

DRAFT FOR DISCUSSION May 14, 2008

Original Adoption December 14, 1999

WATER SUPPLY SYSTEMS (PRIVATE)

INTENT

Private well(s) are intended to be utilized in areas of the County that are not served by a municipal water source. Consistent with the Comprehensive Development Plan, new subdivisions developed at urban densities must utilize municipal water systems.

The purpose of the rules and regulations is to plan for future needs of Douglas County's groundwater uses in the best interests of public health, to improve the quality of potable water supplies where feasible, to delay or prevent domestic water supplies from being depleted, to provide for energy conservation uses, and to reduce uses, recycle and reuse groundwater where possible.

Any cross-connection between a municipal water supply system and any private water supply system is prohibited.

DEFINITIONS: and as referenced by the Nebraska Health and Human Services Regulation and Licensure, Title 178 Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards 12-002 Definitions.

For the purpose of this section, the following terms, phrases, words, and their derivations shall have the meaning given herein. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number and words in the singular number include the plural number. The word "shall" as used herein is mandatory and not merely directory.

Board shall mean the County Board of Commissioners of Douglas County, Nebraska.

~~Cement grout shall mean a mixture of cement, sand and water in the proportions of one 94 pound bag of cement, a volume of dry sand equal to that of the cement and five to six gallons of clean water.~~

Community Water Supply shall mean a public water supply system which serves at least fifteen service connections used by year round residents or regularly serves twenty-five year round residents.

Comprehensive Development Plan shall mean the latest version of such plan as adopted by the Board

Contamination shall mean the introduction of any material that would cause potable water to be a hazard to human health.

County shall mean Douglas County, Nebraska

Distribution System shall mean the storage reservoir and all pipes, valves and plumbing fixtures appurtenant thereto, constructed for the purposes of conducting water to the point of use when the point of use is not in the immediate vicinity of the well.

DRAFT FOR DISCUSSION May 14, 2008

Ground Water Heat Pump Well shall mean a well constructed for the purpose of utilizing the geothermal properties of the earth.

1. **Open Loop Heat Pump Well** shall mean a well that transfers heat via ground water which is discharged above and/or below ground.
2. **Closed Loop Heat Pump Well** shall mean a well constructed for the purpose of installing the underground closed loop pipe necessary to recirculate heat transfer fluid.
 - a. **Horizontal Closed Loop** shall mean a trench or pit essentially parallel to the horizon and into which a closed loop pipe is placed for the purpose of heat transfer.
 - b. **Vertical Closed Loop** shall mean a borehole essentially perpendicular to the horizon into which a closed loop pipe is placed for the purpose of heat transfer.

Health Department shall mean the Douglas County Health Department.

Health Officer shall mean the director of the Douglas County Health Department or ~~his~~ their authorized representative.

NDHHS shall mean the Nebraska Department of Health and Human Services.

Non-potable Water shall mean water which is not meant for human consumption.

Permits and Inspection Division shall mean Douglas County Permits and Inspection Division.

Pollution shall mean an impairment of water quality to a degree that restricts the intended use of groundwater.

Potable Water shall mean water which is suitable for drinking as established by the Nebraska Health and Human Services Regulation and Licensure, Title 178, or the Federal Environmental Protection Agency drinking water standards.

Potable Well shall mean a private well that supplies water suitable for drinking as established by the Nebraska Health and Human Services Regulation and Licensure, Title 178, or the Federal Environmental Protection Agency drinking water standards.

Private Water Supply System shall mean a well or wells not operated as a public water supply system.

Public Water Supply shall mean a water supply system designed to provide public piped water fit for human consumption if such system has at least fifteen service connections or regularly serves at least twenty-five individuals.

~~**Puddled Clay** shall mean mixture of clean clay and water of a flowing consistency.~~

~~**Pump** shall mean the mechanical device, either hand operated or power driven, which lifts water from the well and discharges same to point of use or distribution.~~

Sand Point Well or Driven Sand Point Well shall mean a well that is driven, washed or jetted into an aquifer with the sand point attached directly to the pump suction line.

Storage Reservoir shall mean the enclosure in which water is stored prior to use after extraction from the well.

DRAFT FOR DISCUSSION May 14, 2008

~~Water Tight Joints in Well Casings shall mean water tight threads or welds in the case of metal casings.~~

Well shall mean the structural assembly constructed for the purpose of extracting water from the ground.

SECTION 1:

POTABLE WATER SUPPLY SYSTEMS (PRIVATE)

INTENT

Private potable well(s) are intended to be utilized in areas of the County that are not served by a municipal water source. Consistent with the Comprehensive Development Plan, new subdivisions developed at urban densities must utilize municipal water systems.

