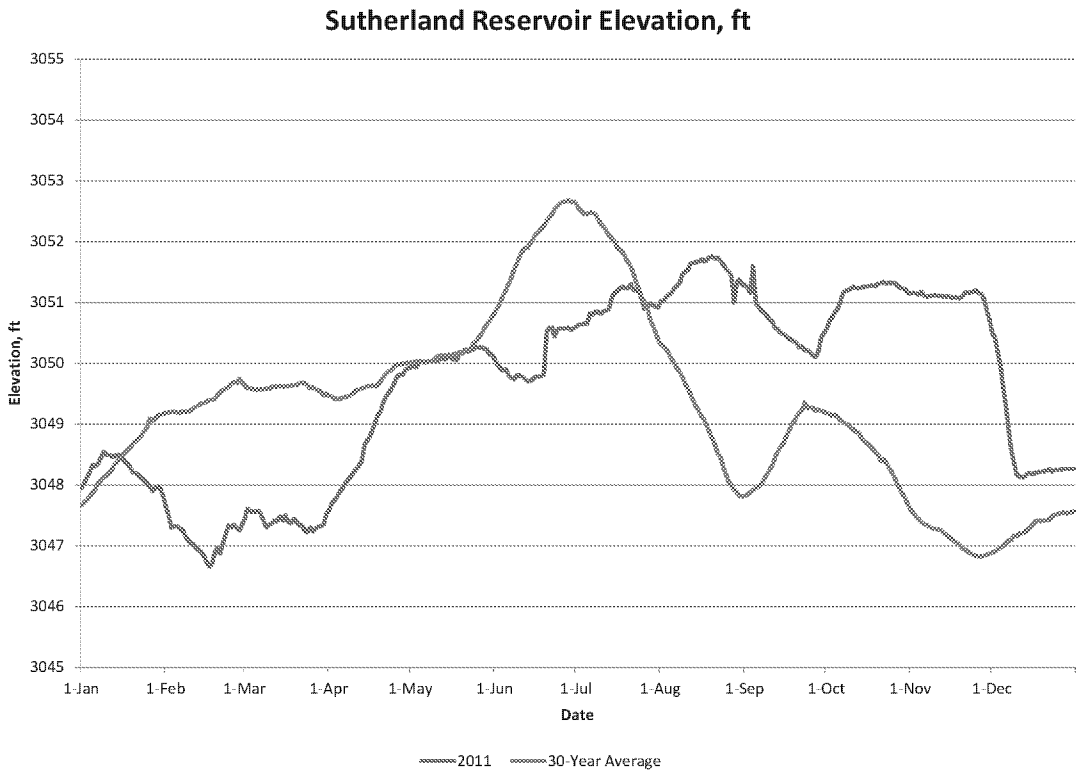
GGS Landowner Committee Meeting

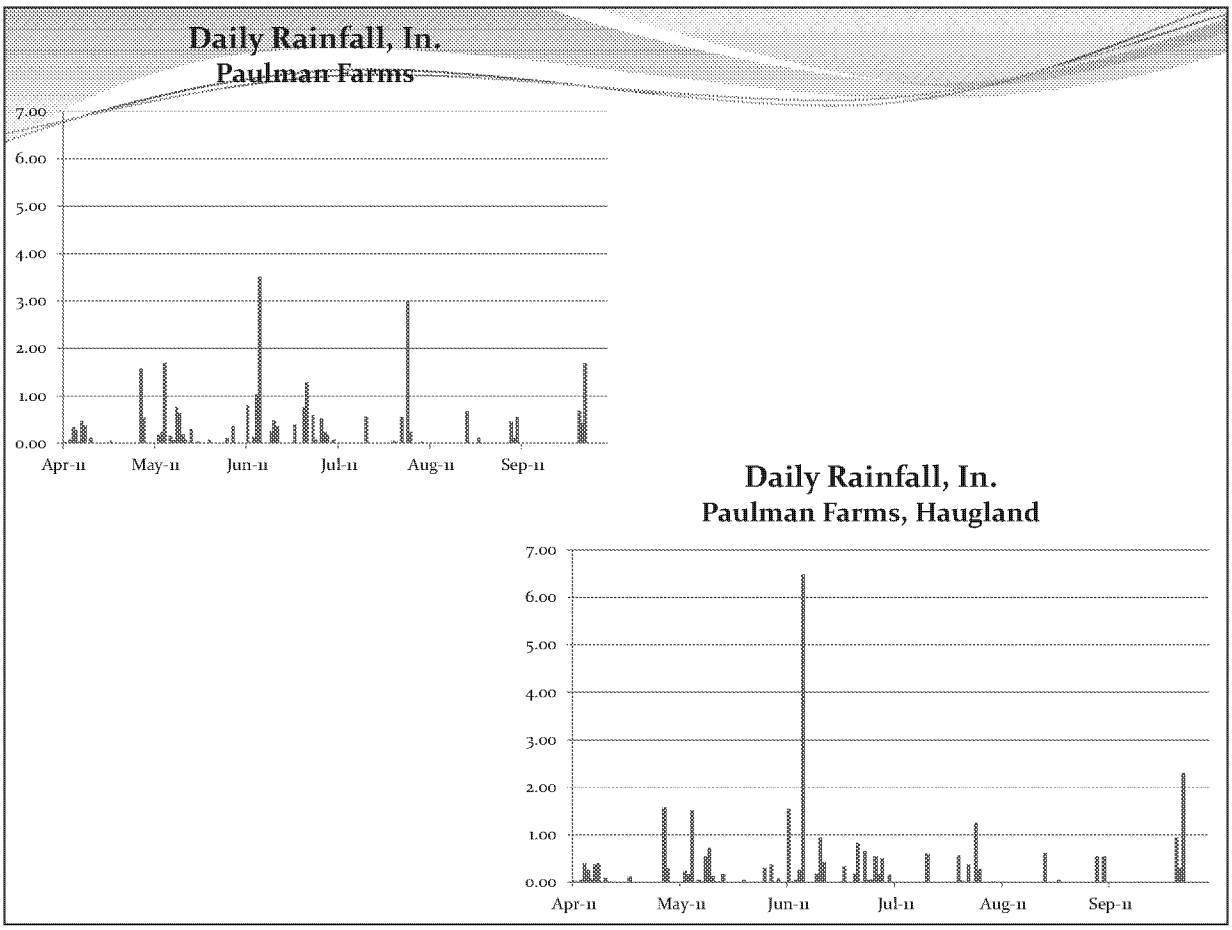
March 21, 2012

Agenda

- Review of Last Meeting Notes
- 2011 Water Operations
- 2011 GGS Well Operations
- Monitoring Well Summary
- TPNRD Well Monitoring
- 2007, 2011 Modeling Summary
- 2012 Conditions and Operations
- Mitigation Agreement Discussion
- Other Topics
- Questions, Comments, Recommendations

2011 Water Operations




Daily Rainfall, In.
Paulman Farms
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Daily Rainfall, In.
Paulman Farms, Haugland
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11

