



March 17, 2023

10417.00

Humboldt County Planning and Building Department  
3015 H Street  
Eureka, California 95501

Attention: Mr. Rodney Yandell

Subject: Evaluation of Nearby Spring - Ozanian Proposed Subdivision Well Connectivity Study Report  
1355 Centerville Road, Ferndale, California; APN 100-311-019

Dear Mr. Yandell:

Based our conversation today, I agreed to review the conclusions concerning the cumulative impacts of the proposed well on the above-referenced property (Site) on nearby groundwater users. You provided me with additional information that was not available to LACO when our report was prepared in November 2022. This included a copy of a water right issued in 1891 for the extraction of 3.41 gallons per minute from a spring located on a parcel identified by APN 101-093-007. This parcel consists only of this spring and is fully surrounded by APN 101-093-001.

Our report was restricted to the Site and any conclusions we drew referencing the "Site" pertained only to this parcel. In addition, our conclusions concerning nearby users of seeps and springs was restricted to users registered in California state databases. As this water right predates regulatory controls, it is therefore not listed, we had no knowledge of it.

At the request of your office, I reviewed the information we have on the spring and conditions we identified during our study of the planned well uses. The well is installed at a surface elevation of approximately 85 feet WGS84 with top of the well screen at approximately 45 feet WGS84. Elevations referenced here are approximate and were obtained from Google Earth. The spring is at an elevation of approximately 370 feet WGS84. The well is located a horizontal distance 0.5 miles in an assumed downgradient direction from the spring and its screen is 325 feet below the point of diversion.

In addition, our report evaluated an 18-hour dry season pumping test performed on the well in September 2022 at a pumping rate that ranged from 8 gallons per minute (gpm) to 6.5 gpm. The water level in the well stabilized after less than 10 minutes of pumping at the higher rate and the well recovered to its pre-pumping static condition in 20 minutes. We concluded that the pumping test had negligible impact on the aquifer. Using the County's guidelines for the assumed water use of three-bedroom residences, we calculated that a well discharge of 1 gpm would satisfy the proposed demand. Handwritten notes on the copy of the water right I was provided indicate an allocated use rate of 3.41 gpm. The distance and vertical separation between the well and the spring would almost certainly preclude extraction of water at the well from having a negative impact on the spring. If there did happen to be interaction between two, the total uses discussed here are well within the 6.5 gpm tested and found to have no impact on the aquifer.

Evaluation of Nearby Seep  
1355 Centerville Rd., Ferndale, CA  
Dr. Charles Ozanian; LACO Project No. 10417.00  
March 17, 2023  
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Please contact me at [manhartc@lacoassociates.com](mailto:manhartc@lacoassociates.com) if you have further questions.

Sincerely,  
LACO Associates



Christine S. Manhart, CEG  
Lic. No. 1802, Exp. 3/31/25



CSM:

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