



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
KNOXVILLE ENVIRONMENTAL FIELD OFFICE
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February 26, 2024

Mr. Dan Barnett, ESCUD Board Member
e-copy: D.Barnett@blueridgecos.com
East Sevier County Utility District
1529 Alpine Dr.
Sevierville, TN 37811

Certified Mail: 9489 0090 0027 6129 2562 94
Return Receipt Requested

RE: Sanitary Survey of Community Water System - Notice of Violation
East Sevier County Utility District (ESCUD)
PWSID #0000618
Sevier County, TN

Dear Mr. Barnett:

On January 24, 2024, personnel from the Division of Water Resources (The Division) visited the East Sevier County Utility District Water System and performed a Sanitary Survey. The survey consisted of a records review to document the operational performance of the system and an on-site inspection of the water treatment and distribution systems. The survey covered the time period from the previous survey on October 12, 2021, through January 24, 2024. The Division would like to thank Mr. Nathaniel Allsup, and Mr. Jeff Bragonier for their courtesy and timely responses to Division requests. In accordance with the Sanitary Survey Manual, ESCUD Water System earned 567 points out of a possible 599 points for a numerical score of ninety-four percent (94%). This rating retains the ESCUD Water System in the State's "**Provisionally Approved**" category.

The following deficiencies, comments, and/or recommendations as outlined in the Sanitary Survey Rating Form were identified during the survey and should be addressed as applicable:

1. Section 1: System Management and Operation

• Subsection A. Record Keeping

A copy of the record retention requirements was provided during the sanitary survey. Better organization of these records is recommended to improve the operation and efficiency of the water system. The Division recommends going through historical records and purging documents no longer required to be maintained.

There were numerous records that were unable to be located. Specifically, many records from 2017 to current were not available, except for daily operational logs, which existed through 2022. Sample records, historical Sanitary Survey reports, monthly operational reports (MOR's), complaint records, new line records, line repair records, flushing program records,

cross-connection control records, and tank inspection reports were either non-existent, or were not maintained in an orderly fashion. Based on previous survey results and speaking with the previous inspector, it appears that many records between 2017 and halfway through 2023 were removed from the premises upon the previous contracted organization departing the water system.

Because of the gap in records available at the facility and based on the previous survey indicating records for that time period were present, the Division recommends that ownership of the records by the utility district be expressly stipulated in any future contracts.

- **Subsection B. Construction Projects**

The system is reminded that no new construction or modification of the water system may be made without approval of the Division's Engineering Section. Please contact Engineering Services Unit (ESU) with any questions, at DWR.Engineering@tn.gov, if you are planning any water system alterations.

Emergency repairs and repairs in kind may be accomplished, but as-built documents should be submitted to the above-referenced Engineering Section once work is complete.

- **Subsection C. Submission of Monthly Operations Reports**

The following Monthly Operations Reports (MORs) were not received by the Division during the following months, nor were they available on site:

- 2022 – June, August, September
- 2023 – February, March, April, May, September, October, November, December

- **Subsection H. Emergency Operations Plan**

A 2016 copy of the Emergency Operations Plan (EOP) was available on site. Correspondence with the Division, dated January 4, 2021, indicates a 2019 EOP was to be updated to follow Division guidance and to include local Emergency Management Agencies. Revisions were to be submitted to the Division by March 5, 2021. A copy of this letter has been provided to Mr. Tim Ham and Mr. Nathaniel Allsup via separate email.

The Drought Management Plan (DMP) was not located on site, nor was it available in Divisional records. Per Division Rule 0400-45-01-.17(7), the EOP and DMP are required to be updated and approved by the Division every three years. Failure to update and have the EOP and DMP approved by the Division has resulted in a one-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

2. Section 3: Source

- **Subsection D. Source Protection Plans**

The wellhead protection plan was approved in 2021. A wellhead protection plan is required to be submitted to the Division in 2024. Plans should be submitted to Mr. Brian Ham in Nashville Central Office at Brian.Ham@tn.gov. He may also be reached at (615) 532-9224 if you have any questions concerning the wellhead protection program.

