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Section: Geochemical Modeling
Page: 81

Comment:

Page 81: _Ground-water flow velocities determined from travel times along potential interbasin and intrabasin flow paths range from 10 to 200 years_. This statement should be referenced to source and analysis, and the mentioned flow paths should be noted with their estimated velocities as part of the characterization. This information is as significant as the quantities, and deserves a similar graphic presentation as Plate 3.

Section: Irrigation Water Use
Page: 67

Comment:

Page 67: Irrigation acreage total for Snake Valley from Appendix A is 9932 acres, compared to 9200 mentioned in the report. Some acreage previously in production was not irrigated during the years preceding 2005 (2000-2004) because of drought conditions.(See crop insurance claims for those years, particularly 2002-2003).

Section: Mean Annual Evapotranspiration
Page: 62

Comment:

Page 62/Figures 25 and 31: Snake Valley was divided into 5 subbasins, but only 4 data bars are represented. If correct, what data source can be referenced in the report to verify the data on the chart?

Section: Comparison of Ground-Water Recharge Estimates
Page: 53

Comment:

Page 53: Comparison of Ground-Water Recharge Estimates states _High recharge estimates for Snake, Spring, Steptoe, and Tippet Valleys may be the result of methodology_. This statement reveals the need for an analysis of methodology for the results derived, and a comparison of the relative differences in results of each. If the methods are not in alignment, then the methodology must be defended relative to previous work.

Figures 22 and 23 should be consistent in format and explanation. Both need a better representation and explanation of uncertainty.

Monday, August 13, 2007

Section: Geologic History
Page: 18

Comment:
7th-8th line s.b. "...resulting in deposition..."

Section: Water Use
Page: 66

Comment:
Page 66: The discussion of Water Use, particularly Irrigation, does not appear to be directly related to the water-budget analysis, as irrigation acres were estimated at pre-development conditions. An explanation of the use of this section and relevance to the flow characteristic conclusions should be included.

If irrigation efficiency does indeed impact the conclusions, an efficiency uncertainty of 14% (p.70) would be significant in the flows depicted for basins with significant agricultural use (Snake Valley, Spring Valley, White River Valley, Lake Valley). This should be depicted in Figure 35.

Section: Ground-Water Budgets
Page: 47

Comment:
Page 47-63: A separate discussion on uncertainty should be included for each water-balance element report section: Recharge, Discharge, ET, etc. due to the frequent mention of assumptions and uncertainty in all areas. Uncertainty is a common thread throughout this report and should not be relegated to minor status.

Section: Ground-Water Recharge
Page: 49

Comment:
Page 49: BCM discussion should include information relative to calibration and sensitivity to assumed conditions.

Section: Regional Ground-Water Recharge and Discharge
Page: 86

Comment:
Page 86: Some indication of the time-phasing of recharge should be included. Local experience indicates that time lags between significant snowfall and groundwater level increases range from 1 to 3 years, depending on location. The impact of 2005 as a record-precipitation year should be noted, since it was the primary time period for the BARCASS data collection.

Monday, August 13, 2007

Section: Summary of Major Findings

Page: 2

Comment:

Page 2: Assumption that equal amounts are pumped from carbonate and basin-fill must be justified. South Snake Valley experience would not support this assumption, as production depth and yield makes basin-fill locations preferable.

Section: Summary of Major Findings

Page: 3

Comment:

Plate 1: No geologic sections are available through the potential interbasin flow zone areas, such as between Spring and Snake Valleys. They would be helpful in understanding the characteristics which might support or impede flow between basins.

Plate 3: There is a flow arrow pointing eastward from Snake Valley toward the Confusion Range without an associated value. How does this relate to the conclusion that all 29,000 acy exit to the Great Salt Lake to the north? If the indication is correct, as the potentiometric surface contours indicate, some estimate of the associated flow should be provided, and the overall balance adjusted accordingly.

A range of values should be shown for the flow values which depict the uncertainty and variability of the data, methods, and calculations involved in their determination. Using a single number implies a level of accuracy which is not warranted, and may prejudice readers who can not or do not analyze the report or data further. Perhaps a parenthetical display could be added to the values:
XXXX (aaaa-zzzz).

Plate 4: The totals for the categories in Steptoe Valley do not equal the sum of the individual subbasin values. The entire plate should be checked for accuracy.

Summary: (Pages 4-8) A table of the values associated with the graphical representation of the findings should be included which displays the values and the range of uncertainty associated with the selected values.

The summary section gives the impression of accuracy which is not appropriate given the discussions which follow in the more detailed presentations and discussions. The absence of such information leaves the casual reader with the wrong impression of the quality and usability of the results.

Also, some acknowledgement should be included that the study was conducted in an anomalous wet year during a preceding period of local drought, and the potential effects on averages and assumptions.

Monday, August 13, 2007