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10/28/05

Texas Commission on Environmental Quality
New Technology Research & Development (NTRD) Program
Monthly Project Status Report

Contract Number: 582-5-70807-0019

Grantee: Sonoma Technology, Inc.

Date Submitted: September 20, 2005

Report for the **Monthly** period:

Starting Date July 29, 2005 Ending Date August 25, 2005

Section I. Accomplishments *(Please provide a bulleted list of project accomplishments as well as a description of their importance to the project.)*

During the above period STI completed the following:

- Conducted weekly project meetings with STI staff.
- Created an installation protocol.
- Upgraded our radar wind profiler to digital technology to improve data recovery and clutter removal in the offshore marine environment.
- Received sodar from Atmospheric Systems. Installed, tested, and deinstalled sodar at Petaluma test facility.
- Finalized our subcontract with TEST Automation and Control for assistance with instrument modifications, transport of equipment from Louisiana to the platform, and installation of power, communications, and instrumentation following Shell's Class I Division II requirements. The cost to perform the work has increased to $48,666 from $36,895 (see attached statement of work). The cost increase is primarily due to new information regarding shipping cost, a better understanding of the Shell's Class 1 Division 2 explosion proofing requirements and the amount of manpower needed to complete the install.
- Traveled to Tuscan to assist Vaisala with the radar wind profiler modifications and to get trained on modified components.
- Packed and shipped radar wind profiler to TEST Automation and Control for preparation of purge system and explosion proofing as required by Shell and for inspection by Shell.
- Packed and shipped sodar to TEST Automation and Control for shipping to platform.
- Traveled to TEST Automation and Control to inspect installation of purge system and conduct final testing of equipment before shipping offshore.
- Abbeville Offshore to provide a shelter the meets Shell's Class 1 Division 2 requirements.

- Traveled to Abbeville Offshore in LA to inspect shelter to verify that it met all Shell requirements.
- Deinstalled equipment, power, shelter, and communications at Petaluma Test Site.
- Purchased and configured Cisco Routers for communications with meteorological equipment.
- Purchased and configured web camera for site monitoring.
- Designed and set-up procedure for transferring and displaying data on STI website.
- Installed and tested the latest radar wind profiler data processing software.
- Continued working with Shell on logistics for placing the instruments on the platform including safety requirements, preparation for instrument explosion proofing, siting, power, transportation, and communications.
- Continued to test communications hardware and software with the RWP.

Indicate which part of the Grant Activities, as defined in the grant agreement, the above accomplishments are related to:

Preparation and Installation of RWP, RASS, Sodar, and surface meteorological instruments.

Section II: Problems/Solutions

Problem(s) Identified *(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)*	*The cost of TEST subcontractor to assist in the install of equipment, power, shelter, and communications to meet Shells Class 1 Division 2 requirements has increased to $48,666 from $36,895.* *Meeting Shell's Class 1 Division 2 requirements is requiring extensive modifications to our equipment and supporting infrastructure. The procurement of supplies for the modifications by our subcontractor is about 2-weeks behind schedule and will result in about a two week delay in the installation of the equipment. Thus, we will be installing our equipment by the end of August and expect to be operational the first week of September.*
Proposed Solution(s) *(Please report any possible solution(s) to the problem(s) that were considered/encountered)*	*We will continue to monitor the budget and scope of work and will inform TCEQ on significant implications to the project schedule, cost, and deliverables.*
Action(s) Conducted and Results *(Please describe the action(s) taken to resolve the problem(s) and its effect)*	

Section III. **Goals and Issues for Succeeding Period**: (*Please provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen)*

In September, we hope to:

- *Prepare the platform for installation of the equipment.*
- *Complete installation of the meteorological equipment and communications on the platform.*
- *Complete set-up of website for displaying meteorological data.*
- *Start operations.*

Date: *September 20, 2005*

Authorized Project Representative's Signature

NOTE: *Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.*

AUGUST STATEMENT OF WORK FOR TEST AUTOMATION AND CONTROL

The following statement of work provides detailed information regarding the modification of STI's radar wind profiler (RWP), sodar, and surface meteorological equipment, shipping of the equipment to Brazos-A19, and assistance needed for installing the equipment on the platform. STI would like the installation to be completed within one week of receipt of the modified antenna. All work to be done on a T & M bases, This estimate is budgetary.

