

2011 WYOMING RC&D – ENERGY CONFERENCE

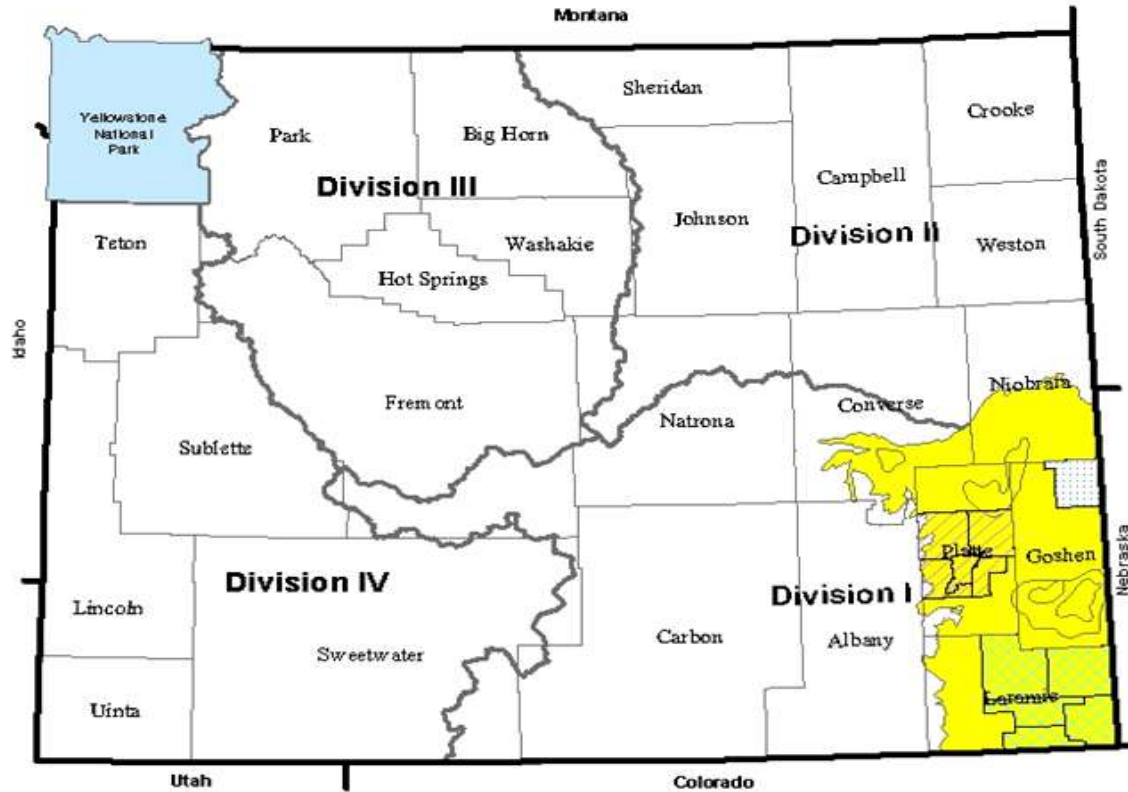
- APRIL 28, 2011

- BY

- JOHN R. BARNES, P.E.

