

# Natural Gas Assessment of the Arkoma Basin, Ouachita Thrust Belt, and Reelfoot Rift

## *Arkoma Basin Coalbed Gas*

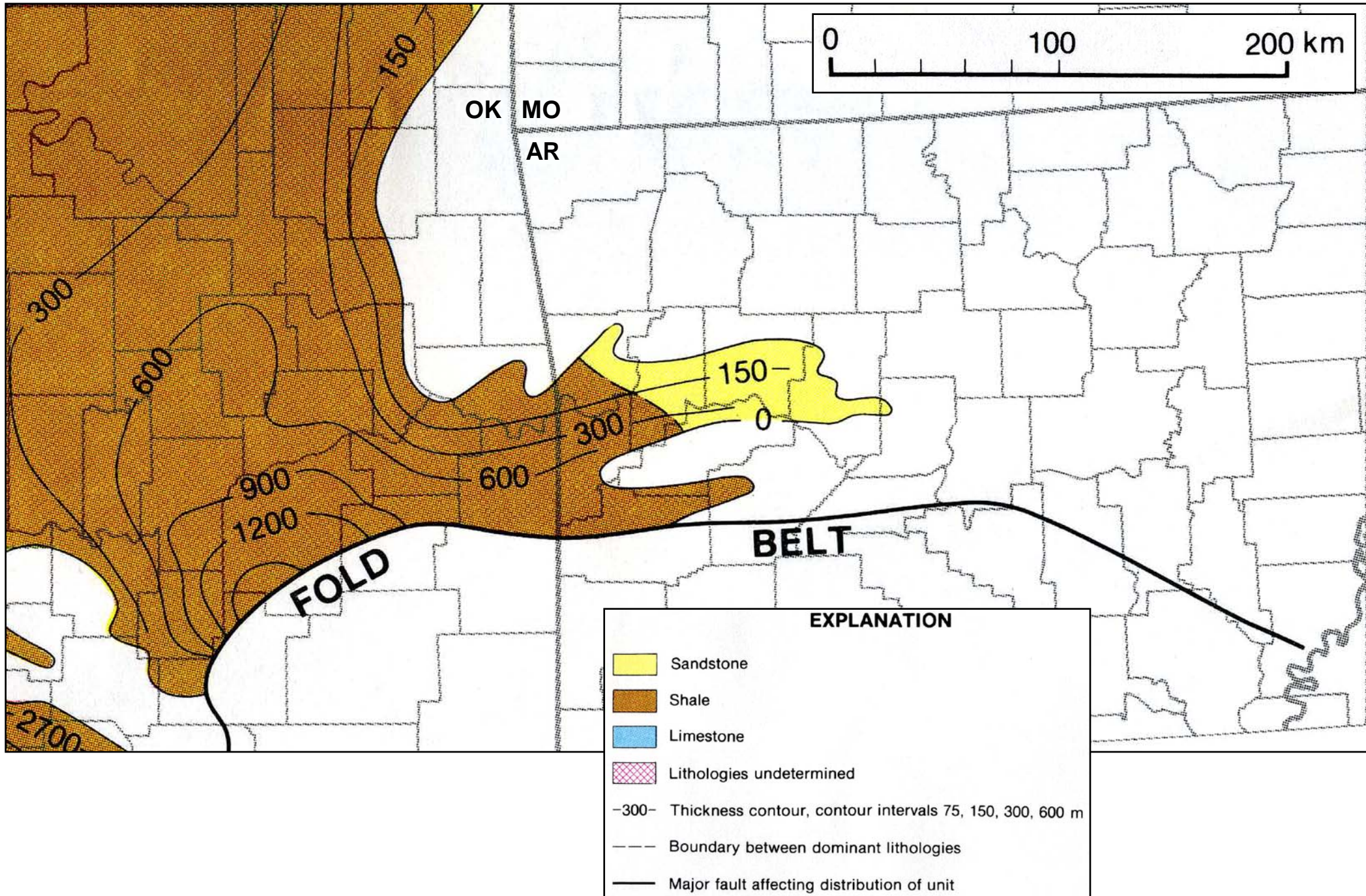


