate health hazards associated with occupied environments. Our full staff of engineers and industrial hygienists has specific experience in IAQ evaluations. GLE is one of the few facilities consulting firms with both Registered Mechanical Engineers and Certified Industrial Hygienists on staff with extensive experience in IAQ. We can evaluate symptoms, determine the existing contaminants and prepare remediation plans. GLE's IAQ services include:

- Sick Building Syndrome Assessments
- Building Surveys
- HVAC Evaluations
- Moisture Evaluations
- Ambient Air Monitoring
- Sampling and Testing
- Health and Safety Training
- Corrective Action Implementation
- Project Management
- Public Relations

Industrial Hygiene

GLE offers the expertise of a team of industrial hygiene and occupational health and safety consultants and technicians to help clients develop and implement thorough, cost-effective industrial hygiene programs that meets all EPA, OSHA and other related regulations. We can conduct comprehensive sampling and analysis for a broad range of airborne contaminants, including metals, organics, silica, toxic gases and vapors, particulates, asbestos and other fibers, dust, acids and welding fumes. Our in-house analysis of workplace contaminants is backed by our stringent quality assurance controls. Our team of certified industrial hygienists, scientists and professional engineers are also experienced in monitoring and assessing worker exposures to physical agents, including noise, ionizing and non-ionizing radiation and heat stress. We also provide consulting services in testing, sampling, analysis and risk assessment.

Property Transactions/Due Diligence (Phase I ESAs)

GLE's staff has performed thousands of Phase I ESAs in accordance with ASTM E-1527 for numerous clients nationally including commercial lenders, private land owners, and municipalities. Our staff are experts in the evaluation of properties for acquisition by our clients.

Each Phase I ESA prepared by GLE includes the following:

- Site condition evaluations
- Evaluations of past site use and operational practices
- Property title searches (if required)
- Tenant records and archive researches
- Aerial photos, site maps and plan reviews
- Interviews with previous owners
- Construction records
- Environmental regulatory searches
- Current commercial & industrial operations
- Inventory of on-site hazardous materials, records & MSDS
- Review of environmental files and permits
- Sanborn Maps (if available)
- Evaluation of various environmental transport routes

Phase II Environmental Site Assessments

Should a recognized environmental condition (REC) be identified, GLE will prepare a scope of work to address the potential for soil & groundwater impacts, implement the scope, and prepare a Phase II ESA report in accordance with ASTM E-1903-97 standards which will include many of the following services:

- Development of testing programs
- Site explorations using soil borings
- Excavation of test pits
- Collection and sampling soil, surface water and groundwater
- Installation of groundwater monitoring wells
- Sampling and identification of potentially hazardous waste

- Sampling of liquid and sediment in streams, ditches, ponds and surface runoff
- Sampling suspect areas of past spills
- Soil vapor surveys and monitoring
- Geophysical investigations
- Analysis of groundwater flow and contaminant transport

Each Phase II ESA is unique and developed specifically to address the REC, based upon the results of the Phase I ESA and the site-specific investigation constraints (utilities locations, building locations, etc.). Once the Phase II ESA is completed, GLE will determine if the site requires further investigation or if there is no basis for further investigation or remedial action.

Assessment/Remediation Services

GLE's offices are staffed with professional engineers, geologists and senior scientists, who have considerable experience in the assessment of property impacts (e.g. petroleum, solvents), identification, evaluation and selection of remediation treatment technologies (e.g. Excavation, air-sparge/soil vapor extraction (AS/SVE), Dual-Phase Extraction (DPE), Multi-phase Extraction (MPE), land farming, soil washing and/or Bioremediation) for cleanup of a facility. GLE can provide the following environmental cleanup services:

- Site Assessments and SAR Preparation
- Remedial Action Plan Preparation (LSRAPs and Full RAP Preparation)
- Bid Package Preparation and Bidding Services
- Contract Preparation and Negotiation
- Remediation System Installation/Construction (RAC)
- Remediation System Operation & Maintenance (O&M)
- Well Sampling and Site Monitoring (PARM)
- Site Reconstruction to Pre-Cleanup Conditions

GLE was selected by the FDEP as an Agency Term Contractor (ATC) in the North, Central, and South Regions to perform these services, including site assessment and site evaluations.

GLE's senior engineers and geologists have vast experience, giving them the ability to easily identify whether remediation is required or if site-specific, alternative site rehabilitation levels (SRLs) may be proposed. GLE's professional geologists and engineers have extensive experience negotiating with FDEP and local environmental regulatory agencies to ensure that remedial action is taken only if necessary and appropriate. Additional environmental services GLE offers, regarding petroleum distribution systems include the following:

- Closure Assessments (Tanks, Spill Buckets, Sumps, Dispenser Liners) conducted with 24 hours notice (Field Work Completed in 48 hours)
- LCAR Preparation for Secondary Discharges conducted within 30 days (Historical and Current Plume Size Comparison conducted prior to report submittal)

- SRFA Agreement Negotiation (Contamination Constituent and Plume Size Comparisons conducted and estimated cost impact calculated prior to SRFA negotiation with DEP)
- Limited Source Removal Initiative Site Cleanup with UST Upgrades Evaluations UST Upgrades/Remediation System Installation Coordination

Mold Assessments & Remediation Design

GLE helps clients address mold concerns quickly, offering the blend of expertise needed to develop responsible, cost-effective solutions that make sense for each client. With a highly qualified team of mold experts and more than a decade of experience solving indoor air problems, GLE is leading the field of mold assessment and remediation design. Our extensive practical experience, combined with a strong base of biological and structural expertise, helps ensure mold issues are addressed properly, greatly minimizing each client's financial risk.

Lead Consulting Services

GLE provides analysis of lead-in paint (LBP) and drinking water. Consultation services include surveys to identify problems and the design of safe procedures for removal of LBP. GLE has extensive experience in lead testing and abatement with trained individuals on staff to perform:

- Paint/Water/Soil Testing
- Air Monitoring
- Risk Assessments
- Laboratory Analysis
- Remediation Design
- Specifications Preparation
- Project Management

GLE uses our own equipment, which includes an RMD XRF for on-site determination of lead in paint. Our experienced team members have designed, managed and performed contract administration tasks on various lead, asbestos and environment projects, ensuring rapid response.

Radon

As one of the few Florida-licensed radon firms, GLE provides certified radon measurement and radon mitigation services that consist of the following.

- Building Surveys
- Mitigation Design and Construction
- Concentration Level Assessments
- Facility/Soil Measurements for Real Estate Transactions and New Construction

GLE has performed radon services for numerous clients, including several school boards and government agencies. Our familiarity and experience with statutory requirements for radon measurement testing and

reporting has enabled us to develop a streamlined process, resulting in improved efficiencies and lower costs.

Expert Witness

GLE has provided Expert Witness testimony for various clients. Our technical expertise in vast related fields allows us to provide our clients with testimony that is up to date on today's rules and regulations.

3.4.3.1 Key GLE personnel who will provide support for ACEPD environmental projects

PAUL S. ZAK, CIH, North Florida Operations Manager, has been involved in the environmental consulting field since 1999. He has a working knowledge of regulations and projects involving industrial hygiene, safety, asbestos, lead, Indoor Air Quality (IAQ), mold, Environmental Site Assessments (ESAs), and OSHA compliance. As the North Florida Operations Manager, his duties include business development, project bidding and proposals, project execution, report writing and senior oversight for the Gainesville, Jacksonville, and Orlando offices. Mr. Zak currently manages eight term contracts related to industrial hygiene, environmental assessment, health and safety, asbestos, IAQ and lead-based paint consulting.

Mr. Zak has extensive experience with a wide variety of public, private and industrial clients. Recent clients have included the Federal Emergency Management Agency (FEMA), Department of Veteran Affairs, State of Florida Department of Environmental Protection, the City of Gainesville, Panhandle Area Educational Consortium, Alachua, Baker, Brevard, Citrus, Duval, Hernando, Suwannee and Volusia County Schools, the University of Florida, Texas A&M University, Georgia Southern University, Shands Healthcare, Balfour Beatty Construction, Balfour Beatty Communities, Northstar, NCM Environmental, Hensel Phelps, Skanska, General Growth Properties, Georgia Pacific, LVI Environmental Services, M-D Building Products, Parsons, BellSouth, The Pantry, Tower Sealants, Allstate, Nationwide and State Farm Insurance Companies and an extensive list of architectural, construction and engineering firms throughout the country.

ROY GRAY, Project Manager, has been involved in the environmental remediation, consulting, contracting and general construction industry since 1980. He has extensive experience with asbestos project monitoring activities to ensure work practices are performed safely and within OSHA and EPA regulations. He has served as Project Manager on projects with costs exceeding \$20 million. Mr. Gray has extensive experience with a wide variety of public and private clients. Recent clients have included the Malcolm Randall Veterans Affairs Medical Center, Shands HealthCare and the University of Florida. Over the past three years, Mr. Gray has served as the primary project monitor for several large asbestos abatement projects involving the removal of asbestos-containing spray-applied fireproofing from occupied educational and healthcare facilities.

JOHN K. HANSEN, PG, Senior Geologist, is a Professional Geologist with more than 31 years of experience in environmental and geological consulting. He has extensive experience in environmental assessments of petroleum, chlorinated solvent, and pesticide impacted sites throughout Florida. Mr. Hansen is also experienced in remedial plans such as design, construction, and operation and maintenance for both petroleum and dry-cleaning sites. He is well versed in compliance sampling and reporting for both petroleum and chlorinated solvent sites. Mr. Hansen also has technical expertise in geotechnical forensic explorations for residential and commercial sinkhole claims.

MICHAEL D. HARRELL, Project Manager, has been involved in the environmental consulting field since 2006. He has a working knowledge of regulations and projects involving industrial hygiene, asbestos, lead-based paint, Indoor Air Quality (IAQ), mold, and ground water monitoring. His duties include project bidding and proposals, project design, project execution, report writing and review, invoicing and follow-up contact. He has extensive experience with a variety of public, private and industrial clients. Recent clients have included the Agency for Workforce Innovation, BellSouth, Capital Preferred Management Agency (Insurance), City of Gainesville, Department of Veterans Affairs, Gainesville Regional Utilities, General Growth Properties, Inc., Georgia Pacific Corporation, Florida Department of Environmental Protection, Florida Department of Transportation, M-D Building Products, Meridian HealthCare, Shands HealthCare, Tower Sealants, University of Florida, Georgia Southern University, Santa Fe College; Alachua, Bradford, Calhoun, Citrus, Columbia, Dixie, Gulf, Hamilton, Hernando, Holmes, Liberty, Madison, Putnam, Suwannee, Union, Wakulla, Walton and Washington County School Boards; and Alachua, Marion, Orange and Union Counties; as well as a variety of property management, architectural, construction and engineering firms.

ARTIOM CHACON, Project Manager, has been involved in the environmental consulting field since 2006. He has a working knowledge of regulations and projects involving industrial hygiene, asbestos, lead-based paint, Indoor Air Quality (IAQ), mold and biological health and safety. He has extensive experience with a variety of federal, public, private and industrial clients. Recent clients have included the City of Gainesville, Department of Veterans Affairs, Gainesville Regional Utilities, University of Florida, Santa Fe College, the State of Florida, Alachua County Public Schools, Florida Department of Transportation, Florida Department of Environmental Protection, Florida Forest Services, as well as a variety of property management, architectural, construction and engineering firms.

ADAM SPRINGER, PG, Project Manager, has over seven years of diversified experience in the environmental and geotechnical consulting fields. He currently manages projects related to due diligence, environmental assessments, soil and groundwater environmental assessments, and petroleum contamination and remediation.

3.4.4 Ecosystem Research Corporation (ERC)



Ecosystem Research Corporation (ERC) is an environmental consulting firm that provides environmental and biological services for private individuals, small and large corporate enterprises, and County, City, State, and Federal government interests. ERC specializes in services related to wetland jurisdiction assessments, wetland/upland plant community mapping, and plant community surveys. In addition, ERC provides services for threatened and endangered plant and animal surveys as well as wetland creation and monitoring services. Since 1980, ERC has specialized in research regarding the effects of wastewater application on wetlands and responses of wetland vegetation to man-induced activities. These include hydrologic alterations to plant communities and changes in salinity related to large scale dredging applications in southeastern U.S. ports.

ERC provides support and consultation to a host of clients related to permit applications for residential, commercial, industrial, and municipal projects. ERC has significant familiarity with the comprehensive plan policies and land development regulations of both Alachua County and the City of Gainesville, the City of Alachua as well as the smaller municipal interests located within Alachua County. In addition, ERC is expressly familiar with the comprehensive plan policies and land development regulations of the counties neighboring Alachua County to include Levy, Gilchrist, Union, and Putnam. ERC has additionally worked extensively in the following counties: Baker, Bay, Bradford, Brevard, Clay, DeSota, Duval, Escambia, Flagler, Gadsden, Glades, Hamilton, Hardee, Highlands, Indian River, Jefferson, Lake, Leon, Manatee, Martin, Okeechobee, Orange, Osceola, Palm Beach, Pinellas, Polk, Sarasota, Seminole, St. Johns, Suwannee, Taylor, and Volusia.

ERC has assisted several County governments with large land acquisition projects for landfill and water disposal projects to include Alachua, Brevard, Clay, Leon, Orange and Sarasota. ERC has provided environmental services to County, City, and State entities within the State of Florida for the past 31 years. ERC can provide to ACEPD environmental and biological services for any type of project related to development requirements as described in the Land Development Code. ERC has prepared over 100 Environmental Resource Assessments as per guidelines established in Alachua County for projects proposed for development within Alachua County and the City of Gainesville. ERC additionally maintains a native plant nursery that provides a unique selection of native plants for public use such as landscaping and large-scale wetland creation projects.

3.4.4.1 Key ERC personnel who will provide support for ACEPD environmental projects

PETER M. WALLACE a Wetlands Ecologist, Professional Wetland Scientist (Cert No. 000755) and Registered Gopher Tortoise Agent, has more than 37 years' experience in Florida's ecosystems, including ground verification of upland and wetland habitat, aerial photo interpretation of natural and disturbed Florida habitats, T&E species surveys, wetland jurisdictions, plant community mapping, permitting, and wetlands mitigation and monitoring. He has provided Environmental Assessments on over 1000 projects within the State of Florida and southeastern United States. The projects include State and Federal government projects as well as providing assessments within 33 counties within Florida. He has extensive experience in Phosphate mining areas and has designed and monitored many wetland mitigation projects. He has performed assessment for 7 counties for lands acquired for landfill construction and has worked on several projects involving several thousand acres for the Gainesville Regional Power Plant and adjacent lands annexation. Mr. Wallace has extensive experience with performance of baseline inventory and operational monitoring of several large wastewater to wetlands systems throughout Florida. He has performed the wetlands delineation, habitat mapping, and listed species surveys for the Baseline Inventory Studies for siting of the Orange County (±4,000 acres), Sarasota County (±6,000 acres), and Okeechobee County (±2,000 acres) landfills. In addition, Mr. Wallace was contracted by the U.S. Air Force to perform the wetlands delineation of the Avon Park Bombing Range (125,000 acres). He also assisted with habitat delineations for development of a Management Plan by Florida Natural Areas Inventory for this property. Mr. Wallace assisted the Florida Department of Environmental Protection as a team member for providing technical support for developing a State of Florida Assumption Package for the Federal 404 Permit Program. In addition, he is a coauthor of the Florida Department of Environmental

Protection manual Identification Manual for Wetland Plant Species of Florida and Florida Wetland Plants: An Identification Manual. He was invited by FDEP to assist in preparation of this book to aid the public and consulting personnel in application of the Florida Wetland and Surface Water Delineation Rule as described in Chapter 62-340 FAC.

3.4.5 Advanced Environmental Laboratories, Inc. (AEL)

Advanced Environmental Laboratories, Inc. (AEL) is a NELAP/TNI certified, full-service environmental analytical laboratory firm. AEL is the largest laboratory network in the State of Florida with seven labs throughout the state including Gainesville. NELAP certification and laboratory scope is provided in the appendix.



AEL was founded in 1994 and is still owned by the same sole proprietor, Charles Ged. AEL corporately performs over 50,000 projects a year and hundreds of thousands of individual tests. Typical projects include analytical investigations of soil, water, and air at RCRA, CERCLA, landfill, UST, drinking water, wastewater, commercial property transfer, remediation, and O&M sites. AEL Gainesville performs many analyses for consultants, industries, and public agencies within Alachua County. Currently, AEL has the ACEPD Environmental Laboratory Services Contract.

3.4.5.1 Key AEL personnel who will provide support for ACEPD environmental projects

Todd Romero is the Strategic Accounts and Laboratory Manager for Advanced Environmental Laboratories, Inc. Gainesville, FL (AEL). He has over 25 years of environmental technical experience including Project Management, Environmental Engineering, Information Technology Services, Business Development, Client Services, and Office Operational Systems. Responsible as primary contact for clients not limited too but mostly involved with complex sites involving site assessments and various remediation techniques requiring project tailored sampling plans. Responsible for all aspects of laboratory operation including client services, analytical testing, business development, and overseeing quality assurance including NELAP compliance.

3.4.6 Environmental Conservation Laboratories, Inc. (ENCO)

Environmental Conservation Laboratories, Inc. (ENCO) owns and operates three laboratory facilities in Orlando and Jacksonville, Florida and Cary, North Carolina. Our laboratories house instrumentation in support of Volatile and Semivolatile GC/MS, Volatile and Semivolatile GC, ICP/MS, ICP, HPLC, FTIR, Ion Chromatography and Wet Chemical methods of analysis. The NELAP certification and laboratory scope for the Orlando facility is provided in the appendix.



Our laboratories have instrumentation to perform analyses for all the routinely-requested tests – Volatiles, BNAs, Pesticides, PCBs, Herbicides, Polynuclear Aromatics, Metals, Demands, Nutrients, etc. We also offer specialty analyses that are not routinely performed in most laboratories. Those specialty

analyses include: Alcohols, Glycols, low-level 1,4-Dioxane, MEE and Carbon Dioxide by RSK 175 and Volatile Fatty Acids.

ENCO also has an air laboratory located in our Jacksonville facility that performs TO-14, TO-15 and Method 18 analyses. We supply SUMMA canisters and flow controllers as part of those analyses.

Quality assurance/quality control

ENCO is committed to providing analytical services of superior quality. Our unit prices include adherence to Quality Assurance/Quality Control protocols for each analytical method offered and ensures acceptable accuracy, precision and sample integrity. Our standard reports include MS, MSD and LCS Recoveries, Surrogate Recoveries, MS/MSD RPDs and Laboratory Blank information.

ENCO holds multiple state certifications and NELAC-level certification through the State of Florida. Our Jacksonville and Orlando, Florida facilities also hold wide-ranging DoD ELAP certifications that allow them to analyze samples from DoD installations.

Because of our State, NELAC-level and DoD ELAP certifications, ENCO is routinely audited by outside assessors. ENCO also performs internal audits as part of our on-going quality assurance process. In addition, ENCO produces data packages on a daily basis that are validated by our clients, their hired data validation specialists or government agencies.

3.4.6.1 Key ENCO personnel who will provide support for ACEPD environmental projects

Matthew J. Foti, Ph.D. is the Laboratory Manager for ENCO where he manages the Orlando facility staff on a daily basis, including oversight of all laboratory operations. Dr. Foti's responsibilities include but are not limited to all aspects of production, staffing, technical support, and ensuring that all requirements of Environmental Conservation Laboratories, Inc.'s quality assurance program are met. Dr. Foti's formal education is in the area of analytical biochemistry. He spent three years studying bio-organic drugs designed to combat cancer related illness using a variety of analytical techniques. He is specialized in the field of liquid chromatography and nuclear magnetic resonance.

3.5 Experience in the scope of services

The work proposed in this RFP covers several categories in which DBE has extensive experience, including:

- environmental sampling and monitoring
- modeling and data analysis
- stormwater management and wastewater treatment
- contaminant assessment and remediation
- laboratory services

Additional areas of expertise are provided by our partnering subcontractors, including:

- phase I and II environmental assessments
- consultations on built environment (air quality, asbestos abatement, and industrial hygiene)
- natural resource assessments
- ordinances and growth management regulations

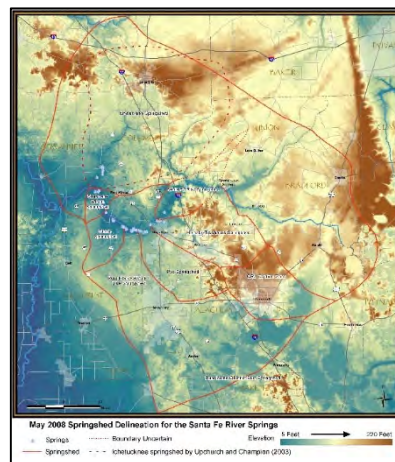
In the following sections, we provide examples of projects completed by DBE and our partnering subcontractors that highlight our ability to successfully perform projects similar to those likely to be requested by the County.

3.5.1 Environmental Sampling and Monitoring

The ACEPD RFP indicates that the selected respondent shall provide services for water quality protection and monitoring programs. Below, we describe several projects where DBE scientists have provided project design, sampling and/or data interpretation on a variety of water quality projects in North Central Florida and elsewhere around the state. These include Groundwater Well Monitoring in the Santa Fe River Basin for Springshed Delineation and Groundwater Protection, Hydrologic Studies for Protecting Groundwater and Treating Stormwater Runoff, Hydrologic and Water Quality Data Collection, Groundwater Monitoring at an Active Rock Mine, and an Assessment of Sediment Phosphorus Stability in Little Hatchet Creek.

3.5.1.1 Santa Fe River Springs and Groundwater Protection

Mr. Myles was instrumental in expanding a Floridan aquifer water level monitoring network to provide finer spatial resolution and collected data for the delineation of the Santa Fe River springsheds and production of potentiometric surface maps. This involved identifying areas within the springsheds where groundwater levels were unknown and performing spatial analysis of the monitoring network to determine areas with low confidence in the interpolated surfaces created from the monitoring points. Candidate wells were identified, and the owners were approached to request permission to measure water levels and collect samples from their wells. Willing owners had their wells enrolled in the monitoring program, measuring point elevations on the wells were surveyed and water samples were collected. Many of these wells continue to provide valuable data to ACEPD.



3.5.1.2 Hydrologic studies for protecting groundwater and treating stormwater runoff

Protecting groundwater resources is essential for the well-being of both County residents and the ecological integrity of the County's natural resources. While employed with ACEPD, Mr. Myles assisted with the management of a Springs Initiative contract to complete a dye tracer study which confirmed connectivity between two sinkholes and springs and groundwater wells in the Santa Fe River basin. Additional tracer studies have been performed by DBE scientists for the South Florida Water Management District, in large wetland-based stormwater treatment systems, in order to characterize internal hydraulic issues that may influence treatment performance. DBE has provided similar analyses as consultants to the City of Orlando, providing guidance on hydraulic-related performance optimization efforts for the Orlando Easterly Wetland (OEW), a large (~1,200 acre) municipal wastewater treatment wetland. Our team has experience in using both lithium chloride and rhodamine WT as tracers in surface flow wetlands and has published a comparative analysis of their usage (Dierberg and DeBusk, 2005).

3.5.1.3 Hydrologic and Water Quality Data Collection and Summary (2016-Present)

Mr. Myles and Mr. Wilson, from DBE's Gainesville office, manage the operations and maintenance of two Hybrid Wetland Treatment Technology (HWTT) facilities, one of which (in St. John's County) is the largest hybrid (chemical-wetland) surface water phosphorus removal facility in the US. At this site, inflow and outflow water quality and quantity are measured with a variety of instruments and sampling methods to characterize nutrient removal efficiency. Grab samples and composite autosamplers are used to collect inflow and outflow samples on a weekly basis and delivered to DBE's laboratory for chemical analysis and reporting. Flows in streams and pipes are measured using acoustic Doppler velocity meters and ultrasonic flowmeters which are reported in real-time along with water levels, pH, chemical dosing rates, video observations of chemical treatment and pump station performance and control. Additional instrumentation is maintained to record water levels and conductivity in nearby streams, canals, wetlands and lakes associated with these nutrient removal projects. Large datasets of instantaneous values (including nutrient load reductions) are summarized, graphed and reported to the client and funding agency.

3.5.1.4 Groundwater well monitoring at Palm Beach Aggregates rock mine (2015-present)

Limerock mining operations can interact with the shallow groundwaters in South Florida. A large rock mine, Palm Beach Aggregates, maintains a network of monitoring wells around their Palm Beach County quarry. In 2015, and again in 2016, DBE scientists used a submersible well pump to collect groundwater samples from 9 shallow (20' casing depth) and 10 deep (50' casing depth) wells, following DEP-SOP-001/01 FS 2200 Groundwater Sampling methodologies. Accessing wells required navigation of derelict agricultural roads by 4x4 vehicle, using a map and GPS to locate well stations. A spreadsheet application on a field computer was used to calculate well volumes and purging times based on the depth to water surface and overall casing depth. Beginning in 2017, DBE was contracted to perform quarterly monitoring at 16 wells in the same network.



3.5.1.5 Sediment Phosphorus Stability in Little Hatchet Creek (2017)

For this study, DBE scientists conducted a series of field surveys to characterize sediment phosphorus storage and stability within the Little Hatchet Creek watershed, a tributary of nutrient-impaired Newnans Lake. Along Little Hatchet Creek, stream bank materials and stream bed sediments were sampled upstream and downstream of areas with high erosion potential, to examine whether the stream bed sediments were enriched in phosphorus, relative to eroding stream bank materials. Stream bank materials containing very high P levels were identified along the incised stream channel, and were also found within the stream bed, though most stream bed materials were sand deposits and much lower in P.

High sediment P areas were located adjacent to an old landfill parcel that was recently mitigated to contain the solid waste and prevent further erosion and sediment transport into the stream. However, based on our chemical fractionation of sediment P, it does not appear that Fe-bound P enrichment has occurred near the landfill property. Instead Ca-bound P is the most abundant P form, suggesting geologic phosphate as a source and the change in depositional environment (lower stream channel energy and slope) as the reason for P accumulation along that reach.



Based on the results of this research, it appears that mitigation strategies for reducing P loading into Little Hatchet Creek surface waters and Newnans Lake should address both actively-eroding areas along the stream bank, as well as depositional areas where eroded calcium phosphate minerals may have resettled. Continued release of P from the existing stream bed sediments into the overlying water should be expected until erosion is controlled, and existing bed materials are either removed or covered by newly deposited sediment.

3.5.2 Modeling and Analysis

DBE scientists have local knowledge and broad experience in environmental data analysis and modeling, expertise that should prove useful in support of the County's environmental programs. A selection of prior projects is described below and include sampling and communication of groundwater levels (potentiometric surface maps), evaluations of groundwater recharge opportunities (Tampa Augmentation Plan), assessments of water treatment facilities, and studies of surface water-groundwater interactions (L-8 reservoir).

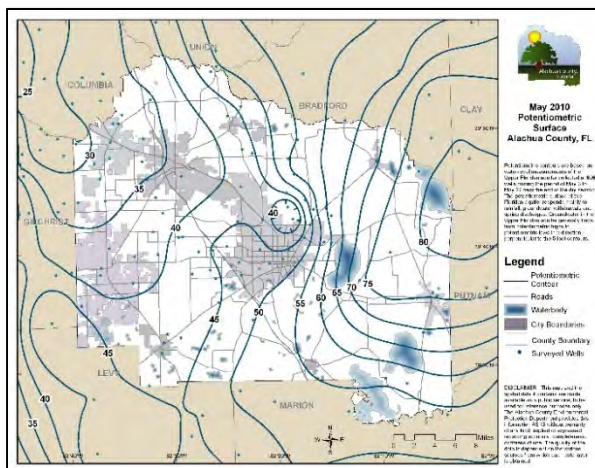
3.5.2.1 Modeling the Effects of Increased Phosphorus Loading and Flow Pulsing on Phosphorus Removal Performance of the Orlando Easterly Wetland (2012 - 2014)



During the past decade, wetland managers have removed surficial sediments from several of the cells in the Orlando Easterly Wetland (OEW), one of the largest and longest-running treatment wetlands in Florida. Our project team, led by Tom DeBusk, was hired to evaluate the effects of recent post-rehabilitation efforts on wetland phosphorus removal performance. For this effort, we developed a model that incorporated simple but effective representations of P removal, P recycle from sediment, and hydraulic efficiency effects. The model was in turn calibrated and exercised to evaluate a range of future operating scenarios with uncertainty intervals. Results and management recommendations were documented in a Final Report delivered to the City.

3.5.2.2 Groundwater in the Santa Fe River Basin

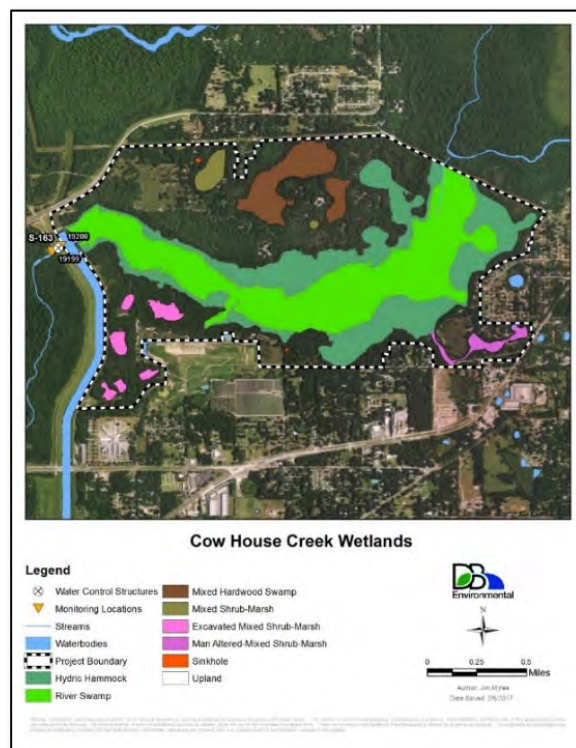
Understanding the availability of groundwater resources is critical to County managers and environmental planning professionals. One important aspect is the status of regional groundwater levels. DBE scientists have first-hand knowledge of the procedures involved in generating quality field data, and also have experience with sampling well networks within the County and surrounding region. During his tenure with ACEPD, Mr. Myles managed a Floridan Aquifer monitoring program that sampled a network of well and springs locations, conducted water level measurements, directed water quality analysis and the production of potentiometric surface maps (example below) and water quality reports. The database where current and historic County water quality data are archived was designed and implemented by Mr. Myles. This technical understanding of the regional groundwater levels and monitoring networks will enable DBE to provide County managers and decision makers with relevant and timely interpretation of data that is produced by on-going monitoring efforts.



