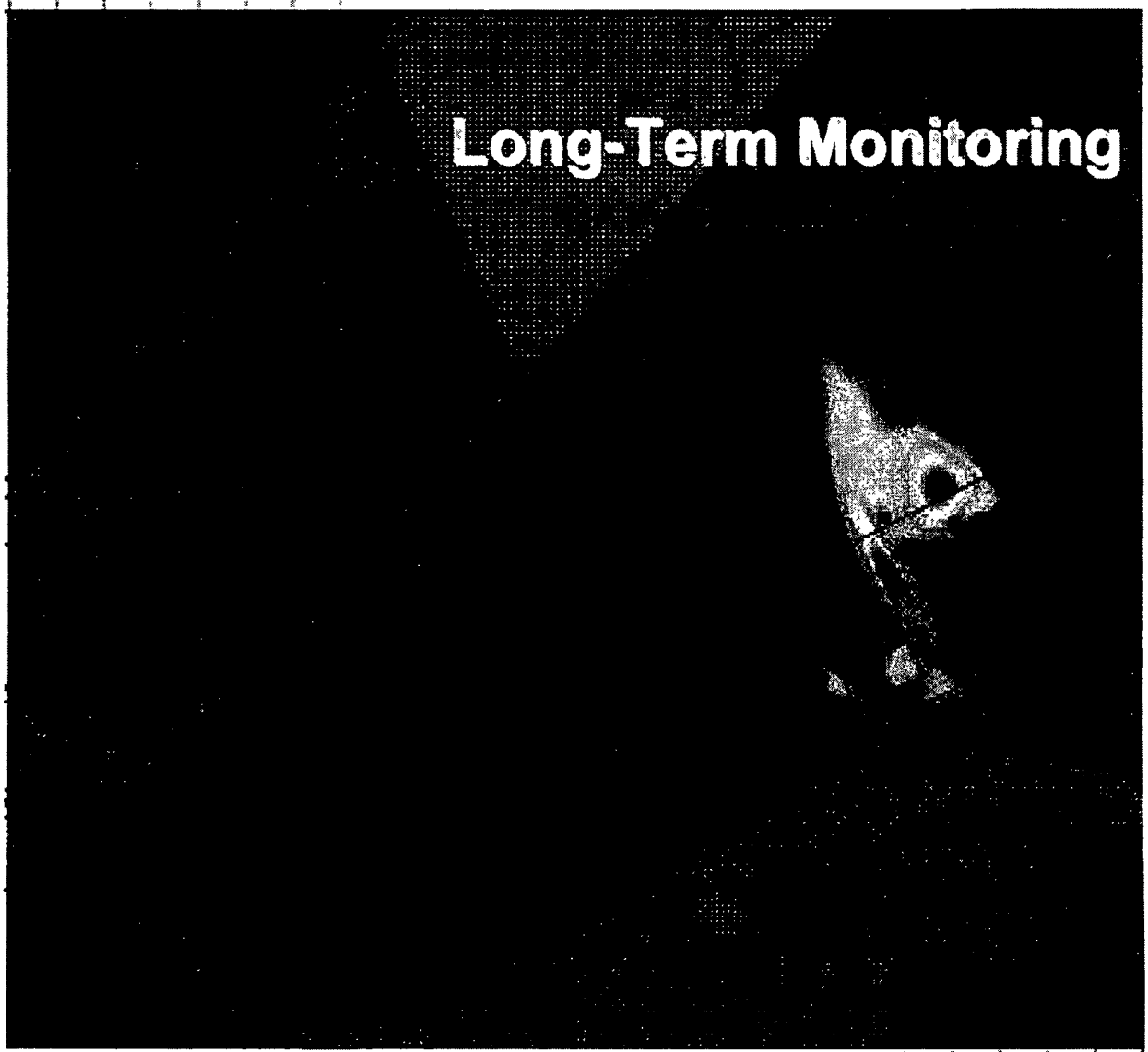
Spectra Tech Inc.

Long-Term Monitoring



Prepared by:
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Oak Ridge, Tennessee 37830

January 20, 2006

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Introduction

Spectra Tech Inc. has the qualifications and experience to perform Long-Term Monitoring at Solid Waste Management Units (SWMUs) 2, 7, 14 and 39 at Naval Support Activity (NSA) Mid-South in Millington, Tennessee, as specified in Request for Proposal (RFP) No. N62467-06-R-6001 issued November 23, 2005 (as amended on November 30 and December 5, 2005).

Spectra Tech is a Tennessee-based U.S. Small Business Administration (SBA)-certified 8(a) and HUBZone firm with a staff of more than 45 full- and part-time professionals. Spectra Tech is a values-based company that believes in performing our work with integrity, being good stewards of our resources, performing quality work, and working as a team.

For this work, Spectra Tech is teaming with EnSafe Inc., a global professional services company based in Memphis, Tennessee. EnSafe has significant experience at NSA Mid-South, having performed this RFP's Statement of Work (SOW) for two years, which will allow our team to begin working immediately and effectively, with little to no learning curve about the requirements of the task or particulars about working at the installation. We have in-depth experience as a team, having entered into a formal SBA-approved mentor-protégé relationship. We currently work with EnSafe on environmental monitoring and remediation projects at the Charleston Naval Complex and for Westinghouse Savannah River Co. We also are performing coordination of design logistics to facilitate the U.S. Environmental Protection Agency's (USEPA) first Oil Pollution Act of 1990-mandated Spill of National Significance exercise, scheduled for 2007. Thus the firms know each other and have an appreciation of their mutual capabilities and confidence in their performance.

Spectra Tech Overview

Spectra Tech's principals, and Spectra Tech as a company, have a history of continued success in performing environmental and multidisciplinary engineering work for federal and commercial clients. Our major clients include the U.S. Army Corps of Engineers, USEPA, the U.S. Veterans Administration, Oak Ridge National Laboratory (ORNL), Foster Wheeler Environmental Corp., URS Corp., Duratek, and Naval Facilities Engineering Command, Southern Division (SOUTHDIV).

Spectra Tech President Loong Yong holds a PhD in nuclear engineering. He has more than 18 years of technical and management experience in environmental remediation, waste management, and environment, safety, and health. He managed the preparation of a major update to the ORNL Environmental Protection Manual and worked on the performance assessments of nuclear and hazardous waste repositories.

Spectra Tech's Environmental Services Vice President; Robb Unger, PE; has 34 years of experience in environmental compliance projects and will serve as the program manager for this project.

EnSafe Overview

EnSafe has considerable expertise and experience providing environmental investigation and remediation services. This experience includes implementation of in situ enhanced bioremediation and monitored natural attenuation (MNA) of chlorinated solvents in groundwater at numerous sites. EnSafe specializes in engineering, environment, health & safety, and technology. Founded in 1980, EnSafe has been using creative thinking to deliver custom solutions to our clients for 25 years. EnSafe has more than 20 years' experience working on U.S. Navy projects, including a major Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at NSA Mid-South.

In 2005, *Engineering News-Record* magazine ranked EnSafe No. 265 among the Top 500 U.S. Design Firms and No. 123 among Top 200 U.S. Environmental Firms. EnSafe has been recognized for its engineering innovations and prowess through these national and state awards.

- Secretary of the Navy and the Chief of Naval Operations 2000 awards for environmental restoration at Naval Weapons Industrial Reserve Plant McGregor, TX
- Chief of Naval Operations 2005 award for environmental restoration at NAS Pensacola, FL
- *Engineering News-Record* — 123rd largest environmental engineering firm and the 265th largest design firm in the U.S.
- American Council of Engineering Companies of Tennessee
  - 2005 Engineering Excellence Top Surveying and Mapping Technology Award for GIS Mapping at NSA Mid-South, Millington, TN
  - 2005, Engineering Excellence Top Studies, Research, and Consulting Engineering Award for Innovative ICP/SPCC Plans for MCB Camp Lejeune and MCAS New River, NC
  - 2003 Engineering Excellence Grand Award for 3D Imaging of Karst Bedrock beneath Engineered Structures, Dickson County, TN
  - 2002 Engineering Excellence Grand Award for Use of Mine Spoils as an Alternative Capping Material for Sanitary Landfill Closure, Grundy County, TN
  - 2000 Engineering Excellence Grand Award for Remediation of Perchlorate Contamination at NWIRP McGregor, TX
  - 1999 Engineering Excellence Top Environmental Award for Innovative Remediation of Stamina Mills NPL Site, Smithfield, RI
- Inc. Magazine/Cisco award as a top innovator in the use of information technology
- American Consulting Engineers Council — 2000 National Engineering Excellence Award Finalist

EnSafe has ample resources to devote to this contract with more than 250 employees in 15 offices worldwide.

Factor A Project Experience

A.1 Corporate Experience

The following case histories demonstrate that the Spectra Tech team has experience in implementing in situ enhanced bioremediation systems for treating chlorinated solvents in groundwater. In fact, EnSafe installed the systems specified in this RFP and thus has intimate knowledge of their operation and long-term monitoring requirements.

■ Full-Scale Implementation of Enhanced Bioremediation for Treatment of Chlorinated Solvents in Groundwater, NSA Mid-South, Millington Tennessee

EnSafe conducted a pilot enhanced reductive dechlorination study at NSA Mid-South. The focus area for the study was the largest of the four plumes in the lower portion of the fluvial deposits groundwater on NSA Mid-South's former Northside designated as Area of Concern (AOC) A.

The pilot study's objective was to examine the feasibility of biologically remediating chlorinated solvents such as trichloroethylene (TCE) in fluvial deposits groundwater. Based on the results of the pilot study, a full-scale system was implemented in May 2004 and continues to reduce chlorinated solvents impacting this area.

EnSafe has been solely responsible for operation and maintenance of the full-scale system. This includes:

- Installation of an injection well network to facilitate distribution of substrate
- Installation of a monitoring well network for performance monitoring
- Performing monthly substrate injections and quarterly performance monitoring
- Evaluation of data and development of Progress Reports

NSA Mid-South Project Details

Contract Title/Number: Comprehensive Long-Term Environmental Action Navy; N62467-89-D-0318

Location: Millington, Tennessee

Dollar Amount: $10.4 million (total RFI)

Performance Dates: 1991 to Dec. 31, 2005

Agency Contracting Officer: Robert Rivers, Contract Specialist; Telephone, (843) 820-5622; Fax, (843) 820-5865

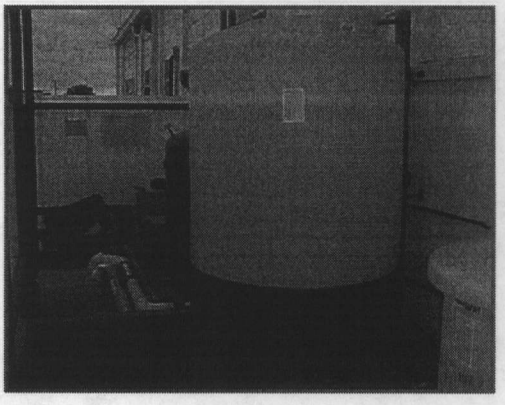
Agency Technical Manager: Bill Hill, Engineer in Charge; Telephone and Fax, (843) 820-7324, (843) 820-5563

Lead Regulatory Agency (State or EPA): Tennessee Department of Environment and Conservation

Performance Evaluation Report: 95% for Most Recent Evaluation

Commendation from Tennessee Regulator Clayton Bullington: "Mostly, I would like to say that your dedication to quality work has led to a well defined and quite successful remedial effort at NSA Mid South."

To facilitate installation of the injection wells, EnSafe obtained permits from the State of Tennessee and the local Groundwater Quality Control Board (GWQCB). In support of the GWQCB permit, EnSafe presented information to request the original permit and provided periodic updates. EnSafe also presented updates to the Restoration Advisory Board concerning the progress of the cleanup.



Results of a December 2005 Progress Report indicate the introduction of sodium acetate and ammonium phosphate has firmly establish reducing conditions in all four plumes, a condition that is critical to enhanced reductive dechlorination. Isotopic analyses performed for TCE and its daughter products have confirmed the robust microbial degradation of these contaminants in the aquifer.

The success of the pilot study and positive indicators of the full-scale system led to the selection of this technology for treatment of TCE in plumes at SWMUs 14 and 39 on the base's Southside. EnSafe has also been solely responsible for the successful full-scale implementation of enhance bioremediation at these sites.

Key Personnel Involved: John Stedman, Ronnie Britto, and Phil Atkinson

■ Operations and Management of ETTP Central Neutralization Facility, Oak Ridge, Tennessee

Spectra Tech personnel fill key positions providing environmental, safety, health, and quality (ESH&Q) support for the operation of the Central Neutralization Facility (CNF) at the East Tennessee Technology Park (ETTP), a mixed radiological and hazardous waste treatment facility treating liquid effluents from various groundwater sources, remedial action waste streams, process streams and effluent from the Toxic Substances Control Act (TSCA) Incinerator Mixed Waste disposal facility.

Project Details

Contract Title/Number: (URS Corp. under subcontract to Bechtel Jacobs Co.) No. 7590152

Location: East Tennessee Technology Park, Oak Ridge, Tennessee

Dollar Amount: $612,000/year

Performance Dates: 3/2002 to 3/2006

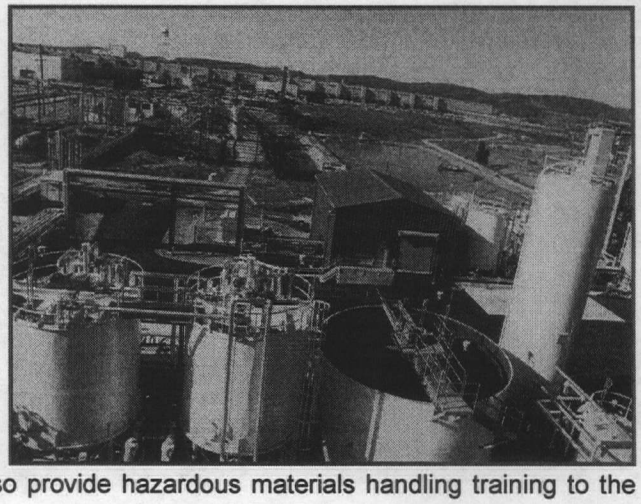
Agency Contracting Officer: Christine Taylor, (512) 454-4797

Agency Technical Manager: Michael Juscius, (865) 574-3802

Lead Regulatory Agency (State or EPA): Tennessee Department of Health and Environment

Performance Evaluation Report: Spectra Tech received an "outstanding" rating for work at this facility from our client, URS Corp.