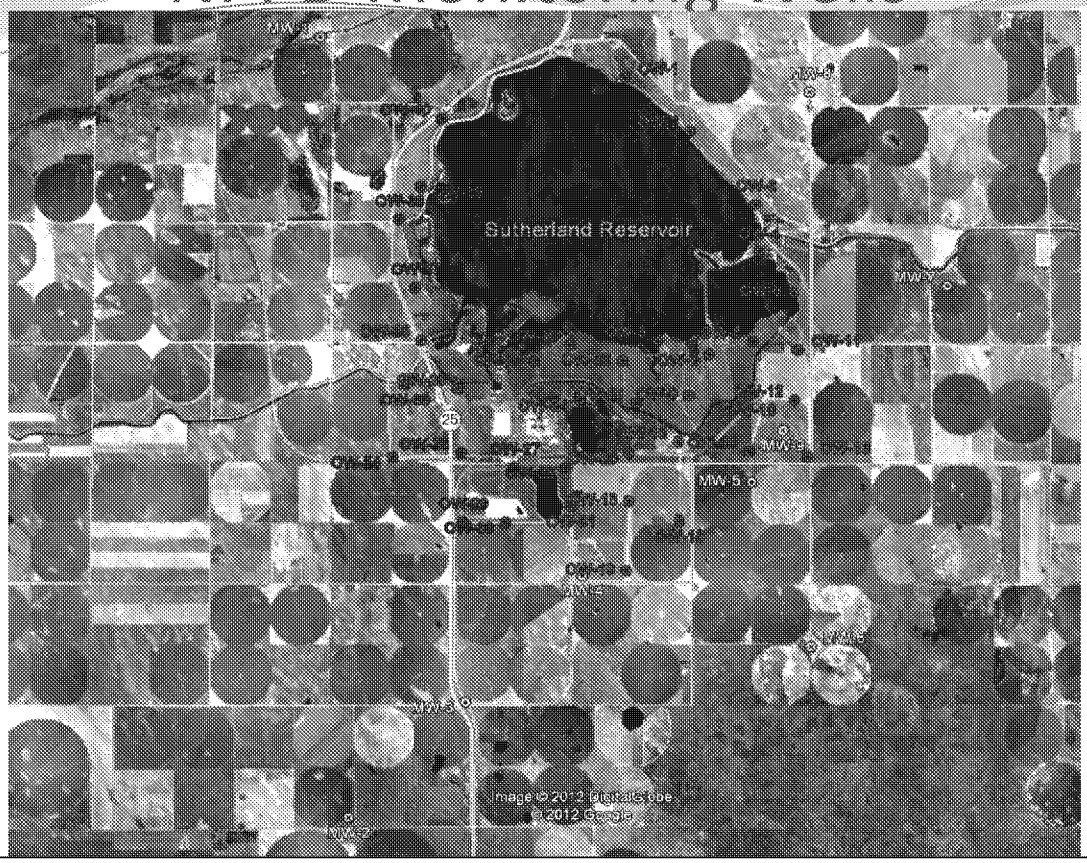
2011 GGS Well Operations

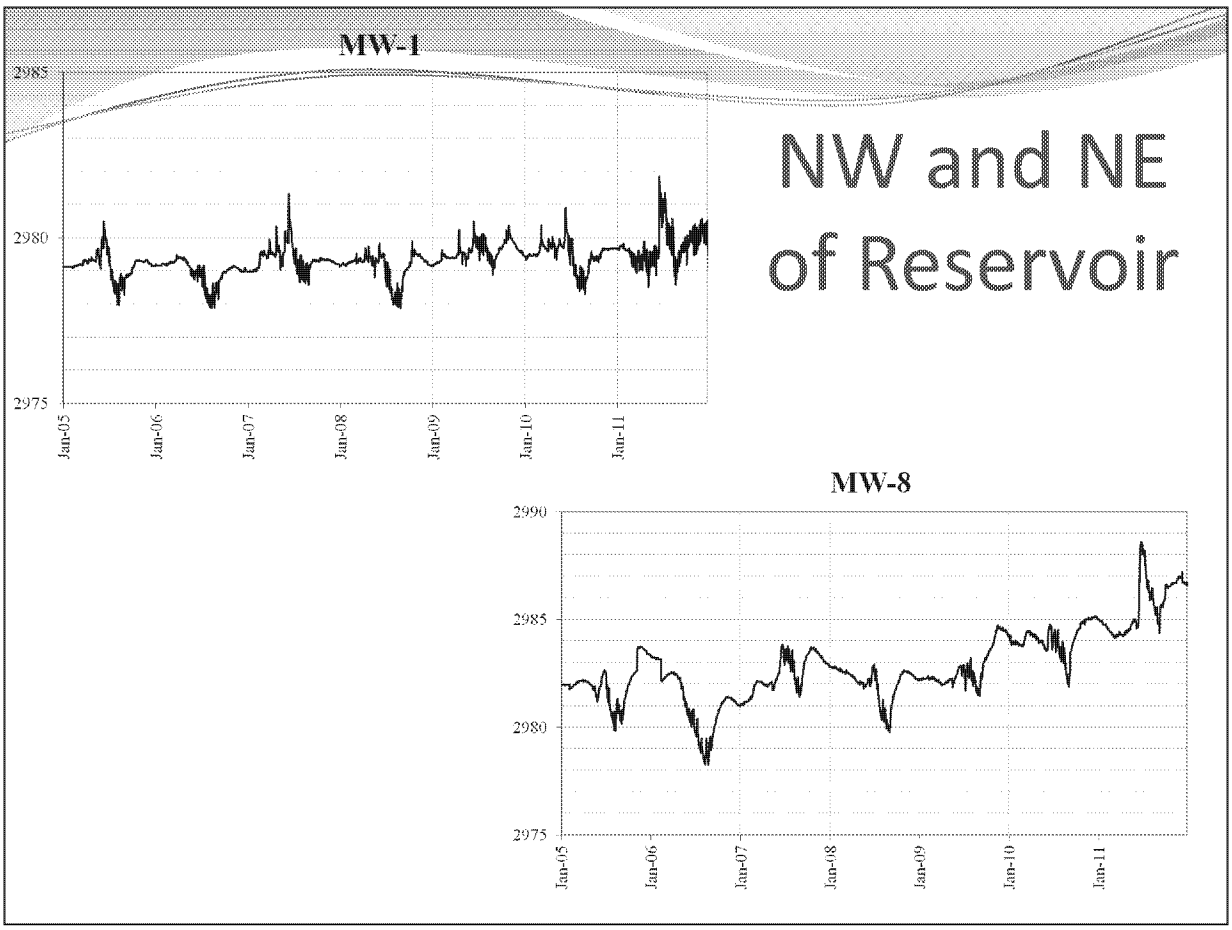
Year	Total AF	Operated
2011	13	test & flush
2010	1,127	6/22 – 7/1
2009	3,241	6/21 – 8/30
2008	426	6/22 – 8/10
2007	8,194	6/21 – 9/8
2006	3,444	6/25 – 8/24
2005	4,451	7/12 – 9/10

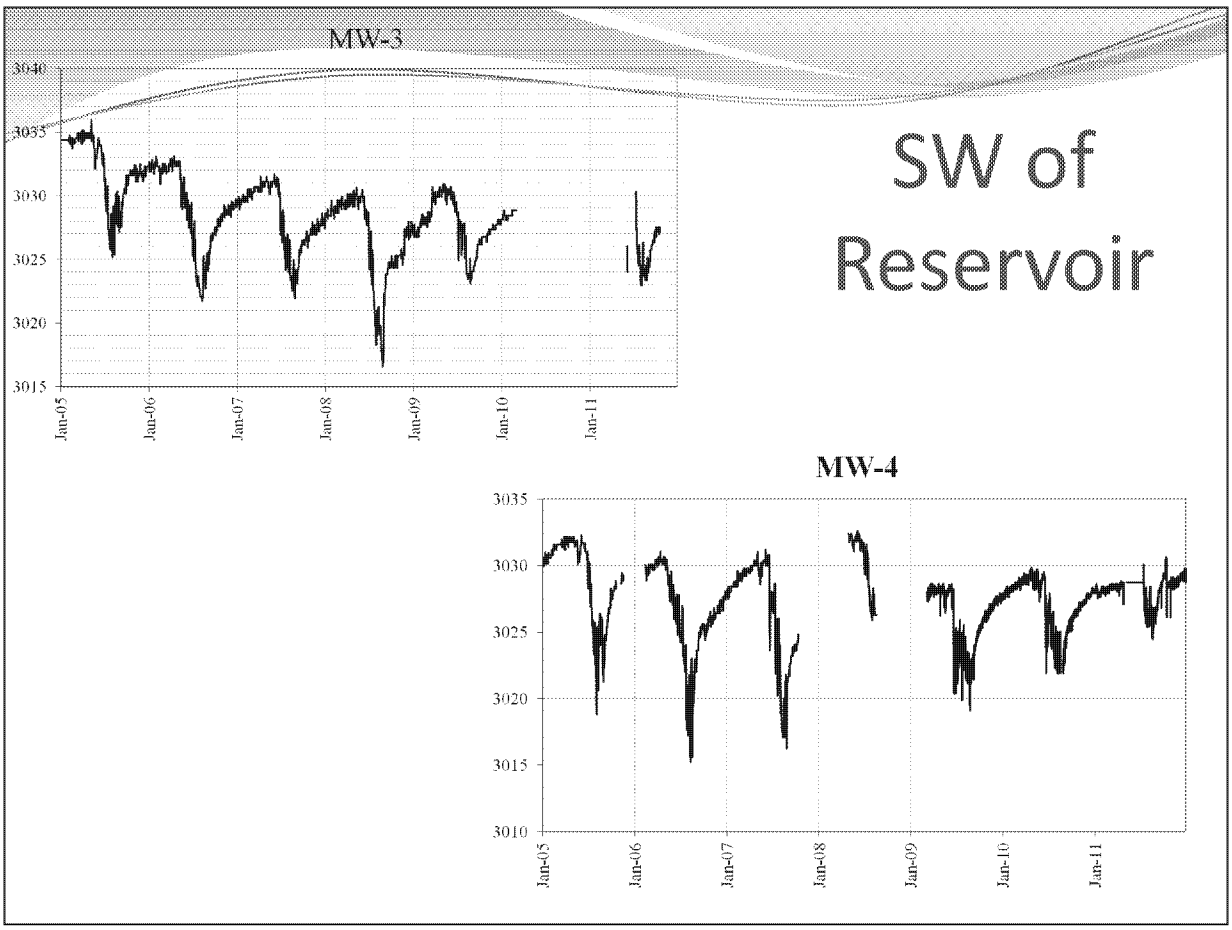
Operation is periodic in the time period, not continuous.