3.5.2.3 Tampa Augmentation Plan: Treatment Wetland Literature Review, Ecological Assessment of Cow House Creek Wetlands, and their Potential Use for Effluent Treatment/Reuse (2017)

The Tampa Augmentation Project (TAP) seeks to recharge the local watershed with up to 20 million gallons per day of treated wastewater effluent at Cow House Creek. Water returned to the land in this project would improve hydrology for local ecosystems and augment the drinking water supply for the City of Tampa. The suitability of a parcel of land along the creek, owned by Southwest Florida Water Management District, was evaluated by DBE for potential methods for wastewater reuse, including application to existing wetlands and creation of newly constructed wetlands.

The assessment was comprised of three components: 1) characterization of the project site, particularly the existing wetlands therein, and a review of pertinent regulatory considerations to identify the potential treatment wetland implementation opportunities and constraints; 2) a literature review of nutrient removal in treatment wetlands, including detailed

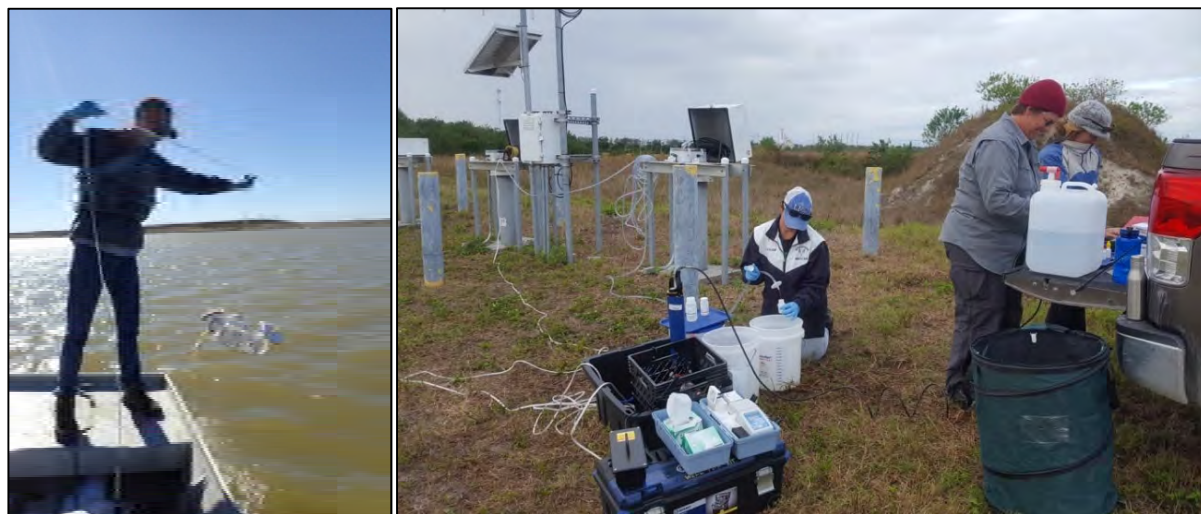


evaluation of six reference systems from around the state; and 3) numerical estimation of the capacity and performance of treatment wetlands developed at the site, based on those results.

3.5.2.4 L-8 Flow Equalization Basin Operational Guidance Study, 2018-2019

The L-8 flow equalization basin (FEB), is a 950-acre former rock mine capable of storing approximately 45,000 acre-feet (15 billion gallons) of water. The primary purpose of the facility is to attenuate peak stormwater flows and temporarily store runoff to improve inflow delivery rates to downstream treatment wetlands. With improved flow deliveries, operational flexibility will be enhanced, and nutrient removal performance may improve to help achieve state water quality standards.

The L-8 reservoir was not designed as a nutrient removal facility, so marked changes in reservoir water column nutrient concentrations were not originally anticipated. The water quality data from 2018 suggested that the facility may, at times, be a source of phosphorus (P). The purpose of this study is to provide insight into the relationships between surface water quality and facility operations (stage, flows), with a particular focus on the potential for surface water-groundwater interactions. In January 2019, DBE scientists began collecting monthly water quality samples at the surface, mid-depth and bottom of each of the six cells in the reservoir, as well as recording a vertical profile of specific conductance, pH, temperature and dissolved oxygen concentrations. With these data and similar analysis of groundwater samples from 19 monitoring wells surrounding the L8 FEB, DBE will identify spatial and temporal trends in nutrients and ions under various stage and operational conditions. DBE adheres to the procedures of the Field Quality Manual (FQM) while handling and processing surface water samples, and all groundwater samples are collected using a submersible pump and follow the DEP-SOP-001/01 FS 2200 Groundwater Sampling procedures. Using Piper (trilinear) diagrams, ion balances, ion ratio analyses, and Stiff diagrams, along with water level and flow data, the data collected in this study will be used to determine if groundwater interactions are impacting TP concentrations within the water column of the FEB.



3.5.3 Stormwater and Wastewater Treatment

3.5.3.1 Improving Stormwater Treatment with Wetland Vegetation

Since the 1990s, DBE scientists have been involved with wetland flora sampling and characterization in many lake and wetland systems, including the natural wetlands such as the Everglades as well as constructed treatment wetlands designed for nutrient removal. These efforts have included surveys of plant biomass/cover characterizations of wetland plant communities, chemical analyses of foliage and root tissues, productivity and decomposition studies and nutrient removal investigations. Many of these studies have yielded useful insights into the effectiveness of various surface water management procedures and practices. For example, in a FDEP-funded study in the early 2000s, DBE quantified the role of littoral zone cattails and other emergent vegetation on stormwater nutrient and metals removal in a wet detention pond (Kent et al. 2005). Over the years, there have been 100+ DBE-designed vegetation studies and monitoring events conducted across bench-, microcosm, mesocosm, field- and ecosystem scales.



DBE scientists have been studying vegetation in Florida ecosystems for over 25 years, from bench-scale to field-scale, and all scales in between.

3.5.3.2 EWRF Treatment Wetland Internal Water Quality Assessment, Prepared for Orange County Utilities, (2018)

Orange County, FL, maintains a 335-acre treatment wetland to polish effluent from the Eastern Water Reclamation Facility (EWRF). The EWRF wetland is somewhat unique in that it couples constructed forested wetlands with natural forested wetlands in a treatment train. Established in the late 1980s, this

treatment wetland operated successfully for decades. Nutrient removal performance recently tapered off within selected system compartments. DBE designed and performed a spatial sampling of water quality internal to wetlands receiving reclaimed water to provide insight into current hydraulic characteristics and nutrient removal and/or export processes. Results suggested possible short-circuiting and identified “dead zones” of minimal water exchange within the treatment wetlands. DBE used these insights to support development of wetland optimization strategies for the facility.

3.5.4 Contamination Assessment and Remediation

This RFP seeks support from a consulting team with expertise in contamination assessment methods across a range of matrices, pollutants, and environments. DBE and GSE have the combined experience, staff, and local presence to provide effective support to the County in this area. We have conducted numerous investigations to better inform remediation plans, and a selection of these projects is provided below. These include: Identifying Sources of Water Pollution, Sources of Nitrate to the Santa Fe River, Gainesville urban Creek Storm Sewer Outfall reconnaissance, and sediment quality Investigations in Springstead Creek and Hogtown Creek to assess the extent of contamination of sediments near a Superfund site.

3.5.4.1 Identifying Sources of Groundwater Pollution: Nitrate Source Investigation, Santa Fe River Springs Basin, Poe and Hornsby Springs (2014)

While employed with ACEPD, Mr. Myles assisted in securing grant funding from the Protect Florida Springs Tag Grant Program & Wildlife Foundation of Florida to conduct sampling of springs and groundwater within the springshed, in an effort to determine the source of nitrate to the springs. The funding was utilized to conduct a temporal assessment of groundwater in contributing areas to Poe and Hornsby springs. Water samples were collected from wells and spring locations, for an extensive suite of water chemistry analytes including nutrients and major anions/cations. The nitrogen and oxygen isotopic composition of nitrate (NO₃-N) and other potential source indicators, such as sucralose and boron, were also characterized.

The NO₃-N has been used by other studies in Florida and elsewhere to determine the sources of nitrate in groundwater and surface waters. Inorganic fertilizer, animal waste, and wastewater have relatively distinct ranges of N and O isotopes. The NO₃-N also can be used to assess the extent of denitrification. Collaborative work with FDEP detected nitrogen isotope values indicative of denitrification that most likely originated from mineralized ammonium nitrate (NH₄ – NO₃) fertilizer and organic sources, such as wastewater, in the Poe and Hornsby springsheds. The samples collected at Poe and Hornsby springs indicate that denitrification has occurred to the point that a source cannot be determined from the isotope analyses. However, domestic wastewater still may be a significant N source, based on observed elevated chloride and boron concentrations. The presence of sucralose, an artificial sweetener and potential indicator of wastewater influences, was also detected in samples from Poe Spring. This project complements the larger FDEP Middle Santa Fe Nutrient Fate and Transport study currently underway and is needed to better define sources so that nutrient load reductions can be identified and implemented.

3.5.4.2 Sources of Nitrate & Estimated Groundwater Travel Times to Springs of the Santa Fe River Basin (2010)

The lower Santa Fe River has been determined by the Florida Department of Environmental Protection (FDEP) to be impaired for nutrients and dissolved oxygen, with a Total Maximum Daily Load (TMDL) target of 0.35 milligrams per liter (mg/L) of nitrate (NO₃) to protect aquatic ecosystems. While employed with ACEPD, Mr. Myles assisted with the prioritization of local initiatives for springs protection in the lower Santa Fe River by securing grant funds and directing a project where MACTEC Engineering and Consulting, Inc. (currently Wood EIS), was contracted to develop an ArcGIS™ tool designed to estimate nitrate loadings to groundwater in the springsheds. MACTEC also conducted an evaluation of the sources of nitrogen based on land use and loading rates and modeled groundwater travel time in the upper Floridan aquifer. The study area boundaries were the springsheds determined by SDII (2011) in their initial 2007-2008 work.

3.5.4.3 Gainesville urban creeks storm sewer outfall reconnaissance and inspection program to identify sources of fecal coliform bacteria, Gainesville, Florida (2008-2014)

During his tenure at ACEPD Mr. Myles developed, implemented and managed an “Outfall Reconnaissance and Inspection” program of the urban stormwater collection system as a BMAP project in Gainesville, FL. Previous work had identified “Hot Spots” of elevated fecal coliform bacteria. Within these stream segments, all storm sewer outfalls were identified, inventoried and sampled for evidence of illicit discharges. ArcGIS applications and databases were developed to aid in field data collection and data analysis. The program resulted in the identification and remediation of several illicit discharges including those from the sanitary sewer, septic systems and potable water supply. Additional discoveries and documentation about the prevalence of wildlife using the stormwater collection system provided insight into a relatively undocumented source of fecal coliforms.

3.5.4.4 Sediment Quality in Springstead and Hogtown Creeks Near the Cabot - Koppers Superfund Site, Gainesville, Florida (2009)

The extent of sediment contamination downstream of the Cabot-Koppers Superfund site in Gainesville, Florida, was determined through the sampling plan implemented by Mr. Myles while at ACEPD. Through collection and analysis of sediment samples in Springstead Creek, Hogtown Creek and selected ditched tributaries, areas of contamination were identified. Concentrations of semi-volatile organic compounds (SVOCs), including polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol (PCP), dioxins and furans, and volatile organic compounds (VOCs), metals (copper (Cu), chromium (Cr), arsenic (As), aluminum (Al), iron (Fe)), and total organic carbon (TOC) were measured in the sediments. These streambed reconnaissance surveys identified areas of contamination by comparing the results to prior investigations, to State of Florida soil contamination clean-up criteria, and to sediment quality guidelines. Gas chromatography/mass spectrometry (GC/MS) was also included to provide a more complete characterization of the contamination in the sediments and information about potential sources of the contaminants. As a result of this work, the responsible parties were required to remediate the identified areas by removal and permitted disposal of the contaminated sediments.

3.5.4.5 Dogwood Park, Gainesville, Florida (2008-2015)

The Dogwood Park site conditions were evaluated to provide for formal closure through the regulatory authority of the FDEP. GSE prepared a Site Assessment Report (SAR) and Site Assessment Report Addendum (SARA) for the FDEP Waste Cleanup Section - Northeast District which determined the extent of groundwater impacts. In addition, the general extent of the landfill footprint was confirmed. Considering the findings of the SAR and SARA, FDEP approved a Level 2 No Further Action with Conditions closure for the subject site. FDEP subsequently granted a Conditional Site Rehabilitation Completion Order (SRCO). Mr. Joakim (Jay) B. Nordqvist, P.E. with GSE was the Engineer of Record for this project.

Subsequent to the SRCO, GSE and CHW were retained to assist in proposed site development. Preliminary site plan development and plan approval was obtained from Alachua County.

3.5.4.6 University House Erosion Mitigation Project – (2008)

During construction of University House apartment complex in Gainesville, FL, heavy rains led to erosion issues and impacts to the wetland buffer adjacent to the project. St. John's River Water Management District staff inspected the site, found that there was a violation of the environmental resource permit that had been issued for construction, and issued a letter requiring restoration action for the disturbed wetland buffer. Erick Smith, co-founder of Kestrel Ecological Services, was working with the construction contractor, and contacted Kevin Grace (DBE's proposed alternate Project Manager) to assist with developing an appropriate restoration plan. A plan was developed, approved by the District, and implemented to restore the vegetative cover to the impacted areas. The plan included mitigation of areas of high potential for further erosion through bank stabilization, slope modification and revegetation. Selection of biodegradable erosion control materials and proper design and installation of the erosion control and mitigation measures were important features of the project. The existing mesic hammock at the middle and top of the slope, and the bottom land forest system at the lower end of the slope near the creek, were used as a model to select plant species used in the restoration plan, which included replacement of trees lost during the storm event. Consideration was also given to increase plant diversity and habitat quality within the wetland buffer that was to be restored.

3.5.5 Laboratory and Quality Assurance Support

DBE's laboratory is NELAC certified (NELAP certification#: E83330) with an updated quality manual (DBE 2018) and follows the 2003 National Environmental Laboratory Accreditation Conference (NELAC) Standard (NELAC 2003) and The NELAC Institute (TNI) Standard (TNI 2009 and TNI 2016) for all certified analyses. The DBE laboratory is well equipped to perform specialized analyses relevant to elemental cycling in wetland, lake and coastal environments, and has performed hundreds of such investigations in the past three decades. DBE's laboratory specializes in analyses of environmental samples of multiple matrices, including plants, soils, sediments, animal tissues and water. DBE's senior scientists have overseen the development of DBE's analytical capabilities over the past 30 years, during which time the laboratory staff has processed and analyzed over 50,000 soil/macrophyte/algae samples collected from Florida ecosystems.

Since 2001, we have performed over 70 soil slurry and soil core incubations under a range of conditions and can quantify chemical constituent changes in the water column, soils and in the gas phase (e.g., CO₂ and methane). Processes evaluated with these incubations include particle (re-)suspension and nutrient release, diffusive flux of soil nutrients to the water column, sediment oxygen demand, adsorption/desorption of P and other elements, mercury (Hg) methylation and demethylation, and microbial respiration and decomposition of plant and soil organic matter (DeBusk and Reddy 1998; Dierberg 1999; Dierberg et al. 2011).

DBE's laboratory staff also has performed hundreds of bench-scale studies to select appropriate chemicals and dosing rates for removing P, particulate matter, and dissolved organic matter from environmental waters (lake waters, wetland surface waters, stormwater runoff) via coagulation. Chemicals routinely evaluated for this purpose include aluminum sulfate, ferric chloride, polyaluminum chloride, sodium aluminate and polymers (Dierberg et al. 2017).

Chemicals such as lithium chloride and Rhodamine WT are often used as tracers to evaluate hydraulic characteristics of wetlands. During the conduct of full-scale tracer studies in the Everglades STAs in the early 2000s, DBE's scientists performed laboratory trials to evaluate the sorption/desorption behavior, as well as degradation rates, of these tracer chemicals (Dierberg and DeBusk 2005).



Chambers utilized for water - soil core and slurry incubations in DBE's laboratory.



Porewater equilibrators deployed in a treatment wetland, depicting the small, individual chambers whose contents are sampled and analyzed for dissolved constituents.

DBE and other investigators routinely utilize porewater equilibrators (peepers) in lakes and wetlands to measure diffusive flux of soil/sediment nutrients to the water column. Our field and laboratory personnel have processed and analyzed samples from hundreds of peepers in the past three decades. These devices can prove challenging, however, due to the resulting low volumes retrieved from each discrete peeper chamber. Our analysts are trained to work with low sample volumes (instead of diluting), which allows us to maintain low method detection limits for porewater analytes. For one of our prior projects, we analyzed eight key soil porewater parameters (TSP, SRP, dissolved Ca, dissolved Fe, ammonia, sulfate, sulfide and alkalinity) using only 16 mL of sample.

Sequential P extractions require experienced laboratory personnel, since successful outcomes for these labor-intensive analyses depend on good technique and sound professional judgement. DBE's Laboratory Manager for 20 years (Ms. Nancy Chan) has overseen over 2000 sequential P fractionations of soil samples. Additionally, in support of Water Management District agencies and other clients, DBE's scientists are constantly evaluating and testing refinements to the soil extraction schemes, with the goals of minimizing variability among extraction runs and improving data quality.



Soil extraction in DBE's laboratory.

FDEP conducted laboratory "Round-Robin" assessments for several years in the early 2000s to evaluate accuracy and precision of low-level total P analyses for all laboratories conducting research and monitoring in the Everglades. DBE was consistently the top performing private laboratory in these evaluations, providing comparable results to the top performing government laboratories (typically SFWMD and FDEP).

3.5.6 Special Projects

3.5.6.1 Restoration and Bank Stabilization Project at Poe Springs (2005)

In an effort to make citizens aware to the consequences of shoreline habitat destruction and the resulting erosion and sedimentation, Mr. Myles directed a project to install a staircase to access the Poe Springs' run while working at ACEPD. This is a part of another restoration project in which the riparian buffer has been replanted and other various bank stabilization techniques employed. Access to the spring was provided by a concrete amphitheater and staircase located at the main spring boil which is a deeper part of the spring and not conducive for young children. For this reason, visitors of the park had created their own access to the shallower spring run by trampling up and down and eroding a portion of the bank. The purpose of the project was to provide an appealing access point to the shallower spring run, therefore reducing the foot traffic up and down the bank and the resulting bank instability and erosion. Mr. Myles secured grant funding from the FDEP Springs Grant for the project, designed the staircase and other bank stabilization techniques, obtained permits from SRWMD and USACE, and oversaw all field activities to complete the project.



3.5.6.2 Database and Mobile Application development for the ACEPD Irrigation Inspection and Enforcement Program

While managing the GIS services for ACEPD, Mr. Myles designed and managed a database for the irrigation inspection and enforcement program. This data base was integrated with a mobile application developed for field data collection of violations and follow up investigations. The database featured automated report generation of statistics, batch production of case specific warning letters ready to mail and case tracking by parcel.

3.5.6.3 Mullet Lake Enhancement Project, Central Florida (2002)



A 60-acre natural lake in central Florida suffered from high sedimentation and eutrophic conditions. After characterizing the trophic state and sediments, DBE utilized laboratory tests to evaluate several management and remediation techniques for restoring the lake to a state suitable for recreation. These included lake dry-down followed by reflooding, and well as the potential use of bioaugmentation products. Sediment phosphorus nitrogen and oxygen demand were measured on unconsolidated sediments in flasks before and after dry-down followed by reflooding or after application of bioaugmentation products.

3.5.6.4 Identifying External Phosphorus Source Loading to Lake Butler, Orange County, Florida (2003)

Excavation of soil from an 8-acre wetland along the shoreline of 1800-acre Lake Butler (Orange County) coincided with an algal bloom in this oligotrophic-mesotrophic lake. Orange County Environmental Protection District (OCEPD) contracted DBE and St. Johns River Water Management District to conduct independent research and a review of existing data to determine whether the excavation of the wetland cove caused the algal bloom. After careful examination of the



database and previous engineering reports, along with our own investigations (hydrologic, water quality, and sediment testing; stormwater runoff monitoring; mass balance and empirical modeling), it was concluded that the rapid rise in total phosphorus concentrations within Lake Butler was caused by stormwater runoff from the watershed following a 3-year drought. Specific recommendations to be included in the adoption of a Lake Restoration and Management Plan were provided. The necessity for a timely resolution of the issue was driven by the political and community interests in safeguarding the lake's water quality. The principal investigators attended three public meetings, the last of which was to respond to the conclusions reached by two independent peer-reviews of the Final Report.

3.5.6.5 GRU Kanapaha Water Reclamation Facility Gainesville, Florida

eda-engineers-surveyors-planners, Inc. provided Gainesville Regional Utilities with civil engineering and land surveying and mapping services for the Kanapaha Water Reclamation Facility – Dewatering Project.

Engineering services included preparation and submittal of a development plan application, representation of the client at required meetings and coordination with other project consultants. eda's engineers also assisted in obtaining a stormwater management permit from St. John's Regional Water Management District and water, sewer, gas and electrical permits from Gainesville Regional Utilities. Surveying services included the preparation of a boundary survey, identification of underground utility locations, construction stakeout services and preparation of a topographic survey that included spot elevations, fixed above ground improvements, tree locations, interior dimensions and elevations, and the locations of storm sewer inverts.

3.5.7 Phase I and Phase II Environmental Assessments

3.5.7.1 Commercial Retail – Gainesville, Florida (2013)

During performance of a Phase I Site Assessment at the former Brasington Cadillac-Oldsmobile dealership, GSE Engineering and Consulting, Inc. documented several recognized environmental conditions including on-site USTs and in-ground hydraulic lifts. Follow up Phase II services identified minor petroleum impacts to soils in the vicinity of the hydraulic lifts.

GSE provided a sampling plan to the Alachua County Environmental Protection Department (ACEPD) for approval prior to performing lift closure activities. We coordinated removal of the hydraulic lifts and lift-closure testing and assessment of the impacted soils with Gus Olmos, Hazardous Materials Program Manager for ACEPD. Following excavation of impacted soils and confirmatory soil and groundwater sampling, approval of "No Further Action" was issued by ACEPD. Mr. Joakim (Jay) B. Nordqvist, P.E. with GSE was the Engineer of Record for this project.

3.5.7.2 Hull Road Extension Gainesville, Florida (2012-2014)

Hull Road was extended west of the University of Florida Campus as part of area site development. GSE was initially retained to conduct Phase I & II ESA services. An unregulated landfill which operated in the 1970's was identified and determined to encroach upon the area of roadway expansion. Site grades required excavation and off-site disposal of solid waste to allow for utility installation. Both geotechnical and environmental conditions were addressed by GSE. GSE prepared a Solid Waste Management plan outlining the procedures to be implemented for handling, staging, characterizing, and disposing of the waste. FDEP Hazardous Waste Program & Permitting Department approved the plan and conducted a site visit during removal activities. Due to the lack of documentation related to the contents with the landfill, a modified Level C PPE was selected with adjustments during site activities. The solid waste was stockpiled and tested to establish if it was a characteristic hazardous waste. Off-site proposal manifested disposal to a permitted facility was then coordinated. A lined trench was installed to provide for a safe work area with no potential for solid waste exposure during utility installation. Mr. Joakim (Jay) B. Nordqvist, P.E. with GSE was the Engineer of Record for this project.

3.5.7.3 Proposed Commercial Retail – Ulmerton Road Largo, Pinellas County, Florida (2015)

GSE initially completed a Phase I & II environmental site assessment for this effort, which confirmed the historical bumper restoration activities (i.e. plating operation) on-site resulted in regulated metals being present at elevated concentrations in the soil. Supplemental testing indicated that the soil and groundwater impacts exceeded default State soil and groundwater cleanup target levels (62-777 FAC) for Nickel and Chromium. GSE completed an assessment consistent with FAC Chapter 62-780 Contaminated Site Cleanup Criteria requirements for the site and developed a remediation action plan. No off-site groundwater impact was identified. The site assessment was conducted with the involvement of FDEP Southwest District. Mr. Joakim (Jay) B. Nordqvist, P.E. with GSE was the Engineer of Record for this project.

It was established that the soil impacts were relatively surficial with a shallow groundwater table. The remedial approach for the site considered the possibility of closure with institutional controls. Three closure alternatives are currently being considered by the client. Through complete soil impact removal to the groundwater table, and resampling of the groundwater quarterly, there is a possibility of no further action (NFA) without conditions or with conditions (groundwater restricted use only). The third possibility is to provide for engineering controls and leave portions of the soil impacts intact on the site, controlling potential migration through engineering controls.

3.5.8 Air Quality, Industrial Hygiene and Asbestos Abatement Support

3.5.8.1 University of Florida Environmental Services Contract

GLE Associates, Inc. has served as the primary asbestos consultant for the University of Florida (UF) since 1997. Since then, we have successfully performed over 1,700 projects with services in the areas of asbestos and lead-based paint consulting, including contract administration, facility surveys, asbestos and lead abatement design and asbestos/ lead project monitoring. Our services have also included PCB testing, mercury testing, radon testing, industrial hygiene sampling, indoor air quality building commissioning and environmental site assessments. Under our continuing contract, we provide services in the areas of asbestos consulting, including contract administration, facility surveys, asbestos abatement design and monitoring. These services have been performed for the University of Florida Planning Design and Construction Division, the University Health Center, UF Department of Housing and Resident Life Education Department, UF Institute of Food and Agricultural Services (IFAS), and UF Physical Plant Division, as well as other various departments.

3.5.8.2 Citrus County School Districts Environmental Services Contract (1997-Ongoing)

GLE has served in a full-service capacity as the Citrus County School Board's environmental consultant since 1996. GLE has completed over 300 projects, ranging from asbestos inspections/monitoring, lead-based paint inspections, Phase I ESA's, UST removals/closures, contamination assessment and remediation for petroleum products including source removal, indoor air quality consulting and radon measurement and mitigation.

As environmental consultant to the District, GLE has been responsible for the evaluation and design of cost effective solutions for a wide variety indoor air contaminants. GLE has provided numerous IAQ investigations, which have included sampling for mold, bacteria, volatile organic compounds, formaldehyde, carbon dioxide, relative humidity, temperature and respirable particulates. In addition, GLE has assisted the District by providing in-house Architecture/Engineering expertise with regards issues moisture intrusion issues and potential issues involving the HVAC systems, such as air handler and distribution system evaluations.

GLE has provided annual 100% radon measurement services for several facilities within the District that are located in radon-prone areas of the state. We have provided both the design of radon measurement mitigation systems and turnkey radon mitigation system installation through the use of our in-house radon mitigation specialists and construction group. The total estimated cost of this environmental term contract is \$1,750,000.

3.5.8.3 Cattle Dip Vat Reassessment and Closure Project Ocala, Florida (2013-Ongoing)

GLE was selected by the City of Ocala Engineering Department Director (William Stevens, PE) to conduct the environmental assessment of the City of Ocala Cattle Dip Vat, located on NW Highway 44th Avenue, located west of Interstate 75. In 2008, a former cattle dip vat site was discovered during a study of the proposed extension of the Northwest 44th Avenue Road corridor. The City conducted several rounds of Site Assessment, reporting to the Florida Department of Environmental Protection (FDEP) Central District office. Arsenic was the only constituent discovered at this site detected above the Soil Cleanup Target Level (SCTL) and Groundwater Cleanup Target Level (GCTL).

In September 2010, the City conducted an Interim Source Removal, which was approved by FDEP. The Interim Source Removal Activities were implemented, and 4,440 tons of arsenic-impacted soil were excavated and transported off site for disposal. Following the Interim Source Removal, additional site assessment was conducted that showed that the soil impacts were mitigated, but still were present above the arsenic SCTL, and that groundwater impacts of arsenic were substantially higher than the GCTL for arsenic.

In 2013, GLE reviewed the site history for the Cattle Dip Vat, and proposed a unique strategy for closing out the site. GLE proposed that under the rules of Florida Administrative Code (FAC) Chapter 62-780, the City of Ocala could potentially apply for a No Further Action (NFA) with conditions. GLE completed the negotiation of the site assessment scope of work, implemented the Site Assessment activities, which effectively defined the horizontal and vertical extent of the arsenic impacts. In 2014, GLE proposed Natural Attenuation Monitoring (NAM) to further reduce the costs of the site closure. Temporary Points of Compliance (TPCO) monitoring wells were proposed at the roadway right-of-way boundaries, and monitoring data showed that arsenic was not detected in groundwater above its GCTL at these TPOC monitoring wells. Further, with the impacted soils removed, the groundwater plume is stable and is located completely on the roadway property owned by the City.

