

APPENDIX E

UWNY's AWWA Water Audit Reports to the PSC, 2012-2014

AWWA WLCC Free Water Audit Software: Reporting Worksheet

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Water Audit Report for: **UNITED WATER NEW YORK**
 Reporting Year: **2012** 1/2012 - 12/2012

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

WATER SUPPLIED

<< Enter grading in column 'E'

Volume from own sources:	<input type="text" value="9"/>	<input type="text" value="10,348.865"/>	Million gallons (US)/yr (MG/Yr)
Master meter error adjustment (enter positive value):	<input type="text" value="9"/>	<input type="text" value="0.000"/>	under-registered MG/Yr
Water imported:	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr
Water exported:	<input type="text" value="9"/>	<input type="text" value="41.542"/>	MG/Yr
WATER SUPPLIED:		<input type="text" value="10,307.323"/>	MG/Yr

AUTHORIZED CONSUMPTION

Billed metered:	<input type="text" value="9"/>	<input type="text" value="8,192.276"/>	MG/Yr
Billed unmetered:	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr
Unbilled metered:	<input type="text" value="9"/>	<input type="text" value="29.555"/>	MG/Yr
Unbilled unmetered:	<input type="text" value="9"/>	<input type="text" value="128.842"/>	MG/Yr
AUTHORIZED CONSUMPTION:		<input type="text" value="8,350.673"/>	MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Click here: for help using option buttons below

Pcmt: Value:

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

MG/Yr

Apparent Losses

Unauthorized consumption:	<input type="text" value="8"/>	<input type="text" value="497.000"/>	MG/Yr
Unauthorized consumption volume entered is greater than the recommended default value			
Customer metering inaccuracies:	<input type="text" value="9"/>	<input type="text" value="222.075"/>	MG/Yr
Systematic data handling errors:	<input type="text" value="7"/>	<input type="text" value="80.000"/>	MG/Yr
Apparent Losses:		<input type="text" value="799.075"/>	

Pcmt: Value:

2.63%

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

Real Losses

Real Losses = Water Losses - Apparent Losses:	<input type="text" value="9"/>	<input type="text" value="1,157.575"/>	MG/Yr
WATER LOSSES:		<input type="text" value="1,956.650"/>	MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: MG/Yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="text" value="7"/>	<input type="text" value="1,049.3"/>	miles
Number of active AND inactive service connections:	<input type="text" value="9"/>	<input type="text" value="73,733"/>	
Connection density:		<input type="text" value="70"/>	conn./mile main
Average length of customer service line:	<input type="text" value="7"/>	<input type="text" value="75.0"/>	ft (pipe length between curbstop and customer meter or property boundary)
Average operating pressure:	<input type="text" value="9"/>	<input type="text" value="107.0"/>	psi

COST DATA

Total annual cost of operating water system:	<input type="text" value="9"/>	<input type="text" value="\$32,332,734"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="text" value="8"/>	<input type="text" value="\$5.74"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="text" value="9"/>	<input type="text" value="\$362.00"/>	\$/Million gallons

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="20.5%"/>
Non-revenue water as percent by cost of operating system:	<input type="text" value="20.4%"/>
Annual cost of Apparent Losses:	<input type="text" value="\$6,131,511"/>
Annual cost of Real Losses:	<input type="text" value="\$419,042"/>

Operational Efficiency Indicators

Apparent Losses per service connection per day:	<input type="text" value="29.69"/>	gallons/connection/day
Real Losses per service connection per day*:	<input type="text" value="43.01"/>	gallons/connection/day
Real Losses per length of main per day*:	<input type="text" value="N/A"/>	
Real Losses per service connection per day per psi pressure:	<input type="text" value="0.40"/>	gallons/connection/day/psi
<input type="checkbox"/> Unavoidable Annual Real Losses (UARL):	<input type="text" value="960.44"/>	million gallons/year
<input type="checkbox"/> Infrastructure Leakage Index (ILI) [Real Losses/UARL]:	<input type="text" value="1.21"/>	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 87 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Systematic data handling errors
- 3: Customer retail unit cost (applied to Apparent Losses)

[For more information, click here to see the Grading Matrix worksheet](#)

