



Egin Lakes Recharge Experiment Fall 2008

Presentation to ESHMC
January 2009

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2008/11/20 10:14

OUTLINE

- Overview
- Aquifer Water Levels
- Seepage Reconnaissance
- Stage/Shoreline Measurements
- Flow Measurements
- Planned Analysis
- Future Needs
- URLs for photo links

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OVERVIEW

- Recharge undertaken by a coalition
 - Eastern Idaho Water Rights Coalition
 - Fremont Madison Irr. District
 - St. Anthony Canal Co.
 - Northside Canal Co.
 - Committee of Nine

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OVERVIEW

- Administrative Agencies Supportive & Cooperative
 - IDWR
 - IWRB
 - BLM
 - BOR

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OVERVIEW

- IWRRI Funded to Assess *Potential for Monitoring*
 - 50% IWRB, 50% Eastern Idaho Water Rights Coalition
 - Goal: Can monitoring document the impacts of recharge *independently of aquifer modeling?*

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OVERVIEW

- Timeline:
 - Early October: Start delivery to recharge site
 - Irrigation still continuing, all canals charged
 - Reduced flow rates to avoid subbing potato harvest fields
 - 30 October: Water reaches west pond.

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OVERVIEW

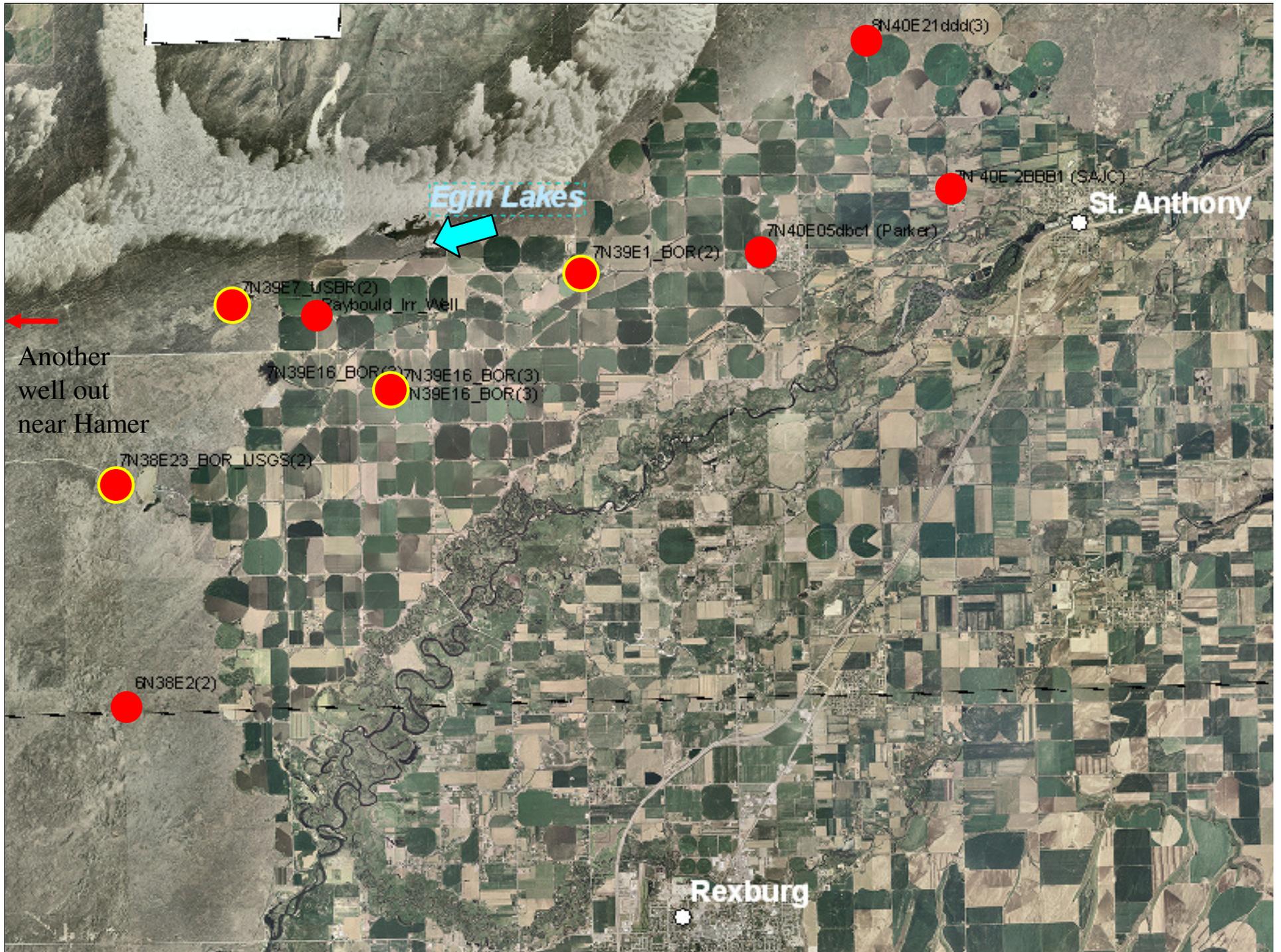
- Timeline:
 - 31 October: Irrigation & all canals shut off, except for recharge experiment
 - Flow rates to recharge ramped up
 - 13 December: Headgate closed at river
 - 16-17 December: Some storage still draining from canals, some standing water in canals
 - 22 December: Canals essentially empty

