

## APPENDIX 5-D

### Special Requirements for Wells Serving Public Water Systems

(Statutory authority: Public Health Law, §§206[18], 225)

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#### Section 5-D.1 Application and Definitions.

(a) (1) This Appendix applies to water wells that serve a public water system as defined in Subpart 5-1 of the State Sanitary Code. Additional requirements for these wells are contained in Appendix 5-A (*Recommended Standards for Water Works*) and Appendix 5-B (*Standards for Water Wells*) of this Part. Other state agencies, regional authorities, and local agencies with authority to regulate water wells may also have additional requirements.

(2) The Department or local health department may allow deviations from a standard on a case by case basis in accordance with procedures and criteria established by the Department. Such deviations may only be allowed upon approval in writing by the Department or local health department.

(b) Definitions used in Appendix 5-B shall apply within this Appendix.

#### Section 5-D.2 Water Well Location and Protection.

(a) Wells serving public water systems shall be located such that the owner of the water system possesses legal title to lands within 100' of the well and the owner controls by ownership, lease, easement or other legally enforceable arrangement the land use activities within 200' of the well. Hydrogeologic evaluations and source water assessments should be used to determine appropriate separation from potential contaminant sources. Where no evaluations are available, the minimum separation distances shall be those specified for public water system wells in Table 1.

(b) Where the ownership/control distances or separation distances specified in subdivision (a) of this Section cannot be achieved, including but not limited to the installation of in-kind replacement wells at existing well fields, and alternative water sources have been considered, use of such well location may be allowed by the Department or local health department having jurisdiction along with such additional measures as needed to prevent contamination

of the water well and/or to otherwise provide potable water. Additional measures may include evaluation of local hydrogeology, including consideration of available water and soil quality information and historic water quality trends, and may include consideration of available source water assessments.

### **Section 5-D.3 Water Well Construction.**

- (a) A well shall be constructed to preclude and prevent entry of all known sources of contamination into the well to the extent reasonably achievable. Where the only viable source of water supply available is contaminated and alternative water sources have been considered, the local health department having jurisdiction may allow construction and use of a well in contaminated ground water with such additional measures (e.g., treatment and monitoring) as needed to ensure provision of potable water.
- (b) Well casing shall extend a minimum of 18 inches above finished grade. If a well is located in a well house, the floor of the well house shall be at least six inches above grade and the permanent casing shall extend at least twelve inches above the floor.

### **Section 5-D.4 Well Yield and Water Flow.**

Before being put into use, new and redeveloped public water supply wells shall be tested for yield as specified in this section. Where adequate hydrogeologic information and uniform conditions exist, or when an experienced hydrogeologist or licensed professional engineer directs and certifies the test, yield testing requirements may be modified by the local health department having jurisdiction. Additional yield test requirements may need to be met for other agencies having jurisdiction.

- (a) Pumping yield tests shall be done for the minimum duration of time specified in Table 2. For wells completed in unconsolidated deposits, constant flow rate testing may be used. For wells completed in rock, a minimum of six hours of stabilized drawdown should be observed either at the end of the test or as a second test except as allowed under subdivision (d) of this section or except where the Department or local health department allows constant rate testing.
- (b) Where water wells use ground water sources potentially influenced by surface water as indicated in Table 2, water quality shall be tested and/or monitored during the pumping yield test in accordance with Department guidance for the determination of ground waters under the direct influence of surface water.
- (c) Periodic water level observations shall be made and recorded during initial drawdown, stabilized drawdown, and recovery periods. The recorded data shall be provided in tabular form to the local agency(ies) having jurisdiction. During the period of stabilized drawdown the stabilized water level shall not fluctuate more than plus or minus 0.5 foot (i.e., within a vertical tolerance of one foot) for each 100 feet of water in the well (i.e., initial water level to bottom of well) over the duration of constant flow rate of pumping. The water level at the endpoint of the stabilized drawdown period shall not be lower than the water level at the beginning point of that period. Water level measurement may be determined by steel tape, calibrated pressure gauge attached to an air line terminating at least five feet above the pump intake, electric sounder, or pressure transducer.

- (d) If a stabilized pumping level is not achieved during the required test period or if the well does not recover to 90% of the initial water level within 24 hours after cessation of pumping, a thorough evaluation of the expected sustained performance of the well during seasonal or multi-year dry periods shall be prepared. This evaluation may involve additional hydrogeologic investigation. Such evaluation may be used in lieu of satisfying the objectives of subdivision (c) of this section only at the discretion of the reviewing agency(ies) having jurisdiction.
- (e) The test shall be conducted at a pumping rate at least equal to the design pumping rate based on system demand.
- (f) Water discharged during a yield test shall be discharged in a manner that avoids short circuiting of the pumped water back into the aquifer.
- (g) For wells that have been subjected to hydrofracturing, the yield test shall not commence until redevelopment has been completed and, as a minimum, until the volume of water pumped/discharged into the aquifer has been removed from the well. After pumping, the hydrofractured well shall receive a water well yield test as outlined in this section.

#### **Section 5-D.5 Well Pumps and Components.**

Well caps and seals shall be tightly secured to the well casing, watertight, vermin- proof, and provide venting as noted in this section. Split caps shall not be used. Well caps shall be lockable and secured with sturdy, weatherproof locks or otherwise secured to prevent tampering.

#### **Section 5-D.6 Water Well Capping and Abandonment.**

All water well capping, abandonment and decommissioning shall be in accord with requirements in Appendix 5-A of this title.

#### **Section 5-D.7 Separability.**

If any provisions of this Appendix are held invalid, such invalidity shall not affect other provisions which can be given effect without the invalid provisions.

**Table 1 Required Minimum Separation Distances to Protect Public Water Supply Wells From Contamination**

<b>Contaminant Source</b>	<b>Distance (Feet)<sup>1</sup></b>
Chemical storage sites not protected from the elements (e.g., salt and sand/salt storage) <sup>2</sup>	300
Landfill waste disposal area, or hazardous or radiological waste disposal area <sup>2</sup>	300
Land surface application or subsurface injection of effluent or digested sludge from a Municipal or public wastewater treatment facility	300
Land surface application or subsurface injection of septage waste	300
Land surface spreading or subsurface injection of liquid or solid manure	200
Storage Areas for Manure piles <sup>3</sup>	200
Barnyard, silo, barn gutters and animal pens <sup>3</sup>	200
Cesspools (i.e. pits with no septic tank pretreatment)	200
Wastewater treatment absorption systems located in coarse gravel or in the direct path of drainage to a well	200
Fertilizer and/or pesticide mixing and/or clean up areas	200
Seepage pit (following septic tank)	200
Underground single walled chemical or petroleum storage vessels	200
Absorption field or bed	200
Contained chemical storage sites protected from the elements (e.g., salt and sand/salt storage within covered structures) <sup>4</sup>	200
Septic system components (non-watertight)	200
Intermittent sand filter without a watertight liner	200
Sanitary Privy pit	200
Surface wastewater recharge absorption system for storm water from parking lots, roadways or driveways	200
Cemeteries	200
Sanitary privy with a watertight vault	200
Septic tank, aerobic unit, watertight effluent line to distribution box	100
Sanitary sewer or combined sewer	50
Surface water recharge absorption system with no automotive-related Wastes (e.g., clear-water basin, clear-water dry well)	None <sup>5</sup>
Stream, lake, watercourse, drainage ditch, or wetland	None <sup>5</sup>
All known sources of contamination otherwise not shown above	200

Notes for Table 1:

<sup>1</sup> The listed water well separation distances from contaminant sources shall be increased by 50% whenever aquifer water enters the water well at less than 50 feet below grade. If a 50% increase in separation distances can not be achieved, then the greatest possible increase in separation distance shall be provided with such additional measures as needed to prevent contamination.

<sup>2</sup> Water wells shall not be located in a direct line of flow from these items, nor in any contaminant plume created by these items, except with such additional measures (e.g., sentinel groundwater monitoring, hydraulic containment, source water treatment) as needed to prevent contamination.

<sup>3</sup> Water wells may be located 100 feet from temporary (30 days or less) manure piles/staging areas that are controlled to preclude contamination of surface or groundwater or 100 feet from otherwise managed manure piles that are controlled pursuant to regulation in a manner that prevents contamination of surface or groundwater. Wells serving public water systems may be located 100 feet from temporary barnyards, silos, barn gutters, or animal pens that are similarly controlled to prevent contamination of surface or ground water.

<sup>4</sup> Chemical storage sites as used in this entry do not include properly maintained storage areas of chemicals used for water treatment.

<sup>5</sup> Wells serving public water systems may be located near water bodies or surface water recharge systems but are subject to monitoring to determine if groundwater at the point of withdrawal is directly influenced by surface water and corresponding treatment requirements. Such wells must also be protected from floodwater pursuant to subdivision 5-B.2(b) of this Part.

**Table 2. Yield Test and GWUDI <sup>1</sup> Determination Requirements for Wells Serving Public Water Systems**

Well Geologic Formation And Casing Depth	Type of Public Water System (see Subpart 5-1) <sup>2</sup>			
	CWS, NTNCWS		TNCWS	
	Duration (hrs) <sup>3</sup>	GWUDI Testing	Duration (hrs)	GWUDI Testing
For Wells Located 200 feet or less from Surface Water				
All Geology and Casing Depths	72	Yes	Per 5-B.4 if allowed by LHD <sup>4</sup>	Yes
For Wells Located greater than 200 feet from Surface Water				
Sand and gravel; ≤ 50 feet casing	24	Yes	Per 5-B.4(b) if allowed by LHD <sup>4</sup>	Yes
Sand and gravel; > 50 feet casing	24	No	Per 5-B.4(b) if allowed by LHD <sup>4</sup>	No
Non-Carbonate Rock; ≤ 50 feet casing	72	Yes	Per 5-B.4(b) if allowed by LHD <sup>4</sup>	Yes
Non-Carbonate Rock; > 50 feet casing	72	No	Per 5-B.4(b) if allowed by LHD <sup>4</sup>	No
Carbonate Rock; All Casing Depths <sup>5</sup>	72	Yes	Per 5-B.4(b) if allowed by LHD <sup>4</sup>	Yes

Notes for Table 2:

<sup>1</sup> GWUDI means ground water source directly influenced by surface water source. Where well water sources may be potentially influenced by surface water, appropriate water quality testing shall be done in accordance with Department guidance to determine if the well water source is directly influenced by surface water.

<sup>2</sup> CWS means community water system as defined in 10 NYCRR Subpart 5-1. NTNCWS means nontransient noncommunity water system as defined in 10 NYCRR Subpart 5-1. TNCWS means a public water system that is neither a CWS nor a NTNCWS.

<sup>3</sup> Specified duration is the minimum required pumping period and must include a minimum of six hours of stabilized drawdown at the end of the test except as allowed under subdivision 5-D.4(d) of this Appendix.

<sup>4</sup> LHD means local health department as defined in Appendix 5-B.

<sup>5</sup> For wells located in areas that have the potential to draw water from carbonate aquifers, the local health department may determine based upon a hydrogeologic assessment, records of well logs, and/or other local geologic data that the aquifer is unlikely to show a surface water influence associated with karst topography. Where such determination is made, GWUDI testing need not be done.