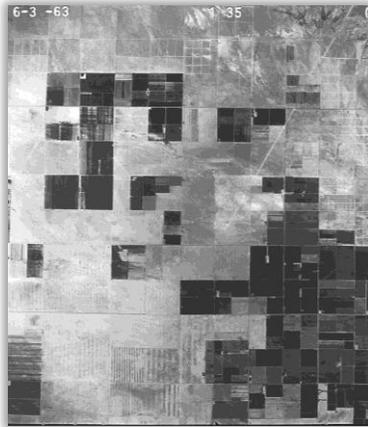


# Analysis and Documentation of Historical Water Use in Support of Landowner in Basin Adjudication Proceedings

## Antelope Valley, CA



EKI served as the designated technical expert in support of a large landowner in the Antelope Valley groundwater basin adjudication proceedings. The proceedings involved the establishment of water rights for the hundreds of private and public entities that extract groundwater from this basin. EKI's client owned property within the basin that had historically been used for agricultural purposes.

The focus of EKI's work was to demonstrate to the adjudicating authority that groundwater had supported irrigated agriculture at the property prior to the delivery of imported surface water, and to estimate the historical water use on the property. As part of this effort, EKI compiled aerial photo evidence of historical agricultural use of the property, as well as cropping records from public records maintained by the County, and performed GIS analysis of multi-spectral satellite imagery to confirm the areas of irrigated crops throughout the growing seasons. EKI then developed an irrigation water use model based on a soil moisture balance methodology and data from nearby climate monitoring stations; crop- and region-specific growing season information, rooting depths, and crop coefficients during crop growth stages; and information on typical irrigation efficiencies. EKI's quantitative model-based estimates of historical water use on the property were compared to, and agreed well with, records of surface water deliveries from the local water agency.

On behalf of its client, EKI submitted an Expert Report to the adjudicating authority that documented the modeling methodology, the long-term agricultural use of the property, the historical water use estimates, and the corroborating surface water delivery data. This Expert Report served as the basis for the client's claims to a portion of the groundwater basin's available yield.