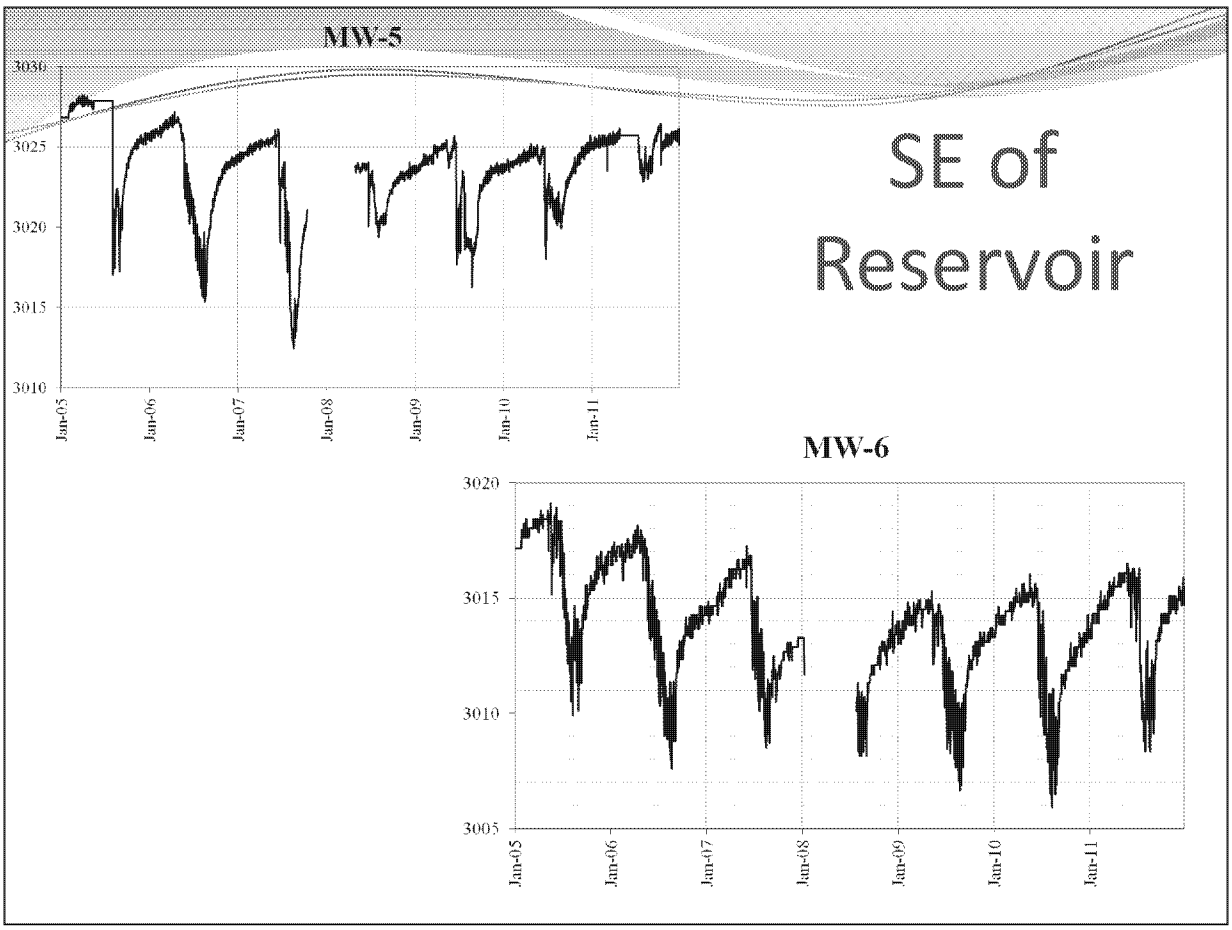
Monitoring Well Summary

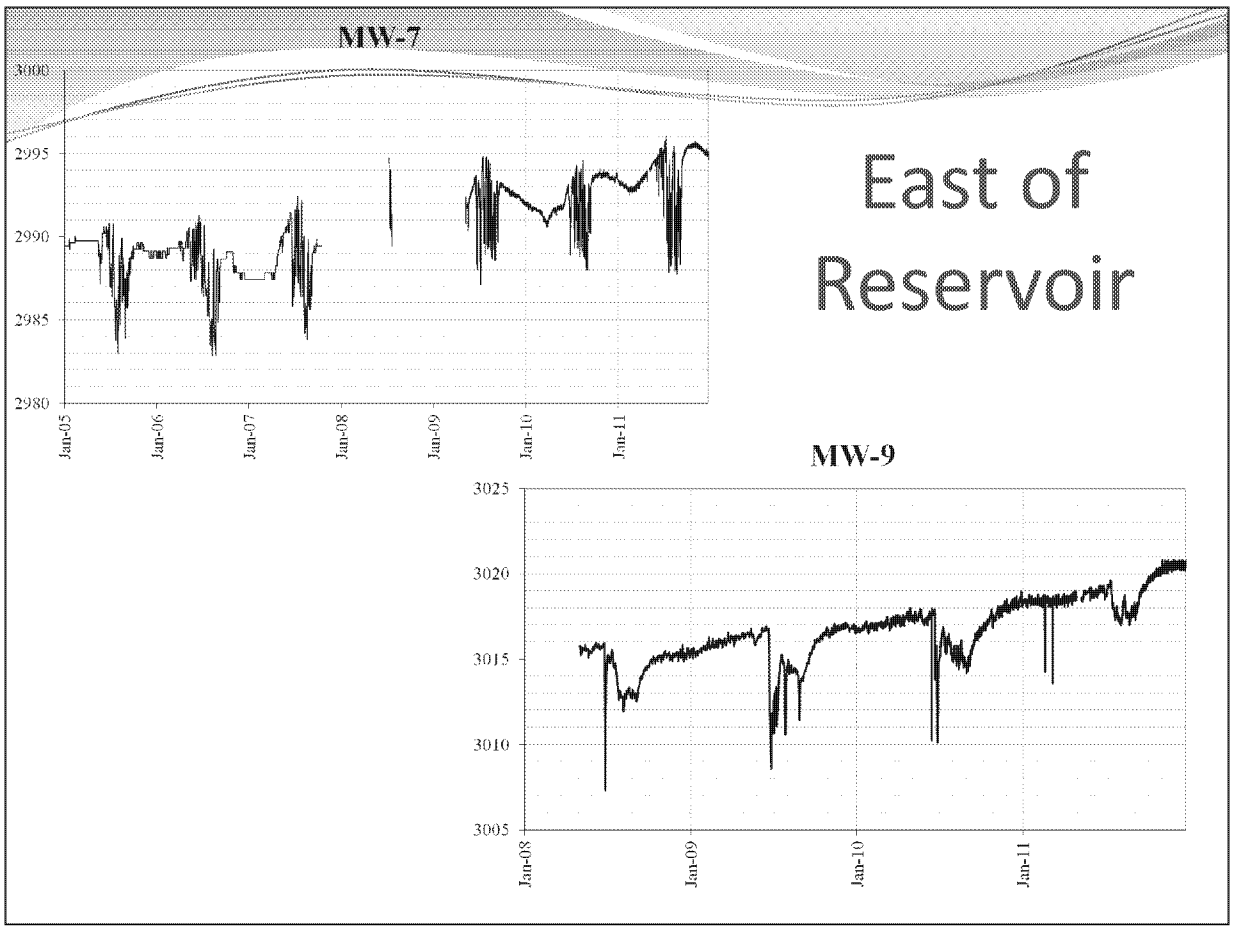
NPPD Monitoring Wells




MW-1
2985
2980
2975
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
NW and NE of Reservoir
MW-8
2990
2985
2980
2975
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11

