

Exhibit No.:

Issue:

Systems features and capacity

Compliance with regulatory and engineering standards

Witness:

David G. Krehbiel

Sponsoring Party:

Folsom Ridge LLC and Big Island Homeowners Water and Sewer Association, Inc.

Case No.:

Case No. WO-2007-0277

**Joined for hearing with**

**Case No. WC-2006-0082**

FOLSOM RIDGE LLC  
AND BIG ISLAND HOMEOWNERS WATER AND SEWER ASSOCIATION, INC.

Case No. WO-2007-0277

**Joined for hearing with**

**Case No. WC-2006-0082**

**FILED**<sup>2</sup>

APR 02 2007

SURREBUTTAL TESTIMONY

Missouri Public  
Service Commission

OF

DAVID G. KREHBIEL

Camdenton, Missouri  
February, 2007

Folsom  
Ridge Exhibit No. 16  
WC-2006-0082, et  
Case No(s) WO-2007-0277  
Date 2-28-07 Rptr KF

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

In the matter of the Application of )  
Folsom Ridge LLC and Big Island )  
Homeowners Water and Sewer Association, )  
Inc. for an order authorizing the transfer ) Case No. WO-2007-0277  
and Assignment of Certain Water and )  
Sewer Assets to Big Island Water )  
Company and Big Island Sewer )  
Company, and in connection therewith )  
certain other related transactions. )

AFFIDAVIT OF DAVID KREHBIEL

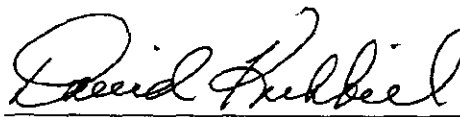
STATE OF MISSOURI )  
 ) ss.  
COUNTY OF CAMDEN )

I, David Krehbiel, of lawful age, and being duly sworn, do hereby depose and state:

1. My name is David Krehbiel. I am a consulting engineer for Krehbiel Engineering, Inc.


2. Attached hereto and made a part hereof for all purposes is my surrebuttal testimony.

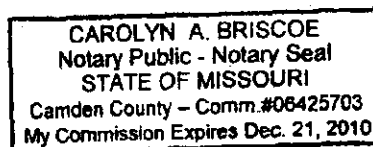
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my personal knowledge, information and belief.



David Krehbiel

Subscribed and sworn to before me, a Notary Public, this 22<sup>nd</sup> day of February, 2007.

  
Notary Public



1                                   DAVID KREHBIEL SURREBUTTAL

2    Q.    **Please state your name and your business address.**

3    A.    My name is David G. Krehbiel and my business address is 63 Blair Ave.,  
4           Camdenton, MO 65020.

5

6    Q.    **Are you the same David Krehbiel who filed written direct and rebuttal**  
7           **testimony in this matter?**

8    A.    Yes, I am.

9

10   Q.    **Explain the purposes of your surrebuttal testimony.**

11   A.    I will be addressing portions of the rebuttal testimony filed in this case by Ms.  
12           Cathy Orlor, Mr. Ben Pugh and Mr. Jim Merciel.

13

14   **Ms. Orlor's Rebuttal Testimony**

15   Q.    **On pages 13-15, Ms. Orlor testifies that the treatment plant capacity on Big**  
16           **Island was exceeded in 2002? Has this system ever operated in excess of its**  
17           **treatment capacity?**

18   A.    No, it has not. The active sewage connections to the system have never exceeded  
19           the plant's operating capacity.

20

21   Q.    **Ms. Orlor states on page 15 that the filter bed expansion for the plant was**  
22           **constructed only after formal complaints had been filed in Case No. WC-**  
23           **2006-0082? When did the design of the expansion project begin?**

1 A. Design of the treatment plant expansion began early in 2005 and the completed  
2 documents were submitted to DNR for review on April 11, 2005 long before the  
3 complaints were filed. The Construction Permit was issued in September 2005  
4 and construction commenced after permit issuance. Construction of the  
5 expansion was scheduled after the permit was issued and not because of the  
6 complaints. The Commission should also note that the DNR Operating Permit for  
7 Big Island, No. MO-0123013 as issued on May 19, 2005 (which is a renewal of  
8 the permit), is for a Design Population Equivalent (P.E.) of 296 and a Design  
9 Flow of 22,525 gallons per day. As allowed by the DNR Construction Permit  
10 issued on September 20, 2005, the treatment plant has been expanded by 41,625  
11 gallons per day (a P.E. of 555) to a total Design Flow of 64,150 gallons per day  
12 (a P.E. of 851).