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Water Audit Report For:

UNITED WATER NEW YORK

Report Yr:

2012

Own Sources (Adjusted for known errors)	Water Exported 41.542	Authorized Consumption 8,350.673	Billed Authorized Consumption	Billed Metered Consumption (inc. water exported) 8,192.276	Revenue Water 8,192.276
	Water Supplied 10,307.323		Unbilled Authorized Consumption	Billed Unmetered Consumption 0.000	
Water Imported 0.000		Water Losses 1,956.650	Apparent Losses 799.075	Unbilled Metered Consumption 29.555	Non-Revenue Water (NRW) 2,115.047
	Unbilled Unmetered Consumption 128.842				
		Real Losses 1,157.575	Unauthorized Consumption 497.000		
			Customer Metering Inaccuracies 222.075		
			Systematic Data Handling Errors 80.000		
			Leakage on Transmission and/or Distribution Mains Not broken down		
			Leakage and Overflows at Utility's Storage Tanks Not broken down		
			Leakage on Service Connections Not broken down		

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Water Audit Report for: **UNITED WATER NEW YORK**
 Reporting Year: **2013** 1/2013 - 12/2013

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: **MILLION GALLONS (US) PER YEAR**

WATER SUPPLIED

<< Enter grading in column 'E'

Volume from own sources:	9	10,389.154	Million gallons (US)/yr (MG/Yr)
Master meter error adjustment (enter positive value):	9	0.000	under-registered MG/Yr
Water imported:	n/a	0.000	MG/Yr
Water exported:	9	27.280	MG/Yr
WATER SUPPLIED:		10,361.874	MG/Yr

AUTHORIZED CONSUMPTION

Billed metered:	9	8,124.086	MG/Yr
Billed unmetered:	n/a	0.000	MG/Yr
Unbilled metered:	9	65.717	MG/Yr
Unbilled unmetered:	7	129.523	MG/Yr
AUTHORIZED CONSUMPTION:		8,319.326	MG/Yr

Click here: for help using option buttons below

Pcnt: 1.25% Value:

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

2,042.548 MG/Yr

Apparent Losses

Unauthorized consumption:	8	412.885	MG/Yr
Unauthorized consumption volume entered is greater than the recommended default value			
Customer metering inaccuracies:	9	221.210	MG/Yr
Systematic data handling errors:	7	191.675	MG/Yr
Apparent Losses:		825.770	

Pcnt: Value:

2.63%

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

Real Losses

Real Losses = Water Losses - Apparent Losses:	7	1,216.778	MG/Yr
WATER LOSSES:		2,042.548	MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 7 2,237.788 MG/Yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	7	1,050.5	miles
Number of active AND inactive service connections:	9	74,576	
Connection density:		71	conn./mile main
Average length of customer service line:	7	75.0	ft (pipe length between curbside and customer meter or property boundary)
Average operating pressure:	9	103.3	psi

COST DATA

Total annual cost of operating water system:	9		\$/Year
Customer retail unit cost (applied to Apparent Losses):	8		\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	9		\$/Million gallons

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	21.6%
Non-revenue water as percent by cost of operating system:	
Annual cost of Apparent Losses:	\$0
Annual cost of Real Losses:	

Operational Efficiency Indicators

Apparent Losses per service connection per day:	30.34	gallons/connection/day
Real Losses per service connection per day*:	44.70	gallons/connection/day
Real Losses per length of main per day*:	N/A	
Real Losses per service connection per day per psi pressure:	0.43	gallons/connection/day/psi
Unavoidable Annual Real Losses (UARL):	935.62	million gallons/year
Infrastructure Leakage Index (ILI) [Real Losses/UARL]:	1.30	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 87 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Systematic data handling errors
- 3: Customer retail unit cost (applied to Apparent Losses)

[For more information, click here to see the Grading Matrix worksheet](#)

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Water Audit Report For:

Report Yr:

UNITED WATER NEW YORK

2013

	Water Exported 27.280		Billed Water Exported			
Own Sources (Adjusted for known errors)		Authorized Consumption 8,319.326	Billed Authorized Consumption 8,124.086	Billed Metered Consumption (inc. water exported) 8,124.086	Revenue Water 8,124.086	
				Billed Unmetered Consumption 0.000		
10,389.154	Water Supplied 10,361.874	Water Losses 2,042.548	Unbilled Authorized Consumption 195.240	Unbilled Metered Consumption 65.717	Non-Revenue Water (NRW) 2,237.788	
				Unbilled Unmetered Consumption 129.523		
			Apparent Losses 825.770	Unauthorized Consumption 412.885		
0.000				Customer Metering Inaccuracies 221.210		
				Systematic Data Handling Errors 191.675		
			Real Losses 1,216.778	Leakage on Transmission and/or Distribution Mains Not broken down		
				Leakage and Overflows at Utility's Storage Tanks Not broken down		
				Leakage on Service Connections Not broken down		

AWWA WLCC Free Water Audit Software: Reporting Worksheet

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Water Audit Report for: **UNITED WATER NEW YORK**
 Reporting Year: **2014** | 1/2014 - 12/2014

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (1-10) using the drop-down list to the left of the input call. Hover the mouse over the call to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

WATER SUPPLIED

<< Enter grading in column 'E'

Volume from own sources:	<input type="text" value="9"/>	<input type="text" value="10,513.682"/>	Million gallons (US)/yr (MG/Yr)
Master meter error adjustment (enter positive value):	<input type="text" value="9"/>	<input type="text" value="0.000"/>	under-registered MG/Yr
Water imported:	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr
Water exported:	<input type="text" value="9"/>	<input type="text" value="0.000"/>	MG/Yr
WATER SUPPLIED:		10,513.682	MG/Yr

AUTHORIZED CONSUMPTION

Billed metered:	<input type="text" value="9"/>	<input type="text" value="8,447.437"/>	MG/Yr
Billed unmetered:	<input type="text" value="n/a"/>	<input type="text" value="0.000"/>	MG/Yr
Unbilled metered:	<input type="text" value="9"/>	<input type="text" value="30.250"/>	MG/Yr
Unbilled unmetered:	<input type="text" value="9"/>	<input type="text" value="131.421"/>	MG/Yr
Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed			
AUTHORIZED CONSUMPTION:		8,609.108	MG/Yr

Click here: for help using option buttons below

Pcnt: Value:

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

MG/Yr

Apparent Losses

Unauthorized consumption:	<input type="text" value="8"/>	<input type="text" value="373.821"/>	MG/Yr
Unauthorized consumption volume entered is greater than the recommended default value			
Customer metering inaccuracies:	<input type="text" value="9"/>	<input type="text" value="228.985"/>	MG/Yr
Systematic data handling errors:	<input type="text" value="7"/>	<input type="text" value="143.878"/>	MG/Yr
Apparent Losses:		746.684	

Pcnt: Value:

Choose this option to enter a percentage of billed metered consumption. This is NOT a default value

Real Losses

Real Losses = Water Losses - Apparent Losses:	<input type="text" value="9"/>	<input type="text" value="1,157.889"/>	MG/Yr
WATER LOSSES:		1,904.574	MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: MG/Yr

= Total Water Loss + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="text" value="7"/>	<input type="text" value="1,056.3"/>	miles
Number of active AND inactive service connections:	<input type="text" value="9"/>	<input type="text" value="74,973"/>	
Connection density:	<input type="text" value="71"/>		conn./mile main
Average length of customer service line:	<input type="text" value="7"/>	<input type="text" value="44.0"/>	ft (pipe length between curbstop and customer meter or property boundary)
Average operating pressure:	<input type="text" value="9"/>	<input type="text" value="103.3"/>	psi

COST DATA

Total annual cost of operating water system:	<input type="text" value="9"/>	<input type="text" value="\$52,637,304"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="text" value="8"/>	<input type="text" value="\$5.11"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="text" value="9"/>	<input type="text" value="\$430.51"/>	\$/Million gallons

PERFORMANCE INDICATORS

Financial Indicators

Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="19.7%"/>
Non-revenue water as percent by cost of operating system:	<input type="text" value="10.8%"/>
Annual cost of Apparent Losses:	<input type="text" value="\$5,095,668"/>
Annual cost of Real Losses:	<input type="text" value="\$498,483"/>

