Waste Reductions & Recycling Improvements

AT SANDIA NATIONAL LABORATORIES
IN ALBUQUERQUE, NEW MEXICO
2009-2010

PRESENTED BY:

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“Zero Waste to the Landfill by 2025”

- Goal adopted by Pollution Prevention team within Sandia/New Mexico in 2008

- Not using a landfill leaves these options:
  - Waste Reduction
  - Increased diversion
    - Reuse
    - Recycle
  - Landfill
  - Waste-to-Energy Incineration
Scope of 2025 Goal

- Commercial Solid Waste
  - Office Waste
- Industrial Solid Waste
  - Non-hazardous laboratory & operations waste
- Construction & Demolition Waste

Not in Scope:
- Hazardous Waste (RCRA)
- Radioactive Waste
Status Since 2007 Baseline

Known, Projected, and Targeted Waste to the Landfill

- Known
- Projected
- Targeted

Metric Tons

- Commercial Solid Waste
- Industrial Solid Waste
- Construction & Demolition

Chart showing waste reduction from 2007 to 2025, with a decline in waste over time.
Know Thy Waste

- Waste Audits
  - At largest office building
  - At medium off-site office building & museum for visiting researchers
  - At small office building (for LEED®)
  - At on-site cafeteria
Recycle Stream Assessment

- Cardboard
  - 25% was being recovered from trash rather than through recycle dumpsters
  - So...
  - Mapped out all dumpsters in GIS
  - Removed excess trash dumpsters
  - Added more cardboard where missing
  - Upgraded cardboard dumpster sizes to reduce overflow to trash
  - Changed dumpster styles at docks for easy loading
Recycle Stream Assessment

- **Plastics**
  - Identified top five generators of clean shrink wrap for collection/baling
  - Collect clean, natural #5 (PP) rigid containers from a semiconductor fabrication facility
  - Bought a packing foam compactor
    - #4 LDPE/EPE
    - #6 EPS/Styrofoam®

**Approaches**

Commercial Solid Waste

Also:

- #1-2 bottles
- #1 transparencies
- #2 natural bottles
- #2 Tyvek®
- #7 miscellaneous
Recycle Stream Assessment

- **Alkaline/Carbon Zinc Batteries**
  - Launched Earth Day 2009
  - ~190 collection points
  - ~800 pounds diverted
  - Includes: AAAA, AAA, AA, C, D, N, 9V and alkaline button cells
  - Primary Constituent: Scrap Metal
Industrial Solid Waste (ISW)

- **What is ISW?**
  - Only 4-7% of total waste landfilled
  - 69% in FY09 was solid waste and C&D waste contaminated with beryllium
  - **Remainder:**
    - Non-regulated chemicals
    - Contaminated oils
    - Contaminated soils
    - Coolants
    - =1,320 semi-unique waste streams
Path Forward

- Become educated about beryllium
- Prioritize remaining waste streams
  - Soils contaminated with oil
  - Oil/water mixtures
  - Coolants
- Team with generators and waste processors to reduce quantities and improve handling
Building – Rebuilding – Unbuilding

- C&D Waste down 30% - 2008/09
- C&D Recycle Rate: 89% in 2009
- Remaining 11%...?
Major Factors

- **Green Contractual Language**
  - Better product procurement
  - Construction Specifications
  - Active monitoring on large, new construction projects
  - Thorough process for demolition

- **Known Problem**
  - Untracked small remodel jobs
Problems

- Recycling creates jobs
  - Funding?
  - Capacity?

- American independence
  - You can lead a horse to water, but...

- Undeveloped markets
  - Refurbishment of furniture
  - Plastics