- SURFACE WATER DIVISION ADMINISTRATOR

Control Areas



Legend

 PLATTE COUNTY CONTROL AREA

 LARAMIE COUNTY CONTROL AREA

 PRAIRIE CENTER CONTROL AREA

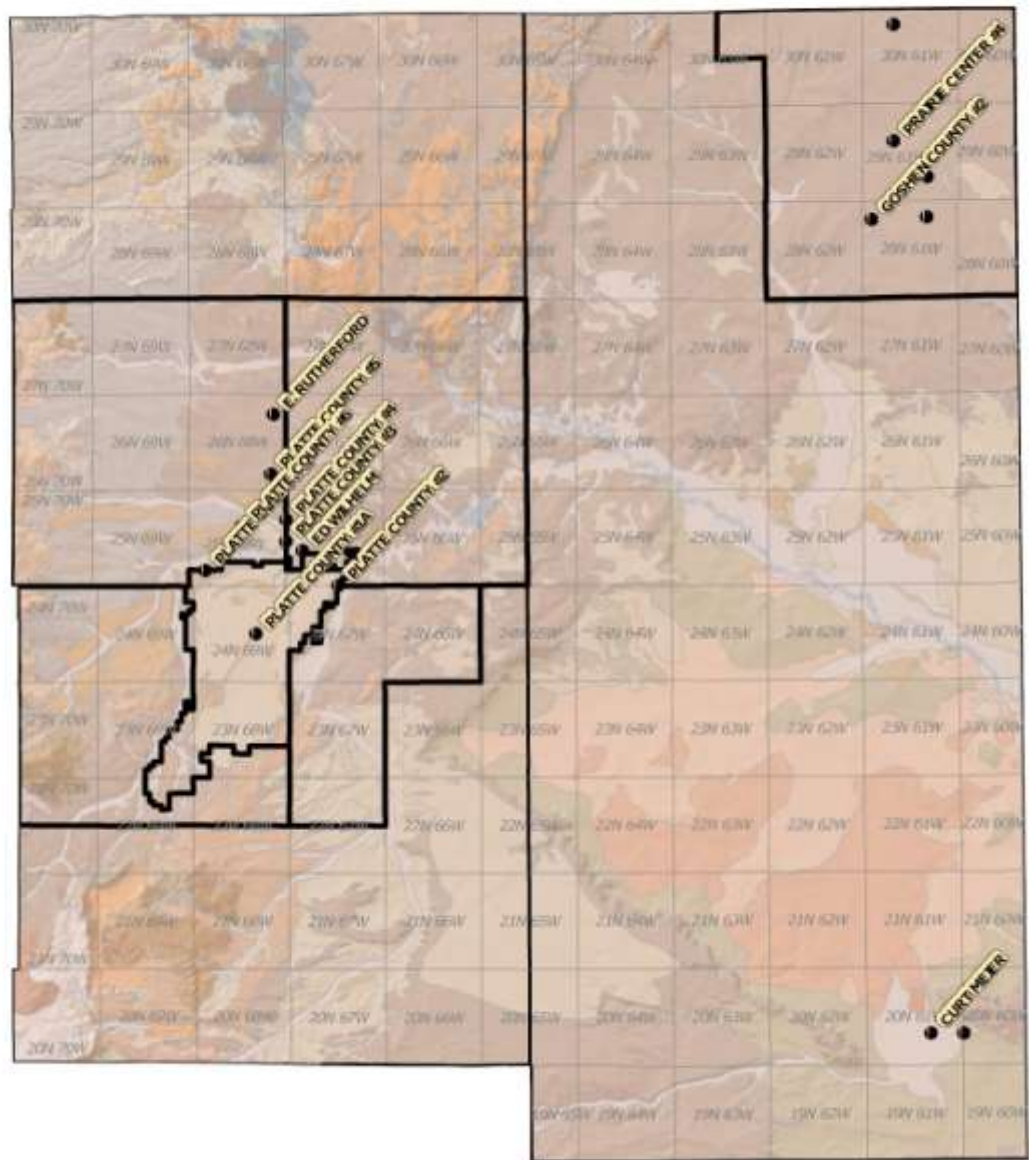
 Extent of High Plains Aquifer System in Wyoming

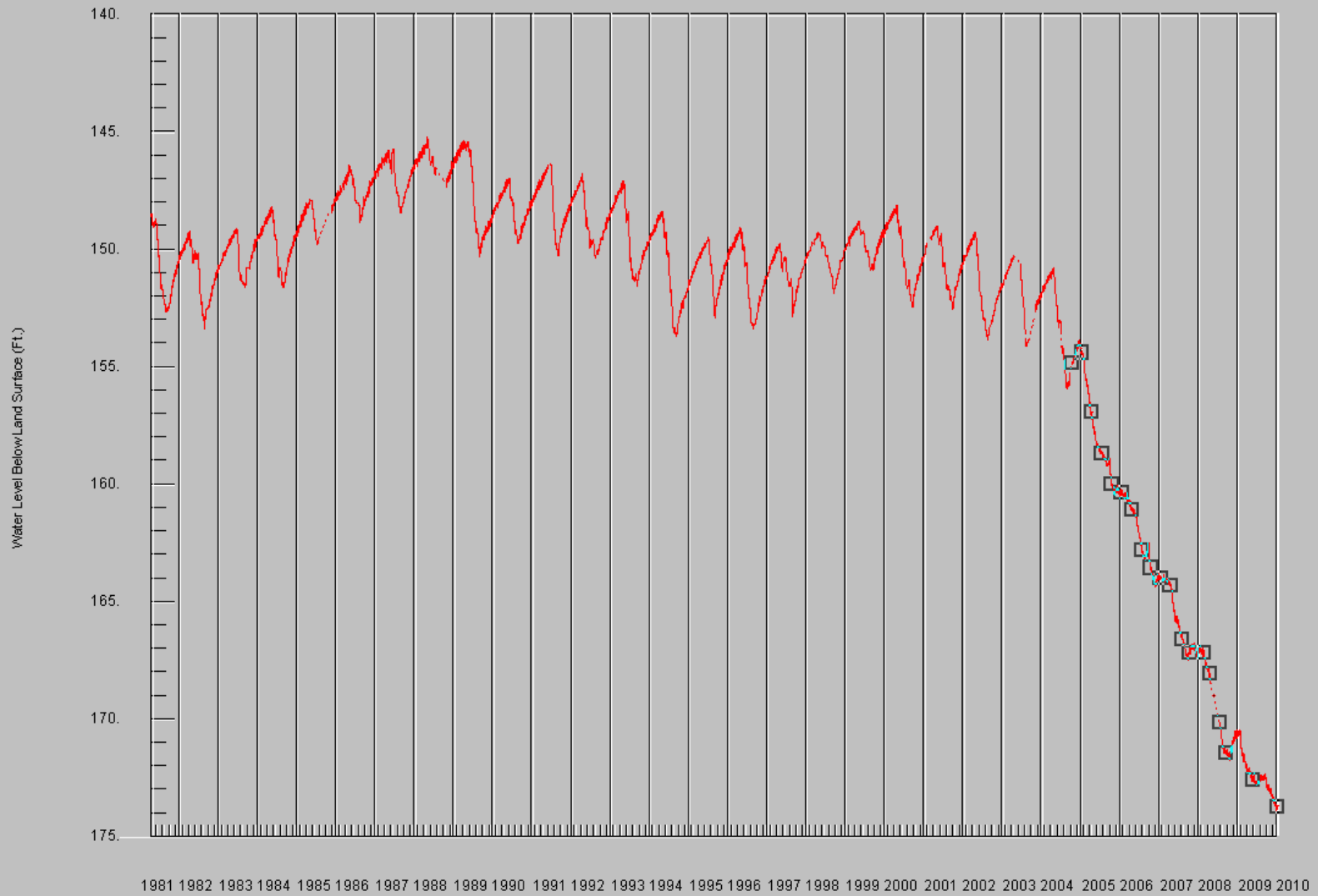
	GEOLOGIC UNIT	THICKNESS (feet)	ROCK TYPE
Blue	Alluvium, Colluvium, Terrace Deposits	0 to 200	Sand, gravel, mud, dirt in general
	Ogallala Group	0 to 330	Details below
	Arikaree Group	0 to 450	
	White River Group	0 to 500	
Orange	Lance (Laramie) Fm.	100 to 2,000	
Blue	Fox Hills Sandstone	190 to 360	
Orange	Pierre (Steele, Lewis, Cody) Shale	0 to 5,000 (3,000 in Cheyenne area?)	Shale with a few sandstone beds (Hygiene)
	Niobrara Fm.	325 to 400	Calcareous shale and limestone
	Frontier Fm.	550 to 600	Mostly shale with some thin sandstone beds
	Mowry Fm	80 to 200	Siliceous shale with bentonite beds
	Newcastle Sandstone	75 to 100	Sandstone with minor interbedded mudstone
Orange	Skull Creek Shale	70 to 150	Shale with local limestone
Light Blue	Cloverly Fm.	100 to 200	2 sandstone beds with minor conglomerate split by intervening shale
	Morrison Fm.	200 to 230	Variegated shale with sandstone beds
Light Blue	Sundance Fm.	40 to 100	Sandstone and sandy shale
Orange	Chugwater Fm.	430 to 500	Red siltstone and very fine-grained sandstone
	Goose Egg Fm.	200 to 250	Red siltstone and very fine-grained sandstone with interbedded shale, limestone, dolomite, gypsum
Blue	Casper(Hartville) Fm.	800 to 900	Repetitively interbedded limestone and sandstone
	Basement		Igneous, metamorphic rocks