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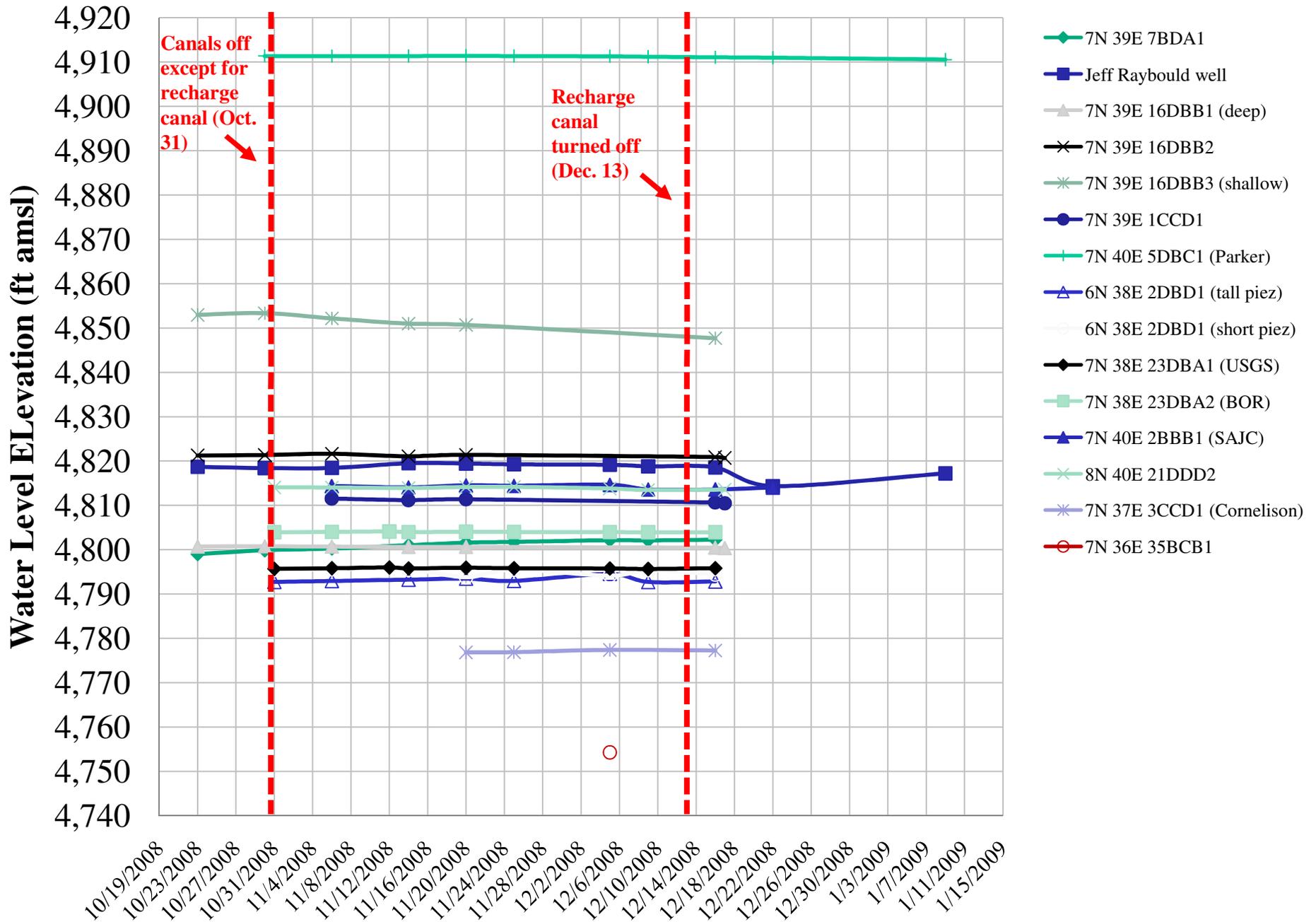
AQUIFER WATER LEVELS

