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Subject: Aravaipa Valley Surface Water and Groundwater Info

1. Rebecca and I have pulled together some surface water and groundwater information as it applies to Aravaipa Valley upstream of the wilderness area. These datasets are from Arizona Department of Water Resources (ADWR) and the databases are known to have inaccuracies and lack complete information. That said, they are the best available data for enumerating water uses in the state. If you would like to see all the records from the datasets we queried for the summaries below, let us know and we can provide them as Excel files.

The surface water filings are claims made for water rights and have not been adjudicated. If you have additional questions about the nature of surface water filings you can contact Scott Deeny. The well registration database provides information about wells drilled in the state where owners provided notice to ADWR. They may be helpful in evaluating the groundwater component of uses upstream from the wilderness area.

a. Surface Water Filings on Private Land

Querying the ADWR surface water filings database it appears that there are approximately 117 claims on private land for surface water upstream of the wilderness area (107 prior to 1984 and 10 after 1984). Of those 117 private claims Rebecca and I called 17 of those "large uses" (greater than 40 AFA – 10 acres at 4 AFA/acre). Our determination of what constitutes a "large use" was arbitrary.

Of these 17 large uses 16 have a priority date before 1984 and only 1 with a priority date after 1984, suggesting that there has not been much surface water development since 1984. The Nature Conservancy claims 4 of these 17 large uses for irrigation, and they have indicated to SRP that they have not irrigated these areas in recent years except occasionally to support native vegetation.

b. Groundwater Well Registration on Private Land

Querying the ADWR well registration database there are approximately 168 registered wells on private land upstream of the wilderness area in the Aravaipa Valley.

Of those 168 wells approximately 38 are what Arizona law refers to as "non-exempt" wells (>35gpm pumping capacity), 125 are "exempt" wells (<35 gpm), and 5 other (geophysical, monitoring).

Of those 38 non-exempt wells 23 were installed prior to 1984, 3 were installed since 1984 and the remaining 12 the installation date was not recorded.

2. Irrigation Estimates

Also related to water use upstream of the wilderness are the two tables below from the U.S. disclosed report "Environmental Change in Aravaipa..." (Hadley, 1991) p.222

TABLE VIII.A

IRRIGATED ACREAGE FOR THE ARAVAIPA *BOTTOMLANDS

Year	Acres
1880-1920	236 acres
1920-1955	486 acres
1956-1987	169 acres

*Preliminary Hydrographic Survey Report for the San Pedro Watershed 1990

TABLE VIII.B

TOTAL ACREAGE CONTINUOUSLY SERVED BY SURFACE WATER

Year	Acres
1900	167
1920	212
1975	226
1980	200
1985	82

3. Groundwater Survey Index Wells (GWSI) (ADWR Monitoring Well Program)

We queried ADWR's GWSI well information, and found 3 monitoring wells within the Aravaipa Valley upstream of the ACWA. We have attached the map, well information, and hydrographs for these three wells.

4. Rebecca spoke with Frank Corkhill, Chief Hydrologist at ADWR, who completed a groundwater change analysis by GW basin for the state (also based on GWSI data). He only used two of the three GWSI wells within Aravaipa – he said for statistical purposes (perhaps one only had a few measurements taken) within the scope of his analysis. His report and GW basin maps are online – entitled Statewide Hydrologic Monitoring Report:
<http://www.azwater.gov/AzDWR/Hydrology/Library/HydrologicMonitoringReports.htm>
5. Rebecca spoke with Mark Haberstich, TNC preserve manager. They do have 3 piezometers, upstream of the ACWA. Attached are the data and map showing the locations. He indicated that he has only been collecting data since 2005 at one, and 2009 at the other two.