The Chemical Inventory Lifecycle: Conception to Optimization

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Agenda

1. Defining a chemical inventory

2. A lifecycle analysis

   - Conception: selecting a program

   - Implementation: creating and/ or regenerating a chemical Inventory

   - Optimization: maintaining and optimizing a chemical inventory

3. Betsy Parsons of Merck Research Laboratories – success story

4. Discussion

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What is a Chemical Inventory?

The Chemical Inventory Lifecycle
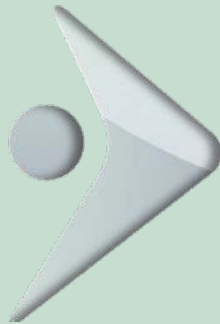
CONCEPT **IMPLEMENTATION** **OPTIMIZATION**

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Chemical Inventory

Stage 1: Conception
Goals & Objectives

- **What are the program drivers?**
  - Environmental compliance
  - Safety compliance
  - Purchasing
  - Science
- **What do you hope to accomplish?**
  - Business continuity
  - Reporting abilities
  - Chemical library

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Stage 1: Conception
Program Scope

- Identify key stakeholders

- Types of chemicals to be inventoried

- Chemical data required

- MSDS management

- Location setup & hierarchy

- Timeline

- Phased approach / pilot lab

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Stage 1: Conception
## Facility Variables

- Size

- Departmental users
  - Chemistry
  - Biology
  - Facilities
  - EHS
  - Purchasing
  - Shipping/Receiving

- Logistics
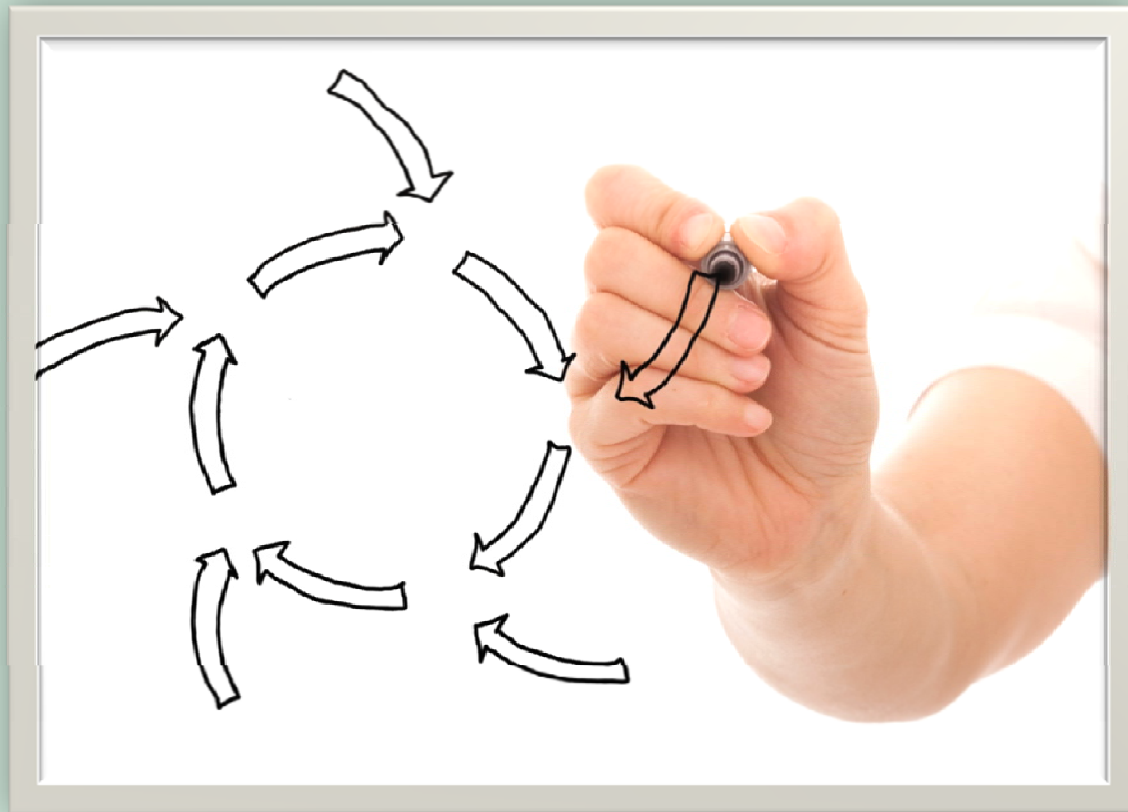 - Centralized vs. decentralized

Stage 1: Conception Selecting Software

- Select software based on program objectives and facility variables.