GLE has completed the most recent negotiations with the FDEP Central District, who have indicated that they will approve of GLE's recommended Site Rehabilitation Completion closure as a NFA with Conditions, including engineering and institutional controls. The FDEP agreed to GLE's proposed engineering control

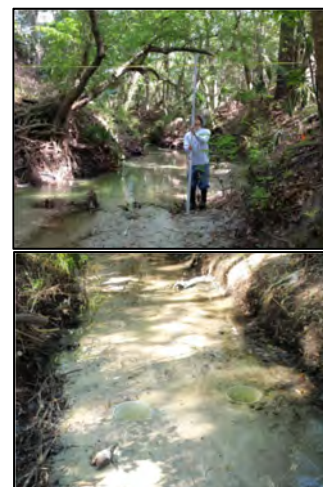
(a concrete cap over all exposed soil in the contaminant plume area), and the institutional control (a deed restriction against water well installation) in the area of the arsenic plume.

3.5.9 Natural Resource Assessment

Natural Resource Assessments provide critical information to land managers and decision makers during the conservation land acquisition process. As part of the DBE team, experts from our subcontractors will be available to conduct Unified Mitigation Assessment Method (UMAM) assessments, wetland delineations, and other services, as needed, in support of all County projects. In addition, DBE scientists have experience working with the Alachua County Land Conservation department on erosion and sedimentation issues, well abandonment, cattle dip vat remediation, wetland restoration and controlled burns. We also have conducted restoration projects along urban stream corridors in the City of Gainesville, controlling exotic vegetation and conducting stream and riparian habitat assessments using FDEP standard methods.

3.5.9.1 Revitalizing Sweetwater Branch – City of Gainesville, FL (2013)

The *Revitalizing the Sweetwater* project was awarded 319 funding (FDEP Project Agreement G0181) to the City of Gainesville and included several project components that were selected for implementation from the Sweetwater Branch Watershed Management Plan. These included creation of regional stormwater treatment ponds, an in-stream trash trap, and a stream restoration project. As part of that project, Kevin Grace, manager of DBE's Gainesville office, conducted an evaluation of the stream restoration (bank stabilization) effort. The evaluation included developing a FDEP-approved quality assurance plan, conducting an assessment of the stream morphology, biological assessments using FDEP-approved macroinvertebrate sampling techniques, and a stream corridor habitat assessment. In addition, estimates of sediment transport were provided to city planners designing in-stream grade control structures and trash trap components within the watershed. The stream restoration increased bank stabilization, reduced the bank slope, removed debris, and avoided bank failure that would have contributed large sediment loads to the stream.



A number of exotic plants also were observed along the stream corridor, which resulted in low Habitat Scores prior to the restoration project. A plan was developed and implemented to control the exotic invasive vegetation on the public land parcels along the stream, and citizens with stream-side property were contacted for voluntary participation in the project.

3.5.9.2 Special Area Study: Paynes Prairie West Strategic Ecosystem, Alachua County Department of Growth Management.

Ecosystem Research Corporation (ERC) performed wetlands survey, plant community mapping, and environmental features inventory on a 503.97-acre group of parcels located west of Paynes Prairie. This project involved performance of the first Special Area Plan conducted by Alachua County for

determination of a development footprint within multiple private parcels located within a designated Strategic Ecosystem Overlay area. For this project, a Baseline Inventory Report was prepared identifying the location of native and man-altered habitats as well as defining the boundaries of significant habitat areas to be set-aside and protected within a Conservation Management Area and Conservation Easement.

3.5.9.3 Deep Creek Water Reclamation Project, Watershed Technologies, LLC, and Florida Department of Agriculture and Consumer Services, St. Johns County, Florida.

ERC performed an Environmental Assessment consisting of wetland jurisdiction, listed species surveys, and feasibility analysis for using Hybrid Wetland Treatment Technology for renovation of agricultural discharges to Deep Creek. The Deep Creek water reclamation project is an FDACS project contracted through Watershed Technologies, LLC. The project is designed to renovate the phosphate-contaminated surface waters of Deep Creek (St. Johns County) that have been affected by long-term historical agricultural discharges. For this project, extensive field surveys were performed to document the existing native and man-altered agricultural habitats. Listed species surveys were performed and extensive analysis of mean annual and 100-year flood elevations were also provided. The Baseline Inventory studies were used to determine the most appropriate areas where waters could be pumped from and discharged into Deep Creek to affect the minimal impacts to the natural system.

3.5.9.4 Trout Lake Water Reclamation Project, Watershed Technologies, LLC, and Florida Department of Agriculture and Consumer Services, Lake County, Florida.

ERC performed an Environmental Assessment consisting of wetland jurisdiction, listed species surveys, and feasibility analysis for using Hybrid Wetland Treatment Technology for renovation of agricultural discharges to Hicks Ditch and Trout Lake. The Trout Lake project is a natural lake/wetland reuse and renovation project in which phosphorus-contaminated waters from historical agricultural runoff sources are collected from Trout Lake and treated within constructed floating and emergent macrophyte treatment ponds. This is an FDACS project contracted through Watershed Technologies, LLC. For this project extensive natural habitat mapping of the Trout Lake wetland system was performed. The wetland boundary was delineated and surveys for listed species were performed. Nuisance and exotic species populations were documented, and plans were devised to avoid reintroduction of exotic species into renovated waters.

3.5.9.5 Springhills Transit Oriented and Traditional Neighborhood Developments Gainesville, Florida (2010)

The Springhills property consists of a 389-acre parcel of land consisting of agricultural lands with a mosaic of native upland and wetland habitats. In 2010, PREIT (the owner of the Springhills property) petitioned Alachua County with a series of comprehensive plans and zoning requests in preparation of a Preliminary Development Plan (PDP) submittal for a mixed Transit Oriented Development and Traditional Neighborhood Development for the property. As part of these series of applications, ERC performed a host of environmental services in support of these applications, to include the following:

- 1 Performance of a formal wetland delineation with the St. Johns River Water Management District

- 2 Upland and wetland habitat mapping with delineation of Significant Upland Habitats, which are defined as those ranked as S1, S2, or S3 by the Florida Natural Areas Inventory
- 3 Surveys for listed plant and animal species and delineation of listed species habitat
- 4 Delineation of a Conservation Management Area (CMA) to protect the Significant Upland and Wetland Habitats.

3.5.9.6 Environmental Resource Assessment of Celebration Pointe: A Transit Oriented Development Gainesville, Florida (2007)

Celebration Pointe is a 210-acre Transit Oriented Development located in southwest Alachua County. Following many years of predevelopment application studies beginning in 2007, construction began in 2016 and continue to date. In 2007, ERC was retained to perform an Environmental Assessment of the project site, which included high-quality Mesic Uplands, agricultural lands historically maintained in silviculture and pasture, and a large borrow historically associated with construction of I-75. The property is associated with Lake Kanapaha and Hogtown Creek and occurs within the Hogtown Prairie Strategic Ecosystem Overlay as mapped by Alachua County. The Environmental Resource Assessment consisted of mapping all native and disturbed upland habitats, delineation of the wetland boundary, and subsequent approval by Alachua County, the St. Johns River Water Management District, and the U.S. Army Corps of Engineers. In addition, listed species surveys were performed.

3.5.9.7 Gainesville Regional Utilities Projects

ERC performed wetlands jurisdiction, mitigation, and permitting services on a 117-acre parcel designated for construction of GRU Eastside Maintenance Facility (2008–2010). ERC performed listed species surveys and wetlands jurisdiction for GRU Force Main relocation at the Gainesville Airport (2011). They also performed wetland/upland and plant community boundary mapping, T&E species survey, and environmental features inventory for the Deerhaven Power Plant Land Annexation, a 2342-acre site for the purposes of obtaining a Future Land Use amendment. ERC performed wetland jurisdiction, plant community mapping, listed species surveys for the Deerhaven Biomass Plant Siting Study.

3.5.9.8 Regional Transit Systems (RTS) Proposed Expansion Properties, City of Gainesville

ERC performed wetlands jurisdiction, listed species surveys, and plant community mapping for properties designated for future expansion of the RTS facility located on South Main Street (2011).

3.5.10 Ordinance and Growth Management Regulations

3.5.10.1 Continuing Urban Planning for Public Sector Clients (Multiple)

eda serves a number of public sector clients under continuing services contracts, including (among others) the City of Hawthorne, City of Waldo, City of Alachua & Gainesville Regional Utilities. **eda** planning staff regularly provides professional planning services to these clients for a wide variety of services, including processing Comprehensive Plan and zoning amendments, professional review of private petitions, Land Development Code amendments, drafting of ordinances and master planning.

3.5.10.2 Celebration Pointe Transit Oriented Development (TOD)

eda currently provides urban planning, civil engineering, and surveying services for this project by assisting the developer with the project master planning and permitting with multiple local agencies including Alachua County, City of Gainesville, Gainesville Regional Utilities, Water Management District and other utility providers. eda is also currently assisting the client with modification of the approved Master Development Plan with Alachua County to further expand and intensify the project with modified block sizes, roads and utilities.

3.5.10.3 GRU Eastside Operations Center

eda provided Gainesville Regional Utilities with urban planning, civil engineering, and land surveying services. These services included rezoning the parcel from Limited Industrial to Public Services, preparation of a Zoning Master Plan and a revised 100-Year Flood Plain Map, an engineering review that included conceptual drainage analysis, a FEMA Letter of Map Revision, preparation of As-Built plans, vacuum excavation, construction stakeout services, design of a minor subdivision, stakeout of boring locations, and a topographic survey that included above ground improvements and utilities, tree locations, and elevations.

Tab 4

Ability of Consultant's Professional Personnel

James L. Myles

Associate Scientist

Total Years of Experience:
15+

**Years with DB
Environmental: 4**

Significant Accomplishments:

- *Certified GIS Professional*
- *15 years implementing and managing government and private sector water resource projects*

Prior Affiliations:

- *Alachua County
Environmental Protection
Department*

Current Affiliations:

- *DB Environmental, Inc.*

Education:

- *MS, Environmental
Engineering, University of
Florida, 2003*
- *BS, Natural Resource
Management, University of
Maryland, 2001*

Jim Myles, MS, GISP, has over 15 years of experience performing and managing environmental monitoring and water resource management projects. Mr. Myles has strong problem-solving skills, which he has successfully applied to many complex projects involving tracking sources and fate of pollutants (nutrients, fecal coliforms, petroleum products, arsenic, creosote, dioxins, furans, etc.) in surface waters, groundwater, soils and sediments. Mr. Myles is accomplished at developing custom databases, and in organizing and analyzing large geospatial datasets in the ArcGIS platform. He is well-versed in relevant surface water and groundwater Standard Operating Procedures and has applied these protocols to water quality investigations and hydraulic studies designed to pinpoint contaminant sources and their fate in Florida's environments.

Areas of Specialization

- Design, implementation and management of surface water and groundwater monitoring programs
- Nutrient and contaminant source tracking in surface water and groundwater
- Hydrologic Studies: stage/discharge measurements and relationships
- Hydrogeologic Studies: potentiometric surface measurements and mapping, springshed delineation, dye tracer studies, contaminant plume delineation
- GIS: database design, field data collection, geospatial analysis and interpolation
- Relational Database Design, data standardization, manipulation, complex querying

Current Projects

- Manage operations and maintenance at two Hybrid Wetland Treatment Technology (HWTT) facilities, including water quality and hydrologic data collection, analysis and reporting.
- Manage the field data collection and data analysis of a water resource study to provide insight into the relationship of the SFWMD L-8 flow equalization basin (FEB) water quality with stage, flows, and potential groundwater interactions.
- Design and manage GIS database for submerged aquatic vegetation surveys in the Stormwater Treatment Areas (STA) of South Florida. Standardize field data model, GIS analysis and map production. Develop web applications to collect field data and share results of the GIS analysis.

Completed Projects

- Managed the permitting of two HWTT facilities (15 acre and 60 acre) in which water is pumped from natural waterbodies (streams, lakes) and is subsequently treated by a hybrid sequence of chemical and wetland unit processes. Permitting involved Environmental Resource Permits (FDEP, SJRWMD and USACE), Consumptive Use Permitting (SJRWMD), Gopher Tortoise relocation permits (FWC), Cultural Resource Surveys, Natural Areas Resource Assessments. Construction permits also were obtained from local County Governments and Municipalities, additionally lease agreements and easements were negotiated and secured.
- Performed field and desktop evaluation of wetlands in Hillsborough County, FL as a potential recharge area for 20 million gallons per day of treated wastewater. The project considered several methods for wastewater reuse, including application to existing wetlands and creation of newly constructed wetlands. Wetlands were evaluated for type, condition and hydrology to describe potential use areas. The project also evaluated the regulatory limits on wetland application of reclaimed water, protection of downstream waters and entailed a review of relevant wetland treatment systems. Based on the data collected, estimates of capacity and performance of treatment wetlands were provided.

- Designed and performed a spatial sampling of water quality internal to wetlands receiving reclaimed water to provide insight into current hydraulic characteristics and nutrient removal and/or export processes. Used these insights to support development of wetland optimization strategies.
- Designed and performed water quality sampling and analysis of surface waters upstream and downstream of a gun range in North Florida to determine the extent of offsite lead contamination.
- Assisted with the experimental design, setup and sampling of several mesocosm and core studies related to wetland performance and treatment.
- Expanded a Floridan aquifer water level monitoring network to provide finer spatial resolution and collected data for the delineation of the Santa Fe River springsheds and production of potentiometric surface maps.
- Assisted with the management of a Springs Initiative contract to complete a dye trace study from two sinkholes to springs and wells in the Santa Fe River basin.
- Secured grant funding from FDEP to develop a plan, conduct field sampling, and prepare a report investigating the sources of nitrate to Poe and Hornsby Springs in the Santa Fe Springs River springshed.
- Managed a contract to develop an ArcGIS tool to estimate nitrate loading from point source and non-point source to groundwater in the Santa Fe River springshed.
- Assisted with designing a monitoring plan to address sediment P storage, stability and distribution within Newnans Lake, Alachua County FL.
- Assisted with the planning and spatial sampling of soils and sediments in the Little Hatchet Creek watershed to determine Phosphorus content of streambank soils and stability of P in stream sediments.
- Designed and managed a database for the irrigation inspection and enforcement program including application development for field data collection using mobile devices.
- Microsoft Access database design and management using VBA programming and SQL queries.
- Managed a Floridan Aquifer well and springs monitoring network, including water quality analysis, water level measurements and production of potentiometric surface maps and water quality reports.
- Managed a contract and data for surface water level and rainfall gauge network.
- Fulfilled FDEP contract requirements for field sampling and data management for the FDEP groundwater temporal variability network located in Alachua and Marion Counties.
- Implemented and managed an Outfall Reconnaissance and Inspection program of the urban storm water collection system for illicit discharge detection program as a BMAP project in Gainesville, FL.
- Managed a contract for an aquatic plant management program on Bivens Arm Lake in Gainesville, FL.
- Completed an extensive sediment survey and stormwater sampling effort downstream of the Cabot/Koppers Superfund site in Gainesville, FL to map the concentration and extent of chemical contamination. Results of the sampling effort were reported to fulfill a USEPA Grant. Reviewed remedial action plans by contractors and monitored the cleanup activities in the creeks.
- Assisted Land Conservation with Erosion and Sedimentation issues, well abandonment, cattle dip vat remediation, wetland restoration and controlled burns.

Certifications

- Certified GIS Professional by GIS Certification Institute #90609 (4/25/2015)
- FDEP Stormwater, Erosion, and Sedimentation Control Qualified Stormwater Management Inspector #6560 (3/5/2004)
- FDEP trained in Habitat Assessments, Bio-reconnaissance, Stream Condition Index Sampling, Ambient and Temporal Variable sampling procedures
- FEMA training IS-00100 Intro to the Incident Command System, IS-00700 National Incident Management Systems (9/2006)
- OSHA's annual refresher in Hazardous Waste Operator & Emergency Response
- Completed training in S-130 Firefighter Training, L-180 Human Factors on the Fireline and S-190 Introduction to Wildland Fire Behavior (July 2007)
- FDEP Wetland Delineation Training (12/2006)

Total Years of Experience:
22

Years with DB Environmental: 22

Significant Accomplishments:

- *Designed, managed and published studies on low-level P removal by S. FL periphyton communities.*
- *Developed and managed field and data analysis protocols for numerous emergent and submerged plant investigations in STA flow-ways.*
- *Developed the experimental design and performed data analyses for an array of internal stage monitoring devices deployed to assess hydraulic characteristics of STA-2 Cell 2.*

Prior Affiliations:

- *City of Gainesville Public Works*
- *Alachua County Public Works*
- *University of Florida*

Current Affiliations:

- *DB Environmental, Inc.*

Education:

- *MS, Soil and Water Science, University of Florida, 2003*
- *BS, Environmental Science, Florida Institute of Technology, 1997*

Kevin A. Grace

Associate Scientist

Kevin Grace, a DB Environmental Scientist and Project Manager, has conducted and supervised a wide range of environmental research projects in south and central Florida since 1997. He has broad expertise in soils, vegetation (macrophyte and algal) and water quality investigations in aquatic systems. Mr. Grace also has a strong analytical background and has been instrumental in developing specialized laboratory techniques for analyses of periphyton enzyme activity and UV absorbance of dissolved organic matter in Everglades STA waters. He has designed and implemented several mesocosm studies and field monitoring programs for STA flow paths, with a focus on vegetation influences, as well as factors that impact sediment-water column nutrient exchange. Mr. Grace's thesis research addressed phosphorus (P) cycling among soil, water, and detritus compartments in emergent and submerged vegetation communities of Stormwater Treatment Area (STA) – 1W.

Areas of Specialization

- Phosphorus cycling in aquatic ecosystems.
- Design and management of STA vegetation, soils and water quality investigations.
- Technical review of water quality reports, total maximum daily loads (TMDL), basin management action plans, stormwater management master plans, and proposed changes to water quality criteria.
- Experimental design and data analysis.

Reviewer, Manuscripts for Scientific Journals

- Wetlands, Ecology and Management
- Wetlands
- Ecological Society of America (Ecology)
- Chemosphere
- Environmental Monitoring and Assessment
- Journal of Environmental Quality

Professional Organizations and Affiliations

- Society of Freshwater Science
- North American Lake Management Society
- American Ecological Engineering Society

Publications (refereed)

- Grace, K. A., J. M. Juston, D. Finn, W. F. DeBusk, D. Ivanoff, and T. A. DeBusk. 2019. *Substrate manipulation near the outflow of a constructed wetland reduced internal phosphorus loading from sediments and macrophytes.* Ecological Engineering 129:71-81.
- Juston, J. M., T. A. DeBusk, K. A. Grace, S. D. Jackson. 2013. *A model of phosphorus cycling to explore the role of biomass turnover in submerged aquatic vegetation wetlands for Everglades restoration.* Ecological Modelling, 251:135-149.
- Paudel, R., K. A. Grace, S. J. Galloway, M. Zamorano, J. W. Jawitz. 2013. *Effects of hydraulic resistance by vegetation on stage dynamics of a stormwater treatment wetland.* Journal of Hydrology 484:74-85.
- DeBusk, T. A., M. Kharbanda, S. D. Jackson, K. A. Grace, K. Hillman, and F. E. Dierberg. 2011. *Water, Vegetation and Sediment Gradients in Submerged Aquatic Vegetation Mesocosms Used for Low-Level Phosphorus Removal.* Science of the Total Environment 409 (23):5046-5056.

- Grace, K. A., F. E. Dierberg, T. A. DeBusk and J. R. White. 2008. *Phosphorus uptake by Typha leaf litter as affected by oxygen availability*. Wetlands 28(3): 817-826.
- Jawitz, J. W., R. Muñoz-Carpena, S. Muller, K. A. Grace, and A. I. James. 2008. Development, Testing, and Sensitivity and Uncertainty Analyses of a Transport and Reaction Simulation Engine (TaRSE) for Spatially Distributed Modeling of Phosphorus in South Florida Peat Marsh Wetlands: U.S. Geological Survey Scientific Investigations Report 2008-5029, 109 p.
- DeBusk, T. A., K. A. Grace and F.E. Dierberg. 2005. Treatment Wetlands for Removing Phosphorus from Agricultural Drainage Waters. In E. J. Dunne, K. R. Reddy and O. T. Carton (eds.) Nutrient Management in Agricultural Watersheds: a wetlands solution. Wageningen Academic Publ.
- Duxbury, C. V., K. A. Grace, A. Poponi, and T. Auter. 2005. *Copper and Zinc Accumulation by a Transplanted Bivalve, Elliptio buckleyi, in freshwater systems in central Florida*. Journal of Freshwater Ecology 20(4): 661-669.
- DeBusk, T. A., K. A. Grace, F. E. Dierberg, S. D. Jackson, M. J. Chimney, and B. Gu. 2004. *An investigation of the limits of phosphorus removal in wetlands: a mesocosm study of a shallow periphyton-dominated treatment system*. Ecological Engineering 23: 1-14.

Master's Thesis

- Grace, Kevin A. 2003. *Phosphorus removal and soil stability within emergent and submerged vegetation communities in treatment wetlands*. Master of Science Thesis, University of Florida. Full Thesis: http://etd.fcla.edu/UF/UFE0001219/grace_k.pdf

Project Reports

- DB Environmental, Inc. (DBE) 2017. *Sediment phosphorus stability in Little Hatchet Creek*. Prepared for Alachua County Environmental Protection Department. August 31, 2017.
- Zamorano, M. F., K. Grace, T. DeBusk, T. Piccone, M. Chimney, R. T. James, H. Zhao, and C. Polatel. 2017. *Investigation of Stormwater Treatment Area-3/4 Periphyton-based Stormwater Treatment Area Performance, Design, and Operational Factors*. Appendix 5C-2 South Florida Water Management Report – Volume I. West Palm Beach, FL.
- Paudel, R., J. W. Jawitz, K. A. Grace, S. Galloway. 2013. STA 3/4 Effects of emergent vegetation on flow dynamics in STA-2 Cell 2. In: Ivanhoff, D., K. Pietro, H. Chen, and L. Gerry 2013. South Florida Environmental Report, Vol. 1 Ch 5. Performance and Optimization of the Everglades Stormwater Treatment Areas. South Florida Water Management District, West Palm Beach, FL.
- Piccone, T., H. Zhao, S. Miao, K. Grace, T. DeBusk, and D. Ivanhoff. 2013. STA 3/4 Periphyton-based Stormwater Treatment Area Project. In: Ivanhoff, D., K. Pietro, H. Chen, and L. Gerry 2013. South Florida Environmental Report, Vol. 1 Ch 5. Performance and Optimization of the Everglades Stormwater Treatment Areas. South Florida Water Management District, West Palm Beach, FL.
- DBE 2010. *Tracer Study: Taylor Creek STA*. Prepared for the South Florida Water Management District.
- Water & Air Research, and K. A. Grace. 2010. *Revitalizing the Sweetwater: Stream Restoration Evaluation Quality Assurance Project Plan (QAPP)*. Prepared for the Florida Department of Environmental Protection on behalf of the Public Works Department - City of Gainesville, FL.
- Smith, E. M. Meisenburg, K. Grace, C. Lewis. *Wetland Mitigation Restoration Plan*. Prepared for University House Apartments, Gainesville, FL. December 2008.
- Metcalf & Eddy. 2007. *Evaluation of Cixi (China) Constructed Wetland Design for Tertiary Wastewater Treatment*. Prepared for Design Review Advisory Team, Ningbo Water and Environment Project. Funded by the Partnership Investment Fund for Pollution Reduction in Large Marine Ecosystems of East Asia (World Bank and Global Environment Facility Trust Fund).
- DBE and Community Watershed Fund. 2005. *Quantifying the Effect of a Vegetated Littoral Zone on Wet Detention Pond Pollutant Load Reduction*. Final Report to Florida Department of Environmental Protection. Tallahassee, FL.
- DBE 2004. *Preliminary design and pilot development of sediment management protocols to enhance the long-term performance of City of Orlando's Easterly Wetlands Treatment System*. Final report to Post, Buckley, Schuh, and Jernigan, Inc. Orlando, FL. January 2004.
- DBE 2003. *Evaluation of passive and actively managed treatment wetlands for phosphorus removal from dairy and basin-wide runoff*. Prepared for Soil and Water Science Department, University of Florida, Gainesville, FL.

- DBE 2003. *Assessment of hydraulic and ecological factors influencing phosphorus removal in Stormwater Treatment Area 1W*. Final Report to the Florida Department of Environmental Protection. Tallahassee, FL.
- Reddy, K. R., J. R. White, M. M. Fisher, H. K. Pant, Y. Wang, K. Grace, and W. G. Harris. 2002. *Potential impacts of sediment dredging on internal phosphorus load in Lake Okeechobee*. Summary Report submitted to South Florida Water Management District, West Palm Beach, FL.
- DBE 2000. *Submerged aquatic vegetation/limerock treatment system technology for removing phosphorus from Everglades Agricultural Area waters: Follow-on study*. STA-1W Cell 4 Tracer study report submitted to the South Florida Water Management District West Palm Beach, FL., and the Florida Department of Environmental Protection, Tallahassee, FL. April 19, 2000.
- DBEL 1999. *A demonstration of submerged aquatic vegetation/limerock treatment system technology for removing phosphorus from Everglades Agricultural Area waters*. Final Report submitted to the South Florida Water Management District and the Florida Department of Environmental Protection, West Palm Beach, FL.

