



SOLUTIONS YOU CAN COUNT ON. PEOPLE YOU CAN TRUST.





DATA DEFENSIBILITY

The Data User's Guide to Producing Legally Defensible Environmental Data

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Defensible Data

- Environmental data that can hold up to scrutiny of another potential user such as regulator, client, consultant, or judge
- Data is usable for the purpose of use now and for potential future uses
- Data are useable for decisions made relative to protection of human health and the environment

Overview



What is Your Final Goal?

Short
Term



Long
Term

To reach your “Final Goal”, the supporting data will have to be measured in both extent and quality.

Definition of Defensible Data for this Project



Developing Data Quality Objectives

Step 1: State the Problem

Step 2: Identify the Decision

Step 3: Identify Information Inputs

Step 4: Define the Boundaries of the Study

Step 5: Develop the Analytical Approach

Step 6: Specify the Performance or Acceptance Criteria

Step 7: Develop the Plan for Obtaining Data

Planning Defensible Data

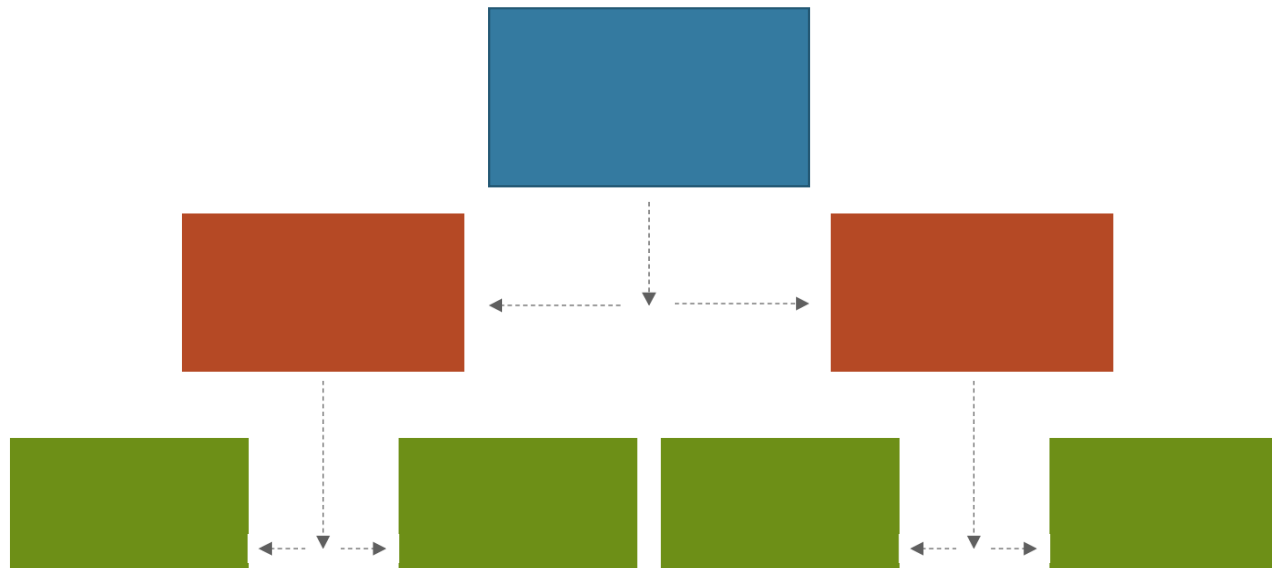


Bad Idea – Spending money without a plan

Choose Your Resources Wisely



Organizational Chart



Contracting with the Laboratory



- Certifications
- Capabilities
- Capacities
- Methodology
- Reporting
- Limits



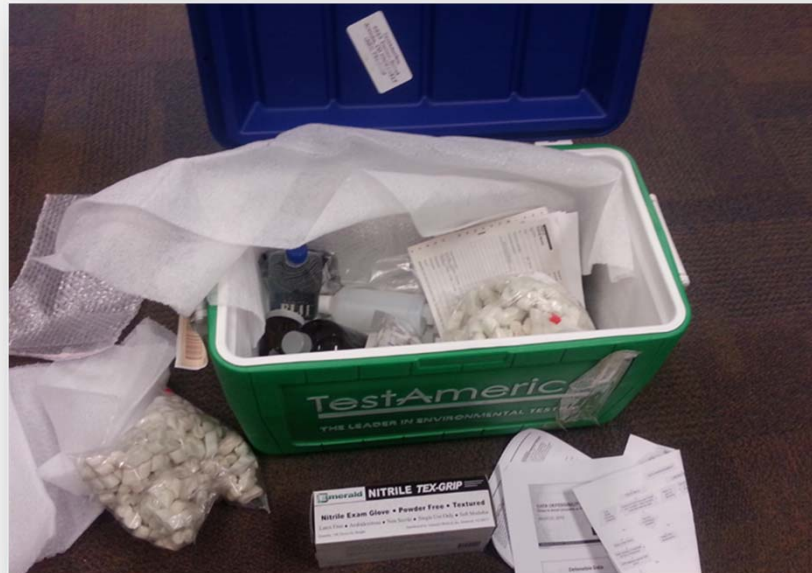
STANDARDMETHODS

Plans for the Future – Looking Ahead

- QAPP – Quality Assurance Project Plan
- DMP – Data Management Plan
- SAP – Sampling and Analysis Plan
- SMP – Sample Management Plan
- DQO – Data Quality Objectives



Preparing



Laboratory Preparation



Field Preparation



- Collecting Methods
- Collection Order
- Decontamination
- Quality Assurance Samples
- Documentation
- Sample Custody
- Packing/Shipping

Quality Assurance Samples


HOW MANY SHOULD I COLLECT??

