Presentation To The National Alliance Of Independent Crop Consultants

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Groundwater Management
Districts of Kansas
Big Bend GMD#5

- Groundwater Management District Act of 1972
- District formed to address quantity and quality issues in 1976
- Local form of government – governed by a nine member board of directors
- Local funding – allowed to assess $0.05 per acre of land. Up to $1.00 for water use charge
Points of Diversion Within the Big Bend Groundwater Management District

Created: August 8, 2005
By: Obie Pepper
Environmental Scientist

Points of Diversion

Index Map

0 10 20 Miles
Big Bend GMD#5

• Original management program based future large scale development on a safe yield (recharge = withdrawals) program.

• Recharge was set at 9” in 1979. It was reduced to 4.5” in 1984, and in 1990 reduced to 2.25”. 
Big Bend GMD#5

- Officially closed Arkansas, Pawnee, Rattlesnake, and Walnut basins in 1990
- Closed remainder of District in 1998
- Required flow meters in 1992
STATE GOALS

• Goal of State is to reach sustainable yield by 2015.

• Lot of different perspectives statewide on what sustainable yield means and how it should be administered.

• Most definitions include some form of “interaction to stream flow”.
Current Programs

- Environmental Quality Incentive Program (EQIP)
- Conservation Reserve Enhancement Program (CREP)
- Central Kansas Water Bank
- Mineral Intrusion/Water Quality
- Modeling Study
- Weather station network
- Rattlesnake Creek Partnership
- Middle Arkansas Project
Rattlesnake Creek Sub-basin
RATTLESNAKE CREEK/QUIVIRA PARTNERSHIP

• Partnership formed in 1994.
• Cooperatively created programs to reduce approximately 20,000 acft in the basin.
• Plan accepted in 2000 and is now being reviewed for its success (8-year review).
• Some programs have been more successful than others.
Middle Arkansas Sub-basin

- Sub-basin program started by State in 1998
- Approximately 241,855 AF authorized
- Average water use is approximately 65% of authorized quantity.
- State representatives have indicated basin is overappropriated by as much as 40,000 acre-feet.
- One model has been conducted in the basin and it is now being reviewed again.
(EQIP)

• Funds to transition from irrigation to dryland
• At least 90% of funding in High Plains
• 4-year contract, paid for 3 years
• Local entity cost share
• Quick response areas receive priority
CENTRAL KANSAS WATER BANK
THE FIRST IN THE STATE

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Objectives

- Add flexibility in closed areas
- Reduce water use in over appropriated areas
Conservation Component

• All deposits and leases will be subject to the conservation program.
• A minimum 10% conservation component must be achieved from the consumptive use.
Mineral Intrusion/Water Quality

• Chloride
  – Natural (5-25-10)
  – Petroleum
  – Salt mining (solution)
  – Irrigation
  – Municipal

• Nitrate

• Sulfate
Weather Station Network

- Funding from the State to equip 10 stations
- Precipitation, air temperature, wind speed, humidity, solar radiation, and grass reference ET
- 1996 to present
McCrometer Telemetry Meter
Soybeans no-till
Creative thinking may simply mean that we need to think outside the box!
0 to 60 gallons per minute........in 1 hour
Discussing Water Rights, A Western Pastime