

**Texas AgriLife Research
Texas Water Resources Institute**

**Preventing Water Quality Contamination Through the Texas Well Owner Network
FY 10 CWA 319(h)
TSSWCB Project No. 10-04**

Quarter no. 4 From 07-01-11 through 09-30-11 .

I. Abstract

One well screening was held during this quarter, and selection of targeted counties for TWON program delivery began. Since April 2011, twelve screenings have been held with a total of 647 samples screened. .

II. Overall Progress and Results by Task

TASK 1: Project Administration

Subtask 1.1: *TWRI will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all project partners.*

The following actions have been completed during this reporting period:

- A. TWRI submitted the 3rd Quarter, Year 1 report to TSSWCB on July 15, 2011.

25% Complete

Subtask 1.2: *TWRI will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.*

The following actions have been completed during this reporting period:

- a. As of September 30, 2011, \$56,315.00 or 12% of federal project funds had been expended.

12% Complete

Subtask 1.3: *TWRI will host coordination meetings, conference calls, or TTVN meetings, as appropriate, with project partners in order to efficiently and effectively achieve project goals, coordinate efforts and summarize activities and achievements made throughout the course of this project. TWRI will develop lists of action items needed following each project coordination meeting and distribute to project personnel.*

The following actions have been completed during this reporting period:

- a. Project meeting was held on September 19, 2011 to discuss project progress. In attendance were
- SCSC- Diane Boellstorff, John Smith, Kristine Uhlman, Mark McFarland
 - BAEN- Brent Clayton (via telephone), Ryan Gerlich
 - TSSWCB- Loren Warrick, Jana Baker
 - TWRI- Brian VanDelist

25% Complete

Subtask 1.4: *TWRI and SCSC will attend and participate in the Texas Groundwater Protection Committee and subcommittee meetings, Texas Alliance of Groundwater Districts conferences, and other meetings as*

appropriate in order to communicate project goals, activities and achievements accomplishments to affected parties.

The following actions have been completed during this reporting period:

- a. Diane co-chaired TGPC Public Outreach & Education Subcommittee meeting on September 20.
- b. Kristine delivered TWON presentation at the Southern Region Water Resource Conference in Atlanta, GA on September 14.
- c. Diane moderated Well Owner Network Program session and organized and moderated an expert panel discussion on Wellhead Protection Programs at the Southern Water Resources Conference in Atlanta, GA on September 14.
- d. Kristine served on expert panel discussion and initiated organization of Symposia on Well Owner Networks for the May, 2012 National Extension Water Conference.

25% Complete

*Subtask 1.5: TWRI in collaboration with SCSC, will create (Months 1-3), host and maintain (Months 4-36) a website to serve as a clearinghouse for TWON information and resources including updated and renamed, web-adapted Tex*A*Syst educational materials and online delivery of TWON.*

The following actions have been completed during this reporting period:

- a. The Texas Well Owner Network website went online on June 10, 2011. It can be found at <http://twon.tamu.edu/>. Since the website went online, it has been viewed by a total of 469 unique visitors. 454 of those in the last quarter.
- b. TWON publications posted to the website: Facts about Fracking.....and Your Drinking Water Well

25% Complete

Subtask 1.6: TWRI and SCSC will develop a project final report.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

TASK 2: Development of TWON Educational Materials/Curriculum

Subtask 2.1: SCSC will employ a TWON Coordinator to develop and deliver the TWON curriculum in selected watersheds.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

100% Complete

*Subtask 2.2: Update and rename existing TEX*A*Syst documents to reflect changes/improvements in laws and regulations and private well management, maintenance and protection. Revisions will be developed by the TWON Coordinator, with significant assistance from Project Co-Leads and the BAEN Program Specialist. Existing publications include:*

- *Improving Wellhead Management and Conditions*
- *Improving Pesticide Storage and Handling*

- *Improving Fertilizer Storage and Handling*
- *Improving Petroleum Product Storage*
- *Improving Hazardous Waste Management*
- *Improving Household Wastewater Treatment*
- *Improving Livestock Manure Storage and Treatment Facilities*
- *Improving Livestock Holding Pen Management*

All documents, educational materials, etc. will be provided to the TSSWCB for review and comment prior to dissemination.

The following actions have been completed during this reporting period:

- Updating of materials continues. TWON anticipates a January 1, 2012 delivery of the TWON Handbook to TSSWCB for review.

55% Complete

Subtask 2.3: Develop and adapt additional educational resources to create a TWON curriculum. Resources will be developed by the TWON Coordinator, with significant assistance from Project Co-Leads and the BAEN Program Specialist. Specific components or modules of the curriculum may include:

- *Watershed and groundwater hydrology and the importance to neighbors and the public of safeguarding aquifer integrity and groundwater quality*
- *Proper siting of drinking water wells and avoiding improper well construction techniques*
- *Proper maintenance and protection of the wellhead*
- *Solid and hazardous household waste management*
- *Aging and failure of well construction materials*
- *Locating and properly plugging abandoned wells*
- *Improperly sited and functioning on-site wastewater treatment systems*
- *Maintenance, aging and failure of on-site wastewater treatment systems*
- *Effects of land use changes on well water quality*
- *Successful methods of sharing TWON information with neighbors and community.*

TWON curriculum will include a handbook for participants, standardized presentations for program delivery and availability of program materials online.

