BIO-BASED PRODUCTS: AN EXAMPLE OF U.S. AIR FORCE INTERGRATION

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Bio-Based Products: An Example of US Air Force Integration

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Seymour Johnson AFB

4th Fighter Wing Mission
Preparing And Providing Professional Expeditionary Air Forces
To Fulfill Any 4FW Tasking … Anytime, Anywhere

16 February, 2006
USDA Outlook Forum
Seymour Johnson AFB

- Installation Population: 15,000 +
- Main Base Occupies: 3,200 + acres
- DCBR & FFRA: 46,000 + acres
**Seymour Johnson AFB**

- **Primary Missions**
  - Two F-15E Fighter Squadrons with associated maintenance of equipment & aircraft
  - Two F-15E Training Squadrons with associated maintenance of equipment & aircraft
  - 916th Reserve ARW (KC-135s) with associated maintenance of equipment & aircraft
  - Typical Quality of Life services for military installations
How Did We Get Here?

- RCRA
- DoD GPP
- Farm Bill
- WWTP

Pilot Project

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Four Roads Converging (RCRA)

- Shaping the Acquisition Process
  - Executive Order 13101 “Greening the Government Through Waste Prevention, Recycling, & Federal Acquisition” (1998)
  - Title 40, CFR Part 247 “Comprehensive Procurement Guideline for Products Containing Recovered Materials”
  - Department of Defense & Installation Affirmative Procurement Programs
Four Roads Converging (RCRA)

• Shaping the Acquisition Process
  – Seymour Johnson AFB Environmentally Preferable Purchasing Policy
    • Established preference program for recycled content products
    • Contract & specification changes
    • Base-wide training of all procurement personnel
    • Education & awareness opportunities
    • Existing audit system
Four Roads Converging (Farm Bill)

- Shaping the Acquisition Process
  - 2002 Farm Security & Rural Investment Act “Farm Bill”
    - Required procurement preferences for bio-based products from all Federal Agencies (details at a later date)
Four Roads Converging (Farm Bill)

- Detailed USDA Responsibilities
  - At some point, designate items that are bio-based or can be procured with bio-based content
  - Recommend practices for procurement and vendor certification of bio-based products
  - Provide information on availability, relative price, performance, environmental and public health benefits from these products
  - In turn, federal agencies are to initial preference programs
Four Roads Converging (DoD GPP)

- Shaping the Acquisition Process
  - Department of Defense Green Procurement Program
    - Energy & Water Efficient Products
    - Alternative Fuels & Fuel Efficiency
    - Environmentally Preferable Products
    - Non-Ozone Depleting Substances
    - Priority Chemicals
    - Bio-Based Products
Four Roads Converging (DoD GPP)

- DoD goal is to achieve 100% compliance with all mandatory Federal GPP programs in all acquisition transactions.
  - No timetable (i.e. by 2012)
  - Each federal agency is to show continued progress toward this goal (ISO 14001, Environmental Management System concept)
  - With this type of goal, where do we start?
Four Roads Converging (WWTP)

- Seymour Johnson AFB sends wastewater to the City Of Goldsboro WWTP
  - Goldsboro WWTP discharges to the Neuse River
  - Goldsboro Sanitary Sewer
    Ordinance has pollutant thresholds which could trigger Industrial User Permit requirements.
  - One of our largest industrial wastewater discharge streams is from floor scrubbers
Initiated a Pilot Project

- Surveyed the base to locate all walk-behind floor scrubbers
- Took wastewater samples from each to identify any wastewater meeting the hazardous waste criteria
  - Over 30 samples taken, testing for pH, ammonia, phosphorus, and RCRA metals
- Identified the brand of scrubber detergent currently being used by the shop and cleaning frequency
## Bio-Based Detergent

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<th>Oil &amp; Grease (mg/l)</th>
<th>Ammonia (mg/l)</th>
<th>Total Phosphorous (mg/l)</th>
<th>Total Nitrogen (mg/l)</th>
<th>Cadmium (mg/l)</th>
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</table>

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Bio-Based Detergent

• Initiated a Pilot Project
  – Identified local supplier / manufacturer of detergents
    • Cox Industries, Inc. out of Wilson, North Carolina
  – Requested they provide a bio-based, neutral pH, phosphate-free detergent for scrubbers
  – Established a trial for four concrete floor locations
    • Aircraft & engine maintenance facilities
    • Golf course maintenance facility
    • Supply warehouse
Biobased Detergent

- SoyBase 2000
  - Cox Industries provided a soybean methyl ester based concentrated detergent
  - No phosphates
  - Near neutral pH
  - 55 gal drums or 270 gallon totes provided to each shop with dispensing mechanisms
  - Competitively priced
  - Results were generally favorable, but improved with set-up and operation training provided by the scrubber representative
Bio-Based Detergent

- SoyBase 2000
  - Supply warehouse and golf course were pleased with cleaning, price, and customer service.
  - Aircraft hanger was pleased with cleaning capabilities. However, different technology used today.
  - Engine shop was pleased with price and customer service, however the pH has been modified slightly to provide a more aggressive cleaner.
    - FOD identification requirements
    - Still below hazardous waste thresholds

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Bio-Based Detergent

- SoyBase 2000
  - Results were advertised base-wide along with a re-education concerning the base Environmentally Preferable Purchasing Policy
    - Could not mandate purchase of SoyBase 2000 for competitive issues, however we stressed the preference requirements for like products
    - The base took an interest and so did other detergent vendors who attempted to introduce their own bio-based products
    - SJAFB Pollution Prevention Newsletter was also distributed throughout Air Combat Command
**Bio-Based Detergent**

- SoyBase 2000
  - USDA certified or not?
    - Cox Industries had a lot of questions about marketing with the term “bio-based”
    - This early in the game, that was not our objective
    - Objective was to familiarize our base populace with the bio-based terminology and preference requirements as well as our vendors that we intended to comply with this requirement
    - As “certifiable” criteria is established, the vendors must take on that responsibility
USAF Integration

- 2005 White House Closing the Circle Award (Honorable Mention) – Green Procurement
  - Bio-based Pilot Project
  - Affirmative Procurement Park (playground area created using 100% recycled content products)
  - Continuing conversion to bio-diesel
  - Commitment to increasing bio-based product use on base such as hydraulic oils, greases, cleaning products, etc.
USAF Integration

• Trends
  – Increased procurement of bio-based products throughout federal agencies
  – Increased use of bio-diesel
  – Still must overcome resistance to change by showing real-world end user benefit
    • Relief from environmental or occupational health regulatory requirements
  – Pope AFB, Fayetteville, North Carolina
    • Similar activities based on occupational health drivers rather than environmental drivers
• In summary
  – The stage is set among AF installations and DoD to increase procurement of bio-based products
  – Installations must continually work toward the 100% compliant procurement goal; any improvement will naturally be driven by environmental and occupational health benefits
  – To really get shop level buy-in, these benefits must be in the form of man-hours & dollars
    • Micro-benefits vs. macro-benefits
USAF Integration

• For General Air Force Green Procurement Information:
  AFCEE Technical Directorate
  Brooks City-Base, Texas
  www.afcee.brooks.af.mil
  afcee.td.awaq@brooks.af.mil
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Thank You

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