



C. Earl Hunter, Commissioner  
*Promoting and protecting the health of the public and the environment.*

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WATER POLLUTION CONTROL  
DIVISION

November 16, 2009

Town of Denmark  
Attn: Dr. Gerald Wright  
4768 Carolina Highway  
Denmark, SC 29042

RE: Sanitary Survey  
System #0510002  
Bamberg County

Dear Dr. Wright:

On November 9, 2009 a sanitary survey was conducted on the Town of Denmark public water system. The intent of the sanitary survey is to evaluate the public water system's ability to provide a continuous supply of safe drinking water to its customers.

The Town of Denmark public water system received an overall rating of **Unsatisfactory**. Enclosed is a copy of the survey and a report, which includes a description of the public water system, specific findings made during the sanitary survey, and recommendations for correcting any deficiencies. This survey and the report should be kept on file for no less than ten (10) years and be made available to the public or DHEC upon request. It is requested that all parties responsible for the operation and maintenance of the water system review this report promptly.

If you have any questions or if I can be of any assistance, please call me at (803) 641-7670.

Sincerely,

  
Travis Fuss  
Region 5 EQC, Aiken

cc: Marty Chaney, Bureau of Water Compliance Assurance Division

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL  
CONTROL  
REGION 5 EQC

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**SANITARY SURVEY REPORT**

*Town of Denmark  
Water System # 0510002  
Bamberg County*

**Introduction**

The South Carolina Department of Health and Environmental Control recently conducted a sanitary survey of the Town of Denmark Public Water System (Water System # 0510002). This survey consisted of a review of the Department files and an on-site inspection by Department personnel on November 9, 2009. The following persons participated in the on-site inspection:

Travis Fuss                      SCDHEC – Region 5 EQC, Aiken  
Jamie Preacher                Town of Denmark

This report includes a description of the water system, a list of findings and recommendations noted during the survey.

**System Description**

The Town of Denmark owns and operates a groundwater facility and associated potable water distribution system that serves approximately 3800 by approximately 1501 service connections. Information on the system's wells is given in the table below.

*Well Information*

	Type	Horsepower	Yield	Regulated Capacity	Treatment
Well One Brooker Center	NOT IN SERVICE				
Well Two Voorhees	Turbine	60	330 gpm	316.80 TGD	Gaseous Chlorine
Well Three Legare Street	NOT IN SERVICE				

Well Four Cox Mill	Turbine	50	350 gpm	336 TGD	Gaseous Chlorine Iron Bacteria Removal
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Three (3) elevated storage tanks with a total volume of approximately 475,000 gallons serve the Town of Denmark public water system. However, the City Hall Tank was taken offline in late 2008/ early 2009 and may or may not be brought back into service. An emergency connection exists with the Town of Bamberg.

### Storage Capacity

Tank	Capacity (gallons)
City Hall Elevated Tank (offline)	100,000
Nibco Elevated Tank	250,000
Voorhees Elevated Tank	125,000

Currently, the Town of Denmark public water system has the following operators:

Operator	License	Certification #	Class
Tim Freeman	Treatment	6651	D ✓ 6/30/10
	Distribution	1830	G ✓ 6/30/10
Jimmie Shepherd	Treatment	7449	T ✓ -
	Distribution	931 (lapsed)	G ✓ 10/30/10 6/30/10
James Preacher III	Treatment	8413	D ✓ 6/30/10
	Distribution	3337	T ✓ 6/30/10

Freeman	NW	10922	D	6/30/10
Shepherd	WW-T	12751	T	-
<u>Findings and Recommendations</u>				
Preacher	WW-D	13267	D	6/30/10

- 1) The system received a **Satisfactory** rating for Protection from Contamination. The town has taken two wells out of service due to contamination. Samples taken in 2006 from two of the town's three wells detected contamination above an EPA established Maximum Contaminant Level (MCL). Neither well has exceeded the MCL in the past. The Brooker Center Well results showed slightly elevated levels of tetrachloroethylene, also known as PCE. PCE is commonly used as a dry cleaner solvent. The Brooker Center well is within 1200 feet of the closed Colonial Dry Cleaners, which is a potential source for this PCE contamination. The site is in the process of being cleaned up. The Legare Street/Clark Street well has shown contamination of trichloroethylene,

also known as TCE. The town, along with DHEC, is actively investigating the source of the contamination.

- 2) The system was downgraded to an **Unsatisfactory** rating for Water Quality. Many customer complaints due to poor water quality are still being received and investigated by the Department. The Department has stressed the importance of a proactive flushing program but the Town has failed to do so. It is necessary to institute an aggressive flushing program to improve discoloration. The town should consult a professional engineer, the SC Rural Water Association, or Fred Taylor with the Bureau of Water, to help establish an effective flushing program.
- 3) The system received an **Unsatisfactory** rating for Operation and Control. The purpose of this item is to ensure the distribution system is being operated in a safe, reliable manner. This rating is a direct result of an increase in customer complaints, lack of adequate record-keeping, and lack of line flushing. In addition, improperly located and operating valves and hydrants are creating an issue in isolating sections of the line for leak repair and flushing.
- 4) The system received an **Unsatisfactory** rating for Valve and Hydrant Maintenance. Valves are now being exercised as time permits and a few hydrants have been replaced, but much more work needs to be accomplished in this area. According to the Town's records approximately 20 hydrants still need to be replaced. The Town needs to develop written programs for Valve and Hydrant Maintenance.
- 5) The system was downgraded to an **Unsatisfactory** rating for Flushing Program. The purpose of a flushing program is to ensure that the system's routine flushing program is adequate to help prevent customer complaints and water quality problems associated with stagnant, discolored, and sediment-laden water. At the time of the inspection, the Town was only flushing the system in response to citizen complaints and when a line break occurs. As stated earlier, the Town needs to be more proactive in its flushing program.
- 6) The system maintained an **Unsatisfactory** rating for Leak Detection and Repair Program. At the time of the survey, a water audit was still not available for review. This deficiency has been noted on past surveys.
- 7) The system maintained a **Needs Improvement** rating for System Map. A system map exists but it needs to be revised. Please note that a system map must include all sources, treatment plants, storage tanks, distribution lines with sizes, pumping facilities, valves, hydrants, and blow-offs. The system map must be current and up-to-date and needs to include the addition of Cox Mill Well.
- 8) The system was downgraded to an **Unsatisfactory** rating for Storage Appurtenances. The Voorhees Tank overflow pipe still needs to be extended. In addition, the level indicator on the Voorhees Tank must be

- repaired. Although the Town has allegedly contracted services for this work, the deficiency has been mentioned in many previous survey reports. Once the repairs/ modifications have been made, the rating will be upgraded.
- 9) The system was downgraded to a **Needs Improvement** rating for Procedures Manual. The purpose of this item is to ensure that a water system maintains written procedures for the operation and maintenance of its systems. At the time of the survey, the procedures manual was not available for review. Although a procedures manual exists, it needs to be updated to account for changes in the various programs.

### **Conclusions**

The overall rating for the follow-up sanitary survey is **Unsatisfactory**. Considering the previous survey of **Unsatisfactory** and the presence of significant deficiencies, this matter is being referred to the Bureau of Water- Enforcement section. We are committed to working with your system to ensure all deficiencies are properly addressed in a timely manner. Please don't hesitate to reach us, if we can be of assistance to you. A Follow-up Sanitary Survey will be conducted in approximately 60 days. The Department will continue to work with the water system to ensure that the residents of Denmark receive safe and reliable drinking water.