

**South Crestview
Homeowners' Association**

CONSERVATION PLAN

2007

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Introduction

South Crestview Homeowners' Association has developed three wells on the property. They are numbered 351-01, 351-02 and 351-03.

The original well, 351-01, is located on the west side of section 7 adjacent to the property owned by Marcus and Wendy Samper. Well 351-02 is located in the southeast quadrant of the block next to the property owned by Winsor and Graciette McLean. Well 351-03 is located on the west side of section 7 on property owned by John and Sharon Hogg.

Location of South Crestview's Wells		
Well #	Coordinates in UTM Zone 11, Nad 27	
351-01	0598430E	4521648N
351-02	0599008E	4521413N
351-03	0598419E	4521858N



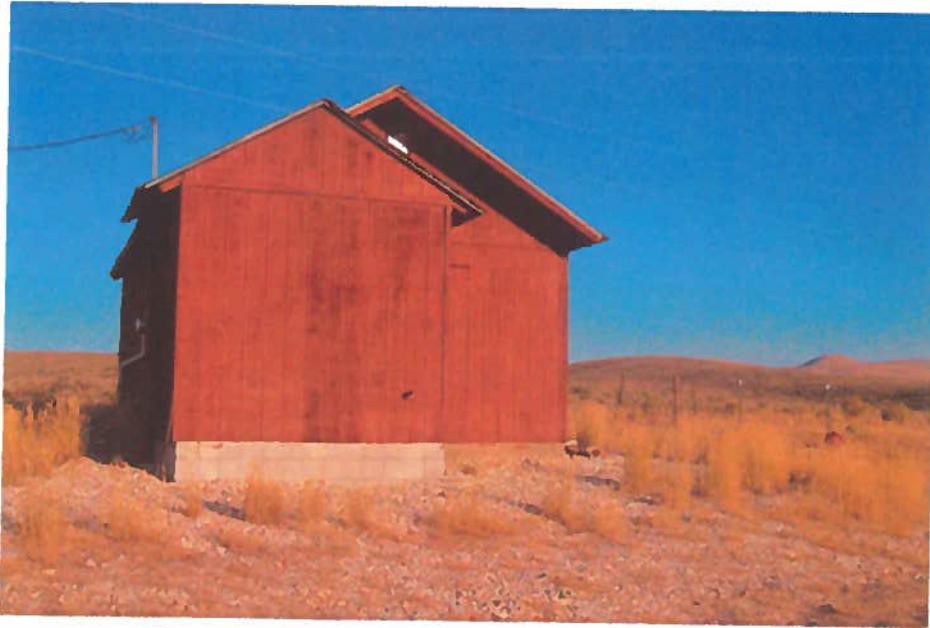
Wellhead #1



Wellhead #2



Wellhead #3



Pump house #1. Wellhead #1 is visible on right.



Pump house #2. Wellhead #2 is visible in foreground.

Two storage tanks are used: a 10,000 gallon tank at Well 351-01 and 351-03 and a 20,000 gallon tank at Well 351-02.

Twenty-three customers are provided with water from these wells. One land owner has not joined the Association and has not constructed a home in the subdivision. All members owning more than 5 acres have the ability to subdivide into 2½ acre parcels, and a significant increase in water usage would result if all qualifying members exercised this option.



Tank #1



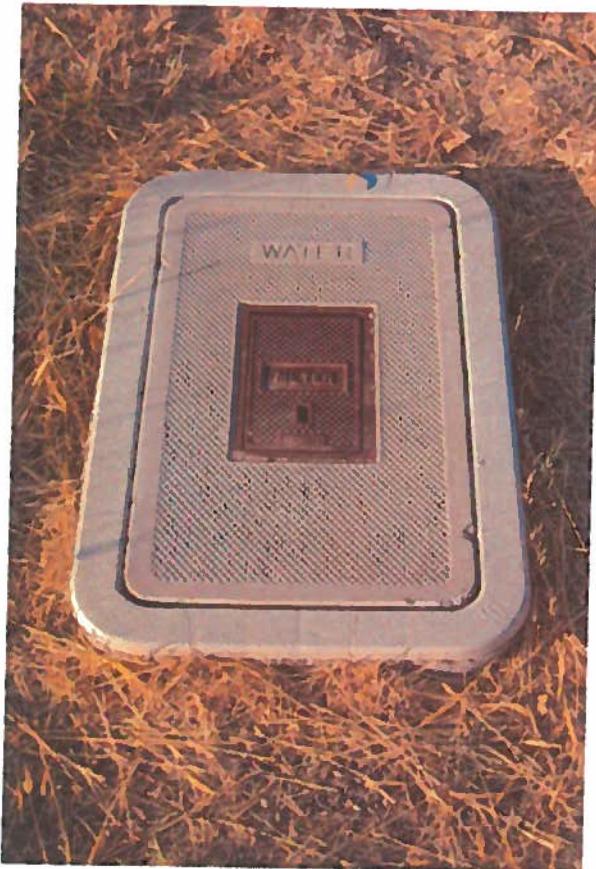
Tank #2

The main distribution system consists of an asbestos pipe which lies buried on the inside loop of Crestview Drive and Pratt Drive. A map of the distribution system is included in the pocket of this report.

