Troubleshooting for Negative Water Loss Audit Components

Line 22

1. Does a Negative Total Water Loss (Line 22) appear on your Water Loss Audit?
    a. Is Billed Metered (Line 17) equal to or greater than Total System Input Volume (Line 16)?
        i. Check the Water Use Survey.
            - You may have put the total volume of water produced and/or purchased in the Water System Information section instead of putting the total volume of water sold to your retail customers.
        ii. Check the Production Meter Accuracy (Line 13a), Treated Purchased Water Meter Accuracy (Line 14a), and/or Treated Wholesale Water Meter Accuracy (Line 15a).
            - You may have put meter accuracy much greater than 100%.
                - Ensure that the meter accuracy is an average of the meters for that given field. If the meter accuracy is not derived from flow verification testing, then do not provide meter accuracy outside of manufacturer specifications for accuracy.
    b. Check the Billed Unmetered (Line 18), Unbilled Metered (Line 19), and/or Unbilled Unmetered (Line 20).
        - You may have included these volumes already in the metered fields of the Water System Information section of the Water Use Survey which transfer to Billed Metered (Line 17). This causes these volumes to double count on the Water Loss Audit.

Line 27

2. Does a Negative Total Apparent Loss (Line 27) appear on your Water Loss Audit?
    a. Is Average Customer Meter Accuracy (Line 23) greater than 100%?
        i. If the average customer meter accuracy was not derived from verified representative sample testing* of the customer meter population we do not recommend using a percentage above 100%.
            - Since customer meters tend to under-register with wear, we recommend the utility use a range between 90 and 98%. 98% can be used if all or most of the meters are new and dependable, 95-97% should be used if the meters are in fair to good condition overall, 90-94% should be used if the meters are in poor condition overall. Choose a percentage within the respective range depending on your confidence in your meters.

*Verified representative sample testing of customer meter population to obtain an average customer meter accuracy is attained by cataloging the types, sizes, and uses of meters in the utility. Test a sample from each, preferably at least 50-100 meters, to obtain an average.

Line 29 and/or Line 30

3. Does a Negative Unreported Loss (Line 29) and/or Negative Total Real Loss (Line 30) appear on your Water Loss Audit?
    a. Is Reported Breaks and Leaks (Line 28) greater than Total Water Loss (Line 22)?
        i. Reported Breaks and Leaks (Line 28) may be overestimated, Total Water Loss (Line 22) is underestimated, or Total Apparent Loss (Line 27) is overestimated.
            - If you overestimated your Reported Breaks and Leaks: use 0 gallons for Line 28. The volume will still show up in Unreported Loss (Line 29) and Total Real Loss (Line 30).
            - If you underestimated your Total Water Loss: ensure Total System Input Volume (Line 16) and the components in Section B are not underestimated and/or ensure Total Authorized Consumption (Line 21) and the components in Section C are not overestimated.
            - If you overestimated your Total Apparent Loss: ensure Average Customer Meter Accuracy (Line 23) is not below 90%, Systematic Data Handling Discrepancy (Line 25) is not overestimated, and/or Unauthorized Consumption (Line 26) is not overestimated.
        ii. Is Reported Breaks and Leaks (Line 28) greater than the difference between Total Water Loss (Line 22) and Total Apparent Loss (Line 27) {Line 28 > Line 22 – Line 27}?
            - See 3.a.i. above.
        iii. Is Total Apparent Loss (Line 27) greater than Total Water Loss (Line 22)?
            - Then you may have overestimated your Total Apparent Loss.
                - Ensure Average Customer Meter Accuracy (Line 23) is not below 90%. See 2.a.i. instruction on estimating average customer meter accuracy.
                - Ensure Systematic Data Handling Discrepancy (Line 25) is not overestimated. Recommended to use the industry standard default calculation of 0.25% of Billed Metered (Line 17). {In a calculator 0.25% is 0.0025 in decimal form}.
                - Ensure Unauthorized Consumption (Line 26) is not overestimated. Recommended to use the industry standard default calculation of 0.25% of Total System Input Volume (Line 16). {In a calculator 0.25% is 0.0025 in decimal form).
        iv. Is Total Water Loss (Line 22) lower than anticipated?
            - Check the volume of Produced Water (Line 13), Total Treated Purchased Water (Line 14), and/or Total Treated Wholesale Water Sales (Line 15) to ensure they are correct.
            - Check the Production Meter Accuracy (Line 13a) and/or Treated Purchased Water Meter Accuracy (Line 14a) are not too high.
            - Check the Treated Wholesale Water Meter Accuracy (Line 15a) is not too low.

If none of these above troubleshooting fixes correct the negative in the Water Loss Audit please contact the Water Loss Group at 512-463-0987 or WLA-Group@twdb.texas.gov for assistance.