All documents, educational materials, etc. will be provided to the TSSWCB for review and comment prior to dissemination.

The following actions have been completed during this reporting period:

- Curriculum is being developed. SCSC and TWON have developed a fact sheet, *Facts about Fracking....and Your Drinking Water*, in response to the increased concerns about the expanded use of hydraulic fracturing in Texas.
- TWON anticipates a curriculum delivery date of January 1, 2012 to the TSSWCB for review.

55% Complete

TASK 3: Deliver updated and renamed TEX*A*Syst Publications, Well Water Screenings, and TWON trainings

Subtask 3.1: SCSC will develop a preliminary list of watersheds where the Well Water Screenings and TWON trainings will be delivered. SCSC will work with the TSSWCB and other state and local organizations to select locations for these training events. SCSC will coordinate efforts with state agencies and organizations already involved in WPP/TMDL processes or who are planning future WPP/TMDL processes in specific watersheds.

The following actions have been completed during this reporting period:

- a. The preliminary list has been developed and will be updated as the project continues.

60% Complete

Subtask 3.2: *SCSC with assistance from TWRI will develop and disseminate informational materials in order to actively market well water screenings and TWON trainings including news releases, internet postings, newsletter announcements, public/conference presentations, flyers, etc. As appropriate TWRI will include information on the project in the txH₂O, New Waves e-letter, and AgriLife news. All announcements, letters, and publications will be provided to the TSSWCB for review and comment prior to dissemination.*

The following actions have been completed during this reporting period:

- a. TWON Coordinator was interviewed, unrelated to this project, for the AgriLife TODAY Press Release, 07/20/2011, *AgriLife Extension Expert: Well owners advised to practice conservation during historic drought*. In the interview TWON mentioned the need for water well testing and directed readers to the TWON website for questions.

30% Complete

Subtask 3.3: *Deliver 6-hour TWON trainings in selected watersheds, with the minimum goal being 6 trainings in year 2, and 8 trainings in year 3 to increase local understanding of the factors which can adversely impact well water quality and provide access to the knowledge and tools which can be employed to prevent and/or resolve them. Trainings will be delivered by the TWON Coordinator, and a combination of the BAEN and SCSC Program Specialists and the SCSC Assistant Professor and Extension Specialist.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 3.4: *Deliver well screening events to provide well-head protection information and recommendations for remediating well contamination, if appropriate. Screenings will be delivered by the SCSC Assistant Professor and Extension Specialist, TWON Coordinator and/or the SCSC Program Specialist as appropriate. A minimum of 30 well screening events will be delivered throughout the course of the project. Well screening event educational programming will include an overview of the topics discussed in more detail during comprehensive TWON trainings. Well screening events will be conducted in conjunction with TWON trainings as well as other Texas AgriLife Extension programs.*

The following actions have been completed during this reporting period:

- a. Well screenings were held in;
 - i. Victoria County for screening in Victoria, 26-27 July 2011

37% Complete

TASK 4: Evaluate the effectiveness of the TWON trainings

Subtask 4.1: *SCSC will develop and deliver pre-test/post-test evaluation strategy to evaluate increased knowledge by individuals participating in the TWON trainings regarding program principles, appropriate BMPs, and other activities; to address proper private well management, to evaluate participant satisfaction with the program; and to evaluate participant's intentions to change their behavior as a result of the TWON training.*

The following actions have been completed during this reporting period:

- a. SCSC met with met with AgriLife Extension Service evaluation specialist, Paul Pope, to automate

analyses of screening evaluations and to discuss development of evaluation instruments for TWON trainings. Evaluation crafting was discussed at September 19 meeting and included the need for the evolution of an effective evaluation to include; pilot questions, sorting questions, and careful question crafting.

- b. TWON Specialist obtained example pre-test/post-test evaluations from the Virginia Tech. Well Owner Program as examples of program evaluation approaches.
- c. TWON Specialist and SCSC met with TAMU IRB (Internal Review Board) on September 1 to address protection of private data and compliance with IRB data management requirements

30% Complete

Subtask 4.2: *SCSC will develop and deliver 6 month follow-up survey via online techniques to assess behavior changes adopted and other activities (such as number of neighbors contacted) by TWON training participants.*

The following actions have been completed during this reporting period:

- a. Surveys crafting was discussed at September 19 meeting and the need for a brief survey was stressed.

30% Complete

Subtask 4.3: *SCSC will analyze results obtained from the pre-test/post-test and 6 month follow-up evaluations using descriptive, correlational, and analysis of variances statistical procedures.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.4: *SCSC will modify educational program and materials as appropriate.*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

I. Projected Work for Next Quarter

- Provide screening for Victoria County in Victoria on 26-27 July 2011.
- TWON Coordinator will present *Drought Impacts on Groundwater Resources in Texas*, for the Texas Groundwater Protection Committee / Agricultural Chemicals Subcommittee on Oct. 12, 2011.
- TWON Coordinator will present at the Annual SWCDs directors meeting in San Antonio on October 24.
- Five well screenings have been scheduled for next quarter.