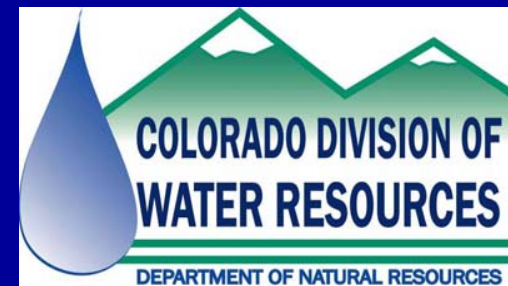


# Administration of Wells in the Arkansas Basin

SEO Water Forum  
September 6, 2006  
Bill W. Tyner  
Assistant Division Engineer,  
Division 2



# Measurement of Wells

- Accurate measurement of well production is key to the administration of the Arkansas Use Rules. The Measurement Rules provide three acceptable measurement methods:
  - Power Consumption Coefficient
  - Totalizing Flow Meter
  - Inactive Affidavit



- Power Consumption Coefficient is the number of kilowatt hours required to produce one acre-foot of water by a particular system.





- Totalizing Flow Meter.



Inactive Affidavit: Non-exempt wells without a measurement method are prohibited from diverting and can be posted with a well-head order.



STATE OF COLORADO  
DIVISION OF WATER RESOURCES



Structure ID \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

**THE DIVERSION OF WATER FROM  
THIS WELL IS PROHIBITED**

The owner/user of this well is ordered not to divert any water pursuant to section 37-92-502, C.R.S. Use of this well is in violation of the **AMENDED RULES AND REGULATIONS GOVERNING THE DIVERSION AND USE OF TRIBUTARY GROUND WATER IN THE ARKANSAS RIVER BASIN** and/or the **AMENDMENTS TO RULES GOVERNING THE MEASUREMENT OF TRIBUTARY GROUND WATER DIVERSIONS LOCATED IN THE ARKANSAS RIVER BASIN, COLORADO** and section 37-92-501, C.R.S. Pursuant to section 37-92-503, C.R.S. violation of this order subjects the owner/user of this well to fines not to exceed \$500.00 per day plus applicable fees at the discretion of Division II Water Court.

**THIS ORDER SHALL ONLY BE REMOVED BY DWR PERSONNEL. NO PUMPING SHALL OCCUR BEFORE REMOVAL OF THIS ORDER BY DWR PERSONNEL.**

Signed: \_\_\_\_\_

Further information can be obtained by  
contacting the Division of Water Resources:

310 E. Abriendo  
Suite B  
Pueblo, Colorado 81004  
(719) 542-3368

301 Colorado Avenue, Suite 303  
P.O. Box 767  
La Junta, Colorado 81050-0767  
(719) 384-1000

# Implementation of the Arkansas Use Rules

- The Arkansas Use Rules have a dual purpose; to protect senior Colorado surface water rights from out of priority depletions caused by junior tributary ground water rights and to prevent depletions to usable Stateline flow that would otherwise occur as a result of pumping post-Compact wells in Colorado.

## Some of the key points:

- Non-exempt tributary wells may not be pumped, except under annual SEO approved replacement plans pursuant to the Arkansas Use Rules, SEO approved Substitute Water Supply Plans pursuant to 37-92-308, or Court approved augmentation plans.
- SEO may approve use of senior rights as replacement sources for up to 10 years.
- Replacement requirements determined using presumptive depletion factors (PDFs) applied to amount pumped each month.
- This method of estimating depletion is subject to determinations based on use of HI Model over 10 yrs for Compact compliance purposes.

