



September 1, 2022

Wyatt Wicks
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SUBJECT: Well Interference and Subsidence Evaluation, Proposed Ranch Well, Gillis Canyon, APN 017-661-022, Shandon, San Luis Obispo County, California

Dear Sir:

Cleath-Harris Geologists (CHG) has performed a well interference and subsidence evaluation for the planned agricultural water well to be located at gps coordinates 35.622821, -120.301498, California (APN 017-661-022). The proposed well would be drilled and constructed by Filipponi & Thompson Drilling. We have reviewed available well completion reports and the geologic map for this ranch land area.

GOVERNOR'S EXECUTIVE ORDER

Per the Governor's Executive Order N-7-22, the County of San Luis Obispo requires that all water well construction permits for non-exempt wells must be accompanied by a report signed by a California Licensed Professional Geologist with a Certified Hydrogeologist specialty certification that concludes both that extraction of groundwater from the well (1) "is not likely to interfere with the production and functioning of existing nearby wells" and (2) "is not likely to cause subsidence that would adversely impact or damage nearby infrastructure.

GSA REVIEW

This well site is located in the Paso Robles Groundwater Basin in the Shandon-San Juan GSA. Willy Cunha, representing the Shandon-San Juan GSA, was consulted regarding the proposed well and verbally informed CHG that this proposed well would have no significant impact on the basin.

PROPOSED WELL

The proposed well is planned to be a 5-inch diameter PVC well constructed to a depth of 499 feet. The well is proposed to be drilled with mud rotary drilling equipment.



GEOLOGIC SITE DESCRIPTION

The well site is in an area underlain by clays, sands and gravels of the Paso Robles Formation.

INTERFERENCE

Well interference occurs when a pumping well causes the water level to decline in a nearby well. Multiple wells can interfere with each other. This analysis is specific to the interference of the proposed well on existing wells. The amount of water level drawdown caused by interference has been estimated based on using the non-equilibrium well equation (the Theis equation).

Local aquifer transmissivity is estimated at 900 gallons per day per foot at the proposed well based on the results of a bail test for a well in the general area. Aquifer storativity is estimated at 0.0036 (dimensionless), based on representative specific storage values from literature and local aquifer thickness. The proposed well is anticipated to pump up to 15 gallons per minute and is assumed to operate approximately 5 hours per day year-round for agricultural use (up to 5 acre-feet per year). Interference estimates assume there is no recharge to the aquifer during the irrigation season, although recharge and associated water level recovery is assumed to occur between irrigation seasons.

The closest existing active well to the proposed well is approximately 1,000 feet to the southwest. A water level drawdown of up to 9.3 feet (approximately five percent of the local saturated aquifer thickness), would not be expected to significantly impact the production and functioning of this well. Calculations using the non-equilibrium equation and the above parameters and assumptions result in seasonal interference of 1.3 feet of water level drawdown at the closest existing well due to pumping at the proposed well, which is less than the impacts threshold. Other nearby existing wells reviewed would experience lower levels of interference that are also less than their respective impacts thresholds. Therefore, extraction of groundwater from the proposed well is not likely to interfere with the production and functioning of existing nearby wells.



SUBSIDENCE

Subsidence has not historically been observed in this area (USGS, https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html).

The closest infrastructure is a residence about 1,000 feet from the well site. A well producing 15 gpm/5 acre-feet per year from the Paso Robles Formation at this proposed location will not result in any noticeable subsidence at that distance.

Therefore, the proposed well's operation is not likely to cause subsidence that would adversely impact or damage nearby infrastructure.

Very truly yours,

CLEATH-HARRIS GEOLOGISTS

Timothy S. Cleath
State of California Certified Hydrogeologist #81

