

## **George Sills Geotechnical Engineering Consultant, LLC**

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**MR. GEORGE SILLS**

**SPECIALTY/SKILLS:**

Geotechnical Engineer, levees and slopes, cutoff walls (ex-USACE)

**GEOGRAPHIC BASE:** Vicksburg, MS

**TYPE OF COMPANY:** Sole Proprietor

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### **RESUMÉ**

#### **MR. GEORGE L. SILLS**

- EDUCATION**      Advanced Graduate Work, Civil Engineering, Louisiana State University, toward Ph.D  
ME, Civil Engineering, Texas A & M University, 1981  
BS, Civil Engineering, Mississippi State University, 1975
- REGISTRATION**      Professional Engineer: MS, TX
- AWARDS**      Tau Beta Pi Member
- Selected by National Society of Professional Engineers as USACE National Engineer of the year and one of the Top 10 Federal Engineers of the Year-1999
- Award for Outstanding Team Effort for planning and testing of temporary, barrier-type flood-fighting technologies. Award-May 2008
- Commander's Award for Superior Civilian Service, 2007-for service to ERDC
- Commander's Award for Superior Civilian Service, 2007- for service to IPET Team
- Certificate of Appreciation from Sacramento District, U.S. Army Corps of Engineers for leading the Levee Seepage Task Force for developing criteria for flood protection – 2003

Commander's Award for Civilian Service-1995, 1999

Commander's Award for Community Service-1994, 1999

Appointed to MS State University National Board of Directors and recipient of the Distinguished Service Award-1994

Commander's Award for Civilian Service-1994. During the 1993 Midwest flood, George served as technical advisor for the USACE St. Louis District to answer seepage related questions in the field during the flood event.

## **PROFESSIONAL SUMMARY**

George currently serves as manager of his private consultant company, George Sills Geotechnical Engineering Consultant, LLC, which he opened in 2008. George is retired from the U.S. Army Corps of Engineers (Corps) where he worked for over 36 years. He was employed by the Vicksburg District for 32 of those years and the Engineer Research & Development Center (ERDC) for 4 years. He has extensive experience in the evaluation, design, and construction of dams, levees, pumping plants, and flood fighting. George has lead several investigations into the causes and mechanisms of seepage distress along levees and has helped the Corps develop a comprehensive understanding of these issues. He has lectured and published numerous technical papers on levee seepage distress and levee design.

While at ERDC, George led the joint Corps and Bureau of Reclamation (Reclamation) team that developed a toolbox for use in performing Probabilistic Risk Assessments (PRAs) on Corps and Reclamation dams with regard to seepage and piping distress. Much of this effort involved leading a diverse group to resolve complex and conflicting guidance criteria to create useable tools for practitioners from different agencies. George also served on the Corps' National Levee Safety Program to help set policy/methodology for Corps levee assessments in the future. George also led the team assigned to rewrite the Corps Levee Design Engineering Manual, which instructs engineers in proper design procedures for levee underseepage. This document is currently in draft form and undergoing review.

George served on a team from 2006 through 2007 to provide Independent Technical Review of the design for repairs to the Herbert Hoover Dike in Florida. This 145-mile-long dam/dike was constructed over peat and limestone which created seepage problems. Currently, George is a member of the Independent Consulting Board reviewing the ongoing design work for urban and non-urban levees in the Central Valley of California. He also serves on the Senior Board of Consultants for the review of levee designs for the Natomas Levee Improvement Program for the Sacramento Area Flood Control Agency. He also serves on a similar Board of Senior Consultants for the Cities of West Sacramento, CA,

Sutter-Butte, CA, and Dallas, TX. During 2008, George was selected and served as a member of the National Levee Safety Committee Review Team which reviewed the new levee proposals made to Congress.

In 2005, George was selected to serve on the Corps' Interagency Performance Evaluation Task Force (IPET) following Hurricane Katrina as a member of the Perishable Data Team and also as a member of the Performance Analysis Team. He made major contributions to these efforts and to the IPET document that summarized the team's findings. He has also testified in court about their efforts on this study.

