

Advanced Tools for Cost Effective Review and Management of Analytical Data



Michael S. Johnson

USEPA Analytical Services Branch (ASB/OSRTI)

Nazy Abousaedi - CSC

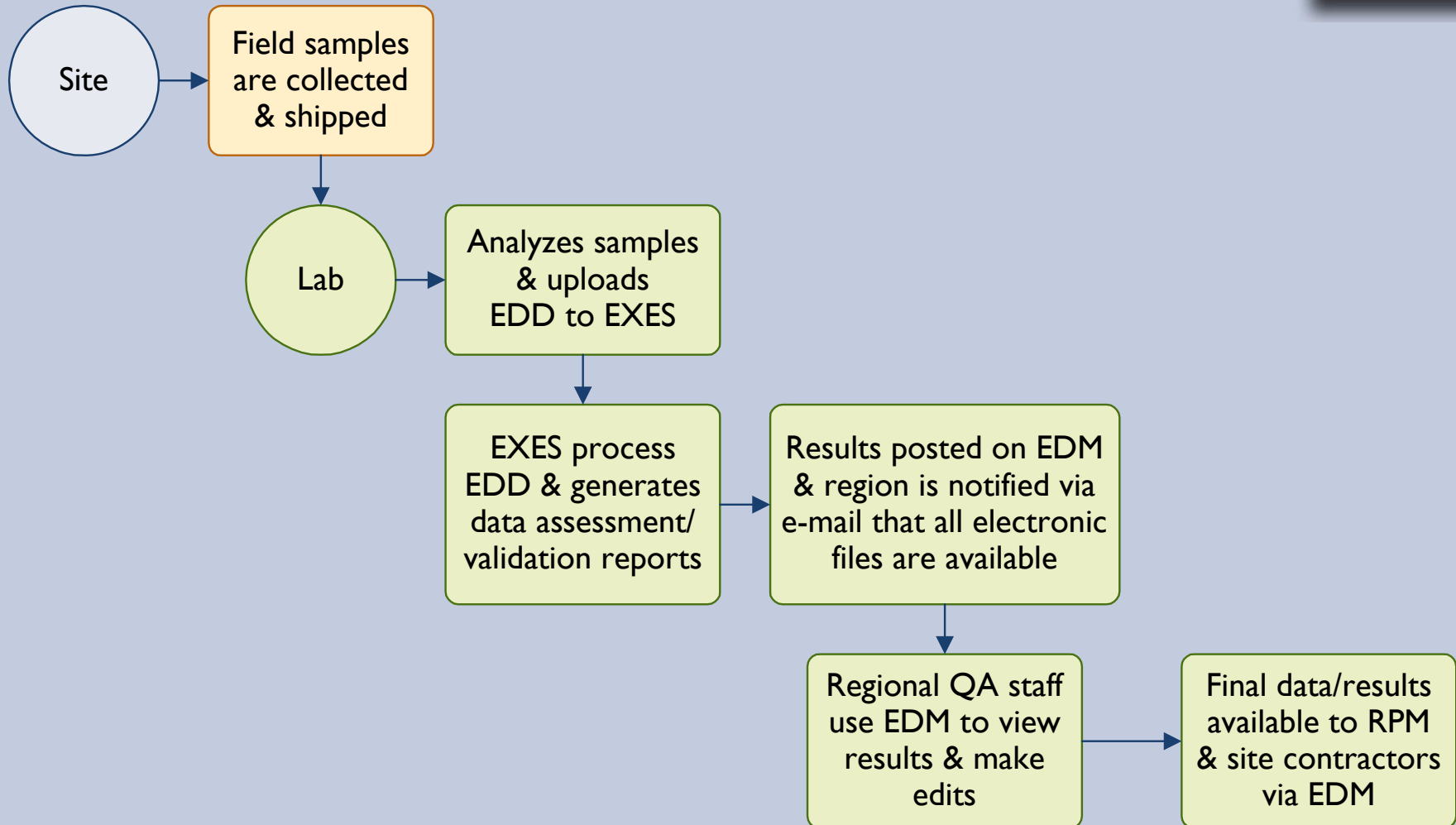
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Outline



- Automated Data Review and Assessment
- Advanced Data Management
- Reasons to go “Green”

Data Management Process



Automated Data Review Overview of Approach



- Manual validation of analytical data can easily exceed the costs of laboratory analysis.
- Much of the validation review can be automated, allowing chemists to focus on areas of professional judgment.

