



## COLORADO

Department of Public  
Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

February 7, 2017

Mr. Mark Fuson  
Florida River Estates HOA Inc  
383 Meadowbrook Dr  
Bayfield, CO 81122

Subject: Sanitary Survey of Florida River Estates HOA Inc  
Public Water System Identification (PWSID) No. CO0134300  
La Plata County

Dear Mr. Fuson:

A sanitary survey was performed on January 26, 2017 by the Field Services Section of the Colorado Department of Public Health & Environment's Water Quality Control Division (the department) at Florida River Estates HOA Inc (the supplier) in accordance with the *Colorado Primary Drinking Water Regulations, 5 CCR 1002-11* (Regulation 11), Sections 11.38(1)(b) and 11.38(2). This letter serves to provide the supplier with written notification of the sanitary survey findings, including any identified significant deficiencies and violations of Regulation 11. The assistance that was provided during the sanitary survey was very helpful and is greatly appreciated. Table 1 identifies the parties present during the sanitary survey.

**Table 1: Parties Present**

Name	Organization
Mark Fuson	Florida River Estates HOA Inc
KC Kay	Colorado Department of Public Health & Environment

In response to this letter, the supplier must provide a written response, documenting resolution of all significant deficiencies and violations, and/or propose a corrective action plan with a corrective action schedule, as required by Regulation 11, Section 11.38(3)(d,f). Also, for findings that are violations of Regulation 11, the supplier must comply with the public notification requirements described in Section V, below. The supplier's written response is due within forty-five (45) days. If a corrective action plan is proposed, it must outline the course of action that has been or will be taken and the date by which the supplier proposes to correct each significant deficiency and violation of Regulation 11. Table 2 summarizes the number of findings and the required written response and resolution dates.

**Table 2: Sanitary Survey Findings**

Severity Category	Number Identified	Written Response Due (within 45 days of letter date)	Resolution Due (within 120 days of letter, or department-approved alternate date)	Public Notice Required (Violations of Regulations 11 or 100)
Significant Deficiencies	1	March 24, 2017	June 7, 2017	Not Required
Violations	0	No response required	Not applicable	Not Required
Observations - Recommendations	12	No response required	Not applicable	Not applicable

Failure to adequately address all significant deficiencies and violations referenced above may result in additional violations of Regulation 11. A list of the findings for each category in Table 2 can be found in the following sections:

### **Section I: Significant Deficiencies**

According to Regulation 11, Section 11.3(71), a significant deficiency means:

*any situation, practice, or condition in a public water system with respect to design, operation, maintenance, or administration, that the state determines may result in or have the potential to result in production of finished drinking water that poses an unacceptable risk to health and welfare of the public served by the water system.*

The items in this category are significant deficiencies. Please direct questions regarding resolution of the following items to the department inspector.

#### **1. D250 - Distribution: Distribution System (SDWIS ID: DS001)**

*High Leakage Rates:* Supplier usage data indicated that leakage rates may pose a risk of back-siphonage.

During the sanitary survey, the department inspector discussed the high leakage rates experienced by the supplier. The supplier has estimated that the current leakage rate is approximately 70%. The high leakage rates was discovered by the operator comparing pumping rates and raw water volume with billed usage. Further analysis by the operator appears to show that the distribution system may be of glued-joint hard plastic. This type of piping is fragile and ages poorly. The high leakage rates have resulted in continuous pumping of raw water which reduces the lifecycle of the pumps, increases frequency of filter bag replacement due to increased turbidity of constantly drawn water from the spring source. The operator has explored statewide leak detection contractors to determine where the leakage is occurring and it is strongly recommended that the supplier continue those efforts.

The supplier has not yet experienced a loss of pressure within the system, however, if a major line break were to occur, the water treatment plant may not be capable of keeping up with the increased demand. If fifty percent of the distribution system is without water, the supplier must call the Department's 24-Hour incident reporting hotline at 1-877-518-5608. The WQCD acute team will review the circumstances and the Department may require a Tier 1 public notice and bottled water advisory to protect public health. Please see the "Pressure Loss and Main Break Response Guidance" accessible at <https://www.colorado.gov/pacific/cdphe/wq-drinking-water-incidents>. To resolve this deficiency, the supplier is expected to submit a written plan with milestones and timeframe to alleviate the high leakage problem.