- Create a requirements document

- Software examples:
  - CisPro/ChemSW
  - CambridgeSoft
  - SciQuest
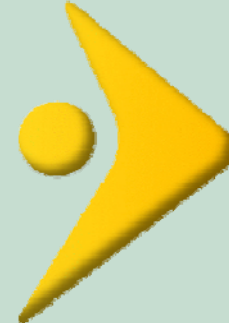 - Internally developed system
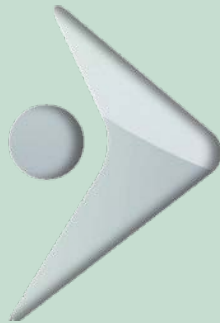 - Microsoft Excel spreadsheet

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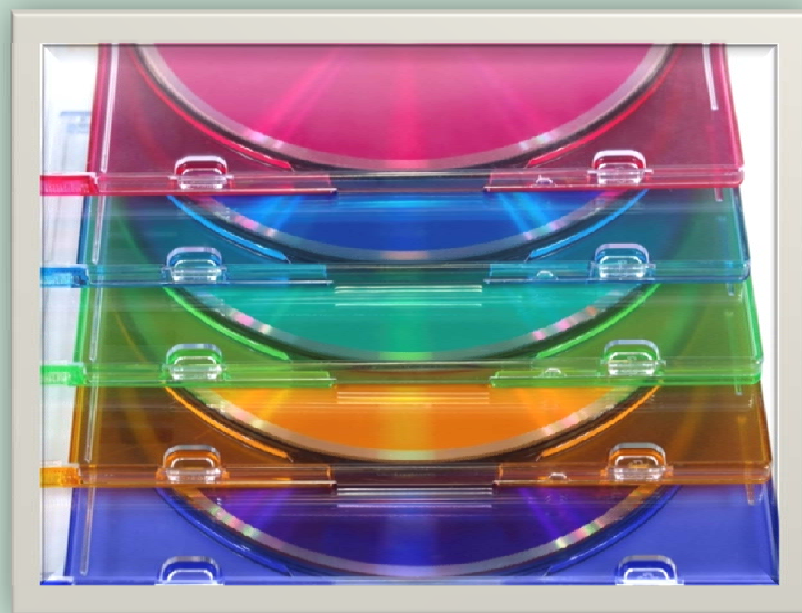
Stage 1: Conception
Program Strategy
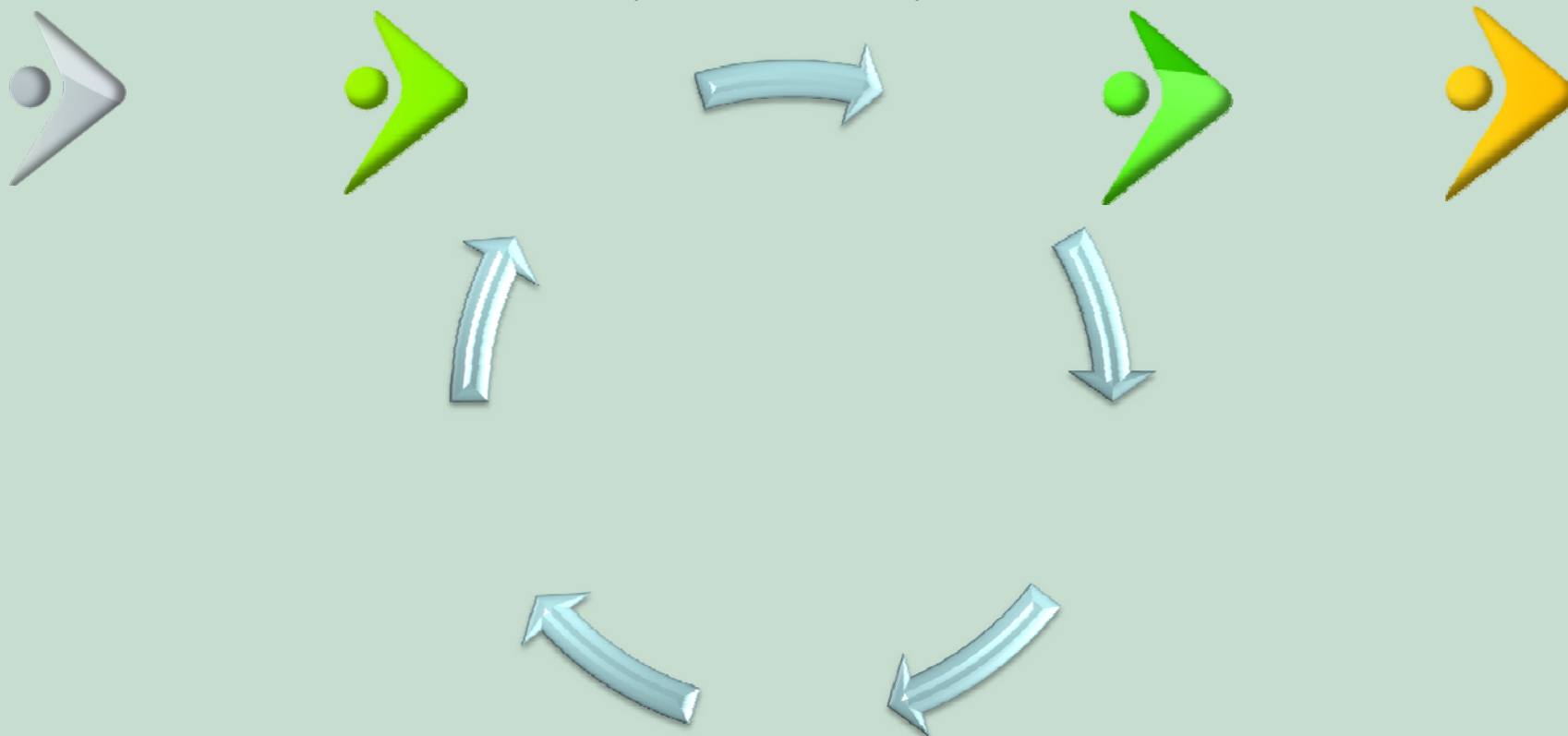

