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Agricultural Outlook Forum

Presented: February 16, 2006

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

**Brian Joyner**  
Chief, Pollution Prevention  
U.S. Airforce



## *USDA 2006 Outlook Forum*

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

***Brian W. Joyner, P.E.***  
***Environmental Engineer***  
***Seymour Johnson AFB***  
***Goldsboro, North Carolina***  
***brian.joyner@seymourjohnson.af.mil***

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## *Seymour Johnson AFB*



### 4<sup>th</sup> Fighter Wing Mission

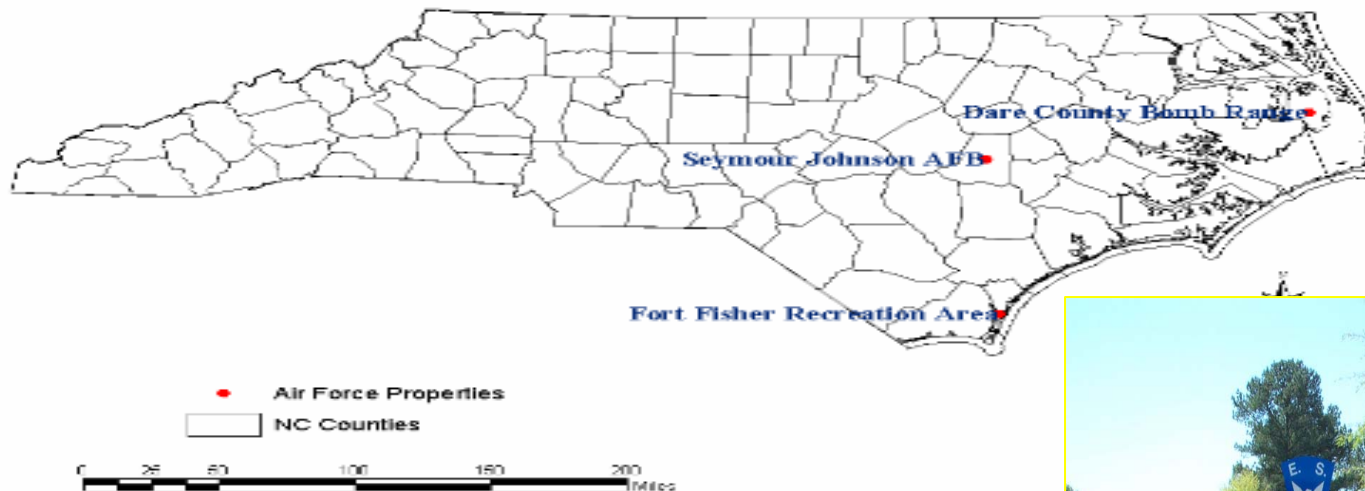
Preparing And Providing Professional Expeditionary Air Forces  
To Fulfill Any 4FW Tasking ... Anytime, Anywhere

