RCRA Facilities Investigation
Remedy Selection Track (FIRST)
Toolbox Update & Case Studies

August 15, 2017
ASTSWMO Training
Oklahoma City, Oklahoma
# RFI Process Lean Event Results

## As Is vs To Be

<table>
<thead>
<tr>
<th>Process Stats</th>
<th>Current Process</th>
<th>Future Process</th>
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<tbody>
<tr>
<td># of Hand-offs - Internal to Agency</td>
<td>44</td>
<td>11</td>
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<tr>
<td># of Review / Approvals</td>
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<tr>
<td>Total Avg. wait time in process</td>
<td>4.6 years</td>
<td>0.4 years</td>
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<tr>
<td>Total Avg. work time per process steps</td>
<td>14.8 years</td>
<td>4.7 years</td>
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<td>TOTAL Avg. Cycle Time in Process</td>
<td>19.4 years</td>
<td>5.1 years</td>
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<tr>
<td>% Value Add activity in Process</td>
<td>10%</td>
<td>51%</td>
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## Remedy Selection Process Lean Event Results

### Remedy Selection Process

<table>
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<tr>
<th></th>
<th>Current Process</th>
<th>TO BE Process</th>
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<tbody>
<tr>
<td># of Hand-offs*</td>
<td>23</td>
<td>17</td>
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<tr>
<td># of Reviews / Approvals</td>
<td>26</td>
<td>5</td>
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<td># of Loopbacks / Re-dos / Re-submissions</td>
<td>30</td>
<td>0</td>
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<td># of Documents Generated</td>
<td>75</td>
<td>8</td>
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<td># of Decision Points</td>
<td>9</td>
<td>4</td>
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<tr>
<td>Total avg. work time per step</td>
<td>2,464 days</td>
<td>352 - 717 days**</td>
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<tr>
<td>Total avg. wait time within steps and between steps</td>
<td>6.75 years</td>
<td>1 - 2 years**</td>
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<td><strong>% improvement in time</strong></td>
<td><strong>75 - 85%</strong></td>
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<tr>
<td>% of Value Add activity in end to end process</td>
<td>20%</td>
<td>97%</td>
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*Types* of Hand-offs have been added together (internal to agency, external to agency and Internal to industry. **Range has been calculated and provided for the "3" potential paths within the process.
Root Causes identified in Region 3/7 Lean Events

1. No common, upfront understanding on investigation or remedy selection objectives
2. No simple way to elevate issues for resolution
3. Projects require too many approval steps
4. Overall strategies are not discussed early in the process
5. Project manager changeover (all parties) requires revisiting decision
6. No one person is responsible for project quality
7. Poor documentation and record-keeping
8. Poorly defined data quality objectives
9. Site conceptual model misunderstood by either party
10. Competing objectives among parties
11. Tolerance for uncertainty is not discussed
12. Lack of defined product standards
Toolbox Purpose

- Develop Tools for EPA Regions and partners to implement
- RCRA FIRST is an approach to managing RCRA corrective action projects. The legal and technical foundation of the program remains the same.
FIRST Website

Four Key Improvements with RCRA FIRST

• Mutual Development of RFI objectives *before workplan is prepared*
• Mutual Development of Corrective Action Objectives prior to remedy selection
• Elevation of issues when needed and engagement of stakeholders
• Three paths to remedy and time frames established:
  1. No Corrective Measures Study (CMS)
  2. Limited CMS
  3. Full CMS
Region 3 & 7 FIRST Projects
FIRST Replication

- Developed 1-day, 3-day training events
- Performed in R3, R4, R7, R10 and NY, CA, OH, MI, WA, PR
Time to reach Remedy Implementation in PR
Progress of Remedy Construction CA550 (GPRA)

- 25 out of 51 facilities completed (49 %)
- Goal for FY2017: 53%
- US National Average: 64%; FY17 Goal 69%

Completed (49%)
Three Phases

**Investigation Planning**
- Discuss and Agree on Measurable Objectives
- Develop Framework for the Corrective Action investigation
- Approve RCRA Facility Investigation (RFI) Workplan