Conference Proceeding Abstracts

- Grace, K. A., and T. A. DeBusk. 2018. *Nutrient exchange following sediment resuspension in South Florida wetlands*. Presented at the 12th International Symposium on Biogeochemistry of Wetlands. Coral Springs, FL. April 26, 2018.
- Grace, K. A., D. Finn, C. Cummins, K. Hileman, and J. Henry. 2018. *Calcium substrates used to control plant growth and reduce water column phosphorus in wetlands treating agricultural runoff*. Presented at the 42nd Annual Florida Aquatic Plant Management Society Annual Training Conference. Daytona Beach, FL. October 16, 2018.
- Dierberg, F. E. T. A. DeBusk, M. Kharbanda, J. Potts, K. Grace, N. Larson, N. Chan, D. Sierer Finn, M. Jerauld, S. D. Jackson, and D. Ivanoff. 2017. *Soil accrual and phosphorus retention in a flow-way dominated by submerged aquatic vegetation within an Everglades Stormwater Treatment Area: a longitudinal study*. Presented at the Greater Everglades Ecosystem Restoration (GEER) Conference. Coral Springs, FL. April 18, 2017.
- Grace, K. A., D. Sierer Finn, M. Jerauld, K. Hileman, J. Henry, and D. Ivanoff. 2017. *Effect of lime rock substrates on stormwater treatment area water quality and vegetation characteristics*. Presented at the Greater Everglades Ecosystem Restoration (GEER) Conference. Coral Springs, FL. April 18, 2017.
- Zamorano, M. F., T. Piccone and K. A. Grace. 2017. *Historical performance of the STA-3/4 Periphyton-based Stormwater Treatment Area*. Presented at the Greater Everglades Ecosystem Restoration (GEER) Conference. Coral Springs, FL. April 18, 2017.
- Zamorano, M. F., T. Piccone, M. J. Chimney and K. A. Grace 2016. *Investigation of the STA-3/4 Periphyton-based Stormwater Treatment Area (PSTA) Performance, Design, and Operational Factors*. Presented at the National Conference on Ecosystem Restoration (NCER). Coral Springs, FL. March 31, 2016.
- Grace, K., D. S. Finn, D. Ivanoff, L. Toth, and S. Jackson. *Submerged and Emergent Aquatic Vegetation Management in the Everglades Stormwater Treatment Areas (STAs)*. Presented at the Florida Aquatic Plant Management Society Annual Meeting. Daytona Beach FL. October 2014.
- Dierberg, F. E., T. A. DeBusk, S. D. Jackson, K. A. Grace, S. Galloway, N. Chan, and D. Ivanoff. *Phosphorus Removal Performance and Sustainability of a Submerged Aquatic Vegetation-Dominated Constructed Wetland for Everglades (USA) Restoration*. Presented at INTECOL 9 joint meeting with Greater Everglades Ecosystem Restoration and the Society of Wetland Scientists. Lake Buena Vista, FL. June 2012
- Grace, Kevin A., Scott D. Jackson, Nichole Larson, and Thomas A. DeBusk. *Carbon and Phosphorus Dynamics of Dissolved Organic Substances in Low-nutrient Surface Waters from South Florida Constructed Treatment Wetlands and Natural Marshes*. Presented at INTECOL 9 joint meeting with Greater Everglades Ecosystem Restoration and the Society of Wetland Scientists, Lake Buena Vista, FL. June 2012
- Dierberg, F. E., T. A. DeBusk, S. D. Jackson, P. Owens, M. Kharbanda, K. A. Grace, and J. Juston. 2008. *Tracer Studies for Quantifying Transport Processes and Phosphorus Removal within the Everglades Stormwater Treatment Areas*. Presented at the Greater Everglades Ecosystem Restoration conference, Naples, FL. July 2008.
- Dierberg, F. E., T. A. DeBusk, S. D. Jackson, P. Owens, M. Kharbanda, K. A. Grace, and J. Juston. *Using tracers for quantifying transport processes in large-scale constructed wetlands*. Presented at the American Society of Limnology and Oceanography annual meeting. Orlando, FL. March 2008

- Grace, Kevin A., Stacey J. Cote, Scott D. Jackson, Thomas A. DeBusk, and Forrest E. Dierberg. *Effect of Soil Phosphorus Enrichment on Soil-P Release and Long-Term P Removal by Wetland Mesocosms*. Presented at the Greater Everglades Ecosystem Restoration conference. Naples, FL. July 2008.
- Dierberg, F. E., K. A. Grace, and M. Kharbanda. *Soil phosphorus accrual in Everglades Stormwater Treatment Areas*. Presented at North American Benthological Society 55th Annual Meeting. Columbia, SC. June 2007
- Grace, Kevin A., Forrest E. Dierberg, and Thomas A. DeBusk. *Relationships between Sediment Phosphorus Accrual and Internal Phosphorus Loading in a South Florida Treatment Wetland*. Presented at the North American Lake Management Society 27th Annual Meeting. Orlando, FL. October 2007
- Grace, Kevin A., Forrest E. Dierberg, Nancy L. Chan, Scott D. Jackson, and Thomas A. DeBusk. *Relationships between Sediment Characteristics and Sediment-Water P Exchange in an Everglades Stormwater Treatment Area*. Presented at the Greater Everglades Ecosystem Restoration Conference. Lake Buena Vista, FL, June 2006.
- Jackson, S. J., F. E. Dierberg, T. A. DeBusk, and K. A. Grace. *Spatial Profiles of Water Column Phosphorus Species within an Everglades Stormwater Treatment Area*. Presented at the Greater Everglades Ecosystem Restoration Conference. Lake Buena Vista, FL. June 5-9, 2006.
- Muñoz-Carpena, R., J. W. Jawitz, A. James, K. Grace, S. Muller, K. L. Campbell, and Y. Li. *A model for phosphorus reactions and transport in the coastal wetlands of southern Florida*. Presented at the Greater Everglades Ecosystem Restoration Conference. Lake Buena Vista, FL. June 5-9, 2006.
- James, A., K. A. Grace, J. W. Jawitz, J. R. White, S. Muller, R. Muñoz-Carpena, and E. G. Flaig. *Modeling Phosphorus Transport and Cycling in a Large Treatment Wetland*. Presented at the Greater Everglades Ecosystem Restoration Conference. Lake Buena Vista, FL. June 5-9, 2006.
- Dierberg, F. E. T. A. DeBusk, K. A. Grace, and S. D. Jackson. 2005. *Assessment of phosphorus release from submerged aquatic vegetation sediments subjected to drydown and rehydration*. Presented at the NALMS conference Madison, Wisconsin.
- Jawitz, J.W., and Grace, K.A., 2005. *Long term modeling of phosphorus transport in the eutrophic northern Everglades, USA*. Presented at the Annual Meeting of the European Geophysical Union, Vienna, Austria, 25-29 April, Geophysical Research Abstracts, Vol. 7, 10478, EGU05-A-10478.
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- Grace, Kevin A., Forrest E. Dierberg, John R. White. 2005. *Effects of Vegetation Type on Soil Accrual and Phosphorus Stability in Wetlands Receiving Agricultural Drainage*. Presented at 9th Annual Conference on Biogeochemistry of Wetlands. Baton Rouge, LA. March 2005
- James, A., K. A. Grace, J. W. Jawitz, J. R. White, and R. Munoz-Carpena. 2004. *Development of a Phosphorous Transport Model for the Northern Everglades, Florida*. Proceedings of the American Water Resources Association 40th Annual Conference. Orlando, FL November 1-4, 2004.
- Jawitz, J.W., and Grace, K.A., 2004. *Internal loads in the eutrophic northern Everglades: Large-scale modeling of phosphorus transport*. Presented at the First National Conference on Ecosystem Restoration. Orlando, FL. December 6-10, 2004.
- Jawitz, J.W., and Grace, K.A., 2004. *Large-scale modeling of phosphorus transport in the eutrophic northern Everglades, Florida*. Presented at the 4th International Conference Groundwater Quality 2004. Waterloo, ON, Canada. July 19-22, 2004.
- Grace, Kevin A., Daniel B. Perkins, and James W. Jawitz. 2003. *Large-scale Modeling of Phosphorous Transport in the Northern Everglades, Florida*. Presented at the Soil Science Society of America Annual Meeting. Denver, CO. November 2003
- Grace, Kevin A., and John R. White. 2003. *The Importance of Leaf Litter to Phosphorus Cycling in Treatment Wetlands Dominated by the Emergent Macrophyte, Typha Domingensis*. Presented at the Society of Wetland Scientists Annual Meeting. New Orleans, LA. June 2003
- Grace, Kevin A., Thomas A. DeBusk, Forrest E. Dierberg. 2003. *Phosphorus Removal Performance by Submerged Aquatic Vegetation-Dominated Wetlands under High Hydraulic Loading Rates*. Presented at the Conference Greater Everglades Ecological Restoration. Tarpon Springs, FL. April 2003
- Grace, Kevin A., John R. White, and K. Ramesh Reddy. 2002. *Effects of Surficial Mud Sediment Removal on Phosphorus Release into Lake Waters under Anaerobic and Aerobic Conditions*. Presented at the Soil Science Society of America Annual Meeting. Indianapolis, IN. November 2002

- Grace, Kevin A., Thomas A. DeBusk, and Michael J. Chimney. 2000. *Treatment Options for Enhanced Phosphorus Removal from Constructed Wetland Effluent*. Presented at the 7th International Conference on Wetland Systems for Water Pollution Control. Lake Buena Vista, FL. November 2000.
- Grace, Kevin A., Thomas A. DeBusk, Forrest E. Dierberg, and Kathleen C. Pietro. 1999. *Characteristics of Submerged Aquatic Vegetation Communities Used to Remove Phosphorus from Agricultural Drainage Waters*. Presented at the 4th Annual Conference on Biogeochemistry of Wetlands. Ft. Lauderdale, FL. September 1999.



Thomas DeBusk

President

Thomas DeBusk is co-founder and President of DB Environmental, Inc., an environmental consulting and research firm. He is an internationally recognized expert on the design and optimization of wetland, macrophyte and algal-based treatment systems. He has published widely and is a frequent lecturer on innovative watershed management concepts. Mr. DeBusk has served as a water resources consultant to governmental agencies and private industries in the Americas, Europe and Asia, and has managed over a dozen large (\$1MM+) multi-disciplinary research investigations.

Areas of Specialization

- Design, implementation and optimization of water and wastewater treatment technologies using wetland, chemical, hybrid, aquatic macrophyte and algal-based approaches.
- Innovative watershed management techniques.
- Freshwater ecology.
- Water resources program management.

Invited Lecturer

Lecture Topic: Assessment and Prioritization of Pollutant Sources in Support of China's South – North Water Transfer Project. *Workshop Sponsor:* Government of Shandong Province. *Workshop Title:* North – South Transfer Project Environmental Review. *Location and Date:* Qingdao, Shandong Province, China. July 2008.

Lecture Topic: Watershed Management Challenges and Solutions. *Workshop Sponsor:* Government of Shandong Province. *Workshop Title:* Shandong Executive Ecological Forum. *Location and Date:* Jinan City, Shandong Province, China. September 6, 2006.

Lecture Topic: Treatment Wetlands to Improve Water Quality for China's South – North Water Diversion. *Workshop Sponsor:* Shandong Provincial Government. *Workshop Title:* Approaches for Improving Surface Water Quality for the Eastern Route of the South – North Water Diversion. *Location and Date:* Jinan City, Shandong Province, China. June 8-9, 2004.

Lecture Topic: Metals removal by macrophytes cultured in a thin-film rhizosphere system. *Workshop Sponsor:* Grant Agency of the Czech Republic. *Workshop Title:* Fifth International Workshop on Nutrient Cycling and Retention in Natural and Constructed Wetlands. *Location and Date:* Borova Lada, Czech Republic, September 24-27, 2003.

Lecture Topic: Wastewater treatment fundamentals, and appropriate wastewater treatment technologies for developing countries. *Workshop Sponsor:* U.S. Environmental Training Institute. *Workshop Title:* Wastewater Treatment in Coastal Zone Management *Location and Date:* Belize City, Belize, September 3 - 5, 1997.

Lecture Topic: Watershed processes, and key issues in watershed management. *Workshop Sponsor:* U.S. Environmental Training Institute. *Workshop Title:* Watershed Management and Wastewater Treatment Technologies. *Location and Date:* Cha-Am, Thailand, August 26 - 30, 1996.

Lecture Topic: Use of surface and subsurface flow wetlands for domestic wastewater treatment. *Workshop Sponsor:* U.S. Environmental Training Institute. *Workshop Title:* Innovative Domestic Wastewater Treatment Technologies. *Location and Date:* Orlando, FL, March 17, 1995.

Lecture Topic: Design and optimization of constructed wetlands for water quality improvement. *Workshop Sponsor:* U.S. Environmental Training Institute. *Workshop Title:* Municipal Wastewater Treatment Technologies. *Location and Date:* Orlando, FL, Sept. 30, 1994.

Total Years of Experience:

42

Years with DB Environmental: 28

Significant Accomplishments:

- Key advisor on some of the largest water resource projects in the world
- Technical consultant for water quality projects in China, Belize, Thailand, Brazil, and the Caribbean
- Ten water resources patents
- 75 refereed publications

Prior Affiliations:

- Walt Disney Company
- Woods Hole Oceanographic Institution
- University of Florida
- Harbor Branch Oceanographic Institution

Current Affiliations:

- DB Environmental
- Azurea, Inc.

Education:

- MS, Environmental Science, Florida Institute of Technology, 1982
- BS, Botany, University of Florida, 1976

Lecture Topic: Watershed management approaches for the Pantanal. *Workshop Sponsor:* Institute of Governmental Responsibility, University of Florida. *Workshop Title:* Sustainable Development: Technical and Policy Issues for the Pantanal Region, Brazil. *Location and Date:* Cuiaba and Campo Grande, Brazil, August 9 - 17, 1994.

Lecture Topic: Creating and using wetlands for wastewater disposal and water quality improvement. *Workshop Sponsor:* University of Wisconsin College of Engineering. *Workshop Title:* Wetland Construction for Mitigation and Water Treatment. *Location and Date:* Madison, WI, May 1993.

Lecture Topic: Use of wetlands to enhance treatment performance of on-site wastewater treatment systems. *Workshop Sponsor:* South Carolina Department of Health and Environmental Control. *Workshop Title:* Current Concepts Seminar: On-Site Wastewater Treatment System. *Location and Date:* Columbia, S.C. May 1990.

Invited Speaker for Conferences and Symposia

- American Soil Science Society Annual Meeting. Salt Lake City, November 2005.
- Watershed Management Conference sponsored by China Ocean University, Qingdao, China. June 2005.
- United States- China International Wetland Seminar. Conference sponsored by United States Consulate and Shanghai Chongming Dongtan Investment & Development Co., LTD. Shanghai, China. 2003.
- Phosphorus Biogeochemistry in Florida Ecosystems. Conference sponsored by University of Florida, St. John's Water Management District, and South Florida Water Management District. Clearwater Beach, FL. 1997.
- Biogeochemistry of Wetlands. Biennial symposium sponsored by University of Florida and Louisiana State University, Orlando, FL. 1994.
- AWRA Seminars on Water Resources and Sustainable Development. (2 seminars). Colorado State University, Dept. of Earth Resources, Ft. Collins, CO. 1994
- American Society of Agronomy Symposium on Wetland Soil Processes and Water Quality. Minneapolis, MN. 1992
- International Conference on Constructed Wetlands for Water Quality Improvement. Pensacola, FL. 1991
- Workshop on Conversion of Agricultural Lands to Wetlands. Cornell University, Ithaca, NY. 1991
- Twentieth Conference on Environmental and Energy Engineering in the Food Industry. St. Augustine, FL. 1990
- Biological Nitrogen and Phosphorus Removal: The Florida Experience II. University of Florida TREEO Center, Gainesville, FL. 1989
- Twenty-First Water for Texas Conference on Urban Water Resources. Texas A&M University, College Station, TX. 1986

Oral Presentations at International Conferences

- 9th INTECOL International Wetlands Conference. Orlando, FL, 2012
- Pollution Control '97 Conference. Bangkok, Thailand, 1997
- Conference on Watershed Management. Bangkok, Thailand, 1996
- IAWPRC Conference on Use of Constructed Wetlands in Water Pollution Control. Cambridge, England, 1990
- Third Chemical Congress of North America. Toronto, Canada, 1988
- IAWPRC Conference on Waste Stabilization Ponds. Lisbon, Portugal, 1986

Service as a Technical Reviewer

Member, 1989 and 1991 South Florida Water Management District Scientific Advisory Panels for the 3,400 acre Everglades Nutrient Removal (Wetland) Project

Reviewer, Manuscripts for Scientific Journals

- Transactions of the American Fisheries Society
- Biological Wastes
- Biomass
- Journal of Environmental Quality
- Lake and Reservoir Management
- Ecological Engineering

Reviewer, Proposals Submitted to U. S. Government Funding Agencies

- U.S. Department of Agriculture
- National Oceanic and Atmospheric Administration
- National Science Foundation

Publications (refereed)

Use of Wetlands, Aquatic Macrophyte and Algal Systems for Water Quality Enhancement

- Jerauld, M.J., Juston, J.M., DeBusk, T.A., King, J., Ivanoff, D., In review. *Measurement of internal phosphorus loading rate (iPLR) in a low-P stormwater treatment wetland*. Ecological Engineering.
- Grace, K. A., J. M. Juston, D. Finn, W. F. DeBusk, D. Ivanoff, and T. A. DeBusk. 2019. *Substrate manipulation near the outflow of a constructed wetland reduced internal phosphorus loading from sediments and macrophytes*. Ecological Engineering 129:71-81.
- Dierberg, F.E., T.A. DeBusk, S.D. Jackson, M.D. Kharbanda. S.C. Galloway, P.D. Owens, and D.B. Ivanoff. 2017. *An assessment of iron and calcium amendments for managing phosphorus release from impacted Everglades soils*. Wetland Ecology and Management (in press).
- DeBusk, T.A., F.E. Dierberg, W.F. DeBusk, S.D. Jackson, J.A. Potts, S.C. Galloway, D.S. Finn, and B Gu. 2015. *Sulfide concentrations effects on Typha domingensis Pers. (cattail) and Cladium jamaicense Crantz (sawgrass) growth in Everglades marshes*. Aquatic Botany 124:78-84.
- Juston, J.M., T.A. DeBusk, K.A. Grace and S.D. Jackson. 2013. *A model of phosphorus cycling to explore the role of biomass turnover in submerged aquatic vegetation wetlands for Everglades restoration*. Ecological Modelling 251: 135-149.
- Dierberg, F.E., T.A. DeBusk, J.L. Henry, S.D. Jackson, S. Cote, and M.C. Gabriel. 2012. *Temporal and spatial patterns of internal phosphorus recycling in a south Florida (USA) stormwater treatment area*. J. Environ Qual 41, doi:10.2134/jeq2011.0448.
- DeBusk T.A., M. Kharbanda, S.D. Jackson, K.A. Grace, K. Hielman, and F.E. Dierberg. 2011. *Water, vegetation and sediment gradients in submerged aquatic vegetation mesocosms used for low-level phosphorus removal*. Science of the Total Environment 409:5046-5056.
- Dierberg, F.E., T.A. DeBusk, N.R. Larson, M.D. Kharbanda, N. Chan and M.C. Gabriel. 2011. *Effects of sulfate amendments on mineralization and phosphorus release from south Florida (USA) wetland soils under anaerobic conditions*. Soil Biology and Biochemistry 43:31-45.
- Juston, J. M. and T.A. DeBusk. 2011. *Evidence and implications of the background phosphorus concentration of submerged aquatic vegetation (SAV) wetlands in stormwater treatment areas for Everglades restoration*. Water Resources Research 47, W01511, doi:10.1029/2010WR009294.
- Dierberg, F.E. and T. A. DeBusk. 2008. *Particulate phosphorus transformations in south Florida stormwater treatment areas used for Everglades protection*. Ecol. Eng., 34:100 – 115.
- Grace, K.A., F.E. Dierberg, T.A. DeBusk and J.R. White. 2008. *Phosphorus uptake by Typha leaf litter as affected by oxygen availability*. Wetlands, 28:817 – 826.
- Juston, J. and T.A. DeBusk, 2006. *Phosphorus mass load and outflow concentration relationships in stormwater treatment areas for Everglades restoration*. Ecol. Eng. 26: 206-223.
- DeBusk, T. A, R. Baird, D. Haselow and T. Goffinet. 2005. *Evaluation of a floating wetland for improving water quality in an urban lake*. In: Proceedings, 8th Biennial Stormwater Research and Watershed Management Conference, Southwest Florida Water Management District, Brooksville, FL.
- Kent, D.M., T. Auter, M. Kharbanda, T.A. DeBusk, K. Grace and F.E. Dierberg. 2005. *Quantifying the effect of a vegetated littoral zone on wet detention pond phosphorus load reduction*. In: Proceedings, 8th Biennial Stormwater Research and Watershed Management Conference, Southwest Florida Water Management District, Brooksville, FL.
- DeBusk, T. A., K.A. Grace and F. E. Dierberg. 2005. *Treatment wetlands for removing phosphorus from agricultural drainage waters*. In: E. J. Dunne, K. R. Reddy and D. T. Carleton, Eds., Nutrient Management in Agricultural Watersheds – A Wetlands Solution. Wageningen Academic Publishers, The Netherlands.
- Dierberg, F.E. and T. A. DeBusk. 2005. *An evaluation of two commonly-used tracers in wetlands: Rhodamine WT and lithium*. Wetlands. 25(1):8-25.
- Dierberg, F. J. Juston, T. DeBusk, K. Pietro, and B. Gu. 2004. *Relationship between hydraulic efficiency and phosphorus removal in a submerged aquatic vegetation-dominated treatment wetland*. Ecol. Eng. 25: 9 - 23.

- DeBusk, T.A., K. Grace, F.E. Dierberg, S.D. Jackson, M.J. Chimney, and B. Gu. 2004. *An investigation of the lower limits of phosphorus removal in treatment wetlands: mesocosm testing of a shallow limerock-substrate wetland*. Ecol. Eng. 23:1 – 14.
- Dierberg, F.E., DeBusk, T.A., Potts, J and B. Gu. 2002. *Biological uptake vs. coprecipitation of soluble reactive phosphorus by "P-enriched" and "P-deficient" Najas guadalupensis in hard and soft waters*. Verh. Internat. Verein. Limnol. 28:1865-1870.
- Dierberg, F.E., T.A. DeBusk, S.D. Jackson, M.J. Chimney and K. Pietro. 2002. *Submerged aquatic vegetation-based treatment wetlands for removing phosphorus from agricultural runoff: response to hydraulic and nutrient loading*. Wat. Res. 36: 1409-1422.
- DeBusk, T.A. and F.E. Dierberg. 2002. *Use of wetlands for treating Florida's agricultural runoff*. In: Proc. Seventh Biennial Stormwater Research and Watershed Management Conference, pp. 156-163. Southwest Florida Water Management District, Brooksville, FL. May 22-23, 2002.
- Dierberg, F.E., and T.A. DeBusk. 2001. *Short- and long-term phosphorus removal processes using submersed aquatic vegetation to treat agricultural drainage waters*. Verh. Internat. Verein. Limnol. 27: 3992-3995.
- Gu, B., T.A. DeBusk, F.E. Dierberg, M.J. Chimney, K.C. Pietro and T. Aziz. 2001. *Phosphorus removal from Everglades agricultural area runoff by submerged aquatic vegetation/limerock treatment technology: an overview of research*. Wat. Sci. and Tech., 44: 101-108.
- DeBusk, T.A., F.E. Dierberg and K.R. Reddy. 2001. *The use of macrophyte-based systems for phosphorus removal: An overview of 25 years of research and operational results in Florida*. Wat. Sci. and Tech., 44: 39-46.
- DeBusk, T.A. and W. F. DeBusk. 2000. *Wetlands for water treatment*. In: D. M. Kent (Ed.), Applied Wetlands Science and Technology. Lewis Publishers, Boca Raton.
- DeBusk, T.A. and F. E. Dierberg. 1999. *Techniques for optimizing phosphorus removal in treatment wetlands*. In: K.R. Reddy, G.A. O'Conner and C.L. Schelske (Eds), Phosphorus Biogeochemistry in Subtropical Ecosystems. Lewis Publishers, Boca Raton, FL.
- DeBusk, T.A. 1997. *Natural systems for municipal and industrial wastewater treatment: Opportunities and limitations*. In: Proceedings, Pollution Control '97, Thailand Pollution Control Dept., Bangkok, Thailand, November 1997.
- Kent, D.M., Langston, M.A., and T.A. DeBusk. 1997. *Stormwater pollutant removal in live and artificial emergent plant mesocosms*. In: Proc., Fifth Biennial Stormwater Research Conference. Southwest Florida Water Management District, Brooksville, FL.
- DeBusk, T.A. and P. Krottje. 1996. *The use of wetlands for wastewater treatment: A Florida overview*. In: Proceedings, Florida Water Resources Conference, Florida Wat. Poll. Cont. Fed., Ft. Myers, FL, May 5-8.
- DeBusk, T.A., Peterson, J.E., and Reddy, K.R. 1996. *Use of aquatic and terrestrial plants for removing phosphorus from dairy wastewaters*. Ecol. Eng. 5: 371-390.
- Reddy, K.R., Flaig, E., Scinto, L.J., Diaz, O. and DeBusk, T.A. 1996. *Phosphorus assimilation in a stream system of the Lake Okeechobee Basin*. Wat. Res. Bull. 32: 901-915.
- Kent, D.M. and T.A. DeBusk. 1996. *Managing treatment wetlands*. Land & Water, 40: 52-53.
- Burgoon, P.S., Reddy, K.R. and DeBusk, T.A. 1995. *Performance of subsurface flow wetlands with batch load and continuous-flow conditions*. Water Environ. Res. 67: 855-862.
- DeBusk, T.A., Peterson, J.E. and Jensen, K.R. 1995. *Phosphorus removal from agricultural runoff: An assessment of macrophyte and periphyton-based treatment systems*. In: K.L. Campbell, Ed., Proceedings, Versatility of Wetlands in the Agricultural Landscape Conference, pp. 619-626, Am. Society Agricultural Engineers.
- DeBusk, T.A. and Reddy, K.R. 1991. *Wastewater treatment and biomass production using floating macrophytes*. In: Methane from Community Wastes, R. Isaacson, Ed., Elsevier Science Publishing Co., New York, NY, 222 pp.
- Burgoon, P.S., DeBusk, T.A., Reddy, K.R., and Koopman, B. 1991. *Vegetated submerged beds with artificial substrates: I. BOD removal*. J. of Environ. Engr., Proc. Am. Soc. of Civil Engrs. 117:394-407.
- Burgoon, P.S., DeBusk, T.A., Reddy, K.R., and Koopman, B. 1991. *Vegetated submerged beds with artificial substrates: II. N and P removal*. J. of Environ. Engr., Proc. Am. Soc. of Civil Engrs. 117:408-424.

- DeBusk, T.A., Langston, M.A., Burgoon, P.S. and Reddy, K.R. 1990. *A performance comparison of vegetated submerged beds and floating macrophyte systems for wastewater treatment*. pp. 301-308. In: Constructed Wetlands in Water Pollution Control, P.F. Cooper and B.C. Findlayer, Eds., Pergamon Press, Oxford, England.
- Reddy, K.R., D'Angelo, E.M. and DeBusk, T.A. 1990. *Oxygen transport through aquatic macrophytes: Its role in wastewater treatment*. J. Environ. Qual., 19:261-267.
- DeBusk, T.A. and Dierberg, F.E. 1989. *Effects of nutrient availability on water hyacinth standing crop characteristics and detritus deposition*. Hydrobiologia. 174: 151-159.
- DeBusk, T.A., Reddy K.R., and Clough, K.S. 1989. *Effectiveness of mechanical aeration in a floating aquatic macrophyte-based wastewater treatment system*. J. Environ. Qual. 18: 349-354.
- DeBusk, T.A., Reddy, K.R., Hayes, T.D., and Schwegler, B. R. 1989. *Performance of a pilot-scale water hyacinth-based secondary treatment in central Florida*. J. Water Pollut. Control Fed., 61: 1217-1224.
- DeBusk, T.A., Burgoon, P.S. and Reddy, K.R. 1989. *Secondary treatment of domestic wastewater using floating and emergent macrophytes*. pp. 525-529. In: Constructed Wetlands for Wastewater Treatment, D.A. Hammer, Ed., Lewis Publishers, Inc., Chelsea, Michigan.
- Burgoon, P.S., Reddy, K.R. and DeBusk, T.A. 1989. *Domestic wastewater treatment using emergent plants cultured in gravel and plastic substrates*. pp. 536-541. In: Constructed Wetlands for Wastewater Treatment, D.A. Hammer, Ed., Lewis Publishers, Inc., Chelsea, Michigan.
- DeBusk, T.A. and Reddy, K.R. 1989. *Wastewater nutrient removal in Florida using aquatic macrophytes*. Proc. Biological Nitrogen and Phosphorus Removal: The Florida Experience II. March 22, 1989. Univ. Florida TREEO Center, Gainesville, FL.
- Reddy, K.R. and T.A. DeBusk. 1987. *State-of-the-art utilization of aquatic plants for water pollution control*. Wat. Sci. Tech. 19: 61-79.
- Clough, K., DeBusk, T.A., and Reddy, K.R. 1987. *Model water hyacinth and pennywort systems for secondary treatment of domestic wastewater*. pp. 775-781. In: Aquatic Plants for Water Treatment and Resource Recovery, K.R. Reddy and W.H. Smith, Eds. Magnolia Publishing, Inc., Orlando, FL
- DeBusk, T.A. and Reddy, K.R. 1987. *Wastewater treatment using floating aquatic macrophytes: contaminant removal processes and management strategies*. pp. 643-656. In: Aquatic Plants for Water Treatment and Resource Recovery, K.R. Reddy and W.H. Smith, Eds. Magnolia Publishing, Inc., Orlando, FL
- DeBusk, T.A. and Reddy K.R. 1987. *The use of aquatic macrophytes for water quality enhancement*. pp. 195-201. Proc. Twenty-First Water for Texas Conference on Urban Water Resources. College Station, TX, October 2 & 3, 1986.
- DeBusk, T.A. and Reddy, K.R. 1987. *BOD removal in floating aquatic macrophyte-based wastewater treatment systems*. Wat. Sci. Tech. 19:273-279.
- DeBusk, T.A. and J.H. Ryther. 1984. *Nutrient removal from domestic wastewater by water hyacinths: The importance of plant growth, detritus production and denitrification*. 2:713-722. Proc. Water Reuse Symp. III, San Diego, CA. AWWA Research Fdn., Denver, CO. USA.
- DeBusk, T.A., Williams, L.D. and J.H. Ryther. 1983. *Removal of nitrogen and phosphorus from wastewater in a water hyacinth-based treatment system*. J. Environ. Qual. 12:257-262.
- Tucker, C.S. and T.A. DeBusk. 1983. *Seasonal variation in the nitrate (NO₃) content of Eichhornia crassipes (Mart.) Solms*. Aquat. Bot., 15: 419-422.
- DeBusk T.A., Hanisak, M.D., Williams, L.D. and J.H. Ryther. 1981. *Effects of seasonality and plant density on the productivity of some freshwater macrophytes*. Aquat. Bot., 10: 133-143.

Environmental Effects and Removal/Remediation of Metals and Organic Compounds

- DeBusk, T. A., D. Halcrow and N. Chan. 2005. *Metals removal by macrophytes cultured in a thin-film rhizosphere system*. pp. 112-124. In: Natural and Constructed Wetlands: Nutrients, Metals and Management, J. Vymazal, Ed. Backhuys Publishers, Leiden, The Netherlands
- DeBusk, T.A., Langston, M.A., Schwegler, B.R. and S. Davidson. 1997. *An evaluation of filter media for treating stormwater runoff*. In. Proc., Fifth Biennial Stormwater Research Conference. Southwest Florida Water Management District, Brooksville, FL.

- Duxbury, C.V., DeBusk, T.A. and Schwegler, B.R. 1996. *An assessment of the corrosiveness of fireworks fallout*. In: Proc. Of Third International Symposium on Fireworks, Lake Buena Vista, FL. Public Works and Government Services Canada, Cat. No. M39-57/1996, Ottawa, Canada.
- DeBusk, T.A., Laughlin, R.B., and Schwartz, L.N. 1996. *Retention and compartmentalization of lead and cadmium in wetland microcosms*. Wat. Res. 30:2707-2716.
- Dierberg, F.E., DeBusk, T.A. and Goulet, N.A. 1987. *Removal of copper and lead using a thin-film technique*. pp. 497-504. In: Aquatic Plants for Water Treatment and Resource Recovery, K.R. Reddy and W.H. Smith, Eds. Magnolia Publishing, Inc., Orlando, FL
- Dierberg, F.E., Goulet, N.A. and DeBusk, T.A. 1987. *Removal of two chlorinated compounds from secondary domestic effluent by a thin film technique*. J. Environ. Qual. 16: 321-324.

Algae/Macrophyte Physiology and Production Technologies

- Riley, R., D. Kent, C. Salgado and T. DeBusk. 1999. *The Riley Encased Methodology for establishing mangroves*. Land and Water, 43: 48-49.
- DeBusk, T.A., Blakeslee, M., and J.H. Ryther. 1986. *Studies on the outdoor cultivation of Ulva lactuca L.* Bot. Mar. 29: 381-386.
- DeBusk, T.A. and J.H. Ryther. 1984. *Effects of seawater exchange, pH and carbon supply on the growth of Gracilaria tikvahiae (Rhodophyceae) in large-scale cultures*. Bot. Mar. 27: 357-362.
- DeBusk, T.A., Williams, L.D. and J.H. Ryther. 1983. *Evapotranspiration of Eichhornia crassipes (Mart.) Solms and Lemna minor L. in central Florida: Relation to canopy structure and season*. Aquat. Bot., 16: 31-39.
- Bird, K.T., Habig, C. and T.A. DeBusk. 1982. *Nitrogen allocation and storage patterns in Gracilaria tikvahiae (Rhodophyta)*. J. Phycol. 18: 344-348.
- Tucker, C.S. and T.A. DeBusk. 1981. *Seasonal growth of Eichhornia crassipes (Mart.) Solms: Relationship to protein, fiber and available carbohydrate content*. Aquat. Bot., 11: 137-141.
- Ryther, J.H., Corwin, N., DeBusk, T.A. and L.D. Williams. 1981. *Nitrogen uptake and storage by the red alga Gracilaria tikvahiae*. Aquaculture, 26: 107-115.