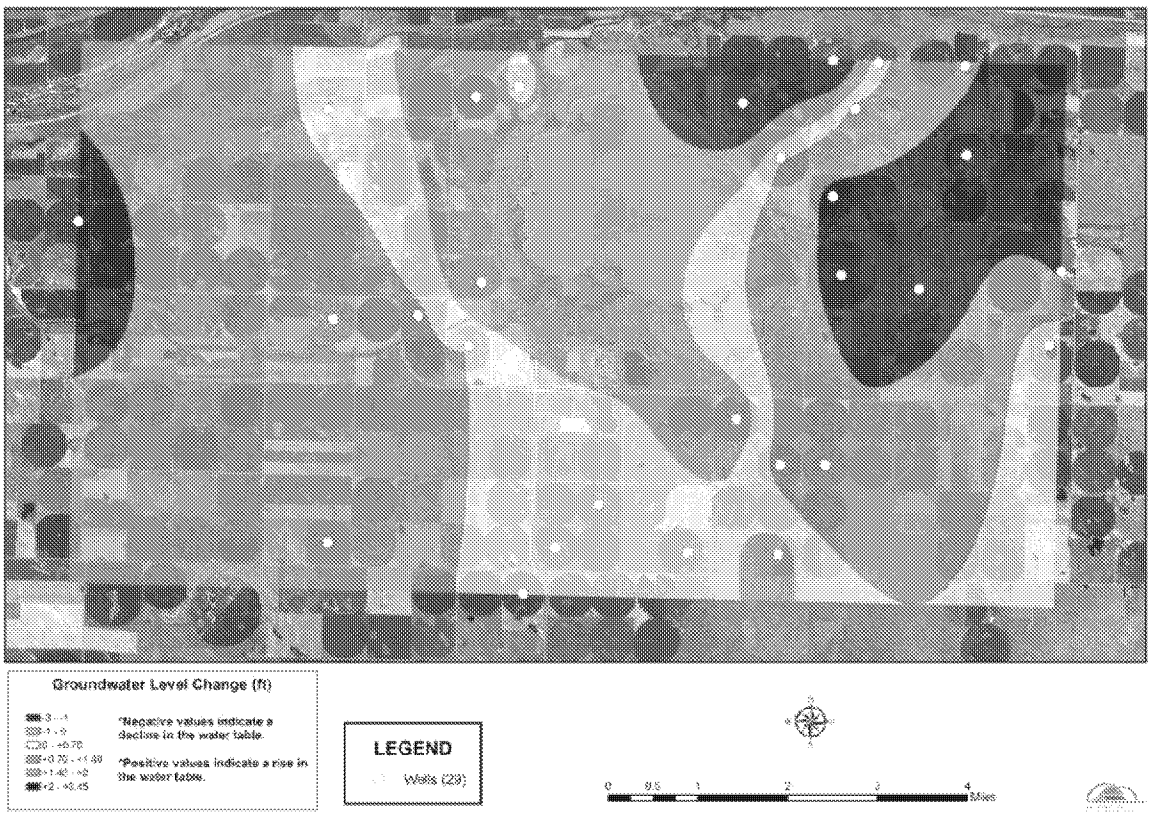

MW-3
3040
3035
3030
3025
3020
3015
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
SW of Reservoir
MW-4
3035
3030
3025
3020
3015
3010
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11


MW-5
3030
3025
3020
3015
3010
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
SE of Reservoir
MW-6
3020
3015
3010
3005
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11

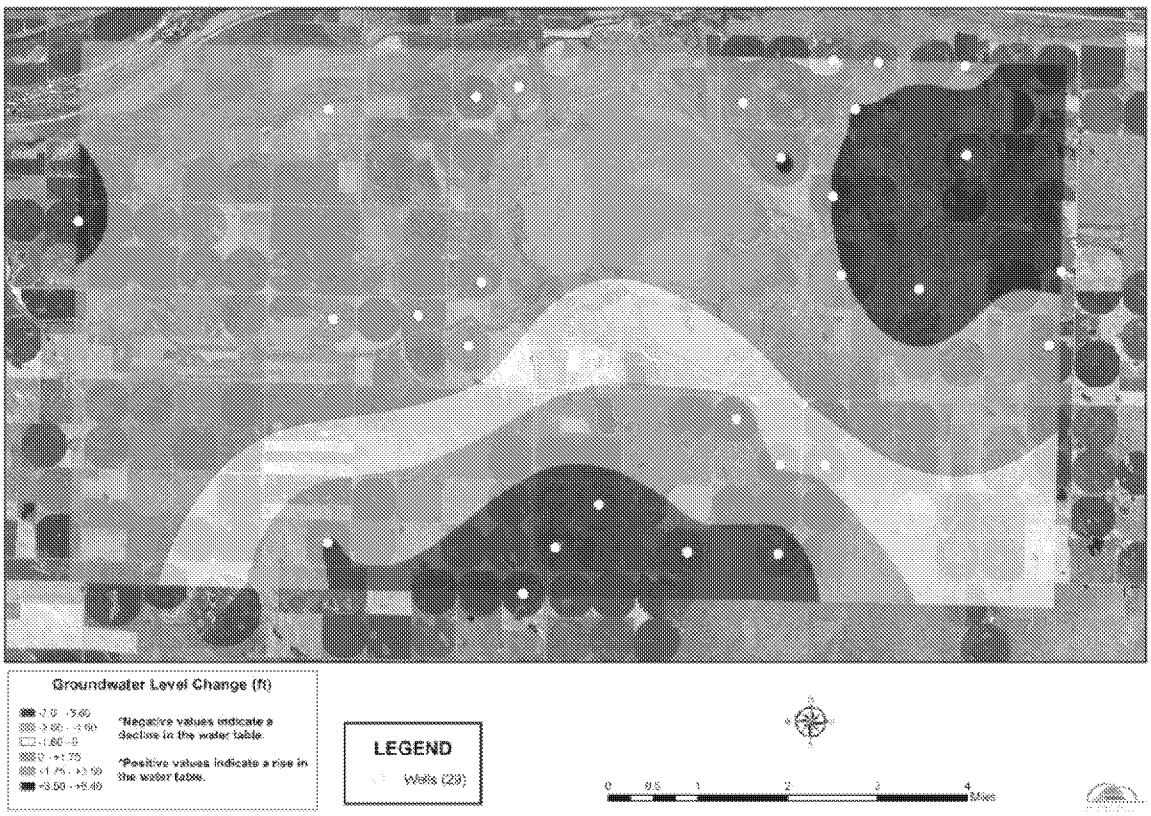

MW-7
3000
2995
2990
2985
2980
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
East of Reservoir
MW-9
3025
3020
3015
3010
3005
Jan-08
Jan-09
Jan-10
Jan-11

