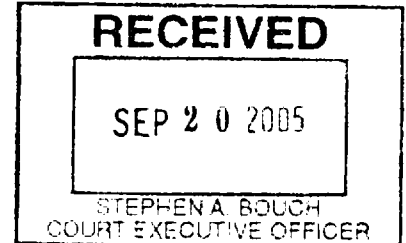


# NAPA BERRYESSA RESORT IMPROVEMENT DISTRICT

ROBERT J. PETERSON, P.E.  
District Engineer

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Assistant District Engineer

September 13, 2005



The Honorable Richard A. Bennett  
Presiding Judge  
Superior Court of California, County of Napa  
825 Brown Street  
Napa, CA 94559

Dear Judge Bennett:

As required by Penal Code Section 933(c), enclosed are the responses to the 2004-05 Grand Jury Final Report.

Grand Jury activity takes place over the course of a number of months. As such, their findings and recommendations often address issues which the district has already identified as problems and to which solutions are in the process of being developed.

The District acknowledges the members of the 2004-05 Grand Jury for the time they have devoted in preparing their report.

Sincerely,

A handwritten signature in cursive script that reads "Diane Dillon".

Diane Dillon, Chair of the Governing Board of the Napa Berryessa Resort Improvement District

Enclosure

cc: Foreman, 2005-06 Grand Jury  
Nancy Watt, County Executive Officer  
Robert Peterson, District Engineer

SEP 20 2005

Clerk of the Napa Superior Court

By: C. B. [Signature]  
Deputy

## WATER LOSS

**FINDING:** As reported by the cities, towns and water districts in the county, current unaccounted water losses are listed below:

- City of Napa County about 12%
- American Canyon 30%
- Calistoga about 6%
- Yountville 3%
- St. Helena about 6%
- Circle Oaks about 2%
- Spanish Flat 27%
- Berryessa Pines 31%
- Lake Berryessa Resort Improvement District 26%
- Napa-Berryessa Resort Improvement District about 23%

**Response – Napa Berryessa Resort Improvement District Public Works Director:** The Napa Berryessa Resort Improvement District Public Works Director partially agrees with this finding. While the findings are based upon the information provided by each agency, the data provided needs to be evaluated more closely in some cases. Inasmuch as the District’s numbers indicate that they experience a 23% loss in water, the interpretation is not entirely accurate. The data provided did not account for the fact that the District’s water treatment procedure utilizes the processed water to clean the filter equipment on a regular basis. The District’s water treatment plant utilizes sand filters to extract particulate matter from the raw water to levels established by the State Department of Health Services. The sand filters must be back-washed on a regular basis to remove the particulate matter from the sand and dispose of it in the sewer treatment facility. The back-wash water comes from the community’s water storage tanks. Approximately 30,000 gallons of water is needed to perform a back-wash operation on a schedule that averages three times per week. Therefore, approximately 4,680,000 gallons of water is used per year to clean the sand filters, which translates to 14± acre-feet (5% of the total amount of water entering the system). Additionally, last year the District experienced a complete evacuation of the 500,000 gallon storage tank when the water main that fills the storage tank spontaneously ruptured due to weathering and age. The District lost approximately 2.5 acre-feet of treated water during the duration of the incident which accounts for approximately 1% of the total water entering the system.

The definition of water loss as prescribed by the American Water Works Association and incorporated in the 2004-2005 Napa County Grand Jury Report (Report) is: “...the total amount of water entering the system minus water accounted for both by metering and by estimating volumes used for municipal irrigation, flushing operations, street cleaning and firefighting.” Strict application of the above noted formula, while accounting for the water used for back-washing the sand filters and the water line rupture, yields a water loss estimated at about 17%. The following is the calculation of the 17% total water loss:

299 ac-ft (total water entering the system) minus 231 ac-ft (total billed water consumption) minus 14 ac-ft (water used for back-washing sand

filters) minus 2.5 ac-ft (water lost due to pipe line rupture) equals 51.5 ac-ft (estimated water loss amount). 51.5 ac-ft (estimated water loss amount) is 17% of 299 ac-ft (the total water entering the system).