Support includes programmatic, functional, and technical support in the areas of environmental compliance, waste management, transportation, safety and health, and quality assurance. The CNF, owned by the U.S. Department of Energy (DOE), is a 24-hours-per-day seven-days-per-week operation consisting of groundwater monitoring wells and recovery wells for three contaminated plumes, various contaminated building sumps and pump stations, force mains, and treatment facilities. Unit processes within the CNF include flow equalization, chemical physical treatment, chemical oxidation, pressure filtration, forced air stripping, activated carbon adsorption, and centrifuge dewatering.



The facility includes the recovery and treatment of the K-1070 Burial Ground TCE- and uranium-contaminated groundwater, the Mitchell Branch slurry wall and recovery well field for the TCE- and uranium-contaminated K-1407 plume. Routine treatment includes chemical-physical removal of uranium along with air-stripping and activated carbon adsorption of TCE. A reactive slurry wall with injection of metallic iron was abandoned as ineffective early in the project.

Spectra Tech personnel perform hazardous, mixed, and radioactive waste characterization, sampling, waste inventory tracking, operation and maintenance support, and prepare waste shipments for transportation and disposal at Envirocare in Utah. Spectra Tech personnel also provide hazardous materials handling training to the CNF work force.

In the compliance area, Spectra Tech performs monitoring and tracking for compliance with RCRA, Clean Water Act, Clean Air Act, National Pollutant Discharge Elimination System (NPDES), National Emissions Standards for Hazardous Air Pollutants, and hazard communications requirements. Spectra Tech

personnel also perform sample management and oversee the CNF sampling and analysis program, including data validation and verification and reporting.

Additional project tasks performed by Spectra Tech include quality assurance (QA) reviews, project training and updates of training matrices, maintenance of training records, verification of current training records, and training for QA programs. QA support includes the identification, control, and correction of nonconforming items and processes and the facility as well as document control and procurement QA.

Key Personnel Involved: Robb Unger

■ MNA Remedy, Tennessee Electroplating, Ripley, Tennessee

EnSafe performed a remedial investigation/feasibility study to investigate the presence of chlorinated solvents in groundwater at the Tennessee Electroplating Co. (TNEP) in Ripley, Tennessee. This followed an agreement TNEP made with the Tennessee Department of Environment Conservation's (TDEC) Division of Remediation to join the Voluntary Cleanup Oversight and Assistance Program in 1997. EnSafe's investigation and geochemical analyses showed that chlorinated solvents —TCE and its daughter products — were biodegrading naturally in groundwater. EnSafe assembled an MNA Plan detailing the site investigation, findings, and monitoring requirements.

Tennessee Electroplating Project Details

Contract Title/Number: N/A

Location: Ripley, Tennessee

Dollar Amount: $380,184

Performance Dates: 1997-present

Agency Contracting Officer: Steve Sheriff; Telephone, (731) 635-3421; Fax, (731) 635-9702

Agency Technical Manager: N/A

Lead Regulatory Agency (State or EPA): Tennessee Department of Environment and Conservation, Division of Remediation, Don Sprinkle, (731) 512-1328

Performance Evaluation Report: None available.

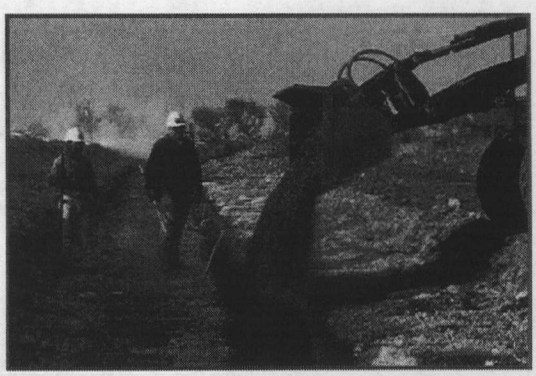
The maximum TCE in groundwater at the site was 3,300 micrograms per liter (µg/L) in 2001. The maximum concentration measured in August 2005 was 370 µg/L. The cis-1,2-dichloroethylene (cis-DCE) concentrations at values an order of magnitude above the current TCE concentration are being observed. The decrease in TCE and increase in its daughter product cis-DCE is a positive indicator that natural attenuation is occurring. However, neither cis-1,2-DCE nor vinyl chloride (another daughter product) appear to be accumulating in groundwater and the geochemical conditions in groundwater appear to continue to be very supportive on natural attenuation.

Monitoring continues on an annual basis followed by an annual assessment report to TDEC. The MNA remedy has proven to be much more economical compared to any engineered remedy — biological or physical/chemical — that may have been considered for the site.

Key Personnel Involved: Ronnie Britto

■ In Situ Bioremediation, NWIRP McGregor, TX

EnSafe is conducting an RFI that included the characterization of seven SWMUs ranging from an acid disposal area to an operating open burning/open detonation unit, and former pink water stabilization ponds as well as ubiquitous chlorinated solvent contamination. EnSafe was well into the RFI when data began to emerge regarding the potential health effects of perchlorate, which was used extensively at the facility. EnSafe rapidly integrated perchlorate sampling into the ongoing RFI.



In early 1999, perchlorate concentrations exceeding 5,000 µg/L and chlorinated solvents were detected in surface water discharging from NWIRP McGregor via

natural springs and seeps. The contaminated water flowed toward Lakes Belton and Waco, which provide drinking water to 400,000 people. EnSafe was tasked with investigating the perchlorate and chlorinated solvent contamination, evaluating remedial alternatives, preparing a conceptual design, and overseeing final design and construction for interim stabilization measures (ISMs).

EnSafe's geophysics staff employed a ground-penetrating radar (GPR) survey that imaged bedrock fractures and the top-of-bedrock surface across the site. GPR data were used to install monitoring wells, which now fully delineate the perchlorate and chlorinated solvent plume. The GPR data also helped position successful bioreactive barriers.

ISMs were implemented to abate offsite perchlorate and chlorinated solvent migration. EnSafe's stabilization strategy targeted perchlorate- and chlorinated solvent-contaminated groundwater exfiltrating to surface water before migrating offsite, source area groundwater, and impacted surface soil. In three years, EnSafe mitigated offsite perchlorate and chlorinated solvent migration by rapidly and effectively developing perchlorate treatment technologies from conception through bench- and pilot-scale testing to full-scale implementation.

NWIRP McGregor Project Details

Contract Title/Number: Comprehensive Long-Term Environmental Action Navy; N62467-89-D-0318

Location: McGregor, Texas

Dollar Amount: $23 million

Performance Dates: 1991-Present

Agency Contracting Officer: Robert Rivers, Contract Specialist, Telephone, (843) 820-5622; Fax, (843) 820-5865

Agency Technical Manager: Mark Craig; Telephone, (843) 820-5517; Fax, (843) 820-5563

Lead Regulatory Agency (State or EPA): Multiple

Performance Evaluation Report: Four times this work earned technical award-fee ratings from the Navy of 100%; the project's technical rating has averaged 97.6% since October 1997. The project has also earned regional and national recognition — Consulting Engineers of Tennessee's 2000 Engineering Excellence Grand Award and the Chief of Naval Operations and the Secretary of the Navy awards for environmental restoration.

Key accomplishments include the following:

- Through bench-scale studies, EnSafe identified and refined biological treatment techniques for perchlorate and chlorinated solvents in soil and groundwater.
- EnSafe prepared conceptual designs for trenches to cut off and intercept groundwater before it surfaced via springs and seeps. The trenches also effectively serve as permeable reactive barriers that foster anaerobic zones using in-place natural organic media and supplemental soluble carbon sources. Perchlorate concentrations in groundwater were reduced from 20,000 µg/L to 4 µg/L using in situ techniques.
- EnSafe constructed, operated, and monitored pilot studies to test in situ treatment of perchlorate in groundwater using bioborings and second-generation biological permeable reactive barriers. These pilot studies provided valuable data used to design full-scale remediation systems.
- EnSafe developed both engineered and in situ anaerobic soil treatment systems, which reduced perchlorate concentrations from an average of 500,000 µg/L to below detection limits.

Four times this work earned technical award-fee ratings from the Navy of 100%; the project's technical rating has averaged 97.6% since October 1997. The project has also earned regional and national recognition — Consulting Engineers of Tennessee's 2000 Engineering Excellence Grand Award and the Chief of Naval Operations and the Secretary of the Navy awards for environmental restoration.

Key Personnel Involved: Ronnie Britto

A.2 Personnel Experience

■ Robb Unger, PE — Program Manager

Spectra Tech's Environmental Services Manager, Robb Unger, PE, will serve as program manager. He has more than 34 years of environmental compliance and engineering design experience. Mr. Unger's project management role will include programmatic interaction with SOUTHDIV, balancing resources (including implementing mentoring goals), schedule coordination, progress reports, etc. He is a seasoned manager with long-term experience in federal government programs.

Robb Unger
Current Job Title: Vice President, Environmental Services
Employment Status: Full-time employee
Education: B.S., Engineering Physics; M.S., Environmental Engineering
Active Registration: PE in SC, AL, & LA

Mr. Unger managed the Remediation Operating Services Program at URS Corp. in Oak Ridge, Tennessee, prior to joining Spectra Tech. In this role he provided direct management and oversight of seven project managers and 55 employees on environmental restoration and investigation projects totaling $47 million over five years. Mr. Unger made the technical and fiscal decisions necessary to ensure profitability, quality, and safety on the extensive range of environmental projects for a diverse clientele of commercial clients, DOE, and the U.S. Air Force. Duties included recruiting and staffing, acquisition and utilization of business and project management systems, support services subcontractors and consultants, and providing technical and contract management, client relations, and business development for the program.

Projects he has managed range from complex environmental restoration program support for removing or remediating underground storage tanks and the operation and maintenance of a government-owned mixed radioactive hazardous waste water treatment facility to the firm fixed-price design-build and operation of a radioactive lagoon remediation and stabilization facility.

Other duties included loss prevention, bargaining unit contract negotiation, project reporting, conceptual designs, feasibility studies, cost estimating, value engineering studies, quality assurance, project manager training, contract supervision, preparation of detailed plans and specifications, clean and environmental construction, start-up and operation of various treatment facilities for the remediation of radiological and hazardous waste at commercial and DOE facilities in eight states.

Mr. Unger has recruited, placed, and managed up to 34 environmental professionals providing environmental guidance and expertise in the National Environmental Policy Act; RCRA; NPDES; Comprehensive Environmental Response, Compensation, and Liability Act; Spill Prevention, Control, and Countermeasures, Occupational Safety and Health Administration, and Clean Air Act to ensure facility environmental compliance. Work scope varied by work release and was staffed by in-house or recruited resources. Client satisfaction was maintained throughout the five-year program performance period, leading to the award of a $20 million Environmental Restoration Program Support Contract for the Oak Reservation.

He also investigated extensive TCE groundwater contamination, evaluated aquifer restoration alternatives, and designed extraction, stripping, and injection systems for remediation of groundwater at Texas Instrument Corp. in Attleboro, Massachusetts, and at two contaminated groundwater plumes at Arcata Graphics Printing Facilities in Kingsport, Tennessee. These plumes involved investigation and in situ and ex situ groundwater remediation treatability studies using active bioremediation, vacuum extraction, air-stripping, and biological polishing with activated sludge. These studies resulted in the design, installation, start-up, and operation of two groundwater recovery well fields and aboveground systems; one air-stripping with biological polishing and the other air-stripping and activated carbon adsorption pretreatment prior to discharge to a publicly owned treatment facility.

Other projects include:

- Conducting waste treatability studies, alternative analyses process design and facility startup for regenerant and blowdown wastewater treatment facility for fossil fuel electric power-generating plant at Lakeland Power, Lakeland, Florida;
- Treatment facility design, treatability studies, Spill Prevention, Control, and Countermeasures Plan, RCRA Sludge delisting, and closure plans for metal sludge lagoon remedial action project at Florida Production Engineering, Daytona Beach, Florida;
- Conducting four separate wastewater treatability studies, cost effectiveness analyses, feasibility studies, and pilot plant studies and preparing final designs and specifications for storm water collection facilities. Prepared detailed specifications and facility designs for storm water collection and treatment (23 sites), sanitary waste treatment plant (two sites), industrial waste treatment (two sites), industrial waste treatment (two sites), petroleum, oil, and lubricants, TCE groundwater investigation, well field installation and remediation, wastewater collection system supervisory control, and spill prevention control at Robins Air Force Base, Warner Robbins, Georgia;
- Conducting treatability studies and process design for a 100 million-gallon-per-day joint sanitary and industrial waste treatment facility including unit process evaluation, feasibility, and value engineering studies of final designs for East St. Louis/Monsanto, St. Louis, Missouri; and
- Designing biological treatment and waste-handling facilities for various industries including: leather-tanning, dairy, metal-finishing, chemical-processing, paint, forest products and paper, manufacturing, mining and petroleum industries.

■ John Stedman, CHMM — Senior Project Manager/Scientist

John Stedman

Current Job Title: Senior Project Manager

Employment Status: Full-time employee

Education: B.S., Electrical Engineering, 1987, University of Memphis

Active Registration: Certified Hazardous Materials Manager, No. 9379. Initially registered in 1999.

Mr. Stedman serves as project manager for site investigation and corrective action development and implementation at numerous government and industrial facilities. His experience includes RCRA, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), solid waste, and petroleum sites. Compliance-related projects include asbestos and lead-based paint surveys and abatement. His experience includes the following.

