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10/29/05

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: August 21, 2005

Report for the **Monthly** period:

Starting Date June 29, 2005 Ending Date July 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 bi-weekly project meetings with STI staff.
- Continued preparation and testing of the radar wind profiler (RWP), RASS, and surface instruments at our office in Petaluma, CA.
- 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. We have identified and are currently working with a subcontractor to assist us with this effort. The subcontractor is TEST Automation and Control. The preliminary cost estimate for TEST Automation and Control is $36,895. See attached statement of work for details.
- Continued to test communications hardware and software with the RWP.
- Purchased a satellite dish for offshore communications.
- Designed and constructed hermetically-sealed extension box for RWP antenna per Shell's requirements, which are more stringent the Federal Government requirements. If we were allowed to follow the Federal Government requirements this box would not be required.
- Negotiated lease of Sodar from Atmospheric Systems.

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

Preparation 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)*	*We are still working on meeting the Class 1 Division 2. As discussed in the prior report, Class 1 Division 2 requires that the instrumentation meet strict explosion proofing requirements.* *In the last monthly report we noted that STI will attempt to cover the cost of power, communications, and a shelter using the money originally allocated for shipping and helicopter flights. However, we have learned that Shell will only cover the cost of shipping and not the helicopter flights. In addition, the cost to provide power, shelter, and communications may be much more than originally anticipated because of the lack of infrastructure on the platform provided by Shell. We will not know the final cost for power, communications, and a shelter until our subcontractor completes the work in August or early September.*	
Proposed Solution(s) *(Please report any possible solution(s) to the problem(s) that were considered/encountered)*	*We are modifying our equipment as required by Shell.* *STI will attempt to cover the cost of power, communications, and a shelter using the money originally allocated to shipping and money from the reduced cost of helicopter flights from the original budget.*	
Action(s) Conducted and Results *(Please describe the action(s) taken to resolve the problem(s) and its effect)*	*We are modifying our equipment as required by Shell.* *We are proceeding with obtaining power, communications, and a shelter.*	

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 August, we hope to:

- *Complete the instrument modifications while working with a subcontractor.*
- *Lease and test the mini-Sodar.*
- *Finalize 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.*
- *Deploy our instruments on platform by mid-August.*

Date: *August 21, 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.*

JULY 13, 2005 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, which we plan to get to TEST by July 27, 2005. In the meantime, to meet the schedule, we would like TEST to order necessary supplies and coordinate the shelter at the direction of STI. The total cost is estimated to be **$36, 895**.

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	**99**	**$3,465**
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 transportation 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.	30	$1,050
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.	20	$700
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.	8	$280

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.	2	$70
Determine and 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.	1	$35
Obtain cable trays, supports, and air supply tubing and fittings. Length will have been determined during the trip to the platform.	2	$70
Prepare two 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	$210
Obtain all required material for providing power to the shelter (including cables, connectors, ground wire, and other necessary items).	1	$35
Review the guy wire system and verify that the guy wires are adequate for use on the platform. In addition, acquire the necessary Shell-approved hardware for anchoring the guy wires to the platform deck.	1	$35
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 oil platform via sea transport. Note that sea transport will be provided by Shell for free. 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.	18	$630

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 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**	**$15,050**
TEST will:		
Travel to and from the Brazos A-19 platform. In addition, TEST will attend any orientations required by Shell.	128	$4,480
Assist STI in RWP set-up. This includes assembling the clutter fences and attaching the radome box to the clutter fence.	16	$560
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.	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.	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). Power requirements: 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.	84	$2,940

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.		
Install cable trays per Shell electrical installation standards.	56	$1,960
Run all instrument cables into shelter via the cable trays. 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

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. Table 3 lists additional expected direct costs. These costs are 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	**$18,380**
Cable tray, covers, supports and hardware	$3,000
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	$2,000
Lag bolts (about 40)	$80
Purge and alarm system	$3,000
Tubing for air supply and tubing fasteners	$1,800
Shelter tie downs	$200
Pole and winch system	$2,800