The above noted quantities (299 ac-ft of total water entering the system and 231 ac-ft of billed water consumption) were provided to the Grand Jury during their inquiry of water loss from the water agencies in Napa County.

Although 14± acre-feet of water appears to be a significant amount of water, it is the design and function of the water treatment plant that necessitates the volume. The District is currently evaluating alternative water treatment processes that would require less volumes of water for required cleaning of filtration systems and use less energy.

### **RECOMMENDATION:**

1. Water districts and municipalities must monitor unaccounted-for water on an annual basis.
2. Water districts and municipalities must follow the methodology and goal for calculating unaccounted-for-waste according to the American Water Works Association.
3. Water districts and municipalities must have in place a system for inspecting, testing, maintenance and replacement of meters.
4. Water districts and municipalities should consider joining the California Urban Water Conservation Council. The council establishes standards and audit procedures.
5. The City of American canyon, the City of Napa, the Napa-Berryessa Resort Improvement District, and the Spanish Flat, Berryessa Pines, and Lake Berryessa Resort Improvement Districts must find, explain, and fix the high, unaccounted-for water loss.

***Response – Napa Berryessa Resort Improvement District Public Works Director:*** The Napa Berryessa Resort Improvement District Public Works Director agrees in part with the recommendations. The additional analysis that takes into account the mandatory back-washing operations and unfortunate water main rupture places the District above the acceptable industry standard of 10%. While the District is prepared to implement the above recommendations, it has always been the philosophy of the District to pursue strategies that conserve natural resources and improve operation efficiencies. The above noted recommendations provide common sense suggestions to enhance the conservation of water, in which the District shall endeavor to implement to the best of their ability and within the limited resources available to them. The following are the actions the District will pursue in response to the above noted recommendations.

1. The District currently records the necessary information to perform a water loss calculation; however, the calculation has not been carried out. Beginning immediately, the District shall monitor water loss on a yearly basis and develop long term strategies to help maintain or reduce the percent of water loss each year and provide the information to the governing board on a yearly schedule.

2. The District shall utilize the American Water Works Association's (AWWA) methodology for determining water loss and venture to meet the goals and objectives established by AWWA.
3. The District has a procedure for detecting, testing and repairing/replacing water meters through out the District. The inspection of water meters poses a significant challenge to the District's personnel and financial resources. While meter inspection may capture a portion of the potential water loss, it only accounts for a small percentage of the overall water loss. The District fully understands that every little bit counts; however, the District's main focus for the near future, given their limited resources, shall be pursuing a more efficient filtration process and leak detection and repair.
4. The District shall consider joining the California Urban Water Conservation Council (CUWCC). Currently, the District does not have the resources available to meet the commitments outlined in the Memorandum of Understanding governing the CUWCC. Nonetheless, the water conservation goals of CUWCC are consistent with the management of the District and the district intends to join the CUWCC when it has the necessary resources to meet the commitment established by the CUWCC.
5. The District has historically been and will always be committed to finding and repairing leaks within their distribution system as they appear. Proactively conducting leak detection through a routine maintenance plan is a goal of the District; however, it warrants a priority status below the operational and financial challenges that face the District today. The District is currently in the process of improving their financial stability to secure their future. Part of the Districts long term planning strategies includes an aggressive and proactive maintenance policy that will address such issues as leak detection.

The District is currently experiencing issues with leaks on the water main that feeds the community's storage tank, and is the main suspect in the majority of its water loss. The water main is an aging water pipe that travels over steep terrain that makes accessibility a challenge. The District is currently pursuing a grant opportunity that would fund the replacement of the water main resulting in reduced water loss. Once the water main is replaced the District will monitor the water loss over the next year to evaluate whether additional immediate attention is necessary.

Conserving natural resources is a primary objective that the District is continually pursuing. The Findings and Recommendations provided in the Grand Jury report certainly outline goals that will assist the District in achieving their conservation objectives and the District will implement them to the best of their ability. The District hopes that this response adequately addresses the Findings and Recommendations of the 2004-2005 Grand Jury Report and respectfully requests the opportunity to provide more information or clarify their position to the Grand Jury if necessary.