- 11 wells/sites water levels were monitored (some sites included multiple piezometers or wells)
- Most change in water level was about 3 feet in a well just south of the West Recharge Site
- Data loggers are currently in place in some of these wells now and will be retrieved in the spring

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Water Level Elevation for Wells Near Egin Lakes





Egin Lakes

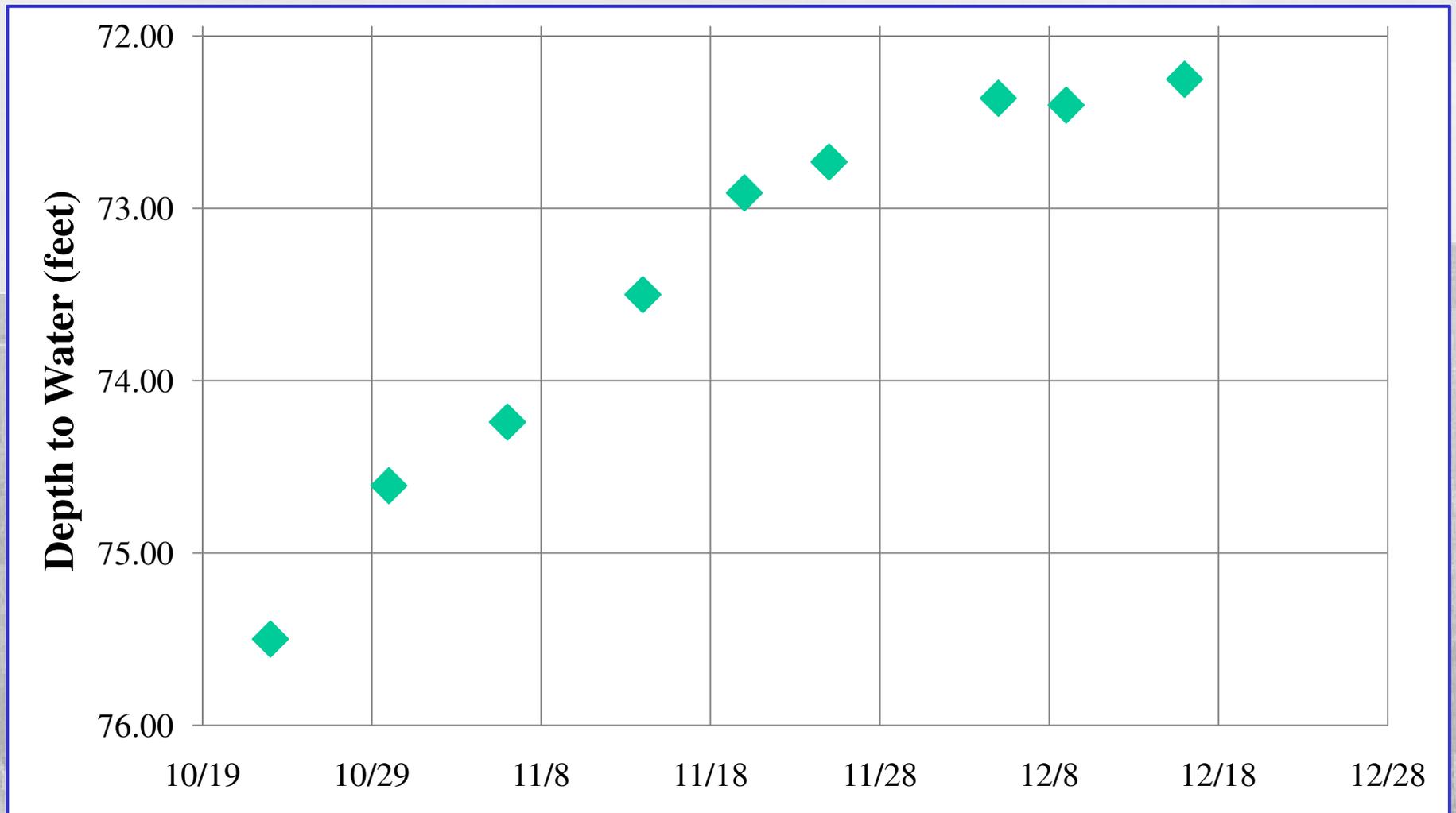


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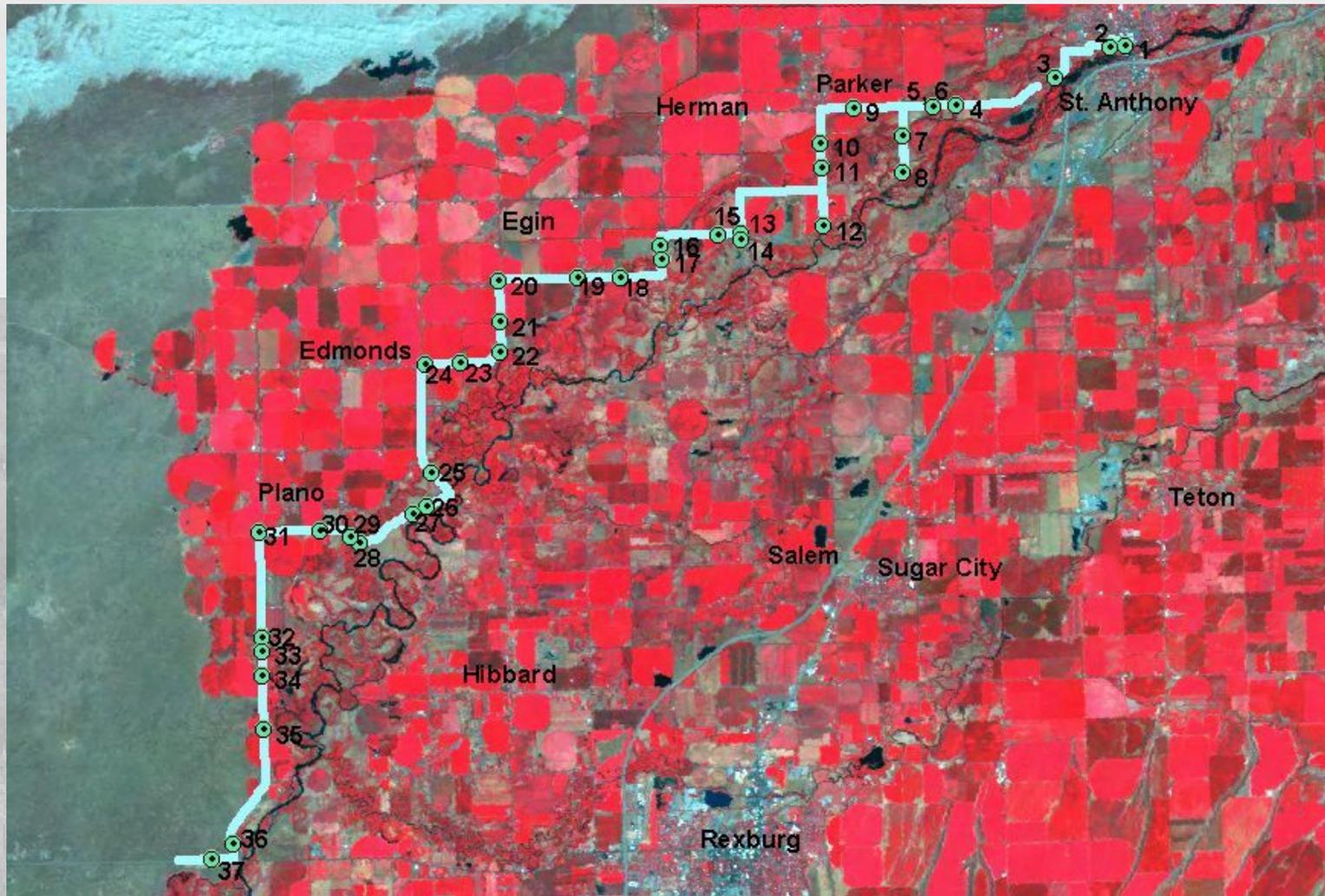
Raybould_Irr_Well

