



California's Statewide Airborne Electromagnetic (AEM) Surveys

Existing Data Fact Sheet

California Department of Water Resources
Sustainable Groundwater Management Program
September 2021

Project overview

DWR will conduct airborne electromagnetic (AEM) surveys in California using funds available through Proposition 68. The AEM method is a geophysical method where data are collected from instruments towed beneath a helicopter. AEM data can be interpreted for continuous images of large-scale aquifer structure and provide a standardized, statewide dataset that supports the implementation of SGMA.

DWR will conduct surveys in all High and Medium Priority basins and data will be collected in a coarse grid. DWR will define flight lines and orient them to ensure data are collected over important areas (e.g. areas with known data gaps, adjacent to critical infrastructure, or where GSAs are considering recharge).

Why existing data are needed

Existing data support and ensure reliable processing and interpretation of AEM data. The locations of existing data should be incorporated into flight line planning so that the AEM survey lines are oriented close to the location of the existing data. The following types of existing data are needed to support the AEM surveys:

- Lithology logs
- Geophysical data (surface and logging)

Request for existing data

DWR will obtain existing data that are readily available through statewide data management systems (DMSs). However, some of these data may not be high-quality and some datasets may not cover an entire basin. GSAs and counties may have high-quality data that are not available through a statewide DMS or may have tabulated data that were obtained from a statewide DMS. The integration of all existing, high-quality data into the AEM survey process ensures accurate and reliable AEM data. **DWR requests that GSAs provide DWR with their high-quality lithology and geophysical data.**

All AEM and supporting data collected or obtained as a part of the statewide AEM surveys will be made publicly available.

Lithology logs

Lithology logs are created during drilling of new groundwater or oil and gas wells. Lithology logs can be found as stand-alone documents for exploration or sampling wells or within well completion reports (WCRs), groundwater well as-built reports, or geotechnical reports. Please provide high-quality lithology logs from your sub-basin. Logs considered high quality have (1) accurate location information, (2) detailed, accurate lithology descriptions, and (3) a fine discretization of depth intervals.

Digitized lithology logs

Please provide lithology logs that have been tabulated and are in a digital format (e.g. file types .xls, .csv, .las, .mdb). If data originated from a state DMS, please provide the identifying number: State Well Number, CASGEM/SGMA Portal Site Code, or WCR number.

List of high-quality wells

If lithology logs have not been digitized, but high-quality wells have been identified, please provide a list of identifying well numbers (such as those listed above).

Identified accurate well locations

If well locations have been more accurately identified than provided in the WCR, please provide a list or map with the location of the wells and an identifying well number.

Geophysical data

Geophysical logging and surface data have been collected throughout the state. Electrical resistivity logs, often referred to as e-logs, are sometimes collected when drilling new groundwater wells and are required to be collected when drilling new oil and gas wells. Surface electric and electromagnetic surveys (e.g. TDEM, t-TEM, walk-TEM, ERT) surveys have also been collected in various locations.

Please provide all available geophysical data, regardless of whether the data have been tabulated.

Location and amount of existing data

There is no limit to the amount of existing data that can be used to support the AEM surveys: generally, the more high-quality data available, the better. Existing data from locations throughout the entire basin can support the AEM surveys.

Instructions to submit existing data

Data can be submitted to DWR through Box.com, a simple and secure file transfer application.

Sub-basin POC

Please identify a point of contract (POC) for the existing data compilation effort. POCs will be provided with a secure link to access the Box.com basin folder. The POC may also be contacted if additional information is needed. Note: GSAs will be asked to identify a separate POC to support AEM survey implementation at a later time.

Data submittal steps

1. Fill out the POC form ([here](#)) to receive an email with a link to DWR's secure file upload site through Box.com.
2. Click the link in the email to access Box.com and upload data. **Only individual files or zipped folders can be uploaded; unzipped folders cannot be uploaded.** (The link provided will only allow data to be uploaded. Data viewing or downloading is not accessible through the link.)
3. Respond to the following questions from the email with the Box.com link:
 - What type(s) of data are being submitted (e.g. lithology, maps, geophysical data)?
 - How are wells identified (e.g. Well Completion Report number, State Well number, other)?
 - What is the location accuracy of the submitted data (e.g. GPS, center of PLSS section, unknown)?
 - Do the submitted data represent all or a subset of data available in the basin?

Contact Information

Data submission support

Ian Gottschalk

Ian.Gottschalk@aecom.com

DWR Region Offices

Northern Region

Pat Vellines

Patricia.Vellines@water.ca.gov

North Central Region

Chelsea Spier

Chelsea.Spier@water.ca.gov

South Central Region

Amanda Peisch-Derby

Amanda.Peisch@water.ca.gov

Southern Region

Tim Ross

Timothy.Ross@water.ca.gov

DWR Headquarters

AEM Project Manager

Katherine Dlubac

Katherine.Dlubac@water.ca.gov