

Recovery Act Data Quality: Methodological Innovations

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May 13, 2010





GAO

U.S. Government Accountability Office

Covert Testing Shows Energy Star Program Certification Process is Vulnerable to Fraud and Abuse

“...certification controls were ineffective primarily because Energy Star does not verify energy-savings data reported by manufacturers....” 3/20/10



For Conference Purposes Only

American Recovery and Reinvestment Act 2/17/2009



- EPA Programs Receiving ARRA Funding
 - Clean Water and Drinking Water State Revolving Funds (tribal and non-tribal) (\$6B)
 - Brownfields (\$100M)
 - Underground Storage Tank (\$200M)
 - Superfund (\$600M)
 - Clean Diesel (300M)
- Programs chosen to get people to work and for environmental benefits
- Unprecedented transparency and accountability

How is EPA tracking the Performance of ARRA?

- Section 1512 Recipient-reported data
 - Financial award status
 - Project percent completion
 - Jobs created and retained = economic impact
 - www.recovery.gov



Data Views on Recovery.gov

State/Territory	Number Of Awards	Total Funds Awarded	Funds Awarded Per Capita	Total Funds Received	Local Amount	Recipient Reported Jobs
[+] Alabama	2,643	\$2,766,199,792	\$593	\$806,820,463	\$2,674,356,225	12,987.63
[+] Alaska	1,743	\$1,452,999,392	\$2,117	\$329,078,737	\$1,448,667,811	1,504.83
[+] Arizona	2,400	\$3,206,041,770	\$493	\$1,082,313,853	\$3,214,024,719	6,812.81
[+] Arkansas	2,203	\$1,537,658,003	\$539	\$558,850,048	\$1,540,824,773	2,850.06

See Where the Money Is Going



» Go to the Recipient Reported Data Map

Recipient-reported data For Conference Purposes Only

FINANCIAL STATUS



[Text View of Data](#)

[Source](#)

WEEKLY PROGRESS



[Text View of Data](#)

[Source](#)



How is EPA tracking the Performance of ARRA?

- Performance Data
 - 60+ measures, many are existing planning measures
 - Cumulative quarterly results from 2/17/09
 - www.epa.gov/recovery (see Q1 2010 performance report)

The Brownfields Program Accomplishments as of December 31, 2009

American Recovery and Reinvestment Act Performance Measures	Cum. Q1 FY10 Results	Cum. Long-term Target	Percent Complete
Number of Brownfield assessments initiated	27	500	5%
Number of Brownfield assessments completed	6	500	1%
Number of Brownfield cleanups initiated	1	30	3%
Number of Brownfields properties assessed	13	500	3%
Number of Brownfield properties cleaned up	1	30	3%
Acres of Brownfields property made ready for reuse	17	500	3%
Billions of dollars of cleanup and redevelopment funds leveraged at Brownfields sites.	\$.025	\$.45	6%

Quality Requirements for ARRA Data



- Internal controls under A-123 [Financial]
- Disclosure of reporting period (e.g., monthly, quarterly), measurement methodology
- Performance reporting complete and accurate and complies with the Agency's Information Quality Act. Point-of-contact for quality information
- Pre-dissemination review of Performance Data
- ARRA Stewardship Plan [Financial and Performance]

IQG Predissemination Review



- I certify that my organization has an approved quality program in place that includes sufficiently comprehensive quality assurance and pre-dissemination review procedures...
- has performed predissemination reviews of the ARRA performance measure information to meet the intent of OMB's guidance for ARRA performance measurement. *Senior Information Officer*
- To the best of my knowledge, the data meet EPA's Information Quality Guidelines expectations and are of appropriate quality for dissemination. *Date*

