

AWU Water Loss Calculation

for: January 1, 2014 to December 31, 2014

Line #	Field Description (from TWDB Water Audit Reporting Form)	Value	Assessment Values	
			Score	Max Points
A. WATER UTILITY GENERAL INFORMATION				
1	Water Utility Name:	Austin Water Utility		
2	Contact:	Dan Strub AWU Name Pipeline Operations Telephone # (512) 972-0349 Email Address dan.strub@awu.texas.gov		
3	Reporting Period:	January 1, 2014 to December 31, 2014		
4	Source Water Utilization, percentage:	Surface Water % 100% Groundwater % 0%		
5	Population Served:			
	a. Retail Population Served	896,363		
	b. Wholesale Population Served	54,966		
6	Utility's Length of Main Lines, miles	3,793	5	5
7	Number of Wholesale Connections Served	50		
8	Number of Retail Service Connections Served	218,198		
9	Service Connection Density (Number of retail service connections/Miles of main lines)	57.53 conn/mile		
10	Average Yearly System Operating Pressure (psi)	77.3 psi	5	5
11	Volume Units of Measure (check one): acre-ft million gallons thousand gallons gallons	Gallons		
B. SYSTEM INPUT VOLUME				
12	Water Volume from own Sources	44,589,633,317.0 gals	4.5	5
13	Production Meter Accuracy (%)	100.00% pct.	4.5	5
14	Corrected Input Volume	44,589,633,317.0 gals		
15	Wholesale Water Imported	1,876,000.0 gals	4.5	5
16	Wholesale Water Exported	2,579,530,487.0 gals	5	5
17	System Input Volume	42,011,978,830.0 gals	100.00%	
C. AUTHORIZED CONSUMPTION				
18	Billed Metered	36,171,058,100.0 gals 86.10%	3.5	5
19	Billed Unmetered	3,339,880.0 gals 0.01%	4	5
20	Unbilled Metered (amount used at AWU buildings/facilities)	52,411,165.0 gals 0.12%	2	5
21	Unbilled Unmetered (amount used by other city Departments) **	148,700,039.6 gals 0.35%	4	5
22	Total Authorized Consumption	36,375,509,184.6 gals	86.58%	
NOTES: ** Most of the water used by other City Departments is included in line 18.				
D. WATER LOSSES				
23	Water Losses (Line 17 minus Line 22)	5,636,469,645.4 gals	13.42%	
E. APPARENT LOSSES				
24	Average Customer Meter Accuracy %	97.93% pct.	3	5
25	Customer Meter Accuracy Loss	764,898,655.8 gals 1.82%		
26	Systematic Data Handling Discrepancy	0.0 gals 0.00%	4	5
27	Unauthorized Consumption	109,453,555.0 gals 0.26%	4	5
28	Total Apparent Losses	874,352,210.8 gals 2.08%		
F. REAL LOSSES				
29	Reported Breaks and Leaks (Estimated volume of leaks and breaks repaired during the audit period)	34,527,090.0 gals 0.08%	5	5
30	Unreported Loss (Includes all unknown water loss) (Calculated as Water Losses - Total Apparent Losses - Reported Breaks & Leaks)	4,727,590,344.6 gals 11.25%	3	5
31	Total Real Losses (Line 29, plus Line 30)	4,762,117,434.6 gals 11.34%		
32	Water Losses (Apparent + Real) (Line 28 plus Line 31) should = Line 23	5,636,469,645.4 gals 13.42%		
33	Non-revenue Water (Water Losses + Unbilled Authorized Consumption) (Line 32, plus Line 20, plus Line 21)	5,837,580,850.0 gals 13.90%		

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		Assessment Values		
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G. TECHNICAL PERFORMANCE INDICATOR FOR APPARENT LOSS				
34	Apparent Losses Normalized (Apparent Loss Volume/# of Retail Service Connections/365)	10.978 gals/conn/day		
H. TECHNICAL PERFORMANCE INDICATORS FOR REAL LOSS				
35	Real Loss Volume (Line 31) (shown as total gallons/year)	4,762,117,434.6 gals	11.34%	
36	Unavoidable Annual Real Losses, volume (calculated) in MGD	4,116,791.6 MGD	3.58%	
37	Infrastructure Leakage Index (calculated) (Equals real loss volume (div by 365) divided by unavoidable annual real losses)	3.169		
38	Real Losses Normalized (Real Loss Volume/# of Service Connections/365) <i>(This indicator applies if service connection density is greater than 32/mile)</i>	59.780 gals/conn/day		Austin's Serv Conn Density > 32/mile so this calc is used
39	Real Losses Normalized (Real Loss Volume/Miles of Main Lines/365) <i>(This indicator applies if service connection density is less than 32/mile)</i>	3,439.730 gals/mile/day		This one not used
I. FINANCIAL PERFORMANCE INDICATORS				
40	Total Apparent Losses (Line 28)	874,352,210.8 gals		Cost Data Points
41	Retail Price of Water	\$5.60 Per 1,000 Gals	5	5
42	(Apparent loss volume multiplied by retail cost of water - Line 40/1000 x Line 41)	\$4,896,372.38		
43	Total Real Losses (Line 31)	4,762,117,434.6 gals		
44	Variable Production Cost of Water* (*Note: In case of water shortage, real losses might be valued at the retail price of water instead of the variable production cost.)	\$0.40 Per 1,000 Gals	4	5
45	(Real loss multiplied by variable production cost of water - Line 43/1000 x Line 44)	\$1,914,371.21		
46	Total Assessment Score		70.0	85.0
47	Total Cost Impact of Apparent and Real Losses	\$6,810,743.59		82.35%

LEGEND:
 = calculated item
 = reliability assessment required
 = Update Needed

ASSESSMENT VALUE SCORING:

Data considered Preliminary; Do not benchmark to other Utilities or use for planning < 40

Progressively greater validity of data; use for planning & developing targeted loss control efforts; sufficient validity to compare to similarly assessed data from other utilities. 40 to 70

Mature programs of "auditing" & loss control; data is reliable in guiding and tracking advanced programs in apparent and real loss control; performance tracking and benchmarking to other utilities can be carried out in a reliable manner. 70 to 85