Bio-Energy and Recycling Technologies

- Myer, R.O., DeBusk, T.A., Brendemuhl, J.H., Rivas, M.E., and D.D. Johnson. 1996. *Preliminary assessment of dehydrated food wastes as a potential feedstuff for swine*. In: Proceedings, Food Waste Recycling Symposium, U.S. Dept. Agriculture and New Jersey Dept. Agriculture, Atlantic City, NJ.
- DeBusk, T.A., Schwegler, B., Rowell, R., and Reddy, K.R. 1991. *Utilization of anaerobic digester residues*. In: Methane from Community Wastes, R. Isaacson, Ed., Elsevier Science Publishing Co., New York, NY, 222 pp.
- DeBusk, T.A. and J.H. Ryther. 1987. *Biomass production and yield potential of aquatic plants*. pp 579-598. In: Aquatic Plants for Water Treatment and Resource Recovery, K.R. Reddy and W.H. Smith, Eds. Magnolia Publishing, Inc., Orlando, FL
- DeBusk, T.A. and F.E. Dierberg. 1984. *The effect of nitrogen and fiber content on the decomposition of the water hyacinth (Eichhornia crassipes [Mart.] Solms)*. Hydrobiologia 118: 199-204.
- Habig, C., DeBusk, T.A. and J.H. Ryther. 1984. *The effect of nitrogen content on methane production by the marine algae Gracilaria tikvahiae and Ulva sp.* Biomass 4: 239-251.
- Ryther, J.H. and T.A. DeBusk. 1982. *Significance of carbon dioxide and bicarbonate carbon uptake in marine biomass production*. IGT Symp. Energy from Biomass and Wastes. IV. Lake Buena Vista, Florida. Jan 25-29, 1982.
- Tucker, C.S. and T.A. DeBusk. 1981. *Productivity and nutritive value of Pistia stratiotes and Eichhornia crassipes*. J. Aquat. Plant Manage. 19: 61-63.
- Ryther, J.H., Andrews, D.A., DeBusk, T.A., Faulkner, B.E., Hanisak, M.D., Stenberg, R.W., Tucker, C.S. and L.D. Williams. 1980. *Studies on biomass and biogas production by aquatic macrophytes*. Proc. Bio-Energy '80 World Congress and Exposition, Atlanta, Georgia. April 21-24, 1980.
- Ryther, J.H., DeBusk, T.A., Hanisak, M.D., and Williams, L.D. 1979. *Freshwater macrophytes for energy and wastewater treatment*. In: Wetland Functions and Values: The State of Our Understanding. Greeson, P.E., Clark, J.R. and Clark, J.E., Eds., American Water Resources Assn.

- Ryther, J.H., Williams, L.D., Hanisak, M.D., Stenberg, R.W. and T.A. DeBusk. 1979. *Freshwater and marine plants for biomass production*. Proc. 3rd Annual Biomass Energy Systems Conf., Golden, Colorado. pp 13-23.
- Ryther, J.H., Williams, L.D., Hanisak, M.D., Stenberg, R.W., and DeBusk, T.A. 1978. *Biomass production by some marine and freshwater plants*. Proc. 2nd Ann. Fuels from Biomass Symp., Rensselaer Polytech. Inst., Schenectady, N.Y. 2: 978-989.

Wastewater Treatment Facility Optimization

- DeBusk, T.A., X. Yang and G. Lee. 1999. *A unique approach for assessing the capacity of a biological nutrient removal facility*. In: Proceedings, WEFTEC 99, Water Environment Federation, Alexandria, VA.
- Hubbard, J.W., R.C. Kirkpatrick, T.A. DeBusk and D.L. Fortier. 1998. *Enhancing competitiveness of an operations staff: Five years experience with a BNR wastewater treatment facility*. In: Proceedings, WEFTEC 98, Water Environment Federation, Alexandria, VA.

F. Gavin Wilson

Field Operations Manager

Total Years Experience: 29

**Years with DB
Environmental:** 2+

Significant Accomplishments:

- *26+ years experience maintaining and optimizing environmental measurement and control instrumentation*
- *Has successfully passed environmental audits by multiple State and Federal agencies, including the Army Corps of Engineers, US Army & Navy, EPA, DOE, and FLDOH*
- *For 2+ years, has successfully operated, monitored and optimized the largest hybrid (chemical-wetland) surface water phosphorus removal facility in the US*

Prior Affiliations:

- *ESE/Hunter/QST/Mactec Laboratory*
- *UF/IFAS Soil and Water Science*

Current Affiliations:

- *DB Environmental, Inc.*

Education:

- *A.A. degree, Santa Fe Community College, 1991*

Gavin Wilson, Field Operations Manager, provides strong field and analytical technical expertise to DBE's team. Mr. Wilson has recently overseen the successful startup and daily operations of a 19 million gallon-per-day hybrid (chemical and wetland) phosphorus removal facility in St. John's County. His responsibilities at that site include ensuring daily, continuous operation of large (100 HP) inflow water pumps, maintenance of remotely accessible monitoring and control instrumentation, as well as the collection of field data and water quality samples in accordance with FDEP Standard Operating Procedures. With over 26 years of technical environmental experience, Mr. Wilson brings an invaluable skill set to DBE's clients, as he has broad expertise with a variety of environmental monitoring and control instruments. He also possesses strong problem-solving skills: for both DBE and his prior employers, Mr. Wilson was the key staff "troubleshooter" for optimization and repair of mechanical equipment and instrumentation.

Areas of Specialization

- Maintenance, operation and optimization of environmental (field and laboratory) instrumentation
- Maintenance and repair of mechanical system components (e.g., water pumps, chemical dosing pumps) in water treatment systems
- Experienced with field and laboratory procedures that (for regulatory purposes) require diligent attention to supporting documentation
- Training of other technical personnel on the theory, proper operation, and safe use of various environmental measurement and control instruments
- Formulation and optimization of SOPs for collection and analysis of water, soil and vegetation samples.
- Training of other technical staff on the practical aspects of the chemical treatment of surface waters

Certifications

- Certificate of Apprenticeship Completion/Journeyman, 1985, Plumbers and Pipefitters Union, U.A. Local 295, Daytona Beach, FL



Nancy Lau Chan

Laboratory Manager

Ms. Chan has served as a Project Manager for DB Environmental, Inc. for 20 years and has managed DB's overall laboratory operations for 18 years. She has a Master of Science degree in Chemistry from the University of Central Florida. Ms. Chan has broad expertise in laboratory analyses of surface waters, soils, soil porewaters and biological tissues. Ms. Chan has played a key role in developing and maintaining DB Environmental's position as the premier soils/plant tissue analytical laboratory in Florida.

Areas of Specialization

- Laboratory management.
- QA/QC Protocols and Laboratory Safety.
- Low-Level Nutrient and Metal Analyses.

Publications (refereed)

Dierberg, F.E., T.A. DeBusk, N. R. Larson, M. D. Kharbanda, N. Chan and M.C. Gabriel. 2011. *Effects of sulfate amendments on mineralization and phosphorus release from south Florida (USA) wetland soils under anaerobic conditions*. Soil Biology and Biochemistry. 43:31-45.

DeBusk, T. A., D. Halcrow and N. Chan. 2005. Metals removal by macrophytes cultured in a thin-film rhizosphere system. pp. 112-124. *In: Natural and Constructed Wetlands: Nutrients, Metals and Management*, J. Vymazal, Ed. Backhuys Publishers, Leiden, The Netherlands.

Clausen, C. A., C. L. Geiger, D. R. Reinhart, N. Ruiz, K. Farrell, P. Toy, N. Lau Chan, M. Cannata, S. Burwinkle. 2000. Ultrasonic Regeneration of Permeable Treatment Walls: Laboratory/Field Studies. *In: Chemical Oxidation and Reactive Barriers*, G. B. Wickramanayake, A. R. Gavaskar and A. S. C. Chen (Eds.). Battelle Press, Columbus, Ohio.

Geiger, C. L., C. A. Clausen, D. R. Reinhart, N. Ruiz, P. Toy, N. Lau Chan and J. Quinn. 2000. Laboratory and Field Studies on the Use of Ultrasound to Enhance or Restore Dechlorination Rates of Permeable Treatment Walls Containing Iron. *In: Proceedings, American Institute of Chemical Engineers International Conference*, Atlanta, GA, March 5-9, 2000.

Geiger, C. L., C. A. Clausen, D. R. Reinhart, P. Toy, N. Ruiz, N. Chan, J. Quinn. 1999. Using Ultrasound to Examine The Sorptive Characteristics Of Different Zero-Valent Iron Surfaces. American Chemical Society Meeting, (General Papers and SCI-MIX) Anaheim, CA, March 21-25, 1999.

Besteman, A. D., G.K. Bryan, N. Lau, J.D. Winefordner. 1999. *Multielement Analysis of Whole Blood Using a Capacitively Coupled Microwave Plasma Atomic Emission Spectrometer*. Microchem. J. 61:240-246.

Geiger, C. L., C. A. Clausen, D. R. Reinhart, N. Ruiz, N. Lau, P. Toy, J. Quinn. 1998. The Use of Ultrasonic Energy for Regeneration of Reactive Iron Used in Permeable Reactive Walls. Partners in Education & Research Conference, NASA, Kennedy Space Center. Cocoa Beach, Florida, October 6-8, 1998.

Geiger, C. L., C. A. Clausen, D. Reinhart, N. Ruiz, P. Toy, N. Lau. 1998. The Use Of Ultrasonic Energy For Regeneration Of Reactive Iron Used In In Situ Remediation. *In: Proceedings, The Air And Waste Management Association 91st Annual Meeting*, San Diego, California, June 14-18, 1998.

Besteman, A. D., N. Lau, D. Y. Liu, B.W. Smith, J.D. Winefordner. 1996. *Determination of Lead in Whole Blood by Capacitively Coupled Microwave Plasma Atomic Emission Spectrometry*. J. Anal. At. Spectrom. 11:479-481.

Total Years of Experience:
22

Years with DB Environmental: 20

Significant Accomplishments:

- Led DB Environmental's development of several low-level, low volume porewater analysis protocols
- Under Ms. Chan's management, DB Environmental has routinely been ranked among the top three laboratories (out of 25 labs) for low-level P analyses of Everglades surface waters

Prior Affiliations:

- Department of Chemistry, University of Central Florida
- Department of Chemistry, University of Florida

Current Affiliations:

- DB Environmental, Inc

Education:

- Master of Science in Industrial Chemistry, University of Central Florida 1998
- Bachelor of Science in Chemistry, University of Florida, 1996

Conference and Symposium Presentations

- Dierberg, F.E., T.A., DeBusk, S. Jackson, K. Grace, S. Galloway, N. Chan, and D. Ivanoff. 2012. "Phosphorus Removal Performance and Sustainability of a Submerged Aquatic Vegetation-Dominated Constructed Wetland for Everglades (USA) Restoration" at the 9th INTOCOL International Wetlands Conference on Wetlands in a Complex World. Orlando, FL, June 6, 2012.
- Grace, K. F.E. Dierberg, N.L. Chan, S.D. Jackson, and T.A. DeBusk. 2006. "Relationships Between Sediment Characteristics and Sediment-Water P Exchange in an Everglades Stormwater Treatment Area" 2006 Greater Everglades Ecosystem Restoration Conference, Lake Buena Vista, FL, June 5-9, 2006.
- DeBusk, T.A., D. Hanf, N. Chan, D. Halcrow. "Removal of Lead, Copper and Nickel by Three Macrophytes Cultured in a Hydroponic, Thin-Film Rhizosphere System" at the 7th International Conference on Wetland Systems for Water Pollution Control. Orlando, FL, 2000.
- Geiger, C. L., C. A. Clausen, D. R. Reinhart, N. Ruiz, K. Farrell, N. Lau, J. Quinn. 2000. "Sonication as a Technique for Restoring the Efficiency of Reactive Iron in Permeable Treatment Walls" at the Florida Academy of Sciences 64th Annual Meeting, Melbourne, FL, March 9-11, 2000.
- Geiger, C. L., C. A. Clausen, D. R. Reinhart, N. Ruiz, P. Toy, N. Lau Chan and J. Quinn. 2000. "Laboratory and Field Studies on the Use of Ultrasound to Enhance or Restore Dechlorination Rates of Permeable Treatment Walls Containing Iron" at the American Institute of Chemical Engineers International Conference, Atlanta, GA, March 5-9, 2000.
- Clausen, C. A., C. L. Geiger, D. R. Reinhart, N. Ruiz, K. Farrell, P. Toy, N. Lau Chan, M. Cannata, S. Burwinkle. 2000. "Ultrasonic Regeneration Of Permeable Treatment Walls: Laboratory/Field Studies" at the Battelle 2nd Annual Remediation of Chlorinated and Recalcitrant Compounds, Monterey CA, May 22-25, 2000.
- Geiger, C. L., C. A. Clausen, D. R. Reinhart, P. Toy, N. Ruiz, N. Chan, J. Quinn. 1999. "Trichloroethylene Sorption At A Zero-Valent Iron Surface" at the Florida Section of the American Chemical Society Annual Meeting, May 11-13, 1999.
- Geiger, C. L., C.A. Clausen, D.R. Reinhart, P. Toy, N. Ruiz, N. Chan, J. Quinn. 1999. "Examining The Sorptive Characteristics Of Different Zero-Valent Iron Surfaces" at the Florida Academy Of Sciences Annual Meeting, Tampa, FL, March 11-13, 1999.
- Geiger, C. L., C.A. Clausen, D.R. Reinhart, N. Ruiz, N. Chan, J. Quinn. 1999. "Using Ultrasound To Examine The Sorptive Characteristics Of Different Zero-Valent Iron Surfaces" at the American Chemical Society National Meeting, (Environmental Division Posters and SCI-MIX Posters), Anaheim, CA, March 21-25, 1999.
- Geiger, C.L., C.A. Clausen, D. Reinhart, N. Ruiz, P. Toy, N. Lau. 1998. "The Use Of Ultrasonic Energy For Regeneration Of Reactive Iron Used for In Situ Remediation" at the Air And Waste Management Association 91st Annual Meeting, San Diego, California, June 14-18, 1998.
- Lau, N., C.L. Geiger, C.A. Clausen. 1998. "The Use of Zero Valent Iron to Remove Chlorinated Hydrocarbons from Contaminated Groundwater" at the American Chemical Society, Florida Annual Meeting and Exposition Orlando, FL, May 9, 1998.
- Lau, N., C.L. Geiger, C.A. Clausen, D. Reinhart, N. Ruiz, P. Toy. 1998. "Reductive Dehalogenation of Chlorinated Hydrocarbons Using Zero Valent Iron" at the Florida Academy of Sciences, 62nd Annual Meeting. Orlando, FL, March 26-28, 1998.
- Lau, N., C. Geiger, C.A. Clausen, G. Afioni, N. Ruiz, P. Toy, D. Reinhart. 1997. "Column Studies for the Use of Ultrasound Enhanced Zero-Valent Iron Technology for the Use in Subsurface Aquifers" at the American Chemical Society, Florida Section Annual Meeting. Orlando, FL, May 3, 1997.

Forrest E. Dierberg, Ph.D.

Laboratory/Technical Director

Total Years of Experience:
45

**Years with DB
Environmental:** 28

Significant Accomplishments:

- *Expert witness testimony in three administrative hearings.*
- *Scientific Peer Review Panel Member on Minimum Flows and Levels Rule for the Northern Tampa Bay Area, Florida*
- *Fulbright Scholar on coastal zone management in Thailand*
- *62 publications*

Prior Affiliations:

- *Prince of Songkla University, Hat Yai, Thailand*
- *Tennessee Valley Authority, Water Quality Department*
- *Department of Chemical and Environmental Engineering, Florida Institute of Technology,*
- *University of Florida*
- *Aquatic Control, Inc*
- *Washington University School of Medicine*

Current Affiliations:

- *DB Environmental*

Education:

- *Ph.D., University of Florida, 1980*
- *MSPH, University of North Carolina, 1972*
- *BS, Southeast Missouri State University, 1967*

Dr. Dierberg has 45 years of experience with wetland and other aquatic systems. His areas of specialization include applied limnology; algal taxonomy and nutrient cycling; analytical laboratory management; freshwater and estuarine ecology; remote sensing to characterize the quality of natural waters; lake and wetland restoration techniques; environmental management; water quality modeling; hydraulic modeling; assessing toxic organics in natural waters and non-point source pollutant management. Through exhaustive laboratory and field-testing, he has developed and evaluated numerous surface water treatment options, including physical methods such as aeration, drawdown, dredging and excavation; chemical amendments using alum and calcium-based products; and biological approaches such as treatment wetlands.

Areas of Specialization

- Design and conduct of unique laboratory assays
- Freshwater and estuarine ecology
- Remote sensing to characterize the quality of natural waters
- Lake and wetland restoration techniques
- Environmental management
- Water quality and hydraulic modeling
- Applied limnology
- Public health and sanitation
- Toxic organics in natural waters
- Non-point source pollutant management

Algal-Related Expertise

- MS Thesis: "The Development of an Algal Assay Organism for Estuarine Water Quality"
- Proficient in algal taxonomy and shifts in community structure as a result of potential impacts from development projects (e.g., thermal discharges from power plants)
- Investigated airborne sensors to quantify chlorophyll a concentrations in Tennessee Valley Authority reservoirs
- Received a Small Business Innovation Research grant from the National Science Foundation to examine the feasibility of using a spectral sensor mounted on fixed-wing aircraft to measure chlorophyll a concentrations in Florida estuaries
- As a consultant to Pennsylvania Power and Light, participated in an expert panel to review nuisance hydrogen sulfide emitted from a hydroelectric reservoir and to assess factors affecting pH measurement for compliance monitoring
- Invited by the St. Johns River Water Management District to serve as a technical expert in evaluating various innovative water resource technologies, including bioaugmentation products, lake aeration, aquatic plant mats, ferrate chemical treatment, and ultrasonic probes to control algal blooms and sediment nutrient release

Invited Authorship

Dierberg, F.E. 1999. Phosphorus, phosphates. *In*: D.E. Alexander and R.W. Fairbridge (Eds.) *Encyclopedia of Environmental Science* (pp. 479 – 480). Kluwer Academic Publishers, Hingham, Massachusetts.

DeBusk, T.A., and F.E. Dierberg. 1999. Techniques for Optimizing Phosphorus Removal in Treatment Wetlands, pp. 467-488. Chapter 20. *In*: K.R. Reddy, G.A. O'Connor, and C.L. Schelske (Eds.), *Phosphorus Biogeochemistry of Subtropical Ecosystems*. CRC Press, Boca Raton, FL.

Moderator of Symposium Sessions

- "Phosphorus Removal in Large-Scale, Long-Term Surface Flow Wetlands in Florida" at the Society of Wetlands Scientists/Greater Everglades Ecosystem Restoration (GEER)/INTECOL Conference (2012).
- "Methylmercury Cycling, Transport, and Effects in the Everglades" at GEER Conference (2015).
- "Evaluation of Factors Influencing Methylmercury Accumulation in South Florida Marshes" at GEER Conference (2017).
- "STA Management: Biogeochemistry" at GEER Conference (2019).

Publications (refereed)

Use of natural systems for water quality enhancement

- Dierberg, F.E., and T.A. DeBusk. 2008. *Particulate phosphorus transformations in South Florida stormwater treatment areas used for Everglades protection*. Ecological Engineering 34:100-115.
- DeBusk, T.A., K.A. Grace, and F.E. Dierberg. 2005. Treatment wetlands for removing phosphorus from agricultural drainage waters. *In: Proceedings on Nutrient Management in Agricultural Watersheds – A Wetlands Solution*. Wexford, Ireland.
- Farve, M., W. Harris, F. Dierberg, and K. Portier. 2004. *Association between phosphorus and suspended solids in an Everglades treatment wetland dominated by submerged aquatic vegetation*. Wetlands Ecology and Management 12:365-374.
- DeBusk, T.A., K. Grace, F.E. Dierberg, S.D. Jackson, M.J. Chimney, and B. Gu. 2004. *An investigation of the lower limits of phosphorus removal in wetlands: a mesocosm study of a shallow periphyton-dominated treatment system*. Ecol. Eng. 23:1-14.
- Dierberg, F.E., T.A. DeBusk., J. Potts, and B. Gu. 2002. *Biological uptake vs. coprecipitation of soluble reactive phosphorus by "P-enriched" and "P-deficient" Najas guadalupensis in hard and soft waters*. Verh. Internat. Verein. Limnol. 28:1865-1870.
- Dierberg, F.E., T.A. DeBusk, S.D. Jackson, M.J. Chimney and K. Pietro. 2002. *Submerged aquatic vegetation-based treatment wetlands for removing phosphorus from agricultural runoff: response to hydraulic and nutrient loading*. Water Research 36: 1409 – 1422.
- Pant, H.K., K.R. Reddy, and F.E. Dierberg. 2002. *Bioavailability of organic phosphorus in a submerged aquatic vegetation – dominated treatment wetland*. J. Environmental Quality 31: 1748-1756.
- DeBusk, T.A., F.E. Dierberg and K.R. Reddy. 2001. *The use of macrophyte-based systems for phosphorus removal: An overview of 25 years of research and operational results in Florida*. Wat. Sci. and Tech., 44(11): 39–46.
- Gu, B., T.A. DeBusk, F.E. Dierberg, M.J. Chimney, K.C. Pietro, and T. Aziz. 2001. *Phosphorus removal from Everglades agricultural area runoff by submerged aquatic vegetation/limerock treatment technology: an overview of research*. Wat. Sci. and Tech. 44(11): 101–108.
- Dierberg, F.E., and T.A. DeBusk. 2001. *Short- and long-term phosphorus removal processes using submersed aquatic vegetation to treat agricultural drainage waters*. Verh. Internat. Verein. Limnol. 27: 3992–3995.
- DeBusk, T.A., and F.E. Dierberg. 1999. Techniques for Optimizing Phosphorus Removal in Treatment Wetlands, pp. 467-488. Chapter 20. *In: K.R. Reddy, G.A. O'Connor, and C.L. Schelske (Eds.), Phosphorus Biogeochemistry of Subtropical Ecosystems*. CRC Press, Boca Raton, FL.
- Dierberg, F.E., T.A. DeBusk, and N.A. Goulet, Jr. 1987. Removal of copper and lead using a thin film technique, pp. 497-504. *In: K.R. Reddy and W.H. Smith (Eds.). Aquatic Plants for Water Treatment and Resource Recovery*. Magnolia Publishing Inc., Orlando, Florida.
- Dierberg, F.E., and P.L. Brezonik. 1985. *Nitrogen and phosphorus removal by cypress swamp sediments*. Water, Air, and Soil Pollution 24:207-213.
- Dierberg, F.E., and P.L. Brezonik. 1984. Nitrogen and Phosphorus Mass Balances in a Cypress Dome Receiving Wastewater, pp. 112-119. Chapter 11. *In: K.C. Ewel and H.T. Odum (Eds.), Cypress Swamps*, University Presses of Florida, Gainesville.
- Dierberg, F.E., and K.C. Ewel. 1984. The Effects of Wastewater on Decomposition and Organic Matter Accumulation in Cypress Domes, pp. 164-170. Chapter 16. *In: K.C. Ewel and H.T. Odum (Eds.), Cypress Swamps*, University Presses of Florida, Gainesville.
- Dierberg, F.E., and P.L. Brezonik. 1984. The Effect of Wastewater on the Surface Water and Groundwater Quality of Cypress Domes, pp. 83-101. Chapter 9. *In: K.C. Ewel and H.T. Odum (Eds.), Cypress Swamps*, University Presses of Florida, Gainesville.

- Dierberg, F.E., and P.L. Brezonik. 1983. *Tertiary treatment of municipal wastewater by cypress domes*. Water Research 17:1027-1040.
- Dierberg, F.E., and P.L. Brezonik. 1983. *Nitrogen and phosphorus mass balances in natural and sewage-enriched cypress domes*. Journal of Applied Ecology 20:323-337.
- Dierberg, F.E. 1982. Nitrogen transformations and mass balances in natural and sewage-enriched cypress domes. In: P.M. McCaffrey, T. Beemer, and S.E. Gatewood (Eds.), Progress in Wetlands Utilization and Management. Coordinating Council on the Restoration of the Kissimmee River Valley and Taylor Creek-Nubbin Slough Basin. Tallahassee, Florida.
- Dierberg, F.E., and P.L. Brezonik. 1981. *Autotrophic nitrifier populations and inhibition of ammonium oxidation in natural and sewage-enriched cypress swamps*. Water Research 16:123-126.
- Dierberg, F.E., and P.L. Brezonik. 1981. *Nitrogen fixation (acetylene reduction) associated with decaying leaves of pond cypress (Taxodium distichum var. nutans) in a natural and sewage-enriched cypress dome*. Applied and Environmental Microbiology 44:1413-1418.

Freshwater and estuarine ecology

- DeBusk, T.A., F.E. Dierberg, W.F. DeBusk, S.D. Jackson, J.A. Potts, S.C. Galloway, D.S. Finn, and B. Gu. 2015. *Sulfide concentrations effects on Typha domingensis Pers. (cattail) and Cladium jamaicense Crantz (sawgrass) growth in Everglades marshes*. Aquatic Botany 124:78-84.
- Grace, K.A., F.E. Dierberg, T.A. DeBusk, and J.R. White. 2008. *Phosphorus uptake by Typha leaf litter as affected by oxygen availability*. Wetlands 28:817-826.
- Dierberg, F.E., J. Potts, and K. Kaštovská. 2006. *Alterations in the suspended algal abundance, distribution, and diversity within a stormwater treatment area in south Florida, USA*. Verh. Internat. Verein. Limnol. 29:2227-2231.
- Dierberg, F.E. 1993. *The decomposition of desiccated submerged aquatic vegetation and the bioavailability of released phosphorus*. Lake and Reservoir Management 8:31-36.
- DeBusk, T.A., and F.E. Dierberg. 1989. *Effects of nutrient availability on water hyacinth standing crop characteristics and detritus deposition*. Hydrobiologia 174:151-159.
- Castro, M.S., and F.E. Dierberg. 1987. *Biogenic hydrogen sulfide emissions from selected Florida wetlands*. Water, Air and Soil Pollution 33:1-13.
- Dierberg, F.E., P.A. Straub, and C.D. Hendry. 1986. *Leaf-to-twigs transfer conserves nitrogen and phosphorus in nutrient poor and enriched cypress swamps*. Forest Science 32:900-913.
- DeBusk, T.A., and F.E. Dierberg. 1984. *Effect of nitrogen and fiber content on the decomposition of the waterhyacinth (Eichhornia crassipes[Mart.] Solms)*. Hydrobiologia 118:199-204.
- Dierberg, F.E., and P.L. Brezonik. 1984. Water Chemistry of a Florida Cypress Dome, pp. 34-50. Chapter 4. In: K.C. Ewel and H.T. Odum (Eds.), Cypress Swamps, University Presses of Florida, Gainesville.
- Dierberg, F.E., and P.L. Brezonik. 1981. *Nitrogen fixation (acetylene reduction) activity associated with tree roots in cypress wetlands*. Soil Biology and Biochemistry 13:555-557.

Remote sensing to characterize the quality of natural waters

- Dierberg, F.E., and J. Zaitzeff. 1997. Assessing the application of an airborne intensified multispectral video camera to measure chlorophyll a in three Florida estuaries, pp. 80-87. Vol. II of the Proceedings of the Fourth International Conference on Remote Sensing of Marine and Coastal Environments. March 17-19, 1997, Orlando.
- Dierberg, F.E., and W. Kiattisimkul. 1994. Remote sensing for water quality from fixed-wing aircraft: Closing the spatial, spectral, and temporal gaps of satellite technology. Proceedings of the Kung Krabaen Workshop on Coastal Zone Management: Concepts, Methods, and Experiences. August 1-4, 1994. Chanthaburi Province, Thailand.
- Dierberg, F.E., and N.E. Carriker. 1994. *Field testing two instruments for remotely sensing water quality in the Tennessee Valley*. Environmental Science and Technology 28:16-25.

Lake and wetland restoration techniques

- Dierberg, F.E., T.A. DeBusk, S.D. Jackson, M.D. Kharbanda, S.C. Galloway, P.D. Owens, and D.B. Ivanoff. 2017. *An assessment of iron and calcium amendments for managing phosphorus release from impacted Everglades soils*. Wetland Ecology and Management 26:649-666.
- Dierberg, F.E., and T.A. DeBusk. 2005. *An evaluation of two tracers in surface-flow wetlands: rhodamine-WT and lithium*. Wetlands 25:8-25.
- Dierberg, F.E. 1995. Diagnostic/feasibility study for the restoration of an urban lake in Florida, USA. Proceedings of the Water Quality and Catchment Management Workshop. May 1-5, 1995. Prince of Songkla University and Griffith University. Hat Yai, Thailand.
- Dierberg, F.E. 1992. *The littoral zone of Lake Okeechobee as a source of phosphorus after drawdown*. Environmental Management 16:371-380.
- Dierberg, F.E., and V.P. Williams. 1989. *Lake management techniques in Florida, USA. Costs and water quality effects*. Environmental Management 13: 729-742.
- Dierberg, F.E., V.P. Williams, and W.H. Schneider. 1988. *Evaluating water quality effects of lake management in Florida*. Lake and Reservoir Management 4:101-111.