The purpose of the rules and regulations is to plan for future needs of Douglas County's groundwater uses in the best interests of public health, to improve the quality of potable water supplies where feasible, to delay or prevent domestic water supplies from being depleted, to provide for energy conservation uses, and to reduce uses, recycle and reuse groundwater where possible.

REQUIREMENTS

Construction of a private potable well ~~water supply system~~ requires a well permit issued by the Health Department.

DESIGN REQUIREMENTS

A potable well shall be located no nearer than 100 feet to any septic tank soil absorption system, cesspool or any other known or suspected means of contamination. A potable well shall be no nearer than 75 feet to any septic tank. The potable well shall be located on the upstream side of any septic tank, cesspool or any known source of contamination when feasible. The potable well shall be located at least ten feet from any depression that could retain stagnant water. There shall be no frost proof hydrants within ten feet of the potable well. Whenever a potable well must be located on the downstream side of a known source of contamination, specific design criteria shall apply to the well, and shall be established by the Health Department. These special provisions may include berming and extended depth of the well casing seal.

A potable well shall be constructed so as to exclude dust, dirt, or foreign material of any kind and to exclude surface water and any groundwater above a depth of ten feet.

A private water supply system consisting of a potable well(s) and/or a well(s), pump(s), and distribution system shall be constructed so as to prevent contamination of the water during the process of extraction from the potable well and while in transit to the point of use.

~~A private potable water supply system shall be used and maintained so as to continue a relationship with the surrounding environment which will assure that the above mentioned sanitation requirements shall be met as long as the private water supply system is in use.~~

DRAFT FOR DISCUSSION May 14, 2008

APPLICATION PROCESS

An application for a private potable well(s) water supply system shall be submitted to the Health Department for review. If approved, approval by the Health Department of plans and specifications, a permit for construction will be issued.

No potable or non-potable well shall be drilled or maintained on any property for supplying water features where municipal water is available consistent with the Comprehensive Plan.

CONSTRUCTION REQUIREMENTS

All wells shall comply with construction standards as outlined in NDHHS regulations governing water well construction shall be complied with. A domestic water well to be used for human consumption shall not be constructed as a driven sandpoint well. Driven sand point wells are prohibited.

The well casing shall project at least 12 inches above the well platform or at least twelve inches above grade if no platform is required.

There shall be no sanitary sewer located nearer than 10 feet from the well. Any sewer located between 10 and 50 feet from the well shall be constructed so as to be water tight when subjected to a hydrostatic test of ten feet of water.

QUALITY OF WATER

The sanitary quality of water from the potable well(s) water supply systems shall be determined by the administration of the bacteriological, chemical and physical standards as promulgated by the Federal Environmental Protection Agency (EPA) and recent edition of the "Public Health Service Drinking Water Standards" as interpreted by the Health Department. or the NDHHS whichever is the more stringent regulation.

FEES

The permit fee is established by the Board with recommendation from the Douglas County Board of Health for a permit to construct a private potable well(s) Water Supply System and shall be payable to the Health Department.

INSPECTIONS

The Health Officer is hereby authorized and directed to make such inspections as are necessary to determine satisfactory compliance with these regulations. It shall be the duty of the owner or occupant of a property to give the Health Officer free access to the property at reasonable times for the purpose of making such inspections as are necessary to determine compliance with the requirements of these regulations.

COMPLIANCE WITH REQUIREMENTS OF STATE OF NEBRASKA DEPARTMENT OF HEALTH AND HUMAN SERVICES SYSTEM (NDHHS)

In the design, construction installation and operation of private a potable well(s) water supply systems, State Laws and the rules, regulations and requirements of the NE Department of Health

DRAFT FOR DISCUSSION May 14, 2008

~~and Human Services~~ NDHHS shall be observed. In the event of any conflict between the provisions of these regulations and any provisions of the State Law or requirement, rule or regulation of the ~~NE Health and Human Services System~~, NDHHS, the provision imposing the higher standard or the more stringent requirement shall be controlling.

DISTRIBUTION SYSTEM – COMPLIANCE WITH METROPOLITAN UTILITIES DISTRICT STANDARDS

The design, construction and installation of ~~private~~ potable water distribution systems for subdivisions, all water mains, valves, fire hydrants, house connections and other appurtenances shall comply with the applicable standards of the Metropolitan Utilities District, Omaha, Nebraska. All house connections shall be inspected by and meet the approval of the Douglas County Environmental Services Permits and Inspections Division.

