



Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

March 14, 2014

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

RE: Sanitary Survey
System # 0510002

Dear Dr. Wright:

On February 6, 2014, a follow-up sanitary survey was conducted on the public water system serving the Town of Denmark. 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 **Satisfactory**. 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.

Travis Fuss
Midlands EQC Region – Aiken
206 Beaufort Street, NE
Aiken, SC 29801
Phone (803) 642-1637 Fax (803) 643-4027

cc: Marty Chaney, Bureau of Water

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
REGION 5 EQC

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. This survey consisted of a review of the Department files and an on-site inspection by Department personnel on February 6, 2014. The following persons participated in the on-site inspection:

Travis Fuss	SCDHEC - Midlands BEHS, Aiken
Cedric Hudson	Town of Denmark, Public Works Director
Travis Taylor	Town of Denmark, Operator

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. The Cox Mill Well has an iron bacteria treatment system, which consists of an injection of HaloSan tablets into the well twice daily while the well is idle. Treatment contact lasts for 60 minutes, and treated water is then available for further disinfection as it is pumped into the distribution system. Information on the system's wells is given in the table below.

Well Information

	Type	Horsepower	Yield (gpm)	Regulated Capacity (TGD)	Treatment
Well One Brooker Center	NOT IN SERVICE				
Well Two Voorhees	Turbine	60	330 gpm	316.80	Gaseous Chlorine
Well Three Legare Street	NOT IN SERVICE				
Well Four Cox Mill	Turbine	50	350	336.00	Gaseous Chlorine Iron Bacteria Removal (HaloSan)
Well Five Acacia Street	Submersible	40	403	386.88	Gaseous Chlorine
Well Six W. Voorhees	Submersible	40	325	312 .00	Gaseous Chlorine

Two (2) elevated storage tanks with a total volume of approximately 375,000 gallons serve the Town of Denmark public water system. The City Hall Tank was taken offline and physically disconnected from the system in late 2011. 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
Cedric Hudson	Treatment	5044	A
	Distribution	785	A
Tim Freeman	Treatment	6651	D
	Distribution	1830	G
Jimmie Shepherd	Treatment	7449 (lapsed)	T
	Distribution	931 (lapsed)	T
Travis Clark	Treatment	8674	T
	Distribution	3889	T

Findings and Recommendations- *Please note that all items requiring action are italicized.*

1. The system maintained a **Satisfactory** rating for **Water Quality**. The purpose of this item is to ensure that a water system consistently produces water which complies with established water quality standards. Recently, the Department has not received many complaints of discolored water. In addition, sampling performed within the distribution system in September 2013 showed that the drinking water is without total coliform bacteria and that it is meeting the secondary MCLs for iron and manganese. *Considering the history of poor drinking water quality in Denmark, this item will be closely evaluated during each subsequent Sanitary Survey.*
2. The system maintained a **Satisfactory** rating for **Flushing Plan**. The purpose of this item is to ensure that the system's routine flushing program is adequate to help maintain a disinfectant residual throughout the system, as well as to help prevent water quality issues associated with stagnant, discolored, and sediment laden water. The system is doing a good job of routinely flushing their system and documenting flushing activities. The weekly flushing events seem to be improving water quality and preventing customer complaints. Although this flushing is important to maintaining chlorine residuals throughout the system, **a rigorous yearly unidirectional flushing event will serve to more effectively scour the lines. The Department looks forward to evaluating the unidirectional flushing event at the next survey.** As mentioned during the survey, it is important to continue communicating flushing events with the customers so that they will be prepared for potential discoloration. To effectively perform the task of unidirectional flushing, the Department encourages the system to work closely with the SC Rural Water Association to ensure the flushing is done properly.

3. The system maintained a **Satisfactory** rating for **Fire Flow**. The purpose of this item is to ensure that the water system can provide adequate flow to protect the integrity of their water system when fire protection is provided. Hydrants must be flow tested at a minimum of once every three years with a minimum flow required for fire protection of 500 gpm. All fire hydrants were tested by the Town during the month of January 2013. A review of the testing results reveals that all hydrants appear to be meeting minimum flows and pressure.
4. The system received a **Satisfactory** rating for **Storage Maintenance**. The purpose of this item is to ensure the system's storage tanks are properly maintained to guarantee their good working condition. As requested at the last survey, the water level gauge at the Nibco Tank has been repaired.
5. The system received a **Satisfactory** rating for **Monitoring and Recordkeeping**. The purpose of this item is to ensure the water system is monitoring their treatment process and maintaining records that verify that they are checking equipment operation and drinking water quality on a routine basis. The Department employs the appropriate grade treatment operator and it appears that daily inspections are being performed as required. Please ensure that enough detail is being recorded in the well logs such that exactly who performed what task can easily be distinguished. The daily visit by the appropriately graded treatment operator needs to be clearly recorded with a detailed description of any tasks performed. If other staff visit a treatment plant and perform certain tasks (such as, checking chlorine residuals), the visit and actions should be documented as well.

Conclusions

The Department appreciates the attention given to this report. The Department is committed to working with the water system to ensure that the residents of Denmark receive safe and reliable drinking water. If you have any questions regarding the report, please do not hesitate to call.