RFI/CMS, NSA Mid-South, Millington, TN: Managed corrective actions at NSA Mid-South that include performing Corrective Measures Studies (CMS) for SWMUs 2, 14, and 39 as well as AOC A, implementing full-scale enhanced in situ bioremediation at SWMUs 14 and 39 and AOC A; and implementing an MNA remedy at SWMU 2. CMS activities included performing treatability studies and aquifer characterization tests. Tasks associated with the full-scale implementation included installing injection wells and effectiveness monitoring wells, performing substrate injections, performing effectiveness and MNA sampling, and preparing progress reports that present data and make recommendations. Mr. Stedman was responsible for coordinating and participating in Team Meetings. In support of required injection well permits, Mr. Stedman prepared necessary permit applications and was the technical representative for the Navy at local GWQCB meetings. Mr. Stedman also assists the Navy with implementing NSA Mid-South's Community Relations Plan. Activities associated with this include: coordinating public Restoration Advisory Board (RAB) meetings, performing technical presentations at RAB meetings, and preparing fact sheets for distribution to the Millington community.

UST Management, NSA Mid-South, Millington, TN: Managed three underground storage tank (UST) sites under two contracts totaling $150,000. After the site investigations, he prepared assessment reports for each site and remedial action plans for two sites. Site investigations included installing groundwater monitoring wells and collecting soil and groundwater samples. Cost estimation and tracking were also required. Mr. Stedman also managed preparation of tank closure plans and provided technical oversight for implementing closure plans at 63 tank sites under a contract totaling $277,000. Confirmatory

sampling, closure reporting, and confined space entry to inspect two 420,000-gallon USTs are also included in this contract.

Asbestos Abatement, NSA Mid-South, Millington, TN: Managed abatement of asbestos-containing material from numerous buildings and structures. Tasks included removing pipe runs with thermal system insulation (TSI), spray-applied ceiling material, and pipe-joint compound. Other tasks include completing an asbestos reinspection of approximately 150 buildings/structures. Mr. Stedman also managed the removal of lead-based paint material and a lead-based paint survey of approximately 150 buildings/structures.

Miscellaneous Services, NSA Mid-South, Millington, TN: Managed the preparation of the base's Spill Contingency Plan, Erosion Control and Sedimentation Plan, Urban Forestry Management Plan, and numerous state and federal aquatic stream permits in support of construction activities.

Bioterrorism Response, NSA Mid-South, Millington, TN: Managed the project in which EnSafe was retained by the U.S. Department of Navy to develop and implement a sampling plan to test one of its postal facilities for the presence of anthrax. The sampling plan was developed using guidance information from the U.S. Centers for Disease Control, U.S. Department of the Army, and U.S. Department of the Air Force. EnSafe collected 48 wipe samples from potential anthrax-contaminated sources including mail-sorting equipment, work stations, distribution containers, and heating, ventilation, and air conditioning systems. EnSafe documented the results in a report that was approved by the Navy.

■ Thomas G. Lee — QA Program Manager

Thomas Lee
Current Job Title: QA Program Manager/Senior Engineer
Employment Status: Full-time employee
Education: B.S., Physics/Math, Georgia Southern College; A.S., Electrical Engineering, Middle Georgia College

Mr. Lee provides QA management, overseeing QA systems in the areas of radiation protection, environmental remediation projects, laboratory quality assurance, and construction engineering projects. He prepares Quality Assurance Plans, program plans and procedures. Mr. Lee performs Nuclear Safety Evaluations (USQD) and screenings, Price Anderson Act Compliance Assessments, Activity Hazards Analyses, QA audits, laboratory and data assessments for multiple projects. He is corporate QA manager for Environmental Assessment preparation under National Environmental Policy Act, Y-12 National Security Complex (NSC). He also provides compliance augmentation and Conduct of Operations support for ETTP CNF radiological facility (second-tier subcontractor to Bechtel Jacobs Co.) including preparation of operating procedures and checklists, verification, and validation of waste characterization. He has provided radiological engineering support to environmental remediation of the David Witherspoon Site (DWI-901), a Tennessee Superfund (CERCLA)-listed site. He also has prepared Health and Safety and Environmental Compliance Plans for U.S. Navy environmental remediation projects at Charleston Naval Shipyard, South Carolina, and NSA Mid-South in Millington, Tennessee.

■ Ronnie Britto, PhD, PE — Senior Project Engineer

Ronnie Britto, PhD, PE
Current Job Title: Senior Civil Engineer
Employment Status: Full-time employee
Education: Ph.D., Civil Engineering (Environmental), 1994, Mississippi State University; M.E., Civil Engineering (Transportation), 1986, Bangalore University, India; B.E., Civil Engineering, 1983, Bangalore University, India
Active Registration: Professional Engineer-Environmental Engineering, Louisiana, No. 27352. Initially registered in 1997.

Dr. Britto, a senior civil engineer with EnSafe's engineering services group, has an extensive academic background in civil and environmental engineering. He has applied microbial, physical, and chemical techniques in remedial decision-making to engineer the cleanup of hazardous wastes in soil, wastewater, and groundwater. He has successfully designed and managed landfarming, biosparging, bioventing, and other systems to treat wood-treating compounds, petroleum wastes, and chlorinated solvents.

Dr. Britto is a specialist in the evaluation of natural attenuation as a site remedy and has evaluated MNA at more than 50 sites. He also is an expert on data analysis, interpretation, and the application of advanced statistical tools in groundwater monitoring, remedial decision-making, and site closures. His experience includes the following.

In Situ Remediation/MNA Study, NSA Mid-South, Millington, TN: Conducted investigations, collected data, and evaluated feasibility of remediating the site by natural attenuation. Contaminants of concern are chlorinated solvents. Designed and installed a successful, innovative in situ pilot system to examine the feasibility of biological treatment of chlorinated solvents in groundwater. Currently designing and installing a full-scale system to treat groundwater at the site.

In Situ Treatment of Chlorinated Solvents, MNA, Charleston Naval Shipyard, SC: Evaluated the potential for MNA (natural attenuation) to remediate chlorinated solvents and petroleum-related wastes at several sites at the shipyard. Designed, installed, and completed an innovative in situ anaerobic-aerobic pilot system to examine the feasibility of biological treatment of chlorinated solvents in groundwater.

MNA Evaluation, NAS Corpus Christi, TX: Completed the evaluation of MNA as a site remedy for chlorinated solvent contamination in site groundwater. The Texas regulatory agency accepted MNA as a site remedy.

MNA Evaluation, NAS Pensacola, FL: Completed the evaluation of MNA as a remedy at two separate CERCLA sites. Regulatory agencies approved MNA at these sites, one of which has petroleum wastes and the other chlorinated solvents.

In Situ Bioremediation, NWIRP McGregor, TX: Worked on the design of pilot and bench-scale studies and interim measures for the in situ and ex situ treatment of perchlorate and chlorinated solvent contamination in soil and groundwater at this military installation where the chemical was used in the development of solid rocket boosters. Designed innovative aboveground fixed-bed reactor for biological treatment and several innovative in situ systems including biobarriers for groundwater and soil contaminated with perchlorate. This precedent-setting work won the 2000 Secretary of the Navy and the precursor Chief of Naval Operations awards for environmental restoration. It also won the American Council of Engineering Companies of Tennessee's Grand Award in the 2000 Engineering Excellence competition and was a finalist in the national Engineering Excellence awards that same year.

In Situ Bioremediation, Weyerhaeuser Co., Multiple Sites:

- **Philadelphia, MS:** Designed and installed a biosparging curtain to prevent offsite migration of pentachlorophenol (PCP)-contaminated groundwater. Assisted in the design of two pump-and-treat groundwater treatment systems for PCP contamination. Treatment was by conventional physical-chemical techniques including filtration, chlorination, and carbon adsorption.
- **DeQueen, AR:** Designed two successful pilot studies for landfarming of soil and biosparging of groundwater contaminated with organic wood-treating wastes (polynuclear aromatic compounds and PCP). Following these pilot studies, designed full-scale remedial systems to treat contaminated soil and groundwater onsite. The soil system attained closure. The groundwater system is ongoing and has reduced contamination by more than 90%. Also completed a pilot bioventing study for unsaturated soil, and a surfactant-enhanced contaminant mobilization study to examine the feasibility of movement of non-aqueous-phase liquids toward the existing onsite trench collection system. Additionally, he has assisted in evaluating a wastewater system to treat generated onsite using a combination of physical (flotation), chemical (flocculation and precipitation), and a biological system.

MNA Evaluation, Tennessee Electroplating Co.; Ripley, TN: Completed evaluation of MNA for chlorinated solvent contamination in groundwater at this site. Regulatory agencies have approved the implementation of natural attenuation as the sole remedy.

■ Phil Atkinson — Project Manager

Phil Atkinson
Current Job Title: Environmental Scientist
Employment Status: Full-time employee
Education: B.S., Environmental Health Sciences, 1995, Wright State University
Active Registration: None

Mr. Atkinson has 11 years' experience in the environmental field. He has been responsible for managing environmental projects in Tennessee, Mississippi, Arkansas, and Ohio, interfacing with clients and regulators to implement the best management practices, manage, coordinate, and conduct field activities, including soil and groundwater sampling and remediation, UST removals, waste disposal, asbestos sampling and abatement, lead-based paint sampling, and permitting. His experience includes the following.

RFI/CMS, NSA Mid-South, Millington, TN: Prepared RFI and CMS reports for various SWMUs at NSA Mid-South. Teamed with NSA Mid-South and regulatory agencies to apply best management practices to address sites under investigation.

Also supervised and conducted soil and groundwater investigations using various technologies. Skilled in using and troubleshooting various sampling pumps including pneumatic and electric-submersible pumps. Used lo-flow and other sampling techniques to monitor groundwater using various instrumentation (e.g., water quality multi-meters and spectrophotometers) for various MNA parameters. Implemented corrective actions at solvent-contaminated sites including conducting and overseeing nutrient injections into contaminated aquifers.

Asbestos Abatement, NSA Mid-South, Millington, TN: Provided oversight for asbestos abatement projects, including ceiling scrapes and TSI removal. Inspected facilities for asbestos and lead-based and lead-containing paints.

UST Projects, Various Clients: Managed environmental projects at more than 60 sites in Tennessee, Mississippi, Arkansas, and Ohio. Prepared monitoring, UST closure, and risk assessment reports. Implemented and maintained remedial activities, including groundwater pump-and-treat, soil-vapor extraction, air sparging, and mobile enhanced multi-phase extraction. Prepared permits for air and water discharge and waste disposal applications for soil and groundwater.

Investigations, Various Clients: Provided project assistance to various soil and groundwater investigations in the Mid-South. Conducted asbestos sampling/inspections and asbestos abatement oversight at several commercial facilities.

Factor B Understanding of the Work/Conceptual Work Plan

B.1 Environmental Compliance

Several environmental permits are currently in place to allow substrate injection into the subsurface at NSA Mid-South. However, these permits will expire and new permit applications will be required. The State of Tennessee requires Class V Injection Permits for these activities. These permits are valid for two years. Permits for SWMUs 14 and 39 expire in 2006 while AOC A's permit expires in 2007. Spectra Tech Team members have prepared applications for these permits in the past, so they understand state requirements to facilitate approval. The Shelby County GWQCB also requires a variance to the well codes for these activities. Re-application to obtain this variance is required for SWMUs 14 and 39 and AOC A in 2006. The Spectra Tech team will prepare the proper applications to obtain this variance. In addition, the Spectra Tech team members will attend and present information at two GWQCB meetings annually in support the variance request.

B.2 Work Approach

Spectra Tech has selected a project team that will provide the Navy with the smoothest transition of the work. The team includes members who have been integral to implementing all aspects of the current treatment approach. Even though the overall approach is dictated by specific requirements in the SOW, the Spectra Tech Team has the experience and resources to successfully complete all tasks with minimal disruption to the current program. The following briefly explains the Spectra Tech Team's approach for each task identified in the SOW.

■ Substrate Injections

The Spectra Tech Team is extremely knowledgeable in the operation and requirements of the current system. The mobile mechanical substrate injection system will continue to be used to inject the required quantities of sodium acetate and ammonium phosphate. This system will be used to perform pressure injections at SWMU 14 and gravity flow injections at SWMU 39 and AOC A.

Critical to successfully performing the monthly substrate injections is having an extensive knowledge of the site. Injections wells that will be used to deliver the substrate into the effected aquifer were installed by Spectra Tech team members. Knowledge about each well and the subsurface media is critical to recommending possible system enhancements.

The Spectra Tech Team is familiar with access requirements for both the Navy property (SWMUs 2, 14, and 39) and property that has been transferred to the City of Millington; that site is currently operating as a municipal airport (AOC A). Team members have been successful in coordinating with airport and base personnel to obtain access to injection points with minimal or no disruption to airport or Navy operations.

■ Effectiveness Monitoring

The Spectra Tech Team realizes the importance of collecting accurate data in order to evaluate a remedy's effectiveness. With enhanced biological treatment systems such as the current systems at AOC A and SWMUs 14 and 39, and MNA programs such as at SWMU 2, geochemical data can be as important as the chemical data in assessing the system's effectiveness as well as potential system enhancements. Table 1 lists effectiveness monitoring geochemical and chemical sample parameters and associated analysis methods; however, some of the parameters listed are not required for all sites. Parameters analyzed for each site will be as indicated site-specific tables in the SOW.

Table 1 — Effectiveness Monitoring Parameters/Analytes and Methods

Parameter/Analyte	Method
Laboratory	
VOCs	SW8260B
Hydrogen	AM20GAX
Methane, ethane, and ethene	8015MOD
Nitrate	353.3
TOC	SW9060
Volatile Fatty Acids	Microbial Insights (Rockford, IN) In-House Methods
Total Iron	SW6010
Field	
Ferrous iron	Portable colorimeter
Sulfate and sulfide	Portable colorimeter
DO	YSI 55 DO meter calibrated prior to use per manufacturer's instructions
ORP	Orion 250A ORP meter or equivalent calibrated prior to use per manufacturer's instructions
pH	pH meter
Temperature	Temperature probe
Alkalinity	Portable colorimeter
Chloride and Carbon Dioxide	Portable colorimeter
Phosphorus and ammonia-nitrogen	Portable colorimeter

Notes:

VOCs = Volatile organic compounds
DO = Dissolved oxygen
TOC = Total organic carbon
ORP = Oxidation-reduction potential

It is critical to use proper sample collection and field analysis methods and procedures during each and every sampling event so that data will be comparable. For this reason, Mr. Atkinson has been chosen to lead the effectiveness monitoring events. He has supervised every effectiveness-monitoring event at AOC A and SWMUs 14, 39, and 2 since initiation. In addition to Mr. Atkinson, staff-level personnel who have also been performing Interim Measures effectiveness monitoring since remedy implementation will also be used. This will ensure that the resulting data will be comparable to previous data.