3. Section 4: Treatment

- **Subsection I. Disinfection/Calibration**

Contrary to Division Rule 0400-45-01-.17(11), the system is not providing duplicate disinfection at either treatment plant. Each plant has two peristaltic pumps available; however, they have not been connected to the system. Additionally, they do not have two bleach solution tanks from which the pumps can feed. Failure to provide duplicate disinfection at both entry points has resulted in a two-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

4. Section 5: Monitoring, Data Verification and Compliance

- **Subsection A. Laboratory – Process Monitoring**

Contrary to Division Rule 0400-45-01-.17(3), there were expired reagents and buffers being used for the analysis of free chlorine, pH, and hardness. Additionally, the pH sample kit was last calibrated in 2022. Failure to have unexpired free chlorine, pH, and hardness reagents has resulted in a two-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

- **Subsection B. Bacteriological Monitoring**

Contrary to Division Rule 0400-45-01-.41(5)(b), the system failed to conduct bacteriological sampling for November 2023 and December 2023. Failure to conduct required bacteriological sampling during November and December of 2023 has resulted in a six-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

- **Subsection F. Chlorine Residual Monitoring**

Contrary to Division Rule 0400-45-01-.40(4)(c)(ii), the system failed to submit CN-1201 (Disinfectants Monitoring Report) to the Division for November 2023 and December 2023. Additionally, Rule 0400-45-01-.36(6)(c)(1)(i) requires systems using chlorine to measure the residual disinfectant level in the distribution system at the same point in the system and at the same time as total coliforms are sampled. Failure to conduct chlorine residual monitoring for November and December of 2023 have resulted in a three-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

- **Subsection G. Primary Chemicals Monitoring**

During the onsite portion of the survey, it was identified that the December 2023 Nitrate samples were not properly labeled. Specifically, the operator who took the samples did not identify the two sample locations as TP001 and TP003. The lab, therefore, identified both analysis as TP001. This letter serves as notification that the operator who took the sample is authorized to make a statement of correction to the lab analysis and identify the correct sample locations. This statement shall be certified by signature of the individual who took the sample and submitted to Brad Antone at brad.antone@tn.gov as soon as possible.

- **Subsection K. Disinfection/Disinfection By-products and Precursors Monitoring**

Contrary to Division Rule 0400-45-01-.38, and ESCUD's Stage 2 DBP Monitoring Plan, the system conducted Stage 2 DBP sampling on October 13, 2023 instead of September 13, 2023. Failing to conduct Stage 2 DBP sampling during the sampling period, as required, has resulted

in a three-point deduction of the survey rating and contribute to this letter being a **notice of violation**.

5. Section 6: Finished Water Storage

• Subsection B. Inspection and Maintenance of Reservoirs, Tanks, and Clearwell

The previous survey indicates that the system had professional tank inspections conducted in 2019; however, these records were not able to be located. Per Division Rule 0400-45-01-.17(33), all public water systems must maintain records of all routine water storage tank and clearwell inspections. Additionally, this rule requires that community water system have a professional inspection performed and a written report produced on each of their distribution storage tanks and clearwells at least once every five years. The system is reminded to conduct this inspection on their tank this year (2024), and to maintain the record of inspection.

6. Section 7: Pumps, Pump Facilities and Controls

• Subsection B. Maintenance of Pumping Equipment

One of the pumps in the TP001 treatment room is leaking water and should be repaired to prevent leakage, and potential failure of equipment. Additionally, there is an elbow union close to the leaking pump, which is heavily corroded and should be considered for replacement.

7. Section 8: Distribution System and Cross Connection Controls

• Subsection A. Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities

Contrary to Division Rule 0400-45-01-.17(8)(a), there were no records of disinfection and sample collection following repairs available for review during the inspection. This rule requires systems to follow and document sanitary practices used in inspecting, constructing, or repairing water lines, finished water storage facilities, water treatment facilities, and wells. Records of these procedures shall include the disinfection procedures used, bacteriological sample results, construction logs, and repair logs. Failure to maintain documentation of disinfection and bacteriological results following repair has resulted in a three-point deduction of the survey rating and contribute to this letter being a **notice of violation**.

• Subsection B. Flushing Program / Blow Offs

Contrary to Division Rule 0400-45-01-.17(10), the system does not maintain an active flushing program. There were no records of flushing available beyond the 2017 calendar year. Failing to maintain an active flushing program has resulted in a three-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

• Subsection D. Adequate Pressure

Contrary to Division Rule 0400-45-01-.17(9), the system failed to provide minimum positive pressure of 20 psi throughout the distribution system. Specifically, customers in the area of Hickory Tree Street, 1201 Alpine Drive, and The Preserve at English Mountain experienced water pressures lower than 20 psi for an extended period of time. Failure to maintain water pressure above 20 psi has resulted in a five-point deduction from the survey rating and contribute to this letter being a **notice of violation**.

