**WATERLINE REVIEW SHEET**

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| Project Name: |       | PTLog #: |       |
| Waterworks Name: |       | PWSID # |       |
| Reviewed By: |       | Date: |       |

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| **Materials (12VAC5-590-1110)1** |
| **Pipe Material** | **Specification**  | **Acceptable1** | **Joint Material** | **Specification**  | **Acceptable1** |
|       |       | Yes [ ]  No [ ]   |       |       | Yes [ ]  No [ ]   |
|       |       | Yes [ ]  No [ ]   |       |       | Yes [ ]  No [ ]   |
|       |       | Yes [ ]  No [ ]   |       |       | Yes [ ]  No [ ]   |
| Do valves, hydrants, and coatings conform to AWWA standards? | Yes [ ]  No [ ]  |

1. Material must meet AWWA or NSF/ANSI/CAN standards. Note that specific AWWA standards may not exist for some types of pipe smaller than 4-inch diameter.

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| **Pipe Sizes and Length** |
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| **Minimum Pipe Size (12VAC5-590-1120)** |
| Minimum distribution system pipe size is 4 inches in diameter | Yes [ ]  No [ ]   |
| 2-inch diameter pipe does not exceed 300 feet  | Yes [ ]  No [ ]  N/A [ ]  |
| 3-inch diameter pipe does not exceed 600 feet | Yes [ ]  No [ ]  N/A [ ]   |
| Minimum 6-inch diameter pipe where fire protection is provided  | Yes [ ]  No [ ]  N/A [ ]  |
| If single building noncommunity waterworks, in accordance with USBC | Yes [ ]  No [ ]  N/A [ ]  |
| If multi-building noncommunity waterworks, sizing sufficient for flow/pressure | Yes [ ]  No [ ]  N/A [ ]  |
| COMMENTS:       |  |

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| **System Design and Waterline installation (12VAC5-590-1130, 1140,1220 & 1230)** |
| Dead ends minimized by looping | Yes [ ]  No [ ]  N/A [ ]  |
| Means for effective flushing (not connected to sewer) at dead ends | Yes [ ]  No [ ]  N/A [ ]  |
| Adequate support provided1,2 | Yes [ ]  No [ ]   |
| Continuous and uniform bedding, stone/rock removal1,3 | Yes [ ]  No [ ]   |
| Pressure test specification provided and adequate1 | Yes [ ]  No [ ]   |
| Allowable leakage specification provided and adequate1 | Yes [ ]  No [ ]   |
| Adequate cover provided to prevent freezing or damage from forces5 | Yes [ ]  No [ ]   |
| Nonmetallic pipe has provisions for being located | Yes [ ]  No [ ]  N/A [ ]  |
| Meters provided for new service connections | Yes [ ]  No [ ]  N/A [ ]  |
| Pipe & appurtenances between main and meter conforms to applicable codes | Yes [ ]  No [ ]  N/A [ ]  |
| PRVs provided for pressures exceeding 80 psig7 | Yes [ ]  No [ ]  N/A [ ]  |
| COMMENTS:       |  |

1. See AWWA Standards C600-17 (DIP), 604 (Steel) and C605 (PVC). Specifications are to reference either AWWA Standard or manufacturer’s installation procedures.
2. i.e. thrust blocks, pipe timber supports, valve supports.
3. Stones to be removed to a minimum depth of 6” below pipe.
4. See AWWA Standards C600-14 (DIP) and C605-13 (PVC) for testing procedures and leakage allowances.
5. A minimum of 3 feet of cover is typical in Virginia.
6. Recommendation for distribution system, however, pressures may be higher for some waterworks. Please note, USBC requires PRV for building connections exceeding 80 psig.