Sample collection procedures used throughout previous NSA Mid-South RFI investigations and corrective actions will continue to be used to complete sampling tasks under this scope of work. These include:

- Donning appropriate personal protection equipment before sampling;
- Decontaminating sampling equipment before use;
- Collecting water level measurements from treatment area wells prior to sampling;
- Purging wells using low-flow sampling techniques that include obtaining pH, temperature, and conductivity measurements to determine whether groundwater is stabilized before sample collection;
- Documenting field measurements and other pertinent sample collection information;
- Following appropriate sample management procedures including sample preservation, labeling, packing, and adherence to chain-of-custody procedures.

Complete sample collection procedures will be detailed in a Work Plan that will be submitted to the Navy for approval before field activities begin. The Work Plan will include a Sampling and Analysis Plan, Quality Control Plan, Environmental Protection Plan, and a Health & Safety Plan. These plans will describe methods and procedures that will be used to complete substrate injections and effectiveness monitoring. The Work Plan will also address related tasks such as investigation-derived waste management, well inspections, and reporting.

■ Submittals

In addition to the Work Plan, the SOW identifies three other submittals:

- Progress Reports
- Land-Use Control Implementation Plan (LUCIP)
- Permits

Results of the effectiveness monitoring will be documented in progress reports. Currently, semi-annual progress reports are required for SWMUs 14 and 39 while annual progress reports are required for SWMU 2 and AOC A. Progress reports will summarize field/laboratory data, evaluate the aquifer's geochemical condition, evaluate microbial activity, and make recommendations for system modification/enhancements. Dr. Britto, who is considered an expert on biological treatment systems, will assist with these complex and critical evaluations. Dr. Britto also has specialized expertise in evaluating natural attenuation as a site remedy and has evaluated MNA at more than 50 sites. He is proficient in data analysis, interpretation, and the application of advanced statistical tools in groundwater monitoring, remedial decision-making, and site closures.

A LUCIP will be required for 22 non-BRAC SWMUs and will include elements such as:

- Geographic Information System maps depicting the location and pertinent site features
- Explanation of land-use controls (e.g., signage and fencing requirements, restrictions, etc.)
- Duration of land-use controls
- Requirements and frequency of land-use control inspections including documentation requirements

Permit requirements are discussed in Section B.1.

■ Meetings

The SOW identifies three meeting types in which the Contractor will be involved:

- Team Meetings
- RAB Meetings
- GWQCB Meetings

Team meetings are important tools for presenting information to regulatory agencies. Again, the Spectra Tech Team has chosen key individuals who can effectively present monitoring data and make recommendations. Mr. Unger and Mr. Stedman have been selected to represent the Spectra Tech Team at Team Meetings. Mr. Unger has an extensive background performing these functions at other Department of Defense facilities. Mr. Stedman likewise has been responsible for coordinating Team Meetings at NSA Mid-South for the past six years. His responsibilities have included developing meeting agendas, facilitating meetings, and presenting data to regulatory personnel. During this same time period, he coordinated all RAB Meetings and presented technical information to RAB members and the general public. He has also been the Navy's technical representative at GWQCB Meetings.

The Spectra Tech Team anticipates meeting involvement and support will be consistent with previous support. PowerPoint presentations, charts, and handouts will continued to be used to effectively communicate technical information to the public, RAB and Team members, and regulators. Additionally, Spectra Tech will take and distribute Team and RAB meeting minutes.

B.3 Laboratories

Much scrutiny and attention is focused on assessing the quality, validity, and defensibility of laboratory data generated for environmental and remedial sites. Many formal systems of QA/Quality Control evaluations and auditing programs have been in place for years to monitor laboratory performance. These data evaluation and auditing tools are invaluable given the technical and financial magnitude of

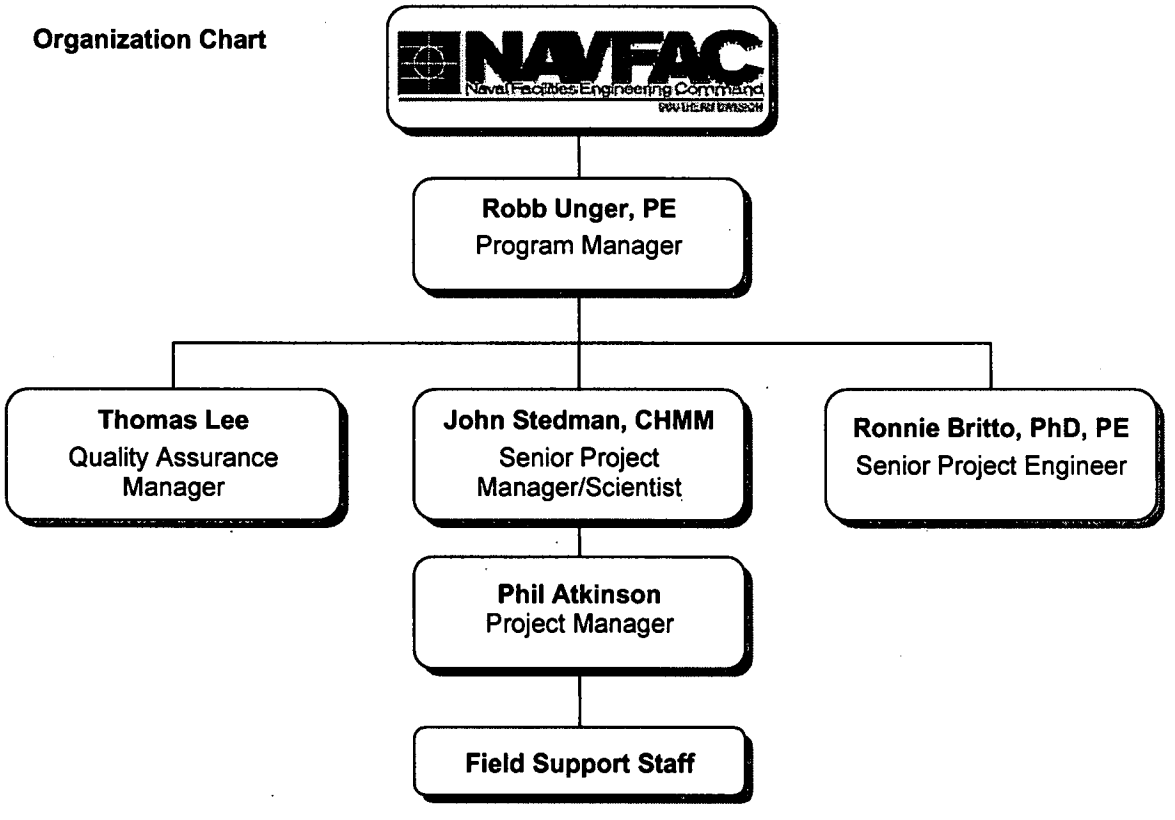
decisions that are based on data generated by the laboratory. The Spectra Tech Team understands that poor data quality can lead to incorrect decision-making and ultimately cost the Navy time and money; therefore, Spectra Tech has selected Severn Trent Laboratories (STL) to analyze the effectiveness monitoring chemical samples.

STL is accredited through the applicable state agencies, National Environmental Laboratory Accreditation Program, and approved by the Naval Facilities Engineering Service Center. STL has analyzed samples in support of the NSA Mid-South's RFI and CMS. Attachment 1 contains STL's accreditations and applicable analytical detection limits as well as a statement of qualifications.

B.4 Organization Chart

The team will be organized as follows.

Organization Chart



Attachment 1 Laboratory Information

State of Tennessee

Department of Health

Division of Laboratory Services

Certifies That

STL Savannah Laboratories

Having Met the Requirements of the Regulations for the Certification of Laboratories Analyzing Drinking Water is hereby Approved as a

State Certified Laboratory

To perform the Analyses as Indicated on the Certified Parameter List For the Public Water Systems of Tennessee

Laboratory ID Number 02961 Effective Through July 30, 2006

Laboratory Certification Officer
Laboratory Services

This certification is subject to laboratory inspections, is nontransferable and supersedes previously issued certificates

SEVERN TRENT STL

Water Parameters

PARAMETER	METHOD	REF	ACC (%REC)	PREC (%RPD)	MDL (mg/L)	RL (mg/L)
General Chemistry						
Carbon, total organic	415.1 / 9060 / 5310B	2 / 1 / 4	80-120	<=25	0.50	1.0
Nitrate (as N) (ion chromatography)	300.0 / 9056	2 / 1	90-110	<=30	0.014	0.10
Nitrate (as N) (colorimetric)	353.2 / 4500-NO3-F	2 / 4	90-110	<=30	0.025	0.050
Metals						
Iron, total recoverable	200.7	2	85-115	<=20	27	50
Iron, total	200.7	2	85-115	<=20	28	50
Iron, total recoverable	200.8	33	85-115	<=20	38	100
Iron, total	200.8	33	85-115	<=20	38	100
Iron, total recoverable	6010 (3005)	1	75-125	<=20	27	50
Iron, total	6010 (3010)	1	75-125	<=20	28	50
Iron (ICP/MS), total recoverable	6020(3005)	1	75-125	<=20	39	100
Iron (ICP/MS), total	6020(3010)	1	75-125	<=20	38	100
Iron (ferrous) (colorimetric)	3500-Fe-D	4	80-120	<=20	50	100
Volatiles in Water and Wastewater by GC/MS						
Acrolein	624	18	54-145	<=50	16	20
Acrylonitrile	624	18	10-183	<=50	3.4	20
Benzene	624	18	37-151	<=30	0.27	1.0
Bromodichloromethane	624	18	35-155	<=30	0.59	1.0
Bromoform	624	18	45-169	<=30	0.084	1.0
Bromomethane	624	18	D-242	<=100	0.34	1.0
Carbon tetrachloride	624	18	70-140	<=30	0.22	1.0
Chlorobenzene	624	18	37-160	<=30	0.49	1.0
Chloroethane	624	18	14-230	<=50	0.67	1.0
2-Chloroethyl vinyl ether	624	18	D-305	<=100	1.3	10
Chloroform	624	18	51-138	<=30	0.64	1.0
Chloromethane	624	18	D-273	<=50	0.68	1.0
Dibromochloromethane	624	18	53-149	<=30	0.10	1.0
1,2-Dichlorobenzene	624	18	18-190	<=30	0.15	1.0
1,3-Dichlorobenzene	624	18	59-156	<=30	0.11	1.0
1,4-Dichlorobenzene	624	18	18-190	<=30	0.10	1.0
Dichlorodifluoromethane	624	18	54-162	<=50	0.50	1.0
1,1-Dichloroethane	624	18	59-155	<=30	0.24	1.0
1,2-Dichloroethane	624	18	49-155	<=30	0.46	1.0
1,1-Dichloroethene	624	18	D-234	<=30	0.83	1.0
cis-1,2-Dichloroethene	624	18	60-131	<=30	0.50	1.0
trans-1,2-Dichloroethene	624	18	54-156	<=30	0.40	1.0
1,2-Dichloroethenes, Total (sum of cis- and trans- isomers)	624	18	60-131	<=30	0.90	2.0
1,2-Dichloropropane	624	18	D-210	<=30	0.41	1.0
cis-1,3-Dichloropropene	624	18	D-227	<=30	0.42	1.0
trans-1,3-Dichloropropene	624	18	17-183	<=30	0.60	1.0

SEVERN TRENT STL

Water Parameters

PARAMETER	METHOD	REF	ACC (%REC)	PREC (%RPD)	MDL (ug/L)	RL (ug/L)
Volatiles in Water and Wastewater by GC/MS (continued)						
1,3-Dichloropropenes, Total (sum of cis- and trans- isomers)	624	18	17-183	<=30	1.0	2.0
Ethylbenzene	624	18	37-162	<=30	0.35	1.0
Methylene chloride	624	18	D-221	<=30	0.72	5.0
1,1,2,2-Tetrachloroethane	624	18	46-157	<=30	0.50	1.0
Tetrachloroethene	624	18	64-148	<=30	0.50	1.0
Toluene	624	18	47-150	<=30	0.34	1.0
1,1,1-Trichloroethane	624	18	52-162	<=30	0.43	1.0
1,1,2-Trichloroethane	624	18	52-150	<=30	0.14	1.0
Trichloroethene	624	18	71-157	<=30	0.39	1.0
Trichlorofluoromethane	624	18	17-181	<=30	0.85	1.0
Vinyl chloride	624	18	D-251	<=50	0.65	1.0
Xylenes (total)	624	18	78-119	<=30	1.0	2.0
Surrogates						
p-Bromofluorobenzene	624	18	71-121	NA	NA	NA
Dibromofluoromethane	624	18	77-129	NA	NA	NA
Toluene-d8	624	18	79-119	NA	NA	NA
Volatiles in Pulp and Paper Samples by GC/MS						
Chloroform	624	18	51-138	<=30	0.64	1.0
Surrogates						
p-Bromofluorobenzene	624	18	71-121	NA	NA	NA
Dibromofluoromethane	624	18	77-129	NA	NA	NA
Toluene-d8	624	18	79-119	NA	NA	NA
Volatiles in Groundwater by GC/MS						
1,1,1,2-Tetrachloroethane	8260 (5030)	1	62-107	<=30	0.53	1.0
1,1,1-Trichloroethane	8260 (5030)	1	70-132	<=30	0.79	1.0
1,1,2,2-Tetrachloroethane	8260 (5030)	1	71-127	<=30	0.21	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	8260 (5030)	1	70-130	<=30	0.10	1.0
1,1,2-Trichloroethane	8260 (5030)	1	75-122	<=30	0.37	1.0
1,1-Dichloroethane	8260 (5030)	1	70-127	<=30	0.56	1.0
1,1-Dichloroethene (MS)	8260 (5030)	1	64-132	<=30	0.93	1.0
1,1-Dichloropropene	8260 (5030)	1	70-130	<=30	0.80	1.0
1,2,3-Trichlorobenzene	8260 (5030)	1	38-130	<=30	0.35	1.0
1,2,3-Trichloropropane	8260 (5030)	1	60-147	<=30	0.44	1.0
1,2,4-Trichlorobenzene	8260 (5030)	1	48-131	<=30	0.28	1.0
1,2,4-Trimethylbenzene	8260 (5030)	1	53-142	<=30	0.44	1.0
1,2-Dibromo-3-chloropropane	8260 (5030)	1	14-147	<=50	0.65	1.0
1,2-Dibromoethane	8260 (5030)	1	60-118	<=30	0.34	1.0
1,2-Dichlorobenzene	8260 (5030)	1	71-125	<=30	0.21	1.0
1,2-Dichloroethane	8260 (5030)	1	68-130	<=30	0.28	1.0
1,2-Dichloroethenes, Total (sum of cis- and trans- isomers)	8260 (5030)	1	70-130	<=30	1.2	2.0
1,2-Dichloropropane	8260 (5030)	1	74-123	<=30	0.26	1.0
1,3,5-Trimethylbenzene	8260 (5030)	1	50-127	<=30	0.49	1.0
1,3-Dichlorobenzene	8260 (5030)	1	70-125	<=30	0.28	1.0
1,3-Dichloropropane	8260 (5030)	1	60-125	<=30	0.31	1.0
1,4-Dichlorobenzene	8260 (5030)	1	65-127	<=30	0.44	1.0
2,2-Dichloropropane	8260 (5030)	1	42-155	<=30	0.86	1.0
2-Butanone (methyl ethyl ketone-MEK)	8260 (5030)	1	51-142	<=30	0.72	10
2-Chloro-1,3-butadiene (Chloroprene)	8260 (5030)	1	70-130	<=30	0.40	1.0
2-Chloroethyl vinyl ether	8260 (5030)	1	D-200	<=100	0.55	10
2-Chlorotoluene	8260 (5030)	1	53-133	<=30	0.58	1.0