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# *Seymour Johnson AFB*

## Seymour Johnson AFB Properties in North Carolina



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





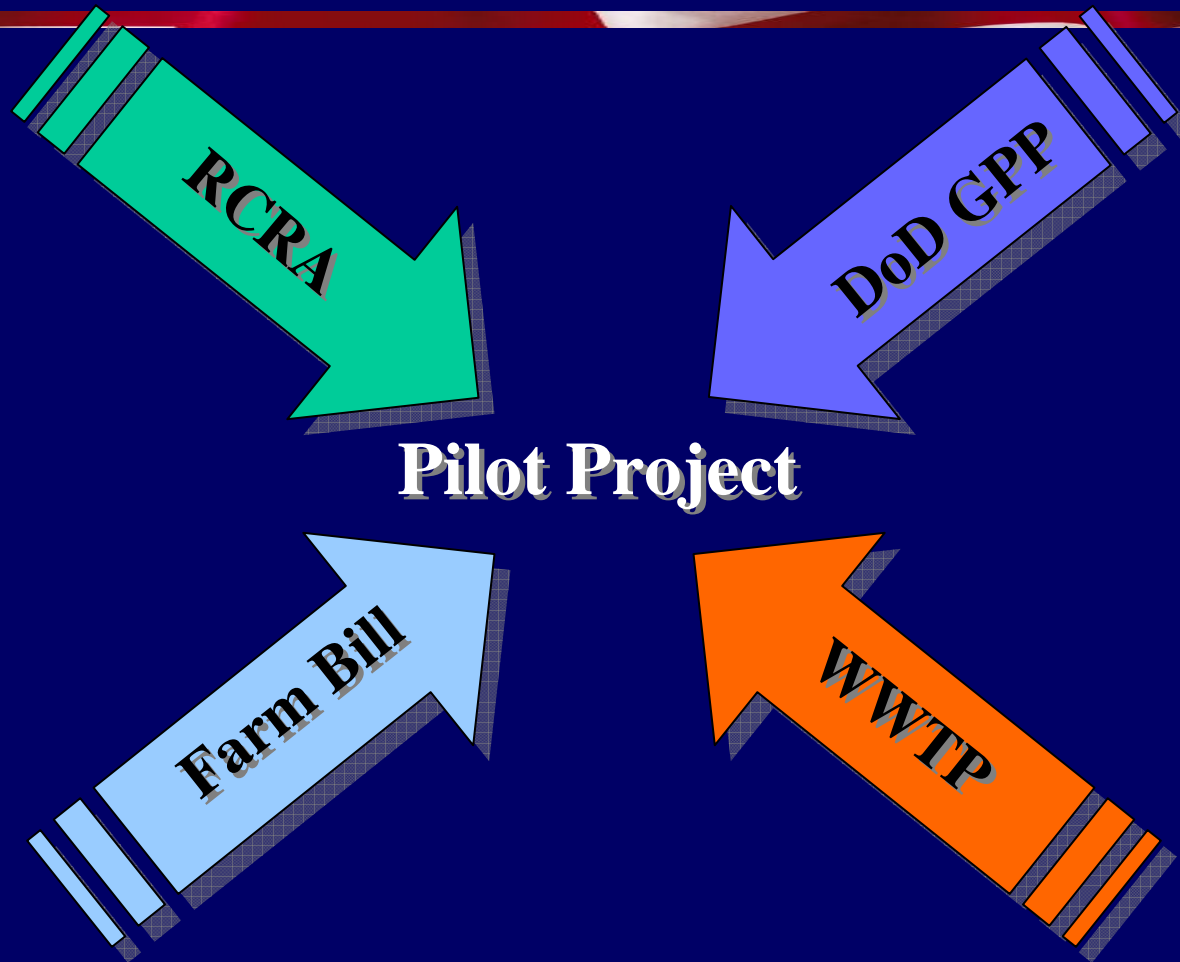
## *Seymour Johnson AFB*

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- Primary Missions
  - Two F-15E Fighter Squadrons with associated maintenance of equipment & aircraft
  - Two F-15E Training Squadrons with associated maintenance of equipment & aircraft
  - 916<sup>th</sup> Reserve ARW (KC-135s) with associated maintenance of equipment & aircraft
  - Typical Quality of Life services for military installations



# *How Did We Get Here?*



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## *Four Roads Converging (RCRA)*

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- 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

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## *Four Roads Converging (RCRA)*

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- 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

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## *Four Roads Converging (Farm Bill)*

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- Shaping the Acquisition Process
  - Executive Order 13134 “Developing & Promoting Bio-Based Products & Bio-Energy (1999)
  - 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)*

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- 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

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## *Four Roads Converging (DoD GPP)*

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- 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



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## *Bio-Based Detergent*



- 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

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## *Bio-Based Detergent*

Sample ID	pH	Oil & Grease mg/l	Ammonia mg/l	Total Phosphorous mg/l	Total Nitrogen mg/l	Cadmium mg/l	Lead mg/l
WW-3105	13.2	220	2.9	72	37	0.340	4.50
WW-4908	5.74			10.24		3.52	2.05
WW-3220	12.2	910	12	48	110	0.08	1.4

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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

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## *Bio-Based 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

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## *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*

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- 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

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## *Bio-Based Detergent*

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- 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

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## *USAF Integration*

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- 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.

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## *USAF Integration*

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- 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

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## *USAF Integration*

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- 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

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# USAF Integration

- For General Air Force Green Procurement Information:

AFCEE Technical Directorate  
Brooks City-Base, Texas

[www.afcee.brooks.af.mil](http://www.afcee.brooks.af.mil)

[afcee.td.awaq@brooks.af.mil](mailto:afcee.td.awaq@brooks.af.mil)

The screenshot displays the AFCEE website interface. At the top, there is a navigation bar with links for 'AFCEE Home', 'Search', 'Products & Services', and 'Personnel'. The main header features the AFCEE logo and the text 'The Air Force Center for Environmental Excellence, Brooks City-Base, San Antonio, Texas'. The central content area is titled 'Green Procurement' and includes a recycling symbol icon. The text explains that 'Green Procurement' (formerly known as Affirmative Procurement) is the purchase of environmentally preferable products and services. It lists program elements such as recycled content products, Energy Star products, alternative fuel vehicles, and biobased products. A 'Resources Menu' on the right side of the page lists various documents, including brochures, educational materials, fact sheets, and guidance documents. The bottom of the page provides contact information for AFCEE/ITD, including a phone number (210) 538-4191, a DSN number 240-4191, and an email address: [afcee.td.awaq@brooks.af.mil](mailto:afcee.td.awaq@brooks.af.mil).

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

# **Thank You**

*Brian W. Joyner, P.E.*

*Environmental Engineer*

*Seymour Johnson AFB*

*Goldsboro, North Carolina*

*[brian.joyner@seymourjohnson.af.mil](mailto:brian.joyner@seymourjohnson.af.mil)*

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