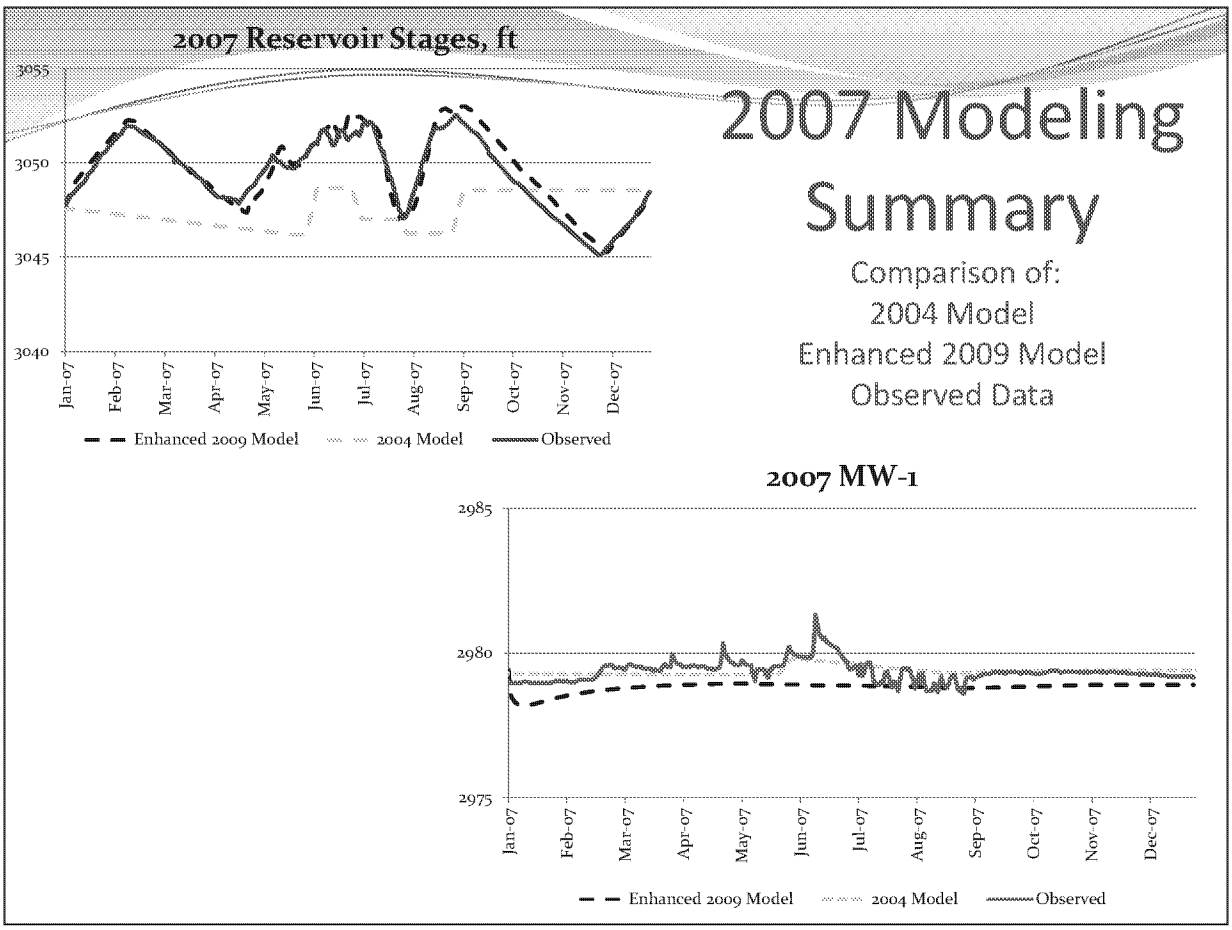
TPNRD Well Monitoring

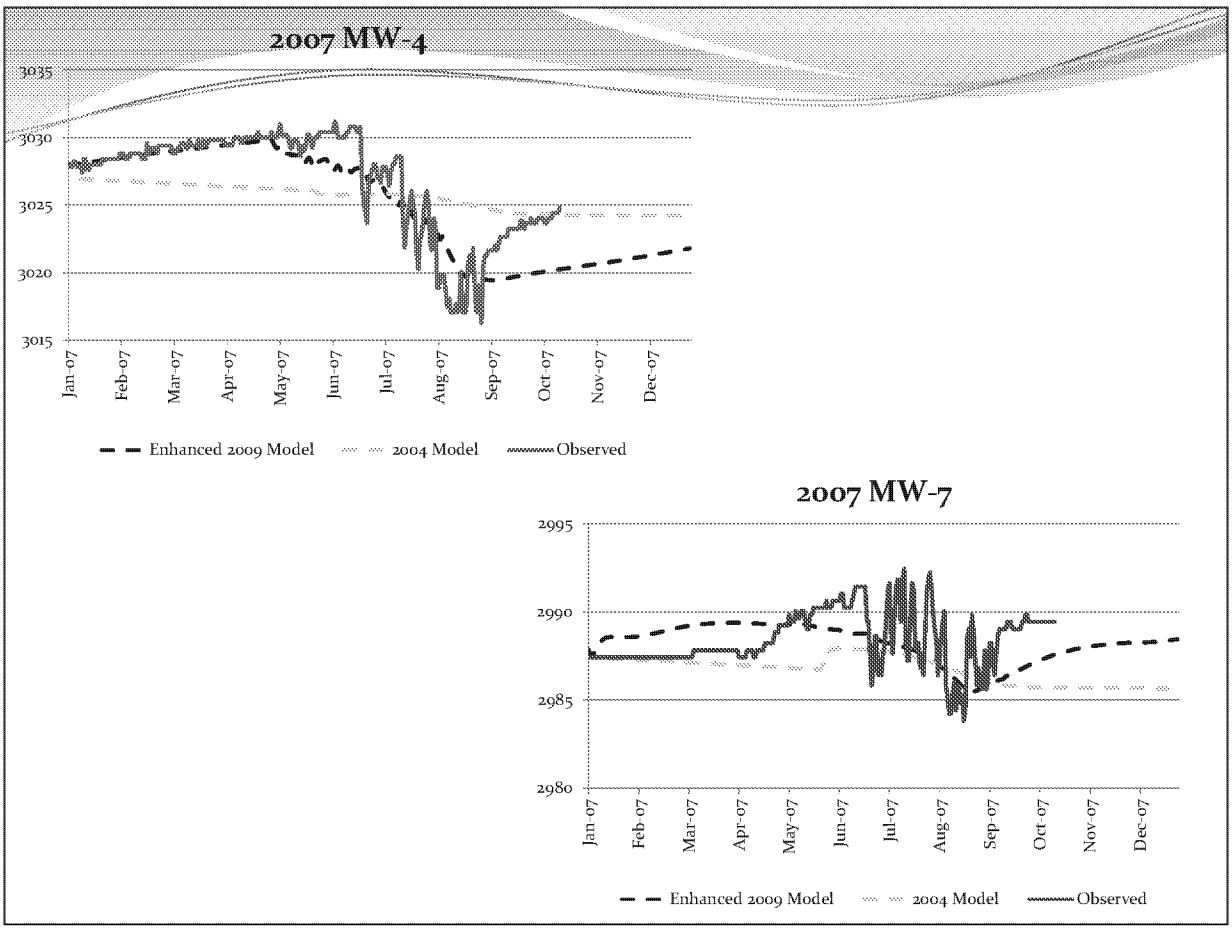
Irrigation Wells Water Level Changes (Spring 2010 – Spring 2011)



Irrigation Wells Water Level Changes (Spring 2004 – Spring 2011)

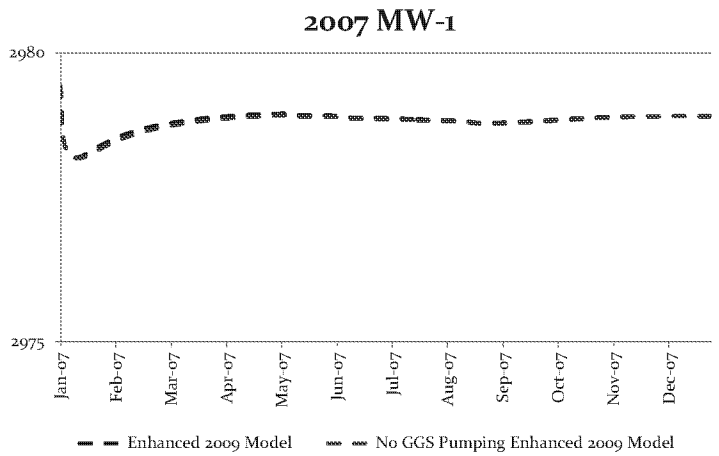


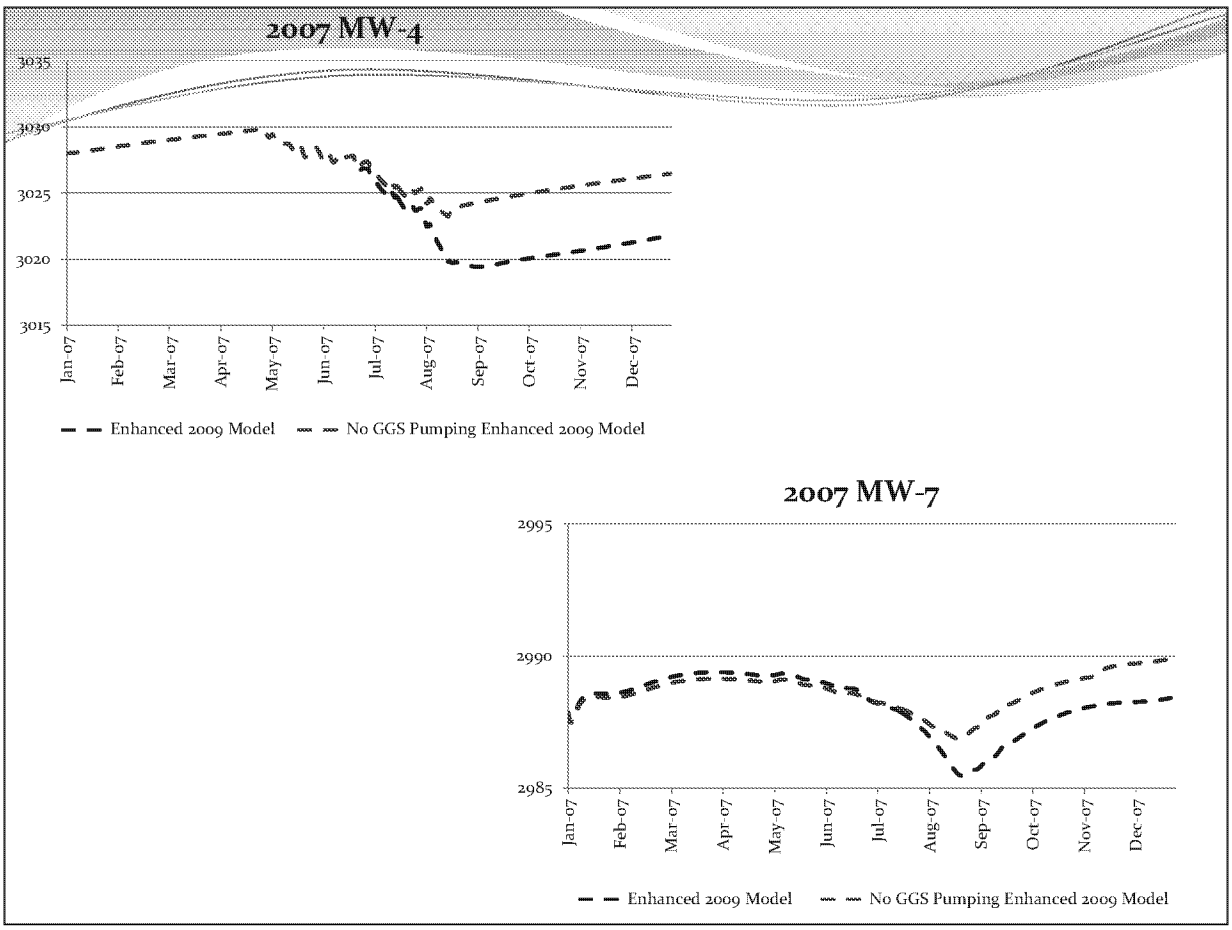

2007 Reservoir Stages, ft
3055
3050
3045
3040
Jan-07
Feb-07
Mar-07
Apr-07
May-07
Jun-07
Jul-07
Aug-07
Sep-07
Oct-07
Nov-07
Dec-07
Enhanced 2009 Model
2004 Model
Observed
2007 Modeling Summary
Comparison of:
2004 Model
Enhanced 2009 Model
Observed Data
2007 MW-1
2985
2980
2975
Jan-07
Feb-07
Mar-07
Apr-07
May-07
Jun-07
Jul-07
Aug-07
Sep-07
Oct-07
Nov-07
Dec-07
Enhanced 2009 Model
2004 Model
Observed