SEVERN TRENT STL

Water Parameters

PARAMETER	METHOD	REF	ACC (%REC)	PREC (%RPD)	MDL (ug/L)	RL (ug/L)
Volatiles in Groundwater by GC/MS (continued)						
2-Hexanone	8260 (5030)	1	58-139	<=30	0.39	10
3-Chloropropene (Allyl chloride)	8260 (5030)	1	D-200	<=100	0.35	1.0
4-Chlorotoluene	8260 (5030)	1	47-132	<=30	0.44	1.0
4-Methyl-2-pentanone (MIBK)	8260 (5030)	1	62-130	<=30	0.45	10
Acetone	8260 (5030)	1	20-183	<=50	7.3	25
Acetonitrile	8260 (5030)	1	71-158	<=30	0.23	40
Acrolein	8260 (5030)	1	40-91	<=30	12	20
Acrylonitrile	8260 (5030)	1	46-144	<=30	3.2	20
Benzene (MS)	8260 (5030)	1	74-122	<=30	0.54	1.0
Bromobenzene	8260 (5030)	1	55-131	<=30	0.45	1.0
Bromochloromethane	8260 (5030)	1	50-154	<=30	0.25	1.0
Bromodichloromethane	8260 (5030)	1	74-128	<=30	0.42	1.0
Bromoform	8260 (5030)	1	64-132	<=30	0.36	1.0
Bromomethane	8260 (5030)	1	21-176	<=50	0.93	1.0
Carbon disulfide	8260 (5030)	1	60-130	<=30	0.75	1.0
Carbon tetrachloride	8260 (5030)	1	64-137	<=30	0.91	1.0
Chlorobenzene (MS)	8260 (5030)	1	75-123	<=30	0.41	1.0
Chloroethane	8260 (5030)	1	40-171	<=50	0.89	1.0
Chloroform	8260 (5030)	1	74-124	<=30	0.52	1.0
Chloromethane	8260 (5030)	1	51-133	<=50	0.53	1.0
cis-1,2-Dichloroethene	8260 (5030)	1	69-126	<=30	0.55	1.0
cis-1,3-Dichloropropene	8260 (5030)	1	76-126	<=30	0.25	1.0
Dibromochloromethane	8260 (5030)	1	75-126	<=30	0.40	1.0
Dibromomethane	8260 (5030)	1	70-130	<=30	0.33	1.0
Dichlorodifluoromethane	8260 (5030)	1	70-130	<=50	0.73	1.0
Ethyl methacrylate	8260 (5030)	1	58-101	<=30	0.33	1.0
Ethylbenzene	8260 (5030)	1	77-123	<=30	0.62	1.0
Hexachlorobutadiene	8260 (5030)	1	58-133	<=30	0.50	1.0
Iodomethane	8260 (5030)	1	34-116	<=30	0.96	5.0
Isobutyl alcohol	8260 (5030)	1	39-132	<=30	13	40
Isopropylbenzene	8260 (5030)	1	62-122	<=30	0.66	1.0
m&p-Xylene	8260 (5030)	1	74-123	<=30	1.3	2.0
Methacrylonitrile	8260 (5030)	1	65-110	<=30	9.1	20
Methyl t-butyl ether (MTBE)	8260 (5030)	1	70-130	<=30	0.45	10
Methylene chloride	8260 (5030)	1	67-128	<=30	0.44	5.0
Methylmethacrylate	8260 (5030)	1	57-120	<=30	0.36	1.0
Naphthalene	8260 (5030)	1	58-143	<=30	0.12	5.0
n-Butylbenzene	8260 (5030)	1	47-130	<=30	0.38	1.0
n-Propylbenzene	8260 (5030)	1	53-125	<=30	0.45	1.0
o-Xylene	8260 (5030)	1	76-122	<=30	0.49	1.0
Pentachloroethane	8260 (5030)	1	1-200	<=100	1.0	5.0
p-Isopropyltoluene	8260 (5030)	1	58-123	<=30	0.52	1.0
Propionitrile (ethylcyanide)	8260 (5030)	1	72-121	<=30	10	20
sec-Butylbenzene	8260 (5030)	1	53-125	<=30	0.60	1.0
Styrene	8260 (5030)	1	75-125	<=30	0.42	1.0
tert-Butylbenzene	8260 (5030)	1	51-134	<=30	0.63	1.0
Tetrachloroethene	8260 (5030)	1	70-133	<=30	0.75	1.0
Toluene (MS)	8260 (5030)	1	75-122	<=30	0.62	1.0
trans-1,2-Dichloroethene	8260 (5030)	1	67-130	<=30	0.80	1.0
trans-1,3-Dichloropropene	8260 (5030)	1	75-126	<=30	0.36	1.0
trans-1,4-Dichloro-2-butene	8260 (5030)	1	26-131	<=50	0.80	2.0
Trichloroethene(MS)	8260 (5030)	1	75-122	<=30	0.71	1.0
Trichlorofluoromethane	8260 (5030)	1	74-165	<=50	0.96	1.0
Vinyl acetate	8260 (5030)	1	47-150	<=30	0.70	2.0
Vinyl chloride	8260 (5030)	1	59-136	<=50	0.92	1.0

SEVERN TRENT STL

Water Parameters

PARAMETER	METHOD	REF	ACC (%REC)	PREC (%RPD)	MDL (ug/L)	RL (ug/L)
Volatiles in Groundwater by GC/MS (continued)						
Xylenes (total)	8260 (5030)	1	77-121	<=30	1.6	2.0
Surrogates						
p-Bromofluorobenzene	8260 (5030)	1	77-120	NA	NA	NA
Dibromofluoromethane	8260 (5030)	1	75-123	NA	NA	NA
Toluene-d8	8260 (5030)	1	79-122	NA	NA	NA
Non-Routine Analytes						
Cyclohexane	8260 (5030)	1	70-130	<=30	0.25	10
1-Chlorohexane	8260 (5030)	1	70-130	<=30	0.42	1.0
Cyclohexanone	8260 (5030)	1	70-130	<=30	6.9	50
Diethyl ether	8260 (5030)	1	70-130	<=30	0.14	2.0
Furan	8260 (5030)	1	70-130	<=30	0.14	10
Methyl acetate	8260 (5030)	1	70-130	<=30	0.80	10
Methyl cyclohexane	8260 (5030)	1	70-130	<=30	0.22	10
Tetrahydrofuran	8260 (5030)	1	70-130	<=30	0.56	10
Dissolved Gases In Water (GC/FID)						
Methane	RSK175/LAB SOP	32	75-125	<=30	0.19	0.19
Ethane	RSK175/LAB SOP	32	75-125	<=30	0.35	0.35
Ethene (Ethylene)	RSK175/LAB SOP	32	75-125	<=30	0.33	0.33

TENNESSEE CERTIFIED PARAMETER LIST

Safe Drinking Water

Issue Date: **September 22, 2003**

Lab Name: **STL Laboratories**
5102 LaRoache Ave.
Savannah, GA 31404

Lab No. **TN02961**

Expiration Date: **July 30, 2006**

INORGANIC CHEMICALS

Metals

Method EPA / SM			Method EPA / SM			Method EPA / SM		
200.7, 200.8, 200.9	1005	Arsenic	200.7, 200.8	1010	Barium	200.7, 200.8	1015	Cadmium
200.7, 200.8	1020	Chromium	335.4, 4500CNE	1024	Cyanide	300.0, 4500FC	1025	Fluoride
200.8, 245.1	1035	Mercury	200.7, 200.8	1036	Nickel	300.0, 353.2, 4110B	1040	Nitrate (T)
	1038	Nitrogen (as N)	300.0, 353.2, 4110B	1041	Nitrite	200.8, 200.9	1045	Selenium
200.8, 200.9	1074	Antimony (T)	200.7, 200.8	1075	Beryllium (T)	200.8, 200.9	1085	Thallium (T)
	1094	Asbestos	200.8, 200.9	5000	Lead			

Secondary Standards

200.7	1002	Aluminum	300.0, 325.2, 4110B	1017	Chloride	200.7, 200.8	1022	Copper
300.0, 4500C	1025	Fluoride	200.7	1028	Iron	200.7, 200.8	1032	Manganese
200.7, 200.8	1050	Silver	300.0, 375.4, 4110B	1055	Sulfate	425.1, 5540C	1089	MBAS
200.7, 200.8	1095	Zinc	110.2, 2120B	1905	Color	C	1920	Odor
150.1	1925	PH	160.1, 2540C	1930	Total Dissolved Solids			

Corrosivity

200.7	1052	Sodium	200.7	1919	Hardness-Calcium	150.1	1925	PH
2320B	1927	Total Alkalinity	160.1, 2540C	1930	Total Dissolved Solids	C	1993	Aggressive Index
	1996	Temperature (%)	2330B	1997	Langlier Index			

180.1, 2130B 0100 **Turbidity**

Disinfectant By-Products

552.2		HAA'S	300.1		Chlorite	300.1, 4110B		Bromide
365.1		Orthophosphate			TOC	300.1		Bromate
								Chlorate

ORGANIC CHEMICALS

508, 525.2	2005	Endrin	508, 525.2	2010	Lindane	508, 525.2	2015	Methoxychlor
508	2020	Toxaphene	515.1	2031	Dalapon	549.2	2032	Diquat
548.1	2033	Endothall	547	2034	Glyphosate	525.2	2035	Adipates
531.1	2036	Oxomyl (Vydate)	525.2	2037	Simazine	525.2	2039	Phthalates
515.1	2040	Picloram	515.1	2041	Dinoseb	525.2	2042	Hexachlorocyclopentadiene
531.1	2046	Carbofuran	525.2	2050	Atrazine	525.2	2051	Alachlor (LASSO)
	2063	Dioxin	508, 525.2	2065	Heptachlor	508, 525.2	2067	Heptachlor Epoxide
515.1	2105	2,4 - D	515.1	2110	2,4,5 - TP Silvex	525.2	2274	Hexachlorobenzene
525.2	2306	Benzo(A)Pyrene	515.1, 525.2	2326	Pentachlorophenol	508	2383	Polychlorinated Biphenyls (PCB'S)
508	2959	Chlordane (T)						

504.1 2931 1,2 Dibromo-3 Chloropropane (DBCP)

504.1 2936 Ethylene Dibromide (EDB)

524.2 2950 **Trihalomethanes** (T)

524.2 #### **VOC'S** (All)

524.2 2976 Vinyl Chloride

531.1, 508, 525.2, 524.2 **VOC'S** (Unregulated)

Legend: Method number or "C" indicates certification

SEVERN TRENT STL

JANUARY 2006

STATEMENT OF QUALIFICATIONS

STL SAVANNAH
5102 LA ROCHE AVENUE
SAVANNAH, GA 31404
PH: 912-354-7858

Leaders in Environmental Testing

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1.1 COMPANY HISTORY

Savannah Laboratories and Environmental Services, Inc. was organized in 1975 to provide quality environmental analytical support for public and private sector clients.

In July of 1999, all divisions of Savannah Laboratories and Environmental Services, Inc. merged with Severn Trent Laboratories, Inc. (STL). The former Savannah Laboratories Savannah location is now known as STL Savannah.

1.2 COMPANY OVERVIEW

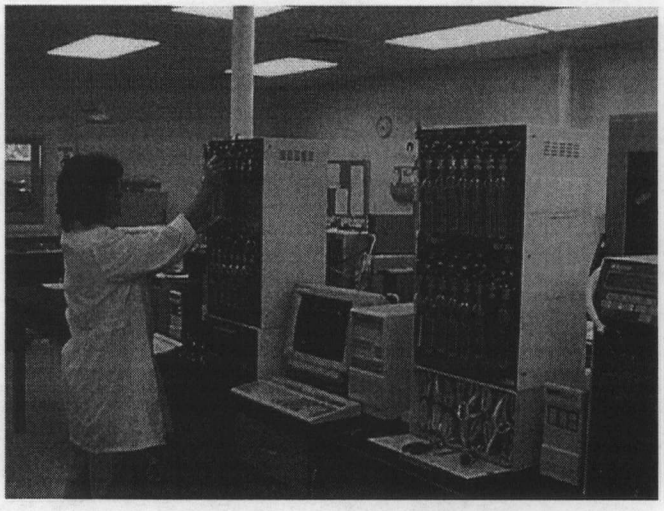
Severn Trent Laboratories (STL), operates the largest environmental laboratory testing network in the United States and Europe with 35 facilities and a support staff of nearly 5,000 employees. STL has grown in the U.S through the acquisition of established, well-managed, high quality and respected environmental analytical testing facilities. These laboratories have extensive experience with all matrices, methods, protocols and programs working on behalf of industry, commerce and government.