**Investigation Completion**
- Implement RFI Workplan
- Develop and Approve RFI Report

**Remedy Selection**
- Confirm Measurable Corrective Action Objectives
- Conduct a Corrective Measures Study (CMS), a Limited CMS, or No CMS, As Needed
- Select and Finalize Remedy
Investigation Planning Phase: Process Map

Objectives:
Start to Approved RFI Workplan in 9 months
Workplan submit to approval 90 days

Beginning Phase Outputs:
1. CAF (living document; can be updated)
2. Draft Conceptual Site Model (in CAF)
3. Approved RFI Workplan

Applicable Tools: 1,2, and Possibly Tool 3
Investigation Completion Phase: Process Map

Transition Phase Inputs:
1. Corrective Action Framework (CAF) (*living document; can be updated*)
2. Draft Conceptual Site Model (in CAF)
3. RCRA Facility Investigation (RFI) Workplan

Transition Phase Outputs:
1. RFI and Risk Assessment (if applicable) Report
2. Consensus Conceptual Site Model

Start RFI Completion Phase

Implement RFI Workplan → Update Conceptual Site Model → Data Review Meeting → Sufficient Data?

YES
Submit RFI and RA Reports

NO
Conduct Stalled RFI CAF Meeting

Resample or Implement Supplemental Data Collection Workplan (with Agency Oversight)

YES
RFI Goals and Expectations Understood?

NO
Commence Joint Elevation

EPA/State & Facility Action
EPA/State Action
Facility Action
Start/End Marker
Decision Point
Applicable RCRA FIRST Tool

Applicable Tools: 1-5

52 months or less

Conduct Stalled RFI CAF Meeting

Agency Review and Approve Report

Continue to Remedy Selection Phase

(Simplified Version)
Data Review – Specific Step

Transition Phase Inputs:
1. Corrective Action Framework (CAF) *(living document; can be updated)*
2. Draft Conceptual Site Model *(in CAF)*
3. RCRA Facility Investigation (RFI) Workplan

Transition Phase Outputs:
1. RFI and Risk Assessment *(if applicable)* Report
2. Consensus Conceptual Site Model

**Start RFI Completion Phase**
- Implement RFI Workplan
- Update Conceptual Site Model
- Data Review Meeting
- Sufficient Data?
  - YES: Submit RFI and RA Reports
  - NO: Conduct Stalled RFI CAF Meeting
- RFI Goals and Expectations Understood?
  - YES: Resample or Implement Supplemental Data Collection Workplan *(with Agency Oversight)*
  - NO: Commence Joint Elevation

**Applicable Tools:** 1-5

**EPA/State & Facility Action**
- 4
- 3
- 2
- 1
Remedy Selection Phase: Process Map

Start Remedy Selection Phase

6
Assemble Team and Plan for Remedy Selection Process (RSP) Meeting

6-9
Conduct RSP Meeting

8
Agree on Corrective Action Objectives?

3
Commence Joint Elevation

Corrective Measures Study (CMS) Needed?

IV
YES
24 months or less

YES
Submit CMS Workplan*

SORT OF
18 months or less

NO
12 months or less

NO
End Phase

Prepare Statement of Basis and Administrative Record

Conduct Public Reviews

Issue Final Remedy Selection

END

Ending Phase:
- **Input**: RCRA Facility Investigation (RFI) Report
- **Outputs**: Corrective Action Objectives, Remedy Selection and Documentation

Applicable Tools: 6-9; RCRA FIRST Toolbox Section IV

*If required
Solvay Example (CAF to RFI)

- Region 3 first RCRA FIRST pilot
- No real movement from 2004 until 2013
- CAF meeting 3/13/13
- RFI workplan rec’d 4/12/13
- Approved in 32 days -- in the field by June 1, 2013
- Data review meeting held 2/9/2014. Move forward with remedy development while supplemental work proceeded
- RFI report approved 7-16-2015

CAF meeting to RFI Report approval in 28 months
Solvay Example (RFI to RS)

- Remedy Selection meeting held February 14, 2015 – Corrective Action Objectives agreement same day
- Limited CMS submitted 7/16/2015 – Approved 12/7/2015
- Draft Statement of Basis public notice May 2016

Solvay total time in RCRAFIRST process: 38 months

Solvay time from RFI Report approval to Remedy Selection: 7 months
(Target time: < 13 months)
Region 7 Refinery
Region 7 Refinery
Region 7 Foundry
# Region 7 Foundry