### **Section II: Violations**

The items in this category are violations of Regulation 11. Please direct questions regarding resolution of the following items to the department inspector.

No Violations were identified.

### **Section III: Observations/Recommendations**

The department recommends the supplier follow-up and consider the following observations-recommendations. Please direct questions regarding any of the items below to the department inspector.

#### **1. D251 - Distribution: Distribution System (SDWIS ID: DS001)**

*Unaccounted for Water:* Determining the percentage of unaccounted for water. Colorado Design Criteria for Potable Water Systems (Design Criteria), Section 8.12.

During the sanitary survey, the department inspector discussed the economics of water loss in costs of water production including filter bag filter replacement, pump lifespan, electrical and disinfection costs. The supplier's distribution system is 100% metered. The cause of Unaccounted for Water could be , incorrect or inaccurate meters, broken water lines, unconnected service taps that are leaking, household taps left open, etc.



Unaccounted for Water is an expense that is not recovered by the supplier. As noted in the Significant Deficiency #1 above, the Unaccounted for Water was discovered by the operator comparing pumping rates and raw water volume with billed usage.

**2. D430 - Distribution: Distribution System (SDWIS ID: DS001)**

*Line Disinfection Procedures:* Supplier did not have adequate disinfection procedures for installation or repair of water mains. Colorado Design Criteria for Potable Water Systems (Design Criteria), Chapter 8, Section 8.7.7.

At the time of the sanitary survey, the department inspector found that the supplier was following American Water Works Association (AWWA) disinfection procedures but did not have the procedures in writing and included in an Operations and Maintenance (O&M) Plan. These procedures can be obtained from the AWWA Disinfection of Pipelines and Storage Facilities Field Guide, and should be included in the written O&M plan. This AWWA field guide can be found at the AWWA website: <http://www.awwa.org/>.

**3. D410 - Distribution: Distribution System (SDWIS ID: DS001)**

*Valve Inspection and Exercising Program:* Valve inspection and exercising program implementation.

At the time of the sanitary survey, the department inspector and the supplier discussed the valve exercising program for the water system. A component of a public water system Operations and Maintenance (O&M) plan is a valve inspection and exercising program. The supplier should have a list of all of the valves in the distribution system, their location and maintenance information. The department recommends developing a program in accordance with AWWA Standard G200-04 Distribution System Operation and Maintenance, which states: "This program shall include at least the following elements:

- a) A goal for the number of transmission valves to be exercised annually based on the percentage of the total valves in the system.
- b) A goal for the number of distribution valves to be exercised annually.
- c) Measures to verify that the goals are met and written procedures for action if the goals are not attained.
- d) Critical valves in the distribution system shall be identified for exercising on a regular basis. Potential quality and isolation concerns shall be recognized. The program shall track the annual results and set goals to reduce the percent of inoperable valves."

Inspecting and exercising valves should include completely closing, opening, and re-closing until the valve seats properly. Leaking or damaged valves should be scheduled for repair. A record of valve maintenance and operation, including the number and direction of turns to closure, should be kept.

The supplier's current distribution system map does not appear to identify all system valves. The supplier should make an effort to locate, identify, and exercise all systems valves and update the distribution system map.

**4. D400 - Distribution: Distribution System (SDWIS ID: DS001)**

*Line Flushing Program:* System lacked an adequate line flushing program or the flushing program can be improved.

At the time of the sanitary survey, the department inspector found that the supplier did not have a program in place for line flushing or was in the process of developing a flushing program. In accordance with the Standard G200-04, Distribution System Operation and Maintenance, "the utility shall develop and implement a systematic American Water Works Association (AWWA) flushing program that meets the needs of the utility, taking into consideration the condition of the public water system including but not limited to, hydraulic capacity, treatment, water quality, and other site specific criteria. At a minimum, the flushing program, according to AWWA, shall incorporate the following items:

1. The program addresses a preventive approach to distribution system flushing, including occasional spot flushing to address localized problems or customer concerns and routine flushing to avoid water quality problems.
2. The utility shall perform system flushing at the velocity appropriate to address water quality concerns.
3. The utility has written procedures addressing all activities associated with system flushing, water quality,



monitoring, frequency, locations, and duration, as well as adherence to all regulatory requirements.” The department recommends developing a written line flushing program that can be incorporated into the supplier's Operations and Maintenance (O&M) plan. Records of flushing activities should be maintained in the plan.