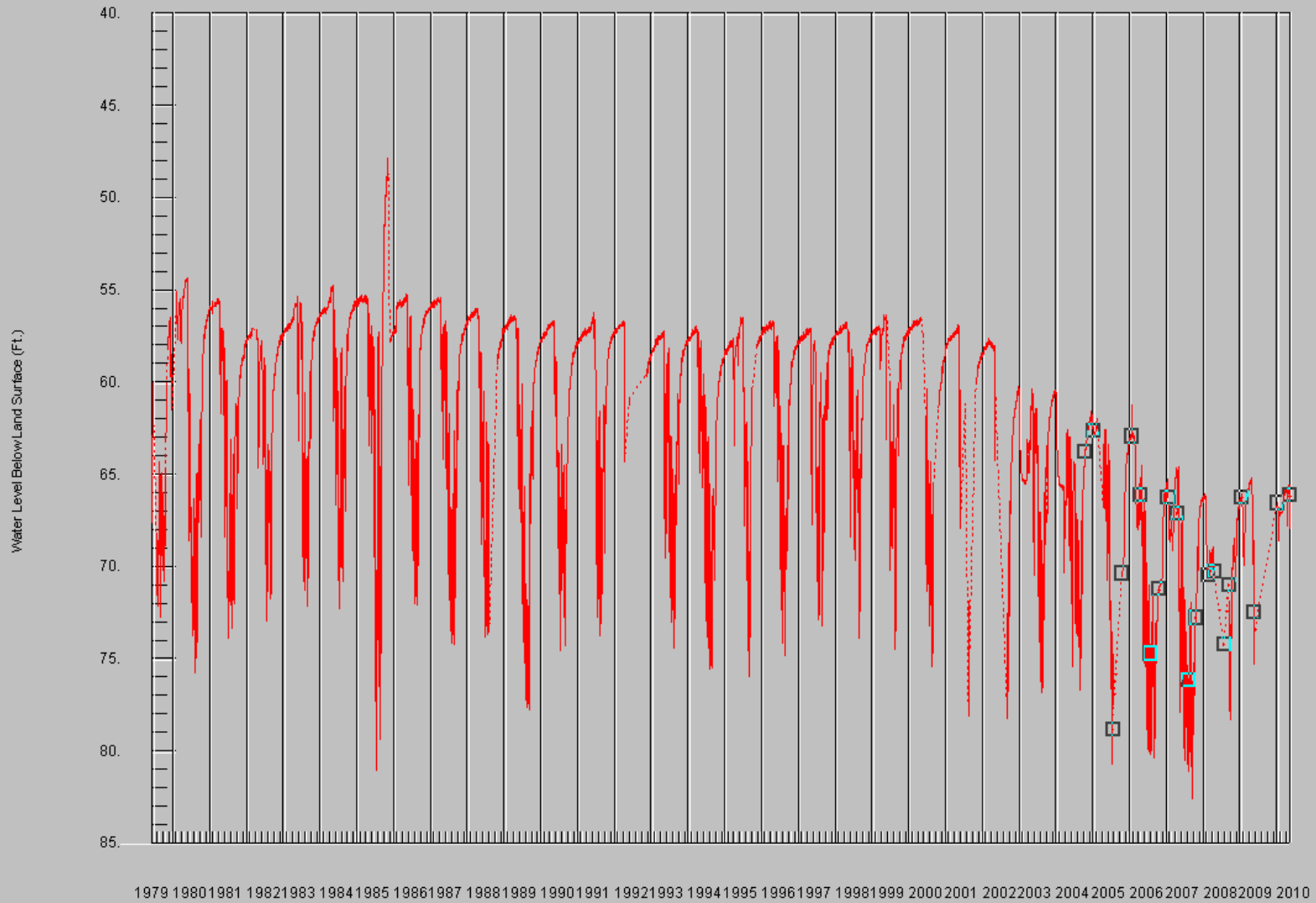
Platte & Goshen Counties

USGS Monitor Wells

- USGS Monitor Wells
- Control Areas



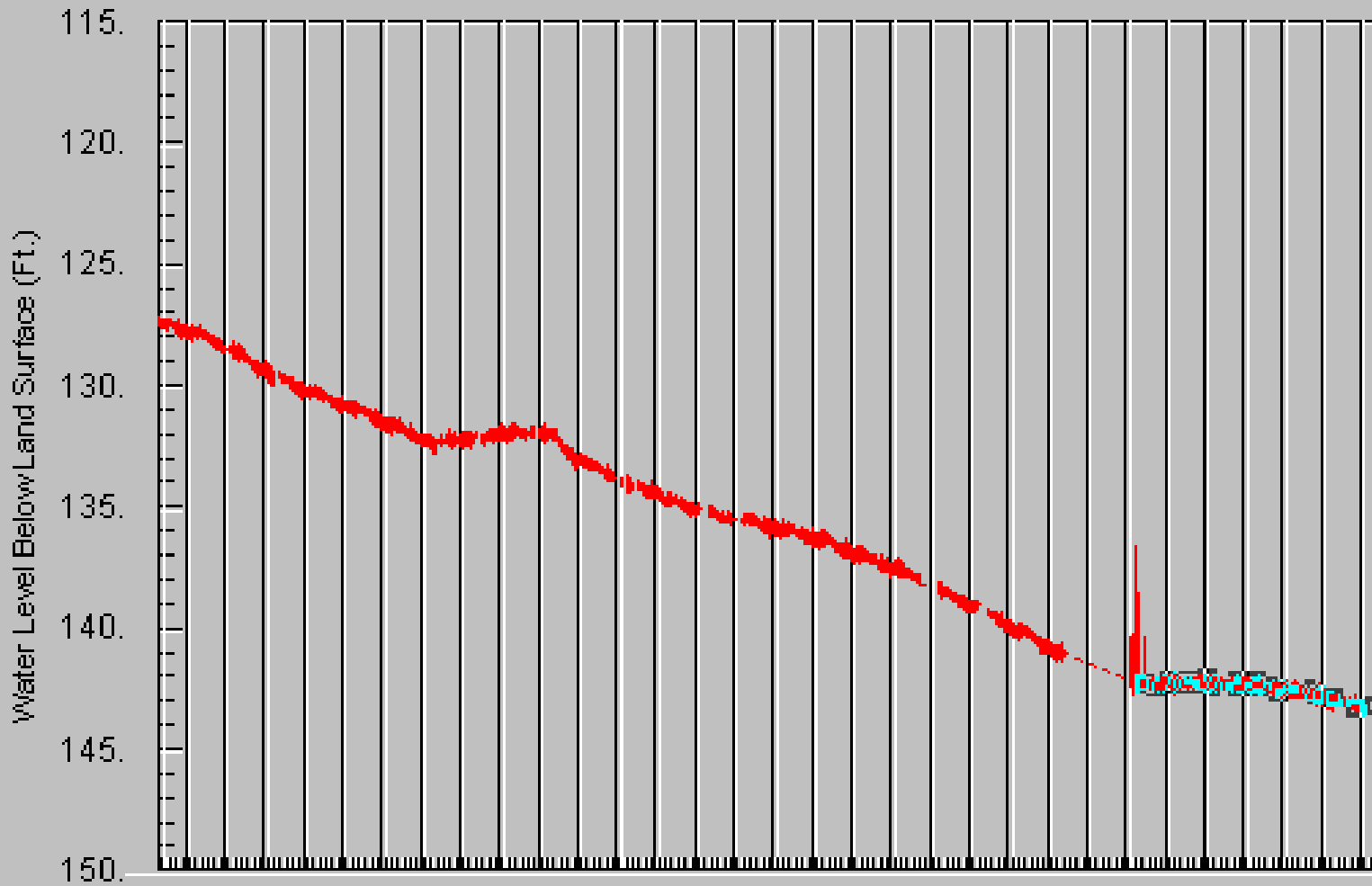




Goshen County

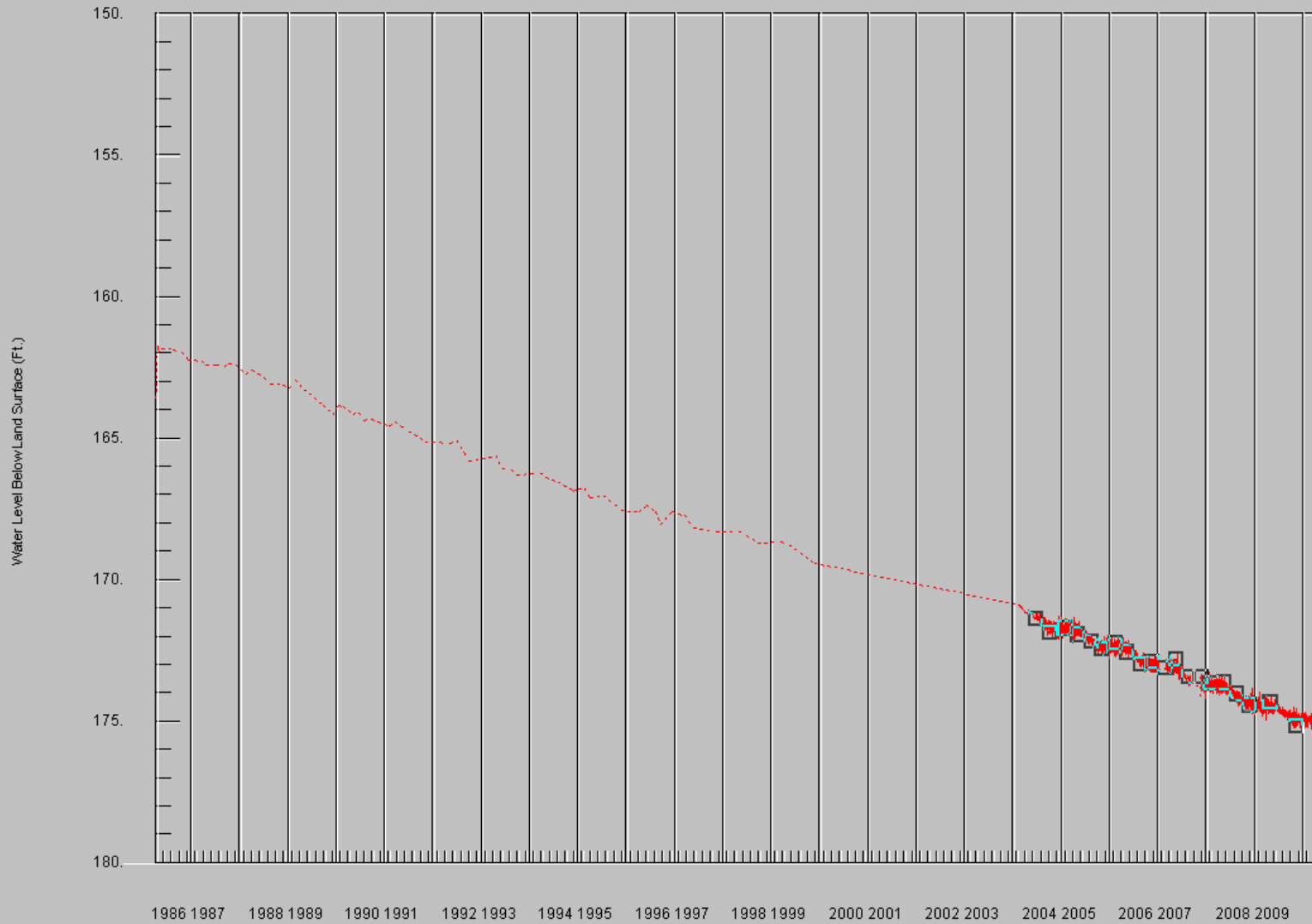
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Goshen County #2



SUMMARY

- Niobrara Shale-related development is occurring in groundwater control areas – these areas are already impacted by high agricultural use
- There are mechanisms available to obtain groundwater for temporary uses (both in and outside of) a groundwater control area, while
 - Minimizing impacts to the groundwater resource
 - Protecting other groundwater appropriators

Policy Memos & Guidances

- **February 12, 2010** Policy Memorandum: Issuance of Temporary Use Agreements (TUAs) in Ground Water Control Areas
- **July 28, 2010** Policy Memorandum: Control Area Advisory Board Review for Miscellaneous Use Applications in Ground Water Control Areas
- **August 2, 2010** Guidance: OBTAINING TEMPORARY WATER SUPPLIES
- **September 23, 2010** Policy Memorandum: Issuance of Temporary Water Use Agreements (TWUAs) Outside the Ground Water Control Areas

