

US EPA ARCHIVE DOCUMENT

**State Innovation Grant Project  
Rhode Island Department of Environmental Management (DEM)  
Progress Report #5**

January 1, 2008 to March 31, 2008

**Project Title:** Underground Storage Tanks—Alternative Inspection Programs and the U.S. Energy Policy Act of 2005

**Part 1 – Synopsis of Accomplishments.** The major activities that took place during the reporting period included meetings/conference calls, baseline data finalization, data gathering for linear regression analysis of baseline data, and preliminary interstate indicator comparative analysis. Several meetings were held with DEM and URI project participants and in Florida with FL UST program personnel. Information for the post-ERP analysis is being gathered as 39 of the 100 randomly-selected facilities were inspected. As part of the interstate comparative model development, communications with FL is on going as the initial analysis of comparative indicators is almost complete. Relative to the original work plan schedule and the key tasks associated with this reporting period, progress is summarized below:

<b>Task</b>	<b>Original Completion Date</b>	<b>Status</b>	<b>Comments</b>
Statistical analysis of RIDEM UST ERP data	June 1, 2008	On Going	Baseline data finalized, final QC check complete. 118 performance indicators segregated into 3 tables based on whether measurable or not. Upper/lower confidence intervals calculated and hypothetical runs of Fisher Exact test performed. 5 page report developed and included herein. 8 page detailed tables w/ calculations completed and included w/ this report. Post-ERP data still being gathered for analysis.
Tabulate RIDEM 10-yr historical compliance data	Dec. 31, 2007	Not completed On Going	On going from past reporting periods, expect to be completed by next reporting period.
Design data collection template/criteria for partner states	Nov. 1, 2007	Not Completed On Going	Work started with Roberta Dusky of FL to develop indicator comparative analysis. Preliminary study to be completed in next reporting period
Send out data collection template/criteria to partner states	Jan. 1, 2008	Not Completed On Going	See comment above

**Part 2 – Narrative Discussion.** As part of the statistical analysis of RI UST data, the information from the 100 baseline inspections performed in 2004 was finalized for statistical analysis. Details can be found in the attached report, “Hazardous Material Underground Storage Tank (UST) Environmental Indicator Baseline Analysis”. Of the 118 indicators collected, 63 or a little over 50% of the total number are considered measurable. A second attachment (Excel file) shows confidence interval/indicator calculations.

Of the 100 randomly selected post-ERP inspections, 39 were completed by DEM’s Office of Waste Management as of March 31, 2008. We originally hoped to finish all post-ERP inspections by December 31, 2007, but DEM inspectors are obliged to first complete the traditional inspections per requirement of the Energy Act. URI has already inputted the results of approximately 35 post-ERP inspections into a similar template used for the baseline data set. Once the full set of post-ERP inspections is completed, data can be organized and formatted to complete the statistical analyses by the summer of 2008. Discussions with Dr. Hanumara (URI Prof. of Computer Science and Statistics) are ongoing concerning best methods for data analysis to possibly include cluster analysis and the global test statistic.

Work is still on going to compile the 10-year history of RI compliance data from the Offices of Waste Management and Compliance & Inspection. DEM staff met with URI Statistics Professor Choudary Hanumara once to review the appropriate statistical methods that will be used. It is anticipated that the tabulation of this data will be completed by the end of the next reporting period and will be used with the multivariate regression analysis as explained in the following paragraph.

A first year URI graduate student in computer science and statistics has begun to develop a data set (which includes baseline data and new data collected from follow-up field visits/telephone calls to all 96 baseline facilities) for multivariate regression analysis. The purpose of this analysis is to identify key variables that influenced compliance status at baseline, if possible. Though this activity was not identified as a deliverable in the EPA grant proposal, investigators feel that this analysis may provide useful information in support of the project. Unfortunately, as the work was progressing well, this student got called back to active duty in the Air Force National Guard. She should, however, return to RIDEM sometime during the next reporting period.

Work with partner states is moving along despite unforeseen delays. As mentioned in previous reports, there were some initial problems retrieving checklist information from Florida as part of the comparative analysis. In order to facilitate data transfer, Eugene Park visited and met with FL Department of Environmental Protection UST personnel during the week of Jan. 14, 2008. Constant communication has been maintained, more specifically with Roberta Dusky of FL DEP, as project personnel are comparing specific indicators. Preliminary results of the findings are expected in May 2008.

Work with New Hampshire is ongoing as their checklist information has already been obtained and is currently being analyzed and prepared for comparison with RI’s checklist. Once the baseline indicators are formalized, a direct comparison to the analogous indicators extracted from NH’s checklist can be performed. No further work with NH took place in this reporting period, but another visit is needed to initiate the comparative indicator analysis and continue

discussions on the first order economic analysis developed in the last reporting period (see Progress Report #4).

**Part 3 – Projection of Activities, Accomplishments, and Major Expenditures for Next Quarter Report.** Most if not all of the post-ERP inspections should be completed by the end of the next reporting period. As mentioned above, unforeseen delays have pushed back this particular phase of the project. The database for the 10-year compliance data should also be well underway. After having met with FL UST Program personnel, URI and DEM continue to compare checklist information and a preliminary report regarding comparative indicator analysis should be ready by next reporting period. Preliminary work into developing the economic template for FL will also commence during the next reporting period, and NH will be contacted to continue comparative analyses. There will be no unusual expenditures expected for the next reporting period.

**Part 4 – Financial Report.**

Confidential business information removed by EPA.

Attachments:

1. Report – “Hazardous Material Underground Storage Tank (UST) Environmental Indicator Baseline Analysis”
2. Excel file – Baseline Statistics Analysis