2007 MW-4
3035
3030
3025
3020
3015
Jan-07
Feb-07
Mar-07
Apr-07
May-07
Jun-07
Jul-07
Aug-07
Sep-07
Oct-07
Nov-07
Dec-07
Enhanced 2009 Model
2004 Model
Observed
2007 MW-7
2995
2990
2985
2980
Jan-07
Feb-07
Mar-07
Apr-07
May-07
Jun-07
Jul-07
Aug-07
Sep-07
Oct-07
Nov-07
Dec-07
Enhanced 2009 Model
2004 Model
Observed

Drawdown Calculation

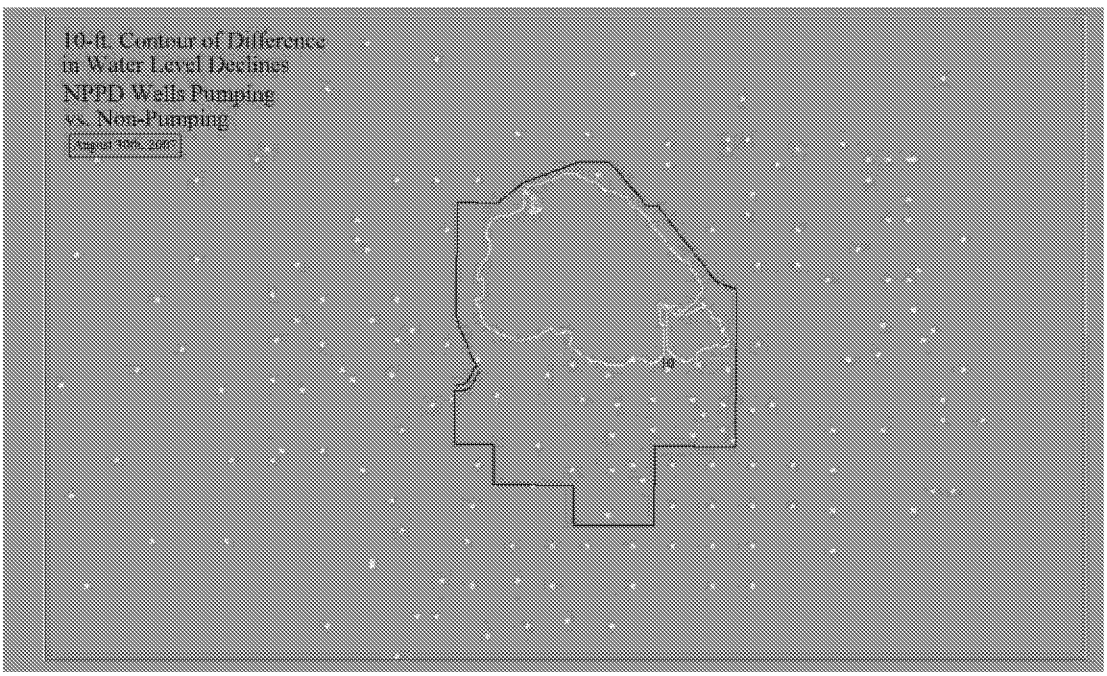
Max Difference between Actual Wells Pumping and No GGS Pumping
Drawdown Contour Map