EPA's ARRA Governance Structure

EPA Stimulus Steering Committee

Agency Senior
Responsible Official

Craig E. Hooks

Steering Committee Chair

Susan B. Hazen

Congressional
Coordination
Subcommittee

Joyce Frank,
Chair

Finance and
Resources
Subcommittee

David Bloom,
Chair

Grants and
Interagency
Agreements
Subcommittee

Howard
Corcoran,
Chair

Contracts
Subcommittee

Chuck
Gherardini,
Chair

Interagency
Issues
Subcommittee

Catherine
McCabe,
Chair

Reporting and
Tracking
Subcommittee

Mike Flynn,
Chair

Performance
Measurement
Subcommittee

Will Anderson,
Chair

Communication
and Outreach
Subcommittee

Mike Thiem,
Chair



Implementation of Quality Requirements for Performance

- Management Action Plan I (3/13/09)
 - Requires quality standards be reflected in grants, contracts, inter-agency agreements with environmental data collection components
 - Relies on existing laws, regulations and policies to implement QA requirements in ARRA projects
 - Provides generic QA terms and conditions language



Implementation of Quality Requirements for Performance

- Management Action Plan II (10-1-09)
 - Broadens definition of performance data to include administrative data and other types
 - Ensures performance results are complete and comply with the Agency's Quality Program and Information Quality Guidelines
 - Supports transparency and accuracy
 - Requires documentation and certification of ARRA performance data

The DQR

- Illuminates the data quality processes associated with the generation of results for ARRA performance measures
- Follows the data lifecycle
- Names those responsible for QA and database oversight
- E-DQR automates DQR certification and IQG Pre-dissemination Form

Benefits of E-DQR

- **DQ information easily accessible + improved understanding/context = better use of performance data**
- Good internal management tool to identify gaps/risks and improve QA
- Complies with QA policies, OMB Recovery Act guidance, and any new transparency regulations under Open Government
- Secure, low costs, and minimal maintenance

The DQR Database

PERFORMANCE DATA QUALITY RECORD

PERFORMANCE DATA QUALITY RECORD	
Status: Draft	
Current Reporting Date	Fiscal Year: 2010 <input type="button" value="v"/> Quarter: 2 <input type="button" value="v"/>
Record Type	<input type="checkbox"/> Database/System <input checked="" type="checkbox"/> Measures/Indicator <input type="checkbox"/> Organization/Program
NPM	OSWER
Managing Office	OBLR
Shareholder(s)	01; 02; 03; 04; 05; 06; 07; 08; 09; 10
Measure Type	Recovery
ACS or BAS Code	R-B29
Measure Text	Number of Brownfields properties assessed.
<u>DATA DEFINITION AND SOURCE REPORTING</u>	<input type="checkbox"/>
<u>DATABASE CONTROLS AND DOCUMENTATION</u>	<input type="checkbox"/>
<u>REPORT WITH DATA TRANSPARENCY</u>	<input type="checkbox"/>
<u>REVIEW AND CERTIFICATION</u>	<input type="checkbox"/>


1c. EPA contact: The name of the EPA regional and/or Headquarters' contact who is responsible for overseeing original data reporting.

Add Person

- Judy Lieberman ~ OCFO,OPAA,AS ~ scientist ~ 202-564-8638
- Kelly Kunert ~ OW,OWOW,AWPD ~ 202-564-0608
- Mary Claytor ~ OA,OES ~ 202-564-0399
- Michael Hanson ~ OA,OES ~ computer guy ~ 202-564-1320

For each cooperative agreement recipient, data is signed off by the EPA Regional Representative (Regional Project Officer) identified in the terms and conditions of the cooperative agreement. For contractors, the EPA Regional COR/WAM signs off on the data.

1d. Collection Mode: The manner by which source data are collected. Drop-down menu choices are: field sampling, survey (specify type), field monitor, estimation, tabulation of records or activities, other). Provide complete reference(s) and URL(s) for collection standards or documents, such as: sampling and analysis protocols, quality assurance project plans, standard operating procedures, technical documentation to study design, implementation manuals, modeling and estimation techniques, questionnaires, surveys, etc.

other (specify : 

Combination of field sampling and tabulation of records. Field sampling is utilized during the assessment process to determine cleanup needs and develop assessment reports. Formal completion of assessment reports is tabulated for this measure.

See item 1o, "Quality Documentation for Environmental Data..." for more information on quality procedures.