During 2003, George was selected to lead the Sacramento District (SPK) Levee Seepage Task Force. The Task Force consisted of six levee experts: two from the federal government, one from the State of California, one private consultant, and two consultants from universities. George led this diverse team to accomplish their mission within budget and within schedule. George later took the information from this study and wrote an Engineering Technical Letter to change procedures currently used by USACE for their nationwide approach to seepage design.

While at the Vicksburg District, Mr. Sills led a study to determine the effects on area groundwater along the Red River which might occur from impounding the pools for navigation on the Red River.

## **RELEVANT EXPERIENCE**

### **1994-2003**

- While working at the Vicksburg District George performed the following as a Geotechnical Coordinating Specialist: George assisted the Branch Chief with the overall management, direction, control, administration, planning, and review of the engineers and design functions of the Geotechnical Branch of the Vicksburg District (MVK). He evaluated technical staffing and performance and made recommendations on the most economical, efficient, and feasible methods and/or manner to accomplish work. He also established schedules and priorities. He served as Technical Expert and Consultant for guidance and recommendations to MVK, other Corps Districts, A-E firms, and higher Corps echelons. During this period, George led the design effort for the soil nailing of the Natchez Bluffs.

### **July 1994-December 1994**

- Served as a Project Engineer in the Programs and Project Management Division, managing the \$1.8 billion Red River Basin Project. Daily, he coordinated all District functions concerning District policies and procedures. He served as major liaison between the project sponsor and Corps. He also worked closely with Congressional staff in order to meet project milestones. He used innovative problem solving techniques to enable the District to begin pool impoundments as scheduled.

**December 1994-December 1995**

- Supervisory Civil Engineer, GS-0810-13, Acting Chief of the Analytical Section with the responsibility of supervising twelve engineers and professionals. This responsibility included personnel and administrative matters as well as scheduling and programming funds. During this period, the Section met or exceeded all schedule requirements and operated within budget requirements.

**December 1989-July 1994**

- Geotechnical Specialist responsible for the designs and reviews of all geotechnical work associated with the Red River Project. This work included designing the foundations for the locks and dams, dewatering requirements, and all other Geotechnical requirements. During this project, George invented a method of slide repair reported in ASCE and currently used by private and government sectors.

**January 1991-November 1991**

- Served as a professional specialist in Project Management, CEMVD General Management Branch. Responsibilities included executing the project management function for Engineering Division by furnishing staff assistance and managerial and technical advice to Districts and MVD staff. He also coordinated the review of reports and studies, monitored District schedules, identified potential slippages, and took corrective action when necessary.

**January 1981-December 1989**

- Served as Project Engineer in the Analytical Section where George was responsible for geotechnical design of complex multimillion dollar projects, as well as supervision of as many as 20 engineers and professionals in the execution of field testing operations. These field tests included the pile load test at John H. Overton Lock and Dam for a period of 8 months, as well as field pumping tests at Locks and Dams No. 4 and 5 on the Red River. He was also responsible for programming funds for the entire Red River in CEMVK-ED-G. George was the primary point of contact for design and/or construction problems for Locks and Dams No. 2, 3, 4, and 5 on the Red River.

**Concrete Locks and Dams**

- Served as Geotechnical Project Engineer for the Red River Waterway Project and was responsible for designing and reviewing all Geotechnical designs of this \$1.8 billion dollar project. This design work included the foundations for the locks and dams, dewatering requirements, and all other Geotechnical requirements.
- Geotechnical Project Engineer for the Joe D. Waggoner, Jr. L&D (Lock & Dam No. 5) on the J. Bennett Johnston Waterway Project (Red River Waterway). His design and construction experience on this project included a slurry trench design and dewatering wells to unwater the excavation. He also led a field pumping test at this site.
- Geotechnical Project Engineer for the design and construction of the Russell B. Long L&D (Lock & Dam No. 4) on the Red River

Waterway, this design included a slurry trench, dewatering wells, and excavation through a rock formation. He also led a field pumping test at this site.