*Hartshorne coal-bearing succession near Heavener, Oklahoma*

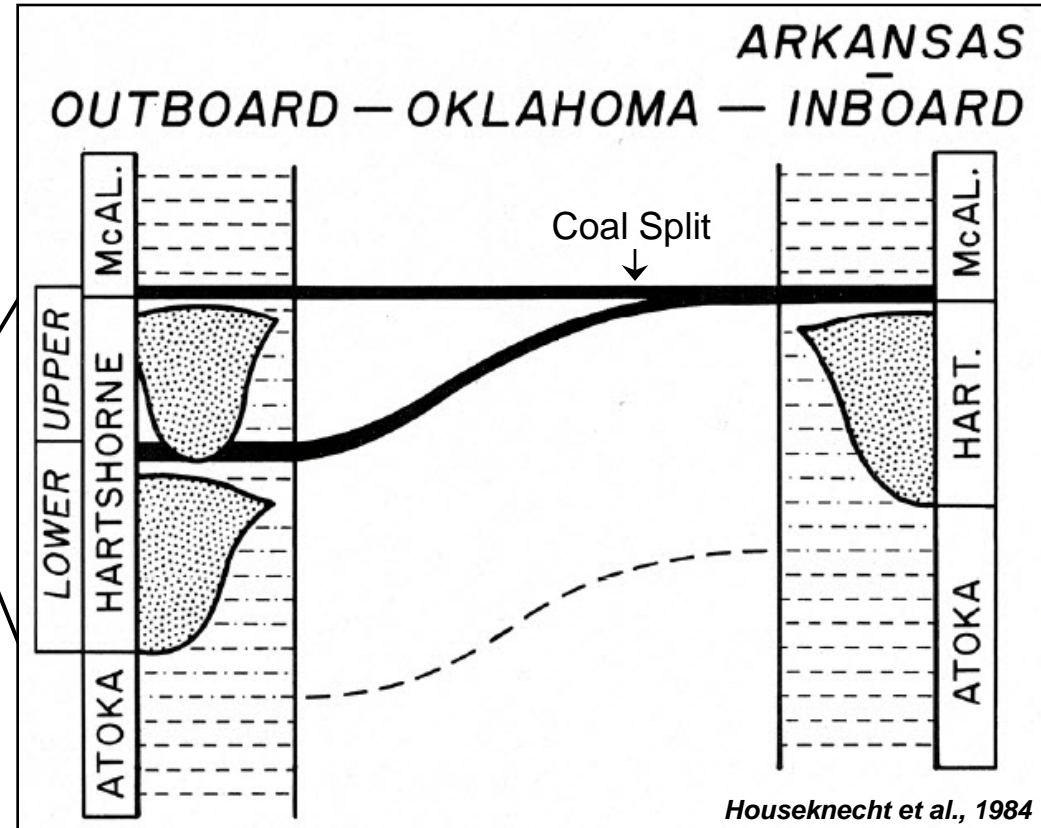
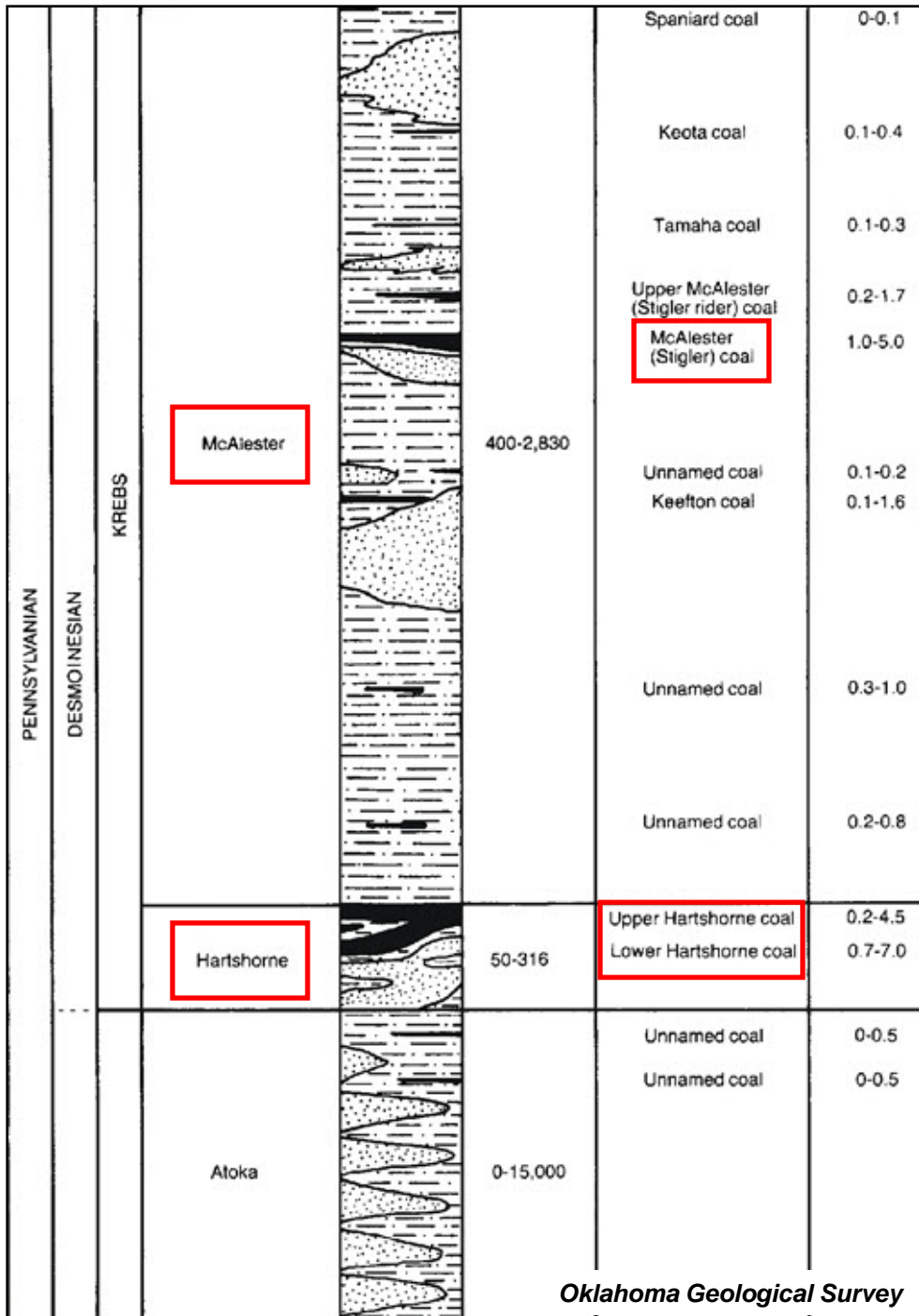
**Bob Milici & Dave Houseknecht**