STL is a part of Severn Trent Services Inc. (STS); a major group of U.S. based companies with annual revenues exceeding $500 million. Both companies are owned by Severn Trent Plc., a $2 billion British water, waste and utility services company, one of the top 100 publicly traded companies in the United Kingdom and employing some 10,000 people.

1.3 STL SAVANNAH

This Statement of Qualifications (SOQ) outlines the services provided by STL Savannah. STL Savannah's testing capabilities include chemical, physical and biological analyses of a variety of matrices, including aqueous, solid, wastewater, waste, tissue, air and saline/estuarine samples. Specialty capabilities include pulp and paper environmental analytical and process improvement services, method development studies, natural attenuation by-products, low resolution dioxin, specialty pesticides and herbicides, dredged material evaluation, perchlorate analysis, explosive residues, biota preparation and analysis and air toxics testing.

2.1 STANDARD SERVICES



STL Savannah maintains that scientifically sound, legally defensible analytical data is one of the most critical elements for the success of an environmental project. To ensure a project's data quality objectives are met, STL Savannah provides a superior standard of service using the latest technological advances and a commitment to quality and customer service. STL Savannah maintains in-house capabilities to perform all commonly required analyses in support of the following programs:

- EPA Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- National Pollutant Discharge Elimination System (NPDES)
- Cluster Rule for the Pulp & Paper Industry, Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act (SDWA)
- Superfund Amendments and Reauthorization Act (SARA)
- Universal Treatment Standards (UTS)
- Clean Air Act (CAA)

STL Savannah performs analyses under various regulatory programs using both published and laboratory developed and validated test methods. Written SOPs have been prepared, methods have been validated and Method Detection Limits (MDL) studies determined for each analytical method as outlined in the STL Savannah Laboratory Quality Manual (LQM).

Occasionally, client needs may extend beyond the scope of routine methods. Although routine target MDL studies are performed at the required frequency to ensure method regulatory requirements are met, STL Savannah is often requested to assist our clients in achieving defensible low-level reporting limits or to perform method validations for non-routine target compounds. The Laboratory Director, Laboratory Manager and STL Savannah Project Manager assist clients in the design, validation and implementation of new technologies as required to achieve these goals. In addition to the implementation of client driven methodologies, the laboratory management staff actively pursues implementation of cutting edge technology and methods to ensure the most current protocols are utilized to maximize cost containment for STL Savannah clients. In support of these activities, STL Savannah is certified or approved in most states including Puerto Rico and numerous federal programs.

Table 2A – Analytical Protocols and Programs

PROTOCOLS
EPA SW846 ➢ Appendix IX / TCLP/SPLP/MEP **Wastewater** ➢ 40 CFR 136 / Standard Methods ➢ Methods for Chemical Analysis of Water and Wastes (600/4-79-020) **CLP Statement of Work** ➢ TCL/TAL **ASTM / NIOSH / EPA** ➢ Toxic Organic Compounds in Ambient Air (EPA 600/4-89/017) **State Specific Protocols** ➢ VPH/EPH **USACE Dredged Materials**
PROGRAMS
Resource Conservation and Recovery Act (RCRA) **Safe Drinking Water Act (SDWA)** **Department of Defense (DOD)** ➢ AFCEE ➢ NFESC ➢ USACE **Clean Water Act (CWA)** **Clean Air Act (CAA)** **National Pollution Discharge Elimination System (NPDES)** **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Superfund** **Technical Association of the Pulp and Paper Industry (TAPPI)** **National Council for Air and Stream Improvement, Inc. (NCASI)**

2.1.1 Organic Analyses

STL Savannah routinely tests for organic compounds using a variety of GC, GC/MS and HPLC test methods as described in the Federal Register, EPA SW846 and the CLP Statement of Work. These analyses include volatiles, semivolatiles, pesticides, herbicides, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (TPH), Appendix IX, TCLP and other regulatory target lists.

2.1.2 Inorganic Analyses

For high-speed, accurate metals analyses, STL Savannah uses a full array of instrumentation, including Trace-ICP, Cold Vapor AA and Graphite Furnace AA. STL Savannah also provides a full range of wet chemistry analyses for nutrients, demand series, and virtually all other general chemistry parameters.

2.2 SPECIALTY SERVICES

In addition to routine analyses, STL Savannah has the capability to provide custom testing services for special projects requiring more sophisticated analyses. STL Savannah also provides a variety of value-added services that augment the laboratories' analytical capabilities (Table 2B).

Table 2B - Summary of Specialty Services

SPECIALTY SERVICES	
Analytical	**Value-Added**
• Air Analyses • AVS/SEM • Dredged Material Evaluation • Explosives Analyses • Incidental PCBs (Method 680) • Isotopic Analyses (Methods 1624 and 1625) • Low Resolution Dioxin (Methods 8280/613) • Natural Attenuation By-products • PCB Congener Analysis • Perchlorate testing • Pulp and Paper Environmental Analytical and Process Improvements Services • Selective Ion Monitoring • Specialty Pesticides and Herbicides by GC and HPLC • Issue Analyses	• Courier Service • Customized EDD/GIS Capabilities • Expert Witness Testimony • Field Services • Method Development • Project planning support • QAPP Preparation • Technical Support for Pulp and Paper Process Improvements

2.3 DATA MANAGEMENT

The STL Savannah computerized Laboratory Information Management System (LIMS) provides a computerized mechanism for storing data, field and login information. The STL Savannah LIMS facilitates the functions of tracking of sample holding times, scheduling and preparing laboratory worksheets, storing results and QC data, reviewing results and relating them to their corresponding QC data, and printing reports (results and QC data) and invoices. Special instructions to communicate program, project, or sample specific QA or processing information is distributed to each workgroup via the LIMS worksheet notes module. This automated system enables laboratory control of client/project specific requirements and permits STL Savannah to remain flexible in meeting project needs.

2.3.1 LIMS Hardware/Software Configuration

The primary LIMS system is centralized at the STL Savannah facility and communicates with four additional STL laboratory facilities via a frame relay wide area network (WAN). The software utilized on the system is designed around a highly versatile UNIX/PICK relational database to improve system efficiency.

2.3.2 Data Processing

Data processing within the laboratory is performed on a Local Area Network (LAN) employing TCP/IP networking protocol. The segment of the LAN that is dedicated to organic target parameters is comprised of three Hewlett Packard (HP) 9000 Series 700, Model 735 workstations utilizing a UNIX operating system. Interfaced to the LAN are more than twenty HP Envizex X-terminals throughout the lab allowing chemists data access for each department from any X-terminal. User specific login sequences that tailor the secured data access to the specific user's needs provide system security. Target 3, Target DB, and Oracle software are used to process organic target parameter data and generate forms for data package deliverables. GALP protocols are built into the software providing a complete audit trail of data within the laboratory. Reportable results are automatically transferred to the LIMS via the LAN/LIMS interface.

The inorganic target parameters that constitute the metals data are managed using the LIMSLINK and MARRS data reporting software programs for data review and forms generation for data package deliverables. General Chemistry target parameter data are processed using Collect/Excel spreadsheets for data calculations, review, and form reporting for data package deliverables. These programs eliminate manual data entry errors and improve the timeliness of data reporting.

2.3.3 Electronic Data Archival

Electronic data files are continually archived to protect against catastrophic data/system loss due to equipment failure and to provide long-term data storage. Data backup files, which include all methods, instrument data, processed data, and forms deliverables are performed daily. System backups are performed monthly for each data production system. Backups are stored on tape cartridges and secured in a fireproof room for permanent archival. LIMS reports and associated QC data are maintained on the LIMS hard diskettes and/or magnetic tape. All data on the LIMS is backed up on a daily basis on magnetic media.

2.3.4 Data Deliverables

Many standard formats for hardcopy and electronic deliverables are available and may be selected or modified as required during the pre-project planning discussion with the STL Savannah Project Manager.

2.3.5. Electronic Data Deliverables

The STL Savannah LIMS system has the flexibility to deliver data to clients through electronic data downloads (EDD) in a variety of formats. An advantage of computerized transfers is the reduction in time and transcription errors and handling costs when data are transmitted electronically. Also, the data may be delivered in common formats that can be directly incorporated into a client database or report.

Electronic data deliverables are available in a variety of STL Savannah format standards, including record-by-record downloads, single and multiple-project spreadsheets, routine database formats, or report page image files. These reports may include a full results summary in report or spreadsheet format, a positive results or "hits only" summary, a results plus standard QC summary, or a full QC report including all fields used in routine electronic data validations. STL Savannah's standard downloading formats are compatible with many standard software formats including spreadsheets (i.e., Lotus, Excel, or Quattro Pro), databases (i.e., dBase, Paradox, FoxPro, or Access), ASCII, Delimited ASCII, Text, and Fixed Field Length. The report page image files are available in Adobe Acrobat PDF format and can be emailed, printed or viewed by the client as an exact reproduction of the printed hardcopy report.

STL Savannah supports program formats such as GIS/Key, EQuIS for Windows, EDSolution97 and federal program-required deliverables, such as AFCEE/ERPIMS, USACE/IRDMIS, DOE/EMIS, Tri-Services SDS, and EPA Format A or Agency Standard. Additionally, our STL Savannah Project Management and computer programming staff may also develop client-specific download formats. To minimize costs, these requirements should be defined and agreed upon prior to the commencement of project work.

2.4 CLIENT SERVICES

STL Savannah's client services are built on a foundation consistent with the principles of Total Quality Management. Customer focus, support, continuous improvement, and measurement are the defining characteristics of STL Savannah's commitment to client services.

At STL Savannah, every client service representative is committed to understanding and meeting client expectations. This proactive approach allows STL Savannah's staff to provide solutions to current requirements while anticipating future needs and expectations. From the smallest detail to understanding overall project objectives, STL Savannah's client service representatives diligently strive to meet and exceed client expectations.

2.4.1 Project Management

STL Savannah's project management strategy is the cornerstone of STL Savannah client services. The elements of STL Savannah Project Management system focuses on planning, coordinating, integrating and monitoring project activities. The STL Savannah Project and Technical Management support team work proactively with our clients to review regulatory and permit requirements. These pre-project planning efforts provide assurance that required site or region specific protocols will be incorporated in the work plan. The STL Savannah client interface/project management approach is outlined in Figure 2A.

At STL Savannah each client is assigned a Project Manager to oversee the successful completion of their project from the definition or pre-project planning stage to the final submittal of data and deliverables. STL Savannah's Project Managers have extensive experience in the environmental field and are well equipped to handle both business and technical matters. Project Managers serve as a liaison between the client and the laboratory. The Project Manager, Laboratory Manager, and Technical Operations Production Supervisors coordinate scheduling for each project. Resource scheduling for each project is facilitated through a computerized "Laboratory Information Management System" (LIMS). STL Savannah's 140 professional and support staff operate on flexible time schedules and are available to expand resources and capacity as dictated by project deadlines and project scope.

2.4.2 Pre-Project Planning Stage

The client initiates project communication with the designated STL Savannah Project Manager regarding an upcoming project. Prior to the initiation of large scale or technically complex projects, a project team of qualified laboratory professionals is established by the Laboratory Director or Client Services Director. Prior to project initiation a kick-off meeting is held to ensure that all team members have an understanding of the technical and administrative requirements of the project. Risk management begins with effective communication between the STL Savannah Project Manager and the client regarding the identification and management of project priorities and potential for data quality liabilities. Implementation of a Laboratory Task Order (LTO) or other formal project-planning tool is an efficient mechanism to communicate project requirements. After the STL Savannah Project Manager has approved and committed the laboratory resources to complete the project task, the STL Savannah LTO or other client-specified format will be incorporated into STL Savannah's LIMS and used to guide project execution. Sample schedules, turnaround time and reporting requirements are communicated and delegation of responsibilities is established. If necessary, laboratory resources are shifted to ensure that all project requirements are met.