Environmental management

- Dierberg, F.E., T.A. DeBusk, J.L. Henry, S.D. Jackson, S. Cote, and M.C. Gabriel. 2012. *Temporal and spatial patterns of internal phosphorus recycling in a South Florida (USA) Stormwater Treatment Area*. J. Environmental Quality 41:1661-1673.
- Dierberg, F.E., T.A. DeBusk, N. R. Larson, M. D. Kharbanda, N. Chan and M.C. Gabriel. 2011. *Effects of sulfate amendments on mineralization and phosphorus release from south Florida (USA) wetland soils under anaerobic conditions*. Soil Biology and Biochemistry 43:31-45.
- Dierberg, F.E., and W. Kiattisimkul. 1996. *Issues, impacts and implications of shrimp aquaculture in Thailand*. Environmental Management 20:649-666.

Modeling

- Dierberg, F.E., J. Juston, T. DeBusk, K. Pietro, and B. Gu. 2005. *Relationship between hydraulic efficiency and phosphorus removal in a submerged aquatic vegetation-dominated treatment wetland*. Ecological Engineering 25:9-23.
- Dierberg, F.E., and K.C. Ewel. 1984. The effects of wastewater on decomposition and organic matter accumulated in cypress domes. In: K.C. Ewel and H.T. Odem (ed.), Cypress Swamps. University Presses of Florida, Gainesville.

Applied limnology

- Dierberg, F.E., and M.M. Scheinkman. 1987. *Contribution from nitrogen fixation (acetylene reduction) to the nitrogen budget of Lake Tohopekaliga*. Hydrobiologia 154:61-73.
- Dierberg, F.E., and P.L. Brezonik. 1985. Trophic nature of selected urban lakes in Florida, pp. 300-306. In: Lake and Reservoir Management: Practical Applications. Proc. 4th Ann. Conf., North American Lake Management Society, October 6-19, 1984, McAfee, New Jersey. NALMS. Merrifield, VA.
- Belanger, T.V., F. E. Dierberg, and J.E. Roberts. 1985. *Dissolved oxygen concentrations in Florida's humic-colored waters and water quality standard implications*. Florida Scientist 48:107-119.

Toxic organics in natural waters

- Bae, H.-S., F.E., Dierberg, and A. Ogram. 2019. *Periphyton and flocculent materials are important ecological compartments supporting abundant and diverse mercury methylator assemblages in the Florida Everglades*. Applied Environmental Microbiology (in press).
- Bae, H.-S., F.E., Dierberg, and A. Ogram. 2014. *Syntrophs dominate sequence associated with the mercury methylation-related gene hgcA in the Water Conservation Areas of the Florida Everglades*. Applied Environmental Microbiology 80:6517-6526.
- Dierberg, F.E., N.A. Goulet, Jr., and T.A. DeBusk. 1987. *Removal of two chlorinated compounds by a thin film technique*. J. Environmental Quality 16:321-324.

- Seidler, J.J., M. Landau, F.E. Dierberg, and R.H. Pierce, Jr. 1986. *Persistence of pentachlorophenol in a wastewater-estuarine aquaculture system*. Bulletin of Environmental Contamination and Toxicology 36:101-108.
- Dierberg, F.E., and C.J. Given. 1986. *Aldicarb studies in groundwaters from Florida citrus groves*. Ground Water 24:16-22.
- Given, C.J., and F.E. Dierberg. 1985. *Effect of pH on the rate of aldicarb hydrolysis*. Bulletin of Environmental Contamination and Toxicology 34:627-633.
- Dierberg, F.E., and R.J. Pfeuffer. 1983. *The fate of ethion in canals draining a Florida citrus grove*. Journal of Agricultural and Food Chemistry 31:704-709.

Non-point source pollutant management

- Dierberg, F.E. 1991. *Nonpoint source loadings of nutrients and dissolved organic carbon to the Indian River Lagoon*. Water Research 25:363-374.
- Dierberg, F.E., and P. Thavipoke. 1990. Nonpoint sources of nitrogen from a mixed agricultural - suburban watershed in east central Florida, U.S.A. *In*: M. Suzuki and Japan Society on Water Pollution Research (eds), Preprint of Poster Papers. International Association Water Pollution Research and Control. 15th Biennial Conference, July 19 - August 3, 1990. Kyoto, Japan.
- Dierberg, F.E., and K.J. Jones. 1989. *Assessment of stormwater runoff for recycle in cooling towers at KSC, Florida*. Water Resource Bulletin 25:43-47.

Public health and sanitation

- Gumbs, A.F., and F.E. Dierberg. 1986. *Heavy metals in the drinking water from cisterns supplying single-family dwellings*. Water Resources Journal. ESCAP/SER.C/148. pp. 45-50.
- Gumbs, A.F., and F.E. Dierberg. 1985. *Heavy metals in the drinking water from cisterns supplying single-family dwellings*. Water International 10:22-28.
- Gumbs, A.F., and F.E. Dierberg. 1984. Heavy metals in the drinking water from cisterns supplying single-family dwellings on St. Maarten, Netherlands Antilles. *In*: H.H. Smith (Ed.), Proceedings on the Second International Conference on Rain Water Cistern Systems. Caribbean Research Institute, College of the Virgin Islands, St. Thomas, Virgin Islands.



Joakim (Jay) Nordqvist, P.E.

Principal Engineer/ QA/QC Coordinator



Engineering & Consulting, Inc.

5590 SW 64th Street, Suite B
Gainesville, FL 32608
Gseengineering.com

Professional Profile

Mr. Nordqvist has a very broad based knowledge of the construction and environmental industry having been involved in geotechnical, environmental, and construction related work for over 30 years. His primary professional focus has been in the environmental consulting area of practice. Mr. Nordqvist has been Principal-In-Charge for hundreds of contamination assessments, both private and governmental clients. These have ranged from preliminary to full delineation assessments and remediation including petroleum products, metals, and other hazardous materials, including chlorinated solvents. Mr. Nordqvist has been a leader on projects including natural resources, indoor air quality, vapor intrusion, storage tank compliance, water and wastewater, septic tanks, SPCC plans, microbial growth, and building condition assessments. Through this diverse experience, he has developed the ability to understand client needs and identify and assign appropriate resources to accomplish stakeholder goals in a professional and ethical manner. Mr. Nordqvist also has the lead role in maintaining and improving on the internal QA/QC program for GSE.

Project Experience

- Gator Crossings Development – Gainesville, Alachua County, Florida. Provided Phase I/II ESA services related to a real estate transaction. The Phase II ESA was conducted to characterize and differentiate between on and off-site potential soil and groundwater impact sources related to both petroleum and solvent related contaminants.
- Dogwood Park – Gainesville, Alachua County, Florida. Initially provided Phase I/II ESA services related to a real estate transaction. Subsequently provided Site Assessment services to characterize a former landfill operated by the City of Gainesville, Alachua County, and University of Florida. GSE provided for formal site closure with restrictive covenants with approval from the Florida Department of Environmental Protection (FDEP).
- 2000 Acre Industrial Property - Alachua, Alachua County, Florida. Initially provided Phase I/II ESA services. Portions of the property were characterized for agricultural and petroleum product related contaminants. Cleanup of agrochemical and petroleum contaminants within a former mix load area was performed. This site was granted closure through the FDEP. The regulatory process was expedited as a result of the project being handled as a pilot project by FDEP.
- Barnhardt Manufacturing Facility, Ocala, Marion County, Florida. Provided site assessment services related to an industrial solvent groundwater impact. Assisted in developing a Consent Agreement with the FDEP Southwest District to allow for remediation through natural attenuation.
- Multiple Telecommunication Towers - Florida. Provided Phase I ESA and National Environmental Policy Act (NEPA) reviews for 100+ sites throughout Florida, including cultural resources reviews and coordination with various regulatory entities.
- Alachua County Environmental Protection Department – Gainesville, Alachua County, Florida. Served as Contract Manager for a continuing services contract to provide environmental consulting. Scope included site assessments, regulatory compliance, remediation, and evaluation of environmental liabilities.

Education

B.S., Civil Engineering, University of Florida, 1985

Certifications

Professional Engineer Florida- 42681

Areas of Specialization

Phase I & II Environmental Site Assessments

Brownfields

Soil & Groundwater Assessment and Remediation

Risk Based Corrective Action

Groundwater Modeling

Environmental Compliance and Permitting

Peer Review

Subsidence (Sinkhole) Evaluations

Sinkhole Remediation

Geotechnical Engineering

Construction Material Testing & Inspection

Field Inspections

Affiliations

Urban Land Institute (ULI)

Florida Brownfields Association

Rotary Club of Gainesville

Leadership Gainesville (Class 25)

Alachua County Economic Development Advisory Committee

CLAY SWEGER, AICP, LEED AP

Director of Planning



YEARS OF PROFESSIONAL EXPERIENCE

Total | 17

eda | 13

EDUCATION

- M.A., Urban and Regional Planning, University of Florida
- B.A., Political Science, University of Florida

PROFESSIONAL REGISTRATIONS

- American Institute of Certified Planners (AICP), No. 21983
- LEED Accredited Professional
- American Planning Association

AFFILIATIONS

- UF Bergstrom Center for Real Estate Advisory Board Member
- City of Gainesville Development Review Board Member (2007-2009)
- Leadership Gainesville, Class XXXI
- Alachua County Emerging Leaders (ACEL)
- Peaceful Paths Domestic Abuse Treatment Council, Board of Directors
- Gainesville Quarterback Club
- Florida Blue Key Alumni Advisory Board

In 2005, Mr. Sweger joined eda as the Director of Planning to provide full-service urban planning functions to the firm and its public and private sector clients. His educational training, professional certification, and prior experience as a municipal and county planner, give him a broad range of abilities in the field of urban planning.

Mr. Sweger has been involved in a wide variety of urban planning projects, including master planning, land use change and rezoning applications, master planning, planned development applications, code and comprehensive plan text amendments in the North-Central Florida area. Mr. Sweger has extensive public sector experience, including several projects with the University of Florida, Gainesville Regional Utilities, City of Hawthorne, City of Gainesville, City of Alachua, City of Waldo and City of Newberry as a Planning Consultant. He also holds a FDOT qualification to provide urban planning services.

Along with these functions, Mr. Sweger works closely with the firm's engineers in the design of residential and non-residential site plans with particular attention focused on urban design principles and compliance with the local code criteria.

PROFESSIONAL EXPERIENCE

- Gainesville Regional Utilities (GRU) - Eastside Operations Center
- Gainesville-Alachua County Regional Airport - Master Plan Update
- San Felasco Tech City Campus - Alachua, FL
- Alachua County Housing Authority - Alachua, FL
- EA-Hawthorne Employment Center Planned Development
- Oaks Preserve Environmental Cluster Subdivision
- Gainesville Community Redevelopment Agency - Power District
- Gainesville Community Redevelopment Agency - Seminary Lane
- Celebration Pointe Transit Oriented Development (TOD)

AREAS OF SPECIALIZATION

- Urban and Environmental Design
- Master Planning
- Land Use and Rezoning Analysis and Planning
- Plan Review
- Regulatory Permitting

JARED ROGERS, PSM

Director of Surveying



YEARS OF PROFESSIONAL EXPERIENCE

Total | 15

eda | 5

EDUCATION

- B.S., Geomatics, University of Florida

PROFESSIONAL REGISTRATIONS

- Professional Surveyor and Mapper, Florida, No. 6687

AFFILIATIONS

- Florida Surveying and Mapping Society
- Gainesville-Alachua County Association of Realtors, Featured Business Partner
- Gainesville-Alachua County Association of Realtors, Affiliate Member
- Women's Council of Realtors, Local Sponsor
- Women's Council of Realtors, Affiliate Member

Mr. Rogers was president and owner of Dynamic Land Solutions for five years before merging with eda engineers-surveyors-planners, inc. in 2014. With 15 years of experience, he has performed many types of surveying activities throughout Florida, including topographic, right-of-way, boundary, underground utility locations using Ground Penetrating Radar, specific purpose surveying, and construction stakeout.

Mr. Rogers is the Director of Surveying with eda utilizing his years of experience to provide professional surveying services as well as coordination of eda field crews, one-on-one communication with clients, and project scheduling. Rogers also oversees eda's long-standing continuing services contract with Alachua County for surveying and mapping, performing surveys for the County on a routine basis.

RECENT PROFESSIONAL EXPERIENCE

- Tower Road Topographic Survey – Alachua County
- CR 241 Topographic Survey – Alachua County
- NW 91st Street Topographic Survey – Alachua County
- Canterbury Equestrian Center – Alachua County
- Conservation Easements (Multiple) – Alachua County
- Little Hatchet Creek – Alachua County
- Little Santa Fe to Lake Alto Canal – Alachua County
- Earleton Gage and Little Santa Fe Lake Benchmarks - SRWMD
- Gainesville Area Rowing (GAR) Topographic & Wetland Survey
- Gainesville Regional Airport – Multiple Projects
- University of Florida – Multiple Projects
- City of Alachua – Multiple Projects
- Celebration Pointe Transit Oriented Development

AREAS OF SPECIALIZATION

- Surveying
- Mapping
- Subsurface Utility Locating
- Construction Stakeout

SERGIO REYES, PE

Director of Engineering



YEARS OF PROFESSIONAL EXPERIENCE

Total | 37

eda | 26

EDUCATION

- B.S., Civil Engineering, St. Thomas University, Bogotá, Colombia
- Post-graduate Courses, University of Florida

PROFESSIONAL REGISTRATIONS

- Professional Engineer, Florida, No. 47311

AFFILIATIONS

- American Society of Civil Engineers (ASCE)
- American Water Works Association

Mr. Reyes has been a crucial member of eda's team of engineers for the past 26 years. Having 37 years of combined experience, he has worked with public and private sector clients to provide solutions to their varied development needs, from small office buildings and restaurants to large subdivisions and shopping centers.

Mr. Reyes provides design of stormwater drainage facilities and water distribution for several agencies, including Gainesville Regional Airport and Alachua County Public Works. He is the Project Manager for annual contracts with the University of Florida, Gainesville Regional Utilities, Alachua County, City of Alachua, City of Gainesville, City of Newberry, and the Cedar Key Water and Sewer District.

PROFESSIONAL EXPERIENCE

- Alachua County Library District - Tower Road Branch Expansion
- Alachua County Supervisor of Elections Offices, Gainesville
- City of Gainesville Public Works Addition
- Gainesville Regional Utilities (GRU) - Eastside Operations Center
- Gainesville-Alachua County Regional Airport - Master Plan Update
- Celebration Pointe Transit Oriented Development (TOD)
- Booker T. Washington Neighborhood Infrastructure Improvements
- GCRA – SW 5th Avenue Streetscape Project
- NW 154th Roadway Improvements – City of Alachua
- US 441 Sewer Main Extension – City of Alachua
- Park Avenue Traditional Neighborhood Development
- Lake City Surgical Center at Cypress Lake Business Park
- Clay Electric Cooperative Lake City District Office, Columbia County

AREAS OF SPECIALIZATION

- Stormwater Modeling & Design
- Low Impact Development Design
- Utility and Site Development Design and Permitting
- Water Distribution Systems
- Waste Water Facilities (including reclaimed water systems)
- Road Design
- Regulatory Permitting



ADAM SPRINGER, PG

Project Manager



EXPERIENCE

8 Years



GLE EMPLOYEE

4 Years



EDUCATION

Master of Science, Geology
University of South
Florida—2010

Bachelor of Science,
Geology
University of South
Florida—2007



LICENSES

Professional Geologist
(FL)



CERTIFICATIONS

OSHA Hazwoper
AHERA Asbestos
Inspector

SUMMARY

Mr. Springer has over seven years of diversified experience in the environmental and geotechnical consulting fields. He currently manages projects related to due diligence, environmental assessments, soil and groundwater environmental assessments, and petroleum contamination and remediation.

PROJECT EXPERIENCE

CONFIDENTIAL NATIONAL BANKING CLIENT:

Mr. Springer provides regional services for the client, including Phase I Environmental Site Assessments (ESAs), Transaction Screen Procedures (TSPs), and Phase II ESAs. He has performed these services at various properties throughout Florida.

MULTIPLE CLIENTS, NATIONWIDE:

Mr. Springer personally performed numerous Phase I Environmental Site Assessments (ESAs) for multiple clients. Mr. Springer has performed ESAs on a multitude of properties including shopping malls, shopping centers, manufacturing facilities, apartment complexes, residential developments, high-rise offices and condominium buildings, and large tracts of land.

TURN KEY EMERGENCY RESPONSE:

Mr. Springer performed emergency response, assessment, and remedial action to a transformer leak for a major real estate services firm.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) PETROLEUM RESTORATION PROGRAM:

Mr. Springer has been involved in assessing multiple state-funded petroleum cleanup sites in Florida. Duties included monitoring well installation, soil sampling, monitoring well surveying, and groundwater monitoring.





ARTIOM CHACON

Project Manager



EXPERIENCE

12 Years



GLE EMPLOYEE

4 Years



EDUCATION

Masters in Environmental Health Engineering (MHS), Industrial Hygiene Program, University of Florida—2005

Bachelor of Science, Chemistry
John Hopkins University—2005



TRAINING

AHERA Asbestos Inspector
AHERA Asbestos Contractor/Supervisor
NIOSH 582: Sampling & Evaluating Airborne Asbestos Dust
RMD Instruments, LPA-1 XRF Analyzer Training
ThermoScientific, Niton XLp XRF Analyzer Training

SUMMARY

Mr. Chacon has been involved in the environmental consulting field since 2006. He has a working knowledge of regulations and projects involving industrial hygiene, asbestos, lead-based paint, Indoor Air Quality (IAQ), mold and biological health and safety. He has extensive experience with a variety of federal, public, private and industrial clients. Recent clients have included the City of Gainesville, Department of Veterans Affairs, Gainesville Regional Utilities, University of Florida, Santa Fe College, the State of Florida, Alachua County Public Schools, Florida Department of Transportation, Florida Department of Environmental Protection, Florida Forest Services, as well as a variety of property management, architectural, construction and engineering firms.

PROJECT EXPERIENCE

UNIVERSITY OF FLORIDA:

Mr. Chacon manages various asbestos, mercury, lead, and PCB inspections and abatement activities at the University of Florida (UF). His duties include inspections, asbestos abatement design, on-site project monitoring, including air sampling by Phase Contrast Microscopy (PCM), and acting as client liaison to faculty, staff, and regulatory agencies. He has working experience with environmental surveys and abatements for the renovations of various academic, housing, maintenance and healthcare facilities on campus including the surveys and abatements for the renovations of the Health Science Center, Newell Hall, Tigert Hall, Bryant Hall, McCarty Hall, Weaver Hall, Weimer Hall, Materials Engineering, Reitz Union, the O'Connell Center, Grinter Hall, Ben Hill Griffin Stadium, and many other UF facilities throughout the State of Florida. The estimated value of this ongoing contract GLE has held since 1997 is \$3,000,000.

SHANDS HEALTHCARE:

Mr. Chacon was responsible for project monitoring, including area and personnel air monitoring for multiple large asbestos abatement projects requiring regulated areas adjacent to occupants at Shands HealthCare.



FEDERAL AVIATION ADMINISTRATION (FAA):

Mr. Chacon was responsible for providing hearing conservation and noise exposure assessment expertise for the FAA through a subcontract with Booz Allen Hamilton. Duties include noise exposure monitoring, and ambient noise monitoring for multiple FAA airports and facilities throughout the central services region.

DEPARTMENT OF VETERANS AFFAIRS (DVA):

Mr. Chacon routinely manages and performs a wide range of building science and environmental services, including noise exposure monitoring, ambient noise monitoring, noise mapping, asbestos inspections, lead inspections, Indoor Air Quality (IAQ) air monitoring, hazardous materials assessments and project management of various facility renovation projects for the Department of Veterans Affairs facilities in Gainesville and Lake City.

Additionally, Mr. Chacon manages the quarterly waterline testing of the Dental Units at the Gainesville, Lake City, and The Villages facilities. GLE has conducted over 225 projects and provided over \$520,000 in services to the DVA since 2001.

PANHANDLE AREA EDUCATIONAL CONSORTIUM (PAEC):

Mr. Chacon routinely manages and performs AHERA 3-year asbestos re-inspections for various member and participating school boards associated with the PAEC. GLE has conducted over 20 projects For PAEC affiliated school boards since 2005.

Palm Bay Utilities Department:

Mr. Chacon was responsible for providing professional Occupational Safety and Health Consultation Services. Services rendered included Gap Analysis and Program Manual review of existing and proposed safety programs for the Utilities Department of the City of Palm Bay.

FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT V:

GLE has an ongoing continuing service contract that GLE has held since 2002 with the Florida Department of Transportation (FDOT) District V. Mr. Chacon has conducted asbestos inspections and asbestos abatement project monitoring for multiple Right-of-Way projects for the District under this contract, with a total estimated cost of over \$1,300,000.

GENERAL GROWTH PROPERTIES, INC. (GGP):

Mr. Chacon conducted asbestos inspections for GGP's retail mall facilities located throughout Florida. GLE has conducted approximately 600 projects and provided over \$2M in services to GGP since 2000.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP):

Mr. Chacon has provided asbestos inspections for FDEP projects at various state parks throughout North Florida.

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES (FDAC):

Mr. Chacon has provided asbestos inspections for the Florida Forest Service (FFS), a part of FDAC, at various locations throughout North Florida.





JOHN K. HANSEN, PG

Senior Geologist



EXPERIENCE

31 Years



GLE EMPLOYEE

1.5 Years



EDUCATION

Master of Science,
Geology
University of North
Florida—1988

Bachelor of Science,
Geology and Meteorology
Northern Illinois
University—1985



LICENSES

Professional Geologist
(PG) (FL)



TRAINING

OSHA Hazwoper 40 hour
and annual 8 hour
safety training
Project Management
Associate Status, IT
Corporation, 1993
Frontline Leadership
Training Course, IT
Corporation, 1992
Total Quality Management I
Course, Mobile Oil
Corporation, 1992
DNAPL Site
Characterization and
Remediation Course,
Waterloo, 1996

SUMMARY

Mr. Hansen is a Professional Geologist with more than 31 years of experience in environmental and geological consulting. He has extensive experience in environmental assessments of petroleum, chlorinated solvent, and pesticide impacted sites throughout Florida. Mr. Hansen is also experienced in remedial plans such as design, construction, and operation and maintenance for both petroleum and dry cleaning sites. He is well versed in compliance sampling and reporting for both petroleum and chlorinated solvent sites. Mr. Hansen also has technical expertise in geotechnical forensic explorations for residential and commercial sinkhole claims.

PROJECT EXPERIENCE

FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT):

Mr. Hansen was responsible for multiple Level 1 assessments identifying potential environmental impacts that may affect future road and/or pond construction activities. Duties included reviewing and analyzing Florida Department of Environmental Protection (FDEP) map direct web site and data base, FDOT's EBIT web site and data base, historical aerial photos, USGS topographic surveys, city directories, and fire insurance maps.

DLA/MACDILL AIR FORCE BASE:

Mr. Hansen was responsible for an Above Ground Storage Tank (AST) assessment, NPDES Permit renewal, NPDES monthly sampling and DMR reporting. Additionally he was responsible for completion of a GPR survey of all taxi ways and tarmacs at the base.

FDEP WASTE MANAGEMENT SITE INVESTIGATION SECTION CONTRACT:

As the contract and project manager, Mr. Hansen assisted the FDEP in all aspects of site investigations for identification of source zones at landfills, industrial, residential, and commercial sites. Multiple projects, from Dunedin to Lakeland, have included soil and groundwater assessment of pesticides, herbicides, metals, nutrients, acids, solvents and petroleum hydrocarbons. Tasks also have included site access,





PUBLICATIONS

Graves, D., Hansen, J., and Kean, J., 1997. *Natural Attenuation Selected as Remedial Alternative for Chlorinated Solvent Site in Florida*. Conference on Remediation of Chlorinated and Recalcitrant Compounds.

Hansen, J., 1991. *Unique Application of Several Remedial Technologies at an Environmentally Sensitive Limited Access Petroleum Contaminated Site*. IT Technology Exchange Symposium.

Smith, D., and J. Hanson, 1989. *Distribution of Potentially Elevated Radon Levels in Florida Based on Surficial Geology*. Southeastern Geology. 30.

Hansen, J., 1988. *Distribution of the Gamma Radiation of the Surficial Deposits of the Florida Panhandle*. Master Thesis.

Hansen, J., 1987. *Seismic Refraction Profiling Across Known Shallow Caverns, Implications for the Detection of Subsurface Cavities*. Florida Academy of Sciences 51st Annual Meeting.

STARENTERPRISE/TEXACOFDEPPETROLEUMPRE-APPROVAL PROGRAM:

Mr. Hansen provided services at over 40 petroleum impacted sites included wastewater permitting; hazardous waste classification, separation, and disposal; initial remedial action soil removal; contamination assessments; monitor only plans; groundwater and soil remedial design, natural attenuation, installation of oxygen release compound (ORC), portable groundwater treatment system operations, NPDES permitting, installation, operation and maintenance; remedial pilot tests including pumping, percolation, soil vapor extraction, air sparging, vacuum enhanced pumping.

CITIZENS PROPERTY INSURANCE:

Duties included execution of geotechnical forensic explorations for residential and commercial sinkhole claims that included supervision and evaluation of hand cone penetrometers, ground penetrating radar (GPR), damage assessment, floor elevation surveys, hand augers and standard penetration test (SPT) geotechnical borings.

7-ELEVEN, FDEP PETROLEUM CLEANUP PROGRAM SITES:

As project manager, Mr. Hansen was responsible for supplemental and TSAR assessments involving direct push technology, soil and groundwater source removals primarily during UST upgrades, remedial design and installation, construction plans, permitting and operation and maintenance of groundwater and soil remediation systems.

OLD HOPEWELL ROAD BROWNFIELD SITE:

As project manager, Mr. Hansen completed a pesticide assessment approval that included installation of multiple sonic installed wells defining four separate hydraulic zones. Work also included code violation cleanup of illegally disposed of wastes on property and building demolition.

FLORIDA ARMY NATIONAL GUARD:

Mr. Hansen completed Lead (Pb) assessments, remediation, and the disposal of hazardous waste at 21 indoor firing ranges.

NAVRAC, SOUTHERN DIVISION, MULTIPLE RCRA SITES AND INSTALLATION RESTORATION SITES AT NAS KEY WEST, FL:

As project geologist, Mr. Hansen's duties at the historical land disposal areas and DDT mixing areas included work plan preparation, cost estimation, scheduling, monitoring well installation, soil and groundwater sampling, data reduction, and report preparation.

PRATT & WHITNEY PCB-IMPACTED SOLID WASTE MANAGEMENT UNIT (SWMU):

As project geologist, Mr. Hansen's responsibilities included budgeting, scheduling, field coordination, health and safety, and document production for a DNAPL assessment which included Cone Penetrometer Technology (CPT) drilling to depths of over 135 feet below land surface.





MICHAEL D. HARRELL

Project Manager



EXPERIENCE

12 Years



GLE EMPLOYEE

12 Years



EDUCATION

Bachelor of Science,
Chemical Engineering
University of
Florida—2006



LICENSES

Asbestos Air Sampler (SC)
Asbestos Consultant (SC)
EPA Lead-Based Paint
Inspector/Risk Assessor
(GA)
EPA Lead-Based Paint Risk
Assessor (FL) (SC)



TRAINING

AHERA Asbestos
Contractor/Supervisor
AHERA Asbestos
Inspector
EPA Model Lead-Based
Paint Inspector
EPA Lead-Based Paint
Risk Assessor
NIOSH 582: Sampling
& Evaluating Airborne
Asbestos Dust
RMD's LPA-1/XRF Lead
Paint Inspection
System
JEA Construction Site
Safety

SUMMARY

Mr. Harrell has been involved in the environmental consulting field since 2006. He has a working knowledge of regulations and projects involving industrial hygiene, asbestos, lead-based paint, Indoor Air Quality (IAQ), mold, and ground water monitoring. His duties include project bidding and proposals, project design, project execution, report writing and review, invoicing and follow-up contact. He has extensive experience with a variety of public, private and industrial clients. Recent clients have included the Agency for Workforce Innovation, BellSouth, Capital Preferred Management Agency (Insurance), City of Gainesville, Department of Veterans Affairs, Gainesville Regional Utilities, General Growth Properties, Inc., Georgia Pacific Corporation, Florida Department of Environmental Protection, Florida Department of Transportation, M-D Building Products, Meridian HealthCare, Shands HealthCare, Tower Sealants, University of Florida, Georgia Southern University, Santa Fe College; Alachua, Bradford, Calhoun, Citrus, Columbia, Dixie, Gulf, Hamilton, Hernando, Holmes, Liberty, Madison, Putnam, Suwannee, Union, Wakulla, Walton and Washington County School Boards; and Alachua, Marion, Orange and Union Counties; as well as a variety of property management, architectural, construction and engineering firms.

PROJECT EXPERIENCE

CITY OF GAINESVILLE:

Mr. Harrell routinely manages and performs asbestos inspection and monitoring and lead-based paint inspections for the City of Gainesville.

SEMINOLE COUNTY RISK MANAGEMENT:

Mr. Harrell has completed multiple asbestos, lead, Indoor Air Quality (IAQ) and mold consulting services for over a dozen facilities operated by the county. Through this contract GLE has also performed asbestos, lead and IAQ consulting with Seminole County Sheriff's Office and Seminole County Fire Department. GLE has held with the Seminole County Risk Management department since 2010 worth over \$33,000.