Overview of Approach (cont.)



- Superfund's automated data validation system, **Electronic Data Exchange & Evaluation System (EXES)**, is flexible and processes both organic and inorganic data, based upon national, Regional, or site-specific criteria.
- EXES provides Region-specific files that can be further processed by Regional personnel or site contractors.

Benefits of Automated Validation of Laboratory Data



- Consistency of automated data review and validation.
- Over 6,000 data assessment checks performed.
- Reduced time for automated/manual review of analytical data.
- Improved transparency of data review/validation process.
- **Significant cost savings.**

Estimated Savings for Automated Data Review Over Manual Process



- Estimates based solely upon analyses performed under Superfund by the Contract Laboratory Program (CLP), and represent review savings only.
- FY08 Estimated Savings = \$7.7 Million.
- FY09 Estimated Savings = \$7.6 Million.

National Functional Guidelines Report # 3

10:22 Fri, Mar 7, 2008

Lab Test SDG CLP1 Case 22222 Contract C00001 Region DDTID 36046 SOW SOM01.2

Data Review Results

Detection Limit

Detection Limit	PEST
PDL1	The following pesticide samples have analyte concentrations below the quantitation limit (CROQL). Detected compounds are qualified J. Nondetected compounds are not qualified.
	SAMP1, SAMP2, SAMP3, SAMP4
	Endosulfan sulfate PLCS69, PLCS90
	Endosulfan II PLCS69, PLCS90, SAMP2, SAMP3, SAMP4
	4,4'-DDT PLCS69, PLCS90, SAMP1, SAMP2
	Endrin ketone PLCS69, PLCS90, SAMP1
	Dieldrin PLCS69, PLCS90
	Endrin PLCS69, PLCS90
	Methoxychlor PLCS69, PLCS90, SAMP4
	4,4'-DDD PLCS69, PLCS90, SAMP2
	4,4'-DDE PLCS69, PLCS90
	Endrin aldehyde PLCS69, PLCS90, SAMP1
	Heptachlor SAMP1, SAMP2

National Functional Guidelines Report # 4

10:22 Fri, Mar 7, 2008

Lab Test SDG CLPI Case 22222 Contract C00001 Region DDTID 36046 SOW SOM01.2

Final Flag Results

Pest IG

Sample Location Type Matrix/Level Dilution Factor % Moisture Units	SAMP1 Field_Sample Water/ 1 ug/L		SAMP2 Field_Sample Water/ 1 ug/L		SAMP3 Field_Sample Soil/ 1 0 ug/kg		SAMP4 Field_Sample Soil/ 1 0 ug/kg			
	Compound	NFG Result	NFG Flag	NFG Result	NFG Flag	NFG Result	NFG Flag	NFG Result	NFG Flag	
alpha-BHC	0.050		UJ	0.050		UJ	10		13	
beta-BHC	0.25		J	0.23		J	14		19	
delta-BHC	0.38		J	0.29		J	8.6		12	
gamma-BHC (Lindane)	0.050		UJ	0.050		UJ	12		16	
Heptachlor	0.019		J	0.026		J	12		17	
Aldrin	0.46		J	0.39		J	6.6		8.6	
Heptachlor epoxide	0.050		UJ	0.050		UJ	10		14	
Endosulfan I	0.15		J	0.011		J	7.5		11	
Dieldrin	0.10		UJ	0.10		UJ	12		16	
4,4'-DDE	0.33		J	0.28		J	8.8		12	
Endrin	1.1		J	0.98		J	3.4		5.7	
Endosulfan II	0.51		J	0.053		J	2.2	J	2.9	J
4,4'-DDD	0.10		UJ	0.018		J	12		16	
Endosulfan sulfate	0.91		J	0.79		J	17		24	
4,4'-DDT	0.064		J	0.089		J	35		48	

Advanced Data Management Utilizing Web-Enabled Tools



- EXES Data Manager (EDM) notifies users that data has been received from the laboratory.
- Laboratory data, compliance/validation reports, and customer spreadsheets are all available.
- Different data views and access for various users (Q/A, RPMs, data validators, field contractors, etc.) are available.

