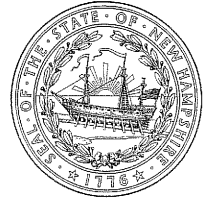




The State of New Hampshire  
**DEPARTMENT OF ENVIRONMENTAL SERVICES**



**Thomas S. Burack, Commissioner**

January 30, 2011

JUDE GATES  
 ROCKINGHAM COUNTY COMPLEX  
 116 NORTH ROAD  
 BRENTWOOD NH 03833-6624

SUBJECT: PWS BRENTWOOD: ROCKINGHAM COUNTY COMPLEX  
 EPA # 0284010  
 SANITARY SURVEY 11/19/2010

Dear Ms Gates:

Representing the NH Department of Environmental Services Drinking Water and Groundwater Bureau, I performed a sanitary survey on the Rockingham County Complex water system on November 19, 2010. The purpose of the survey was to review the capacity of the water system's sources, treatment, distribution, and management to continually produce safe drinking water. I would like to thank Tom Schulte, water operator for his assistance in conducting this survey.

REPORT SUMMARY

The Rockingham County Complex water system is well maintained and is operated by competent, professional operators. As noted in the last survey, the treatment plant again was observed to be especially clean and well cared for. The water system is in compliance with all water quality standards, including those for lead and copper at the users' taps. This sanitary survey did not identify any major deficiencies.

SYSTEM DESCRIPTION

The Rockingham County Complex water system provides domestic water to a nursing home, county jail, assisted living facility, and offices of the county complex in Brentwood. The population served includes about 300 residents at the jail and 217 at the nursing home, approximately 605 employees at those institutions plus the county extension, conservation and health offices, and as many as 46 residents in the assisted living facility. The total population is currently (it changes over time) estimated at 1168.

Since 1999, the county has continued to implement a water conservation program and has reduced water consumption from an average of 79,550 gallons per day in 1999 to approximately 64,000 gpd now in 2010.

Sources and Treatment

The water system consists of two gravel packed wells, treatment plant, storage tank, and distribution piping. Features of the two gravel packed wells are as follows:

Source	DES Data Base ID	Well Depth (ft)	Pumping Capacity (gpm)
GPW 2	'002'	58	150
GPW 3	'003'	68	150

The wells are operated alternately with each one running a month. Both wells have been rehabilitated in the

last 5 years, in keeping with the routine maintenance schedule for this task. The wells are capable of pumping 150 gpm, but are throttled back with variable speed drives due to the hydraulic limitations of the water softener to 125 gpm. The wells cycle according to the clear well level at the treatment plant. And emergency generator with emergency transfer switch is capable of operating either well.

The treatment plant includes the following unit processes:

- Potassium permanganate addition followed by two greensand (oxidizing) filters operating in parallel for removal of iron and manganese.
- Two ion exchange softeners operating singly (one serves as a duty filter while the other backwashes) for iron, manganese, and hardness removal.
- Aeration for pH elevation and corrosion control followed by discharge to the 80,000 gallon clear well.
- High lift pumping to a 500,000 gallon elevated tank based on pressure detected at the tank.
- Injection of soda ash (for alkalinity elevation for corrosion control) and sodium hypochlorite (for disinfection) to the high lift pump discharge.

The green sand filter backwash cycle is triggered manually. Softeners operate singly and are rejuvenated automatically after each 100,000 gallons of water treated. Backwash water flows to two sludge tanks in series, with decant conducted to the wastewater treatment plant. The limiting factor of the treatment facility is the capacity of the softeners. Alarm conditions at the wells, treatment plant, and chemical monitoring are transmitted to the County's dispatch center.

#### Distribution System

The distribution system in the county complex consists primarily of ductile iron with a small amount of pit cast iron pipe. Distribution system flushing is conducted every 3 months.

The Rockingham County Complex has an updated Cross Connection Control plan on file with DES. There are 27 testable backflow prevention devices within the complex which are tested by county personnel twice annually. There is a separate fire fighting water system which draws from an impoundment on Ie Pond Brook. However, there is no connection with the potable water system.

The County has undertaken an aggressive conservation program which included the change-out of plumbing fixtures to save water. Average daily water usage, which totaled 79,500 gpd in 1999 has been reduced to 58,000 gpd. Chemical use has also been dramatically reduced through the reduction in flow and the acceptance of moderately higher hardness in the finished water.

#### Storage

System storage is provided by a 500,000 gallon elevated steel tank which was last painted in 2001.

#### STAFFING AND CERTIFIED OPERATOR VERIFICATION

The Rockingham County Complex is required to have operators certified at the Grade 2 treatment and Grade 1 distribution levels. The department employs two operators which are certified as follows:

	<u>Cert. No.</u>	<u>Treatment Grade</u>	<u>Distribution Grade</u>
Thomas Schulte	743	2	3
Daniel Carlisle III	3023	2	1

#### ISSUES AND RECOMMENDATIONS

#### Acknowledgements

The following are among the positive features which were noted during this survey and for which we commend the water department:

1. System staff interviewed as part of this survey is very knowledgeable about the water system and approaches his job in a professional manner. Staff interviewed represent distribution maintenance, backflow prevention, treatment and maintenance staff.
2. Water quality monitoring records show the Rockingham County Complex currently meets all water quality standards.
3. The Rockingham County Complex has a backflow prevention program based on a cross connection control program.
4. The Rockingham County Complex has kept their emergency plan up to date.
5. The Rockingham County Complex has been active in protection of groundwater quality through the wellhead protection program.

#### System Deficiencies/Recommendations

My survey noted no deficiencies.

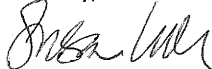
Source protection, minimizing the likelihood that contaminated water reaches your well or intake, is an important responsibility for every public water system. Source protection is far less costly than treating contaminated water or replacing a well.

DES recommends that you continue to implement your source protection program through the chemical monitoring waiver program and consider additional source protection measures such as expanded public education and land protection.

DES provides a variety of guidance materials as well as grant programs for source protection and land conservation to assist public water systems in this respect. DES has also assessed all public water supply sources in terms of their vulnerability to contamination. These source water assessment reports were mailed to all systems and are a valuable source protection tool. For more information about source protection, please contact DES's Drinking Water Source Protection Program at 271-7061.

I can be reached at the letterhead address or by email [Susan.Willoughby@des.nh.gov](mailto:Susan.Willoughby@des.nh.gov), and by telephone at (603) 271-2952.

Sincerely,



Susan Willoughby, P.E.

Groundwater and Drinking Water Bureau

cc: Thomas Schulte, Primary Operator  
File