Flushing of water aids in the reduction of Distribution By Products in addition to aiding in reducing color, odor, and taste issues. The supplier does not have hydrants or flushing hydrants to perform line flushing functions. During the resolution of Significant Deficiency #1 D250 - High Leakage Rates and Observation #1 D251 - Unaccounted for Water, the supplier should explore adding flushing hydrants to the distribution system.

**5. D320 - Distribution: Distribution System (SDWIS ID: DS001)**

*Distribution Construction Standards:* Distribution system construction standards. Colorado Design Criteria for Potable Water Systems (Design Criteria), Section 8.1, 8.7.

At the time of the sanitary survey, the department inspector observed that the supplier did not have written distribution construction standards or was in the process of developing standards. The department recommends that the supplier adopt and periodically update distribution construction standards to ensure that distribution system repairs are made in accordance with minimum design and construction criteria including the Colorado Design Criteria for Potable Water Systems requirements and AWWA guidelines. Contractors should have a copy of the supplier's construction standards prior to commencing work on distribution system projects. A list of construction contractors in priority order should be kept for emergency purposes.

**6. T995 - Treatment: Florida River Estates Ywtp01 (SDWIS ID: 001)**

*Other Treatment Observations:* department inspector identified treatment observation.

An isolation valve between the water treatment plant and the storage tank exists within the water treatment plant building. An isolation valve should be installed outside of the water treatment building allowing the tank to be isolated under the operator's direct request without having to access the interior of the treatment building.

**7. T110 - Treatment: Florida River Estates Ywtp01 (SDWIS ID: 001)**

*Log Inactivation (Surface Water and GWUDI):* Supplier demonstration of adequate disinfection at the time of the sanitary survey. Adequate disinfection is required prior to the entry point to the distribution system. Regulation 11, Section 11.8(1)(b)(i)(A).

Per Regulation 11, Section 11.8(3)(b)(i)(A), the supplier must maintain disinfection treatment sufficient to ensure that the total treatment processes, including filtration and disinfection, achieve 99.9 percent (3-log) treatment of *Giardia lamblia* cysts and 99.99 percent (4-log) treatment of viruses, as determined by the department. The supplier utilizes a Strainrite bag filtration system that, if properly operated, allows for 2.5-log removal credit for *Giardia lamblia* and 0-log removal credit of viruses. Per the information provided by the supplier, the disinfection contact time is achieved at the surface water treatment plant via a free chlorine injection. Regulation 11 defines the first customer as the first potable water service connection downstream of the point where complete water treatment, including disinfection contact time, has occurred. Typically, the first customer is the water treatment plant's domestic water system. The supplier is accessing house water from a tap after a contact chamber consisting of a clear well, 310' of 18" pipe, and 200' of 8" pipe.

At the time of the sanitary survey, the department inspector noted that the current location for the entry point chlorine residual monitor used for compliance reporting is located at after the piping used for CT. Though this requirement has been part of Regulation 11 since the U.S. Environmental Protection Agency's Surface Water Treatment Rule went into effect, the department has recently begun a statewide outreach and disinfection verification project to reevaluate surface water treatment. The department has formed a Disinfection Outreach and Verification Effort (DOVE) team to perform this reevaluation and assist suppliers of water in assessing their disinfection.

During the sanitary survey, the department inspector informed the supplier that the DOVE team will be providing additional information regarding the department's evaluation process under separate letter. The department has assigned Mark Henderson to assess the supplier's treatment plant for sufficient disinfection. If the supplier opts



to proactively start addressing this issue, please contact Mark Henderson at 303-692-6255 or mark.henderson@state.co.us.

**8. M990 - Management:**

*Other Management Observations:* department inspector identified system management and operation observation.