## Comprehensive Corrective Action Report

- **Location:** 5945 N 70TH STREET, LINCOLN, NE 68507
- **Mailing:** 5945 N 70TH STREET, LINCOLN, NE 68507
- **County Name / Code:** LANCASTER / NE109

### Activity Location:
- **NE**

### Non-Notifier:
- **Generator:** LOG
- **Transporter:** N
- **Permitting:** L - 5 -
- **Renewal:**
- **Cross Permitting:**

### Extract:
- **Operating TSDF:** IC/EC in Place: Y / N
- **El Indicator (HE / GW):** - / -
- **GPRA CA 2020:** Y
- **GPRA Permit:** N
- **GPRA Renewals:** N

### Area Name:
- **ENTIRE FACILITY**
- **Acres:** 5
- **Seq. 1:** Releases: GW, SW, Sol., Air.
- **Entire Facility:** Y
- **Regulated Unit:**

### CA Authority:
- **Voluntary CA:** WRAP EPA 10/02/2014

### Citation:
- **Event Code:**
  - CA725YE - HUMAN EXPOSURES CONTROLLED DETERMINATION - YES, APPLICABLE AS OF THIS DATE
  - CA400 - REMEDY DECISION
  - CA750YE - RELEASE TO GW CONTROLLED DETERMINATION - YES, APPLICABLE AS OF THIS DATE
  - CA200 - INVESTIGATION COMPLETE
  - CA190 - INVESTIGATION REPORT RECEIVED
  - CA181 - DATA MEETING
  - CA150 - INVESTIGATION WORKPLAN APPROVED
  - CA110 - INVESTIGATION WORKPLAN RECEIVED
  - CA102 - CAF DEVELOPED
  - CA161 - CONDUCTED CAF MEETING
  - CA100 - INVESTIGATION IMPOSITION

### Notes:
- Based on a conference call discussion that took place on 8-17-15, which is documented in a 8-18-15 EPA letter.

### CA Authority:
- **Agency Policy/Procedure:** RCAP EPA 07/01/2000

### End of Report
Region 7 Former Manufacturing Facility

Comprehensive Corrective Action Report
Report run on: August 15, 2017 - 9:38 AM

*** WARNING *** Sensitive information may be displayed on this report. *** WARNING ***

| CYPRUS SPECIALTY METALS CO/ROQUETTE AMERICA |
| RAILWAY INC/KEOKUK CITY OF |
| Location: 2301 TWIN RIVERS DR, KEOKUK, IA 52632 |
| Mailing: 1417 EXCHANGE ST, KEOKUK, IA 52632 |
| County Name / Code: LEE / IA111 |
| IAD041391772 Region 07 |

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<th>Extract:</th>
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<td>Operating TSDP:</td>
<td>IC/EC In Place: N / N</td>
<td>El Indicator (HE / GW): + / +</td>
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Citation
A - RCRA 3004(u) or equivalent

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Streamlining Cleanup with RCRA FIRST

The U.S. Environmental Protection Agency (EPA) has completed over 250 business process streamlining projects that prevent inefficiencies, reduce work, improve clarity, and reduce time by 50 percent on average. The RCRA Facility Investigation Remedy Selection Track (FIRST) improvement effort represents one of the Agency’s early successes. The streamlined approach has enabled facilities to complete decades-long investigations in half the time.

**BENEFITS OF ACCELERATING CLEANUP**

- Decreased risk of toxic exposure
- Expanded economic opportunity for local communities
- Faster ecosystem recovery
- Improved relationships between regulators and facilities
Corrective Action Program Status

2020 RCRA FIRST Universe

Region 3
- 589 facilities
- 2012: 76 facilities 15 years or older; projected at 103 by 2016
- 2016: After RCRA FIRST, 72 facilities 15 years or older

Region 7
- 204 facilities
- Pre-RCRA FIRST: 19 years to remedy decision, on average

Legend:
- Region #
- % of facility investigations potentially remaining
- % of remedy selections potentially remaining
Key Messages

• Its All about OBJECTIVES
• Tools 13 OF THEM!
• Elevate, Elevate, Elevate
• Set Process Targets