

**Texas AgriLife Research
Texas Water Resources Institute**

**Evaluation of Electrostatic Particle Ionization and BioCurtain Technologies to Reduce Dust, Odor
and other Pollutants from Broiler Houses
FY 10 CWA 319(h)
TSSWCB Project No. 10-90**

Quarter no. 2 From 6/1/2010 Through 8/31/2010.

I. Abstract

Activity for this quarter focused on planning for the upcoming sampling trip scheduled for the beginning of the next quarter. Several trips were taken to the Sanderson Farms facility in Mexia, TX to survey the needs of the site for sampling, as well as to conduct some initial tests on the exhaust fans. The details of the sampling trip were discussed in a project update meeting on August 6, where BAEN, SFA, WTAMU, and TWRI discussed expectations and coordinated the needed materials and personnel needs needed to make the trip successful. In late July, Baumgartner Environics, who is the manufacturer/distributor of both technologies being tested in this study, installed both systems in the test house. They returned on August 4 to install some remaining components and to meet with BAEN discussing more of the operation and safety precautions related to the system. The QAPP was circulated for approval, and all related parties signed off on the document so that sampling could be conducted on schedule.

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 March, June, September, and December. QPRs shall be distributed to all project partners.*

The following actions have been completed during this reporting period:

- A. TWRI submitted the second QPR for this project on September 15, 2010.

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 May 31, 2010, a total of \$193.91, or less than 1% of total project funds have been expended.

5% Complete

Subtask 1.3: *TWRI will participate in meetings as appropriate in order to efficiently and effectively achieve project goals, coordinate monitoring efforts and summarize activities and achievements made throughout the course of this project.*

The following actions have been completed during this reporting period:

- A. TWRI coordinated a project site visit for all involved entities at the beginning of June and hosted a project update meeting in August to discuss issues involving technology installation, sampling trips, and general progress on the project.

25% Complete

Subtask 1.4: *TWRI will develop, host and maintain a project website that will be used as a means to disseminate educational materials, project updates and notify readers about educational opportunities.*

The following actions have been completed during this reporting period:

- a. The Poultry Odors BMPs website is currently active. It can be found at <http://poultrybmps.tamu.edu/>. However, analytical analysis of the website traffic has yet to be registered or posted for viewing online.

65% Complete

Subtask 1.5: *TWRI will work with project personnel from BAEN and SFA to support the preparation of technical reports as required by project Tasks into published technical reports. These reports will be housed in the TWRI online Reports Database indefinitely.*

The following actions have been completed during this reporting period:

- A. No activity to report this period.

0% Complete

TASK 2: Quality Assurance

Subtask 2.1: *TWRI, with assistance from BAEN and SFA, will develop a QAPP for activities in Tasks 3 and 4 consistent with EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan.*

All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in method specific, peer reviewed or widely accepted documents or SOPs describing the specific methods used. These documents will be detailed in the project QAPP when developed.

The following actions have been completed during this reporting period:

- A. This task is complete.

100% Complete

Subtask 2.2: *TWRI will submit revisions and necessary amendments to the QAPP as needed.*

The following actions have been completed during this reporting period:

- A. No activity to report this period.

0% Complete

TASK 3: Poultry Farm Selection and Equipment Installation

Subtask 3.1: *BAEN and SFA will coordinate with TSSWCB to identify and select a poultry operation as a cooperator.*

The following actions have been completed during this reporting period:

- a. This task is complete.

100% Complete

Subtask 3.2: *BAEN and SFA will instrument the control and treatment houses with monitoring equipment. This includes air samplers; temperature, humidity, static pressures sensors; and a Fan Assessment Numeration System. Associated data loggers will also be installed.*

The following actions have been completed during this reporting period:

- A. BAEN and SFA visited the study site several times over the course of the quarter to conduct initial tests and to survey the needs for the upcoming sampling trip next quarter.

25% Complete

Subtask 3.3: *BAEN and SFA will coordinate with the manufacturer/distributor of the EPI and BioCurtain systems to install both treatment systems in the treatment barn.*

The following actions have been completed during this reporting period:

- A. Both the EPI and BioCurtain systems were installed in late July and early August.

100% Complete

Subtask 3.4: *BAEN will track the costs associated with the procurement of the EPI and BioCutain systems, the delivery, installation as well as any retrofitting that is needed to make the systems operational. This information will be compiled into a brief, yet all inclusive summary of costs that a producer could expect if this dust and odor mitigation system was purchased and installed.*

The following actions have been completed during this reporting period:

- A. Several invoices for the equipment and installation have been received, but have not been posted to the financial reports. Cost tracking is expected to begin next quarter.

13% Complete

TASK 4: BMP and Monitoring Systems Verification

Subtask 4.1: *BAEN and SFA will test the BioCurtain and EPI systems independently to ensure the proper operation of each system. Testing will occur during two independent one-day trials for each system; one in the summer and one in the winter.*

The following actions have been completed during this reporting period:

- A. No activity to report this period.

0% Complete

Subtask 4.2: *BAEN and SFA will operate and evaluate the EPI and BioCurtain system concurrently to ensure the proper operation of this dual-technology system. Testing of this technology will occur over a three-day period and will be repeated once during the summer and once during the winter.*

The following actions have been completed during this reporting period:

- A. Preparations have been made to monitor the effectiveness of the dual-technology system during the sampling trip planned for the next quarter.

13% Complete

Subtask 4.3: *BAEN and SFA will operate and maintain monitoring equipment in the control barn during all BMP tests to verify that adequate comparisons will be able to be made between treated and un-treated air during a long-term demonstration.*

The following actions have been completed during this reporting period:

- A. BAEN and SFA have invested significant time in setup and installation of monitoring needs for the upcoming sampling trip planned for the next quarter.

13% Complete

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

No activity to report this period.

IV. Projected Work for Next Quarter

Summer Sampling Trip

BAEN, SFA, and WTAMU will be jointly conducting a sampling trip on September 23-24 to test the effectiveness of the dual-technology system as it relates to improvements in various air quality constituents.

Other Projected Work

- Submit the third quarterly progress report
- Participate in project coordination and update meetings