U.S. Department of the Interior  
U.S. Geological Survey

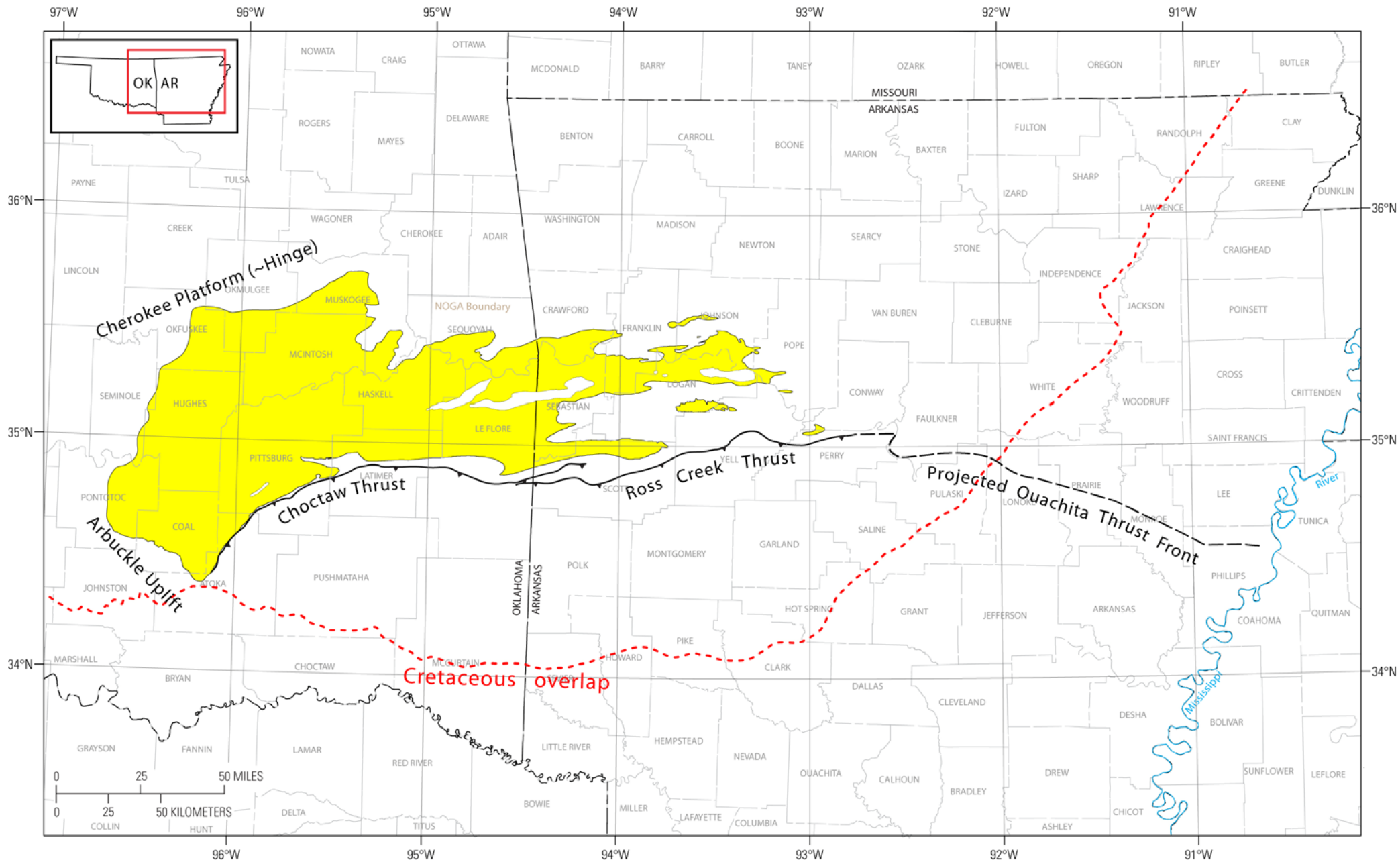
# Desmoinesian Series – Thickness & Dominant Lithology



