



Oklahoma Department of Environmental Quality
 Water Quality Division | Phone: 405-702-8100
 Construction Permitting Section
 707 N. Robinson, OKC, OK 73102-6010
 P.O. Box 1677, OKC, OK 73101-1677

Water Distribution Systems and Ground Water Wells Engineering Report Form

The _____ proposes the construction of a waterline extension(s), ground water well(s), pumping facility, chlorination facility, and/or water storage facility in the manner indicated by the information contained herein and by the plans, profiles, specifications, and other data attached hereto. The plans and specifications have been approved and signed by the proper city officials or owner and an application for a permit properly executed by the Mayor, Chairman of the Board or owner accompanies this report.

I. General Information

1. Name of Facility _____

2. PWSID Number _____

3. Legal Description: ___/4, ___/4, ___/4, of Section _____, T- ___ - ___, R- ___ - ___, I.M./C.M.,
 County _____

4. Source of Water Supply _____

a. Surface _____, Ground _____, or Purchase _____

b. Community Non-Community

c. Waterline is for distribution
 Raw water transmission line (if, so then go to P.E. certification)

5. Population Served by System: _____

6. Type of Service Area (Rural waterline extension, Municipal, Mobile Home Park, Camp Grounds, School, Etc.):

7. Number of Service Connections (System): _____

	Yes	No
8. Technical specifications for the proposed waterline extension, booster pump(s), and water well(s) are provided?	<input type="checkbox"/>	<input type="checkbox"/>

If No, the most current City Ordinances or Standards are referred to?	<input type="checkbox"/>	<input type="checkbox"/>
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If Yes, the Ordinances/Standards are included or on file with the Construction Permit Unit, Water Quality Division, Oklahoma Department of Environmental Quality.

- | | | |
|--|--------------------------|--------------------------|
| 9. The area of the proposed development: _____ | Yes | No |
| If area of development is 1 acre or more, has the developer/builder obtained a DEQ Storm Water Construction Permit? | <input type="checkbox"/> | <input type="checkbox"/> |
| Developers/builders are required to obtain a DEQ Storm Water Construction Permit for a construction site that will disturb five (5) acres or more in accordance with OPDES, 27A O.S. § 2-6-201 et seq. | | |

II. Waterline Extension Technical Information

- | A. Municipal Waterline Extensions | Yes | No |
|--|--------------------------|--------------------------|
| 1. The proposed waterline system is designed to maintain a minimum pressure of 25 psi at all points under all conditions of flow? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Hydraulic analysis based on flow demands and pressure requirements is used to size all water mains? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Hydraulic analysis is provided (hydraulic analysis is required for the review process)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Number of service connections to be served by this waterline after the construction is complete: _____ | | |
| 5. A minimum waterline size of six (6) inches in residential areas and eight (8) inches in high value districts are proposed? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. The normal static pressure throughout the area to be served will range from _____ to _____ psi. | | |
| 7. The normal dynamic pressure throughout the area to be served will range from _____ to _____ psi. | | |
| 8. Flushing hydrants that discharge above the ground surface are provided for dead-end lines? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Positive closing valves are located so that a single break in the line will require no more than 500 linear feet of line to be disconnected in high value districts and 1,320 linear feet in other areas? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Hydrants are provided at each intersection and at intermediate points so spacing does not exceed 600 feet? | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Hydrants should have one (1) 4 ½ inch pumper outlet, not less than two (2) 2 ½ inch hose outlets. | | |
| 12. Hydrants, with 4 ½ inch pumper outlets are to be connected to mains smaller than 6 inches? | <input type="checkbox"/> | <input type="checkbox"/> |
| If Yes, explain _____ | | |
| 13. Drains from hydrant barrels do not connect to any sanitary sewer or storm drain? | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Air relief valves are provided at high points? | <input type="checkbox"/> | <input type="checkbox"/> |

- | | | |
|--|--------------------------|--------------------------|
| | Yes | No |
| 15. In large mains, blow offs are provided at low points? | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Are there any cross connections between the public water supply and any sanitary sewer or storm drain? | <input type="checkbox"/> | <input type="checkbox"/> |

B. Rural Waterline Extensions

- | | | |
|---|--------------------------|--------------------------|
| 1. The proposed waterline system is designed to maintain a minimum pressure of 25 psi at all points under all conditions of flow? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Hydraulic analysis based on flow demands and pressure requirements is used to size all water mains? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Hydraulic analysis is provided (hydraulic analysis is required for the review process)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Number of service connections to be served by this waterline after the construction is complete: _____ | | |
| 5. The normal static pressure throughout the area to be served will range from _____ to _____ psi. | | |
| 6. The normal dynamic pressure throughout the area to be served will range from _____ to _____ psi. | | |
| 7. Flushing hydrants that discharge above the ground surface are provided for dead-end lines? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Valves are located at no more than two (2) mile intervals? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Air relief valves are located at high points in the distribution system? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Are there any cross connections between the public water supply and any sanitary sewer or storm drain? | <input type="checkbox"/> | <input type="checkbox"/> |

C. Installation of Waterlines (To Be Completed For All Municipal and Rural Waterline Extensions)

1. Specifications:
- | | | | |
|------------------|---------------------|-------|-----------------|
| a. Pipe material | Applicable Standard | Class | Pressure Rating |
| Cast Iron | _____ | _____ | _____ |
| Ductile Iron | _____ | _____ | _____ |
| PVC | _____ | _____ | _____ |
| HDPE | _____ | _____ | _____ |
| Other | _____ | _____ | _____ |
- b. Minimum Depth of Cover (30 inches minimum): _____
- | | | |
|--|--------------------------|--------------------------|
| | Yes | No |
| c. Pressure and Leakage Testing in accordance with AWWA C-601? | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Disinfection Procedures in accordance with AWWA C-651? | <input type="checkbox"/> | <input type="checkbox"/> |

	Yes	No
e. Reaction blocking is provided at all bends, tees, and hydrants?	<input type="checkbox"/>	<input type="checkbox"/>
f. Installation of waterlines meets AWWA and Oklahoma DEQ construction standards?	<input type="checkbox"/>	<input type="checkbox"/>
2. Does this water line project involve construction along any state or federal highway?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, has the Oklahoma Department of Transportation (ODOT) been notified, and, do the plans show the location of all affected utilities on file with ODOT?	<input type="checkbox"/>	<input type="checkbox"/>
3. Minimum horizontal separation between water and sewer lines is 10 feet?	<input type="checkbox"/>	<input type="checkbox"/>
If no, please indicated minimum possible horizontal separation: _____ (If 10 feet of separation is not possible, the water line must be constructed in a separate trench and the sewer line designed, constructed, and tested as water line pipe in accordance with OAC 252:656-5-4 (c).)		
4. Minimum horizontal separation between plastic water lines and gasoline storage tanks (including appurtenances) is at least 50 feet?	<input type="checkbox"/>	<input type="checkbox"/>
If no, cast iron must be used for water line pipe and in no case be closer than 10 feet to any part of the storage tank system.		
5. Minimum horizontal separation between water and all parts of septic tanks and absorption fields, or other sewage treatment and disposal system is 15 feet?	<input type="checkbox"/>	<input type="checkbox"/>
6. Minimum horizontal separation distance between waterlines existing or future storm sewers, raw water, oil and gas (includes natural gas), and buried electric lines is 10 feet?	<input type="checkbox"/>	<input type="checkbox"/>
If no, the minimum horizontal separation for storm sewer lines is ___ feet, raw waterlines is ___ feet, oil & gas lines is ___ feet, and buried electric lines is ___ feet.		
7. Where waterlines and sewer lines intersect the minimum vertical separation (edge to edge) is _____ inches.		
8. Hydrants or other flushing devices capable of flow velocities of at least 2 feet per second in the waterline are installed at all dead-ends?	<input type="checkbox"/>	<input type="checkbox"/>
9. Proposed waterline extension involves surface water crossings?	<input type="checkbox"/>	<input type="checkbox"/>
If Yes, above water crossings <input type="checkbox"/> or under water crossing <input type="checkbox"/> . Width of crossing _____ ft.		
If above water crossing:		
a. waterline is adequately supported and anchored?	<input type="checkbox"/>	<input type="checkbox"/>
b. waterline is adequately protected from damage and freezing?	<input type="checkbox"/>	<input type="checkbox"/>
c. expansion joints are provided at each end of the crossing?	<input type="checkbox"/>	<input type="checkbox"/>
d. waterline is easily accessible for repair?	<input type="checkbox"/>	<input type="checkbox"/>
If under water crossing is greater than 15 feet:		
a. minimum cover provided is _____ feet,		
b. waterline has flexible watertight joints?	<input type="checkbox"/>	<input type="checkbox"/>
c. valves are provided at both ends of the water crossing?	<input type="checkbox"/>	<input type="checkbox"/>

Yes No

- d. the valve closest to the water source is in a manhole? Yes No
- e. permanent sampling taps are provided on each side of the valve within the manhole? Yes No

10. Waterlines proposed:

Line Segment	Diameter (inches)	Length	Material
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

11. Onsite inspection of the proposed waterline construction will be inspected by:
- Engineering Firm? Yes No
- Owner? Yes No
- Other (please specify)? _____

12. Is this water line for Commercial? or Residential?

13. What is the maximum square footage of the dwelling or building connecting to the water line? _____ sf

14. International Fire Code (IFC):

Building Classification _____, Minimum fire flow _____ gpm, Duration _____ hours.

Not Applicable

15. What is the available fire flow for one and two family dwellings less than 3,600 sf? _____ gpm (1,000 gpm is required.) If less than 1,000 gpm is available has the fire chief authorized such reduction in flow, please provide letter for proof of reduction and acceptance.

16. What is the available fire flow for other buildings? _____ gpm (Please refer to table B105.1 of the 2009 IFC).

III. Ground Water Wells

1. General information

- a. A completed "Checklist for Well Head Protection" is required for all new well construction. A completed "Checklist for Well Head Protection" is included in the plan documents. Yes No

b. Number of wells _____

c. Capacity of well(s): (# 1) _____, (# 2) _____, (# 3) _____, (# 4) _____

d. Well depth(s) (# 1) _____, (# 2) _____, (# 3) _____, (# 4) _____

e. Legal Description:

Well # 1 ___ /4, ___ /4, ___ /4, of Section _____, T- ___ - ___, R- ___ - ___, I. M. / C. M., _____ County

Well # 2 ___ /4, ___ /4, ___ /4, of Section _____, T- ___ - ___, R- ___ - ___, I. M. / C. M., _____ County

Well # 3 ___ /4, ___ /4, ___ /4, of Section _____, T- ___ - ___, R- ___ - ___, I. M. / C. M., _____ County

Well # 4 ___ /4, ___ /4, ___ /4, of Section _____, T- ___ - ___, R- ___ - ___, I. M. / C. M., _____ County

f. Type of Well (dug, driven, or drilled): _____

g. Name and Characteristics of Aquifer:

h. One Hundred Year Flood Elevation: _____

i. Water Well Elevation of Wells: (#1) _____ (#2) _____ (#3) _____ (#4) _____

2. General Water Well Construction

Yes No

a. Well Casing:

1. Type of well casing: _____

2. Diameter of well casing: _____

3. Thickness of well casing: _____

4. Depth of well casing: _____

5. Well casing extends a minimum of 12 inches above the pump house floor and 18 inches above the final ground surface?

6. The top of the well casing is sealed with a sanitary well seal to properly protect against the entrance of contamination into the well?

b. Surface Casing:

1. Type of surface casing: _____

2. Diameter of surface casing: _____

3. Thickness of surface casing: _____

4. Depth of surface casing: _____

5. Surface casing extends a minimum of 12 inches above the pump house floor and 18 inches above the final ground surface?

c. Type, depth, and thickness of grout: _____

d. Type and length of screen: _____

	Yes	No
e. The water well location is at the highest point on the premises?	<input type="checkbox"/>	<input type="checkbox"/>
f. The pump house floor is located at least two (2) feet above the 100 year flood elevation?	<input type="checkbox"/>	<input type="checkbox"/>
g. Well(s) is provided with a means to measure the water level(s) periodically?	<input type="checkbox"/>	<input type="checkbox"/>
h. Well(s) has provisions for venting the well casing to the atmosphere?	<input type="checkbox"/>	<input type="checkbox"/>
i. The discharge piping is equipped with the following:		
1. Check valve?	<input type="checkbox"/>	<input type="checkbox"/>
2. Shut-off valve?	<input type="checkbox"/>	<input type="checkbox"/>
3. Pressure gauge?	<input type="checkbox"/>	<input type="checkbox"/>
4. Flow meter?	<input type="checkbox"/>	<input type="checkbox"/>
5. A smooth nosed sampling tap located on the upstream side of the shut-off valve and at a point where positive pressure is maintained?	<input type="checkbox"/>	<input type="checkbox"/>
j. All exposed piping, valves, and appurtenances are protected against physical damage and freezing?	<input type="checkbox"/>	<input type="checkbox"/>
3. Well development is included as a part of the specifications and meets the requirements of OAC 252:626-7-4 (a)?	<input type="checkbox"/>	<input type="checkbox"/>
4. Disinfection of the well and ground water is specified and meets the requirements of OAC 252:626-7-4 (d)&(e)?	<input type="checkbox"/>	<input type="checkbox"/>
5. Chlorination facilities required for all ground water systems are proposed?	<input type="checkbox"/>	<input type="checkbox"/>
1. Type of chlorinator: _____		
2. Proposed chlorination facility meets the requirements of OAC 252:626-11 and OAC 252:626-11-4?	<input type="checkbox"/>	<input type="checkbox"/>
6. Water Well Pumps:		
a. Type of pumps proposed: _____		
b. Type of pump motor: _____		
c. Pump capacity: _____ gpm		
d. Operating head: _____ feet		
e. Voltage: _____		
f. Auxiliary power source is provided?	<input type="checkbox"/>	<input type="checkbox"/>
If No, explain: _____		

IV. Disinfection Facilities

Yes

No

1. Daily flow of water to be treated: _____ gpd.

2. A flow meter is provided in order to measure water flow to determine chemical application rate?

3. Disinfection chemicals specified: _____

4. Type of chlorinator specified: _____

5. Maximum feed range: _____ Minimum feed range: _____

6. Capacity of chlorinator can meet chlorine demands at maximum flow?

7. Provisions are provided for measuring the quantities of chemicals used?

8. Standby equipment is provided?

9. A minimum of 30 minutes contact time is provided for ground water?

10. Residual chlorine of 0.2 mg/l at distant points is provided for?

11. Chlorine residual test equipment is provided?

12. Use of chlorine gas is proposed?

If Yes: _____

a. A separate room is provided?

b. A shatter resistant, clear glass inspection window is installed in an exterior door or interior wall to permit the chlorinator to be viewed without entering the room is provided?

c. The chlorine room is constructed in such a manner that all openings between the chlorine room and the remainder of the plant are sealed?

d. Scales are provided for weighing cylinders?

e. The chlorine room is equipped with a ventilating fan with a capacity which provides one complete air change per minute in the room?

f. Exhaust fans take suction near the floor?

g. Switches for fans and lights are located outside of the room, at the entrance, with a signal light indicating when the fan is in operation?

h. A heater is provided which has the capability of heating the chlorine room to 60 °F?

i. Chlorine gas lines that extend beyond the chlorine gas room are feed under vacuum?

