

**Ordinance No. 457**

**An Ordinance Amending the City Zoning Code to Include a Section Which Provides for Protection of Wellheads and Source Water Supplies**

**WHEREAS**, the Federal Environmental Protection Agency (EPA) and the Delaware Department of Natural Resources and Environmental Control (DNREC) have requirements which mandate certain municipalities, including the City of New Castle, to adopt regulations concerning the protection of wellheads and source water related to public drinking water supplies; and

**WHEREAS**, the City has drafted such regulations, working in conjunction with officials from the Municipal Services Commission (MSC), DNREC and the Delaware Rural Water Association; and

**WHEREAS**, said draft regulations meet the requirements of the EPA and DNREC and shall serve the public interest if approved and adopted by the City Council.

**NOW THEREFORE, BE IT ORDAINED** by the Mayor and Council of New Castle, that the following section shall be incorporated as part of the New Castle City Zoning Ordinance, as follows:

**SOURCE WATER PROTECTION AREA ORDINANCE**

**To be Codified as an Amendment to the New Castle City Zoning Code**

**Section 1. Purpose**

The purpose of the Source Water Protection Area Ordinance is to ensure the protection of the public drinking water supply from contamination. The City of New Castle hereby adopts the overlay maps delineating, as source water protection areas the following zoning classifications:

- Class A Water Resource Protection area (AWRP);
- Class C Water Resource Protection area (CWRP).

To ensure the protection of drinking water supplies, this ordinance establishes a zoning overlay to be known as the Source Water Protection Overlay. The purpose of the Source Water Protection Overlay is to protect public health and safety by minimizing contamination of aquifers and preserving and protecting existing and potential sources of drinking water supplies. It is the intent to accomplish this through both public education and public cooperation, as well as by creating appropriate land use regulations that may be imposed in addition to those currently imposed by existing zoning district or other federal, state and county regulations.

The regulations shall apply to all new construction, redevelopment or expansion of existing buildings and new or expanded uses. Activities and uses allowed in a portion of one of the underlying zoning districts that fall within the Source Water Protection Overlay must additionally comply with the requirements of those set forth for either the AWRP or CWRP, as applicable.

Any well in existence prior to the adoption of this Ordinance (non-conforming use) may be replaced or modified, and the replacement or modified well(s) is exempt from the conditions of this Ordinance.

## **Section 2. Definitions**

This section defines words, terms, and phrases found in this article.

**Aboveground Storage Tank (AST):** An AST is a single containment vessel greater than 500 gallons as defined in the Delaware *Regulations Governing Aboveground Storage Tanks*.

**Applicant:** A person, firm, or government agency that executes the necessary forms to obtain approval or a permit for any zoning, subdivision, land development, building, land disturbance, or other activity regulated.

**Aquifer:** A geological formation, group of formations or part of a formation composed of rock, sand, or gravel capable of storing and yielding groundwater to wells.

**CERCLA Hazardous Substances:** are defined in terms of either those substances specifically designated as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), otherwise known as the Superfund law, or those substances identified under other laws. In all, the Superfund law includes references to four other laws to designate more than 800 substances as hazardous, and identify many more as potentially hazardous due to their characteristics and the circumstances of their release. See: <http://www.epa.gov/superfund/programs/er/hazsubs/cercsubs.htm>

**Class A Water Resource Protection area (AWRP):** is the surface area extending to a minimum three hundred (300) foot radius around the wellhead.

**Class C Water Resource Protection area (CWRP):** is the remaining surface area of the delineated wellhead protection area outside the AWRP.

**Contamination:** Any physical, chemical, biological, or radiological substance that enters the hydrological cycle through human action and may cause a deleterious effect on ground water resources; it shall include but is not limited to hazardous waste, limiting nutrients, and sanitary sewage.

**Delineation:** The process of defining and/or mapping a boundary that approximates the areas that contribute water to a particular water source used as a public water supply.