# Generalized Stratigraphy of Coal-Bearing Strata, Arkoma Basin



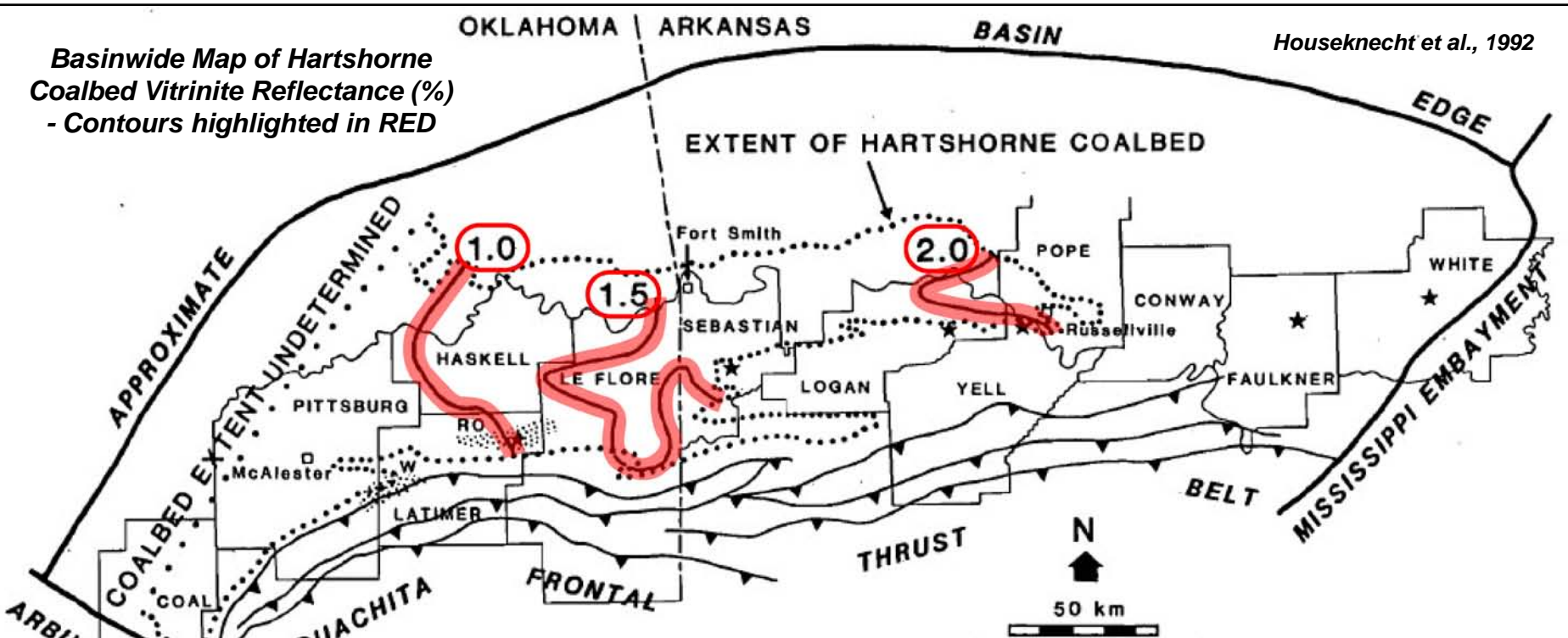
# Distribution of Hartshorne Formation



# Thermal Maturity of Hartshorne Coalbed

**Basinwide Map of Hartshorne Coalbed Vitrinite Reflectance (%)**  
 - Contours highlighted in RED

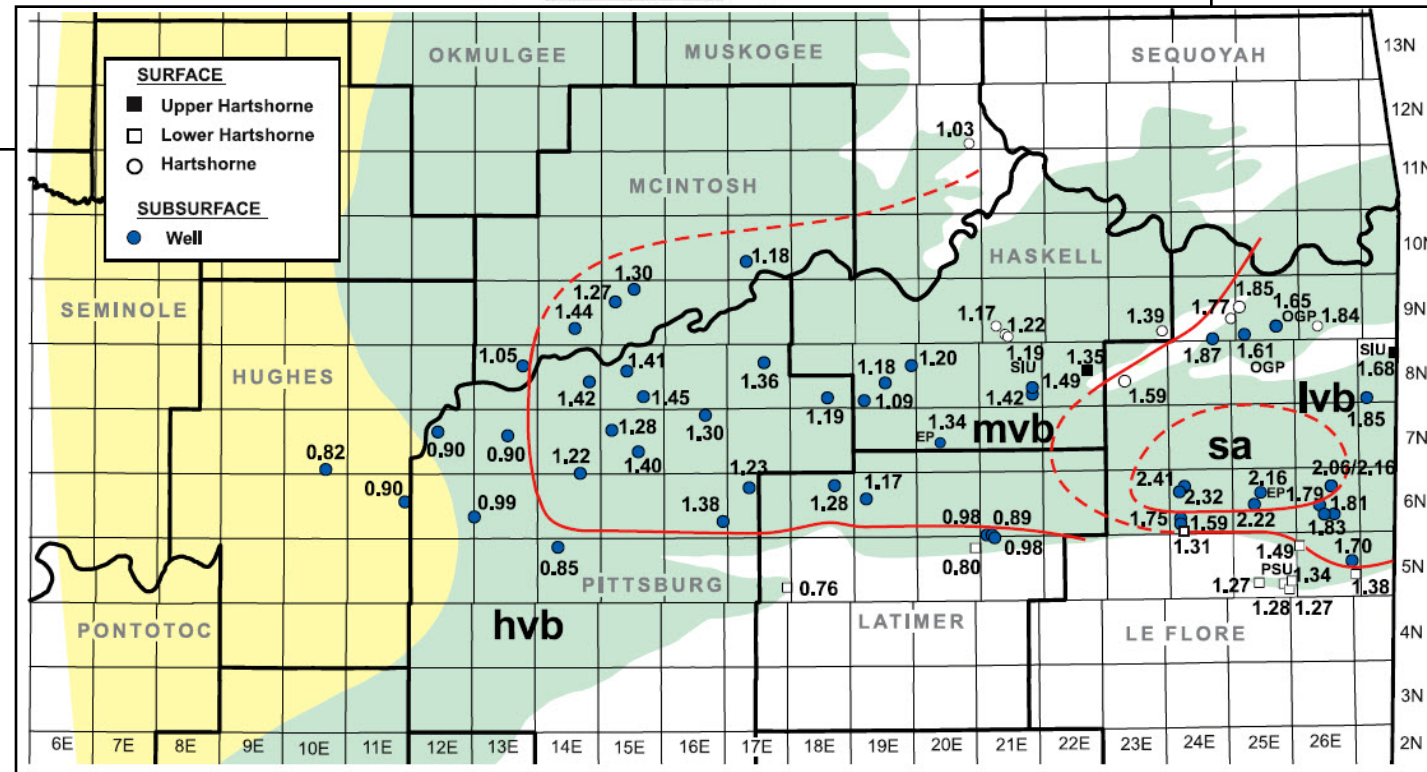
Houseknecht et al., 1992



**More Detailed Map of Hartshorne Coalbed Vitrinite Reflectance (%) in Oklahoma Part of Arkoma Basin – VR (%) Contours in RED**

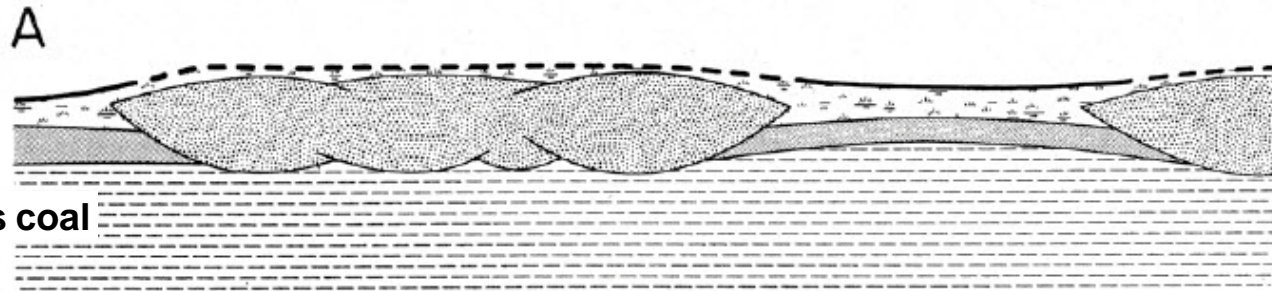
Cardott, 2009

(Oklahoma Geological Survey website)