Operational Efficiency Indicators

Apparent Losses per service connection per day:	<input type="text" value="27.29"/>	gallons/connection/day
Real Losses per service connection per day*:	<input type="text" value="42.31"/>	gallons/connection/day
Real Losses per length of main per day*:	<input type="text" value="N/A"/>	
Real Losses per service connection per day per psi pressure:	<input type="text" value="0.41"/>	gallons/connection/day/psi
Unavoidable Annual Real Losses (UARI):	<input type="text" value="816.16"/>	million gallons/year
Infrastructure Leakage Index (ILI) [Real Losses/UARI]:	<input type="text" value="1.42"/>	

* only the most applicable of these two indicators will be calculated

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 86 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Systematic data handling errors
- 3: Customer retail unit cost (applied to Apparent Losses)

[For more information, click here to see the Grading Matrix worksheet](#)

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Water Audit Report For:

Report Yr:

UNITED WATER NEW YORK

2014

	Water Exported 0.000			Billed Water Exported		
Own Sources (Adjusted for known errors) 10,513.682		Authorized Consumption 8,609.108	Billed Authorized Consumption 8,447.437	Billed Metered Consumption (inc. water exported) 8,447.437	Revenue Water 8,447.437	
				Billed Unmetered Consumption 0.000		
		Water Losses 1,904.574	Unbilled Authorized Consumption 161.671	Unbilled Metered Consumption 30.250	Unbilled Unmetered Consumption 191.421	Non-Revenue Water (NRW) 2,066.245
			Apparent Losses 746.684	Unauthorized Consumption 373.821	Customer Metering Inaccuracies 228.985	
Water Supplied 10,513.682			Systematic Data Handling Errors 143.878			
Water Imported 0.000			Real Losses 1,157.889	Leakage on Transmission and/or Distribution Mains Not broken down		
				Leakage and Overflows at Utility's Storage Tanks Not broken down		
				Leakage on Service Connections Not broken down		

APPENDIX F

**Revised UWNY Water Audit Reports for 2012-2014
Prepared By Task Force Consultant**

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v6.0
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Water Audit Report for: **REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA**
Reporting Year: **2012** 1/2012 - 12/2012

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it

WATER SUPPLIED

PSC data PP. 305+400

Volume from own sources: 8 10,348,865 MG/Yr
Water imported: 8 182,500 MG/Yr
Water exported: 8 73,569 MG/Yr

WATER SUPPLIED: 10,457,796 MG/Yr

Master Meter and Supply Error Adjustments

Pcnt: Value: MG/Yr
n/a () () MG/Yr
n/a () () MG/Yr
n/a () () MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

PSC data PP. 305+400

Billed metered: 8 8,141,947 MG/Yr
Billed unmetered: 7 43,117 MG/Yr
Unbilled metered: 9 0.825 MG/Yr
Unbilled unmetered: 2 2.670 MG/Yr

AUTHORIZED CONSUMPTION: 8,188,559 MG/Yr

Click here: for help using option buttons below

Pcnt: Value: MG/Yr
0.25% () () 2.670 MG/Yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

2,269,237 MG/Yr

Apparent Losses

*
*

Unauthorized consumption: 5 26.144 MG/Yr
Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 4 219,939 MG/Yr
Systematic data handling errors: 5 20,355 MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 266,439 MG/Yr

Pcnt: Value: MG/Yr
0.25% () () MG/Yr

2.63% () () MG/Yr
0.25% () () MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 2,002,798 MG/Yr

WATER LOSSES: 2,269,237 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 2,272,732 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 7 1,049.3 miles
Number of active AND inactive service connections: 9 73,733
Service connection density: 70 conn./mile main

Are customer meters typically located at the curbside or property line? No (length of service line, beyond the property boundary, that is the responsibility of the utility)
Average length of customer service line: 7 44.0 ft

Average operating pressure: 5 107.0 psi

COST DATA

Total annual cost of operating water system: 3 \$28,759,617 \$/Year
Customer retail unit cost (applied to Apparent Losses): 3 \$5.32 \$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses): 3 \$362.00 \$/Million gallons Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 63 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Total annual cost of operating water system
- 3: Customer retail unit cost (applied to Apparent Losses)

* AWWA default applied.