1e. Reporting Format: Description of instrument used to submit the source data (example: Applicant Fleet Description Template for Clean Diesel Program). Provide complete reference(s) and URL(s) or to data submission instrument(s)

Information is provided by the cooperative agreement recipient using a Property Profile Form (PPF). A PPF collects information (environmental, historical, physical) from a property-specific investigation under the Brownfields Program.



2009_multiple_ppf_template_external.xls



2009_property_profile_form_instructions.pdf



2009_property_profile_form.xls

Recipients have 3 submission options: complete and submit the Property Profile Form (PPF) in online format connected to the Assessment, Cleanup and Redevelopment Exchange System (ACRES) database; fill out a PPF version in Microsoft Excel format and submit it via e-mail or regular mail to the EPA Regional Representative; or for multiple properties (more than ten properties) fill out a

2. DATABASE CONTROLS AND DOCUMENTATION

Measure Text : Number of Brownfields properties assessed.

2a. Data Flow: Provide a diagram that illustrates the path of data, and associated quality procedures, from original data source to EPA (Region and/or Headquarters) to public reporting by the Agency. Include as appropriate the elements referred to in questions 2b-2f and 2i-2j, which provide the descriptive information for each database. See following example for the Acres database.

Step 1. Performance measure data entered into ACRES by recipients, Regions (for data related to Targeted Brownfields Assessments) and/or EPA HQ contractor (for data submitted by recipients in an alternate format, such as hard copy). All data entered are signed off by the appropriate contacts, as above.

Step 2. Each Region conducts Regional level review of data from the ACRES system. (Regions may, but are not required to, review data they have entered related to TBAs before passing it on for EPA HQ review.) Rejected data must be edited by the original data source. Approved data proceed to Step 3.

Step 3. HQ conducts National level review (EPA HQ contractors) of data approved by regions. Rejected data must be edited by the region (Step 2). Approved data is stored in ACRES.

Step 4. Each quarter, OSWER Performance Assessment Tool (PAT) database pulls the approved data (performance measure) from ACRES.

Step 5. Headquarters approves PAT results, and PAT pushes results into ACS/Measures Central.

Step 6. ACS/Measures Central aggregates Regional data into a national total. OBLR reporting lead reviews and confirms result.]

2b. Database: Names of all databases that store information used to calculate performance. Indicate whether databases contain source data or transformed data (i.e., aggregated, modeled, normalized, etc.). Include the database that holds the final performance values (e.g., Measures Central). Make sure data flow above includes all the databases named and described in this field. Add explanatory information. Provide complete reference(s) and URL(s).

Assessment, Cleanup, and Redevelopment Exchange System (ACRES). This database is the master database of all data supporting Recovery Act measures. Recipients and EPA report directly into ACRES. It includes source data and transformed data (e.g., data aggregated into Regional totals). <http://www.epa.gov/brownfields/pubs/acres/index.htm> provides more information about this database.

OSWER Performance Assessment Tool (PAT). This tool serves as the primary external servicing

3. REPORT WITH DATA TRANSPARENCY

Measure Text : Number of Brownfields properties assessed.

3a. Reporting Oversight: Name of individual(s) responsible for performance reporting to public website, to performance database, or to the EPA Executive Management Dashboard and who are also responsible for the oversight/review of the final data. Explain responsibilities of individuals. If included already under 2c (above) refer the reader to 2c.

Add Person

- Dan Murphy ~ OCFO,OPAA,IO ~ Test ~ 202-564-3227
- Jennifer Keller ~ OAR,OTAQ,CISD ~ 202-343-9541
- Joseph Greenblott ~ OCFO,OPAA,AS ~ 202-564-4250
- Judy Lieberman ~ OCFO,OPAA,AS ~ scientist ~ 202-564-8638

☐ Ramon Torres or Rachel Lentz of OBLR reviews the accuracy of PAT results before transmission to ACS (by comparing against ACRES results), add information on measure status and explanations (as required by ACS), submit completed results to the Program Office Director or Deputy Director, and request data be reported into ACS (Measures Central) once the results have been certified by the OD or DOD. Ramon Torres or Rachel Lentz also reviews ACS outputs for these measures after PAT has pushed ACRES data into ACS, to confirm accuracy. ☐

3b. Systemic Data Limitations/Qualifications: Limitations or qualifications to the performance data, including known data lags, inconsistencies in data collection/reporting/calculation methods, incomplete reporting, systematic bias etc. Provide complete reference(s) and URL(s) to supporting documentation.

