

April 6, 2006

Mr. Thomas F. Stewart
County Manager, Lincoln County
P.O. Box 711
Carrizozo, NM 88301-0711

CERTIFIED MAIL
RETURN RECEIPT
REQUESTED

Re: Sunrise Estates Subdivision

Dear Mr. Stewart:

The Water Use & Conservation/Subdivision Review Bureau of the Office of the State Engineer has reviewed the referenced subdivision proposal pursuant to the Lincoln County Subdivision Ordinance, the New Mexico Subdivision Act and the OSE Rules and Regulations Governing the Appropriation and Use of Ground Water In New Mexico.

Based on the information provided, this office cannot determine if the subdivider can furnish water sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses, and that the subdivider can fulfill the proposals in his disclosure statement concerning water, excepting water quality. Accordingly, a **negative** opinion is issued.

A staff memorandum providing specific comments is attached for your information. If you have any questions, please call Jerry Keller at 505-827-3845.

Sincerely,

John W. Longworth, P.E.
Water Use & Conservation/Subdivision Review Bureau Chief

Encl.

cc: OSE Water Rights Division, Roswell Office

JK:jk

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

DATE: April 6, 2006

TO: John Longworth, P.E. Water Use & Conservation Bureau Chief

FROM: Jerry Keller, Senior Water Resource Specialist

SUBJECT: Sunrise Estates Subdivision in Lincoln County

SUMMARY

On March 8, 2006, the Office of the State Engineer (OSE) received a request to review the Preliminary Plat for Sunrise Estates, a Type-Three Subdivision. The proposal is a request to subdivide a 116-acre parcel into 14 residential lots ranging in size from 6.0-acres to 12.2-acres each. The proposed water supply is 72-12-1 individual and/or shared domestic wells. The proposed subdivision is located north of Bonito and west of SR 37 off Ruth Road, approximately 16 miles north of Ruidoso within Section 33, Township 9 South, Range 13 East, NMPM.

The water supply documents submitted to this office consist of a Water Plan, Disclosure Statement, Hydrogeologic Study (Study), Draft Restrictive Covenants, and a Draft Shared Well Agreement.

This proposal was reviewed pursuant to the Lincoln County Subdivision Ordinance (Ordinance), the New Mexico Subdivision Act (Act) and the OSE Rules and Regulations Governing the Appropriation and Use of Ground Water In New Mexico. The water supply proposal is not in compliance with the requirements of the Sections 18.2.A, 18.2.B, 17.4.C, and 17.5 of the Ordinance. Accordingly, a **negative** opinion should be issued.

WATER DEMAND ANALYSIS AND WATER CONSERVATION

Section 18.2.A of the Ordinance requires a detailed water demand analysis for subdivisions containing 6 or more parcels. The submittal included a number of water demand budgets, analyses, and allowable activities that can affect these budgets and are discussed below.

The Study provides an array of options to establish the minimum and maximum water demand for the subdivision as well as two water demand budgets. The following is a summary:

- Average number of people per household of 2.34 (U.S. Census Bureau website).
- Minimum subdivision demand of 3.5 acre-feet per annum based on 0.25 acre-feet per lot.
- Maximum subdivision demand of 42 acre-feet per annum based on 3 acre-feet per lot.
- Calculated maximum indoor demand of 2.77 acre-feet per annum based on 75 gpcd per AWWA recommendations. (The particular AWWA document is not cited.)
- Calculated minimum indoor demand of 1,452 gallons per day based on use 44 gpcd for rural residents (Corbit, 1990).
- No irrigation estimates for landscape are presented.
- No estimated water requirements for horses or irrigated grasses are presented.

- Seven wells will supply the 14 lots within the subdivision with a maximum annual diversion of 3 acre-feet per lot. Figure 5 shows a proposed layout of the 7 shared wells.
- The Water Availability Assessment establishes the water budget as 0.25 acre-feet per year per parcel for calculating the minimum subdivision requirements for 40-years.

The Water Plan provides two water supply proposals and no water demand budget:

- The first paragraph of the Water Supply Plan states the subdivision will utilize individual wells for each lot.
- The second paragraph allows the lot owner the option of either installing individual wells or to utilize the shared well concept.
- The attached Exhibit showing well and septic sewer system shows 14 new wells.