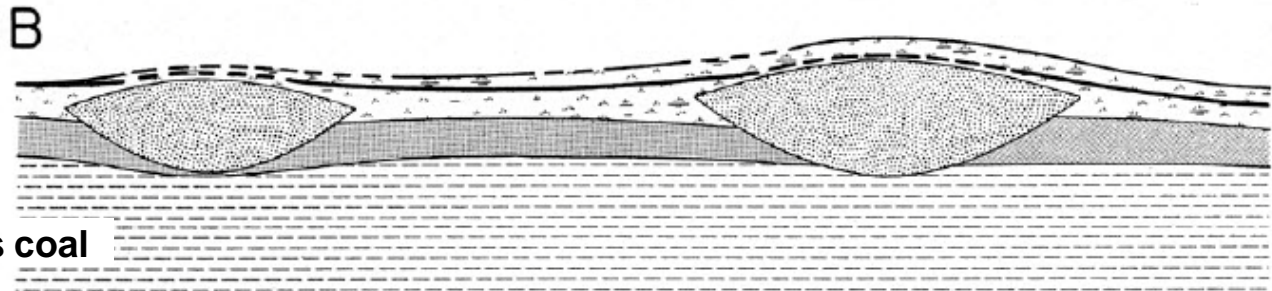


# Hartshorne Facies & Potential for Thick, Laterally Continuous Coalbeds

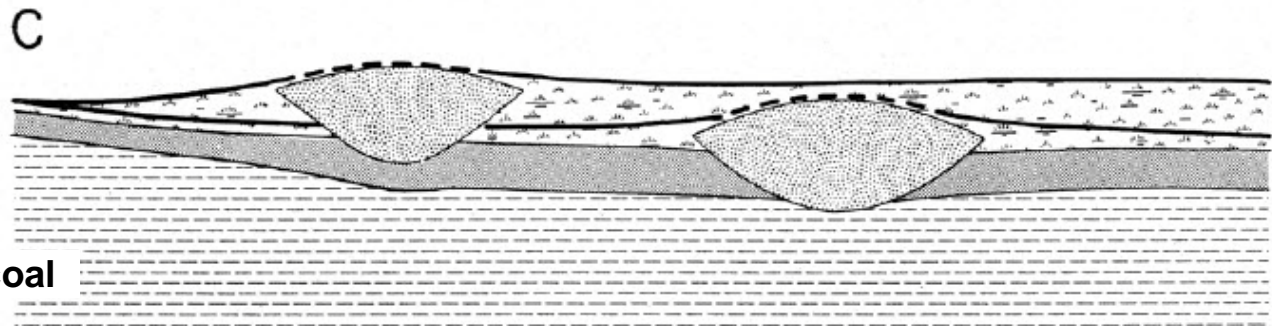
**Wide channel belts  
Narrow interfluves  
Thin, discontinuous coal**



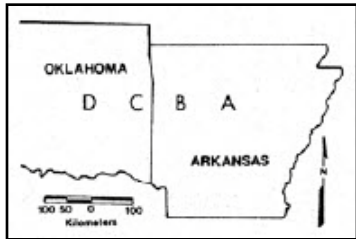
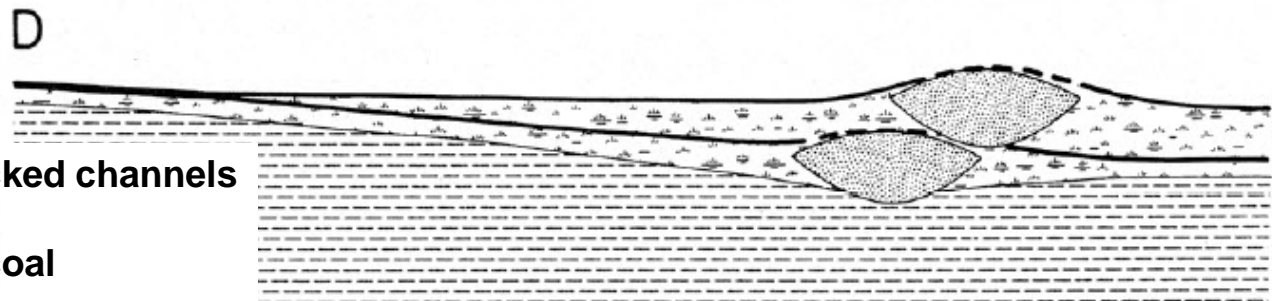
**Large channels  
Wider interfluves  
Thicker, continuous coal**



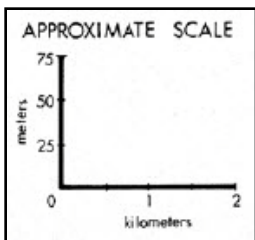
**Narrower channels  
Wide interfluves  
Thick, continuous coal**



