

# MEMORANDUM

February 9, 2006

TO: State Engineer's Office

FROM: Patrick T. Tyrrell, State Engineer

SUBJECT: State Engineer's Office Requirements for Coordinates on Permits and Petitions.

Effective Date: April 1, 2006

## Background

The State Engineer's Office (SEO) is currently implementing an information management technology system for the entire agency. This system will allow for more efficient data retrieval and is the initial step in creating a statewide geographic information system (GIS) for water rights in the state. A key component for GIS is accurate locations of the spatial data being depicted. Historically, the SEO has required maps prepared by an engineer or surveyor for larger projects to depict locations. On stock pond permits and well permits, only the Public Land Survey quarter/quarter locations have been required.

With the advent of hand held Global Positioning System (GPS) units, coordinates for specific locations are easier to acquire. As such, the SEO will begin requiring coordinates for permitting and petitioning processes in the agency. The respective divisions will be administered as follows:

## Surface Water Division

Prior to the SEO issuing a new permit, the applicant shall provide coordinates on all proposed points of diversion and centerlines of dam embankments.

## Ground Water Division

This division will continue to issue permits without the requirement of the applicant providing coordinates on the application form (UW-5). The permittee will be required to provide coordinates when filing the Statement of Completion (UW-6) for completed wells or spring developments. A Statement of Completion will not be considered acceptable until coordinates have been provided.

### Board of Control

In the State Board of Control (BOC) Rules and Regulations, approved in November, 2004, all maps and surveys submitted to the BOC are to indicate the location of points of diversion, reservoir outlets, wells, pumps and pivot points by latitude and longitude (coordinates). The BOC considers coordinates to be an essential component of any map submitted to the BOC.

### Coordinates Systems

The SEO will accept coordinates in one of three coordinate systems. They are as follows:

1. Latitude and Longitude – Preferred
2. Universal Transverse Mercator (UTM)
3. State Plane Coordinates

The adopted datums are North American Datum of 1983 (NAD83) for horizontal measurements and the North American Vertical Datum of 1988 (NAVD 88) for vertical measurements.

### Accuracy

The SEO will allow two levels of accuracy to be used in providing coordinates on submittals to the agency. The accuracy level will be dependent on the type of submittal being made and described as follows:

1. For those applications, Statements of Completion, proofs, petitions, etc. that require a map prepared by a licensed surveyor or engineer, the coordinates shall be ascertained using survey-grade equipment with an accuracy of  $\pm 5$  feet.
2. For those applications, Statements of Completion, etc. that do not require a detailed map (stock ponds, stock and domestic wells), the coordinates may be determined using a hand-held recreational GPS unit. Using the Wide Area Augmentation System (WAAS) feature on GPS units generally achieves an accuracy of  $\pm 10$  feet and is preferred. However, coordinates generated with recreational GPS units without WAAS capability are also acceptable.