- **Subsection E. Map of Distribution System**

The system map last had updates in 2021, but it is unknown how much of the map was updated and what other revisions should be made. Based on new personnel at the system, the Division recommends conducting a thorough review of the system map and of the distribution system, and making necessary updates.

- **Subsection G. Working Cross-Connection Program**

Contrary to Division Rule 0400-45-01-.17(6)(b)2, the system has not maintained an ongoing program to detect and eliminate or protect the system from hazards associated with cross-connections, nor have they maintained adequate records of inspection, surveys, and findings. The Division acknowledges the system has no known backflow prevention devices; however, regular surveys of properties located in the distribution system have not been conducted since 2017. The system's cross-connection control plan is from 2015 and should be reviewed for accuracy and to ensure it is still adequate. Failure to maintain an ongoing cross-connection control program has resulted in a four-point deduction from the survey score and contribute to this letter being a **notice of violation**.

General Observations, Comments, and Other Recommendations

At the time of the inspection, water system personnel were not able to accurately determine the number of connections in the distribution system. System personnel had began using a new billing system and were working to get an updated connections count. The inspector allowed a month of time for the water system to get this new count and has yet to receive the updated information. The last known connection count, from the previous survey in December 2021, was 321 connections with an estimated population of 815. The Division requires within 30 days of the date of this letter, East Sevier Utility District provide an accurate connections count to the Division using the connections form provided during the survey. It is unlikely that the new connections count will place the population above 1000, which would require the system to take two bacteriological samples per month. Once a correct connections count is received by the Division, the water system will be notified in writing of their bacteriological sampling requirements.

The updated Drinking Water Monitoring Program for the system in accordance with Rule 0400-45-01-.17(3) is enclosed. In accordance with Rule 0400-45-01-.14(1)(a), State approval for the analysis of free chlorine residual, pH, hardness, iron, and manganese is hereby granted to Mr. Nathaniel Allsup, along with personnel designated by the water system. This approval is effective until the next sanitary survey and is contingent upon use of approved methodologies and proper operation of the analytical equipment.

The Division of Water Resources utilizes EPA's Enforcement Tracking Tool (ETT) in tracking violations. Violation types are assigned a point value and if a public water system reaches a point total of 11, the Division must pursue enforcement action against the system. Point values are cumulative over a rolling five-year period. Based on the current ETT listing (through November 2023 compliance dates), the East Sevier County Utility District has an ETT score of 14, stemming from violations occurring from 2020 through 2023. This score is likely to increase based on missing monitoring requirements in December 2023.

Within 30 days of the date of this letter, the Division requires the following:

- Verification that duplicate disinfection has been installed at both treatment plants.
- Verification that unexpired laboratory reagents have been procured.
- Updated connections count.

Within 60 days of the date of this letter, the Division requires the following:

- An updated Emergency Operations Plan (EOP) and Drought Management Plan (DMP) be submitted to the Division for review and approval. The DMP should be included as an addendum to the EOP.
- An updated bacteriological site sampling plan submitted to the Division for review and approval.
- SOP's for line repairs, new tap records, and flushing submitted to the Division for review and approval.
- A cross connection ordinance and cross connection control plan be submitted to the Division for review and approval.
- Expired laboratory equipment be calibrated by qualified calibration technician, utilizing approved methods and test instruments.
- Verification that a customer complaint file/form has been created. At a minimum, this file shall contain the name of the person with the complaint, the date, the nature of the complaint, the date of the investigation, and results or actions taken to correct any problems.

The Division recommends a thorough assessment of available records for the system, and better organization of these records. Records that are not required to be maintained for regulatory purposes may be disposed of as deemed appropriate by the water system. Please reference the record retention requirements document, provided during the inspection, to assist in determining what records need to be retained.

The courtesy extended during the survey was appreciated. If you have any questions or need assistance, please contact Brad Antone at (865) 323-8650 or at Brad.Antone@tn.gov, in the Knoxville Environmental Field Office.

