

**Texas AgriLife Research
Texas Water Resources Institute**

**Modeling Support for Little Brazos River Tributaries Bacteria Assessment
Texas State Soil and Water Conservation Board
Total Maximum Daily Load Program
TSSWCB Project #08-55**

Quarter no. 5 From 6/1/2009 Through 8/31/2009

I. Abstract

Layers that were corrected by landowners at the stakeholder meeting last quarter continue to be addressed. These graphs visually illustrated the quality of water in the 5 subwatersheds to-date. These LDCs will be updated toward the end of the project as additional data from BRA is acquired. Steps have also been taken to get the SELECT model setup and ready to perform an initial simulation. As information from the GIS layers, watershed source survey and BST work are developed; they will be incorporated into the model as well.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: TWRI will prepare electronic quarterly reports for submission to the TSSWCB. All progress reports will be provided to all Project Participants. (Month 1 – 24)

The following actions have been completed during this reporting period:

- a. The year 2, quarter 1 report was completed and sent to the TSSWCB on September 15, 2009

63% Complete

Subtask 1.2: TWRI will submit appropriate Reimbursement Forms. (Month 1 – 24)

The following actions have been completed during this reporting period:

- a. As of August 31, 2009, a total of \$3,708.74 or about 7% of total project funds have been expended.

7% Complete

Subtask 1.3: TWRI and BAEN will participate in quarterly meetings (in person or TTVN) as appropriate with project participants to discuss project activities, project schedule, lines of responsibility, communication needs, and other requirements. (Month 1 – 24).

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

63% Complete

Subtask 1.4: TWRI and BAEN will attend and participate in public stakeholder meetings as needed. (Month 1 – 24)

The following actions have been completed during this reporting period:

- b. No activity to report this quarter.

63% Complete

Task 2: Development of Quality Assurance Project Plan

Subtask 2.1: TWRI will develop a QAPP for activities in Task 3 consistent with EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan. (Month 1 – 2)

The following actions have been completed during this reporting period:

- a. The QAPP for the project was approved by TSSWCB on September 16th.

100% Complete

Subtask 2.2: Provide annual revisions to the QAPP and amendments, as necessary, to the TSSWCB and EPA. (Month 3 – 24)

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Task 3: Conducting sanitary surveys to identify potential *E. coli* contributing sources in the impaired watershed

Subtask 3.1: BAEN will cooperate with BRA to develop a comprehensive GIS inventory for the study area through TSSWCB project 08-54. (Month 1 – 3)

The following actions have been completed during this reporting period:

- a. BAEN and BRA have been conferring and collecting information to be included in the GIS inventory for the watersheds.

65% Complete

Subtask 3.2: TSSWCB, in coordination with SSL, will provide BAEN a current land use classification for the study area through TSSWCB project 08-52, Classification of Current Land Use/Land Cover for Certain Watersheds Where TMDLs or WPPs Are In Development. (Month 1 – 3)

The following actions have been completed during this reporting period:

- a. Received shape file for Lower Brazos basin. This land use file will be clipped to get land use percentages for each watershed.

100% Complete

Subtask 3.3: BAEN will assist BRA in designing a watershed source survey, to be conducted through TSSWCB project 08-54, that better characterizes the possible sources of bacteria loadings in the study area. (Month 1 – 4)

The following actions have been completed during this reporting period:

- a. BAEN has coordinated with BRA in designing the watershed source survey and BRA is now underway in collecting these info.

100% Complete

Subtask 3.4: BAEN, with assistance from BRA through TSSWCB project 08-54, will conduct a LDC analysis of all historic and existing water quality monitoring data from the study area. LDCs will be developed for at least one critical index site per segment. LDCs shall be consistent with both EPA's An Approach for Using Load Duration Curves in the Development of TMDLs and EPA's Options for Expressing Daily Loads in TMDLs. (Month 3 – 6)

The following actions have been completed during this reporting period:

- a. Using available historical water quality data from BRA, BAEN has developed historical LDCs for each of the 5 waterbodies in the study area.

100% Complete

Subtask 3.5: Using water quality monitoring data collected by BRA through TSSWCB project 08-54, BAEN, with assistance from BRA, will refine LDCs developed in subtask 3.4. LDCs will be used to determine bacteria load reductions needed to achieve water quality standards. (Month 7 – 21)

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.6: BAEN, with assistance from BRA through TSSWCB project 08-54, will conduct watershed modeling for the study area. Utilizing information from the GIS inventory (Subtask 3.1), the source survey (Subtask 3.3), and water quality monitoring (TSSWCB project 08-54), and in combination with LDCs from Subtasks 3.4-3.5, BAEN will develop a spatially explicit or mass balance model, such as SELECT, for each of the five watersheds in the study area. Modeling will be used to estimate loadings from various sources and to identify critical loading areas within the watersheds. (Month 7 – 21)

The following actions have been completed during this reporting period:

- b. No activity to report at this time.

20% Complete

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

- a. Nothing to report.

IV. Projected Work for Next Quarter

- a. BAEN will continue the setup process for the SELECT model and will present the initial results for the 5 subwatersheds.
- b. Work will also continue in the updating of the GIS for the watershed and will be incorporated into the modeling effort as it is acquired.
- c. Submit sixth quarterly report.