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Stage 2: Implementation

New Programs (1st time around)

Stage 2: Implementation

Programs that missed the target
(2nd around)

Stage 2: Implementation Meet with Stakeholders

- Establish core team

- Communicate your implementation strategy
  - Meetings
  - Trainings

- **KEEP THE LINES OF COMMUNICATION OPEN!**

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Stage 2: Implementation
Initial Data Collection

- Create strategy to collect data
  - Identify what is to be inventoried
  - Create location guide
  - Notify lab personnel
  - Prepare equipment and supplies
  - Create a sustainable plan to inventory new chemicals as they arrive onsite

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Stage 2: Implementation Sustainable Program

- Identify resources & roles

- Daily program management
  - Incoming chemicals
  - Chemical distribution
  - Empty containers

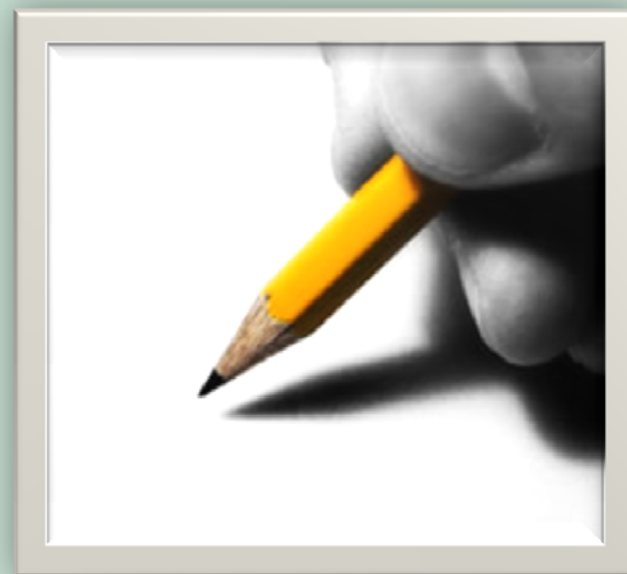TRIUMVIRATE ENVIRONMENTAL | Chemical Inventory

Stage 3: Optimization

1. Written plans

2. Training

3. Onsite chemical management

4. Ordering chemicals

5. Chemical inventory reconciliation

Stage 3: Optimization Written Plans

- Why?

- What does the plan contain?

Stage 3: Optimization Training

- Who should be trained?
  - Chemical inventory staff
  - Scientists
  - Shipping and receiving
  - IT support
  - Purchasing
  - EHS

Stage 3: Optimization Training

- In addition to annual Lab Safety Training (Chemical Hygiene Training)…
    - Emergency response
    - Basic chemistry
    - Identification of high hazard chemicals (e.g., peroxide formers)
    - Identification of chemicals for disposal
    - Process flow

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Stage 3: Optimization
Onsite Chemical Management

1. Who gets access to the stock room?

2. What is the procedure for scanning chemicals in and out of the stock room?

3. What about chemicals that scientists share?

4. Is particular training required for certain chemicals?

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Stage 3: Optimization Chemical Procurement

1. Are there restrictions on chemical purchasing?

2. Do any chemicals need approval prior to ordering? (e.g., DHS, mercury, large quantities)

3. Is there a system that will restrict orders for materials already onsite?

4. Restrictions on distribution?

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Stage 3: Optimization Reconciliation

1. Why?

2. How frequent?

3. How long will it take?

4. Who will do it?

RECAP

1. Conception

2. Implementation

3. Optimization

Regulatory Compliance

- EPCRA
  - Tier II reporting
  - Facility emergency planning
  - Toxic Release Inventory Reporting
  - MSDS management
- OSHA
  - Hazard Communication

- CAA
  - VOC & HAP inventory
- CWA
  - Stormwater regulations
  - POTW, NPDES
- DHS
  - CFAT

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