

MEMORANDUM

New Mexico Office of the State Engineer
Water Use and Conservation Bureau

November 27, 2000

To: Brian C. Wilson, P.E., Water Use and Conservation Bureau Chief

From: Patrick J. Romero, Water Master I

Subject: Bobrick Bed and Breakfast Master Plan Review, Santa Fe County

The Bobrick Bed and Breakfast proposal is a request to convert a residential home and guesthouse into a Bed and Breakfast facility with a residence for the owner. The 10.017 acre lot parcel is located at 422 Old Las Vegas Highway, North of the Bobcat Bite Restaurant, within the Sebastian De Vargas Grant, in Projected Section 29 of T16N, R10E, N.M.P.M.. It was reviewed pursuant to the Santa Fe County Land Development Code via the Extraterritorial Zoning Ordinance, and the New Mexico Subdivision Act. The developer proposes that water will be supplied to this development by a 72-12-1 domestic well.

The subdivider has calculated the maximum annual water requirements, pursuant to Article VII, Section 6.6.2 of the Santa Fe County Land Development Code. The developer calculated his requirements to be 0.74 acre-feet of water per year.

On May 11, 2001, Jim Corbin wrote a letter to Jim Siebert regarding this project. In this letter, he proposes using numbers for the reliability factor (0.15), and the time the aquifer would be depleted (100 years). Using Mr. Corbin's numbers, I found the amount of water available for this development would be 0.12 acre-feet per year.

The developer subsequently submitted a geohydrologic report, as required by Section 6.4.1.D of the Santa Fe Land Development Code. The report, by Corbin Consulting, relies on other wells in the area to estimate the characteristic of the well on the property, due to the fact that there is no well log for the well on the property. The incongruous nature of the geologic formations in the area, demonstrated by the varying well logs are evidence that these estimates are not appropriate. The numbers used in this report were not in compliance with county regulations. In his estimate of the saturated thickness, he uses 204 feet. This number is not appropriate, as no well log provided has a saturated thickness close to this. The pump test as well as well logs from the area seem to indicate that 150 feet would be more appropriate. In his conservative calculation, he uses 40 years as the time period. This number is allowed, as the County predicated this on the belief that water lines would be extended to this area. To the best of my knowledge, there are no

plans in the works for such an extension. Due to what we now know, code should require a 100-year calculation for this area. Mr. Corbin's calculation resulted in 0.82 acre-feet being available for use by the developer.

In analyzing the pump test, the author notes that the later curve on the drawdown plot indicates a limited reservoir. I concur with this opinion. Due to this fact, the author should note that his results from the use of the Theis equation in predicting drawdown after 100 years are uncertain. The non-existence of a well log adds to this uncertainty. Due to these facts, it is my opinion that this report does not prove that the subject well can provide the water requirements of this development, as they are outlined in Section 6.4.2a

Mr. Corbin has submitted a report to try to prove that development could be supported on this property by water being recharged onto it. I found that the report did not contain enough information to be properly evaluated.

I calculated that this development would have 0.6 acre-feet of water per year available. This is based on the 40-year standard. On this standard, we would have to assume 70% occupancy at the Bed and Breakfast, for water to be available for it and the main residence. Engineering principles call for design to be done at 100% occupancy. The County may feel that an approval of this development, subject to limitations (such as limiting occupancy, or reducing the number of rooms by at least one) may be appropriate.

It is my opinion that, if the developer reduces the size of his development, he has provided ample evidence that his water requirements will be met, pursuant to the Santa Fe County Land Development Code. On this condition, a favorable opinion should be **issued**.