The Disclosure Statement contains two water demand budgets:

- Under Item R the water budget is 0.75 acre-feet per year per parcel for shared wells.
- Under Item R the amount of arable turf grass is a maximum of 800 square feet.
- Under Item S for individual wells the water budget is 3 acre-feet per parcel.
- Under Item T of the Disclosure Statement each single well shall server no more than 4 parcels or allowed a withdrawal of more than 0.75 acre-feet per parcel.

A list of the Restrictive Covenants having activities that may affect the water demand, as well as provide a water budget per lot follows:

- Article L.1.4.4 states that no more than 0.75 acre-feet of water per annum is the annual water budget per household.
- Under Article J.1.5 non-native landscaping shall be limited to the square footage requirements for courtyard and backyard walls. Under Item H.2.5 this area may be as much as 10,000 square feet.
- Conservation measures under Article L.1.4.2 of the Restrictive Covenants limit the amount of irrigated turf grass to a maximum of 800 square feet.
- Under Article K.2.2 areas outside the courtyard and backyard walls (Article J.1.5) may be modified by the Architectural Committee to allow for horses. Approved irrigated areas for grasses are to be considered allowed vegetative cover.

None of the methods listed use the step-by-step computational procedure presented in relevant State Engineer Technical Report, OSE Technical Report 48 (Wilson, 1996), as required by Section 18.2.B of the Ordinance.

WATER AVAILABILITY ASSESSMENT

The Study submitted by developer is not in compliance with the requirements of Sections 17.4.C and 17.5 of the Ordinance.

The Study is based on available information in the vicinity of the subject property. No test wells were drilled onsite. Six well logs for existing wells within Section 33, T33S, R13E are included in the Study. The following issues between the requirements of the Ordinance and the Study were identified:

- The Study does not contain cross-sections showing depth to water.
- Hydrogeologic boundaries, intake areas and locations of discharge of the aquifers are not identified.
- Direction of groundwater movement is not shown.
- No discussion of effects on existing offsite wells due to pumping of the proposed wells within the subdivision is provided.
- The Study references a pump test reportedly conducted in 1976 (Donohoe 2004) for a well owned by LaMay Ranch Estates. The values for transmissivity used to calculate the hydraulic conductivity are based on this pump test. This well is not listed in Table 1, wells in the vicinity of the proposed subdivision. No information is provided for the pump test, total depth, depth to water, well log, or well construction.
- The 40-year schedule of effects of the projected water withdrawals for the subdivision water levels is not addressed.

Under Item S of the Disclosure Statement the owners of individual lots may be required to, or elect to, drill individual wells and under Item U prospective owners will have the option to drill a independent wells prior to the subdivider's schedule. Further, Item P and R provides that the subdivider will provide wells by September 1, 2006. A draft Shared Well Agreement is included in the proposal.

Under Item W of the Disclosure Statement the minimum and maximum depth to water are not stated. The average of 300 feet is not consistent with the existing well data presented in the Study. For the recommended total depth, estimated yield, recommended pump setting and size, and lithological characteristics of formations, the Study is referenced. The above recommendations should be clearly listed in the Disclosure Statement. The reader should not be required to locate the data in the Study, since the Study is confusing and conflicts with the Disclosure Statement.

SUMMARY

The proposal conflicts in several areas with regard to the water budget. The Study's water demand analysis is not representative of the water demands identified in the Disclosure Statement and Restrictive Covenants. The Study and the Disclosure Statement are not in agreement for the number of proposed wells to serve the subdivision. The Study states that the

maximum annual diversion is 3 acre-feet per parcel. The maximum allowable diversion from a shared well serving two parcels is 3 acre-feet, or 1.5 acre-feet per parcel. The Restrictive Covenants should clearly state the allowable irrigated areas.

OSE is currently promulgating regulations for The Use of Public Underground Waters for Household or other Domestic Use. The proposed regulations will replace Article 1-15 of the existing Rules and Regulations Governing the Drilling of Wells and the Appropriation and Use of the Ground Water in New Mexico. A public hearing on the proposed regulations will be held on April 21, 2006 in Santa Fe, New Mexico. Under the proposed regulations the total diversion of water from a 72-12-1.1 well shall not exceed 1.0 acre-foot per annum. The total diversion of water from a 72-12-1.1 well permitted to serve more than one household shall not exceed 1.0 acre-foot per annum per household served. The maximum combined diversion from a 72-12-1.1 well serving three or more households shall not exceed 3.0 acre-feet per annum.

Should the proposed regulations become effective prior to issuing well permits for lots within the subdivision the water budget may be affected.