# Replacement Plans Under the Arkansas Use Rules

- Most irrigation wells and many high capacity municipal and commercial wells replace depletions under plans annually reviewed by the Division Engineer's staff in Division 2 and approved by the State Engineer
- Large plans comprise most of the approved pumping:
  - Lower Arkansas Water Management Association – LAWMA
  - Colorado Water Protective & Development Association – CWPDA
  - Arkansas Groundwater Users' Association - AGUA



# Plan Summaries from 2006 Plan Approvals

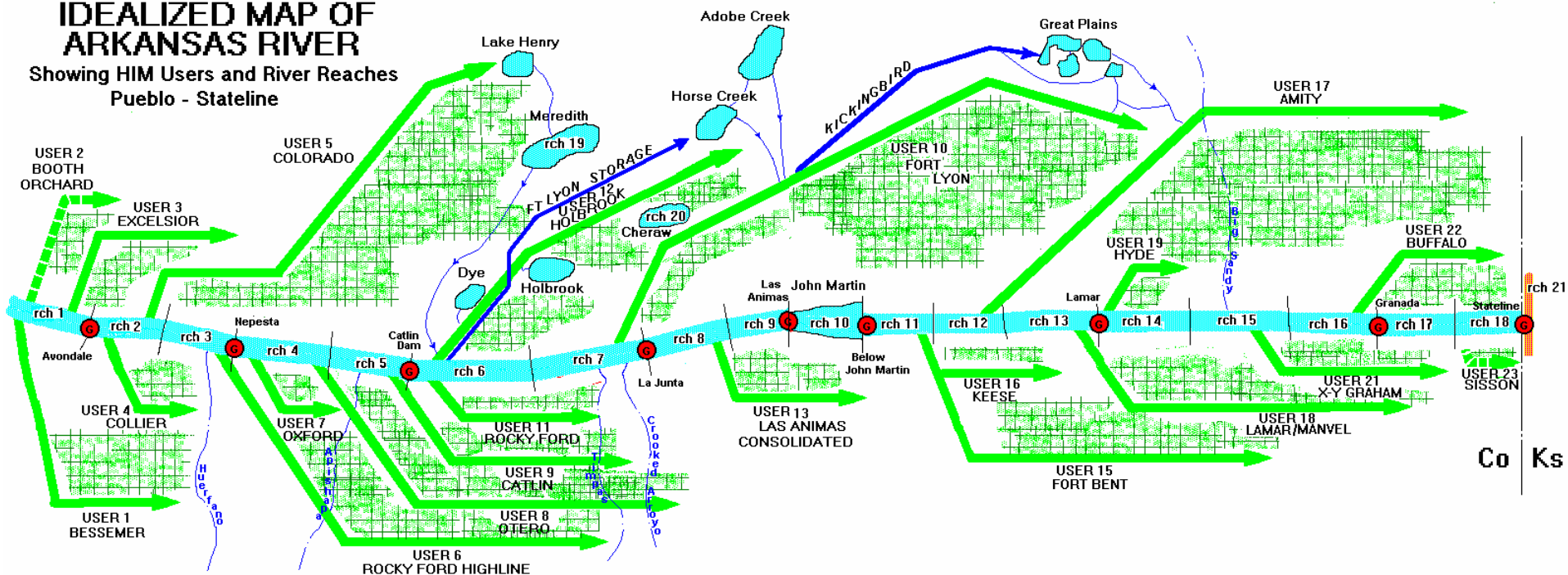
- LAWMA: 525 Wells with 48,000 acre-feet of pumping
- CWPDA: 1,038 Wells with 60,000 acre-feet of pumping
- AGUA: 311 Wells with 10,000 acre-feet of pumping



- Obtain monthly pumping amounts from individuals, well associations and power companies.
- Convert pumping numbers to depletions using presumptive depletion factors approved in the “use rules” by Water Court and utilizing modeling and spreadsheet techniques designed by DWR
- Perform accounting functions and authorize releases to assure depletions are replaced in time, place and amount.