☐ **Recipient-reported data.** There are some known limitations related to the nature of much of the data being recipient-reported. Regional Project Officers review data to minimize errors (as described above), but some known quality issues remain. Most pertinent to this measure is that outcome data are sometimes not reported by recipients, in the event that the EPA funding expires before the work is complete (for instance, if EPA funding is only part of the funding used for an assessment for cleanup).

Data lag. Because of the data lag and the emphasis on cumulative reporting, public reports, the accomplishments associated with a particular quarter may not be evident to the public, even after the data set for a quarter is complete. ☐

4. REVIEW AND CERTIFICATION

4a. Name of EPA Personnel Who Completed this Record: Provide name(s) of individual(s) who completed this record (from Domino directory). Provide titles of individuals in text field.

Add Person

- | | | |
|-------------------------------------|---|---|
| <input type="checkbox"/> | Patricia Mundy ~ OEI,IO,QS ~ Test ~ 732-906-6988 | ▲ |
| <input checked="" type="checkbox"/> | Ramon Torres ~ OSWER,OBCR ~ 202-566-2505 | ▲ |
| <input type="checkbox"/> | Timothy Antisdell ~ OEI,OIAA,TRIPD ~ coputer guy ~ 202-566-0733 | ▲ |
| <input type="checkbox"/> | Zohair Baig ~ OA,OES ~ computer guy ~ 202-564-0413 | ▲ |

4b. Final Reviewer for Data Quality Record Completeness and Accuracy: Provide name of responsible EPA person from Domino directory. Provide title of individual in text field.

Add Person

- | | | |
|-------------------------------------|--|---|
| <input type="checkbox"/> | Dan Murphy ~ OCFO,OPAA,IO ~ Test ~ 202-564-3227 | ▲ |
| <input type="checkbox"/> | Jennifer Keller ~ OAR,OTAQ,CISD ~ 202-343-9541 | ▲ |
| <input type="checkbox"/> | Joseph Greenblott ~ OCFO,OPAA,AS ~ 202-564-4250 | ▲ |
| <input checked="" type="checkbox"/> | Judy Lieberman ~ OCFO,OPAA,AS ~ scientist ~ 202-564-8638 | ▲ |

4c. Completeness and Accuracy Check: Indicate "Yes" or "No". A "No" response requires information on what gaps exist in the record and how they will be filled and any inaccuracies. A "Yes" response requires no further explanation.

Mark Record "Ready for Certification" or "Not Ready for Certification"

4d. Officials authorized to certify: Only individual(s) listed here will have authority to certify the record. Certifying individuals must be SIOs and their designees. Use Domino directory to fill-in names.

Add Person

- | | | |
|--------------------------|--|---|
| <input type="checkbox"/> | Dan Murphy ~ OCFO,OPAA,IO ~ Test ~ 202-564-3227 | ▲ |
| <input type="checkbox"/> | Jennifer Keller ~ OAR,OTAQ,CISD ~ 202-343-9541 | ▲ |
| <input type="checkbox"/> | Joseph Greenblott ~ OCFO,OPAA,AS ~ 202-564-4250 | ▲ |
| <input type="checkbox"/> | Judy Lieberman ~ OCFO,OPAA,AS ~ scientist ~ 202-564-8638 | ▲ |

4e. Certification: I have reviewed this Data Quality Record and certify it is complete and accurate. Select "Yes" or "No".

4f. Explanations/Comments: A no response in 4e. requires information on why the record cannot be certified for completeness and accuracy, and how these issues will be dealt. If yes, comments may be provided.

Next Steps

- Build upon best examples of DQR
- Further simplify the record completion process
- Web publish parts or all of records
- Integrate with other DBs-like Measures Central (OCFO performance DB)
- Pilot E-DQR for application to other externally-reported performance measures