13

14 **Ben Pugh Rebuttal Testimony**

15 Q. **On page 3 of his rebuttal, Mr. Pugh states that an ideal situation according to**  
16 **DNR regulations is water line and sewer line separation by a minimum of 10**  
17 **foot and "separated by virgin undisturbed soil." Has DNR such a**  
18 **regulation?**

19 A. Not to my knowledge. The DNR regulations under which DNR reviews proposed  
20 construction permits do not have any provision on the soil composition separating  
21 the lines. I am attaching as Krehbiel Surrebuttal Schedule 1 a copy of the design  
22 guide regulation I am referring to and for easy reference it is quoted below:

23 C) Relation to Water Mains.

1  
2 1. Horizontal separation. Sewer mains shall be laid at least  
3 ten feet (10') (3.0m) horizontally from any existing or proposed  
4 water main. The distances shall be measured edge- to- edge. In  
5 cases where it is not practical to maintain a ten foot (10')-  
6 separation, the agency may allow deviation on a case-by-case  
7 basis, if supported by data from the design engineer. This deviation  
8 may allow installation of the sewer closer to a water main,  
9 provided that the water main is in a separate trench or on an  
10 undisturbed earth shelf located on one (1) side of the sewer at an  
11 elevation that the bottom of the water main is at least eighteen  
12 inches (18") (46 cm) above the top of the sewer.  
13

14 DNR uses a similar regulation in a design guide dated August 29, 2003 it  
15 recommends for water main installations. That design guide provision states:

16 **8.6.2. Parallel installation.**

17 Water mains shall be laid at least ten feet horizontally from any existing or  
18 proposed sewer. The distance shall be measured edge to edge. In cases  
19 where it is not practical to maintain a ten-foot separation, the department  
20 may allow deviation on a case-by-case basis, if supported by data from  
21 the design engineer. Such deviation may allow installation of the water  
22 main closer to a sewer, provided that the water main is laid in a separate  
23 trench or on an undisturbed earth shelf located on one side of the sewer  
24 and on either case, at such an elevation that the bottom of the water main  
25 is at least 18 inches above the top of the sewer. In areas where the  
26 recommended separations cannot be obtained, either the waterline or the  
27 sewer line shall be constructed of mechanical joint pipe or cased in a  
28 continuous casing.  
29

30 Finally, the same specifications for separation are set out in 10 CSR 60-10.  
31 010(2)(C) and a copy of that regulation is attached to my testimony as Krehbiel  
32 Surrebuttal Schedule 2.

33 **Jim Merciel Rebuttal Testimony**

34 Q. On page 4 of his rebuttal Mr. Merciel mentioned some technical issues with  
35 respect to the water and wastewater systems on Big Island which Mr. Martin

1           **Hummel discussed in his prefiled testimony in Case No. WA-2006-0480.**  
2           **Directing you to page 4 line 16 of Mr. Hummel's rebuttal testimony, which**  
3           **was attached to Mr. Merciel's filing, have those technical issues been**  
4           **addressed?**

5       A.    Many of them have. At the outset, I will state that I agree with many of them.

6  
7           The bullet point on page 4 of his testimony is agreeable 100% and I think the  
8           bylaws of the 393 Companies as proposed handle this. Mr. McDuffey will also  
9           discuss in his testimony the specifications for the septic tanks and any customer  
10          maintenance responsibilities.

11  
12          Regarding "as built" drawings, there are partial "as built" available at this time,  
13          and they will be transferred as part of the transaction proposed with the 393  
14          Companies.

15  
16          Leak management will be addressed by Mr. McDuffey but it is my understanding  
17          that a procedure is in place. Discharge flow measurement is not a DNR  
18          requirement but I understand the 393 Companies are considering installation of a  
19          flow measurement device. Regarding pressure monitoring/recording I am  
20          unaware of any feasible or effective way to accomplish this and in an unregulated  
21          environment the need for this is questionable.

22

1 To my knowledge many shut off valves have already been installed, and it is  
2 possible that there are shut off valves for each home. Mr. McDuffey can address  
3 this. Nonetheless, shut off valves could be installed by the 393 Companies as  
4 they are needed for water and sewer connections discovered during daily  
5 operations or on exposure during maintenance excavation.

6  
7 Water main repair procedures and tapping procedures will be addressed by Mr.  
8 McDuffey including procedures for installation and inspection of uniform septic  
9 tanks and effluent pumps. Evaluation of water mains for installation of isolation  
10 valves, air release valves and flush valves is an on going process which I  
11 understand Mr. McDuffey's firm provides.

12  
13 Permits in the name of the developer for construction of additional water storage  
14 capacity—the standpipe—have been issued by DNR to confirm Mr. Hummel's  
15 understanding on this matter. The 393 Companies will have the benefit of that  
16 permit and the storage facility.

17  
18 **Q. On page 2 of Appendix A of Mr. Merciel's testimony, his staff report last**  
19 **year dated February 9, 2006, he reports that the water system is a single well**  
20 **system with a capacity to serve 65 residential customers. Should this be**  
21 **clarified?**

22 **A.** I would like to clarify this for the Commission. The capacity to serve 65  
23 residential customers is limited by two factors: the pumping capacity and storage

1 capacity. The well produces 140 gallons per minute and already has the capacity  
2 to supply the projected development of 320 units. The other restriction is storage.  
3 Without increased storage on the site, the system capacity is at 65 customers. But  
4 as I have testified above, permits in the name of the developer for construction of  
5 additional water storage capacity—a standpipe—have been issued by DNR  
6 which, when erected, will increase capacity to 320 customers. Also, if needed,  
7 the pumping capacity can be easily increased with the installation of a larger  
8 pump.

9  
10 Q. **Does this conclude your surrebuttal testimony?**

11 A. Yes.



between above-ground and below-ground sewers. For aerial stream crossings, the impact of flood waters and debris shall be considered. The bottom of the pipe should be placed no lower than the elevation of the fifty (50)-year flood.

(11) Protection of Water Supplies.

(A) Water Supply Interconnections. There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any sewage or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.

(B) Relation to Water Works Structures. While no general statement can be made to cover all conditions, it is generally recognized that sewers shall meet the requirements of 10 CSR 60-2.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.

(C) Relation to Water Mains.

1. Horizontal separation. Sewer mains shall be laid at least ten feet (10') (3.0m) horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a ten foot (10')-separation, the agency may allow deviation on a case-by-case basis, if supported by data from the design engineer. This deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one (1) side of the sewer at an elevation that the bottom of the water main is at least eighteen inches (18") (46 cm) above the top of the sewer.

2. Crossings. Sewers crossing water mains shall be laid to provide a minimum vertical distance of eighteen inches (18") (46 cm) between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. When a water main crosses under a sewer, adequate structural support shall be provided for the sewer to prevent damage to the water main.

3. Special conditions. When it is impossible to obtain proper horizontal and vertical separation as stipulated previously, the sewer shall be designed and constructed equal to water pipe and shall be pressure tested to assure watertightness prior to backfilling.

*AUTHORITY: section 644.026, RSMo Supp. 1993.\* Original rule filed Aug. 10, 1978,*

*effective March 11, 1979. Amended: Filed May 17, 1994, effective Dec. 30, 1994.*

*\*Original authority 1972, amended 1973, 1987, 1993.*

### 10 CSR 20-8.130 Sewage Pumping Stations

*PURPOSE: The following criteria have been prepared as a guide for the design of sewage pumping stations. This rule is to be used with rules 10 CSR 20-8.110 10 CSR 20-8.220 for the planning and design of the complete treatment facility. This rule reflects the minimum requirements of the Missouri Clean Water Commission as regards adequacy of design, submission of plans, approval of plans and approval of completed sewage works. Deviation from these minimum requirements will be allowed where sufficient documentation is presented to justify the deviation. These criteria are taken largely from Great Lakes-Upper Mississippi River Board of State Sanitary Engineers Recommended Standards for Sewage Works and are based on the best information presently available. These criteria were originally filed as 10 CSR 20-8.030. It is anticipated that they will be subject to review and revision periodically as additional information and methods appear. Addenda or supplements to this publication will be furnished to consulting engineers and city engineers. If others desire to receive addenda or supplements, please advise the Clean Water Commission so that names can be added to the mailing list.*

*Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.*

(1) Definitions. Definitions as set forth in the Clean Water Law and 10 CSR 20-2.010 shall apply to those terms when used in this rule, unless the context clearly requires otherwise. Where the terms shall and must are used, they are to mean a mandatory requirement insofar as approval by the agency is concerned, unless justification is presented for deviation from the requirements. Other terms, such as should, recommend, preferred and the like, indicate discretionary requirements on the part of the agency and deviations are subject to individual consideration.

(2) Exceptions. This rule shall not apply to facilities designed for twenty-two thousand

five hundred (22,500) gallons per day (85.4m<sup>3</sup>) or less, see 10 CSR 20-8.020 for the requirements for those facilities.

(3) General.

(A) Flooding. Sewage pumping station structures and electrical and mechanical equipment shall be protected from physical damage by the one hundred (100)-year flood. Sewage pumping stations should remain fully operational and accessible during the twenty-five (25)-year flood.

(B) Accessibility. The pumping station shall be readily accessible by maintenance vehicles during all weather conditions. The facility should be located off the traffic way of streets and alleys.

(C) Grit. Where it is necessary to pump sewage prior to grit removal, the design of the wet well and pump station piping shall receive special consideration to avoid operational problems from the accumulation of grit.

(4) Design.

(A) Type. Sewage pumping stations should be of the wet/dry well type. Other types as set forth under sections (5) and (6) of this rule may be approved where circumstances justify their use.

(B) Structures.

1. Separation. Dry wells, including their superstructure, shall be completely separated from the wet well.

2. Equipment removal. Provision shall be made to facilitate removing pumps, motors and other mechanical and electrical equipment.

3. Access. Suitable and safe means of access shall be provided to dry wells and to wet wells containing either bar screens or mechanical equipment requiring inspection or maintenance. For built-in-place pump stations, a stairway with rest landings shall be provided at vertical intervals not to exceed twelve feet (12') (3.7m). For factory-built pump stations over fifteen feet (15') (4.6m) deep, a rigidly fixed landing shall be provided at vertical intervals not to exceed ten feet (10') (3.0m). Where a landing is used, a suitable and rigidly fixed barrier shall be provided to prevent an individual from falling past the intermediate landing to a lower level. Where approved by the agency, a manlift or elevator may be used in lieu of landings in a factory-built station, provided emergency access is included in the design. Reference should be made to local, state and federal safety codes and, if they are more stringent, they shall govern (also see 10 CSR 20-8.140(8)(F)).

**Title 10—DEPARTMENT OF  
NATURAL RESOURCES**

**Division 60—Public Drinking Water  
Program**

**Chapter 10—Plans and Specifications;  
Siting Requirements; Recreational Use  
of Impoundments**

**10 CSR 60-10.010 Plans and Specifications**

*PURPOSE: This rule sets forth requirements for submission, review and approval of engineering reports, plans and specifications for community water supply planning and construction.*

*PUBLISHER'S NOTE: The secretary of state has determined that the publication of the entire text of the material which is incorporated by reference as a portion of this rule would be unduly cumbersome or expensive. Therefore, the material which is so incorporated is on file with the agency who filed this rule, and with the Office of the Secretary of State. Any interested person may view this material at either agency's headquarters or the same will be made available at the Office of the Secretary of State at a cost not to exceed actual cost of copy reproduction. The entire text of the rule is printed here. This note refers only to the incorporated by reference material.*

(1) Report Required. When plans are being made by a supplier of water to a community water system for constructing expansions, modifications and improvements of the water supply source, water treatment facility or for the development of a new community water system, the supplier of water shall submit an engineer-prepared report to the department for review and approval. Upon receipt of an engineering report, the department will evaluate the report and either approve the report in writing or outline the requirements for further investigation.

(A) Written approval of the engineering report shall be obtained before construction plans and specifications are finalized.

(B) Engineering reports need not be submitted to the department for facilities constructed under a supervised program.

(C) If the original approved report is more than two (2) years old, an updated engineering report must be submitted before final plans and specifications will be reviewed or as deemed necessary by the department.

(2) Plans and Specifications Required.

(A) Water Treatment Facility.

1. Every supplier of water to a community water supply must submit to the department

plans and specifications prepared by an engineer for review and issuance of a written approval to construct prior to initiating construction of—

A. A new water treatment facility(ies); and

B. Expansions or modifications of existing water treatment facilities which would significantly change or alter plant capacity or treatment processes.

2. The department shall review or advise plans and specifications and may approve the supplier of water and his/her engineer of the review findings and, if required, outline additional information or changes necessary for approval.

3. The department may approve the plans and specifications by issuance of a written approval to construct and shall describe the facilities to be constructed along with any comments or conditions of approval.

(B) Water Supply Source. Every supplier of water to a community water supply must submit to the department plans and specifications prepared by an engineer for review and issuance of a written approval to construct prior to initiating—

1. Construction of a new water supply source(s); or

2. Modification of an existing water supply source which might reasonably result in significant change in the quality or quantity of water originally approved for the source.

(C) Water Distribution System.

1. Every supplier of water to a community water system must submit to the department plans and specifications prepared by an engineer for review and issuance of a written approval to construct prior to initiating construction of—

A. A complete new water distribution system(s); and

B. Expansion or modification of water distribution systems unless a supervised program of design, construction and construction supervision is maintained by the supplier of water.

2. A supplier of water to a community water supply that desires to conduct a supervised program for construction of water distribution systems, in lieu of submitting plans for approval, must submit to the department a written request for approval.

A. Approval of supervised programs may be granted for a period of up to five (5) years with automatic renewal. Supervised programs will be periodically reviewed by the department and may be revoked should the supplier of water fail to conduct the program in accordance with the approved plan.

B. Upon revocation of a supervised program, engineering plans and specifications

must be submitted to the department for review and issuance of a written approval to construct.

C. A modification(s) to an approved supervised program may be made by written request to the department.

D. A supervised program shall provide the following minimum elements:

(I) Sizing water mains and appurtenances with minimum four-inch (4") diameters so that a minimum pressure of twenty pounds per square inch (20 psi) is maintained under normal flow conditions. Requests for approval to install lesser diameter water mains serving cul-de-sacs may be granted by the department upon submission of standard design data;

(II) Maintenance of permanent records and drawings of the entire water distribution network including all appurtenances to the network, such as valves, hydrants and cleanouts, along with plans and specifications of projects under construction for review by the department;

(III) Selection of construction materials manufactured in conformity with the latest standard specifications issued by the American Water Works Association (AWWA) or other approved specifications;

(IV) Disinfection of the distribution system in conformity with the latest standard specifications issued by the AWWA or other approved methods prior to placement in service; and

(V) Protection of water mains during construction from sources of contamination by—

(a) Maintaining at least a ten-foot (10') horizontal separation of water mains from any existing or proposed sanitary sewer. The distance must be measured edge-to-edge. Installation of the water main closer to a sanitary sewer is acceptable where the water main is laid in a separate trench or on an undisturbed earth shelf located on one (1) side of the sanitary sewer at an elevation so the bottom of the water main is at least eighteen inches (18") above the top of the sanitary sewer;

(b) Providing a minimum vertical distance of eighteen inches (18") between the outside of the water main and the outside of the sanitary sewer where water mains cross sanitary sewer mains. This shall be the case where the water main is either above or below the sanitary sewer. At crossings, one (1) full length of water pipe must be located so both joints will be as far from the sanitary sewer line as possible. Special structural support for the water and sanitary sewer pipes may be required;

(c) Providing at least a ten-foot (10') horizontal separation between water mains and sanitary sewer force mains. There shall be an eighteen-inch (18") vertical separation at crossings;

(d) Locating water mains so that they do not pass through or come in contact with any sanitary sewer manhole; and

(e) Consulting with the department as to the precautions necessary where the conditions in subparts (2)(C)2.D.(V) (a)-(d) cannot be met.

(3) If construction has not commenced within two (2) years after the date of issue or there is a halt in construction of more than two (2) years, the approval to construct will be void unless an extension of time has been granted by the department.

(4) All construction work must conform to approved plans and specifications.

(A) Should it be necessary or desirable to make a material change in the approved design which will affect water quality, capacity and sanitary features or performance, revised plans and specifications, together with a written statement of the reasons for the change, must be submitted to the department. Review and approval must be obtained in writing before the work affected by the change is undertaken.