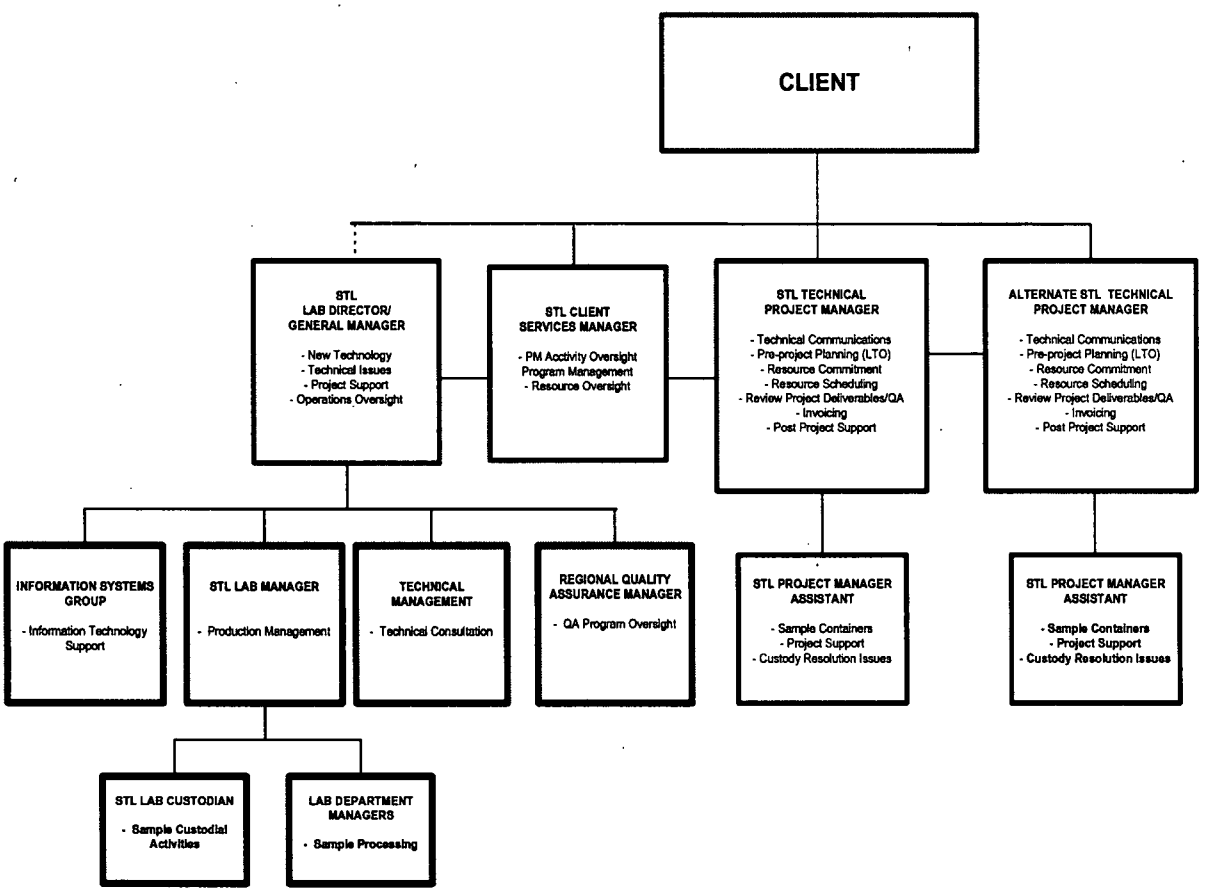
2.4.3 Project Initiation

Prior to field sample collection the client's request for sample containers is directed to the designated STL Savannah Project Manager or Assistant Project Manager. Based on the project requirements outlined in the LTO, STL Savannah will provide appropriate pre-preserved containers, packing materials, chain-of-custody (COC) forms, trip blanks (volatile parameters), temperature vial, sample labels and container request inventory schedule specific to the task.

2.4.4 Project Execution

The STL Savannah Project Manager relates the client's analytical requirements to the laboratory staff via the STL Savannah LIMS. Each project is executed as a unique task by the laboratory, with site-specific requirements for analysis incorporated as defined by the Project Manager. The LIMS contains sample information, required analytical procedures and unique project requirements. The LIMS status system tracks the progress of samples from receipt to project completion and final disposition.

FIGURE 2A
CLIENT / STL SAVANNAH
PROJECT MANAGEMENT INTERFACE



3.1 FACILITIES

The 55,000 square foot STL Savannah facility is custom designed to maximize efficiency, effective implementation of quality control procedures, security and safety. The facility is equipped with the most current approved technology and super minicomputers and PC networks are used for sample tracking, work scheduling, status reporting and electronic data transfer to clients.

The STL Savannah facility is designed to incorporate structural safety features to promote strict adherence to the STL Corporate Safety Manual. Each employee is familiar with the location, use, and capabilities of general and specialized safety features associated with their workplace. Instrument rooms are designed to maintain positive pressure (air flows from instrument room flow outward to neighboring areas). This design serves to minimize chemical exposure to employees, promote energy conservation and reduces the potential of sample contamination from known common air-borne contaminates such as methylene chloride, chloroform, and other solvent vapors. Thus, data reflect the actual levels present (or not present) in background-sensitive samples analyzed in support of low-level monitoring programs. Because of the sensitivity of the work STL Savannah performs, access is controlled through various security systems including locks, passwords, electronic access cards and manned reception areas.

3.2 OPERATIONS

STL Savannah operates on a multi-shift basis (up to three eight-hour shifts daily) as necessary to meet project scheduling and holding time requirements. To facilitate convenient sample receipt, STL Savannah sample custodians accept samples Monday through Friday during laboratory hours of operation (8:00 a.m. to 6:00 p.m.), each Saturday morning, and after business hours by appointment.

3.3 CAPACITY

STL Savannah's Project Management staff (in consultation with the Laboratory Director and Laboratory Manager) verify that appropriate laboratory resources are available prior to accepting additional or expedited turnaround projects, commencing new projects, performing new analyses, or adding new analytes to existing methods. It is advised that all clients review their project needs and plans periodically with their laboratory Project Manager, especially when there are significant changes to their project schedule or scope of work.

The percent capacity utilization of the laboratory is based on current equipment and staff levels and varies between 60 to 70%. This capacity can be expanded by the addition or reassignment of staff and equipment as required. Routine sample processing capacity may also be adjusted through the flexibility of our experienced and cross-trained staff or through utilization of a client-approved STL facility, when additional project requirements or emergency services are required.

3.4 INSTRUMENTATION

STL Savannah is committed to perform routine updates and to automate instrumentation techniques whenever possible. Comprehensive instrumentation and equipment is available to analyze water, wastewater, solid waste, soil, sludge, tissue and air sample matrices for all commonly required environmental compliance tests. For most methods, the instrumentation is equipped with auto-samplers and computerized technology that allow 24-hour data production and processing. Backup instrumentation and maintenance programs provide assurance that analytical processing will meet holding time and quality control project requirements. Table 3A provides a summary of analytical equipment available at the STL Savannah facility.

3.4.1 Preventive Maintenance Programs

To gain maximum performance and minimize downtime, regular inspection, maintenance, cleaning, and servicing of laboratory equipment is performed in accordance with the manufacturers' recommendations in addition to routine maintenance inspections performed under contract.

An extensive parts inventory is maintained for routine repairs at each facility, consisting of GC detectors, AA lamps, fuses, printer heads, flow cells, tubing, certain circuit boards and other common instrumentation components. Since instrumentation is standardized throughout many of the STL laboratories, redundant parts and components can be exchanged, when needed.

3.4.2 Disaster Recovery Plan Summary

In case of a major natural catastrophe, client approved STL laboratory facilities would be available to provide project continuity and to meet sample holding time or critical project schedule requirements. In the event of instrument failure, portions of the sample load may be diverted to duplicate instrumentation within the facility. In some instances an alternate approved technique such as manual colorimetric determination in lieu of an automated determination can be accommodated. At the client's direction or approval, samples can also be shipped to another properly certified and approved STL location (where identical SOPs, QA procedures and instruments are utilized) for analysis.

The LIMS and other critical production systems are protected by a UPS (Uninterrupted Power Supply) system in order to prevent failure due to power outages and major natural catastrophes. In addition to this provision an identical computer system, located off-site at another STL facility, is maintained by the LIMS hardware support contractor. This redundant system can be activated to operate on a real-time basis from the backup facility within 24 hours of a disaster declaration. In the event of severe weather systems the Disaster Recovery Plan can be declared in advance and be accessed by all five STL Savannah LIMS-linked laboratory facilities, enabling them to continue functioning until the primary system is restored. Verification and system performance validation for these emergency systems is performed annually.

Table 3A – STL Savannah Equipment List Summary

Instrument Type	Manufacturer	Model	Purchase Date	Autosampler	Method Performed
ICP	Thermo Jarrell Ash (A) S/N 193390	61E Trace	1994	No	200.7/6010
	Thermo Jarrell Ash (D) S/N 507990	61E Trace	1999	No	200.7/6010
ICP/MS	Agilent S/N JP 10300403	75002/G3155 A	2002	Yes	200.8/6020
GFAA	Varian AA S/N 9111037	Spectra AA 400 (Zeeman)	2000	Yes	200-series/7000-series
Mercury Analyzer	Mercury Cold Vapor Unit S/N 2039	Leeman HYDRA AA	2003	Yes	245.1/7470/7471
GC/MS Semivolatiles	Hewlett-Packard (D) S/N US82311451	5973/6890	1999	Yes	LL PAH, 1653, SIM
	Hewlett-Packard (H) S/N 3118A02286	5973/6890	1999	Yes	Screening
	Hewlett-Packard (E) S/N US82311455	5973/6890	1999	Yes	8270C, 625
	Hewlett-Packard (G) S/N US82311571	5973/6890	1999	Yes	8270C, 625
	Hewlett-Packard (K) S/N 3307A00233	5972/5890	1993	Yes	680, 1653, 8270C, 625
	Hewlett-Packard (N) S/N US72010580	5973/6890	1998	Yes	8270C, 625
	Hewlett-Packard (J) S/N 2919A00427	5971/5890	1992	Yes	8270C, 625
	Hewlett-Packard (T) S/N US33246115	5973/6890	2003	Yes	8270C, 625
	Hewlett-Packard (R-DW) S/N 21842170	5973/6890N	2002	Yes	525.2, 548.1
GC/MS Volatiles	Hewlett-Packard (A) S/N US82311453	5973/6890	2000	Yes	624, 1624, 8260B
	Hewlett-Packard (B) S/N US82311452	5973/6890	2000	Yes	624, 8260B
	Hewlett-Packard (O) S/N US7200579	5973/6890	1993	Yes	624, 8260B
	Hewlett-Packard (M) S/N 3251A00054	5972/5890 II	1992	Yes	8260B

Instrument Type	Manufacturer	Model	Purchase Date	Autosampler	Method Performed
	Hewlett-Packard (L) S/N 3306A00159	5972/5890 II	1994	Yes	8260B
	Hewlett-Packard (P) S/N US0039011	5973/6890	2000	Yes	624, 8260B
	Hewlett-Packard (S) S/N US21843181	5973/6890	2002	Yes	524.2
Ion Chromatograph	Dionex (E) S/N 95120252	DX-500	1998	Yes	300.0, 300.1
	Dionex (C) S/N 00060345	DX-500	2001	Yes	314.0
	Dionex (D) S/N 98120468	DX-500	1999	Yes	314.0
	Dionex (F) S/N 02020190	DX-500	2002	Yes	300.0(DW), 300.1(DW)
GC Semivolatiles	Hewlett-Packard (I) S/N 3336A54128	5890 II Plus	1993	Yes	508, 608, 8081, 8082
	Hewlett-Packard (S) S/N US00024188	6890 Plus	2000	Yes	515.1, 615, 8151
	Hewlett-Packard (M) S/N 3336A51190	5890 II Plus	1993	Yes	508, 608, 8081, 8082
	Hewlett-Packard (R) S/N 3336A54617	5890 II Plus	1994	Yes	508, 608, 8081, 8082
	Hewlett-Packard (P) S/N 33033A30494	5890 II Plus	1990	Yes	8015-DRO, TNEPH, TNRCC1005
	Hewlett-Packard (J) S/N US00033184	6890	2000	Yes	508, 608, 8081, 8082
	Hewlett-Packard (K) S/N 3203A40999	5890 II Plus	1999	Yes	608PCB, 8082
	Hewlett-Packard (DW) S/N US10223085	6890	2002	Yes	504.1, 8011, 552.2, 551.1
	Hewlett-Packard (O) S/N 2750A15498	5890	2001	Yes	614, 8141
	Hewlett-Packard (X) S/N CN10406086	6890N	2003	Yes	508, 608
GC Volatiles	Varian (A) S/N 6672	3300 (HALL/FID)	1990	Yes	8021BTEX
	Varian (B) S/N 6670	3300 (HALL/FID)	1989	Yes	601/602/8021/8015(M)
	Varian (I) S/N 7611	3300 (HALL/PID)	1991	Yes	601/602/8021

Instrument Type	Manufacturer	Model	Purchase Date	Autosampler	Method Performed
	Varian (G) S/N 14921	3400 (FID)	1992	Yes	8015-DAI, NCASI 99.01, NCASI-94.03
	Varian (D) S/N 13574	3400 (PID/FID)	1993	Yes	8021/8015
	Varian (C) S/N 1525	3600 (FID)	1992	Yes	RSK-175
	Hewlett-Packard (A) S/N 3336A50555	5890 (PID)	1990	Yes	Screening
Liquid Chromatography	Hewlett-Packard (J) S/N JP63205060	1100	2002	Yes	531.1/547
	Hewlett-Packard (K) S/N JP73016069	1100	2002	Yes	549.2
General Chemistry	Milton Roy Spectronic (SPC2) S/N 3806202002	301	1995	No	MBAS
	GENESYS S/N 2G2E1410011	10UV	2002	No	UV-254
	Hach (TURB1) S/N 950400000487	2100 AN	1995	No	Turbidity
	Lachet Quickchem S/N A83000-1070	8000	1997	No	Total CN, WAS CN, Amenable CN, NO2+NO3
	YSI (BOD) S/N 98C0951A	5000	1998	No	BOD
	Milton Roy Spectronic (SPC1) S/N 3802235017	301	1991	No	Sulfide, Phenolics, COD
	Shimadzu S/N 32011239	5050A	1994	No	TOC
	OI Solids S/N D110705896	OI Solids	2000	No	TOC
	Mitsubishi S/N 75C20047	TOX-10E	1998	No	AOX, BOX, TOX
	Euroglass S/N 2001.068	ETS-1200	2000	No	AOX, EOX, BOX, TOX
	Konelab20 (1) S/N M4218134	Konelab20	2000	Yes	Ferrous Iron, Chloride, Cyanide, Sulfate, Ortho-phosphate, Ammonia
	Konelab (2) S/N M3118114	Konelab20	2001	Yes	Ferrous Iron, Chloride, Cyanide, Sulfate, Ortho-phosphate, Ammonia

3.5 PERSONNEL

STL Savannah facility is staffed with over 140 dedicated and experienced personnel who have met or exceeded all training requirements for their assignments. These 140 professionals include analytical chemists, microbiologists, quality assurance specialists, computer systems analysts, environmental technicians, client services staff, project managers and field personnel. Many have advanced degrees in their respective disciplines as well as numerous years of analytical methods experience. Table 3B provides a summary of STL Savannah's staff and experience.