There are water meters at each pump house, and water to each home is metered.



Meter at Tank #2



Water meter box outside residence



Meter inside box

A. Public Education

(1) Water Resources and Limited Supply

A library of documents is being developed for distribution to homeowners. The documents that will initially be used will be taken from, but not limited to, the following sources:

USGS Water in Nevada
<http://nevada.usgs.gov/wb/index.htm>

Nevada Natural Resources Status Report
State of Nevada Department of Conservation and Natural Resources
<http://dcnr.nv.gov/nrp01/content.htm>

State of Nevada. Department of Conservation and Natural Resources.
Division of Water Resources.
<Http://water.nv.gov/>

With each quarterly billing to homeowners, a document will be included designed to stress the limited supply of water in Nevada and the need for water conservation.

- (2) Encourage Reduction in size of lawns and encourage the use of plants that are adapted to arid and semi-arid climates

As with (a) above, Water Resources and Limited Supply, a library of documents is being developed for distribution to homeowners. The documents that will initially be used will be taken from, but not limited to, the sources in the above section as well as

Southern Nevada Water Authority
http://www.snwa.com/html/cons_index.html

US Environmental Protection Agency
<http://epa.gov/watersense>

Nevada Water Resources Association
<http://www.nvwra.org>

All of the above URLs will be sent to homeowners in the next quarterly billing in 2007.

B. Conservation Measures

Conservation measures used can be categorized as

- Rate increases for higher water usage
- Separation of the system to reduce water pressures in high usage areas of the subdivision
- Reduction of pumping capacity

(1) Rate Increases

A rate schedule has been developed and modified over the years in order to encourage users to use less water.

Each member is allowed to use a base amount of 36,000 gallons per quarter, for which they are charged \$225.00. Overage charges per quarter are as follows:

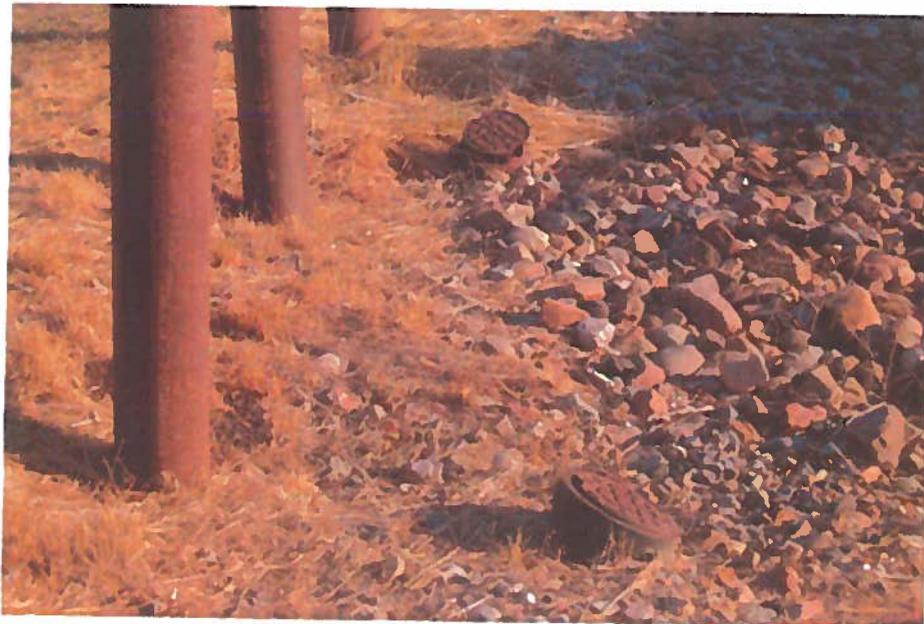
<u>Gallons per Quarter</u>	<u>Rate per 1000 Gallons</u>
less than 36,000	no additional charge
36,000-45,000	\$.80
45,000-65,000	\$1.00
65,000-100,000	\$1.50
100,000-200,000	\$1.75
>200,000	\$2.00

(2) Separation of the System to reduce water pressures in high usage areas of the subdivision

The high water usage homes have always tended to be the homes on the downhill side of the subdivision. This appears to be a function of the elevation differential and also that most of the lower-elevation homeowners have more lawn and trees. The higher homes in the subdivision naturally have less water available to them.

As a result, the Association at high usage times of the year uses a valve to separate the system into two parts. Homeowners on the upper part of the subdivision use water from Well 351-03, and homeowners in the lower part of the subdivision use water from Well 351-02. Well 351-01 is used only at times of greatest need, e.g., fire danger.

This separation allows for the enhanced use of pressure differentials in order to reduce water usage, particularly in the lower part of the subdivision.



Mains separation valves (protected by metal posts)

(3) Reduction of Pumping Capacity

Pump House #1 (Wells 351-01 and 351-03) uses two Gould multi-stage centrifugal pumps (HB2515 series). Pump House #2 (Well 351-02) also uses two of the same type of pumps.