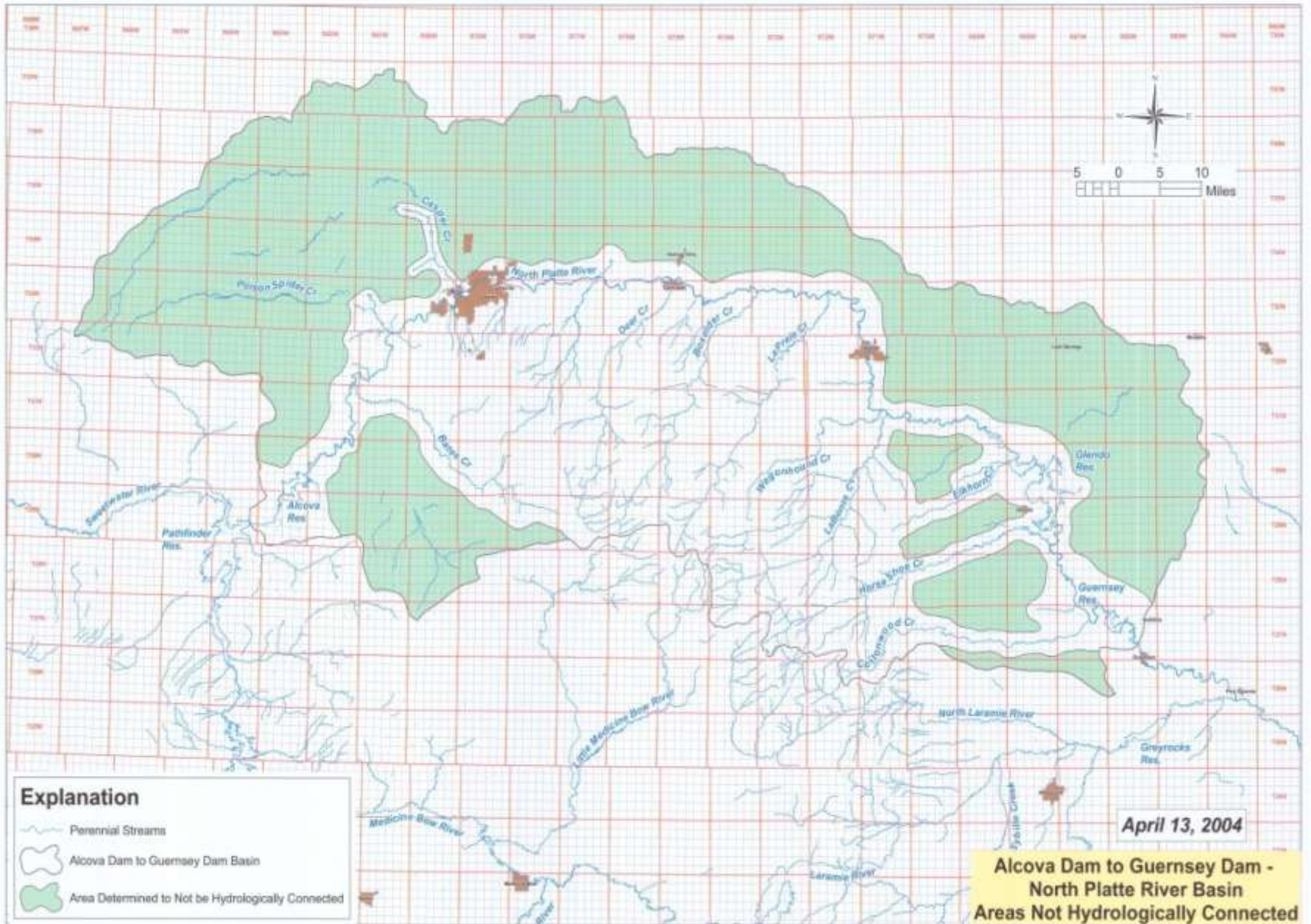
<http://seo.state.wy.us/>

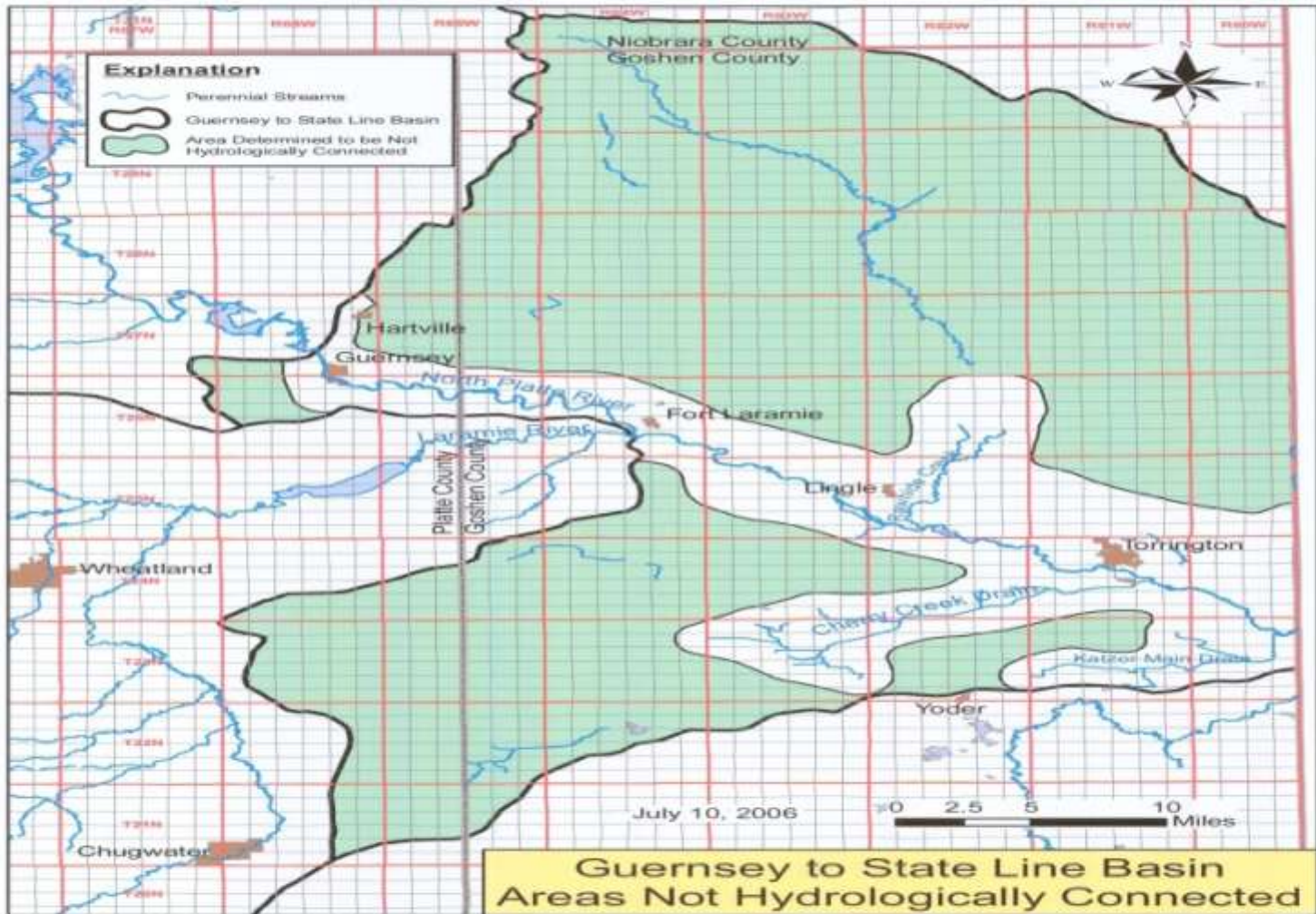
TEMPORARY SOURCE WATER

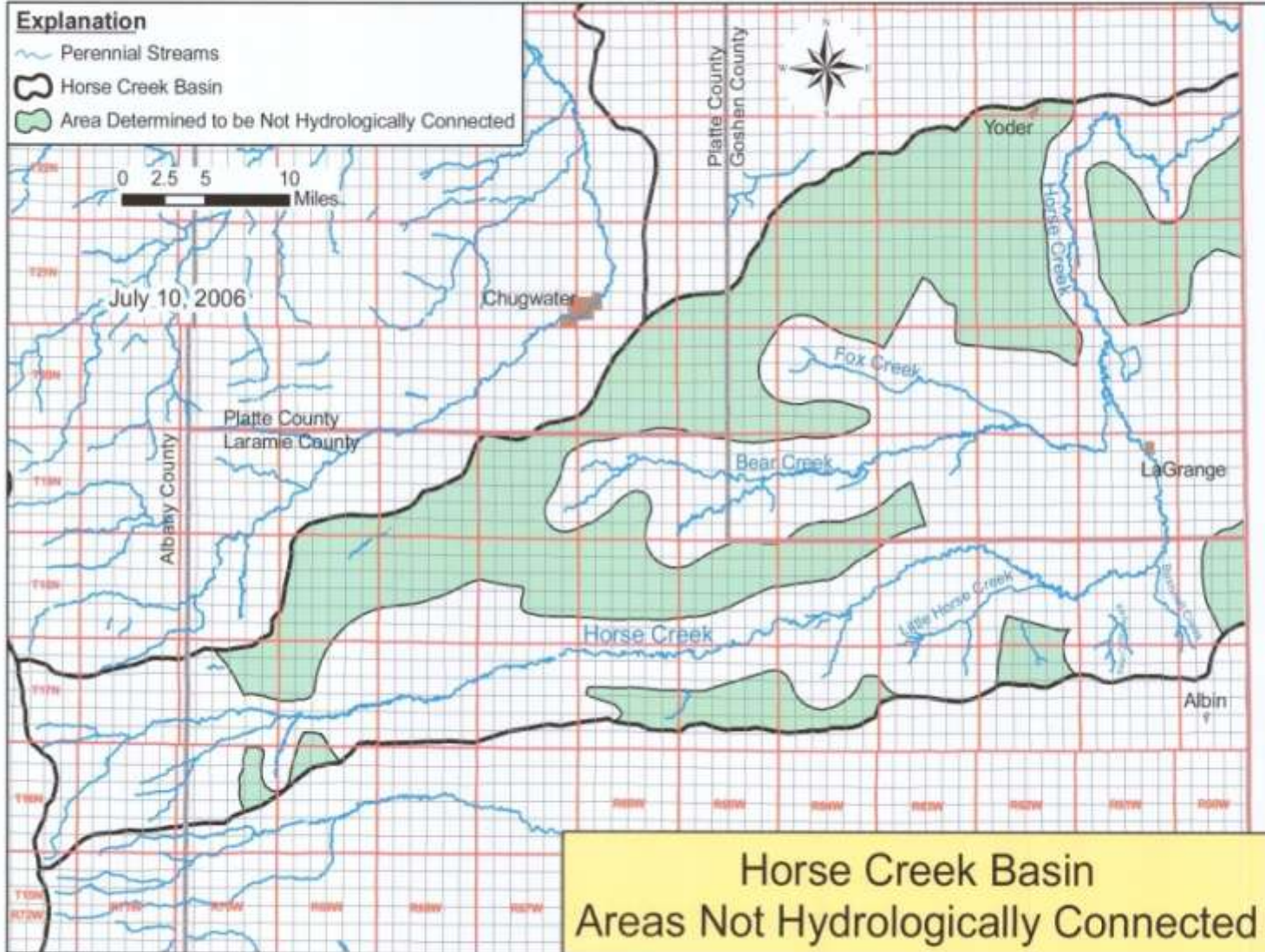
- UNAPPROPRIATED
- APPROPRIATED

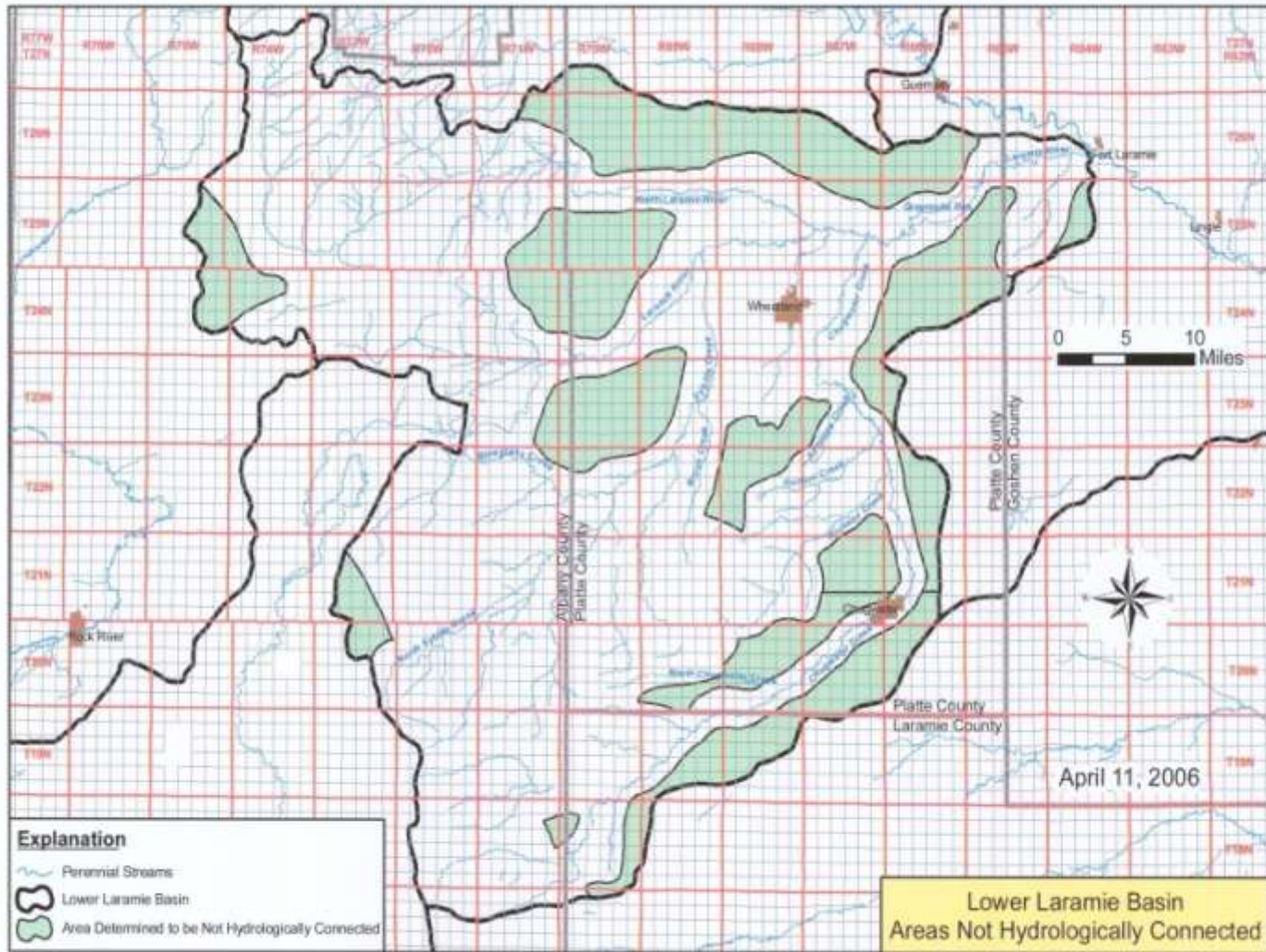
UNAPPROPRIATED WATER

- S.W. 1 FORM – SURFACE WATER
- U.W. 5 FORM – GROUND WATER









Explanation

-  Perennial Streams
-  Lower Laramie Basin
-  Area Determined to be Not Hydrologically Connected

Lower Laramie Basin
Areas Not Hydrologically Connected

APPROPRIATED WATER

W.S. 41-3-110

-MUST BE AN ACTIVE RIGHT

-MUST FOREGO CONSUMPTIVE
USE

-CONTROL AREA POLICY

-OUTSIDE CONTROL AREA
POLICY

WATER AVAILABLE UNDER TWUAS

55 TEMPORARY WATER USE
AGREEMENTS TOTALLING

5,374.07 ACRE-FEET

LANDS OUT OF PRODUCTION

3,162.04 ACRES

THANK YOU!