The supplier is organized as a 501c(3) non-profit Home Owners Association. The supplier may want to consider reorganizing the water system into a Public Improvement District or other entity that allows the ability to establish a Capital Improvement Plan and funds. The PID may assist the supplier with grants, loans, and assessments for district improvements. The supplier may wish to discuss with a lawyer cognizant of benefits and disadvantages of a 501c(3) vs PID.

**9. M642 - Management:**

*Repair and Replacement Plan:* Planning and/or financial capacity for repair and replacement of aging equipment.

During the sanitary survey, the department inspector and the supplier discussed the supplier's managerial and financial processes for maintaining a budget, fiscal records and rate structure to ensure reliable operation and future repair and replacement of aging equipment. The supplier is encouraged to continue efforts to ensure that all current and long term fiscal needs are being met and to identify and prioritize future repair and replacement costs for aging equipment and infrastructure. Information to assist the supplier with developing an Asset Management Program and a Capital Improvement Plan can be found online at <http://www.colorado.gov/CDPHE/WQCD>. The supplier might also benefit from utilization of the U.S. Environmental Protection Agency's Check Up Program for Small Systems (CUPSS) program, which is available on the internet at: <http://www.epa.gov/dwcapacity/information-check-program-small-systems-cupss-asset-management-tool>. In addition, the department's Local Assistance Unit may be able to assist you with preparing an Asset Management Program and can be contacted by calling 303-692-3665.

**10. R510 - Monitoring & Recordkeeping and Data Verification:**

*General Monitoring Plan:* Monitoring plan required content, updates for facility changes, submittal to the department.

According to Section 11.5 of Regulation 11, all suppliers of water shall develop and implement a monitoring plan. At the time of the sanitary survey, the department inspector reviewed the supplier's monitoring plan and noted that the plan is of a deprecated template (2005). The supplier must develop a monitoring plan that includes all the requirements of Section 11.5. In order to aid in the development of the plan, the department recommends that the supplier use the department's monitoring plan template, which can be accessed from <http://wqcdcompliance.com>. If the supplier would like help developing the plan, please request coaching assistance via the department's Local Assistance Unit website at <https://www.colorado.gov/pacific/cdphe/drinking-water-training-opportunities>, which has an online coaching request link.

After developing the monitoring plan, the supplier is required to submit a copy to the department via the department's online portal, which can be accessed at <https://wqcdcompliance.com/login>. The supplier is required to create a portal account, if not done previously. The portal can be used for uploading non-emergency information for suppliers of water in addition to monitoring plans. For portal support, please contact Kaleb Winisko at kaleb.winisko@state.co.us or 303-691-7803.

Once submitted to the department, the plan will be reviewed by the department's Drinking Water Compliance Assurance Section. For questions regarding the Monitoring Plan requirements please contact Tim Jones of the Compliance Assurance Section at timothy.jones@state.co.us or 303-692-2085.

**11. T119 - Treatment: Florida River Estates WTP01 (SDWIS ID: 001)**

*Proper Operation:* Surface water or ground water under the direct influence (GWUDI) of surface water treatment operational practices. Regulation 11, Section 11.8(1)(b) and CDPHE-WQCD Policy 4.



During the sanitary survey, the department inspector discussed the surface water/GWUDI treatment process with the supplier's certified operator. The treatment and disinfection processes consist of (3) 3M 522A roughing filters with 2-micron bags followed by (3) StrainRite HPM99-CC-2SR 1-micron nominal bag filters followed by (3) StrainRite HPM99-CCX-2SR 1-micron absolute finishing compliance filters. The piping within the water treatment plant is hard plastic with glue-together joints. Flexible joints and connections should be considered to reduce the likelihood of piping breaks.

## 12. 0997 - Operator:

*Other Operator Compliance Observations:* department inspector identified operator compliance observation.

Title 25 of the Colorado Revised Statutes (CRS), Article 9, requires that every drinking water facility and water distribution system be under the supervision of a certified operator, holding a certificate in a class equal to or higher than the class of the facility or system. In accordance with Regulation 100 (Water and Wastewater Facility Operators Certification Requirements), the supplier's water system is classified as a D drinking water treatment system and a 1 distribution system. At the time of the sanitary survey, the supplier was under the supervision of a certified operator in responsible charge (ORC), Mark Fuson, with Class A water treatment and Class 1 distribution certifications. The ORC began operational control November 1, 2016 and performed an in-depth evaluation of the system.