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| **Separation of water mains and sanitary sewers (12VAC5-590-1150)** |
| 10 feet horizontal separation from sanitary sewers, manholes, septic tanks, and drainfields provided1 | Yes [ ]  No [ ]  N/A [ ]   |
| 18 inch vertical separation provided when less than 10 feet horizontal and at crossings; sewer under water2 | Yes [ ]  No [ ]  N/A [ ]  |
| If sewer crossing over waterline: 18 inch vertical separation provided, adequate support for sewer, water main centered so joints away from sewer | Yes [ ]  No [ ]  N/A [ ]  |
| Safe distance from other contamination sources, e.g. WWTP, industrial site | Yes [ ]  No [ ]  N/A [ ]  |
| COMMENTS:       |  |

1. If 10 feet horizontal cannot be provided: Must maintain 18” vertical separation (water main above sewer). Sewer manhole watertight and tested in place and no water pipe shall pass through or come into contact with a manhole. Concrete encasement or physical barrier can also be approved by ODW.
2. If 18” vertical separation cannot be provided due to unusual local conditions, then sewer must be constructed of water distribution pipe to at least 10 feet beyond crossing on each side, and pressure tested in place in accordance with Sections 1110 and 1140. If water passes under sewer there is no exception for less than 18 inch separation.

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| **Valves, air relief, meter, blowoff chambers, and hydrants (12VAC5-590-1160 & 1170)** |
| Chamber, pit, blowoffs, air relief valves have acceptable drainage1 | Yes [ ]  No [ ]  N/A [ ]  |
| Air relief valve (can also use fire hydrants) provided 2 | Yes [ ]  No [ ]  N/A [ ]  |
| Air/vacuum/combination release valves installed appropriately, accesible3  | Yes [ ]  No [ ]  N/A [ ]  |
| Fire hydrants and blowoff valves adequately drained4 | Yes [ ]  No [ ]  N/A [ ]  |
| COMMENTS:       |  |

1. Not connected to storm drain or sewer or discharging into flood zone. Where water table is high, sump pump may be needed. Backfill/absorption pit may be OK (See 1170 C).
2. Recommendation for air relief pipe to extend one foot above grade (may be impractical), or in compliance with 1160 E 2.
3. Installed at a) pipeline high points, b) significant grade changes, c) minimum ½ mile intervals on long ascending or descending lines, d) upgradient from blowoffs & drains per *Permit Manual* recommendations.
4. Weep holes to be provided only in compliance with 1170 A.

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| **Surface Water Crossing (12VAC5-590-1180)** |
| Water mains crossing above water bodies are:a) adequately supported and accessibleb) protected from freezing,c) above 100 year flood level | Yes [ ]  No [ ]  N/A [ ]  |
| Water mains crossing under water bodies are:a) provided with flexible watertight jointsb) Valves are provided at both ends of the water crossingc) Sample taps are provided at both ends of the water crossingd) Permanent taps provided for testing and locating leaks | Yes [ ]  No [ ]  N/A [ ]  |
| COMMENTS:       |  |

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| **Water Main Disinfection and Testing (12VAC5-590-1210)1** |
| All water mains are disinfected before being placed in service | Yes [ ]  No [ ]   |
| Disinfection method in accordance with AWWA C651 and detailed | Yes [ ]  No [ ]   |
| All mains flushed prior to disinfection @ minimum 3.0 fps, with valves operated | Yes [ ]  No [ ]   |
| Acceptable methods of chlorine application, chlorine dosage, and contact times specified  | Yes [ ]  No [ ]   |
| Final flushing following disinfection and satisfactory disposal of the highly chlorinated water specified | Yes [ ]  No [ ]   |
| Bacteriological testing following disinfection specified | Yes [ ]  No [ ]   |
| Minimum of two samples collected 16 hours apart at 1,200 ft intervals2 | Yes [ ]  No [ ]   |
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| COMMENTS:       |  |

1. See AWWA Standard C651-14
2. *Waterworks Regulations*, 12VAC5-590-1210 A.

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| **Hydraulic Model (12VAC5-590-640)1** |
| Summary and certification submitted and acceptable2 | Yes [ ]  No [ ]  N/A [ ]  |
| Model covers the scope of project and design basis is appropriate | Yes [ ]  No [ ]  N/A [ ]  |
| Effective storage is determined correctly | Yes [ ]  No [ ]  N/A [ ]  |
| Minimum pressures are met during max day + fire flow | Yes [ ]  No [ ]  N/A [ ]  |
| COMMENTS:       |  |

1. 20 psig shall be maintained under all flow conditions. *Waterworks Regulations,* 12VAC5-590-510 C.

2. Spot check for consistency between the report and the Summary.

**Comments:**

**Calculations:**

*(Provide simple calculations on this page, or attach calculations and spreadsheet calculator outputs. Additional calculations may not be necessary if hydraulic model submitted by engineer.)*