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for: **REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA**
Reporting Year: **2012** | **1/2012 - 12/2012**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 63 out of 100 ***

System Attributes:

Apparent Losses:	<input type="text" value="266.439"/>	MG/Yr
+ Real Losses:	<input type="text" value="2,002.798"/>	MG/Yr
= Water Losses:	<input type="text" value="2,269.237"/>	MG/Yr

Unavoidable Annual Real Losses (UARL): MG/Yr

Annual cost of Apparent Losses:

Annual cost of Real Losses:

Valued at **Variable Production Cost**
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial: { Non-revenue water as percent by volume of Water Supplied:
Non-revenue water as percent by cost of operating system: Real Losses valued at Variable Production Cost

Operational Efficiency: { Apparent Losses per service connection per day: gallons/connection/day
Real Losses per service connection per day: gallons/connection/day
Real Losses per length of main per day*:
Real Losses per service connection per day per psi pressure: gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): million gallons/year

Infrastructure Leakage Index (ILI) [CARL/UARL]:

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

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WAS v5.0

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Water Audit Report for:	REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA	
Reporting Year:	2012	1/2012 - 12/2012
Data Validity Score:	63	

		Water Exported	Billed Water Exported			Revenue Water
		73.569		Billed Authorized Consumption	Billed Metered Consumption (water exported is removed)	73.569
Own Sources (Adjusted for known errors)	System Input	Water Supplied	Authorized Consumption	8,185.064	8,141.947	Revenue Water
				8,188.559	Billed Unmetered Consumption	
10,348.865	10,531.365	10,457.796	Water Losses	Unbilled Authorized Consumption	Unbilled Metered Consumption	Non-Revenue Water (NRW)
				3.495	0.825	
Water Imported			Real Losses	Apparent Losses	Unauthorized Consumption	2,272.732
				2,269.237	266.439	
182.500				Customer Metering Inaccuracies	219.939	
					Systematic Data Handling Errors	
				Leakage on Transmission and/or Distribution Mains	Not broken down	
				Leakage and Overflows at Utility's Storage Tanks	Not broken down	
				Leakage on Service Connections	Not broken down	

AWWA Free Water Audit Software:
Reporting Worksheet

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Water Audit Report for: **REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA**
Reporting Year: **2013** 1/2013 - 12/2013

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

Volume from own sources: 10,383,997 MG/Yr
 Water imported: 182,500 MG/Yr
 Water exported: 70,868 MG/Yr

PSC data pp. 305 + 400

WATER SUPPLIED: MG/Yr

Master Meter and Supply Error Adjustments

Enter grading in column 'E' and 'J' -----

Pcnt:	Value:	MG/Yr
n/a	<input type="radio"/> <input checked="" type="radio"/>	
n/a	<input type="radio"/> <input checked="" type="radio"/>	
n/a	<input type="radio"/> <input checked="" type="radio"/>	

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Billed metered: 8,068,390 MG/Yr
 Billed unmetered: 129,600 MG/Yr
 Unbilled metered: 4,019 MG/Yr
 Unbilled unmetered: 5,988 MG/Yr

PSC data pp. 305 + 400

AUTHORIZED CONSUMPTION: MG/Yr

Click here: for help using option buttons below

Pcnt: Value: MG/Yr

Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

Apparent Losses

Unauthorized consumption: 26,239 MG/Yr
 * Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: 218,039 MG/Yr
 Systematic data handling errors: 20,171 MG/Yr
 * Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: MG/Yr

Pcnt: 0.25% Value: MG/Yr

2.63% Value: MG/Yr

0.25% Value: MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: MG/Yr

WATER LOSSES: MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains: 1,050.5 miles
 Number of active AND inactive service connections: 74,576
 Service connection density: 71 conn./mile main

Are customer meters typically located at the curbside or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: 44.0 ft

Average operating pressure: 103.3 psi

COST DATA

Total annual cost of operating water system: \$27,442,369 \$/Year
 Customer retail unit cost (applied to Apparent Losses): \$5.53 \$/100 cubic feet (ccf)
 Variable production cost (applied to Real Losses): \$430.51 \$/Million gallons Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 64 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Total annual cost of operating water system
- 3: Customer retail unit cost (applied to Apparent Losses)

* AWWA default applied.