At the time of the sanitary survey, the supplier could not adequately demonstrate that the operator in responsible charge (ORC) was making operational decisions for the control and operation of the water treatment and distribution system or that a written operating plan was in place for delegation of activities to other facility operators or personnel. Please note that Regulation 100, Sections 100.16.5 and 100.16.6 clearly define the required roles of the ORC as the following:

- a) the management or administration of the operation of the water or wastewater facility;
- b) the accountability for the proper operation and maintenance of the water or wastewater facility for compliance with applicable regulations and/or permit requirements, including monitoring and reporting requirements;
- c) the control of, supervision over, or active participation in the daily planning, operation or maintenance of a water or wastewater facility;
- d) authority to make day-to-day process control and system integrity decisions on the operation and maintenance of the water or wastewater facility;
- e) the availability to make decisions and initiate actions regarding the operation of the water or wastewater facility in a timely manner;
- f) ensuring proper inspection and testing of new, modified, or repaired facilities prior to placing or returning such facilities into service;
- g) developing and implementing preventative maintenance programs and performing routine maintenance functions for facilities;
- h) overseeing compliance with laws and regulations and reporting as appropriate to facility owners and the department; and
- i) the performance of other functions of direct responsibility, including those enumerated in section 100.15.

Regulation 100 allows the certified ORC of a water or wastewater facility to delegate tasks or activities to other facility operators when delineated by a written operating plan. During the sanitary survey, no written plan was available. **Please develop a written operating plan in accordance with Regulation 100.** The department expects that this written operating plan will be available during the next sanitary survey. More information regarding operating plans is available at: <https://www.colorado.gov/pacific/cdphe/wq-facility-operator-certification-operating-plan>. Please note that the operating plan must be precise in defining the limits of tasks or activities that can occur while the ORC is not on-site. Also, the operating plan must be reviewed and updated, as needed and at least once each calendar year by the certified ORC. The operating plan must be available to the facility owner and other facility operators at all times. The operating plan must be available for inspection by the department upon request. In addition, any operational activity beyond the limits defined in the operating plan requires the immediate and direct consultation with and participation of a certified ORC or another operator holding a certificate equal to or above the classification of the facility he or she is operating.

**Section IV: Field Verification/Sampling**

While performing the sanitary survey, the inspector verified operator certification requirements and performed water quality sampling for chlorine residual and turbidity. Table 3 indicates the results of the water quality sampling performed on-site.

**Table 3: Sampling Results**

Parameter	Sample Location	Value	Units	Notes
Entry Point Disinfectant Residual	EP	0.80	mg/L	
Distribution System Disinfectant Residual	195 County Rd 248	0.80	mg/L	
Turbidity	CFE - EP	0.05	NTU	

**Reminders**

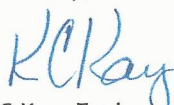
- Regulation 11, Section 11.4(1)(b) (Prior Approval Required) requires the department's approval prior to commencement of construction of any improvements, treatment process modifications, or the addition of new water sources.
- Most regulations, guidance documents, and forms are available on the department's website at <http://wqcdcompliance.com>.

Attached is a form that the supplier may use to document the required written response to this letter. While using this form is optional, it will fulfill the requirement to provide a written response if completed and submitted to the department by the written response due date listed above.

Enclosed with this letter you will find a postage-paid Customer Satisfaction Survey Postcard. Please take a few moments to complete the survey and return it to the department. Your efforts to provide feedback to improve the sanitary survey process are appreciated.

If you have any questions, please contact me at (970) 248-7154 or [casey.kay@state.co.us](mailto:casey.kay@state.co.us). Thank you for your time and cooperation.

Sincerely,



KC Kay, Environmental Protection Specialist  
Field Services Section  
Water Quality Control Division  
Colorado Department of Public Health & Environment

cc: San Juan Basin Health Department  
Drinking Water File, PWSID No. CO0134300  
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