Appendix H

AWWA Water Audit Reporting Worksheets
**Water Audit Report for:** TCCWD  
**Reporting Year:** 2015  
1/2015 - 12/2015

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: ACRE-FEET PER YEAR**

### WATER SUPPLIED

<table>
<thead>
<tr>
<th>Source</th>
<th>Volume</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own sources</td>
<td>1,752,000</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Imported</td>
<td>5,160,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exported</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WATER SUPPLIED:** 6,912,000 acre-ft/yr

### AUTHORIZED CONSUMPTION

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billed metered</td>
<td>6,056,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unbilled metered</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unbilled unmetered</td>
<td>86,400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AUTHORIZED CONSUMPTION:** 6,142,400 acre-ft/yr

### WATER LOSSES (Water Supplied - Authorized Consumption)

**Unidentified:** 769,600 acre-ft/yr

**Apparent Losses**

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unauthorized consumption</td>
<td>17.280</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer metering inaccuracies</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systematic data handling errors</td>
<td>15.140</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Apparent Losses:** 32,420 acre-ft/yr

### Real Losses (Current Annual Real Losses or CARL)

**Real Losses = Water Losses - Apparent Losses:** 737,180 acre-ft/yr

### NON-REVENUE WATER

**NON-REVENUE WATER:** 856,000 acre-ft/yr

### SYSTEM DATA

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of mains</td>
<td></td>
</tr>
<tr>
<td>Number of active AND inactive service connections</td>
<td></td>
</tr>
<tr>
<td>Service connection density</td>
<td></td>
</tr>
</tbody>
</table>

### COST DATA

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual cost of operating water system</td>
<td></td>
</tr>
<tr>
<td>Customer retail unit cost (applied to Apparent Losses)</td>
<td></td>
</tr>
<tr>
<td>Variable production cost (applied to Real Losses)</td>
<td></td>
</tr>
</tbody>
</table>

### WATER AUDIT DATA VALIDITY SCORE:

Add a grading value for 8 parameter(s) to enable an audit score to be calculated

### PRIORITY AREAS FOR ATTENTION:

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

1. Water imported
2. Customer metering inaccuracies
3. Total annual cost of operating water system
# Water Audit Report

**Water Audit Report for:** Bear Valley CSD  
**Reporting Year:** 2015 - 1/2015 - 12/2015

### Master Meter and Supply Error Adjustments

#### WATER SUPPLIED
- **Volume from own sources:** 653.940 acre-ft/yr
- **Water imported:** 0 acre-ft/yr
- **Water exported:** 0 acre-ft/yr

#### AUTHORIZED CONSUMPTION
- **Billed metered:** 592.000 acre-ft/yr
- **Billed unmetered:** 0 acre-ft/yr
- **Unbilled metered:** 0 acre-ft/yr
- **Unbilled unmetered:** 8.174 acre-ft/yr

**WATER SUPPLIED:** 653.940 acre-ft/yr

**AUTHORIZED CONSUMPTION:** 600.174 acre-ft/yr

### WATER LOSSES (Water Supplied - Authorized Consumption)
- **Apparent Losses**
  - Unauthorized consumption: 1.635 acre-ft/yr
  - Customer metering inaccuracies: 0.000 acre-ft/yr
  - Systematic data handling errors: 1.480 acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**
- Real Losses = Water Losses - Apparent Losses: 50.651 acre-ft/yr

### NON-REVENUE WATER
- NON-REVENUE WATER: 61.940 acre-ft/yr

### SYSTEM DATA
- **Length of mains:** 110.0 miles
- **Number of active AND inactive service connections:** 2.953
- **Service connection density:** 27 conn/mile main
- **Are customer meters typically located at the curbstop or property line?** Yes (length of service line: beyond the property boundary, that is the responsibility of the utility)
- **Average length of customer service line has been set to zero and a data grading score of 10 has been applied**
- **Average operating pressure:** 110.0 psi

### COST DATA
- **Total annual cost of operating water system:**
- **Customer retail unit cost (applied to Apparent Losses):**
- **Variable production cost (applied to Real Losses):**

### WATER AUDIT DATA VALIDITY SCORE:
- Add a grading value for 6 parameter(s) to enable an audit score to be calculated

### 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: Billed metered
  - 3: Customer metering inaccuracies
### Water Audit Report

**City of Tehachapi (1510020)**

**Reporting Year:** 2015 - 1/2015 - 12/2015

All volumes to be entered as: ACRE-FEET PER YEAR

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#### WATER SUPPLIED

- **Volume from own sources:** 8,1736.879 acre-ft/yr (Pcnt: 10, Value: -2.50%)
- **Water imported:** n/a, 0.000 acre-ft/yr
- **Water exported:** n/a, 0.000 acre-ft/yr

**WATER SUPPLIED:** 1,781.414 acre-ft/yr

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#### AUTHORIZED CONSUMPTION

- **Billed metered:** 8, 1,352.655 acre-ft/yr
- **Billed unmetered:** n/a, 0.000 acre-ft/yr
- **Unbilled metered:** 9, 146.586 acre-ft/yr (Pcnt: 1, Value: 1.25%)
- **Unbilled unmetered:** 22.268 acre-ft/yr (Pcnt: 9, Value: 1.25%)

**AUTHORIZED CONSUMPTION:** 1,521.508 acre-ft/yr

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#### WATER LOSSES

- **Apparent Losses:**
  - Unauthorized consumption: 4.454 acre-ft/yr (Pcnt: 8, Value: 0.25%)
  - Customer metering inaccuracies: 8, 38.442 acre-ft/yr (Pcnt: 8, Value: 2.50%)
  - Systematic data handling errors: 3.382 acre-ft/yr (Pcnt: 8, Value: 0.25%)

**Apparent Losses:** 46.277 acre-ft/yr

- **Real Losses (Current Annual Real Losses or CARL):**
  - **Real Losses = Water Losses - Apparent Losses:** 213.629 acre-ft/yr

**WATER LOSSES:** 259.906 acre-ft/yr

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#### NON-REVENUE WATER

**NON-REVENUE WATER:** 428.760 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

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#### SYSTEM DATA

- **Length of mains:** 7, 50.0 miles
- **Number of active AND inactive service connections:** 9, 3,085
- **Service connection density:** 62 conn./mile main

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#### COST DATA

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total annual cost of operating water system</td>
<td>$2,632,387</td>
</tr>
<tr>
<td>Customer retail unit cost (applied to Apparent Losses):</td>
<td>$1.82</td>
</tr>
<tr>
<td>Variable production cost (applied to Real Losses):</td>
<td>$142.46</td>
</tr>
</tbody>
</table>

---

#### WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 81 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

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#### 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. Unauthorized consumption
3. Systematic data handling errors
## Water Audit Report

**Reporting Information**

**Water Audit Report for:** Golden Hills CSD (1510045)

**Reporting Year:** 2015

**All volumes to be entered as: ACRE-FEET PER YEAR**

### Master Meter and Supply Error Adjustments

<table>
<thead>
<tr>
<th>Volume from own sources</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 0.000 acre-ft/yr</td>
<td>1,032.000 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water imported</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000 acre-ft/yr</td>
<td>0.000 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water exported</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.000 acre-ft/yr</td>
<td>0.000 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

**WATER SUPPLIED:** 1,032.000 acre-ft/yr

Enter negative % or value for under-registration

### Authorized Consumption

<table>
<thead>
<tr>
<th>Billed metered</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>917.000 acre-ft/yr</td>
<td>917.000 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Billed unmetered</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25% acre-ft/yr</td>
<td>1.25% acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unbilled metered</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,200 acre-ft/yr</td>
<td>1,200 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

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

**AUTHORIZED CONSUMPTION:** 929.900 acre-ft/yr

Enter positive % or value for over-registration

### Water Losses (Water Supplied - Authorized Consumption)

**Apparent Losses**

<table>
<thead>
<tr>
<th>Unauthorized consumption</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.580 acre-ft/yr</td>
<td>2.580 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Customer metering inaccuracies</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.964 acre-ft/yr</td>
<td>13.964 acre-ft/yr</td>
<td></td>
</tr>
</tbody>
</table>

Systematic data handling errors: 2.293 acre-ft/yr 0.25% acre-ft/yr

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

**Apparent Losses:** 18.837 acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

**Real Losses = Water Losses - Apparent Losses:** 83.263 acre-ft/yr

### Non-Revenue Water

**NON-REVENUE WATER:** 115.000 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

### System Data

<table>
<thead>
<tr>
<th>Length of mains</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>66.0 miles</td>
<td>66.0 miles</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of active AND inactive service connections</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,819 connection</td>
<td>2,819 connection</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service connection density</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>43 conn./mile main</td>
<td>43 conn./mile main</td>
<td></td>
</tr>
</tbody>
</table>

Are customer meters typically located at the curbstop or property line?

**Yes**

Average length of service line has been set to zero and a data grading score of 10 has been applied

Average length of customer service line | 65.0 psi |

### Cost Data

<table>
<thead>
<tr>
<th>Total annual cost of operating water system</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,000,000 /Year</td>
<td>$2,000,000 /Year</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Customer retail unit cost (applied to Apparent Losses)</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4.57 /100 cubic feet (ccf)</td>
<td>$4.57 /100 cubic feet (ccf)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable production cost (applied to Real Losses)</th>
<th>Pcnt</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$600.00 /acre-ft</td>
<td>$600.00 /acre-ft</td>
<td></td>
</tr>
</tbody>
</table>

### Water Audit Data Validity Score

**YOUR SCORE IS: 67 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. Unauthorized consumption
3. Systematic data handling errors
Water Audit Report for: Stallion Springs CSD
Reporting Year: 2015 - 12/2015

All volumes to be entered as: ACRE-FEET PER YEAR

WATER SUPPLIED

| Volume from own sources: 5 | 421,000 acre-ft/yr |
| Water imported: 5 | acre-ft/yr |
| Water exported: 5 | acre-ft/yr |

WATER SUPPLIED: 421,000 acre-ft/yr

AUTHORIZED CONSUMPTION

| Billed metered: 5 | 310,000 acre-ft/yr |
| Billed unmetered: 5 | acre-ft/yr |
| Unbilled metered: 5 | acre-ft/yr |
| Unbilled unmetered: 5 | 5,263 acre-ft/yr |

AUTHORIZED CONSUMPTION: 315,263 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

| Unmetered: 105,738 acre-ft/yr |

Apparent Losses

Unmetered: 105,738 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 103,910 acre-ft/yr

WATER LOSSES: 105,738 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 111,000 acre-ft/yr

SYSTEM DATA

Length of mains: 

Number of active AND inactive service connections: 

Service connection density: 

Are customer meters typically located at the curbstop or property line? 

Average length of customer service line: 

Average operating pressure: 

COST DATA

Total annual cost of operating water system: 

Customer retail unit cost (applied to Apparent Losses): 

Variable production cost (applied to Real Losses): 

WATER AUDIT DATA VALIDITY SCORE:

Add a grading value for 8 parameter(s) to enable an audit score to be calculated

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. Customer metering inaccuracies
3. Total annual cost of operating water system