Advanced Data Management Tools (cont.)



- EDM allows authorized users to edit certain data fields based upon manual validation, field requirements, etc.
- Individual data set is locked when in use.
- Audit trail of changes (who, when, and what) is maintained by system.
- Spreadsheets and database files can be updated and regenerated after data edits.

Data Search

Search Criteria

 Use the criteria below to search for an SDG.

The Search Results panel below will retrieve all matches.

Client	<input type="text"/>	
Site	EPA Region 1	
Case	EPA Region 3	
SOW	EPA Region 9	
MA	GLNPO	
	QATS	
Contract	<input type="text"/>	
Lab Code	<input type="text"/>	
SDG	<input type="text"/>	

SEARCH
RESET

Search Results

 Click on a row to view the deliverables for the SDG.

Click on the header link in each column to sort the data.

Showing 1 to 7 of 12

<<< 1 2 >>>

Site	Case	Lab Code	SDG
TEST SITE 7	11111	EDMA	EDM003
TEST SITE 7	11111	EDMA	EDM001
TEST SITE 8	22222	EDME	EDM004
TEST SITE 8	22222	EDME	EDM002
TEST SITE 9	33333	GLAB	EDM005
TEST SITE 9	33333	GLAB	EDM009
TEST SITE 10	44444	CWL	EDM010

* NFG deliverables are not available

Type	Static Deliverables	Update Date	Status	All <input type="checkbox"/>
CCS	CCS Semi-Automated Screening Results	2010-03-23 00:00:00	✓	<input type="checkbox"/>
CCS	Initial Assessment Screening Results	2010-03-23 00:00:00	✓	<input type="checkbox"/>
CCS	Regional CCS Defect Report	2010-03-23 00:00:00	✓	<input type="checkbox"/>

SAVE

Type	Dynamic Deliverables	Update Date	Status	All <input type="checkbox"/>
EDM	Edit History Report	2010-03-29 11:10:03	✓	<input type="checkbox"/>
EDM	Sample Summary Report	2010-03-29 11:10:03	✓	<input type="checkbox"/>

✓ Ready ⚙ Generating

SAVE

? Button Instructions

REFRESH

EDIT SAMPLE DATA

Edit Sample Data

Click in a field to edit sample/analyte information.

Field Definitions

Sample Number: EDM010

Sample Location:

Percent Moisture:

Method: Aroclor

Sample Date: 11/23/2009

Percent Solids:

Matrix:

Sample Time: 16:00:00

PH:

MA Number:

All	Analyte Name	Result	Units	Dilution Factor	Lab Flag	Validation Flag	Reportable	Validation Level
<input type="checkbox"/>	Aroclor-1016	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1221	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1232	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1242	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1248	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1254	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1260	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1262	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Aroclor-1268	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
<input type="checkbox"/>	Total Aroclor	<input type="text"/>	<input type="text"/>	1.0	U	<input type="text"/>	Y	S3VE
APPLY		<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>	<input type="text"/>

Comments

Button Instructions

SAVE

VIEW SAMPLE REPORT

REGENERATE DELIVERABLES

Reasons to Go “Green”



- Both EPA Headquarters and Regional Superfund programs are implementing initiatives to reduce the generation of paper products.
- The CLP alone currently has 30,000 boxes of data at the Federal Records Center.
- Accessing and searching paper files can be time consuming and expensive.
- In the past, some have found it easier to resample rather than locate existing data.

Where We Are Now



- Electronic Traffic Reports & Field Data.
- New CLP laboratory contracts provide for pdf of analytical data packages.
- Electronic generation, review, validation, editing, transfer and storage of analytical laboratory data.
- Data electronically available for future secondary uses.

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Contact Information



- **Michael S. Johnson**

Phone: 703-603-0266

Email: johnson.michaels@epa.gov

- **Nazy Abousaeedi**

Phone: 703-818-4233

Email: nazy@fedcsc.com

Michael Johnson & Nazy Abousaeedi

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