**WATERLINE REVIEW SHEET**

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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.

|  |  |
| --- | --- |
| **Pipe Sizes and Length** | |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **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: |  |

|  |  |
| --- | --- |
| **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.

|  |  |
| --- | --- |
| **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.

|  |  |
| --- | --- |
| **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.

|  |  |
| --- | --- |
| **Surface Water Crossing (12VAC5-590-1180)** | |
| Water mains crossing above water bodies are:  a) adequately supported and accessible  b) 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 joints  b) Valves are provided at both ends of the water crossing  c) Sample taps are provided at both ends of the water crossing  d) Permanent taps provided for testing and locating leaks | Yes  No  N/A |
| COMMENTS: |  |

|  |  |
| --- | --- |
| **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 |
|  |  |
| COMMENTS: |  |

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

|  |  |
| --- | --- |
| **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.)*