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PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

February 25, 2009

RECEIVED

FEB 27 2009

WATER POLLUTION CONTROL DIVISION

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

RE: Sanitary Survey
System #0510002
Bamberg County

Dear Dr. Wright:

On January 28, 2009 a follow-up 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 **Needs Improvement**. 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

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 January 28, 2009. The following persons participated in the on-site inspection:

Travis Fuss	SCDHEC – Region 5 EQC, Aiken
Daniel Norton	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

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 has recently been taken offline and may or may not be brought back into service.

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
Daniel Norton	Treatment	6705	T
	Distribution	03182	D
JP Robinson	Treatment	02418	D
	Distribution	00472	D
James Preacher III	Treatment	8413	T
	Distribution	3337	T

Due to the Cox Mill Well recently being placed into operation, the town is no longer purchasing water from Bamberg. However, the emergency connection is still in place and can be used when needed.

The town recently was awarded the Community Development Block Grant to install two new groundwater sources. The town is currently in the process of having ERC do the preliminary work to plan for the two new wells. The Department looks forward to assisting with planning of the water system improvements. The Department is also in full support of the plan for a Bamberg County regional water system.

Findings and Recommendations

1) The system maintained an Unsatisfactory rating for Protection from Contamination. The town has taken two wells out of service. 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 upgraded to a Satisfactory rating for Source Security. The chlorine cylinders previously found at the Brooker and Legare Street wells have been removed.

3) The system was upgraded to a Satisfactory rating for Wellhead Piping. The blowoff at both Voorhees and Cox Mill wells have now been outfitted with a screen or weighted flap. In addition, a raw water sample tap has been installed at the Voorhees well.

4) The system was upgraded to a Satisfactory rating for Chemical Storage and Handling. Documentation has been provided to the Department showing the proper removal and disposal of the fluoride.

5) The system was upgraded to a Satisfactory rating for Chemical Feed. All previously mentioned deficiencies (chlorine leak detection system, chlorine fan, and chemical feed lines) in this category have been corrected.

6) The system maintained a Needs Improvement rating for Water Quality. Although customer complaints have dramatically reduced, it is still necessary to continue the aggressive flushing system to improve discoloration.

7) The system was upgraded to a Needs Improvement rating for Operation and Control. Many of the previous deficiencies have been corrected and the overall distribution system performance and operation has improved. However, more improvements still need to be made.

8) The system was upgraded to a Satisfactory rating for Fire Flow. All hydrants have been tested and properly documented. According to the system, 49 hydrants were found to be substandard.

9) The system was upgraded to a Satisfactory rating for Cross Connection Control. All testable devices were tested in the calendar year 2008.

10) The system maintained a Needs Improvement rating for Valve and Hydrant Maintenance. The system failed to provide documentation that the valves and hydrants are being exercised in accordance with the valve and hydrant maintenance plan.

11) The system was upgraded to a Satisfactory 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. The system has developed and implemented an effective flushing program. The number of complaints due to discolored water has dramatically reduced.

12) The system maintained an Unsatisfactory rating for Leak Detection and Repair Program. At the time the follow up survey, a water audit was still not available for review. This deficiency has been noted on past surveys. In addition, the water recycled through the iron bacteria treatment system must also be accounted for in the water audit. The system must also maintain leak repair documentation.

13) The system maintained a Needs Improvement rating for System Map. 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.

14) The system maintained a Needs Improvement 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.

15) The system was upgraded to a Satisfactory for Storage Maintenance. The purpose of this item is to ensure that the water system's storage tanks are properly maintained to guarantee their good working condition. On December 11-13, 2008, Southeastern Underwater Services performed inspections and maintenance on all storage tanks. A large amount of sediment was removed from the tanks. Due to so many deficiencies and structural integrity issues at the City Hall Tank, it was taken offline.

16) The system was upgraded to a Satisfactory rating for Monitoring/Records. The purpose of this item is to ensure that 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 Cox Mill Well iron bacteria treatment system is now being properly monitored and records are being maintained to show the addition of tablets to the system.

17) The system was upgraded to a Satisfactory rating for Supplies and Spare Parts Inventory. The system appears to have an adequate stock of spare parts to make minor repairs to the system.

18) The system received a Needs Improvement rating for Certified Operator/Staffing. All systems that provide fire protection must have a licensed operator on staff with at least a class "C" in Water Distribution. At this time, no staff member currently holds a class "C" license. To avoid being downgraded to an Unsatisfactory rating, the system must address this deficiency prior to the next survey.

Conclusions

The overall rating for the follow-up sanitary survey is **Needs Improvement**. The Department appreciates the improvements made to the water system since the last survey. Please continue with the improvements so that the system can reach full compliance. 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. The Department will continue to work with the water system to ensure that the residents of Denmark receive safe and reliable drinking water.