

**Bacterial Monitoring for the Buck Creek Watershed
FY 03 CWA 319(h)
TSSWCB Agreement No. 03-7**

Quarter no. 6 From 1/01/05 Through 3/31/05.

I. Abstract

Sample collection and analysis continued during quarter 6. *E. coli* and *Fecal coli* counts continued to decrease.

TAES hosted a public educational event in Memphis and received positive response from those in attendance.

Communication regarding the beginning of BST for the project commenced between TWRI and TAES researchers. A project coordination meeting will need to be scheduled during the next quarter to further discuss and determine how project data collection will proceed and what actions are needed.

II. Overall Progress and Results by Task

TASK 1: Program Coordination with Project Participants

Subtask 1.1: Conduct meetings as appropriate with project participants, landowners, and other interested parties to discuss water quality monitoring activities, project schedule, lines of responsibility, communication needs, and other requirements. (month 1 thru 24)

The following actions have been completed during this reporting period:

- a. Mr. Kurt Lemon, was hired to serve as the Research Associate for TAES and began work on the Buck Creek Project.
- b. TAES personnel made arrangements in the beginning of the quarter for a public educational meeting to be held in conjunction with the Northwest Texas Ag Conference in Memphis, TX.
- c. TAES personnel completed a press release announcing meeting details and submitted release to TSSWCB project manager for review. Following TSSWCB approval, the press release, which is included as Appendix A, was distributed to local news sources and County Extension Agents on 1-20-05.
- d. Dr. John Sij and Ms. Phyllis Dyer attending the Hall County Farm and Ranch Meeting on 2-8-05 in Memphis, TX to present a 20 minute power point presentation on the Project. Question and answer followed from the approximate 80 in attendance. TAES noted a good reception and response from all in attendance.
- e. TWRI personnel attended EPA Region VI BST Workshop on 1-26 and 1-27-05 to assess how current EPA rules will affect work being conducted in the watershed. Presentations from other agency and university led projects were also presented at the Workshop.
- f. Ms. Dyer attended the annual Red River Authority's Coordinated Monitoring Workshop at Wichita Falls on 3-30-05. The following groups were represented: TAES, TCEQ,

RRA, CRA, USGS, TPWD and several water municipalities. Collective efforts were made to reduce duplication of monitoring of sites. Update presented on *E. coli* numbers collected from Buck Creek.

- g. TAES personnel provided Hall-Childress SWCD a monthly update and attend Board Meetings upon request or as needed.

50% Complete

Subtask 1.2: TAES will prepare electronic quarterly reports. All progress reports will also be provided to TCE project cooperators and participants, and Hall-Childress, Collingsworth, and Donley SWCD directors. (month 1 thru 24)

The following actions have been completed during this reporting period:

- a. Submitted Year 2, quarter 2 report to TSSWCB on 4-15-05.

60% Complete

Subtask 1.3: TCE will provide leadership for educational programs about water pollution and project findings. (month 1 thru 24)

The following actions have been completed during this reporting period:

- a. Hall County Extension Agent, Mr. Josh Brooks, assisted TAES in arranging an opportunity for the public education event to occur in conjunction with an already planned public event.
- b. Hall, Collingsworth and Donley County Extension Offices assisted in publicizing the event on 2-8-05.
- c. Presentation developed by TCE/TAES for public the 2-8-05 event will be added to project Website during the next quarter.
- d. Additionally, more educational events will be organized as data collection reaches the one-year mark.

20% Complete

Subtask 1.4: TAES and TCE will develop an electronic final report, which will include an executive summary of data collected during the project and educational program.

The following actions have been completed during this reporting period:

- a. No progress to report at this time.

0% Complete

Subtask 1.5: TSSWCB, TWRI, RRA and local SWCDs will assist, when needed, with composition, editing, and publication of final report (month 1 thru 24)

The following actions have been completed during this reporting period:

- a. No progress to report at this time.