Depth to Water Measurements

Well located south of recharge site



SEEPAGE RECONNAISSANCE



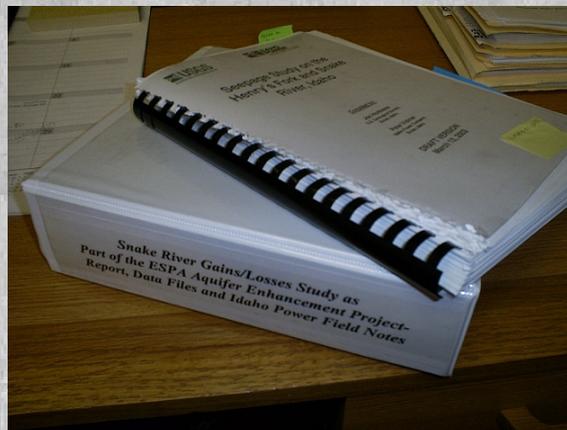
SEEPAGE RECONNAISSANCE

- Purpose: Assess ability to measure or estimate flux from SE side of bench to Henrys Fork
- Activities
 - 18 October 2008 windshield survey
 - (see slides & notes on Web)
 - Some observations December 2008

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SEEPAGE RECONNAISSANCE

- Activities (continued)
 - Follow-up surveys planned spring 2009
 - before irrigation
 - after irrigation starts
 - Planned review of ESPAM1.1 seepage study



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16

STAGE/SHORELINE MEASUREMENTS

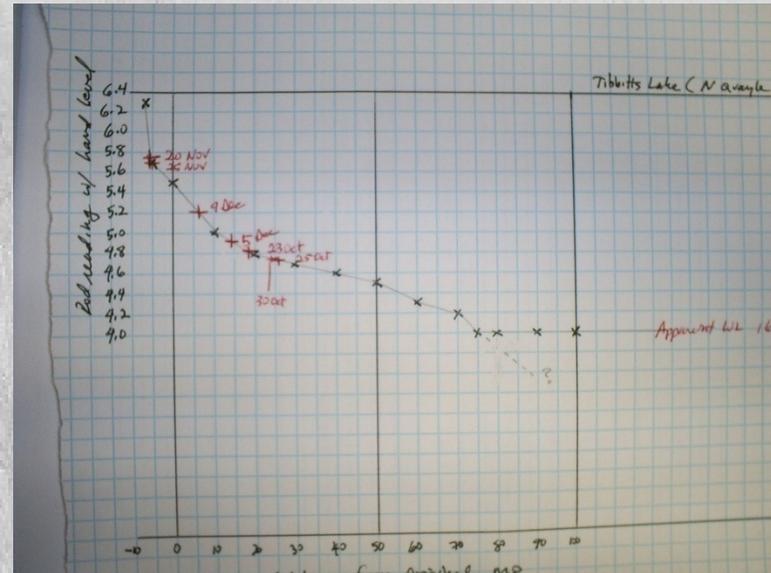


STAGE/SHORELINE

- Purpose: Aid understanding of changes in storage, to allow seepage volume calculations.
- Activities:
 - Identify measuring points
 - Periodic data collection
 - Hand-level survey
 - Plot stage changes

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STAGE/SHORELINE



FLOW MEASUREMENTS



2008/11/20 13:55

FLOW MEASUREMENTS

- Purpose:
 - Quantify amount of water for recharge conveyance payment (IDWR/IWRB)
 - Assess ability to quantify flows (IWRRI)
 - Quantify amount, timing and location of water entering aquifer, for interpretation of water-level data (IWRRI)

FLOW MEASUREMENTS

- Activities:
 - Maintenance of rated sections (IDWR)
 - Reading staff gages (St. Anthony Canal)
 - Loss study 17-20 November (IDWR)
 - Miscellaneous flow measurements (IWRRI)