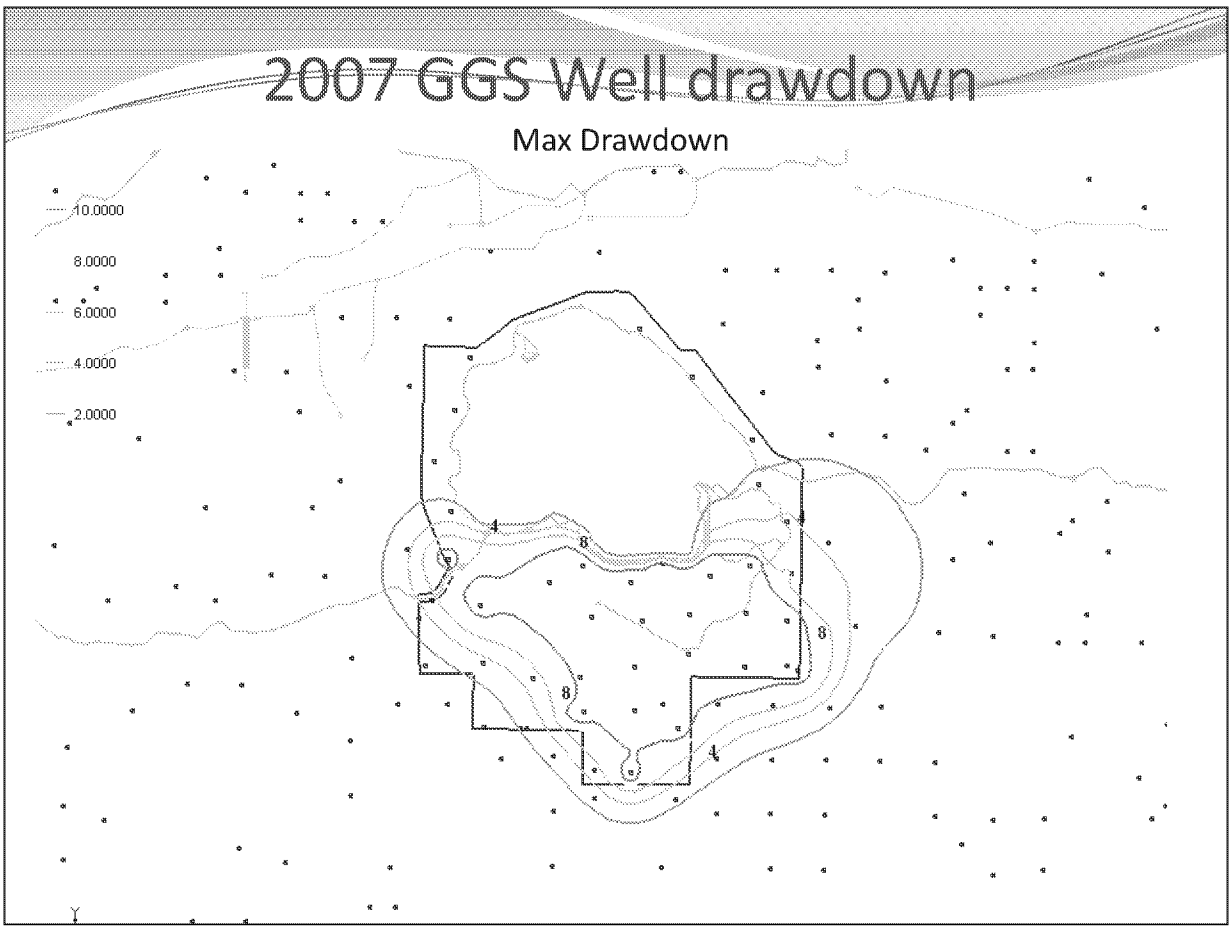


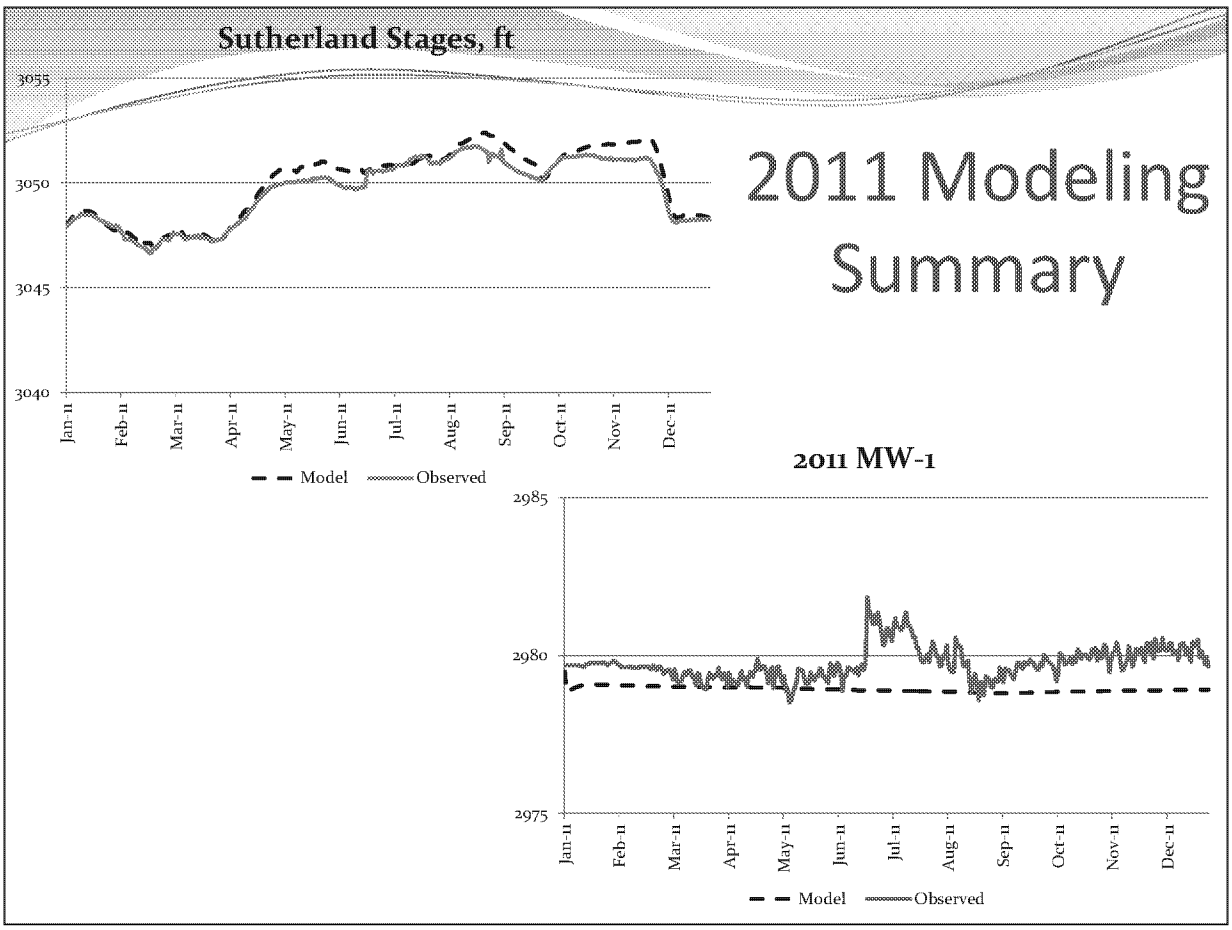

2007 MW-4
3035
3030
3025
3020
3015
Jan-07
Feb-07
Mar-07
Apr-07
May-07
Jun-07
Jul-07
Aug-07
Sep-07
Oct-07
Nov-07
Dec-07
Enhanced 2009 Model
No GGS Pumping Enhanced 2009 Model
2007 MW-7
2995
2990
2985
Jan-07
Feb-07
Mar-07
Apr-07
May-07
Jun-07
Jul-07
Aug-07
Sep-07
Oct-07
Nov-07
Dec-07
Enhanced 2009 Model
No GGS Pumping Enhanced 2009 Model

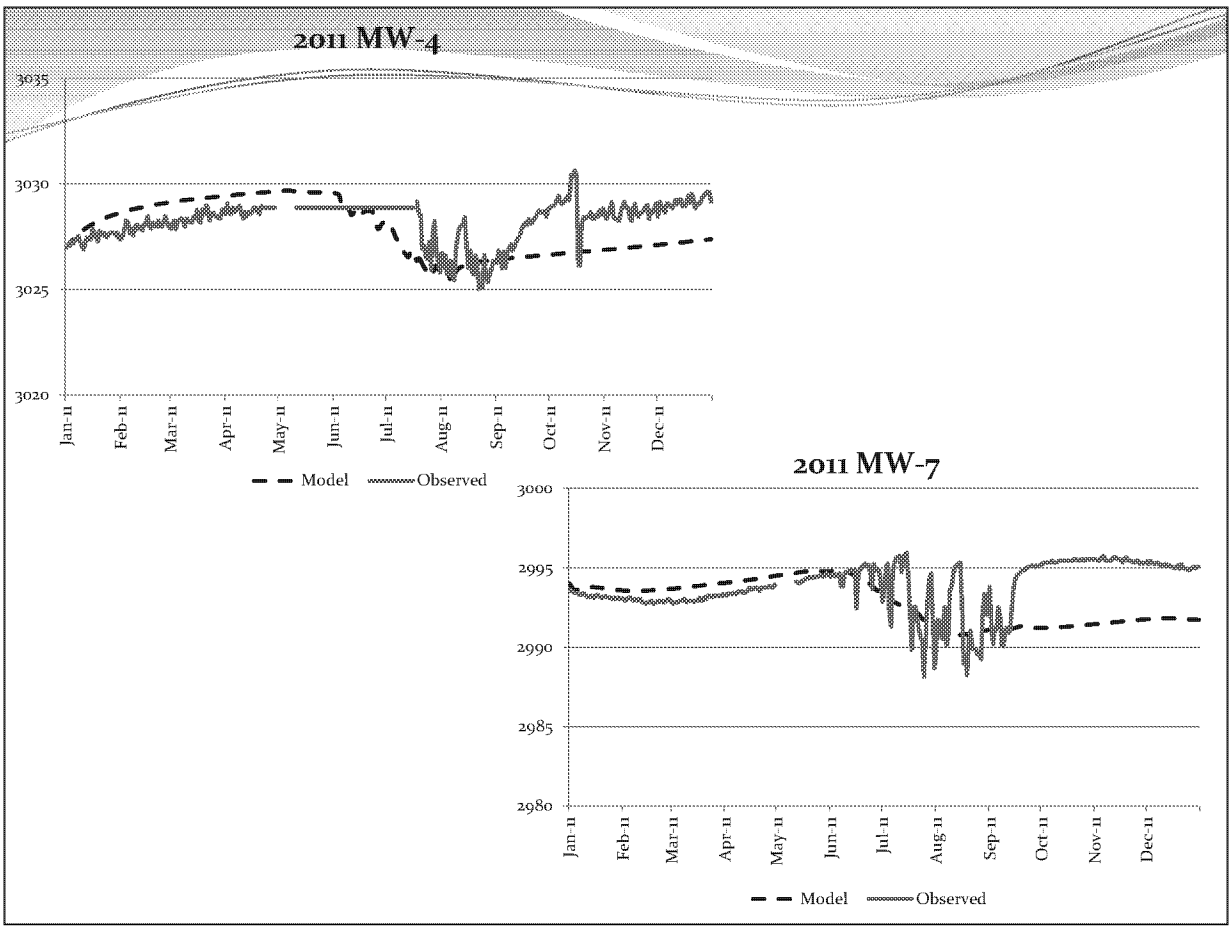
2007 GGS Well drawdown (Original Model)

Max Drawdown




2007 GGS Well drawdown
Max Drawdown
10.0000
8.0000
6.0000
4.0000
2.0000
4
8
8
8
4


Sutherland Stages, ft
3055
3050
3045
3040
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Model
Observed
2011 Modeling Summary
2011 MW-1
2985
2980
2975
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Model
Observed


2011 MW-4
3035
3030
3025
3020
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Model
Observed
2011 MW-7
3000
2995
2990
2985
2980
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Model
Observed