(B) Minor revisions not affecting water quality, capacity, flow, sanitary features or performance will be permitted during construction without further approval; provided, as-built plans documenting these changes are submitted to the department.

(5) Final Approval of Construction.

(A) A final inspection completed by the department or certified by an engineer with the approval of the department.

(B) Construction conformance with the approved plans and specifications and any changes documented by the submission of two (2) copies of as-built plans with the affixed seal of the engineer.

(C) A supplier of water having an approved supervised program for construction does not need additional approval of construction for work completed under that program.

(6) The department will review engineering reports, engineering plans and specifications, requests for approval of supervised water main extension programs and carry out inspections required for final approval of construction within thirty (30) working days of receipt of request. Review time is subject to emergency conditions, manpower availability or other factors beyond department control.

(7) Essential portions of copies of engineering documents will be kept on file by the department.

*AUTHORITY: section 640.100, RSMo Supp. 1989.\* Original rule filed May 4, 1979, effective Sept. 14, 1979. Amended: Filed April 14, 1981, effective Oct. 11, 1981.*

*\*Original authority: 640.100, RSMo 1939, amended 1978, 1981, 1982, 1988, 1989.*

#### 10 CSR 60-10.020 Siting Requirements

*PURPOSE: This rule establishes requirements for siting of new or expanded water systems.*

(1) To the extent practicable, all new or expanded water systems must not be located on a site which—

(A) Is subject to a significant risk from earthquakes, floods, fires, pollution or other disasters which could cause a breakdown of the public water system or a portion of the system; and

(B) Except for intake structures, is within the floodplain of a one hundred (100)-year flood where appropriate records exist.

*AUTHORITY: section 640.100, RSMo Supp. 1989.\* Original rule filed May 4, 1979, effective Sept. 14, 1979.*

*\*Original authority: 640.100, RSMo 1939, amended 1978, 1981, 1982, 1988, 1989.*

#### 10 CSR 60-10.030 Recreational Use of Public Water Supply Impoundments

*PURPOSE: This rule establishes limitations on recreational use of water supply impoundments.*

(1) Every supplier of water to a public water supply must apply for and secure the approval of the department before permitting the use of public water supply impoundments for recreational usage.

(A) Regulated recreational activities are permitted when provisions for these activities are included in the original planning, construction and approval of the impoundment and water treatment facilities.

(B) Recreational activities proposed for existing impoundments will be appraised in the light of the effect on the primary purposes of the impoundment, the capability of the water treatment works, the physical adaptability of the impoundment to the desired recreational use and the maintenance of public confidence in the water supply.

(2) Where recreational activities are permitted, provisions must be made for local enforcement where applicable. Rules must be posted and maintained in legible condition at conspicuous points in the impoundment area.

*AUTHORITY: section 640.100, RSMo Supp. 1989.\* Original rule filed May 4, 1979, effective Sept. 14, 1979.*

*\*Original authority: 640.100, RSMo 1939, amended 1978, 1981, 1982, 1988, 1989.*

#### 10 CSR 60-10.040 Prohibition of Lead Pipes, Lead Pipe Fittings and Lead Solder and Flux

*PURPOSE: This rule protects public water systems and the customer water systems connected to the public water systems from the leaching of lead into the drinking water.*

(1) This rule applies to all public water systems.

(2) For the purpose of this rule, the term lead-free, when used with respect to—

(A) Solder and flux, refers to solders and flux containing not more than two-tenths percent (0.2%) lead;

(B) Pipes and pipe fittings, refers to pipes and pipe fittings containing not more than eight percent (8.0%) lead; and

(C) Plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion, refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300g-6(e).

(3) As of January 1, 1989 all materials used in the construction, expansion, modification or improvement of a public water system or customer water system shall be lead free. This section shall not apply to leaded joints necessary for the repair of cast iron pipes.

(4) Any customer water system constructed, expanded, modified or repaired after January 1, 1989 that is connected to a public water system, and later is found to contain materials that are not lead-free, shall have the water meter removed or otherwise have the service line severed from the public water system when the supplier of water is so ordered by the appropriate local governmental authority (if one exists) or by the department. The requirements of this section shall not apply to any customer water system previously served by a water system other than a public water system.

(5) No ordinance or rule established by a unit of local government or a supplier of water for