1.1 TASK 1: PREPARATION

TEST will assist STI with instrument preparations. The specific details are listed in **Table 1**.

Table 1. Task 1 details for equipment preparation.

	Labor Hours	Cost
Task 1 Total	**114**	**$5,829.00**
TEST will:		$35.00/hr avg.
Arrange a trip to Brazos A-19 oil platform with Shell to inspect the proposed location of the equipment, based on STI's footprint document (see attached). STI will pay for the helicopter flight from Galveston, TX to the platform, as well as travel to and from Harvey, Louisiana to Galveston, TX. TEST will determine the length of cables, cables trays, air supply tubing, how to tie down the RWP (including the methods and requirements), shelter location, and power and grounding requirements needed for all equipment based on this trip. TEST will confirm with Shell that these lengths meet their requirements. Per diem will apply for the first day.	30 @ $52 mileage 772@ .65 per diem @ $70.00 a day	$1,560 $501.80 $70.00
Work with shelter manufacturer (Abbeville Offshore) to verify that shelter can accommodate entry of all cables using the ROX system. This includes visiting with Abbeville Offshore to visually inspect the shelter and verify that the ROX system will work. Travel time and mileage will be required.	20 @ $52 mileage 328 @ .65	$1,040 $213.20
Install cable exiting system from RWP enclosure using ROX system cable and pipe transit.	10	$350
Install Purge System with alarm in RWP box supplied by STI.	12	$420
Test Purge System and cable exiting system at TEST. Fill any leaks. If leaks are found adjacent to the antenna panels, acetic acid-free silicon will be used to fill any holes or gaps.	12	$420
Obtain the number and size of lag bolts necessary for securing the RWP to the platform. Bolts should be strong enough, when combined with the guy wires, to withstand hurricane force winds. STI will add stainless steel guy wires to the existing guy wires for additional strength. STI will determine the size and quantity necessary to properly secure the RWP to the platform.	1 @ $52	$52

Obtain cable trays, supports, and air supply tubing and fittings. Length will have been determined during the trip to the platform.	2 @ $52	$104
Prepare four inch breakaway pole with winch and connectors for solar radiation cross-arm (has 2.25" U-bolts), aspirated temperature cross-arm, relative humidity shield mount, and wind sensor cross-arm (mounting 1.66 in (4.2 cm) - O.D. 1-1/4 in IPS pipe).	6 @ $52	$312
Obtain all required material for providing power to the shelter (including cables, connectors, ground wire, and other necessary items).	2 @ $52	$104
STI to perform a wind load calculation to verify that the guy wires are adequate for use on the platform. In addition, TEST will acquire the necessary Shell-approved hardware for anchoring the guy wires to the platform deck. STI will specify the hardware quantity and type.	1 @ $52	$52
Prepare instruments for shipping (Sodar, RWP, Surface met) to the platform. TEST will ensure that all equipment is properly crated and will arrange and pay for transportation of equipment from Louisiana to the dock. In addition, TEST will oversee shipping of equipment, ensuring that all equipment makes it to the platform and is successfully loaded onto the upper-deck of platform D. STI will pay for sea transportation through Shell.	18	$630

1.2 TASK 2: INSTALLATION

TEST will assist STI with the installation of the RWP, sodar, and surface meteorological equipment on Platform D at Brazos A-19. TEST will follow all safety requirements set forth by Shell and will provide STI with proof of any necessary insurance coverage. Installation is expected to take 4-5 days to complete. **Table 2** lists the detailed tasks to be completed as part of the installation of STI's equipment.

Table 2. Task 2 details for equipment installation.