Sincerely,



Michael Atchley
Environmental Program Manager
Division of Water Resources
Knoxville Environmental Field Office

cc: Nashville Central Office – via WaterLog Database
Mr. Tim Ham, Certified Operator in Direct Charge; Distribution System – via email
Mr. Nathaniel Allsup, Certified Operator in Direct Charge; Treatment Plant – via email

DRINKING WATER MONITORING PROGRAM
East Sevier County Utility District
Treatment Grade 1 and Distribution Grade 1
PWSID# 0000618, Sevier County
March 2024

The following Drinking Water Monitoring Program (DWMP) has been developed in accordance with Division Rule 0400-45-01-.17(3) and other applicable drinking water regulations. Unless otherwise noted, all results must be reported on the Monthly Operations Report (MOR). Please place this monitoring program in an easily accessible location for water system personnel to review.

Well A/B Treatment Plant (TP001): Collect a representative sample after (post) treatment.	
Parameter	Frequency
Chlorine residual, free	Monitor each entry point each day water is served (GWR)
pH	Daily
Hardness	Once per week
Iron	Once per week
Manganese	Once per week

Well D Treatment Plant (TP003): Collect a representative sample after (post) filtration.	
Parameter	Frequency
Chlorine residual, free	Monitor each entry point each day water is served (GWR)
pH	Daily
Hardness	Once per week
Iron	Five per week
Manganese	Five per week

Distribution System: Collect a representative sample from dead-end or low usage lines (sample locations must be reported on or with MOR). Dead-end hydrants or blow-offs can be used for sampling purposes.	
Parameter	Frequency
Chlorine residual, free	Five days per week*
Iron	Five days per week*
Manganese	Five days per week*

*Excluding weekends and holidays

Bacteriological	One (1) sample per month, analyzed by a State Certified laboratory. Free chlorine residual must be collected at the same time and frequency of bacteriological sample.*
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* Pending connections count, which is to be provided by March 27, 2024

Sanitary Survey Rating

PWSID: _____

Water System Name: _____

Survey Date: _____

System Category (Points): -

421 - Consecutive Systems/Distribution Only
 488 - Treatment Systems/Wholesalers
 599 - Both Treatment and Distribution

1. System Management and Operation (94)

	Requirement	Points Range	Deduction	Comments
A.	Record Keeping 0400-45-01-.20	(0)	Narrative	
B.	Construction Projects 0400-45-01-.05, 0400-45-01-.17	(1-5)		
C.	Submission of Monthly Operations Reports 0400-45-01-.17	(0)	Narrative	
D.	Reporting Requirements 0400-45-01-18	(4-30)		
E.	Public Notification 0400-45-01-.19	(1-10)		
F.	Facility Maintenance Fee	(0)	Narrative	
G.	Enforcement - TCA §68-221-701 et seq	(4-10)		
H.	Emergency Operations Plan 0400-45-01-.17	(1-2)		
Deficiency Subtotal				

2. Operator Compliance (23)

	Requirement	Points Range	Deduction	Comments
A.	Certified Operator – Plant and Distribution System 0400-45-01-.17(1) and 0400-49-01- 04	(3-15)		
Deficiency Subtotal				

3. Source (25)

	Requirement	Points Range	Deduction	Comments
A.	Source Adequacy 0400-45-01-.02, .05, .16, .17(13) and .34(3)	(3-5)		
B.	Intake 0400-45-01-.05, .17	(2)		
C.	Wellhead/Springbox Construction 0400-45- 01-.05(12),16 and 17(3) and (16)	(2)		
D.	Source Protection Plans 0400-45-01-.34	(1-2)		
Deficiency Subtotal				