V. Pumping Facilities

Yes

No

A. Pump Stations

1. One hundred year flood elevation: _____
2. Site is accessible at all times, regardless of floods? Yes No
3. Site will be graded so as to lead surface drainage away from the station so water will not enter or pool against the building? Yes No
4. Building has outward-opening doors of adequate size? Yes No
5. All floors slope 0.3 inch per foot to a suitable drain? Yes No
6. All construction shall be in accordance with state and local safety, building, electrical, plumbing, and sanitary codes? Yes No
7. Provisions are provided for adequate heating? Yes No
8. Pump house is adequately lighted throughout and all electrical work conforms with requirements of National Electrical Code and the American Insurance Association? Yes No
9. A means of bypassing the pumping station is provided? Yes No
10. Pumping station is equipped with a flow meter? Yes No
11. Controls provide for proper alternation of the pumps? Yes No
12. Booster pumps are equipped and controlled so that:
 - a. they will not produce negative pressure in their suction lines? Yes No
 - b. the intake pressure will be at least 20 psi when the pump is in normal operation? Yes No
 - c. the pump will automatically cutoff if the pressure in the suction line falls below 10 psi? Yes No
13. Provisions are made for stand-by emergency power in the event of a power failure? Yes No

If no explain: _____

B. Pumps

1. Type of pump(s): _____
2. At least two pumps are provided? Yes No
3. With one pump out of service, the remaining pump(s) is(are) capable of providing the maximum daily pumping demand of the system? Yes No
4. A check valve of the non-slam type is located at each pump casing? Yes No
5. A positive closing valve is located on the discharge line after the check valve? Yes No

- | | Yes | No |
|--|--------------------------|--------------------------|
| 6. Piping is protected against freezing? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Shut-off valves are provided on the suction line to each pump? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Each pump has a standard pressure gauge on its discharge line? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Each pump has a compound pressure gauge on its suction line? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Each pump is provided with smooth nosed sampling cocks on the suction and discharge lines? | <input type="checkbox"/> | <input type="checkbox"/> |

VI. Water Storage Facilities

- | | Yes | No |
|---|--------------------------|--------------------------|
| 1. Water storage tank is located near centers of high demand? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. One hundred year flood plain elevation: _____ | | |
| 3. Type of storage tank(s): _____ | | |
| 4. Hydraulic analysis is included? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. The normal static pressure in the receiving line is _____ | | |
| 6. The normal dynamic pressure in the receiving line is _____ | | |
| 7. Base elevation: _____ | | |
| 8. Low water level elevation: _____ | | |
| 9. Low water level elevation of any other water storage facilities on the distribution system:
_____, _____, _____, _____. | | |
| 10. High water level elevation: _____ | | |
| 11. High water level elevation of any other water storage facilities on the distribution system:
_____, _____, _____, _____. | | |
| 12. Level controls are provided? | <input type="checkbox"/> | <input type="checkbox"/> |
| If No explain: _____ | | |
| _____ | | |
| 13. A vent is provided? | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Tank is equipped with an overflow which is brought down to an elevation between 12 and 24 inches above the ground surface? | <input type="checkbox"/> | <input type="checkbox"/> |

	Yes	No
15. Separate inlet and outlet lines that provide for positive circulation are provided?	<input type="checkbox"/>	<input type="checkbox"/>
If no explain: _____		
16. The inlet line terminates at a point between 30% and 50 % of the tank height?	<input type="checkbox"/>	<input type="checkbox"/>
17. A means of bypassing the tank is provided?	<input type="checkbox"/>	<input type="checkbox"/>
18. Convenient access to the interior of the tank for cleaning and maintenance is provided?	<input type="checkbox"/>	<input type="checkbox"/>
19. Type of paint used: _____; Manufacturer: _____		
20. Paint proposed is listed by the National Sanitation Foundation as meeting the ANSI/ NSF standards for contact with potable water?	<input type="checkbox"/>	<input type="checkbox"/>
21. Disinfection in accordance with AWWA C-652 is provided?	<input type="checkbox"/>	<input type="checkbox"/>
22. Fencing is provided for protection from trespassing?	<input type="checkbox"/>	<input type="checkbox"/>

Professional Engineer's Certification:

I certify that, to the best of my knowledge, all the information provided in this engineering report form is correct and no significant information necessary for a proper evaluation of the project has been omitted:

Signature of Professional Engineer: _____

Date: _____

Name of Professional Engineer: _____

State of Oklahoma Professional Engineer No: _____

Phone No: (_____) _____



Seal