VIOLATIONS

Violations of the Regulations are subject to the provisions of N.R.S. §23.174, and are considered a misdemeanor.

SEVERABILITY

If any portion of these Regulations or their application to specific circumstances shall be held invalid by a court of competent jurisdiction, the remainder of these Regulations and its application to other circumstances shall be unaffected.

DRAFT FOR DISCUSSION May 14, 2008

SECTION 2:

NON-POTABLE WATER SUPPLY SYSTEMS (PRIVATE)

A non-potable well(s) is/are not allowed in areas served by municipal water systems, except for thermal transfer wells consistent with Section 3 (Special use private wells) of this regulation. In areas not served by municipal water systems, water conservation measures are encouraged and landscape irrigation uses in particular should utilize high efficiency systems, including but not limited to, drip irrigation systems.

REQUIREMENT

Construction of a private non-potable well(s) water supply system requires a well permit issued by the Health Department.

DESIGN REQUIREMENTS

A non-potable well shall be located no nearer than 100 feet to any septic tank soil absorption system, ~~cesspool~~ or any other known or suspected means of contamination. A well shall be no nearer than 75 feet to any septic tank. The well shall be located on the upstream side of any septic tank, ~~cesspool~~ or any known source of contamination when feasible. The well shall be located at least ten feet from any depression that could retain stagnant water. There shall be no frost proof hydrants within ten feet of the well.

Whenever a well must be located on the downstream side of a known source of contamination, specific design criteria shall apply to the well, and shall be established by the Health Department. These special provisions may include berming and extended depth of the well casing seal.

~~A private non-potable water supply system shall be used and maintained so as to continue a relationship with the surrounding environment which will assure that the above mentioned sanitation requirements shall be met as long as the private water supply system is in use.~~

~~The use of water from~~ Stock watering wells which ~~does~~ do not meet the requirements of this ordinance ~~for human consumption~~ is prohibited. If stock or fowl are watered, devices shall be provided with back-siphonage devices approved by the Douglas County Environmental Services Permits and Inspection Division.

APPLICATION PROCESS

An application for a private non-potable well(s) water supply system shall be submitted to the Health Department for review. If approved ~~After approval of plans and specifications~~, a permit for construction will be issued.

CONSTRUCTION REQUIREMENTS

All wells shall comply with construction standards as outlined in NDHHS regulations governing water well construction. ~~shall be complied with. A domestic water well to be used for human consumption shall not be constructed as a driven sandpoint well.~~

The well casing shall project at least 12 inches above the well platform or at least twelve inches above grade if no platform is required.

DRAFT FOR DISCUSSION May 14, 2008

There shall be no sanitary sewer located nearer than 10 feet from the well. ~~Any sewer located between 10 and 50 feet from the well shall be constructed so as to be water tight when subjected to a hydrostatic test of ten feet of water.~~

FEES

The permit fee is established by the Board with recommendation from the Douglas County Board of Health for a permit to construct a ~~Private~~ Non-potable well(s) ~~Water Supply System~~ and shall be payable to the Health Department.

INSPECTIONS

The Health Officer is hereby authorized and directed to make such inspections as are necessary to determine satisfactory compliance with these regulations. It shall be the duty of the owner or occupant of a property to give the Health Officer free access to the property at reasonable times for the purpose of making such inspections as are necessary to determine compliance with the requirements of these regulations.

COMPLIANCE WITH REQUIREMENTS OF ~~STATE OF NEBRASKA~~ DEPARTMENT OF HEALTH AND HUMAN SERVICES ~~SYSTEM~~ (NDHHS)

In the design, construction installation and operation of private non-potable well(s) ~~water supply systems~~, State Laws and the rules, regulations and requirements of the NDHHS shall be observed. In the event of any conflict between the provisions of these regulations and any provisions of the State Law or requirement, rule or regulation of the NDHHS, the provision imposing the higher standard or the more stringent requirement shall be controlling.

VIOLATIONS

Violations of the Regulations are subject to the provisions of N.R.S. §23.174, and are considered a misdemeanor.

SEVERABILITY

If any portion of these Regulations or their application to specific circumstances shall be held invalid by a court of competent jurisdiction, the remainder of these Regulations and its application to other circumstances shall be unaffected.

DRAFT FOR DISCUSSION May 14, 2008

SECTION 3:

SPECIAL USE PRIVATE WELLS

Special use ~~private non-potable water~~ wells may include, but are not limited to, ~~irrigation wells~~, injection wells, extraction wells and wells designed for the express purpose of thermal transfer. Special use wells shall be constructed in such a manner to exclude pollution or contamination of underground water.