AWWA Free Water Audit Software:
System Attributes and Performance Indicators

WAS v5.0

American Water Works Association
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Water Audit Report for: **REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA**

Reporting Year: **2013** | **1/2013 - 12/2013**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 64 out of 100 ***

System Attributes:

Apparent Losses:	<input type="text" value="264.449"/>	MG/Yr
+ Real Losses:	<input type="text" value="2,023.205"/>	MG/Yr
= Water Losses:	<input type="text" value="2,287.654"/>	MG/Yr

Unavoidable Annual Real Losses (UARL): MG/Yr

Annual cost of Apparent Losses:

Annual cost of Real Losses:

Valued at **Variable Production Cost**

Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:

Non-revenue water as percent by volume of Water Supplied:

Non-revenue water as percent by cost of operating system:

Real Losses valued at Variable Production Cost

Operational Efficiency:

Apparent Losses per service connection per day: gallons/connection/day

Real Losses per service connection per day: gallons/connection/day

Real Losses per length of main per day*:

Real Losses per service connection per day per psi pressure: gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): million gallons/year

Infrastructure Leakage Index (ILI) [CARL/UARL]:

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

AWWA Free Water Audit Software: Water Balance

WAS v5.0
 American Water Works Association
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Water Audit Report for:	REVISED UWNV REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA	
Reporting Year:	2013	1/2013 - 12/2013
Data Validity Score:	64	

		Water Exported	Billed Water Exported				Revenue Water
		70.866					70.866
Own Sources (Adjusted for known errors)	System Input	Water Supplied	Authorized Consumption	Billed Authorized Consumption	Billed Metered Consumption (water exported is removed)	Revenue Water	
				8,197.990	8,068.390		
10,383.997	10,566.497	10,495.631	8,207.977	Unbilled Authorized Consumption	Billed Unmetered Consumption	8,197.990	
				9.987	129.600		
Water Imported			Water Losses	Apparent Losses	Unbilled Metered Consumption	Non-Revenue Water (NRW)	
				2,287.654	264.449		4.019
182.500			Real Losses	Unauthorized Consumption	Unbilled Unmetered Consumption	2,297.641	
				2,023.205	26.239		5.968
				Customer Metering Inaccuracies			
				Systematic Data Handling Errors			
				Leakage on Transmission and/or Distribution Mains			
				Not broken down			
				Leakage and Overflows at Utility's Storage Tanks			
				Not broken down			
				Leakage on Service Connections			
				Not broken down			

**AWWA Free Water Audit Software:
Reporting Worksheet**

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Water Audit Report for: **REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA**
Reporting Year: **2014** 1/2014 - 12/2014

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: **MILLION GALLONS (US) PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

WATER SUPPLIED

----- Enter grading in column 'E' and 'J' ----->

Volume from own sources:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value="10,513.682"/>	MG/Yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value="182.500"/>	MG/Yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value="84.201"/>	MG/Yr
WATER SUPPLIED:				10,611.981	MG/Yr

Master Meter and Supply Error Adjustments

Pcnt:	<input type="button" value="n/a"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value=""/>	MG/Yr
Value:	<input type="button" value="n/a"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value=""/>	MG/Yr
Enter negative % or value for under-registration Enter positive % or value for over-registration					

AUTHORIZED CONSUMPTION

PSC data pp. 305+400

Billed metered:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value="8,453.843"/>	MG/Yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="7"/>	<input type="text" value="131.275"/>	MG/Yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="8"/>	<input type="text" value="8.250"/>	MG/Yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="5"/>	<input type="text" value="6.385"/>	MG/Yr
AUTHORIZED CONSUMPTION:				8,599.753	MG/Yr

Click here:
for help using option buttons below

Pcnt:	<input type="button" value="0.25%"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text" value="6.385"/>	MG/Yr
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Use buttons to select percentage of water supplied OR value