CITRUS COUNTY SCHOOL DISTRICT:

Mr. Harrell is the primary contact for GLE's ongoing environmental consulting contract with the Citrus County School District and routinely manages and performs asbestos inspection and monitoring, Indoor Air Quality (IAQ) investigations and lead-based paint inspections for their facilities. He also performs AHERA 3-year Re-inspections for Citrus County Schools. He has also overseen surveys and abatements for renovations and demolitions for the Citrus County School District's complete remodeling and rebuilding of Crystal River Primary School and Crystal River High School. He has also performed groundwater sampling and testing for the Florida Department of Environmental Protection's monitoring wells compliance program. GLE has conducted over 260 projects and provided over \$1,000,000 in services to Citrus County Schools as part of our renewed term contract since 2000.

HERNANDO COUNTY SCHOOL DISTRICT:

Mr. Harrell is the primary contact for the Hernando County School District's environmental services contract with GLE and routinely manages and performs asbestos inspection and monitoring and lead-based paint inspections for their facilities. GLE has conducted provided over \$82,000 in services to Hernando County Schools since 2002.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP):

Mr. Harrell has provided asbestos inspections for FDEP projects. Mr. Harrell has provided asbestos inspections for renovation projects at various state parks throughout North Florida.

UNIVERSITY OF FLORIDA:

Mr. Harrell manages various asbestos and lead inspection and abatement activities at the University of Florida (UF). His duties include inspections, asbestos abatement design, on-site project monitoring, including air sampling by Phase Contrast Microscopy (PCM), and acting as client liaison to faculty, staff, and regulatory agencies. He recently completed an asbestos survey, abatement and creation of an Operation and Management Plan of asbestos containing materials for McCarty Halls A, B and D. He was also project manager for environmental surveys and abatements for the renovations of Yon Hall, the Infirmary Building, Benton, Larson, Materials Engineering, and Weil Halls and the Nuclear Science Building the Eastside Campus of the University of Florida, Ben Hill Griffin Stadium, the Communicore Building at the Health Science Center, Medical Science Building at the Health Science Center, Dental Science Building at the Health Science Center, the Autopsy Suite, the Center for Aging at the Health Science Center, and various projects for the Institute of Food and Agricultural Sciences (IFAS). Mr. Harrell has also managed surveys for renovations at The Stephen C. O'Connell Center, Mechanical and Aerospace Engineering, Tigert Hall, Norman Hall, Newell Hall, Reed Labs and the Reitz Union. The estimated value of this ongoing contract GLE has held since 1997 is \$3,000,000.

GENERAL GROWTH PROPERTIES, INC.:

Mr. Harrell has provided asbestos inspection and monitoring services for more than 40 individual surveys at GGP's retail mall facilities located throughout Florida. GLE has conducted hundreds projects and provided over \$2,050,000 in services to GGP since 2000.





PAUL S. ZAK, CIH
North Florida Operations Manager



EXPERIENCE

19 Years



GLE EMPLOYEE

15 Years



EDUCATION

Bachelor of Science,
Environmental & Forest
Biology
State University of New York
College of Environmental
Science and Forestry at
Syracuse—1993



LICENSES

EPA Lead-Based Paint
Risk Assessor (FL)
Mold Assessor (FL)



TRAINING

AHERA Asbestos
Contractor/Supervisor
AHERA Asbestos Inspector
AHERA Asbestos
Management Planner
AHERA Asbestos Project
Designer
OSHA Hazwoper
NIOSH 582: Sampling
& Evaluating Airborne
Asbestos Dust
XRF - RMD's LPA-1 Lead
Paint Inspection
System



CERTIFICATIONS

Certified Industrial
Hygienist (CIH)

SUMMARY

Mr. Zak has been involved in the environmental consulting field since 1999. He has a working knowledge of regulations and projects involving industrial hygiene, safety, asbestos, lead, Indoor Air Quality (IAQ), mold, Environmental Site Assessments (ESAs), and OSHA compliance. As the North Florida Operations Manager, his duties include business development, project bidding and proposals, project execution, report writing and senior oversight for the Gainesville, Jacksonville, and Orlando offices. Mr. Zak currently manages eight term contracts related to industrial hygiene, environmental assessment, health and safety, asbestos, IAQ and lead-based paint consulting.

Mr. Zak has extensive experience with a wide variety of public, private and industrial clients. Recent clients have included the Federal Emergency Management Agency (FEMA), Department of Veteran Affairs, State of Florida Department of Environmental Protection, the City of Gainesville, Panhandle Area Educational Consortium, Alachua, Baker, Brevard, Citrus, Duval, Hernando, Suwannee and Volusia County Schools, the University of Florida, Texas A&M University, Georgia Southern University, Shands Healthcare, Balfour Beatty Construction, Balfour Beatty Communities, Northstar, NCM Environmental, Hensel Phelps, Skanska, General Growth Properties, Georgia Pacific, LVI Environmental Services, M-D Building Products, Parsons, BellSouth, The Pantry, Tower Sealants, Allstate, Nationwide and State Farm Insurance Companies and an extensive list of architectural, construction and engineering firms throughout the country.

PROJECT EXPERIENCE

FLORIDA HOSPITAL:

Mr. Zak is currently providing senior project management over asbestos and lead inspections and monitoring as well as indoor air quality projects for the Rollins, Altamonte Springs, Winter Park, Celebration and East Campuses of Florida Hospital. GLE has provided over \$300,000 in services to Florida Hospital since 2012.



SEMINOLE COUNTY RISK MANAGEMENT:

Mr. Zak was the client manager for an ongoing environmental consulting contract that GLE has held with the Seminole County Risk Management department since 2010 worth over \$33,000. GLE has completed multiple asbestos, lead, Indoor Air Quality (IAQ) and mold consulting services for over a dozen facilities operated by the county. Through this contract GLE has also performed asbestos, lead and IAQ consulting with Seminole County Sheriff's Office and Seminole County Fire Department.

UNIVERSITY OF FLORIDA:

Mr. Zak is currently the Client Manager of a continuing service environmental consulting contract GLE has held with the University of Florida. He has managed and conducted various asbestos and lead inspection and abatement activities, radon testing, industrial hygiene sampling, mercury flooring abatement, Indoor Air Quality (IAQ) building commissioning and Environmental Site Assessments (ESAs) throughout the campus and extension offices throughout the state of Florida. Mr. Zak was recently the senior project manager of the abatement of over 45,000 SF of asbestos containing fireproofing in the Health Science Center, with a construction budget of approximately \$1,500,000. Under GLE's direction, more than 1,800 projects have been successfully completed for UF involving the abatement of approximately 235,000 SF of asbestos containing fireproofing and over 700,000 SF of asbestos containing floor tile. The total cost for this ongoing contract held by GLE since 1997 is over \$4,500,000.

CITRUS COUNTY SCHOOL DISTRICT:

Mr. Zak is currently the Client Manager for an ongoing environment consulting contract GLE has held with the Citrus County School District since 1996 worth over \$1,300,000. GLE has completed over 280 projects for the District, including asbestos and lead-based paint inspections and monitoring, Underground Storage Tank (UST) removals and closures, initial source remediation, contamination assessments and remediation for petroleum products, Indoor Air Quality (IAQ) consulting and radon measurement and mitigation. Mr. Zak was recently the senior project manager for the selective demolition and renovations of Crystal River Primary and Crystal River High Schools, with a construction budget of over \$2,000,000.

PARSONS BELL SOUTH TELECOMMUNICATIONS:

Mr. Zak has managed various asbestos and lead inspections, mold investigations, Indoor Air Quality (IAQ) testing and hazardous material identification at several Air Force bases and Bell South facilities throughout Florida.

GENERAL GROWTH PROPERTIES, INC. (GGP):

Provided asbestos inspection and monitoring services for over 100 individual surveys for GGP's retail mall facilities located throughout Florida. GLE has conducted approximately 600 projects and provided over \$2M in services to GGP since 2000.

GEORGIA PACIFIC:

Client manager for a five-year term contract GLE held. Services provided included lead surveys, mold investigations and an asbestos survey of the Palatka Mill, which involved the collection and analysis of over 3,500 samples. Each sample was individually labeled then color coded bands were applied to the material to assist with the demarcation of asbestos throughout the facility. GLE integrated the existing site documentation into a master database of asbestos containing materials for the facility. GLE provided over \$500,000 in services to Georgia Pacific since 2007.



TEXAS A&M UNIVERSITY:

Mr. Zak has provided Certified Industrial Hygiene services for Texas A&M University (TAMU). Services have included the investigation and evaluation of over 200 types of confined spaces throughout the main campus. GLE has also composed a site-specific confined space program and Mr. Zak has conducted the training of over 80 TAMU staff on the new campus policy. He has also provided senior review on the revised TAMU campus-wide health and safety plan. GLE has provided nearly \$40,000 in services to TAMU.

SHANDS HEALTHCARE:

Mr. Zak routinely manages and performs various services, including asbestos inspections, air monitoring and project management for various facility renovation projects at Shands HealthCare. Recently, he has managed and conducted an asbestos survey of the Rush Lake Motel, Schuct Village and 12-story former University Hotel in Gainesville, Florida. GLE has also conducted approximately 770 projects and provided over \$1,650,000 in services to Shands HealthCare since 2000.

DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER (VAMC):

Mr. Zak routinely manages and performs a wide range of building science services, including Indoor Air Quality (IAQ), asbestos inspections, air monitoring and project management of various facility renovation projects for the VAMC. Mr. Zak was recently the Senior Project Manager over the asbestos abatement coinciding with the Correct Patient Deficiencies project, which includes the addition of a 241,000 GSF bed tower and renovations of over 66,000 GSF at the Malcolm Randall VAMC in Gainesville. The construction cost for this project is between \$80,000,000 and \$120,000,000. GLE has conducted over 400 projects and provided over \$920,000 in services to the Malcolm Randall VAMC and Lake City VAMC since 2001. GLE has also provided over \$300,000 in services to various Service-Disabled Veteran-Owned Small Businesses (SDVOSB) architectural firms, engineering firms, and general contractors over the past five years in conjunction with various VAMC renovations.

NASA/KENNEDY SPACE CENTER:

Mr. Zak has provided senior technical industrial hygiene services for a contract GLE was awarded in 2007 with LVI Environmental Services, Inc. (LVI) for renovations at the Operations and Checkout Facility at the Kennedy Space Center. GLE has provided over \$60,000 in third party industrial hygiene services to LVI in support of this project. GLE was also awarded a time and materials contract with Hensel Phelps to provide industrial hygiene and environmental consulting services for the various trades that are performing the renovations of this historic facility. GLE has provided over \$25,000 in services to Hensel Phelps in support of this project.

FLORIDA DEPARTMENT OF TRANSPORTATION- DISTRICT V:

Mr. Zak is currently the Client Manager for an ongoing continuing service contract that GLE has held since 2002 with the Florida Department of Transportation (FDOT) District V. He has managed and conducted asbestos inspections and asbestos abatement project monitoring for more than 450 Right-of-Way projects for the District under this contract, with a total estimated cost of over \$1,800,000.



M-D BUILDING PRODUCTS (M-D):

Mr. Zak managed and performed industrial hygiene work at five M-D facilities comprised of approximately 2,000,000 SF of manufacturing area and 250 employees. Assessments included OSHA compliance for employee exposure sampling for noise, chemicals, job safety analysis, and confined space. He has also performed octave band analysis on various machinery to determine proper noise engineering controls; the resulting noise evaluation report is currently being utilized by OSHA Region VI as a best management practice. GLE has provided over \$250,000 in services to M-D since 2006.

CONFIDENTIAL INSURANCE COMPANIES:

Mr. Zak has managed and performed preliminary mold investigations and post mold remediation confirmation testing for private residences, as well as industrial and commercial facilities for various insurance carriers. GLE has provided over \$2,500,000 in services to these insurance carriers over the past six years.





ROY GRAY

Project Manager



SUMMARY

Mr. Gray has been involved in the environmental remediation, consulting, contracting and general construction industry since 1980. He has extensive experience with asbestos project monitoring activities to ensure work practices are performed safely and within OSHA and EPA regulations. He has served as Project Manager on projects with costs exceeding \$20 million. Mr. Gray has extensive experience with a wide variety of public and private clients. Recent clients have included the Malcolm Randall Veterans Affairs Medical Center, Shands HealthCare and the University of Florida. Over the past three years, Mr. Gray has served as the primary project monitor for several large asbestos abatement projects involving the removal of asbestos-containing spray-applied fireproofing from occupied educational and healthcare facilities.

PROJECT EXPERIENCE

UNIVERSITY OF FLORIDA:

Mr. Gray has served as asbestos project monitor for over 500 asbestos abatement projects at the University of Florida. As the Owner's on-site representative during asbestos abatement projects, he performs inspections of the engineering controls to minimize the potential for contamination of non-work areas and to ensure the safety of the workers and building occupants. He also provides air monitoring and Phase Contrast Microscopy (PCM) analysis during asbestos abatement activities to document conditions as the work is progressing and provides final clearance air sampling.

FLORIDA DEPARTMENT OF TRANSPORTATION-DISTRICT V:

Mr. Gray conducts project oversight in the remediation of several demolition sites for the FDOT. Acting as the primary air-monitor on-site, he insures that all engineering controls are inspected so no contamination of non-work areas will occur; thus insuring the safety of workers and residents in surrounding areas. Mr. Gray insures the initial survey of each site is correct and identifies and tests any new possible asbestos-containing materials found.



EXPERIENCE

38 Years



GLE EMPLOYEE

17 Years



LICENSES

Asbestos Air Monitoring (TX)



TRAINING

Air Monitoring Technician
AHERA Asbestos
Contractor/Supervisor
AHERA Asbestos
Inspector
OSHA Hazwoper
JEA Construction Site
Safety
NIOSH 582: Sampling
& Evaluating Airborne
Asbestos Dust



ALACHUA COUNTY SCHOOL DISTRICT:

Mr. Gray has served as the project monitor for numerous asbestos abatement projects for the Alachua County School District. He has also provided air monitoring and supervision for projects at Kirby Smith Elementary, J.J. Finely Elementary, Metcalf Elementary School, Buchholz High School and Santa Fe High School.

CITRUS COUNTY SCHOOL DISTRICT:

Mr. Gray has served as asbestos project monitor for over a twelve asbestos abatement projects on behalf of the Citrus County School District. He has also provided inspection services as part of numerous three-year asbestos re-inspections and six-month asbestos surveillances.

SHANDS HEALTHCARE:

Mr. Gray was responsible for project management, including area and personnel air monitoring for multiple large asbestos abatement projects requiring regulated areas adjacent to occupants at Shands. He has also provided construction design and surveillance during asbestos abatement and performed several Indoor Air Quality assessments.

FLORIDA POWER AND LIGHT:

Mr. Gray has provided asbestos inspection and monitoring services over a two month period for the Florida Power and Light facility in Palatka, Florida. Mr. Gray conducted the project oversight, project air monitoring, and final visual observations associated with the removal of asbestos-containing white canvas cloth and cementitious panels, and metal cables and cable trays sprayed with asbestos-containing fireproofing.

GENERAL GROWTH PROPERTIES, INC.:

Mr. Gray has provided asbestos inspection and monitoring services for GGP's retail mall facilities located in Florida and Georgia. GLE has conducted approximately 588 projects and provided over \$2,050,000 in services to GGP since 2000.

NASA/KENNEDY SPACE CENTER:

Mr. Gray has significantly contributed to this contract GLE was awarded in 2007 with LVI Environmental Services, for the renovations at the Operations and Checkout Facility at the Kennedy Space Center. GLE has provided over \$60,000 in third party Industrial Hygiene Services to LVI in support of this project. GLE was also awarded a time and materials contract with Hensel Phelps to provide Industrial Hygiene and Environmental Consulting Services for the various trades performing the renovations of this historic facility. GLE has provided over \$25,000 in services to Hensel Phelps in support of this project.

MALCOLM RANDALL VA MEDICAL CENTER:

Mr. Gray has served as asbestos project monitor for over 100 asbestos abatement projects at the VA Medical Center. As the Owner's on-site representative during asbestos abatement projects, he performs inspections of the engineering controls to minimize the potential for contamination of non-work areas and to ensure the safety of the workers and building occupants. He also provides air monitoring and Phase Contrast Microscopy (PCM) analysis during asbestos abatement activities to document conditions as the work is progressing and provides final clearance air sampling upon completion of the abatement activities.



ADVANCED ENVIRONMENTAL LABORATORIES, INC.

Professional Resume

Todd Romero

Areas of Specialization

Over 25 years of environmental technical experience including Project Management, Environmental Engineering, Information Technology Services, Business Development, Client Services, and Office Operational Systems.

Education

B.S., Environmental Engineering, University of Florida, 1996

Professional Experience

Advanced Environmental Laboratories, Inc. Gainesville, FL

May 2015 – Present

Strategic Accounts Manager. Responsible as primary contact for clients not limited too but mostly involved with complex sites involving site assessments and various remediation techniques requiring project tailored sampling plans.

Laboratory Manager. Responsible for all aspects of laboratory operation including client services, analytical testing, business development, and overseeing quality assurance including NELAP compliance.

KB Labs, Inc., Gainesville, FL

June 2001 - April 2015

Director of Operations. Responsible for all operational systems involving the mobile laboratory and High Resolution Direct Sensing (MIP/MiHPT, HPT, and EC) business units at KB Labs. Typical duties as Director of Operations included implementation of the QA/QC systems for the certified (NELAC, DOD ELAP, and other state agencies) mobile laboratories, client services, project management, field logistics, unit and personnel assignments, data review and reporting, modeling visualizations, information technology services, and business development for Gainesville, FL, and Raleigh, NC, offices. KB Labs client base was diversified within both the private and public sectors mainly consisting of federal, state and industrial environmental assessment and remediation contractors.

MACTEC, (formerly Environmental Sciences and Engineering and currently Wood EIS), Gainesville, FL

September 1986 – June 2001

Senior Staff Engineer/Laboratory Department Manager. Responsibility in various disciplines including: managing US Naval Station air compliance programs, designing air compliance software, preparing air construction and operating permits, performing compliance audits, evaluating visible emission sources, managing Information Services Department and Data Group in the analytical testing laboratory, managing laboratory sample analysis projects, and assisting in design of a Laboratory Information Management System (LIMS).

Certifications

Engineer in Training (EIT) 2000 Florida Board of Professional Engineers

Presentations

Using Ultraviolet Fluorescence (UVF) as a Rapid Onsite Screening Technology for Assessing Petroleum Contamination; ADEM Underground Storage Tank Assessment and Remediation Conference; Montgomery, AL; November 2013.

Innovative Technologies for Assessment at Brownfield Sites; Florida Brownfields Conference; St Petersburg, FL; October 2012.

Use of Fluorescence Tools for Rapid Onsite Assessment of Petroleum Hydrocarbon Contamination; 3rd Annual AIPG-Georgia Section Conference: Innovative Environmental Assessment and Remediation; Kennesaw, GA; April 2011.

Dependable Service ~ Uncompromising Quality

6601 Southpoint Parkway, Jacksonville, FL 32216 904-363-9350, FAX 904-363-9354
Alachua County Annual Environmental Consulting Services RFP #20-171
Ability of Consultant's Professional Personnel; Page 40 of 41



PROFESSIONAL PROFILE
Matthew J. Foti, Ph.D.

TITLE: Laboratory Manager - Orlando Facility

ACADEMIC ACCOMPLISHMENTS:

University of South Florida
Ph.D. Organic Chemistry

University of Central Florida
B.S. Chemistry

MAJOR AREAS OF EXPERTISE:

Analytical Biochemistry

SUMMARY OF EXPERIENCE:

Dr. Foti's formal education is in the area of analytical biochemistry. He spent three years studying bio-organic drugs designed to combat cancer related illness using a variety of analytical techniques. He is specialized in the field of liquid chromatography and nuclear magnetic resonance.

PROFESSIONAL EXPERIENCE:

1998 to Present Environmental Conservation Laboratories, Inc.

Position: Laboratory Manager-Orlando Facility

Responsibilities:

Management of the Orlando facility staff on a daily basis, including oversight of all laboratory operations. Dr. Foti's responsibilities include but are not limited to all aspects of production, staffing, technical support, and ensuring that all requirements of Environmental Conservation Laboratories, Inc.'s quality assurance program are met.

1994 to 1998 Walt Disney Memorial Cancer Institute

Position: Research Assistant/System Administrator

Responsibilities:

Responsibilities include management of the NMR preparation department, development of novel methods to purify, identify, and quantify biopolymers in solution, and support of computer systems/software.

Tab 5

Ability to Meet Time and Budget Requirements

5 Ability to Meet Time and Budget Requirements

The foundation of a successful project is a well-defined project management plan. The management plan must be designed to ensure that:

- Client needs are clearly defined.
- Appropriate resources are devoted to the project.
- Work is completed according to the defined schedule and budget.
- The client is kept apprised of all activities, progress, problems, response to problems, upcoming activities and status.
- All project deliverables are designed to meet the client's needs.

DBE's project management plans contain the following components: clarification of project objectives, project instructions, project scheduling, and continuous communication. Each of these components is discussed below

Project Objectives. The first step in the implementation of an effective project management plan is a clear, explicit delineation of project objectives. It is essential to ensure that all technical activities conducted by the DBE team are designed to meet the ACEPD's needs. The key to a clear mutual understanding of project and/or task objectives and expectations is high-level communication with the ACEPD Program Manager and key staff. For example, sometimes expectations exist beyond those listed in the RFP and/or individual task orders. Our chosen PM has 15+ years of experience interacting with ACEPD staff. DBE has been a successful and repeated contractor to ACEPD and has demonstrated that our team will understand and retain communicated project objectives from project start to finish. Our PM is committed to establishing and maintaining a completely clear understanding of project objectives and productive relationships with ACEPD staff.

Project Schedules and Staffing. The project schedule defines the steps required to complete each task and is used to define staffing needs. In addition to its use as a staffing tool, the project schedule will be used as a communication and monitoring tool for ACEPD. The schedule will be detailed enough to enable ACEPD staff to carefully monitor all phases of work.

ACEPD can be assured that the DBE team is committed to the participation of all staff members proposed for this project to the full extent necessary to successfully achieve ACEPD's objectives. An availability matrix for our Project Managers, Scientists and other staff is given in Section 3.2. At the time of work order promulgation, we can provide more detailed forecasts of key staff commitments. Project-specific work will be apportioned among the firms in our team, and among individuals within each firm, based on the specific discipline and level of effort required for a specific work order. For example, when selected for a work order, our team's Project Manager will provide a proposed staffing schedule (with level-of-effort details) along with an SBE Utilization Plan, which would conform to the specific project and schedule requirements.

We further understand that no work will be authorized until a work order is executed by ACEPD, and that upon award of a work order, we will:

- Screen candidate staff to ensure that they meet the required qualifications, and check their references
- Perform background checks on all candidate staff
- Supervise consulting and subconsulting staff including oversight of their work and performance
- Manage the project (schedules, budget, deliverables, etc.) and provide timely delivery of services and resources
- Perform quality assurance on all deliverables and ensure that they meet ACEPD standards
- Communicate regularly with ACEPD Project Managers

Our team members pride themselves on the ability to maintain strict adherence to project schedules, even in the face of changing project needs and unforeseen technical complications. The ability to continually meet project schedules is greatly facilitated by the management plan.

Consistent Communication. The DBE project management plan stresses consistent communication, both internally and externally as a means to facilitate project quality and timeliness. Internal communication starts with the Project Instruction meetings and also generally includes routine project meetings and conference calls to review work completed in the previous weeks, define work to be accomplished in the following weeks, verify compliance with project schedule and scope, and discuss any technical or management issues that have arisen. External communication consists of routine phone conferences with the client as well as status reports. Status reports will include but not be limited to a description of activities by task during the reporting period, including problem definitions and recommendations for problem resolution.

Quality Management. DBE's reputations for excellence, innovation, and service are firmly rooted in corporate philosophies of quality through planning and prevention rather than through correction. All personnel receive training in the principles and practice of quality improvement and planning, and virtually every corporate program is conducted to yield measurable long-term benefits. The success of our quality commitments is reflected in consistently high marks for our performance in client surveys, and a rate of repeat clients and client referrals of over 90%.

Tab 6

Effect of Project Team Location on Project Responses

6 Effect of Project Team Location on Project Responses

DBE personnel work from three offices throughout the state, including a local office in the City of Gainesville, FL. The availability of personnel to meet with County officials will primarily be supported by the Gainesville office. Additional personnel from the main office in Rockledge or from West Palm Beach will be available as needed to complete ACEPD project tasks in a timely manner.

Both GSE and eda are certified Small Business Enterprises located in Gainesville, FL. Staff from both firms are available to ACEPD and DBE staff to discuss projects and efficiently complete tasks. GLE, ERC and AEL have local offices in Gainesville, FL making them easily accessible and available when needed. ENCO laboratories is located in Orlando, FL where environmental samples can easily be shipped by ground transportation in less than 24 hours.

We believe the team of professionals assembled by DBE is therefore uniquely suited to support ACEPD's projects, in terms of capabilities and experience, as well as their local knowledge related to environmental issues facing the County's citizens and natural resources.

Tab 7

Appendix

SIGNATURE AND ACKNOWLEDGEMENT OF ADDENDUM FORM

RFP NUMBER: 20-171

PROPOSAL OPENING DATE: 2:00 pm, Wednesday, April 24, 2019

RE: Annual Environmental Consulting Services

PLACE OF RFP OPENING: Alachua County Division of Purchasing, 3rd Floor
County Administration Building
12 SE 1st Street
Gainesville, Florida 32601-6983

Acknowledge Receipt of Addendum(s) (if applicable circle):

#1 Yes No #2 Yes No #3 Yes No

Local Based Firms per Section 1.14, Check One Below	
X	I certify that my business is located in Alachua County and meets the criteria for location points as specified in Section 1.14.
	I am not a local based firm in Alachua County.

Proposer: Thomas A. DeBusk Company: DB Environmental Laboratories, Inc.

Address: Local Office: 6352 NW 18th Dr. Unit 2, Gainesville, FL 32653

Home Office: 365 Gus Hipp Blvd., Rockledge, FL 32955

Authorized Signature: Thomas A. DeBusk Title: President

Clearly Print Name: Thomas A. DeBusk

PHONE: 321-639-4896 FAX: 321-631-3169 DATE: 4/22/19

Email Address: info@dbenv.com

SMALL BUSINESS ENTERPRISE (SBE) PROGRAM PARTICIPATION FORM

RFP NUMBER: 20-171: Annual Environmental Consulting Services

OPTION 1

I certify that our Company is an Alachua County Certified Small Business Enterprise (SBE) registered prior to the Bid opening.

Circle One: Yes (If yes, complete and sign the last page of this Exhibit)

No (If No, proceed to *Option 2.*)

OPTION 2

I certify that our Company **will perform ALL work** and that no subcontractors will be utilized for this bid.

Circle One: Yes (If yes, complete and sign the last page of this Exhibit)

No (If No, proceed to *Option 3.*)

RFP NUMBER: 20-171: Annual Environmental Consulting Services

OPTION 3

SBE Participation. I certify that our Company has contacted the **Alachua County's Certified SBEs** listed below. I state that the following information regarding SBE Subcontractors is true and correct to the best of my knowledge and belief.

Alachua County has adopted a 15% SBE participation goal and policies which encourage participation of Small Business Enterprises (SBE) in the provision of labor, time, supplies, services or construction items of any kind materials.

SBEs are located in the Alachua County Small Business Enterprise Directory, available at:

<http://smallbusdir.alachuacounty.us/>.

Subcontractor (any business entity holding a subcontract with the prime vendor) services are defined as, "a contract with another business entity that obtains labor, time, supplies, services or construction items of any kind."

Vendors submitting bids under this solicitation are to identify the intended SBE subcontractors. These SBEs have agreed to perform the work for **the total dollar value and percentage of the bid** set forth below.

If SBE subcontractors are not utilized and listed below or if option 1 or 2 was not chosen, you must proceed to *Option 4* and document your Good Faith Effort.

GSE Engineering and Consulting	EDA Engineers-Surveyors-Planners, Inc
SBE Name of Contractor	SBE Name of Contractor
5590 SW 64th St., Suite B, Gainesville, FL 32608	2404 NW 34rd St., Gainesville, FL 32606
Address	Address
Contamination assessment, remediation, Phase I and Phase II Env. Assessments	Ordinances and land development regulations
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ 10 % (Est \$ Value) (Est % of Total Bid)	\$ _____ 5 % (Est \$ Value) (Est % of Total Bid)
SBE Name of Contractor	SBE Name of Contractor
Address	Address
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ % (Est \$ Value) (Est % of Total Bid)	\$ _____ % (Est \$ Value) (Est % of Total Bid)
SBE Name of Contractor	SBE Name of Contractor
Address	Address
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ % (Est \$ Value) (Est % of Total Bid)	\$ _____ % (Est \$ Value) (Est % of Total Bid)

RFP NUMBER: 20-171Annual Environmental Consulting Services

OPTION 4

SBE Good Faith Effort. To be considered responsive all Vendors **must have** SBE Participation or demonstrate a good faith effort to utilize SBE subcontractors. **If option 1, 2 or 3 was not chosen the Vendor must complete the section below substantiating compliance with good faith effort requirements.**

In accordance with Section 22.36, of the Alachua County Purchasing Code, I have solicited and received responses from the following Alachua County certified SBE companies. (The SBE vendor's response **MUST** be recorded in the section below.)