- a. Wells designed for the express purpose of thermal transfer, including extraction and injection of groundwater, shall be constructed and maintained so as to exclude any biological or chemical contamination. Thermal well systems shall be independent of the drinking water supply system.
- b. Thermal well systems constructed for a closed loop heat pump system shall be located more than 100 feet from a public water system well. A closed loop heat pump system with 10 or more wells shall be located more than 1,000 feet from a water well supplying water to a community water system. The NDHHS will consider approval for location of closed loop heat pump wells at closer proximity than 1,000 feet horizontal separation distance, when the licensed professional engineer or the licensed professional geologist representing the owner(s) of the closed loop heat pump wells, demonstrates to the NDHHS Director or Director's designee that such location will not constitute a pollution hazard to the safety of the water supply, and that the owner(s) of the community water system has no objection to the location of the closed loop heat pump wells as per NDHHS Title 178 NAC 12-010.02B1c.
- c. ~~A single well designed for thermal transfer utilizing a closed system of re-circulating fluid shall use a nontoxic fluid. The use of non-potable fluids such as ethylene glycol is prohibited. Antifreeze material or circulating fluids used in a closed loop system shall be water, food grade potassium acetate or food grade propylene glycol.~~
- d. A horizontal closed loop heat pump system is exempt from the grouting requirements provided that no part of the horizontal loop is constructed in or below the ground water level. All other construction standards for closed loop heat pump wells in NDHHS Title 178 NAC 12 apply.
- e. Special Use wells designed for thermal transfer where water is provided by a governmental subdivision shall be marked non-potable, and all piping and appurtenances at points of use must be color coded yellow. ~~Any cross-connection between a municipal water supply and any private water well is prohibited.~~
- f. Water pumped from a thermal transfer open loop heat pump non-potable well(s) must be disposed of properly.
This may include lawn irrigation, providing;
 1. Water is confined to one's own property;
 2. Water is not allowed to pond;
 3. No health nuisance is created.

DRAFT FOR DISCUSSION May 14, 2008

REQUIREMENT

Construction of a special use well(s) requires a well permit issued by the Health Department.

DESIGN REQUIREMENTS

A special use well shall be located no nearer than 100 feet to any septic tank soil absorption system, ~~cesspool~~ or any other known or suspected means of contamination. A well shall be no nearer than 75 feet to any septic tank. The well(s) shall be located on the upstream side of any septic tank, ~~cesspool~~ or any known source of contamination when feasible. The well(s) shall be located at least ten feet from any depression that could retain stagnant water. There shall be no frost proof hydrants within ten feet of the well.

APPLICATION PROCESS

An application for a private special use well(s) water supply system shall be submitted to the Health Department for review. If approved ~~After approval of plans and specifications~~, a permit for construction will be issued.

CONSTRUCTION REQUIREMENTS

All wells shall comply with construction standards as outlined in NDHHS regulations governing water well construction. ~~shall be complied with.~~

There shall be no sanitary sewer located nearer than 10 feet from the well. ~~Any sewer located between 10 and 50 feet from the well shall be constructed so as to be water tight when subjected to a hydrostatic test of ten feet of water.~~

FEES

The permit fee is established by the Board with recommendation from the Douglas County Board of Health for a permit to construct a private special use well(s) Water Supply System and shall be payable to the Health Department.

INSPECTIONS

The Health Officer is hereby authorized and directed to make such inspections as are necessary to determine satisfactory compliance with these regulations. It shall be the duty of the owner or occupant of a property to give the Health Officer free access to the property at reasonable times for the purpose of making such inspections as are necessary to determine compliance with the requirements of these regulations.

COMPLIANCE WITH REQUIREMENTS OF STATE OF NEBRASKA DEPARTMENT OF HEALTH AND HUMAN SERVICES SYSTEM (NDHHS)

In the design, construction installation and operation of private special use well(s) water supply systems, State Laws and the rules, regulations and requirements of the NDHHS shall be observed. In the event of any conflict between the provisions of these regulations and any provisions of the

DRAFT FOR DISCUSSION May 14, 2008

State Law or requirement, rule or regulation of the NDHHS, the provision imposing the higher standard or the more stringent requirement shall be controlling.

VIOLATIONS

Violations of the Regulations are subject to the provisions of N.R.S. §23.174, and are considered a misdemeanor.

SEVERABILITY

If any portion of these Regulations or their application to specific circumstances shall be held invalid by a court of competent jurisdiction, the remainder of these Regulations and its application to other circumstances shall be unaffected.