WATER LOSSES (Water Supplied - Authorized Consumption)

2,012.228 MG/Yr

Apparent Losses

** Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed*

Unauthorized consumption:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="5"/>	<input type="text" value="26.530"/>	MG/Yr
Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="4"/>	<input type="text" value="228.564"/>	MG/Yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="5"/>	<input type="text" value="21.135"/>	MG/Yr
<i>* Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed</i>					
Apparent Losses:				276.229	MG/Yr

Pcnt:	<input type="button" value="0.25%"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text" value=""/>	MG/Yr
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Value:	<input type="button" value="2.63%"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text" value=""/>	MG/Yr
Value:	<input type="button" value="0.25%"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="text" value=""/>	MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **1,735.999** MG/Yr

WATER LOSSES: **2,012.228** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **2,026.863** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="7"/>	<input type="text" value="1,056.3"/>	miles
Number of active AND inactive service connections:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="9"/>	<input type="text" value="74,973"/>	
Service connection density:	<input type="button" value="7"/>	<input type="button" value="7"/>	<input type="button" value="7"/>	<input type="text" value="71"/>	conn./mile main

Are customer meters typically located at the curbside or property line? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line: ft

Average operating pressure: psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="3"/>	<input type="text" value="\$26,529,066"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="3"/>	<input type="text" value="\$5.78"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="7"/>	<input type="button" value="3"/>	<input type="text" value="\$430.51"/>	\$/Million gallons

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 63 out of 100 ***

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Total annual cost of operating water system
- 3: Customer retail unit cost (applied to Apparent Losses)

** AWWA default applied.*

AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

American Water Works Association
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Water Audit Report for: **REVISED UWNV REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA**

Reporting Year: **2014** | **1/2014 - 12/2014**

*** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 63 out of 100 ***

System Attributes:

Apparent Losses:	276.229	MG/Yr
+	Real Losses:	1,735.999 MG/Yr
=	Water Losses:	2,012.228 MG/Yr

? Unavoidable Annual Real Losses (UARL): 816.16 MG/Yr

Annual cost of Apparent Losses: \$2,134,347

Annual cost of Real Losses: \$747,365

Valued at **Variable Production Cost**
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:

Non-revenue water as percent by volume of Water Supplied: 19.1%

Non-revenue water as percent by cost of operating system: 10.9% Real Losses valued at Variable Production Cost

Operational Efficiency:

Apparent Losses per service connection per day: 10.09 gallons/connection/day

Real Losses per service connection per day: 63.44 gallons/connection/day

Real Losses per length of main per day*: N/A

Real Losses per service connection per day per psi pressure: 0.61 gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 1,736.00 million gallons/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 2.13

* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline

AWWA Free Water Audit Software: Water Balance

WAS v5.0

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Water Audit Report for:	REVISED UWNY REPORT-AWWA DEFAULTS, PSC & CORRECTED DATA	
Reporting Year:	2014	1/2014 - 12/2014
Data Validity Score:	63	

Own Sources (Adjusted for known errors)	System Input	Water Exported	Billed Water Exported				Revenue Water
		84.201					84.201
10,513.682	10,696.182	Water Supplied	Authorized Consumption	Billed Authorized Consumption	Billed Metered Consumption (water exported is removed)	Revenue Water	
				8,585.118	8,453.843		
			8,599.753	Billed Unmetered Consumption		8,585.118	
				131.275			
				Unbilled Authorized Consumption	Unbilled Metered Consumption	Non-Revenue Water (NRW)	
				14.635	8.250		
				Apparent Losses	Unbilled Unmetered Consumption	2,026.863	
				276.229	6.385		
				Unauthorized Consumption	Customer Metering Inaccuracies		
				26.530	228.564		
				Systematic Data Handling Errors	Systematic Data Handling Errors		
				21.135			
Water Imported			Water Losses	Leakage on Transmission and/or Distribution Mains	Leakage on Transmission and/or Distribution Mains		
				2,012.228	Not broken down		
182.500				Real Losses	Leakage and Overflows at Utility's Storage Tanks		
				1,735.999	Not broken down		
				Leakage on Service Connections	Leakage on Service Connections		
				Not broken down	Not broken down		