2012 Conditions and Operations

Nebraska Platte River Water Supplies
March 15, 2012

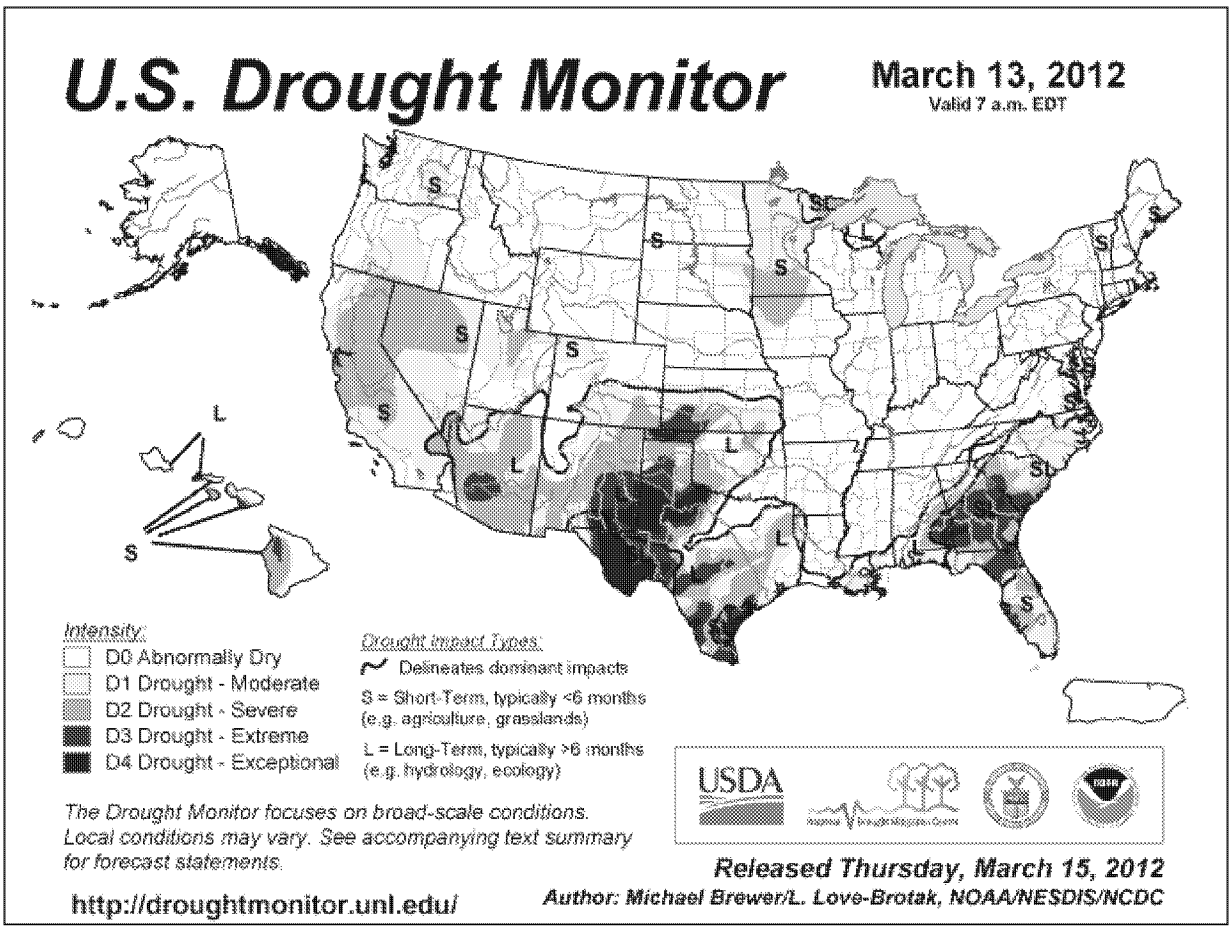
	Current (AF)	30-yr Average (AF)	Last year (AF)
Wyoming System Total Storage	**2,272,400**	**1,618,900**	**2,225,200**

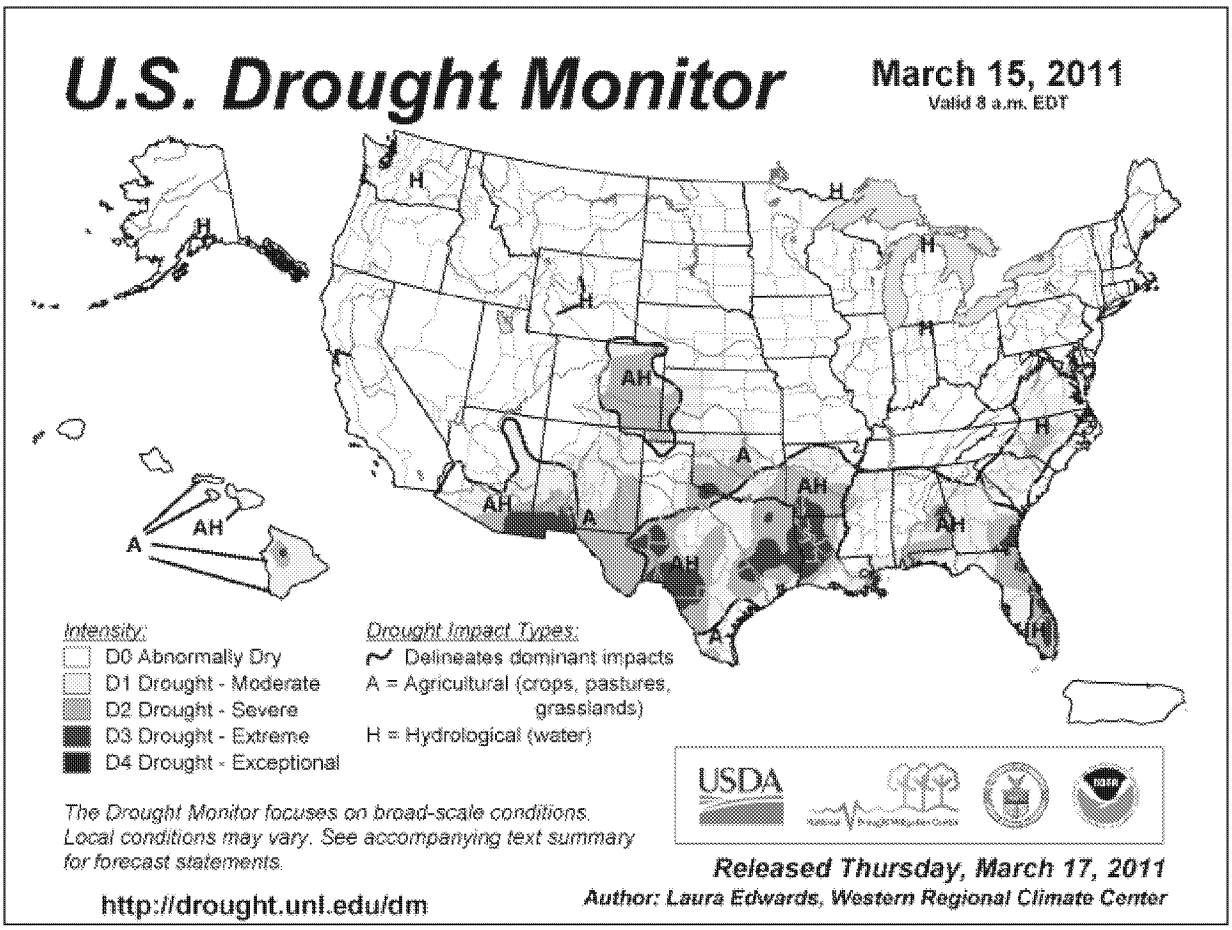
	Snowpack (% avg)	Flow (cfs)	Average (cfs)	Last year (cfs)
South Platte River	**78**			
At Roscoe		**564**	**631**	**267**
North Platte River	**81**			
At Lewellen		**1,010**	**1,417**	**3,897**

	Current (AF)	30-yr Average (AF)	Last year (AF)
Lake McConaughy	**1,454,300**	**1,236,600**	**1,430,100**

All Time Low – 342,000 AF (9/2004)
Environmental Account– 112,000 AF (3/1/12 est.)

23


U.S. Drought Monitor
March 13, 2012
Valid 7 a.m. EDT
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
L = Long-Term, typically >6 months (e.g. hydrology, ecology)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
USDA
Released Thursday, March 15, 2012
Author: Michael Brewer/L. Love-Brotak, NOAA/NESDIS/NCDC
http://droughtmonitor.unl.edu/


U.S. Drought Monitor
March 15, 2011
Valid 8 a.m. EDT
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
USDA
Released Thursday, March 17, 2011
Author: Laura Edwards, Western Regional Climate Center
http://drought.unl.edu/dm

Wellfield Mitigation Agreement Review

- Amendment to Section 6 in 2009
- Last 3-year review of baseline yields was 2011. Next 3-year review of baseline yields is 2014.
- December Futures for February 2012 is $5.68/bushel.
- Review of Agreement

Other Topics

- Amendments to LB 653
- NPPD Generations Options Analysis – Public meeting on March 27th
- State of Nebraska State Implementation Plans for Regional Haze

Generation Options Analysis

- Objective – Develop and evaluate options for future operation
  - GGS
  - Sheldon Station
  - CNS Extended Power Uprate
- Key Assumptions (GGS)
  - Beyond 2015, mercury control required
  - Beyond 2017 but not beyond 2023 "bridge" (short term) SO2 and NOx controls required
  - Beyond 2023, full MPCE, i.e. scrubbers (SO2) and SCRs (NOx), required (cost ~ $1.5 billion)
- Results (GGS) – full MPCE is more cost effective than bridge or early shutdown

Regional Haze Compliance Update

- Regional Haze Rule – intended to improve visibility in National Parks (Class I areas)
  - GGS is affected
- Nebraska submitted a State Implementation Plan (SIP) that proposed adding low NOx burners to GGS Units for NOx control, and no SO_2 control
  - basis: cost and water use for scrubbers
- EPA accepted SIP for NOx, but rejected SIP for SO_2; proposed Federal Implementation Plan (FIP) for SO_2 that relies upon the Cross State Air Pollution Rule (CSAPR)
  - advertised in Federal Register on 3/2/12 with 30-day comment period
- Nebraska stands by conclusions in SIP, and has requested a formal hearing and 30-day extension of the comment period to 5/2/12

Questions, Comments, Recommendations