0% Complete

TASK 2: Micro-Watershed Monitoring and Sampling

Subtask 2.1 Develop DQOs and a QAPP to be approved by USEPA. (month 1 thru 3)

100% Complete

Subtask 2.2: Select 12 or 13 sites to conduct water quality sampling. Maintain water quality monitoring equipment and collect water samples. (month 1 thru 24)

100% Complete

Subtask 2.3 TAES will obtain sampling locations and deploy in accordance with arrangements made. (month 4 thru 21)

100% Complete

Subtask 2.4 TAES will perform routine sampling, (grab sampling) at strategic locations within the Buck Creek watershed. (month 4 thru 21)

The following actions have been completed during this reporting period:

- a. Continued bi-weekly sampling activities on sites 1 thru 13.
- b. All sites still experiencing variable flow rates. The following sites were noted as having consistent flow during sampling events:
January – sites 3, 4, 5, 6, 10, 11, 13
February – sites 3, 4, 5, 6, 7, 10, 11, 13
March – sites 2, 3, 4, 5, 6, 7, 10, 11, 13 (Note: water was present at site 12, but not flowing)

50% Complete

Subtask 2.5: TAES will collect a minimum of 8 rain event/high flow grab samples from the sites over the course of the study. (month 4 thru 25)

The following actions have been completed during this reporting period:

- a. Rainfall event was reported on 3-16-05. Rest area near site 1 actually had 3 inches of snow. Roads were impassable at sites 1, 2, 3, 6, 8, 9, 10. Samples were collected at sites 4, 5, 7, 11, 13. No water flow was noted at site 12.

70% Complete

Subtask 2.6 TAES will compile and analyze the sampling data. Data will be for informational and assessment purposes due to the limited data previously collected. (month 4 thru 24)

The following actions have been completed during this reporting period:

- a. Sample analysis continued to show a reduction in both *E. coli* and *Fecal coli* (taken only at site 11) counts.

50% Complete

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

None to report at this time.

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

- a. More effort will be put into further developing Web site for public outreach purposes. Specifically, presentations and additional material will be posted on the Web.
- b. TWRI will become more involved in ensuring County Extension Agents are kept abreast of project activities.
- c. An assessment of data collected during the first year will be conducted. Efforts will be made to schedule a project coordination meeting to discuss and determine future tasks of the project.
- d. Weather permitting, sites 8 thru 13 will be recorded with GPS.

Appendix A

Press release dated 1-14-05 announcing education event in Memphis, TX

Press Release

Public Educational Meeting February 8, 2005

In conjunction with: Northwest Texas Ag Conference

Presenter: Texas Agricultural Experiment Station – Vernon

Project Leader: Dr. John Sij

Research Technician: Ms. Phyllis Dyer

Location: Community Center in Memphis, Texas (721 Robertson Street)

Time: 12:00 noon, during Lunch

Length: Approximately 20 minutes

Topic: Bacterial Monitoring in the Buck Creek Watershed

Background:

Buck Creek is currently on the EPA Impaired Water Body list for elevated levels of bacteria, which could potentially limit some recreational uses of the creek. As the lead agency for the State of Texas in abating agricultural and silvicultural non-point source pollution, the Texas State Soil and Water Conservation Board in conjunction with the Hall-Childress Soil and Water Conservation District provided funds to the Texas Agricultural Experiment Station, a research division of the Texas A&M University System, to monitor bacteria presence in the impaired water body.

Scientists at the Research and Extension Center in Vernon are currently sampling 13 key locations over approximately 50 miles of Buck Creek. Sample sites begin in Donley County near Hedley, continue through Collingsworth County to south of Wellington, and end in Childress County where the Creek flows southeast into Oklahoma before joining the Red River.

Following sample collection, which began in May 2004, the water samples are analyzed for the presence of *E. coli* bacteria, an organism commonly monitored to indicate the presence of potentially harmful pathogens.

More information about bacterial monitoring in the Buck Creek Watershed, its history, the current data and future planned activities will be presented during the lunch program at the Northwest Texas Ag Conference on February 8, 2005. The Ag Conference will be held at the Memphis Community Center. Landowners within the Buck Creek Watershed are encouraged to attend to learn more about their surface water quality.