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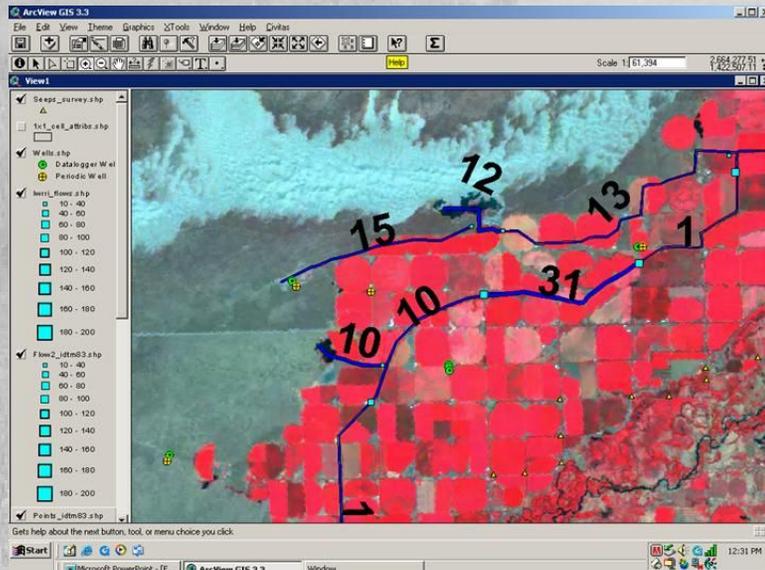
FLOW MEASUREMENTS

(cont.)

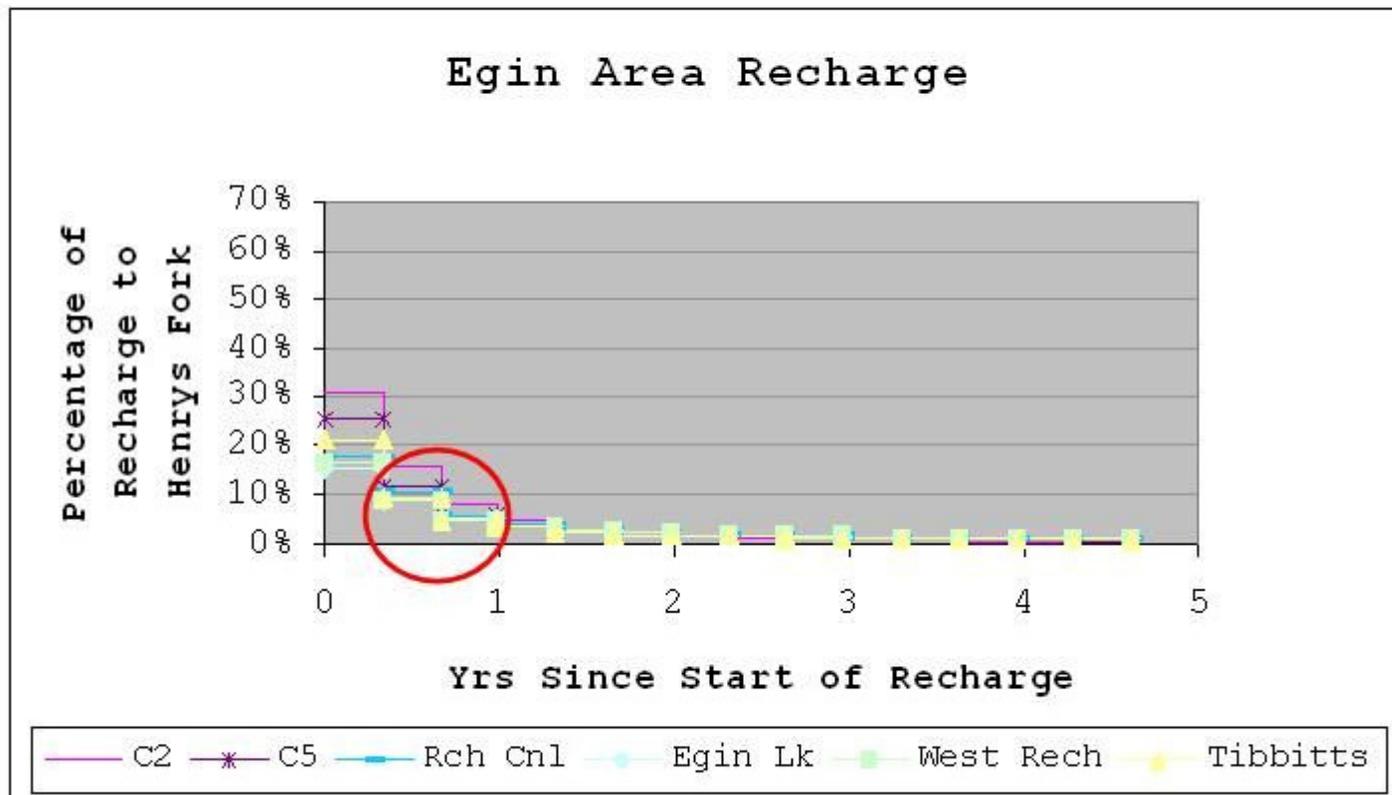
- Methods
 - ADCP (IDWR)
 - Weir/Orifice formulas (IDWR/IWRRI)
 - Current Meter (IWRRI)
 - Zimmerman Velocity Head Rod (IWRRI)

