

**SECTION VII**  
**(Sub-section 352)**  
**Agency Clearances**

Article

Page

1. Water System Clearances for Citrus County and  
Privately-Owned Public Water Supply Systems.

352-1 thru 352-3

**AGENCY CLEARANCES  
SUB-SECTION 352**

**WATER SYSTEM CLEARANCES FOR  
CITRUS COUNTY AND PRIVATELY-OWNED PUBLIC WATER SUPPLY SYSTEMS**

**PLAN APPROVAL AND CONSTRUCTION SUPERVISION**

All plans and specifications for construction of each public water supply project must be prepared by an engineer registered in the State of Florida. Prior to construction, the plans and specifications together with DEP Form 62-555.900(1) or 62-555.900(7) "Application For Drinking Water Facility Construction Permit" or "Notification For Use of the General Permit for Construction of an Extension to a Public Drinking Water Distribution System," must be approved by the Department of Environmental Protection

The PROVISOS for approval for each project are included on each application form. ATTENTION IS CALLED TO ITEM II "STATEMENT BY THE APPLICANT" WHICH REQUIRES THAT THE ENGINEER OF RECORD, WHO SIGNS THE PLANS AND APPLICATION, BE RESPONSIBLE FOR INSPECTION OF CONSTRUCTION OF EACH PROJECT AND UPON COMPLETION MUST INSPECT FOR COMPLETION IN CONFORMITY WITH THE APPROVED PLANS AND SPECIFICATIONS.

It is required that "Water Supply Facilities" including mains and permitted service connections shall be installed, cleaned, disinfected and have a satisfactory bacteriological survey performed in accordance with the latest applicable AWWA Standards and Chapter 62-555, Florida Administrative Code. After project construction, flushing, disinfecting and bacteriological sampling, a properly completed "Certificate of Construction Completion and Request for a Letter of Clearance to Place a Public Drinking Water Facility into Service" DEP Form 62-555.900(9) shall be submitted along with bacteriological survey results, and signed "as built" or "record" drawings to the Citrus County Health Department. A letter of clearance must be obtained from the Citrus County Health Department before the project is placed into service for any purpose other than disinfecting, testing for leaks, or testing equipment operation. (Record or as built drawings must include elevations or separations at all crossings and parallel runs of water mains with sanitary sewers, storm sewers, and reclaimed water lines.)

**RESPONSIBILITY FOR WELL AND MAIN CLEARANCE**

IT IS EXPECTED THAT THE ENGINEER OF RECORD SHALL HAVE RESPONSIBILITY FOR SUPERVISING THE FLUSHING, DISINFECTING AND BACTERIOLOGICAL SAMPLING OF ALL WELLS, treatment plants and distribution systems prior to clearance by FDEP. The Contractor shall obtain prior approval from the engineer of record of the procedure to be used for flushing and disinfecting of the completed work.

Sampling shall be done by the Citrus County Utilities Division (UD) in the case of mains being connected to the Citrus County distribution systems. Contractor shall notify the UD at (352) 527-7650 when each main will be ready for sampling.

Privately Owned Water Systems:

Private utility companies are responsible for proper performance of main clearance/release procedures. Upon completion of procedures in accordance with AWWA Standards (AWWA C651-92 and Chapter 62-555 of the Florida Administrative Code) the Contractor for private water utilities shall make arrangements with the Environmental Engineering Section of the Citrus County Health Department. Questions concerning the proper clearance/release procedures shall be directed to the Citrus County Health Department.

### DISINFECTING OF WELLS AND WATER MAINS

Reference: AWWA C651-92 and AWWA C654-87.

Basic Principals: (#1) Prevention of contaminating during construction or repair is of primary importance. Before disinfecting procedures are commenced, well and mains shall be thoroughly flushed to remove contamination materials from the line. Section Four (4) of the AWWA procedure outlines precautions during construction and instructions for preliminary flushing. (#2) Disinfecting is accomplished by introducing chlorine into the main to be sterilized. Either chlorine gas (liquid chlorine in cylinders) or hypochlorites may be used.

Chapter 62-555.315(3) of the Florida Administrative Code and AWWA Standard C654-87 specify the procedures which shall be used for disinfecting and clearance of wells, while Section 62-555.340 of the Florida Administrative Code and AWWA Standards C651-92, C652-92 and C653-87 give the procedures for disinfecting standards in general.

Liquid chlorine comes in 150 pound or ton cylinders. Great care must be experienced in its use under the personal supervision of a person familiar with its properties and toxicity. Hypochlorites are chemical compounds of chlorine. Commonly used are Calcium Hypochlorites, 5.25 to 16% chlorine by weight.

Hypochlorites are best applied by preparing a solution and injecting it into the system in accordance with the procedures contained in Section Five (5) of the AWWA procedure. Concentration within the main shall be not less than 25 mg/l at the beginning of the required 24 hour holding period and shall not be less than 10 mg/l at the end of the holding period. Procedure shall insure contact with all parts of the system.

The "slug method" as outlined in Section 5.3 of the AWWA procedure employs 100 mg/l of chlorine for 3 hours with the chlorine remaining above 50 mg/l at the end of 3 hours.

Final Flushing: After normal 24 hours contact time or the shorter contact time authorized when "slug method" is used, the heavily chlorinated water shall be flushed

from the main until residual within the line reaches the level of chlorine normally carried in the distribution system – maximum 1.0 mg/l.

## BACTERIAL EXAMINATION

### Water Mains:

Upon completion of water main flushing, samples shall be submitted until satisfactory results are obtained on two (2) successive working days (Friday's and Mondays are considered successive for this purpose). Great care must be exercised in sampling because if the initial disinfecting fails to produce satisfactory results, disinfecting must be repeated and samples resubmitted. As outlined above, arrangements shall be made with the Citrus County UD and the Citrus County Water Quality Lab for all collection of bacteriological samples from systems to be connected to Citrus County systems and for sampling of privately owned systems. Samples shall be collected in sterile bottles or bags, treated with sodium thiosulfate to neutralize chlorine residual. It is important that the chlorine residual (maximum 4.0 ppm allowed) and pH of the line (main) be taken and recorded in columns (3) and (4) of the Department of Health Form DH 655-1/97 (if the Department of Health Lab is not used for analysis then the lab's substitution form must have the same format). Hoses are not satisfactory sampling points. A suggested sampling tap consists of a standard corporation cock installed in the main with tube goose-neck assembly which may be removed after use or retained for future use as a sampling point. Samples should be taken at all dead ends and at intervals of no greater than 1000 feet on continuous pipe runs. All permitted service stubs (domestic, irrigation or fire) should be sampled at the meter location or the backflow location.

### Wells:

Section 62-555.315 of the Florida Administrative code requires that after thorough pumping of the well to remove the disinfecting agent, a series of 20 or more consecutive daily samples shall be submitted for laboratory examination. No more than two samples, at least 6 hours apart shall be collected per day. In extenuating circumstances, the number of samples may be reduced upon approval of the Department of Health. In Citrus County, the Citrus County Health Department will make this determination on the basis of the nature of the aquifer, depth of well, type of construction, location and other pertinent facts. The same arrangements outlined above for clearance of water mains should be followed for wells.