

ATTACHMENT 4. PROJECT DESCRIPTION

Carpinteria Valley Water District Carpinteria Groundwater Basin Sentinel Well Project

The proposed Sentinel Well Project consists of the drilling and construction of nested monitoring wells in the western portion of Storage Unit No. 1 of the Carpinteria Groundwater Basin (CGB). Groundwater supply in the Carpinteria Valley area is derived from distinct, depth specific aquifer units within Storage Unit No. 1 of the CGB. Storage Unit No. 1 is separated from Storage Unit No. 2 to the south by the Rincon Creek Thrust Fault, which trends approximately east-west, and projects offshore at the northwest to southeast trending shoreline in the western portion of the CGB. The aquifers that comprise the water supply for the CGB project offshore as well, making them potentially susceptible to seawater intrusion. The District collects water level and water quality data from a variety of wells throughout the basin, but a suitable monitoring well (or monitoring wells) near the coastline in this portion of the basin that would allow tracking of water quality changes that might be associated with seawater intrusion in each of the basin aquifers at this key location is lacking. The absence of critically important monitoring wells in this portion of the basin has been identified through the District's Groundwater Monitoring Program (developed pursuant to the District's AB3030 Groundwater Management Plan), and was one of the paramount findings of the recently completed CGB Hydrogeologic Update and Groundwater Model Project (LGA 2007 Grant Program). Excerpts from each of these documents citing the recommendation for the CGB sentinel well are attached.

Groundwater from the CGB is pumped by the District and by private pumpers. Produced groundwater is derived from the so-called Aquifers A, B, and C, primarily within the central portion of the basin. The proposed Sentinel Well Project would establish depth discrete, aquifer specific monitoring wells at a critically important location at western edge of the basin. The monitoring wells would allow for the collection of aquifer specific water level data that would serve to identify the susceptibility of each of the basin aquifers to seawater intrusion (i.e. water levels below sea level form prolonged periods of time). The groundwater surface elevation map for the Fall 2011 period (attached) presented in Fugro's 2011 Annual Report on the CGB shows the development of a pumping trough in the central portion of the basin with groundwater elevations as low as twenty feet **below** sea level. The monitoring wells would also serve as early warning sentries for seawater intrusion into the basin by allowing the tracking of water quality parameters for each of the aquifers. Because the sentinel wells would be located at the western edge of the basin and the majority of pumping occurs in the central portion of the CGB, early identification of seawater intrusion would allow basin stakeholders to make groundwater management decisions aimed to protect the CGB from irreversible water quality degradation. A map showing the proposed location of the CGB sentinel wells is attached.

The proposed Sentinel Well Project would represent continued efforts by the District and other CGB stakeholders to proactively manage groundwater resources. The primary goal of the proposed CGB Sentinel Well Project is to supplement the District's existing monitoring well network in a critical portion of the basin where suitable monitoring wells are currently lacking, and to provide the District and the other CGB stakeholders a necessary tool for the effective management of the CGB groundwater resources.

The CGB Sentinel Well Project supports the goals and objectives of the District's GWMP. The primary goal and objective of the GWMP was to establish a groundwater management plan that would facilitate informed decisions regarding the use of the groundwater basin, and to preserve the integrity and sustainability of groundwater supplies. The District has followed through on several of the original action elements of the GWMP toward this goal, including: a well inventory; water level and water quality monitoring; the creation of a groundwater database and reporting system; characterization of basin recharged areas; and the development of a groundwater flow model for the basin. The CGB Sentinel Well Project represents a continuation of these important efforts in managing the groundwater basin.

The sentinel wells will be incorporated into the District's existing monitoring well network. Water levels and water quality information collected from the wells form the basis of the District's GWMP. Monitoring is performed on a semi-annual basis at all of the network wells, and the data is presented in annual reports on the GWMP. The District has made the commitment of funds and other resources to continue the data collection and maintain the status of the GWMP.

The information acquired through the Sentinel Well Project will be disseminated in several ways. The final report containing the boring logs, well location and completion information, and water quality data will be submitted to the United States Geological Survey for their use. The report will also be provided to the County of Santa Barbara Water Agency, who prepares an annual report on groundwater conditions throughout Santa Barbara County. The Sentinel Well Final Report will also be posted on the District's website.

The results of the Sentinel Well Project and ongoing monitoring results for the sentinel wells will also be disseminated through Groundwater Committee Meetings and Workshops, as well as regular Board meetings. Because of the critically important nature of the data to be acquired through monitoring of the sentinel wells, monitoring results will be a regular discussion item on Groundwater Committee Meetings. Groundwater Committee Meetings and Workshops, and regular Board Meetings are advertised, and the general public, related agencies, and other interested parties are invited to attend.

The District has already contacted local agencies and groundwater professionals familiar with CGB and discussed with them the proposed Sentinel Well Project. Letters of support are attached.