	Labor Hours	Cost
Task 2 Total	**430**	**$17,337.20**
TEST will:		
Travel for four people to and from the Brazos A-19 platform. In addition, TEST will attend any orientations required by Shell. Per diem may apply for the first day so that the first day offshore is productive. Otherwise, work will cease at the end of 18 hours including travel time. This is around 4 pm.	128 mile @ .65 per diem @ $70.00	$4,480 $2,007.20 $280.00
Assist STI in RWP set-up. This includes assembling the clutter fences, attaching the radome box to the clutter fence supports, installing and securing guy wires to the platform, and attaching RWP to the platform deck using lag bolts. In addition, TEST will place all	16	$560

cables into cable trays and secure to platform per Shell electronic installation requirements.		
Assist STI in set up of the surface meteorological equipment. This includes attaching the break-away pole to the platform deck, a winch for lowering the pole onto the deck, attaching any guy wires that may be necessary for additional support, and assisting with installation of cross-arms and sensors onto the pole. In addition, TEST will lay all cables in cable trays from the datalogger, which will be attached to the pole, to the shelter. TEST will ensure that all lag bolts are securely fastened to the deck and that all guy wires are securely attached to the lag bolts.	24	$840
Secure the shelter to the platform deck. TEST will ensure that the shelter is securely fastened to the deck using Shell-approved tie-downs/anchors. TEST will ensure that the shelter is properly grounded and that all wires and cables entering the shelter are properly sealed. In addition, TEST will ensure that the shelter is not in the way of crane operations. TEST will not be responsible for designing a secure system.	12	$420
Secure RWP and sodar using lag bolts and STI-supplied guy wires. TEST will ensure that all lag bolts are securely fastened to the platform deck and that all guy wires are securely fastened to the lag bolts. STI will inspect and accept the installation. TEST will not be responsible for damages caused by insufficient securing the equipment.	8	$280
Install tubing and air supply for Purge System. TEST will ensure that the air supply is filtered for moisture. TEST will ensure that air supply is properly connected and that no leaks have developed during the shipping of the equipment, and that the alarm system is functioning properly.	36	$1,260
Install power to the shelter. TEST will work with Shell to ensure that all connections are properly grounded with #4 copper wire to the steel on the platform, all cables are properly secured, and that all wiring satisfies Shell's electrical installation standard ENG0039 (Schedule F). <u>Power requirements:</u> Peak power for RWP is 600 W, with an average power of 0.1 to 70 W. Current requirements include two 15 amp circuits at 100-130 VAC. Peak power for sodar is 120 W, with an average power of 70 W. Current requirements include one 15 amp circuit at 12V. Peak power for surface meteorological equipment is 15 W. Current requirements include on 15 amp circuit at 120V.	84	$2,940
Install cable trays per Shell electrical installation standards.	56	$1,960
Run all instrument cables into shelter via the cable trays. TEST will ensure that all ROX system seals are air-tight per Shell electrical installation standards.	56	$1,960

Ground all equipment with #4 copper wire to the steel on the platform, including datalogger, two inch breakaway pole, RWP, and sodar.	10	$350

1.3 MISCELLANEOUS UNKNOWNS

TEST will assist STI with any miscellaneous tasks required to complete Tasks 1 and 2. In addition, TEST may obtain additional materials needed and bill STI for these costs with prior approval from STI. STI understands that it may take longer than the given time estimates to complete this work, and will compensate TEST for any additional time and materials. Table 3 lists additional expected direct costs. Some of these costs are unknown or based on a preliminary estimate of the length of cable needed for the installation.

Table 3. Miscellaneous direct costs

Materials and Other Direct Costs	**Estimated Costs**
Total Cost	**$25,500**
Cable tray, covers, supports and hardware	$3,500
ROX system for RWP and shelter	$1,000
600 ft Cable, connectors, Tie-wraps, cable tags (CHECK Length)	$4,200
Crates for equipment for shipping	$300
Shipping from TEST to dock	$3,000
Lag bolts (about 40) turn buckles, cable clamps	$500
Purge and alarm system	$3,000
Tubing for air supply and tubing fasteners	$1,800
Shelter tie downs	$200
Pole and winch system	$5000
Miscellaneous Unknowns	$3000

2. PERIOD OF PERFORMANCE

The effective dates of this agreement shall be July 18, 2005 to August 31, 2005.

3. COMPENSATION

The total amount of this subcontract may not exceed **$48,666.20** without a written modification.

Subcontractor will submit monthly invoices by the Tuesday following the last Saturday of every month in which work was performed. Subcontractor will be paid within forty-five days of receipt of invoice and required backup materials. Subcontractor will submit a brief progress report with each invoice.