Check your sample plans!

RULE OF THUMB

QA Sample	How Many	Percentage
Field Duplicate	1 per 10 or 20	10%/5%
Field Blank	1 per day	--
Equipment Blank	1 per day	--
Trip Blank	1 per cooler with VOCs	--
MS/MSD	1 per 20	5%

Chain-of-Custody

 Trihydro Chain of Custody and Analytical Request Record PLEASE PRINT; provide as much information as possible. Refer to corresponding notes on reverse side.																	
Company Name:					Project Name:												
Report Mail Address:					Contact Name (phone, email, etc):					Sampler Name if other than Contact:							
Invoice Address:					Invoice Contact & Phone #:					Purchase Order #:			Lab Quote #:				
Report Required For: _____ Special Report Formats – _____ NELAC _____ Level IV Other See attached _____ EDD/EDT <input type="checkbox"/> Format _____					Number of Containers Sample Type A/W S/V B/O A/L: Blank, Blank Variation, Unknown, Other	ANALYSIS REQUESTED										SEE ATTACHED Normal Turnaround (TAT) Rush Turnaround (TAT)	Receipt Temp _____ °C Cooler ID(s) _____
						Comments: _____ Custody Seal Y N Intact Y N Signature Y N Match Y N											
SAMPLE IDENTIFICATION (Name, Location, Interval, etc)					Collection Date											Collection Time	
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Custody Record MUST be Signed		Relinquished by: _____			Date/Time: _____			Shipped by: _____			Received by: _____			Date/Time: _____			
		Relinquished by: _____			Date/Time: _____			Shipped by: _____			Received by: _____			Date/Time: _____			
		Sample Disposal: _____			Return to Client: _____			Lab Disposal: _____			Sample Type _____			LABORATORY USE ONLY # of fractions			

Tools to help
you make your
data
defensible

Trihydro's Generic CoC



Collecting/Analyzing Defensible Data



BAD DATA

**Bad Idea – Collecting
data that is not usable**

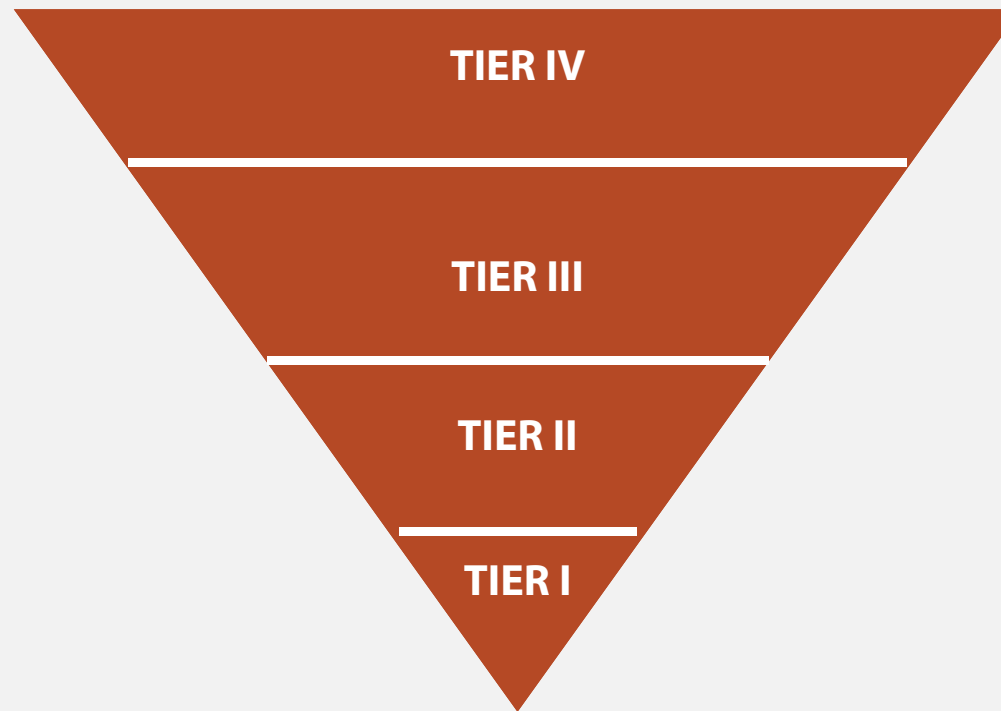
Why Validate Data?



Choosing Validation Levels



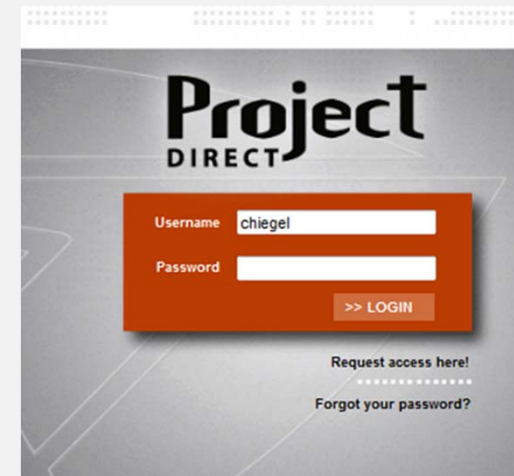
Tiered/Levels of Validation



Maintaining Defensible Data



- Use a database to manage your data
- Complete validations
- Check produced reports, limits, and constituents
- Understand what data are qualified and why
- Check against previous data
- Work with laboratory and your team to make changes, as needed
- Read your data reports and validation reports and ask questions



I Messed Up! What Do I Do?



- Don't panic
- Don't cover-up or hide your mistake
- Be Ethical

Defensible Data



Questions?

WHAT

WHY

WHERE

WHEN

WHO

HOW