4. Treatment (153)

	Requirement	Points Range	Deduction	Comments
A.	Aerator 0400-45-01-.05, .17	(2)		
B.	Chemicals / Chemical Feeders 0400-45-01- .05 (8) and .17,36	(2)		
C.	Mixing 0400-45-01-.02, .05, .17	(2)		
D.	Flocculation 0400-45-01-.02, .05, .17	(2)		
E.	Sedimentation 0400-45-01-.02, .05, .17	(2)		
F.	Filtration / Alternative Technology 0400-45- 01-.17(12) and (27)	(2-30)		
G.	Re-Wash / Filter-to-Waste 0400-45-01- .17(35)	(2)		
H.	Turbidimeters / Calibration 0400-45-01- .05(11), .17, .31, .39	(2-4)		
I.	Disinfection/Calibration 0400-45-01-.02, .17, .31, .36	(2-30)		
J.	Disinfection Contact Time 0400-45-01-.02, .17,31	(2-4)		
K.	Master Meter 0400-45-01.17(2) and (3)	(1-2)		
L.	Maintenance of Equipment, Buildings and Grounds 0400-45-01-.02, .17(3), (17) and (19)	(1)		
M.	Laboratory Facilities 0400-45-01-.02, .14, .17(3)	(1-3)		
N.	Safety 0400-45-01-.02	(2)		
O.	Sludge Handling/Backwash Handling 0400- 45-01-.05	(2)		
P.	Sanitary Conditions 0400-45-01-.17(17)	(2)		
Q.	Fluoridation Techniques 0400-45-01-.06, .12, .17	(2)		
R.	Design Capacity 0400-45-01-.05(10)	(2-4)		
S.	Filter Backwash Recycling 0400-45-01-.31(9)	(1)		
Deficiency Subtotal				

5. Monitoring, Data Verification and Compliance (175)

	Requirement	Points Range	Deduction	Comments
A.	Laboratory-Process Monitoring (excluding Turbidity and Chlorine Residual) 0400-45-01-17(3)	(2)		
B.	Bacteriological Monitoring	(3-6)		
C.	Bacteriological Compliance 0400-45-01-.06	(4-7)		
D.	Turbidity Monitoring	(2-3)		
E.	Turbidity Compliance	(4-7)		
F.	Chlorine Residual Monitoring 0400-45-01-.17,31,36, 40	(2-3)		
G.	Primary Chemicals Monitoring	(2-3)		
H.	Primary Chemicals Compliance	(4)		
I.	Lead and Copper Monitoring 0400-45-01-.33	(2-3)		
J.	Lead and Copper Action Level 0400-45-01-.33	(3-5)		
K.	Disinfection/Disinfection By-Products and Precursors Monitoring 0400-45-01-.36, .37, .38	(2-3)		
L.	Disinfection/Disinfection By-Products and Precursors Compliance 0400-45-01-.06, .36	(2-30)		
M.	Secondary Chemicals 0400-45-01-.12	(2)		
N.	Secondary Chemicals Compliance 0400-45-01-.12	(3)		
O.	Cryptosporidium Monitoring 0400-45-01-.39	(0)	Narrative	
Deficiency Subtotal				

6. Finished Water Storage (25)

	Requirement	Points Range	Deduction	Comments
A.	Adequate Storage 0400-45-01-.17(14)	(2-4)		
B.	Inspection and Maintenance of Reservoirs, Tanks and Clearwell 0400-45-01-.17(16), (17), (33) and (34)	(1-10)		
Deficiency Subtotal				

7. Pumps, Pump Facilities and Controls (18)

	Requirement	Points Range	Deduction	Comments
A.	Pump Facilities 0400-45-01-.17(9) and (13)	(1-4)		
B	Maintenance of Pumping Equipment 0400-45 - 01-.17(13)	(1-3)		
Deficiency Subtotal				

8. Distribution System and Cross Connection Controls (86)

	Requirement	Points Range	Deduction	Comments
A.	Notification, Inspection, Disinfection and Sample Collection of New or Existing Facilities 0400-45-01-.17(8), (19)	(3-5)		
B	Flushing Program / Blow Offs 0400-45-01-.17(10) and (23)	(3-4)		
C.	Fire Hydrants 0400-45-01-.17(18)	(0)	Narrative	
D.	Adequate Pressure 0400-45-01-.17(9)	(5)		
E.	Map of Distribution System 0400-45-01-.17(15)	(3)		
F.	Approved Cross Connection Policy or Ordinance and Plan 0400-45-01-.17(6)	(4)		
G.	Working Cross Connection Program 0400- 45-01-.17(6)	(3-9)		
H.	Percent Estimated Water Loss(real loss/water produced)	(0)	Narrative	
Deficiency Subtotal				

Rating

- 95% - 100% Approved
- 90% - 94% Provisionally Approved
- 0% - 89 % Unsatisfactory

Total Deficiency Points	
System Category Points	
Overall Rating	

Inspectors Signature _____

Additional Comments/Explanation: