

*American Society of Sanitary Engineering*  
PRODUCT (SEAL) LISTING PROGRAM



**ASSE STANDARD #1013 - REVISED: 2009**

**Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers**

Separate, complete laboratory evaluation report forms for each alternate orientation must be submitted to ASSE for review.

MANUFACTURER: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_ E-MAIL: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

LABORATORY FILE NUMBER: \_\_\_\_\_

MODEL # TESTED: \_\_\_\_\_

MODEL SIZE: \_\_\_\_\_

ADDITIONAL MODELS REPORT APPLIES TO: \_\_\_\_\_

ADDITIONAL MODEL INFORMATION (i.e. orientation, series, end connections, shut-off valves):  RP  RPF

\_\_\_\_\_  HORIZONTAL

DATE MODELS RECEIVED BY LABORATORY: \_\_\_\_\_  VERTICAL FLOW UP

DATE TESTING BEGAN: \_\_\_\_\_  VERTICAL FLOW DOWN

DATE TESTING WAS COMPLETED: \_\_\_\_\_ OTHER  \_\_\_\_\_

IF MODELS WERE DAMAGED DURING SHIPMENT, DESCRIBE DAMAGES: \_\_\_\_\_

PROTOTYPE OR PRODUCTION: \_\_\_\_\_

**General information and instructions for the testing engineer:**

***The results within this report apply only to the models listed above.***

There may be items for which the judgment of the test engineer will be involved. Should there be a question of compliance with that provision of the standard, a conference with the manufacturer should be arranged to enable a satisfactory solution of the question.

Should disagreement persist and compliance remain in question by the test agency, the agency shall, if the product is in compliance with all other requirements of the standard, file a complete report on the questionable items together with the test report, for evaluation by the ASSE Seal Board. The Seal Board will then review and rule on the question of compliance with the intent of the standard then involved.

Documentation of material compliance must be furnished by the manufacturer. The manufacturer shall furnish to the testing agency, a bill of material which clearly identifies the material of each part included in the product construction. This identification must include any standards which relate thereto.



**SECTION 1**

**1.0 General**

**1.1**

**Application**

Does the purpose of the device agree with that of the standard?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**NOTE:** This standard applies to single as well as manifold assemblies.

**1.2.1**

**Description**

Does the device conform to the product described in the standard?  Yes  No

Questionable

If questionable, explain: \_\_\_\_\_

**1.2.2**

**Size**

\_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**1.2.3**

**Rated Pressure**

What is the minimum working pressure as noted by the manufacturer?

\_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

**1.2.4**

What is the maximum working pressure as noted by the manufacturer?

\_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

**NOTE:** RP and RPF devices have different pressure requirements

Temperature range as noted by the manufacturer:

\_\_\_\_\_ °F to \_\_\_\_\_ °F ( \_\_\_\_\_ °C to \_\_\_\_\_ °C)

**1.3.2.1**

**Relief Valve Connections**

Indicate shape of discharge port. \_\_\_\_\_

Can a threaded pipe, a screwed fitting or a tubing be connected internally or externally to the discharge port?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**1.3.2.2**

Were female pipe threaded connections so constructed that it would not be possible to run a pipe into them far enough to restrict the flow through the assembly or interfere with working parts?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**1.3.2.3**

Is the assembly repairable and seats replaceable without removing the assembly from the line?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**1.3.2.5**

Were test cocks properly located?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**1.3.2.6**

List the inlet and outlet thread size(s) for the test cocks.

Inlet thread size: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Outlet thread size: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

State the manufacturer size and model number of all shut-off valves tested with the device:

\_\_\_\_\_

Was the assembly equipped with an air gap device?  Yes  No

If yes, did it comply with ASME A112.1.3?  Yes  No



**SECTION II**

**2.0 Test Specimens**

2.1 State the quantity of units provided for the evaluation of the orientation requested. \_\_\_\_\_

2.2 How many units were utilized during the laboratory evaluation? \_\_\_\_\_

**2.3 Drawings**

Were assembly drawings, installation drawings and other technical data which are needed to enable a testing agency to determine compliance with this standard submitted with the assembly?

Yes  No

Were these drawings reviewed in the laboratory?

Yes  No

**NOTE:** Were tests required for an additional orientation?

If yes, were the required additional samples submitted for this additional orientation?

Yes  No

**NOTE:** Separate, complete laboratory evaluation report forms must be submitted for each alternate orientation. The correct number of devices specified in the standard for each intended orientation must be submitted to the testing facility for evaluation to this standard.

**2.4 Manifold Assembly**

Is this a manifold assembly type backflow preventer?

Yes  No

If yes, were the individual devices that constitute the manifold tested to each section of the standard in their intended orientation based on the pipe size for each individual assembly?

Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**SECTION III**

**3.0 Performance Requirements and Compliance Testing**

**3.1 Independence of Components**

How was the independence of components verified?

Drawing Review

Physical cycling of components

Other \_\_\_\_\_

In Compliance?

Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**3.2 Hydrostatic Test of Complete Device**

The assembly was pressurized to: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

The test period was for: \_\_\_\_\_ minutes

Were there any external leaks from the assembly?

Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**3.3 Seat Leakage Test for Shut-Off Valves**

What was the pressure applied to the inlet side of the #1 shut-off valve?

\_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

What was the pressure applied to the outlet side of the #1 shut-off valve?

\_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was the sealing mechanism different between the #1 shut-off valve and the #2 shut-off valve?

Yes  No



If yes:

What was the pressure applied to the inlet side of the #2 shut-off valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

What was the pressure applied to the outlet side of the #2 shut-off valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was there any leakage from the shut-off valve(s)?  Yes  No

**3.4 Hydrostatic Backpressure Test of Checks**

What was the pressure applied through test cock #4? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was there any leakage from the relief valve?  Yes  No

What was the pressure applied through test cock #3? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was there any leakage at the inlet or the #2 test cock?  Yes  No

**3.5 Allowable Pressure Loss at Rate Flow For RP Assemblies**

Was the assembly installed per Figure 1?  Yes  No

If no, explain: \_\_\_\_\_

What was the rated water flow for the assembly? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the supply pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What pressure loss through the piping system (if any) was deducted? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

**For RPF Assemblies**

Was the assembly installed per Figure 1?  Yes  No

If no, explain: \_\_\_\_\_

What was the rated water flow for the assembly? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the supply pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What pressure loss through the piping system (if any) was deducted? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

**For RP & RPF Assemblies & Manifold Assemblies**

What was the pressure loss observed at flows of:

GPM	L/m	psi	kPa
05.0	18.9	_____	_____
10.0	37.8	_____	_____
15.0	56.9	_____	_____
20.0	75.7	_____	_____
25.0	94.6	_____	_____
30.0	113.5	_____	_____
35.0	132.5	_____	_____
40.0	151.4	_____	_____
45.0	170.3	_____	_____
50.0	189.3	_____	_____



**Rated Flow**

150% of Rated Flow \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

200% of Rated Flow \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the maximum pressure loss observed at flows from (0) GPM to rated flow?

(Both ascending and descending) \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Was there any discharge from the relief valve during the flow test?  Yes  No

For RPF assemblies, did the pressure drop generally increase from static up to a flow of 50.0 GPM (189.3 L/m) with a maximum total downward deviation of 10% from the highest previous valve at any point?  Yes  No

Was there any damage or permanent deformation of the internal components of the assembly?  Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.5?  Yes  No

**3.6 Relief Valve Opening Test**

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No

If no, explain: \_\_\_\_\_

The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____



At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?

Yes  No

Did the relief valve close drip tight at each pressure segment?

Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No

**3.7 Sensitivity of Differential Pressure Relief Valve Test**

What was the supply pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Amount of discharge from the relief valve while opening and closing test cock:

#1 \_\_\_\_\_ #2 \_\_\_\_\_ #3 \_\_\_\_\_ #4 \_\_\_\_\_

**3.8 Drip Tightness of First Check**

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

**3.9 Drip Tightness of the Second Check Valve**

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)



**3.10 Relief Valve Discharge Test with Atmospheric Supply Pressure**

What was the rated flow (per table 2) through the relief valve for the size of the device on test? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the intermediate chamber pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the recorded discharge flow rate from the relief valve? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

**3.11 Relief Valve Discharge With Positive Supply Pressure**

What was the rated flow (per table 2) through the relief valve for the size of the device on test? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the intermediate chamber pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

What was the recorded discharge flow rate from the relief valve? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

**3.12 Backpressure/Backsiphonage Test**

Attach test results from USC Protocol for backpressure/backsiphonage testing.

Was there any indication of damage or permanent deformation to the assembly?  Yes  No

Was there any evidence of water being drawn into the upstream transparent collection tube?  Yes  No

**3.13 Relief Valve vs. Supply Pressure Fluctuation Test for RPF Devices Only**

With the assembly in a static condition and the inlet pressure increased from 100 psi (689.5 kPa) to 115 psi (792.9 kPa) record the leakage from the relief valve: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

When the supply pressure reduced from 115.0 psi (792.9kPa) to 100 psi (689.5 kPa) record the leakage from the relief valve: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

In compliance?  Yes  No

**3.14 Air Gap Device Backsiphonage Test**

(Only applies to Assemblies supplied with an Air Gap device)

Measure and record the quantity of water that is carried over from the air gap into the relief discharge port(s): \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

**3.15 Deterioration at Manufacturer's Extremes of Temperature and Pressure Ranges**

Temperature range as noted by the manufacturer: \_\_\_\_\_ °F to \_\_\_\_\_ °F ( \_\_\_\_\_ °C to \_\_\_\_\_ °C)

Maximum rated pressure as noted by the manufacturer: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Water at: \_\_\_\_\_ °F ( \_\_\_\_\_ °C)

was circulated through the assembly at: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

at a flow rate of: \_\_\_\_\_ GPM ( \_\_\_\_\_ L/m)

for: \_\_\_\_\_ hours



While still at temperature, the assembly shall be retested to Sections 3.6, 3.8 and 3.9 as shown below:

*Retest Section 3.6*

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No

If no, explain: \_\_\_\_\_

The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?  Yes  No

Did the relief valve close drip tight at each pressure segment?  Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No



*Retest Section 3.8*

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

*Retest Section 3.9*

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.15 continued**

Upon completion of the 100 hours and the retesting of Sections 3.6, 3.8, 3.9, water at: \_\_\_\_\_ °F ( \_\_\_\_\_ °C) was circulated through the assembly.

Once the assembly reaches ambient temperature, the assembly shall be retested to Sections 3.2 and 3.4 as shown below:

*Retest Section 3.2*

The assembly was pressurized to: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

The test period was for: \_\_\_\_\_ minutes

Were there any external leaks from the assembly?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_



*Retest Section 3.4*

What was the pressure applied through test cock #4? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was there any leakage from the relief valve?  Yes  No

What was the pressure applied through test cock #3? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was there any leakage at the inlet or the #2 test cock?  Yes  No

**3.15 continued**

Upon completion of testing at ambient water temperature water at: \_\_\_\_\_ °F ( \_\_\_\_\_ °C) was circulated through the assembly for: \_\_\_\_\_ hours and then the assembly was retested to Sections 3.6, 3.8 and 3.9 as shown below:

*Retest Section 3.6*

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No

If no, explain: \_\_\_\_\_

The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____



At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?

Yes  No

Did the relief valve close drip tight at each pressure segment?

Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No

**Retest Section 3.8**

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

**Retest Section 3.9**

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.15 continued**

Was the assembly on test in complete compliance with the criteria of Section 3.15?

Yes  No

**3.16 Cycle Test**

**Type RP Assemblies Only**

(a) Flow water at 25% of the rated flow (see Table 1 for size and rated flow)

What was the flow rate? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/s)

What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

The test period was for \_\_\_\_\_ seconds



- (b) What was the static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
The test period was for \_\_\_\_\_ seconds
- (c) What was the backpressure while at static pressure of (b)? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
The test period was for \_\_\_\_\_ seconds
- (d) What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
The test period was for \_\_\_\_\_ seconds
- (e) What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
The test period was for \_\_\_\_\_ seconds
- (f) Repeat steps (a) through (e) for 1250 cycles. After 1250 cycles, retest to Sections 3.6, 3.8 and 3.9 as shown below:

*Retest Section 3.6*

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No  
The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____



At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?  Yes  No

Did the relief valve close drip tight at each pressure segment?  Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No

**Retest Section 3.8**

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

**Retest Section 3.9**

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.16 continued**

(g) Flow water at 50% of the rated flow (see Table 1).

(h) What was the flow rate? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/s)  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds



What was the backpressure while at static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 Repeat steps (a) through (e) for 1250 cycles. After 1250 cycles, retest to Sections 3.6, 3.8 and 3.9 as shown below:

**Retest Section 3.6**

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No  
 The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?  Yes  No  
 Did the relief valve close drip tight at each pressure segment?  Yes  No  
 Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No



*Retest Section 3.8*

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

*Retest Section 3.9*

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.16 continued**

(i) With the relief valve open to atmosphere, a back pressure of: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) was applied for: \_\_\_\_\_ minutes  
Was there dripping from the vent?  Yes  No

(j) With the relief valve open to atmosphere, a back pressure of: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) was applied for: \_\_\_\_\_ minutes  
Was there dripping from the vent?  Yes  No

(k) The pressure at the inlet was raised to: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) for: \_\_\_\_\_ minutes

(l) The pressure at the inlet was raised to: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) for: \_\_\_\_\_ minutes



(m) Flow water at 75% of the rated flow (See Table 1).

(n) What was the flow rate? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/s)  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the backpressure while at static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 Repeat steps (a) through (e) for 1250 cycles. After 1250 cycles, retest to Sections 3.6, 3.8 and 3.9 as shown below:

*Retest Section 3.6*

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No

The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____



At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?  Yes  No

Did the relief valve close drip tight at each pressure segment?  Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No

**Retest Section 3.8**

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

**Retest Section 3.9**

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.16 continued**

(o) Flow water at 100% of the rated flow (See Table 1).

(p) What was the flow rate? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/s)

What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

The test period was for \_\_\_\_\_ seconds

What was the static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

The test period was for \_\_\_\_\_ seconds



What was the backpressure while at static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds  
 Repeat steps (a) through (e) for 1250 cycles. After 1250 cycles, retest to Sections 3.6, 3.8 and 3.9 as shown below:

**Retest Section 3.6**

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No  
 The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?  Yes  No  
 Did the relief valve close drip tight at each pressure segment?  Yes  No  
 Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No



*Retest Section 3.8*

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

*Retest Section 3.9*

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)  
Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)  
The test period was for: \_\_\_\_\_ minutes.  
What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.16 continued**

(q) Repeat (i) through (l) as shown below:  
With the relief valve open to atmosphere, a back pressure of: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) was applied for: \_\_\_\_\_ minutes  
Was there dripping from the vent?  Yes  No  
  
With the relief valve open to atmosphere, a back pressure of: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) was applied for: \_\_\_\_\_ minutes  
Was there dripping from the vent?  Yes  No  
  
The pressure at the inlet was raised to: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) for: \_\_\_\_\_ minutes  
  
The pressure at the inlet was raised to: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) for: \_\_\_\_\_ minutes



**Type RPF Assemblies Only**

- (a) Flow water at 25% of the rated flow (see Table 1 for size and rated flow)  
 What was the flow rate? \_\_\_\_\_ GPM ( \_\_\_\_\_ L/s)  
 What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds
- (b) What was the static pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds
- (c) What was the backpressure while at static pressure of (b)? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds
- (d) What was the supply pressure? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 The test period was for \_\_\_\_\_ seconds
- (e) Fluctuate the supply pressure from 175 psi (1206 kPa) down to 100 psi (690 kPa) for 500 cycles.
- (f) Repeat steps (a) through (e) ten times as shown below:

Requirement	Time 1	Time 2	Time 3	Time 4	Time 5
Flow water at 25% of rated flow- What was the flow rate?	_____ GPM ( _____ L/s)				
What was the supply pressure?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				
What was the static pressure?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				
What was the back pressure while at static pressure of (b)?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				
What was the supply pressure?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				

Requirement	Time 6	Time 7	Time 8	Time 9	Time 10
Flow water at 25% of rated flow- What was the flow rate?	_____ GPM ( _____ L/s)				
What was the supply pressure?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				
What was the static pressure?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				
What was the back pressure while at static pressure of (b)?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				
What was the supply pressure?	_____ psi ( _____ kPa)				
The test period was for:	_____ sec.				



Retest to Sections 3.6, 3.8, 3.9 as shown below:

*Retest Section 3.6*

Was the assembly installed per Figure 1 with a bypass line with a needle valve and differential gauge between test cock #2 and #3?  Yes  No

The test system was pressured to \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the needle valve was opened to show a decreasing differential pressure, at what pressure did the first drop of water come out of the relief valve? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

When the assembly was returned to a static condition after a small amount of water was flowed through the assembly, what was the differential pressure across the first check? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

Repeat the test and record the above data when using supply pressures of:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

At the time of the opening of the relief valve, were all readings 2.0 psi (13.8 kPa) or greater?  Yes  No

Did the relief valve close drip tight at each pressure segment?  Yes  No

Was the assembly on test in complete compliance with the criteria of Section 3.6?  Yes  No



*Retest Section 3.8*

What was the static pressure differential across the first check for the following line pressures:

psi	(kPa)	psi	kPa
20	137.9	_____	_____
30	206.9	_____	_____
40	275.8	_____	_____
50	344.8	_____	_____
60	413.7	_____	_____
70	482.7	_____	_____
80	551.6	_____	_____
90	620.6	_____	_____
100	689.5	_____	_____
110	758.5	_____	_____
120	827.4	_____	_____
130	896.4	_____	_____
140	965.3	_____	_____
150	1034.3	_____	_____
160	1103.2	_____	_____
170	1172.2	_____	_____
180	1241.2	_____	_____
190	1310.1	_____	_____
200	1379.1	_____	_____

Were these pressure differentials at least 3.0 psi (20.7 kPa) greater than the pressure differential between the inlet line pressure and the zone pressure required to open the relief valve as determined in Section 3.6?  Yes  No

*Retest Section 3.9*

Indicate the initial height of water in the sight glass at test cock #3: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

Indicate the initial height of water in the sight glass at test cock #4: \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

The test period was for: \_\_\_\_\_ minutes.

What was the final height difference in the water levels between the sight glasses at test cocks #3 and #4? \_\_\_\_\_ inches ( \_\_\_\_\_ mm)

**3.16 continued (RPF Assemblies)**

(g) With the relief valve open to atmosphere, a back pressure of: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) was applied for: \_\_\_\_\_ minutes  
Was there dripping from the vent?  Yes  No

(h) With the relief valve open to atmosphere, a back pressure of: \_\_\_\_\_ psi ( \_\_\_\_\_ kPa) was applied for: \_\_\_\_\_ minutes  
Was there dripping from the vent?  Yes  No

(i) Retest to Section 3.4 as shown below:

*Retest Section 3.4*

What was the pressure applied through test cock #4? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)

How long was the pressure held? \_\_\_\_\_ minutes

Was there any leakage from the relief valve?  Yes  No



What was the pressure applied through test cock #3? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 How long was the pressure held? \_\_\_\_\_ minutes  
 Was there any leakage at the inlet or the #2 test cock?  Yes  No

**3.16 continued**

Was the USC Life Cycle test protocol used?  Yes  No  
 If yes, attach these test results.

Was the assembly on test in complete compliance with the criteria for RP, RPF Assemblies or with the USC Test Protocol?  Yes  No

**3.17 Body Strength for Type RPF Assemblies**

What was the pressure used for this test? \_\_\_\_\_ psi ( \_\_\_\_\_ kPa)  
 How long was the pressure held? \_\_\_\_\_ minutes

Were there any leaks or indications of damage that would prevent the device from complying with any section of this standard?  Yes  No

In compliance?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_

**3.18 Seat Adhesion Test for Type RPF Assemblies**

Did the adhesion test meet all of the requirements of Section 18 of the UL Standard 312?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_  
 Attach the test results.

**3.19 High Velocity Test for RPF Assemblies**

What was the flow velocity used for this test? \_\_\_\_\_ ft/s ( \_\_\_\_\_ m/s)  
 This velocity was maintained for \_\_\_\_\_ minutes

Was there any damage or permanent deformation to any of the internal components of the assembly?  Yes  No

Did any portion of the assembly become dislodged or restrict flow during this velocity test?  Yes  No

Was the assembly (or assemblies) used for testing of Sections 3.1 through 3.19 in complete compliance with the criteria of this standard?  Yes  No

**SECTION IV**

**4.0 Detailed Results**

**4.1 Materials**

Did the manufacturer provide evidence that the materials make-up of the device has been used successfully in similar applications for at least one (1) year?  Yes  No

**4.1.1 Materials in Contact with Water**

Did any solder and fluxes or metal alloys in contact with the potable water supply exceed 0.2% or 8% lead content respectively?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_



- 4.1.2 Elastomers and Polymers  
 Did all of the elastomers and polymers in contact with the water comply with the requirements of the U.S. Code of Federal Regulations (CFR) Title 21, 177.2600?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.3 Did all ferrous cast parts conform to ASTM A126 for gray iron or ASTM A536 Grade 65-45-12 for ductile iron?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.4 Were all ferrous cast parts in contact with the water flowing through the assembly protected against corrosion by epoxy coating or other equivalent methods?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.6 Were all non-ferrous wetted parts of a corrosion resistance of at least equal to an alloy of 79% copper?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.7 Were all internal non-cast parts of a corrosion resistance of at least equal to an alloy of 79% copper?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.8 Were all springs in contact with the water flowing through the assembly of a corrosion resistance of at least equal to stainless steel series 300?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.9 Were all flexible non-metallic parts of a design to withstand all the criteria of this standard without change in their physical characteristics?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.10 Were check or relief valve seats of a metal to metal seating?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_  
 Identify seating material:  
 #1 Check: \_\_\_\_\_  
 #2 Check: \_\_\_\_\_  
 Relief Valve: \_\_\_\_\_
- 4.1.11 Were the seat rings of a corrosion resistance of at least equal to an alloy of 79% copper?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.12 Were the test cocks of a corrosion resistance of at least equal to an alloy of 79% copper.  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.13 Do all pipe flanges conform to ASME B16.24 for bronze flanges and ANSI B16.1 for cast iron flanges?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_
- 4.1.14 Do all pipe threads conform to ANSI/ASME B1.20.1 for taper pipe threads and ANSI/ASME B1.20.3 for dryseal?  Yes  No  Questionable  
 If questionable, explain: \_\_\_\_\_



4.2 Do inlet and outlet grooved connections comply with ANSI/AWWA C606?  Yes  No  
 Questionable

If questionable, explain: \_\_\_\_\_

**4.3 Marking Instructions**

4.3.1 Identify the markings found on the test assembly/manifold assemblies: \_\_\_\_\_

4.3.2 Describe how these markings were made: \_\_\_\_\_

**4.4 Installation and Maintenance Instructions**

4.4.1 Were instructions for installation and maintenance submitted with the device?  Yes  No  
 Questionable

If questionable, explain: \_\_\_\_\_

4.4.2 Did the installation instructions indicate the tested and approved installation orientation of the assembly?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

**Maintenance**

Were maintenance instructions furnished?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_

4.4.4 Were field testing instructions furnished?  Yes  No  Questionable

If questionable, explain: \_\_\_\_\_



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TESTING AGENCY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

TEST ENGINEERS: \_\_\_\_\_

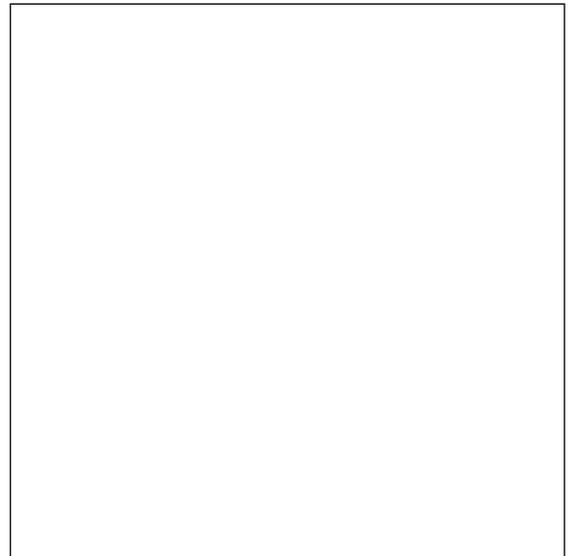
*We Certify that the evaluations are based on our best judgements and that the test data recorded is an accurate record of the performance of the device on test.*

SIGNATURE OF THE OFFICIAL OF THE AGENCY: \_\_\_\_\_

TITLE OF THE OFFICIAL: \_\_\_\_\_ DATE: \_\_\_\_\_

**SIGNATURE AND SEAL OF THE REGISTERED PROFESSIONAL ENGINEER SUPERVISING THE LABORATORY EVALUATION:**

SIGNATURE: \_\_\_\_\_



**PE SEAL**

\*To insert images into document (PE seal and signatures)

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**Adobe Reader users:** Adobe Reader does not allow users to place images into the document. You must print this completed document and then sign and stamp the PE seal by hand. You may then send the completed document to ASSE via fax or mail, or you can scan the completed document and send via e-mail.

**COMMENTS:**