- Geotechnical Project Manager for Lock & Dam No. 3 for the design and construction which also included a field pump test.
- Geotechnical Project Manager for John H. Overton L&D (Lock & Dam No. 2) for the construction phase which included the redesign of the field pile load test program. The pile test program was modified using a method never tried before. Because of these changes, the modified program was able to collect more useable data while saving the Government a sum of \$450,000.
- Geotechnical Project Manager for the construction of Lindy C. Boggs L&D (Lock & Dam No. 1) where he answered all geotechnical related questions during construction.
- Geotechnical Engineer performing all phases of geotechnical design for the foundation of Felsenthal L&D and T.K. Thatcher L&D (Calion L&D) on the Ouachita-Black Navigation Project.

#### **Dams and Levees**

- Served on a group to provide Independent Technical Review for the Herbert Hoover Dike in Florida. This 145 mile long dam/dike was constructed over peat and limestone which has created seepage problems. This review team was responsible for assuring the safety of the design repair.
- He led a diverse team of Corps, State of California personnel, and leading academic experts to review the Sacramento Districts practices of levee construction. Results from this study have led to major changes in the procedures the Corps used nationwide in levee design.
- Geotechnical Engineer managing the geotechnical designs of the Sicily Island Levee system. This project included numerous drainage structures, several large pumping plants, and approximately 70 miles of levees.
- Geotechnical Engineer designing numerous miles of mainline Mississippi River Levee enlargements that included stability berms, seepage berms, and relief well designs.
- Geotechnical Engineer designing and providing construction design support for the Swan Lake levee project. This project was constructed over very soft soils with shear strengths less than 100 psf.
- Geotechnical Project Manager for the geotechnical design for the earthen closures at Locks & Dams 2, 3, 4, and 5 on the Red River. All these closures were constructed in the wet.

#### **Other Experience**

- George has worked on numerous deep slurry trenches and has been heavily involved both in design and in the oversight of construction. He is widely known as an expert in several fields of Geotechnical Engineering.
- Publication and expertise in long-term behavior of soils and slope

stability, pile design and driving.

- Experience in dewatering, slope stability, slurry trench design and construction, ground water movements, seepage, and foundation design.
- Ameristar Casino (Vicksburg) – review of cofferdam cell keyed into limestone that was sliding – including the development of recommendations to stabilize (for Sverdrup).
- Served as lead geotechnical designer for the \$1.8 billion Red River Waterway project that included five locks and dams. Work included pile design, cofferdam cells, dewatering, slope stability, etc.
- Invented a method of slide repair using stone filled trenches that was later published by the American Society of Civil Engineers.
- Responsible geotechnical engineer for the Natchez Bluff Stabilization Project which used “soil nailing”.

#### **Expert Witness for Litigation**

- 2006 testified on IPET forensic work for New Orleans in: Colleen Berthelot, et al., v. BOH Brothers Construction Co., LLC, et al., Civil Action No. 05-4182, May 4, 2006, United States District Court, E.D. Louisiana.
- Calion Lock and Dam - dewatering and differing site condition construction claim - a second claim for rock in the outlet channel.
- Felsenthal Lock and Dam - dewatering construction claim
- John H. Overton Lock and Dam - access road construction claim differing site conditions
- Lock and Dam No. 3 - access road claim - differing site conditions construction claim
- Lock and Dam No. 4 - differing site conditions construction claim - rock in the inlet channel evaluation of difficult driving of sheep pile in rock
- Provided technical assistance to EPA in trial conducted in Texas (1995).
- Provided testimony and assistance concerning “sudden drawdown failures” in lawsuit defended by the Red River Waterway Commission
- Provided numerous depositions in the above listed cases and disputes.

**PUBLICATIONS**      Approximately 50.