# IDEALIZED MAP OF ARKANSAS RIVER

Showing HIM Users and River Reaches  
Pueblo - Stateline

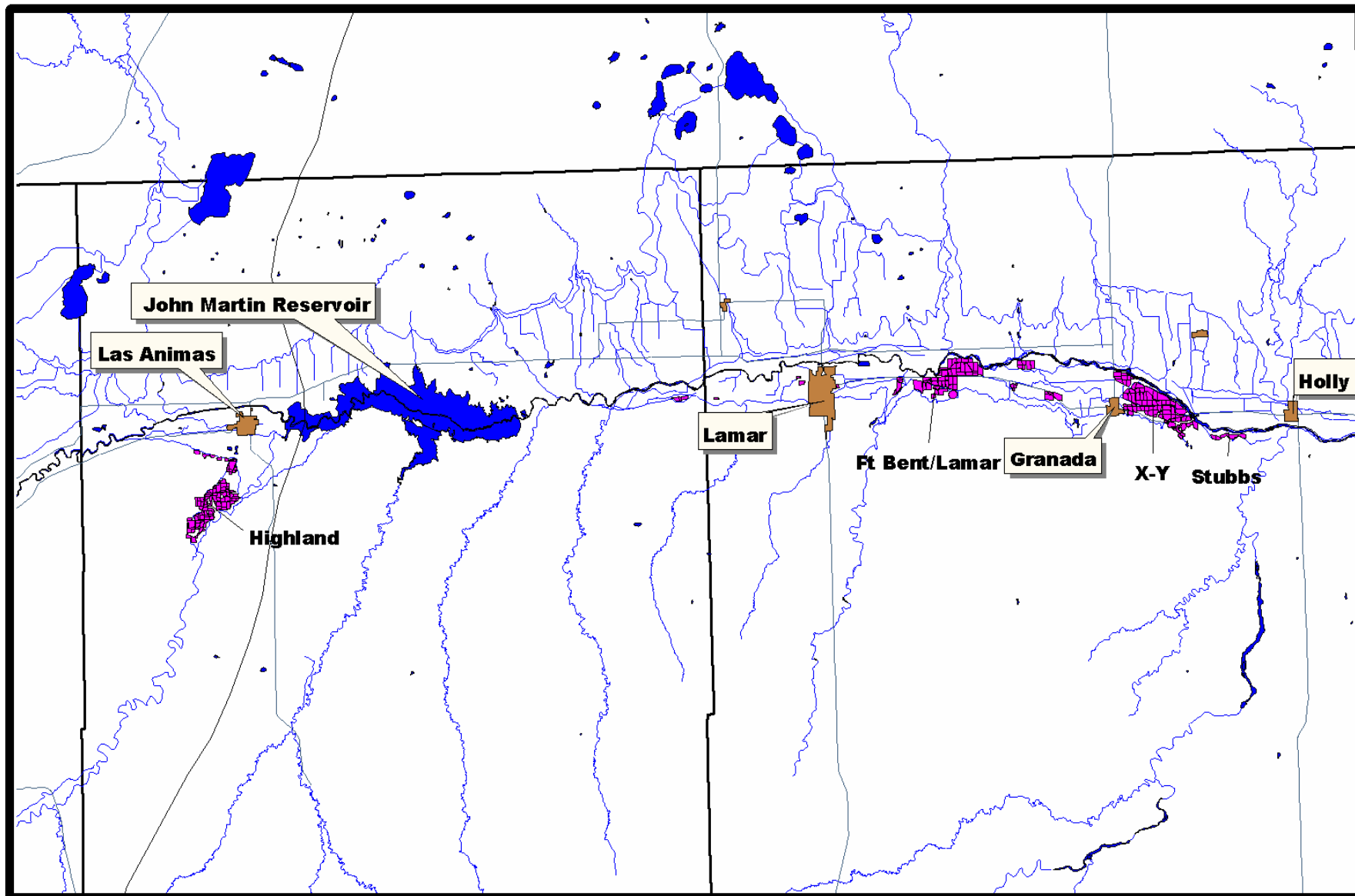


# Conduct Monthly Augmentation Coordination Meetings

- Meet with well associations monthly through irrigation season and for special meetings related to any possible changes in plan approval/operation
- Report stream depletions and already concluded replacement operations
- Decide on additional replacement operations to be conducted



# LAWMA Replacement Operations



# Summary of Well Administration in the Arkansas River Basin

- Accurate and current measuring methods
- Pumping allowed only if under an approved plan
- Aggressive field presence to enforce the measurement and use rules
- Timely monthly operations to compute pumping, stream depletions and replacement requirements
- Active coordination with well associations