

July 15, 2003

Alex Tafoya  
San Miguel County  
500 W. National Suite 104  
Las Vegas, NM 87801

**CERTIFIED MAIL**  
**RETURN RECEIPT**  
**REQUESTED**

Reference: Luz Del Sol II

Dear Mr Tafoya:

The Office of the State Engineer has reviewed the water supply proposal for the Luz Del Sol (II) subdivision pursuant to the San Miguel County Subdivision Regulations. It is the opinion of this office that the subdivider's proposal does not comply with the county's subdivision regulations. A **negative** opinion to this effect is hereby issued.

The Luz Del Sol proposal is a request to add five additional lots to the 15-lot Luz del Sol subdivision. The 267-acre lot is located approximately 3 miles southwest of the Village of Pecos, in Section 7 of T15N, R12E, N.M.P.M.. The developer proposes that water will be supplied to this development via shared 72-12-1 domestic wells.

In the review of February 25, 1998, a positive opinion was issued by this office for the original Luz Del Sol development. Upon revisiting this subdivision proposal, I found that this office erred in approving it. Of primary concern to this office is the poor performance of the sole well tested for this development.

The geohydrologic report submitted for the original subdivision was done by Glorieta Geoscience in December, 1997. In order to develop the report, the author pump tested well UP2550. The well drew down almost 290 feet in 24 hours at a little over 4.0 gpm, and did not fully recover more than 12 days after the test ended. Evaluation of the recovery of the wells using a plot of  $t/t'$  (time since pumping started divided by the time since pump ended) vs. depth to water was done. This Cooper-Jacobs evaluation of the data showed a transmissivity of approximately 3.4 gpd/ft/day. This well is considered "**infeasible for domestic use**" according to the criteria published by the U.S. Department of the Interior, in their Groundwater Manual. Especially disconcerting is that the well will be shared by several homes.

Well log data for well UP2330, and page 2 of well log UP2550 was not submitted, making complete evaluation impossible. Due to the varying geologic structure found under the development, well UP2330 should have also been tested, pursuant to Appendix E, Part 5.2 of the San Miguel County Subdivision Regulations.

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The model submitted was excessively complicated, and did not reflect test data. I ran a Theis model of the well, using data similar to that found in the testing of the well, and found that after forty years, a drawdown of 480 feet could be expected. The fractured sandstone systems, interbedded between clay and shale drilled into cannot be considered a good source of water. Furthermore, any long-term predictions based on this well cannot be accurately predicted, due to the de-watering that would occur in the fractures. The performance of this well is so poor, it is considered to be “infeasible for domestic use” by the U.S. Department of the Interior (Groundwater Manual, 1977, 1988).

This excessive drawdown, combined with regional drawdown, and well inefficiencies, would exceed the water bearing depth within 40 years. Appendix E, Part 5 of the San Miguel County Subdivision Regulations require that water be available for a 40-year period.

If you have any questions regarding this opinion, please feel free to call me at (505) 827-6790.

Sincerely,

Patrick J. Romero  
Water Resource Engineer

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