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FLOW MEASUREMENTS



PLANNED ANALYSIS



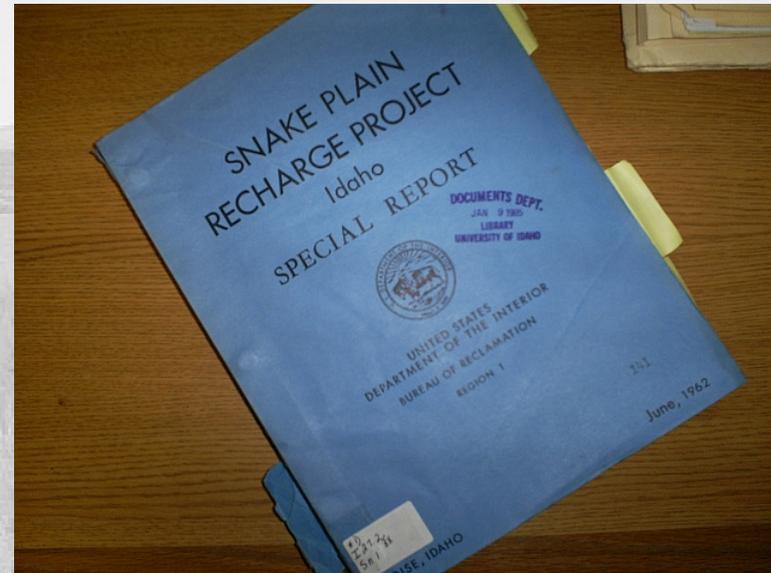
PLANNED ANALYSIS

- Modeling
 - Transfer tool (IWRRI)
 - Dedicated model runs (IDWR)
- Plot water levels & recession curves
- Assess flow/stage/volume measurements

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PLANNED ANALYSIS

- Review prior work



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ANALYSIS

- Write report
 - Assessment of what monitoring can do
 - Recommendations to improve monitoring
 - Preliminary assessment of data from this experiment

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FUTURE NEEDS

- Begin accumulating long-term WL data
 - LOTS of lovely dedicated monitoring wells (USBOR 1960s-1970s)
 - 6 data loggers in place now, could use 3-4 more
 - Periodic (monthly? weekly?) measurements on other wells
- Investigation of area west of recharge site
 - young cottonwoods, no surface water 25+ years
- Better ability to measure surface fluxes

URLs FOR PHOTO LINKS

(These use a security key; search engines can't see them)

<http://picasaweb.google.com/bryce.contor/JensensGrovePictures?authkey=EYMH3cPjWY#>

<http://picasaweb.google.com/bryce.contor/SlidesFromMeeting17DecemberAtFMIDOffice?authkey=sM7ESwzIYLI#>

<http://picasaweb.google.com/bryce.contor/ShorelineMeasurementPointsForEginLakesRechargeProject?authkey=aFKlIU1zuwE#>

<http://picasaweb.google.com/bryce.contor/EginBench20081018?authkey=6NY3Thya74A#>

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END

(Water entering west recharge basin
30 October 2008)