**Narrow, locally stacked channels  
Wide interfluves  
Thick, continuous coal**

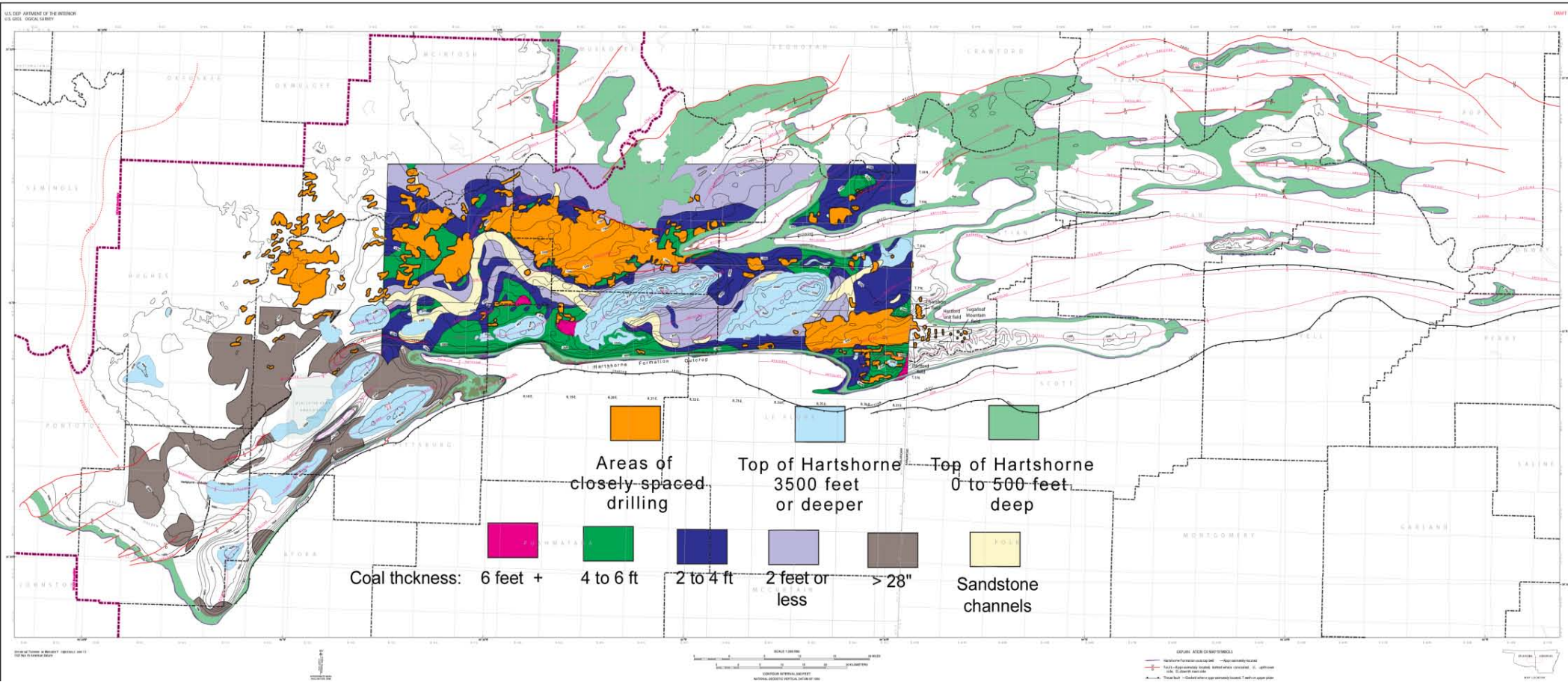


EXPLANATION	
	Marsh-Swamp Facies (coal) (dashed = inferred coal)
	Interdistributary Bay Facies
	Distributary Channel Facies
	Delta-Front Facies
	Prodelta Facies



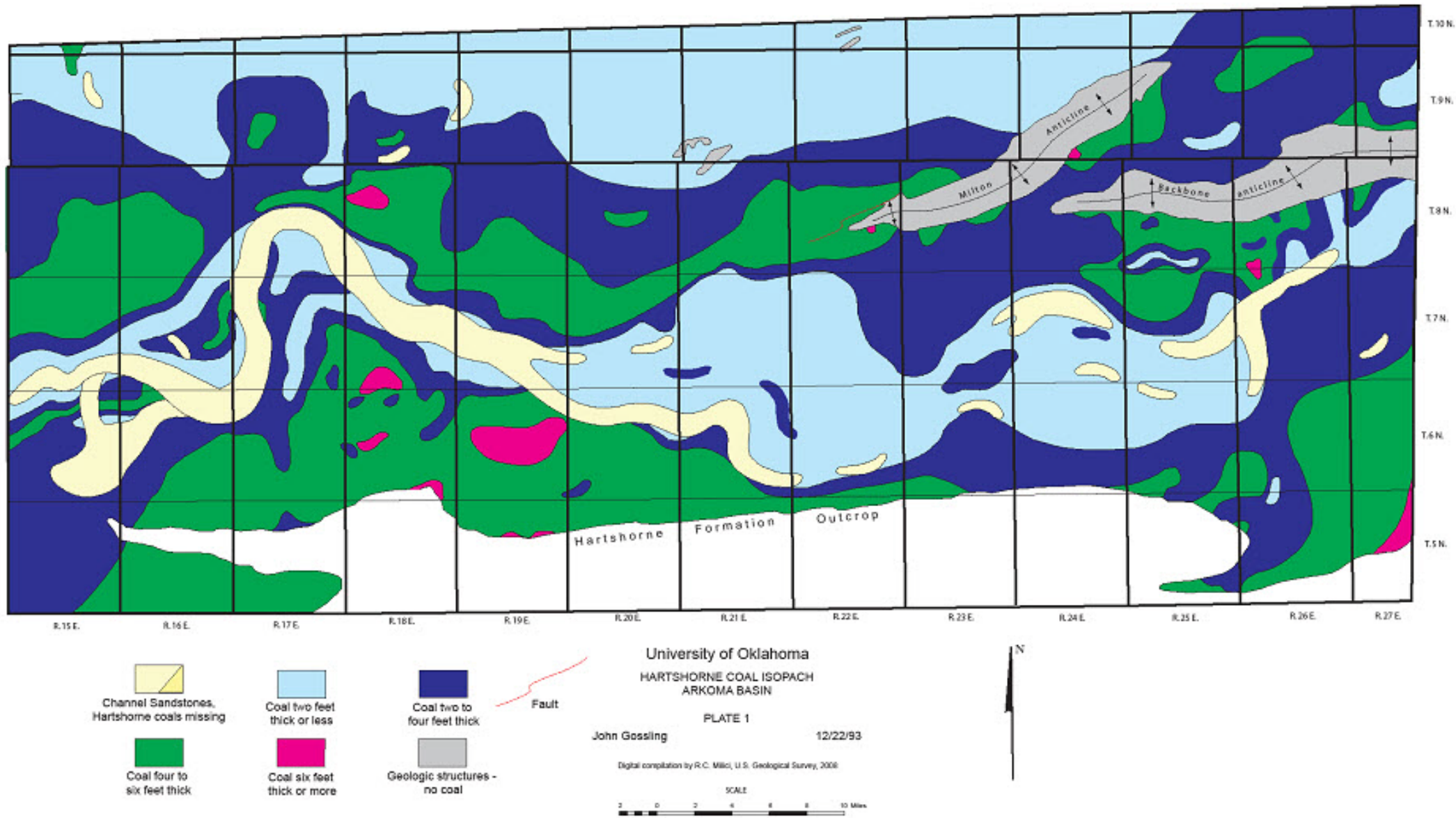
# Hartshorne Coal\* Thickness & Areas of Concentrated Coalbed Gas Development