During times of low usage, i.e., winter months, Wells 351-01 and 351-03 may be shut down for prolonged periods or at least one of the pressure pumps is shut down. At these times one of the pressure pumps at Pump House #2 may also be shut down.

All pressure pumps are on timers, and shutdown of some pumps is carried out during the night. This results in decreased overnight pressure when timed automatic sprinkler systems are used, which results in significant savings in water usage.



Pumps at pump house #2

C. Water Management

(1) Identify and reduce leakage, inaccuracies in water meters and high pressure in water supplies

All homes are on water meters. There are also meters at the storage tanks. All meters are read on a quarterly basis, or more frequently if a home is sold or a water leak has occurred.

During the process the individual meter usage is calculated and correlated with the water usage indicated at the pump stations.

Water meters are replaced when necessary, and the water meters at the pumping stations are checked quarterly for accuracy. They are also visually checked weekly and at the time of the sampling for coliform each month and when any maintenance is carried out at the pumping stations.

(2) Increase the reuse of effluent

All homeowners are on septic tanks, and thus the reuse of effluent is not carried out.

D. Drought Contingency Plan

We have provided for a back-up water supply by having three wells and two tanks with storage capacities of 10,000 and 20,000 gallons. Wells 351-02 and 351-03 were planned with a view that the aquifer might drop in times of drought or from overuse by adjacent land owners with irrigation permits.

The By-Laws of the Association allow for special assessments if a new or deeper well is needed. Legarza Exploration has been contacted about the use of a water truck in order to provide water during emergency conditions. Drinking water would also be purchased at Raley's, the nearest grocery store. No outside water usage for gardens would be permitted during the time of emergency.

E. Schedule for Carrying Out the Conservation Plan

The Conservation Plan will be implemented immediately upon approval. The first information to homeowners would be sent out with the third quarter billings of 2007.

F. Analysis of the Feasibility of charging variable rates for the use of water to encourage the conservation of water (Source: WAPAC-Fees/Water Rates/Alternative Subcommittee Report, 7/24/2003)

The Association since its inception has used variable rates to encourage the conservation of water. The rates have been periodically increased.

The Association regularly assesses the current fee structures and rates and makes recommendations to all members for water pricing strategies that consider the full cycle of water as well as future supply needs. This process is carried out at Board meetings and at the Annual General Meeting.

The Association has taken into account water rates for other users in Elko County and investigated the use of seasonal rates. This has been done by having increased water rates for use of over 36,000 gallons during the second and third quarters of the year, the time of heaviest water use.

The frequency of billing has been considered, along with fixed charges and consumptive charges during the summer months. The Association bills on a quarterly basis and at the end of the second and third quarters bills for overages. These overage charges increase dramatically with increased water usage, as described in section B1.

The lowest overage charge billed for the second quarter in 2006 was \$0 (4,310 gallons total), and the highest charge was \$793.74 (468,020 gallons total). During the third quarter in 2006 the lowest overage charge was \$0 (6,530 gallons total), and the highest charge was \$822.86 (482,580 gallons total). The average overage charges and water usages for each period were

<u>Period</u>	<u>Overage Charges</u>	<u>Gallons Used/Connection</u>
2 nd Quarter 2006	\$135.15	114,904
3 rd Quarter 2006	\$158.00	149,528

The Association has considered increasing the frequency of billing, but this is not practical to implement. The consumption history for each homeowner will be given to the homeowner annually.

We are unable to review household income for the subdivision and are therefore not able to calculate what the percentage of water charges is compared with median household income.

The Association has implemented seasonal rates by charging overages during the peak season. We have considered using conservation rates and effectively do so by charging overages on a graduated scale that charges the heaviest users the highest rates. Research has indicated, however, that conservation rates result only in small reductions in water use that are not sustained over time. Customers tend to consume the amount of water that they are accustomed to, regardless of small and moderate increases in price.

The Association uses a model of charging a base amount (\$225.00 per 36,000 gallons per quarter) for a minimum amount of essential use. By comparing average water use during the second and third quarters, it was determined that the average user was consuming up to 65,000 gallons, so from 36,000 to 65,000 gallons of usage two tiers of pricing were used. Over 65,000 gallons of usage three tiers of charges were developed to encourage conservation.

The feasibility of any billing plan is determined by the Board with the input of all association members.

G. Adoption of Plan to provide incentives to encourage reduction in water usage

The Association encourages the conservation of water by the implementation of a graduated water rate scale. (See section B-1) This water rate scale is heavily biased and beneficial to those who restrict their water usage to less than 65,000 gallons per quarter.

By the implementation of this scale, the homeowners are given the incentive to keep bills low and thus conserve water by

- (1) Using water conservation
- (2) Retrofitting existing homes with plumbing fixtures designed to conserve the use of water
- (3) Installing landscape that uses a minimal amount of water.

The Association believes that the best methods of conserving water are by the continued implementation of a graduated water rate scale and by continuing education.

This Water Conservation Plan will be given to all interested persons, who will be provided with an opportunity to submit written reviews and recommendations on the Plan.