Professional development is also provided through in-house or external training courses and periodic cross-training assignments. STL Savannah's commitment to quality performance is maintained by fostering internal growth through cross training and promotion of individuals within STL. Over the years, STL Savannah has maintained a staffing level that is commensurate with corporate growth objectives and the forecasted volume of work requirements. STL Savannah's staff stability is demonstrated by the low turnover rate of professionals of less than 5% annually and the high ratio of staff with many years experience with STL Savannah.

STL Savannah is in compliance with all federal EEOC requirements and has aggressive Affirmative Action, Drug Free Workplace, and employee training programs in place.

Table 3B - Key Personnel

Name	Position	Degree/Discipline	Years Experience
Benjamin Gulizia	Laboratory Director	BS Biology	23
Betsy Beauchamp	Client Services Manager	BA Biology	14
Charlton Riegner	Operations Manager	BS Chemistry	11
Andrea Teal	QA Manager	BA Chemistry & Mathematics	8
Kathy Smith	Project Manager	BS Environmental Science	7
Lidya Gulizia	Project Manager	BS Biology	22
Sheila Hoffman	Project Manager	BS Business	21
Bernard Kirkland	Project Manager, Director of Project Management	BS Chemistry	13
Amy Bacon	Project Manager	BS Health Science	5
Theresa Hornsby	Project Manager	BS Biology	12
Linda Wolfe	Project Manager	BS Chemistry & Biology	23
Jess Hornsby	Sample Custody/Reports Processing Supervisor	MS Political Science	1
Ernest Walton	Technical Manager, Inorganics EHS Coordinator	BS Chemistry	21
Myron Young	Technical Manager, Organics	BS Chemistry	18
Carol Webb	Extraction & LC/IC/DW Department Manager	AA Science	12
Jerry Lanier	General Chemistry Department Manager	BS Chemistry	9
Chris Kana	Metals Department Manager	BA Chemistry	8
Charlton Reigner	Semivolatile GC Department Manager	BS Chemistry	11
Kimberly Chamberlain	Semivolatile GC/MS Department Manager	BS Microbiology	11
Brent Ketcham	Volatile GC/MS & GC Department Manager	BS Biochemistry	6
Amy Phillips	QA Assistant	MS Biomedical Engineering	1
Amy Martin	QA Assistant		
Larry Phillips	IT Director	BS Computer Science	16
William Van Ausdale	Technical Manager, IT	MS Chemistry	23

4.1 QUALITY ASSURANCE POLICY

It is STL Savannah's policy to:

- provide high quality, consistent, and objective environmental testing services that meet all federal, state, and municipal regulatory requirements.
- generate data that are scientifically sound, legally defensible, meet project objectives, and are appropriate for their intended use.
- provide STL Savannah clients with the highest level of professionalism and the best service practices in the industry.
- build continuous improvement mechanisms into all laboratory, administrative, and managerial activities.
- maintain a working environment that fosters open communication with both clients and staff.

4.1.1 Objectives of STL Savannah Quality System

The goal of the STL Savannah Quality System is to ensure that business operations are conducted with the highest standards of professionalism in the industry.

To achieve this goal, it is necessary to provide STL Savannah clients with not only scientifically sound, well documented, and regulatory compliant data, but also to provide the highest quality service experience available in the industry. STL Savannah's Quality System is designed to provide a framework for continuous improvement within the organization, minimize systematic errors, and to encourage constructive, documented problem solving.

4.1.2 Management Commitment to Quality Assurance

STL Savannah management is committed to providing the highest quality data and the best overall service in the environmental testing industry. To assure that data produced and reported by STL Savannah meet the requirements of STL Savannah's clients and comply with the letter and spirit of municipal, state and federal regulations, STL Savannah maintains a Quality System that is clear, effective, well communicated and supported at all levels in the Company.

The elements that comprise STL Savannah's Quality System are outlined in detail in the STL Quality Management Plan (QMP). This document can be obtained by contacting any STL facility. In addition to the STL Quality Management Plan, STL Savannah operates under a comprehensive Laboratory Quality Manual (LQM) that is designed to assure that project results will be defensible under regulatory agency or courtroom scrutiny. Quality assurance procedures are based on the requirements of the STL Quality Management Plan that adheres to EPA guidance.

4.1.3 Proficiency Testing

STL Savannah analyzes Proficiency Test (PT) samples as required for accreditation and as outlined in the National Environmental Laboratory Accreditation Conference (NELAC) semi-annually for each area of testing and regulatory program for which it is certified. STL Savannah also participates in a number of additional Federal programs such as the Air Force (AFCEE), the US Navy (NFESC) and the US Army Corps of Engineers (USACE) laboratory assessment programs.

4.1.4 Double Blind Performance Evaluation

STL Savannah also participates in a double blind performance program semi-annually which is administered by the Corporate QA Manager. An external vendor is contracted to submit double blind samples. Both the level of customer service and the accuracy of the test results are assessed objectively by the external contractor, who provides a detailed report to the Corporate QA Manager and each of the STL facilities. This program is administered as a double blind program in order to assess all facets of STL laboratory operations.

4.1.5 Client Confidentiality and Proprietary Rights

Data and sample materials provided by the client or at the client's request, and the results obtained by STL Savannah, are held in confidence subject to any disclosure required by law or legal process. STL Savannah's reports, and the data and information provided therein, are for the exclusive use and benefit of the client, and are not released to a third party without written consent from the client.

4.1.6 Record Retention and Archival

STL Savannah adheres to a formal record retention policy incorporated in the LQM that outlines the period of time various record types must be archived. Archives are indexed such that records are accessible on either a project or sequential basis. Archives are protected against fire, theft and loss due to deterioration. Electronic records are protected from deterioration caused by magnetic fields and/or electronic deterioration. Access to archives is controlled and documented.

4.2 CERTIFICATIONS

As part of our Quality Assurance program, STL Savannah participates in many governmental and private laboratory certification and approval programs. Many of these programs require periodic analyses of blind quality assurance samples and on-site inspection of facilities, records and procedures. STL Savannah routinely participates in Federal, State and client performance evaluation audits on a regular basis. STL Savannah is approved by the USDA Animal and Plant Health Inspection Service to import soil from foreign countries to STL Savannah's facility for analysis. International analytical project support has included projects from Caribbean, Central American, South American, European and Asian countries.

Table 4A - Certifications/Accreditation

Agency	Matrix / Category	Cert.	ID No.	Exp. Date
AFCEE	Laboratory	Approved	SAVLAB	
A2LA **ISO/IEC 17025**	Drinking Water	Direct	6883	02/28/07
	Wastewater	Direct	6883	02/28/07
	Solid Waste	Direct	6883	02/28/07
	Microbiology (DW-WW)	Direct	6883	02/28/07
Alabama	Drinking Water	Reciprocity (GA)	41450	02/28/05
	Microbiology			
Arizona	Drinking Water	Direct	AZ0664	06/29/06
Arkansas	Drinking Water	Reciprocity (NY)		07/01/06
	Wastewater	Direct	SAVLAB	04/27/06
	Solid Waste	Direct	SAVLAB	04/27/06
	Microbiology	Reciprocity (NY)		07/01/06
California nelac	Drinking Water	Reciprocity (NY&FL)	03217CA	07/31/06
	Microbiology (DW-WW)	Reciprocity (NY&FL)	03217CA	07/31/06
Colorado	Drinking Water	Reciprocity (NY&FL)	STL Savannah	12/31/05
Connecticut	Drinking Water	Reciprocity (NY&FL)	PH-0161	03/31/07
	Wastewater	Reciprocity (FL)	PH-0161	03/31/07
	Solid Waste (Incl. Soil)	Reciprocity (FL)	PH-0161	03/31/07
Delaware	Drinking Water	Approved		None
Florida nelac	Drinking Water	Direct & Reciprocity (NY)	E87052	06/30/06
	Wastewater	Direct	E87052	06/30/06
	Solid Waste	Direct	E87052	06/30/06
	Microbiology (All)	Direct & Reciprocity (NY)	E87052	06/30/06

Georgia	Drinking Water	Reciprocity (A2LA)	803	12/01/05
	Wastewater	Approved	803	02/28/07
	Solid Waste	Approved	803	02/28/07
	Microbiology	Direct	803	09/23/05
Guam	Drinking Water	Reciprocity (NY&FL)	05-002	01/24/06
Hawaii	Drinking Water	Reciprocity (NY&FL)		06/30/06
Illinois nelac	Drinking Water	Reciprocity (NY&FL)	200022	11/30/06
	Wastewater	Reciprocity (FL)	200022	11/30/06
	Solid Waste	Reciprocity (FL)	200022	11/30/06
Indiana	Drinking Water	Reciprocity (GA)	C-GA-02	01/31/06
Iowa	Drinking Water	Reciprocity (FL)	353	07/01/07
	Wastewater	Reciprocity (FL)	353	07/01/07
	Solid Waste	Reciprocity (FL)	353	07/01/07
Kansas nelac	Wastewater	Reciprocity (FL)	E-10322	07/31/06
	Solid Waste	Reciprocity (FL)	E-10322	07/31/06
	Drinking Water	Reciprocity (NY&FL)	E-10322	07/31/06
	Microbiology (All)	Reciprocity (NY&FL)	E-10322	07/31/06
Kentucky	Drinking Water	Reciprocity (A2LA)	90084	12/31/05
	UST (OPSTEAF)	Reciprocity (A2LA)	0018	09/30/05
Louisiana nelac	Wastewater	Reciprocity (FL)	SAVLABS	06/30/06
	Solid Waste	Reciprocity (FL)	SAVLABS	06/30/06
	Drinking Water	Reciprocity (NY&FL)	LA030002	12/31/05
	Microbiology (WW)	Reciprocity (FL)	SAVLABS	06/30/06
Maine	Drinking Water	Reciprocity (NY &FL)	GA0006	06/09/06
	Wastewater	Reciprocity (FL)	GA0006	06/09/06
Maryland	Drinking Water	Reciprocity (GA)	250	12/31/06
Massachusetts	Drinking Water	Reciprocity (GA)	M-GA006	06/30/06
	Wastewater	Reciprocity (GA)	M-GA006	06/30/06
	Perchlorate Monitoring (DW)	Approved		
Michigan	Drinking Water	Reciprocity (NY&FL)	SAVLABS	4/1/2006
Mississippi	Drinking Water	Reciprocity (NY&FL)	STL Savannah	06/30/06
Montana	Drinking Water	Reciprocity (NY&FL)	CERT0081	04/04/06
NFESC	Laboratory	Approved	SAVLAB	12/20/04

Nebraska	Drinking Water	Reciprocity (NY&FL)	STL Savannah	06/30/06
Nevada	Drinking Water	Reciprocity (NY&FL)	GA6	07/31/06
	Microbiology (All)	Reciprocity (NY&FL)	GA6	08/31/05
New Hampshire nelac	Drinking Water	Reciprocity (NY&FL)	296001	04/24/06
	Wastewater	Reciprocity (FL)	296001	04/24/06
	Microbiology (All)	Reciprocity (NY&FL)	296001	04/24/06
New Jersey nelac	Drinking Water	Reciprocity (NY&FL)	GA769	06/30/05
	Wastewater	Reciprocity (FL)	GA769	06/30/05
	Solid Waste	Reciprocity (FL)	GA769	06/30/05
	Microbiology (DW-WW)	Reciprocity (NY&FL)	GA769	06/30/05
New Mexico	Drinking Water	Reciprocity (FL)		06/30/05
New York nelac	Drinking Water	Direct	10842	04/01/06
	Wastewater	Reciprocity (FL)	10842	04/01/06
	Solid Waste	Reciprocity (FL)	10842	04/01/06
	Microbiology (DW-WW)	Direct & Reciprocity (FL)	10842	04/01/06
North Carolina	Wastewater	Direct	269	12/31/05
	Solid Waste	Direct	269	12/31/05
Oklahoma	Wastewater	Direct	9926	08/31/06
	Solid Waste	Direct	9926	08/31/06
Oregon	Drinking Water	Reciprocity (NY&FL)	GA200002-001	5/24/2006
Pennsylvania	Drinking Water	Reciprocity (NY&FL)	68-474	06/30/06
	Wastewater	Reciprocity (FL)	68-474	06/30/06
	Solid Waste	Reciprocity (FL)	68-474	06/30/06
Puerto Rico	Drinking Water	Reciprocity (NY&FL)	GA00006	01/01/06
Rhode Island	Drinking Water	Reciprocity (NY&FL)	244	12/30/05
South Carolina	Wastewater	Reciprocity (FL)	98001	06/30/06
	Solid Waste	Reciprocity (FL)	98001	06/30/06
	Drinking Water	Reciprocity (NY&FL)	98001	06/30/06
	Microbiology (DW-WW-SW)	Reciprocity (FL)	98001	06/30/06
Tennessee	Drinking Water	Reciprocity (NY&FL)	02961	07/30/06
Texas	Drinking Water	Reciprocity (NY&FL)	TX216	11/30/06
	Wastewater	Reciprocity (FL)	TX216	11/30/06

	Solid Waste	Reciprocity (FL)	TX216	11/30/06
	Microbiology	Reciprocity (FL)	TX216	11/30/06
US ACE	Laboratory	Reciprocity (FL)	399	12/20/04
USDA	Soil Permit	Approved	S-35813	12/31/07
	(Compliance Agreement)	Approved	S35813	12/31/07
Vermont	Drinking Water	Reciprocity (NY&FL)	VT 87052	11/15/06
Virginia	Drinking Water	Reciprocity (GA)	00302	06/30/06
	Microbiology	Reciprocity (GA)	00302	06/30/06
Washington	Drinking Water	Reciprocity (FL)	C275	06/10/06
	Wastewater	Reciprocity (A2LA)	C275	06/10/06
	Solid Waste	Reciprocity (A2LA)	C275	06/10/06
West Virginia	Drinking Water	Reciprocity (NY&FL)	9950C	12/31/05
	Wastewater	Direct	094	04/30/06
	Solid Waste	Direct	094	04/30/06
Wisconsin	Wastewater	Direct	999819810	08/31/06
	Solid Waste (Incl. UST)	Direct	999819810	08/31/06
	Drinking Water	Direct	999819810	08/31/06
Wyoming	Drinking Water	Approved	STL Savannah	06/30/06