*\*Undivided North of Split Line; Lower Coal South of Split Line*



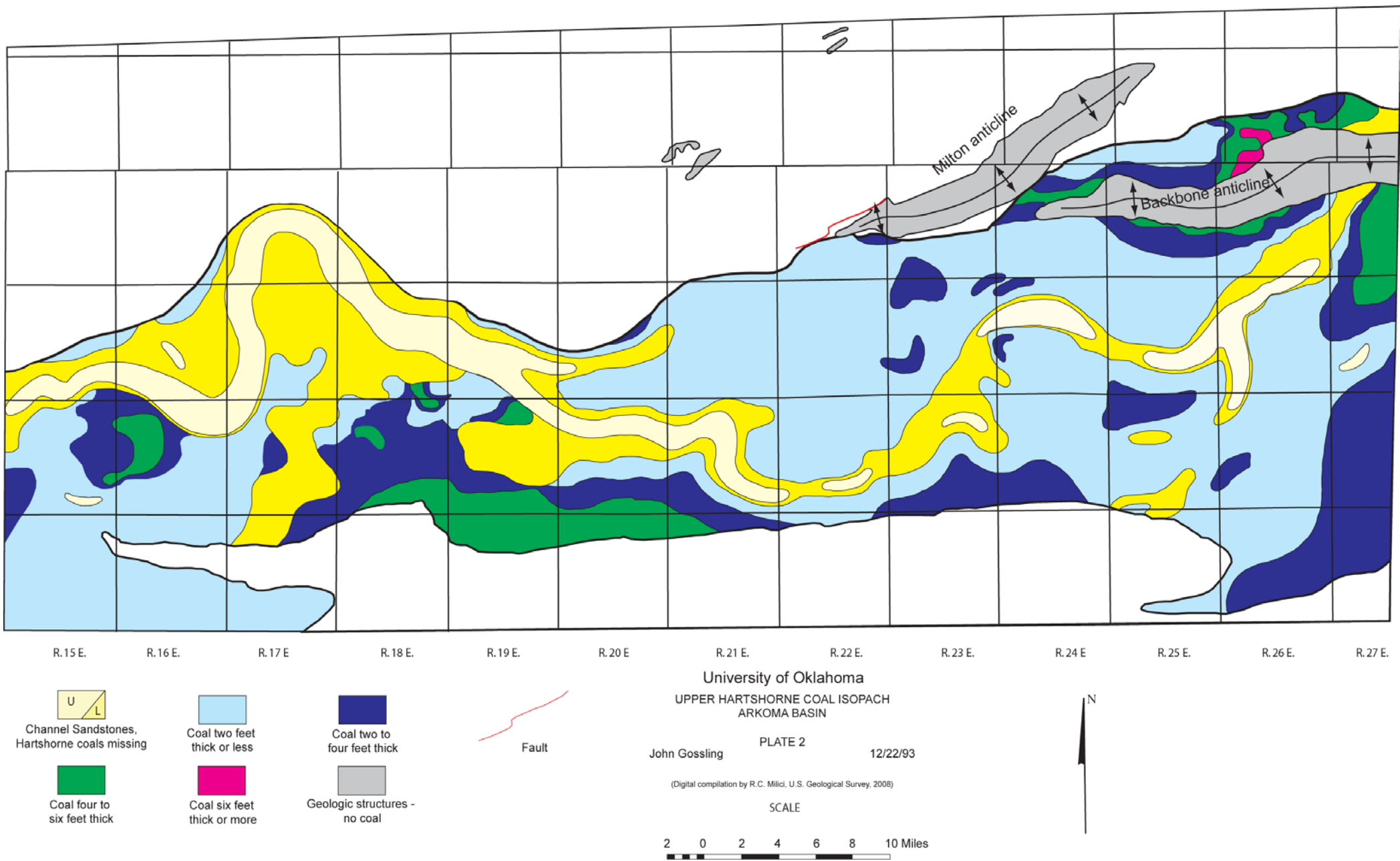
# Hartshorne Coal\* Thickness & Channel Sandstone Distribution

