

ETC Action Team Progress Report

Date: 6/30/08

Name of Action Team: Remote Sensing

Team Leader(s): David Williams (ORD). Michael Miller (Region 6), Ken Gigliello (OECA)

Champion: Larry Starfield, Deputy Regional Administrator, Region 6

Current Team Members: Alan Rush, OAR

Antonio Quinones, Region 4

Carrie Middleton, NEIC

Cary Secrest, OECA

Cliff Rader, OECA

Cynthia Stahl, Region 3

Daniel Vallero, ORD

Danny France, Region 4

David Neleigh, Region 6

David Parrish, Region 6

DavidA Johnson, OEI

Dennis Bushta, OARM

Dennis Johnson, OAR

DennisK Mikel, OAR

Dick DuBose, Region 4

Dorsey Worthy, ORD

Doug Neeley, Region 4

Gary Achtemeier, USDA/FS

Grace Smith, Region 2

Hollis Mehl, Region 7

Warren Johnson., OAR

Kathy Jones, City of Chattanooga, TN

Jacqueline Lewis, Region 4

James Edward, OECA

Jan Baxter, Region 9

Jeffery Robichaud, Region 7

Joe Kordzi, Region 6

John Bosch, OAR

John Glaser, ORD

John Graves, Region 3

John G Lyon, ORD

Ken Garing, NEIC

Kenneth Gigliello, OECA

Bob Lucas, OAR

Joydeb Majumder, Region 4
Mark J Thomas, Region 7
Myron Knudson, Region 6
Jerry Oakley, OARM
Paul Claggett, DOI/USGS
Paul Shapiro, ORD
Richard Guillot, Region 4
Russell Nettles, TCEQ
Manuel Schmaedick, Region 7
Thea Johnson, OSWER
Tim Hanley, OAR
Van Shrieves, Region 4
Terry Slonecker, DIO/USGS
Steve Young/DC/EPA
Alfonso Blanco, OW
Robin Segall, OAR
Eben Thoma, ORD
Sharon Osowski, Region 6

Environmental Problem: Observation and measurement of environmental problems, such as air pollutants or water quality impairments, can often be accomplished through the use of remote sensing technologies. In the case of air pollutants, federal and state organizations are utilizing portable gas imaging cameras to detect fugitive emissions of volatile organic compounds (VOCs) at chemical plants and petroleum refineries. These fugitive emissions can lead to high regional ozone levels. Currently there is an ongoing ETV/ESTE project devoted to the verification of portable gas imaging cameras for industrial leak detection and repair (LDAR).

Name of ESTE or Other Priority Projects: Title of ETV/ESTE project is “Portable optical and thermal imaging devices for leak detection at petroleum refineries and chemical plants”.

Technology Challenges: The sensitivity and detection limits of instruments used for LDAR and other fugitive emission survey activities are not well known. The lack of a scientifically based performance verification of these devices makes their use in many applications limited.

Stakeholder and Partner Involvement: Organizations involved in the ETV/ESTE project include:

EPA’s Office of Air and Radiation, EPA Regions 4, 6, 8, and 9, OSWER, OECA, OEI
The American Chemical Council (ACC)
The Texas Chemical Council (TCC)
American Petroleum Institute (API)
Texas Commission on Environmental Quality (TCEQ)

Louisiana Department of Environmental Quality (LDEQ)

FY07 Accomplishments: The ETV/ESTE testing plan and quality assurance project plan (QAPP) were developed and approved in FY07. The contractor to oversee the project within the scope of the ETV program was chosen. The prime contractor for the EPA Advanced Monitoring Systems (AMS) center, Battelle, will be overseeing the project. Industry matching funds and the contractual arrangements between the ETV contractor and the industrial representative were agreed upon.

FY08 Objectives: Verification testing of four technologies for gas imaging will occur in the 4th quarter of FY08.

A project related to the ETV/ESTE effort will also begin in the 4th quarter of FY08. This project will be investigating fugitive emissions from river tank barges. The project will be using portable gas imaging devices together with optical remote sensing technologies to quantify these emissions provide knowledge of the magnitude of the problem to air quality managers.

Current Funding and Additional Resources Required: Funding for the ETV/ESTE project is set at a 50-50 cost share between the EPA and the stakeholder communities. Currently the EPA has approximately \$200,000 available. The ACC and TCC have secured \$40,000 and \$145,000 respectfully to contribute to the project.

The barge fugitive emission project has funding from ORD labs (NERL, NRMRL, \$40,000 each), ORD SETO (\$20,000), and Region 6 (\$55,000) in the form of RARE funds.

Issues: The contractual arrangements between the ACC, TCC and the AMS center were protracted for many reasons. Scheduling of device manufacturers and vendors for verification testing has become difficult due to their work scheduling.

Performance Measures: An overall reduction of VOCs from industrial sources, as evidenced by lower ozone levels measured by air quality monitoring stations, would be a good performance measure. This implies that EPA's rule on alternative work practices for LDAR was finalized, and that industry was confident in the results of the ETV/ESTE testing and utilized the technologies.

Lessons Learned: Remote sensing is a technology area that often promises more than it can deliver. This is true in many high technology endeavors. In the case of the ETV/ESTE project, the project objectives were narrow and achievable. Careful management of expectations helps on the long run. Working with industry trade associations can be a complex undertaking. A strong stakeholder community can help lower project costs by leveraging in-kind resources for testing and other activities and allows industry a degree of ownership in the final product, which may translate into accelerated adoption of the technology.