# Ground water quality monitoring information in SV

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## The Data Dilemma

Ground water chemistry data sets collected by DWR since 1981 are available, and a copy of the same I did obtain from DWR. Thanks to DWR and the County for providing this information.

What has so far not been made available is the exact location, and the screen interval depths. This is a significant barrier to completing essential field work this field season.

The dilemma is:

* The WQ monitoring wells need to be resampled (at least a selection) to conduct a trend analysis. The last WQ monitoring run was made in 2002, including 27 wells. But we (The County of Plumas, the Sierra Valley Groundwater District nor myself as the contractor for the District and the County on this project) have no contact information (owner, address) to make sure we will sample the same wells that were previously sampled.
* Since 1981 more than 200 WQ data sets have been collected. To analyze the geographic and vertical patterns in GW chemistry for each data set we need the exact location and the screen depth. But that information has not been made available so far.

In order to evaluate the impact of pumping for a 30 year trend analysis, the following data collection is necessary before the well pumping season concludes for this year:

1. Collecting isotope data from those wells for which we already have chemistry data.
2. Repeating the major cation and anion analysis conducted in 2002 (27 samples), and in 1981 (40 samples), Three dimensional WQ analysis in support of aquifer delineation cannot be done without exact location and screen depths – which needs well logs, or info from DWR.

Without this extra effort the existing WQ data are “idle information” for the purpose of trend analysis for the following reasons:

1. Not very useful without site specific location and screen depths.
2. Not very useful because it cannot be integrated into further data collection, like isotope hydrology.
3. Not very useful because these wells cannot be resampled by the District to continue a historical record.

Considering that since 1981 more than 200 samples have been collected, including cost for lab analysis, personnel/wages, mileage, travel time, per diem etc., and including expenditures for the data that have been collected before 1981 (since about 1957), it can be argued that a considerable value has been incurred by collecting these data (maybe between 50K and 80K). Unfortunately without the exact location information (both geographical and screen depth), not much meaningful analysis can be conducted on these data. In other words, a data resource with almost sixty years’ worth of data, is sitting idle – unless we can match it with locations, depths, and access for resampling.

It is also important to note that the District, the County, and DWR are partners under the existing Proposition 50 Contract for the Upper Middle Fork Project and the Sierra Valley Well Capping Project. It is also important to note that the recent “Sustainable Groundwater Management Act” legislation specific direction has been provided to encourage DWR to assist the “Groundwater Sustainability Agency” in this case the District. SB1168, Section 10720.1 (d) states as part of the Legislative intent…, *“To provide local groundwater agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater.”*

## What we need:

1. Exact well locations so that we can get permission to re-sample these wells, not only for major ion chemistry, but also for environmental isotopes, etc.
2. Well screen depth intervals and well depth to be able to:
	1. Conduct a meaningful trend analysis and to
	2. Analyze the three-dimensional distribution of GW chemistry in the SV Basin in support of the aquifer and recharge area delineation.

As proposed earlier by the County and the District , I would be glad to join forces with a DWR employee who is familiar with the well-sites in order to sample these wells. An alternative would be to have someone show me the well locations in the field, so that the locations can be ‘captured’ with a GPS unit. I would then seek well owner permission to sample, etc.

The easiest approach would be for the State to apply a mechanism similar to the one whereby the County obtained a comprehensive well-log data base for Sierra Valley, but that appears to be infeasible by DWR for DWR well data.

Last but not least, there is a certain urgency to this matter, since the irrigation wells need to be sampled as soon as possible, before the end of the irrigation season. Otherwise we have to wait for another six months.