*\*Undivided North of Split Line; Lower Coal South of Split Line*

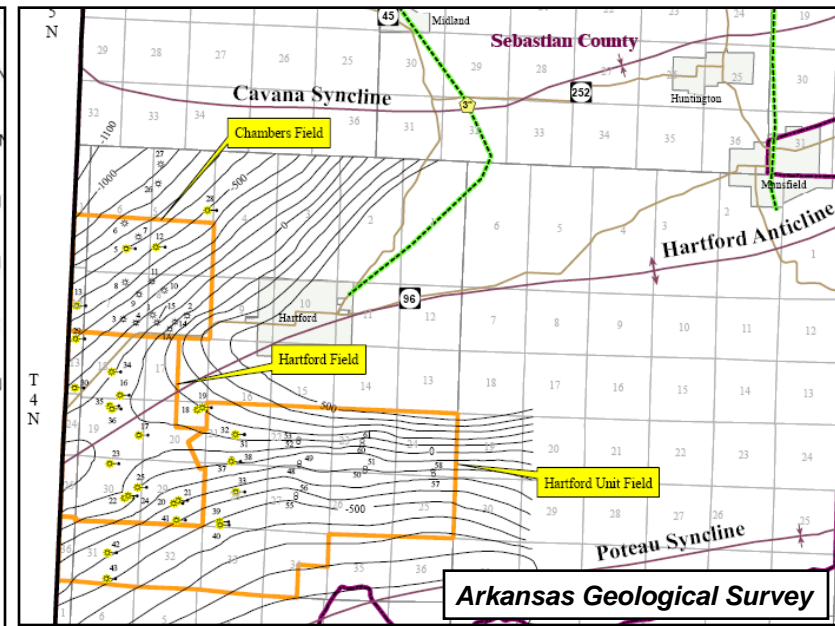
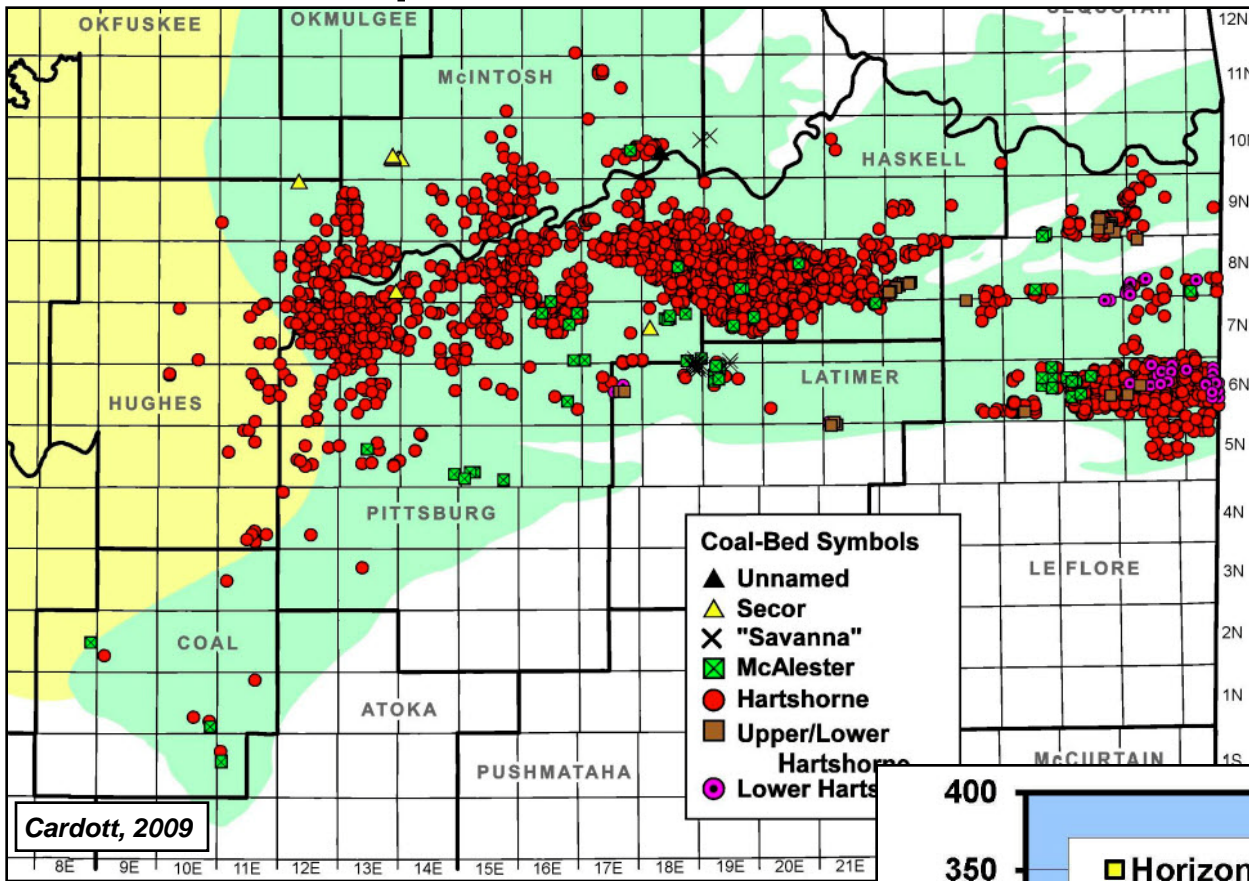




# Upper Hartshorne Coal Thickness & Channel Sandstone Distribution



# Recent Development of Coalbed Gas Resources



## Assessment Focus:

- Character of undeveloped area
- Estimation of EUR distribution
- Drainage area of horizontal wells
- How similar is undeveloped area?