1	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	
2	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	
3	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	
4	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	
5	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	
6	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	
7	Name of SBE Company:	Date SBE Contacted
	SBE Contact Name: Phone:	/ /
	Must be completed by. SBE Response when contacted:	

RFP NUMBER: 20-171: Annual Environmental Consulting Services

I as the undersigned Vendor certify that I have completed one of the option(s) below (Circle One):

OPTION 1**OPTION 2****OPTION 3****OPTION 4**

If you are unable to certify that, you have completed to the best of your knowledge and belief **OPTION 1, OPTION 2, OPTION 3 or OPTION 4**, Call (48 hours prior to RFP opening) the Division of Purchasing at 352.374.5202, for direction.

Vendor Name: DB Environmental Laboratories, Inc.

Date

4/22/18

Signature

Thomas A DeBusk

Title

PresidentPrinted Name: Thomas A. DeBusk

Title

President

CERTIFIED SMALL BUSINESS ENTERPRISE POINTS REQUEST FORM FOR RFP's

The Technical Qualifications Evaluation phase of the Professional Services Evaluation Process assesses whether a Consultant is a certified Small Business Enterprise (SBEs) and provides for the allotting of points where the Consultant includes in their submittal a request for points allowed for Alachua County's Certified SBEs' participation in accordance with the options listed below and the necessary documentation to substantiate such is provided.

CERTIFIED SMALL BUSINESS ENTERPRISE (SBEs)- REQUEST FOR POINTS 15 POINT MAXIMUM																															
Points for Certified Small Participation is to be awarded using one of the options below:	Points Allowed	Points Requested	Points Assigned																												
Fifteen (15) points are awarded to the Consultant if the Consultant is a certified small business (per Alachua County's current SBE registry at the time set for receipt of submittals) and at least 51% of the job will be performed by the Consultant.	15 pts																														
Eight (8) to thirteen (13) points are awarded if the Consultant commits to a significantly higher certified Small participation than the goal, based on the breakdown indicated below: Percentage of Certified Small Participation: <table> <tr> <th>at least</th><th>but less than</th><th colspan="2">Points to be Awarded</th></tr> <tr> <td>25%</td><td>30%</td><td>8</td><td>Points</td></tr> <tr> <td>30%</td><td>35%</td><td>9</td><td>Points</td></tr> <tr> <td>35%</td><td>40%</td><td>10</td><td>Points</td></tr> <tr> <td>40%</td><td>45%</td><td>11</td><td>Points</td></tr> <tr> <td>45%</td><td>50%</td><td>12</td><td>Points</td></tr> <tr> <td>50%</td><td>51%</td><td>13</td><td>Points</td></tr> </table>	at least	but less than	Points to be Awarded		25%	30%	8	Points	30%	35%	9	Points	35%	40%	10	Points	40%	45%	11	Points	45%	50%	12	Points	50%	51%	13	Points	8 pts - 13 pts		
at least	but less than	Points to be Awarded																													
25%	30%	8	Points																												
30%	35%	9	Points																												
35%	40%	10	Points																												
40%	45%	11	Points																												
45%	50%	12	Points																												
50%	51%	13	Points																												
Five (5) points are awarded to a Consultant who has committed to meet the percentage participation goal of 15% as established by the Board of County Commissioners and the Consultant has listed the certified small business(es) and clearly stated the work and percentages of the job that those business(es) will perform.	5 pts	5																													

ALACHUA COUNTY GOVERNMENT MINIMUM WAGE (GMW) FORM

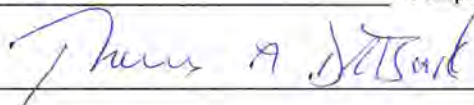
RFP 20-171: Annual Environmental Consulting Services

The undersigned certifies that all employees, contracted and subcontracted, completing services as part of this Bid/RFP are paid, and will continue to be paid, in accordance with Chapter 22, Article III of the Alachua County Code of Ordinance ("Wage Ordinance").

Please mark the appropriate box below that applies to how you pay your employees:

1.	☒ Employees involved with Alachua County projects are paid a minimum of \$13.00 hourly and are provided health benefits?
2.	☐ Employees involved with Alachua County projects are paid a minimum of \$15.04 hourly but are not provided health benefits?

Bidder: Thomas A. DeBusk Company: DB Environmental Laboratories, Inc.

Authorized Signature:  Title: President

Clearly Print Name: Thomas A. DeBusk Phone: 321-639-4896

Email Address: info@dbenv.com

VOLUME OF PREVIOUS WORK SUMMARY

Volume of previous work will be determined by the actual fees rendered to the consultant by Alachua County. These fees are based on actual payments made to the consultant and are retrieved from the County's electronic accounting system. Only a portion of these fees 9 (Adjusted fee) will be considered based on the fiscal year payments and the factor listed below (see chart below).

SAMPLE

PERIOD	ACTUAL FEE	FACTOR	ADJUSTED FEE
Current and last year (Oct 1 – Sept 30)	\$ 100,000.00	X 1.0	\$ 100,000.00
Second year past (Oct 1 – Sept 30)	\$ 100,000.00	X .08	\$ 80,000.00
Third year past (Oct 1 - Sept 30)	\$ 100,000.00	X .06	\$ 60,000.00
TOTAL ADJUSTED FEE CONSIDERED			\$ 240,000.00

VOLUME OF PREVIOUS WORK - POINTS EARNED

The volume of previous work points earned are based on the adjusted fee (see chart below).

POINTS	ADJUSTED FEE (AF) *	YOUR REQUESTED AF POINTS
5	AF < 50,000	<u>5</u> points
4	50,000 < AF < 100,000	
3	100,000 < AF < 200,000	
2	200,000 < AF < 300,000	
1	300,000 < AF < 400,000	
0	AF > 400,000	

PROPOSED SUBCONTRACTORS (NON-SMALL BUSINESS ENTERPRISE) FORM

RFP NUMBER: 20-171: Annual Environmental Consulting Services

This form is for all Non-Small Business Enterprise subcontractors being utilized on this project that are not included on Exhibit B.

Ecosystem Research Corp	GLE Associates, Inc.
Name of Contractor	Name of Contractor
2906 NW 142nd Ave., Gainesville, FL 32609	2228 NW 40th Terrace, Suite C, Gainesville, FL 32605
Address	Address
Natural resources assessments and Wetland delineations	Air quality monitoring, Asbestos abatement, Industrial hygiene
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ 0-5 % (Total \$ Value) (% of Total Bid/RFP)	\$ _____ 0-5 % (Total \$ Value) (% of Total Bid/RFP)
Advanced Environmental Laboratories, Inc. (AEL)	Environmental Conservation Laboratories, Inc. (ENCO)
Name of Contractor	Name of Contractor
4965 SW 41st Blvd. Gainesville, FL 32608	10775 Central Port Drive, Orlando, FL 32824
Address	Address
Laboratory Services	Laboratory Services
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ 0-5 % (Total \$ Value) (% of Total Bid/RFP)	\$ _____ 0-5 % (Total \$ Value) (% of Total Bid/RFP)
Name of Contractor	Name of Contractor
Address	Address
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ % (Total \$ Value) (% of Total Bid/RFP)	\$ _____ % (Total \$ Value) (% of Total Bid/RFP)
Name of Contractor	Name of Contractor
Address	Address
Scope of Work to be Performed	Scope of Work to be Performed
\$ _____ % (Total \$ Value) (% of Total Bid/RFP)	\$ _____ % (Total \$ Value) (% of Total Bid/RFP)

If additional space is required for your subcontractor listing, make copies of this Exhibit F and submit with you RFP package.

DRUG FREE WORKPLACE

Section 22.09 Competitive Sealed Bidding of the Alachua County Purchasing Code states that in the evaluation of proposals, all factors in the bidding process being equal, both as to dollar amount and ability to perform, priority will be given, first, to those vendors certifying a drug-free workplace, secondly, to certified Small Business Enterprise (SBE) bidders.

The undersigned vendor in accordance with Florida Statute 287.087 and Section 22.09 of the Alachua County Purchasing Code hereby certifies that

DB Environmental Laboratories, Inc

Name of Business

does:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.



Bidder's Signature

4/22/19

Date

PUBLIC RECORD DECLARATION OR CLAIM OF EXEMPTION

As a bidder or proposer, any document you submit to Alachua County may be a public record and be open for personal inspection or copying by any person. In Florida "public records" are defined as all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physical form, characteristics, or means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by any agency. Section 119.011, F.S. A document is subject to personal inspection and copying unless it falls under one of the public records exemptions created under Florida law. Please designate what portion of your bid or proposal, if any, qualifies to be exempt from inspection and copying:

(Execute either section I. or II, but not both; bidder may not modify language)

I. NO EXEMPTION FROM PUBLIC RECORDS LAW

No part of the bid or proposal submitted is exempt from disclosure under the Florida public records law, Ch. 119, F.S.

James A. DeRode 4/24/19
 Bidder's Signature Date

--- OR ---

II. EXEMPTION FROM PUBLIC RECORDS LAW AND AGREEMENT TO INDEMNIFY AND DEFEND ALACHUA COUNTY

The following parts of the bid or proposal submitted are exempt from disclosure under the Florida public records law because; (list exempt parts and legal justification. i.e. trade secret):

By claiming that all or part of the bid or proposal is exempt from the public records law, the undersigned bidder or proposer agrees to protect, defend, indemnify and hold the County, its officers, employees and agents free and harmless from and against any and all claims arising out of a request to inspect or copy the bid or proposal. The undersigned bidder or proposer agrees to investigate, handle, respond to, provide defense (including payment of attorney fees, court costs, and expert witness fees and expenses up to and including any appeal) for and defend any such claim at its sole cost and expense through counsel chosen by the County and agrees to bear all other costs and expenses related thereto, even if they (claims, etc.) are groundless, false, or fraudulent.

 Bidder's Signature Date



CERTIFICATE OF LIABILITY INSURANCE

 DATE (MM/DD/YYYY)
04/08/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Northern Insurance Group 949 Brighton Avenue Portland ME 04102		CONTACT NAME: Melonie Malone-Wells PHONE (A/C No. Ext.): (954) 721-3337 FAX (A/C No.): (954) 721-8180 E-MAIL ADDRESS: melonie@northerninsurancegroup.com															
INSURED DB Environmental Lab Inc; Azura Inc 385 Gus Hipp Blvd Rockledge FL 32955		INSURER(S) AFFORDING COVERAGE <table border="1"> <tr> <th>INSURER</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A: Westchester Surplus Line Insurance Company</td> <td></td> </tr> <tr> <td>INSURER B: Hartford Accident and Indemnity Company</td> <td>22367</td> </tr> <tr> <td>INSURER C: Technology Insurance Co</td> <td>42376</td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </table>		INSURER	NAIC #	INSURER A: Westchester Surplus Line Insurance Company		INSURER B: Hartford Accident and Indemnity Company	22367	INSURER C: Technology Insurance Co	42376	INSURER D:		INSURER E:		INSURER F:	
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INSURER C: Technology Insurance Co	42376																
INSURER D:																	
INSURER E:																	
INSURER F:																	

COVERAGES CERTIFICATE NUMBER: CL191905420 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDITIONAL INSURED	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Premises Operations ☒ Products Completed GEN'L AGGREGATE LIMIT APPLIES PER: ☒ POLICY ☐ PROJECT ☐ LOC OTHER:	Y	G24346895007	01/01/2019	01/01/2020	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 150,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMPIG AGG \$ 2,000,000 Pollution Liability \$ 2,000,000
B	☒ AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☒ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY	Y	04UECZP0815	11/01/2018	11/01/2019	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ PIP-Basic \$ 10,000
	☐ UMBRELLA LIAB ☐ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE DED \$ RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/ MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N Y	TWC3760356	01/01/2019	01/01/2020	☒ PER STATUTE ☐ OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - SA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	PROFESSIONAL LIABILITY		G24346895007	01/01/2019	01/01/2020	GENERAL AGGREGATE \$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

The Alachua County Board of County Commissioners, its officials, employees and volunteers are to be covered as an Additional Insured as respects Liability arising out of activities performed by or on behalf of the Contractor, products and completed operations of the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor.
 The Contractor's insurance coverage shall be considered primary insurance as respects the County, its officials, employees or volunteers shall be excess of Contractor's insurance and shall be non-contributory.

CERTIFICATE HOLDER Alachua County Board of County Commissioners 12 SE 1st St Gainesville FL 32601	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE <i>Melonie Jay Malone-Wells</i>
---	---

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ACORD 25 (2016/03)

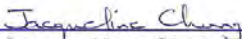
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**Alachua County Board of
County Commissioners
Equal Opportunity Office**

EDA ENGINEERS-SURVEYORS-PLANNERS, INC.

is Certified as a Small Business
Enterprise Under the Provisions of
Section 22, Alachua County Ordinance 06-28
from August 29, 2018 to August 29, 2019


Jacqueline Chung
Equal Opportunity
Manager


Chair
Alachua County Board of
County Commissioners



Alachua County.us

[How Can We Help You? >](#)[County Offices >](#)[Business Resources >](#)[Contact Us >](#)[County Offices >](#) [Small Business Program >](#) **[Small Business Directory](#)**

Small Business Directory

[Equal Opportunities >](#) [Small Business Main Page](#) | [Small Business Directory](#)Search for Products and Services: [For an alphabetical list of companies click here](#)**AKEA, INC.**

3603 NW 98TH STREET, SUITE B, GAINESVILLE, FL 32606

Contact: TERRY HENSLEY
Email: thensley@akeainc.com
Business Tel: (352) 474-6124
Fax Number: (352) 474-6324
Cert. Type: SMALL

Description:
ENGINEERING DESIGN - BUILD AND CONSTRUCTION; ARCHITECT.

ANAMAR ENVIRONMENTAL CONSULTING, INC

2106 NW 67TH PLACE, SUITE 5, GAINESVILLE, FL 32653

Contact: CONSTANCE STEEN
Email: csteen@anamarinc.com
Business Tel: (352) 377-5770
Fax Number: (352) 378-7620
Cert. Type: SMALL

Description:
ENVIRONMENTAL CONSULTING AND ENGINEERING

CAMPBELL SPELLICY ENGINEERING, INC.

3720 NW 43RD STREET, SUITE 106, GAINESVILLE, FL 32606

Contact: KEVIN SPELLICY
Email: spellicy@campbellspellicy.com
Business Tel: (352) 372-6967
Fax Number: (352) 372-7232
Cert. Type: SMALL

Description:
CONSULTING ENGINEERS; MECHANICAL, ELECTRICAL, PLUMBING & FIRE PROTECTION

EDA ENGINEERS-SURVEYORS-PLANNERS, INC.

2404 NW 43RD STREET, GAINESVILLE, FL 32606

Contact: DEBBIE WALLEN
Email: dwallen@engdenman.com
Business Tel: (352) 373-3541
Fax Number: (352) 373-7249
Cert. Type: SMALL

Description:
CIVIL ENGINEERING; LAND SURVEYING; LAND PLANNING

GEO TECHNOLOGIES, INC.

1016 SE 3RD AVENUE, OCALA, FL 34471

Contact: JONNY HEATH
Email: jheath@geotechfl.com
Business Tel: (352) 694-7711
Fax Number: (352) 694-7733
Cert. Type: SMALL

Description:
ENGINEERING CONSULTANTS/CONSTRUCTION MATERIALS TESTING

GEOHAZARDS, INC.

1204 NW 13TH STREET, GAINESVILLE, FL 32601

smallbusdir.alachuacounty.us/Default.asp?stralpha=engineer&B1=Submit

1/3

Contact: GERALD BLACK
Email: jblack@geohazardsinc.com
Business Tel: (352) 371-7243
Fax Number: (352) 371-4410
Cert. Type: SMALL

Description:
 GEOLOGY AND ENGINEERING SERVICES

GSE ENGINEERING & CONSULTING, INC.

5590 SW 64TH STREET, SUITE B, GAINESVILLE, FL 32608

Contact: KENNETH L. HILL
Email: khill@gseengineering.com
Business Tel: (352) 377-3233
Fax Number: (352) 377-0335
Cert. Type: SMALL

Description:
 GEOTECHNICAL, ENVIRONMENTAL AND STRUCTURAL ENGINEERING,
 CONSULTING

JBROWN PROFESSIONAL GROUP

3530 NW 43RD STREET, GAINESVILLE, FL 32606

Contact: LAURIE THOMAS
Email: laurie.thomas@jbgroup.com
Business Tel: (352) 375-8999
Fax Number: (352) 375-0833
Cert. Type: SMALL

Description:
 CIVIL ENGINEERING; LAND SURVEYING & PLANNING

JMJ CONSULTING ENGINEERING, LLC

309 SE 7TH STREET, GAINESVILLE, FL 32601

Contact: JOE MONTALTO, JR., PE
Email: jmontalto@windstream.net
Business Tel: (352) 494-6225
Fax Number: (352) 338-0303
Cert. Type: SMALL

Description:
 CIVIL ENGINEERING

KOOGLER AND ASSOCIATES, INC.

4014 NW 13TH STREET, GAINESVILLE, FL 32609

Contact: KIM HASKO
Email: khasko@kooglerassociates.com
Business Tel: (352) 377-5822
Fax Number: (352) 377-7158
Cert. Type: SMALL

Description:
 ENVIRONMENTAL ENGINEERING, CONSULTING AND TESTING

MITCHELL GULLEDGE ENGINEERING, INC.

210 SW 4TH AVENUE, GAINESVILLE, FL 32601

Contact: CRAIG GULLEDGE
Email: cgulledge@mitchellgulledge.com
Business Tel: (352) 745-3991
Fax Number: No fax number provided.
Cert. Type: SMALL

Description:
 CONSULTING ENGINEERING - BUILDING SYSTEMS DESIGN &
 ANALYSIS; MECHANICAL, ELECTRICAL PLUMBING, FIRE
 PROTECTION ENGINEERS

SPUTO AND LAMMERT ENGINEERING, LLC

10 SW 1ST AVENUE, GAINESVILLE, FL 32601

Contact: THOMAS SPUTO
Email: tsputo50@gmail.com
Business Tel: (352) 378-0448
Fax Number: No fax number provided.
Cert. Type: SMALL

Description:
 CONSULTING STRUCTURAL ENGINEERS

UNION LASTEEL METAL BUILDINGS, INC.

13237 SW 76TH STREET, LAKE BUTLER, FL 32054

Contact: JENNIFER FORSGREN, OFFICE MANAGER
Email: jforsgren@unionlasteel.com
Business Tel: (386) 496-0681
Fax Number: (386) 496-4705
Cert. Type: SMALL

Description:
 PRE-ENGINEERED STEEL METAL BUILDING
 CONTRACTOR

WATER & AIR RESEARCH, INC.

6821 SW ARCHER ROAD, GAINESVILLE, FL 32608

4/23/2019

Alachua County BOCC

Contact: BRYAN B. MCDONALD
Email: bmcdonald@waterandair.com
Business Tel: (352) 372-1500
Fax Number: (352) 378-1500
Cert. Type: SMALL

Description:
ENVIRONMENTAL ENGINEERING CONSULTING SERVICES

Number of records found: 14

You may download an [application form for Small Business Certification](#) here. Please mail it to Alachua County Equal Opportunity Division, 12 SE 1st Street, 1st Floor, Gainesville, FL 32627 to be considered for entry into the directory.



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Background image: Paines Prairie provided by: PhotoTale Studio, Portrait, Family and Landscape Photographer in Gainesville, FL

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smallbusdir.alachuacounty.us/Default.asp?stralpha=engineer&B1=Submit

3/3

DB Environmental, Inc

Equal Employment Opportunity Statement

DB Environmental, Inc. has established and adopted an Equal Employment Opportunity policy (“EEO”). The purpose of this policy is to ensure that all employment decisions are made on a non-discriminatory basis, and without regard to sex, race, color, age, national origin, religion, disability, genetic information, marital status, sexual orientation, gender identity/reassignment, citizenship, pregnancy or maternity, veteran status, or any other status protected by applicable national, federal, state, or local law.

List of References

Consultant Name:	DB Environmental, Inc.	
Client:	Alachua County Environmental Protection District	
Contact Person:	Robin Hallbourg, P.G.	
Phone Number:	(352) 264-6825	
Address:	408 W. University Avenue, Suite 106, Gainesville, FL 32641	
Location of Project:	Alachua County, FL	
DBE Manager/Key Team Members	Jim Myles (DBE) Kevin Grace (DBE)	Project: Sediment Phosphorus Stability in Little Hatchet Creek
Professional License:	n/a	

Consultant Name:	DB Environmental, Inc.	
Client:	Stormwater Engineer City of Gainesville Public Works	
Contact Person:	Alice Rankeillor, P.E.	
Phone Number:	(352) 393-8408	
Address:	PO Box 490 Station 58, Gainesville, FL 32627	
Location of Project:	Gainesville, FL	
DBE Manager/Key Team Members	Kevin Grace (DBE)	Project: Revitalizing Sweetwater Branch
Professional License:	n/a	

Consultant Name: DB Environmental, Inc.

Client: Kestrel Ecological Services, LLC

Contact Person: Erick Smith

Phone Number: (352) 380-0648

Address: PO Box 12417, Gainesville, FL 32604

Location of Project: Gainesville, FL

DBE Manager/Key Team Members Kevin Grace (DBE) **Project:** University House Erosion Mitigation Project

Professional License: n/a

Consultant Name: DB Environmental, Inc.

Client: City of Orlando

Contact Person: Mark Sees

Phone Number: (407) 568-1706

Address: 25155 Wheeler Road, Christmas FL, 32709

Location of Project: Christmas, FL

DBE Manager/Key Team Members Thomas DeBusk (DBE) **Project:** Modeling the Effects of Increased Phosphorus Loading and Flow Pulsing on Phosphorus Removal Performance of the Orlando Easterly Wetland

Professional License: n/a

Subconsultant Name: GSE Engineering & Consulting, Inc.

Client: Dogwood Acquisition, LLC

Contact Person: Mr. Oscar Rodriguez

Phone Number: (352) 333-3233

Address: 5590 SW 64th St., Suite B, Gainesville, FL 32608

Location of Project: Gainesville, FL

GSE Manager/Key Team Members Jay Nordqvist, P.E. **Project:** Dogwood Park

Professional License: Professional Engineer license provided in the following section.

Subconsultant Name: GSE Engineering & Consulting, Inc.

Client: Concept Development, LLC

Contact Person: Mr. Al Tilly

Phone Number: (352) 333-3233

Address: 5590 SW 64th St., Suite B, Gainesville, FL 32608

Location of Project: Gainesville, FL and Ulmerton Road Largo, Florida

GSE Manager/Key Team Members Jay Nordqvist, P.E. **Project:** Commercial Retail

Professional License: Professional Engineer license provided in the following section.

Subconsultant Name: GLE Associates, Inc.

Client: University of Florida

Contact Person: Mr. Frank Javaheri

Phone Number: (352) 273-4027

Address: 2228 NW 40th Terrace, Suite C, Gainesville, FL 32605

Location of Project: Gainesville, FL

GLE Manager/Key Team Members James Elliott
Paul Zak
Robert B. Greene
Michael B. Collins
John Hansen

Project: University of Florida
Environmental Services Contract

Professional License: Business licensed for geology, engineering, asbestos, and lead-based paint. Licenses provided in the following section.

Subconsultant Name: GLE Associates, Inc.

Client: Citrus County School Districts

Contact Person: Greg Covino

Phone Number: (352) 726-1931

Address: 1007 West Main Street, Inverness, FL 34450

Location of Project: Inverness, FL

GLE Manager/Key Team Members James Elliott
Paul Zak
Robert B. Greene
Michael B. Collins
John Hansen

Project: Citrus County School
Districts Environmental Services
Contract

Professional License: Business licensed for geology, engineering, asbestos, and lead-based paint. Licenses provided in the following section.

Subconsultant Name:	GLE Associates, Inc.	
Client:	City of Ocala	
Contact Person:	Payal Pandaya - work was performed under William F. Stevens	
Phone Number:	(352) 351-6733	
Address:	201 SE 3 rd Street, 2 nd Floor, Ocala, FL	
Location of Project:	Ocala, FL	
GLE Manager/Key Team Members	James Elliott Paul Zak Robert B. Greene Michael B. Collins John Hansen	<u>Project:</u> Cattle Dip Vat Reassessment and Closure Project
Professional License:	Business licensed for geology, engineering, asbestos, and lead-based paint. Licenses provided in the following section.	



Ron DeSantis, Governor

Halsey Beshears, Secretary



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS

THE PROFESSIONAL ENGINEER HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

NORDQVIST, JOAKIM BJORN

14313 SW 70 STREET
ARCHER FL 32618

LICENSE NUMBER: PE42681

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com



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Ron DeSantis, Governor

Halsey Beshears, Secretary



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

GSE ENGINEERING & CONSULTING, INC.

5590 SW 64TH STREET, SUITE B
GAINESVILLE FL 32608

LICENSE NUMBER: CA27430

EXPIRATION DATE: FEBRUARY 28, 2021

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RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL GEOLOGISTS

THE GEOLOGY BUSINESS HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 492, FLORIDA STATUTES

GLE ASSOCIATES, INC.

5405 CYPRESS CENTER DR
SUITE 110
TAMPA FL 33607

LICENSE NUMBER: GB297

EXPIRATION DATE: JULY 31, 2020

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Ron DeSantis, Governor

Halsey Beshears, Secretary



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
BOARD OF PROFESSIONAL ENGINEERS

THE ENGINEERING BUSINESS HEREIN IS AUTHORIZED UNDER THE
PROVISIONS OF CHAPTER 471, FLORIDA STATUTES

GLE ASSOCIATES, INC.

5405 CYPRESS CENTER DR
SUITE 110
TAMPA FL 33609

LICENSE NUMBER: CA5483

EXPIRATION DATE: FEBRUARY 28, 2021

Always verify licenses online at MyFloridaLicense.com



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State of Florida
Department of Health, Bureau of Public Health Laboratories



This is to certify that

EB3330

DB ENVIRONMENTAL LABORATORIES, INC.
365 GUS HIPP BLVD
ROCKLEDGE, FL 32955

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories:

NON-POTABLE WATER - GENERAL CHEMISTRY; NON-POTABLE WATER - METALS; SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY;
SOLID AND CHEMICAL MATERIALS - METALS; BIOLOGICAL TISSUE - GENERAL CHEMISTRY; BIOLOGICAL TISSUE - METALS

Continued certification is contingent upon successful on-going compliance with the NELAP Standards and FAC Rule 64E-1
regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and
are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are
urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: November 27, 2018 Expiration Date: June 30, 2019




 Patty A. Leisnerowski, MBA, MT(ASCP)
 Chief Bureau of Public Health Laboratories
 DH Form 1657, 1/04
 NON-TRANSFERABLE - EB3330-28-11/27/2018
 Supersedes all previously issued certificates





State of Florida
Department of Health, Bureau of Public Health Laboratories



This is to certify that

EB3182

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. (ENCO) -
ORLANDO
10775 CENTRAL POST DRIVE
ORLANDO, FL 32824-1009

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories:

DRINKING WATER - MICROBIOLOGY; DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS; DRINKING WATER - SECONDARY INORGANIC
CONTAMINANTS; NON-POTABLE WATER - EXTRACTABLE ORGANICS; NON-POTABLE WATER - GENERAL CHEMISTRY; NON-POTABLE WATER -
METALS; NON-POTABLE WATER - MICROBIOLOGY; NON-POTABLE WATER - PESTICIDES/HERBICIDES/PCBS; NON-POTABLE WATER - VOLATILE
ORGANICS; SOLID AND CHEMICAL MATERIALS - EXTRACTABLE ORGANICS; SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY; SOLID
AND CHEMICAL MATERIALS - METALS; SOLID AND CHEMICAL MATERIALS - PESTICIDES/HERBICIDES/PCBS; SOLID AND CHEMICAL MATERIALS -
VOLATILE ORGANICS

Continued certification is contingent upon successful on-going compliance with the NELAP Standards and FAC Rule 64E-1
regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and
are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are
urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: July 01, 2018 Expiration Date: June 30, 2019




 Patty A. Leisnerowski, MBA, MT(ASCP)
 Chief Bureau of Public Health Laboratories
 DH Form 1657, 1/04
 NON-TRANSFERABLE - EB3182-44-01/01/2018
 Supersedes all previously issued certificates





State of Florida
Department of Health, Bureau of Public Health Laboratories



This is to certify that

EB2001

ADVANCED ENVIRONMENTAL LABORATORIES, INC. - GAINESVILLE
4965 SW 41ST BLVD
GAINESVILLE, FL 32608

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories:

DRINKING WATER - MICROBIOLOGY; DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS; DRINKING WATER - SECONDARY INORGANIC
CONTAMINANTS; NON-POTABLE WATER - GENERAL CHEMISTRY; NON-POTABLE WATER - MICROBIOLOGY; SOLID AND CHEMICAL MATERIALS -
GENERAL CHEMISTRY; SOLID AND CHEMICAL MATERIALS - MICROBIOLOGY

Continued certification is contingent upon successful on-going compliance with the NELAP Standards and FAC Rule 64E-1
regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and
are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are
urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: July 01, 2018 Expiration Date: June 30, 2019




 Patty A. Leisnerowski, MBA, MT(ASCP)
 Chief Bureau of Public Health Laboratories
 DH Form 1657, 1/04
 NON-TRANSFERABLE - EB2001-58-01/01/2018
 Supersedes all previously issued certificates



Environmental 365 Gus Hipp Blvd., Rockledge, FL 32955

**20-171: Annual
Environmental Consulting
Services**

2:00 pm, Wednesday, April 24, 2019
Attention: Alachua County Division of Purchasing,
3rd Floor
12 SE 1st Street
Gainesville, FL 32601-6983

APR 24 19 AM 11:53