**Environmental Impact Assessment Report (EIAR):** A report required by this ordinance that assesses the environmental characteristics of a source water protection area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action that would increase impervious cover beyond the recommended 20% threshold.

**Geologist:** An individual who is registered in the State of Delaware to practice the profession of geology.

**Ground Water:** The water contained in interconnected pores located below the water table in an unconfined aquifer or located in a confined aquifer.

**Hazardous Substance UST System:** means an underground storage tank system that contains a hazardous substance defined in 101(14) of the CERCLA (but not including any substance regulated as a hazardous waste under RCRA Subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.

**Hazardous Waste:** A solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating irreversible, illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed, Without limitation, included within this definition are those hazardous wastes described in Sections 261.31, 261.32, and 261.33 of the Delaware Regulations Governing Hazardous Waste.

**Impervious Cover:** Surfaces providing negligible infiltration such as pavement, buildings, recreation facilities (e.g. tennis courts, swimming pools, etc.), and covered driveways.

**Non-Conforming Use:** is an existing use of a lot or a building that was legal at the time of its creation that is not permitted by this chapter in the district in which it is located.

**Natural Condition:** Open space that is essentially unimproved and set aside, dedicated, designated, or reserved for public or private use.

**Passive Recreation:** refers to recreation that involves existing natural resources and has a minimal impact because they do not require the alteration of existing topography. Such passive recreation shall include but not be limited to non-motorized vehicles, hiking, bicycling, picnicking, and bird-watching.

**Public Water Supply Well:** Any well from which the water is used to serve a community water system by section 22.146 (Public Water Systems) in the Delaware State Regulations Governing Public Drinking Water Systems.

**Public Drinking Water System:** A community, non-community, or non-transient non-community water system, which provides piped water to the public for human consumption. The system must have at least 15 service connections or regularly serve at least 25 individuals daily for at least 60 days.

**On-site Wastewater Treatment and Disposal System:** conventional or alternative, wastewater treatment and disposal systems installed or proposed to be installed on land of the owner or on other land to which the owner has the legal right to install the system.

**Redevelopment:** Any proposed expansion, addition, or major facade change to an existing building, structure, or parking facility.

**Runoff:** That portion of precipitation or snow melt that has not evaporated or infiltrated into the soil, but flows on land or impervious surfaces.

**Sanitary Landfill:** A land site at which solid waste is deposited on or into the land as fill for the purpose of permanent disposal, except that it will not include any facility that has been approved for the disposal of hazardous waste under the Delaware Regulations Governing Hazardous Waste.

**Site plan approval:** is a process for the review and approval of a development plan prior to the issuance of a development.

**Source Water:** refers to any aquifer from which water is drawn either periodically or continuously by a public water system.

**Source Water Assessment Area:** The area delineated by DNREC Source Water Assessment and Protection Program that contributes water to a public water supply system.

**Source Water Assessment Plan:** The October 1999 U.S. EPA approved plan for evaluating the sources of public drinking water in Delaware for their vulnerability and susceptibility to contamination.

**Source Water Assessment Report (SWAP):** The identification and evaluation of the sources of water within the state used by public water systems in an effort to determine the vulnerability and susceptibility to contamination.

**Source Water Protection Area (CWRPA):** encompasses Class A and Class C Water Resource Protection areas.

**Stormwater:** The runoff of water from the surface of the land resulting from precipitation or snow or ice melts

**Stormwater Management:**

A) for water quantity control, a system of vegetative, structural, and other measures that may control the volume and rate of stormwater runoff which may be caused by land disturbing activities or activities upon the land; and

B) for water quality control, a system of vegetative, structural, and other measures that control adverse effects on water quality that may be caused by land disturbing activities or activities upon the land.

**Vacant Property:** Lands or buildings that are not actively used for any purpose as designated in the underlying zoning district/overlay for one year.

**Underground Storage Tank (UST):** An UST is one or a combination of Tanks including underground Pipes, the volume of which is 10% or more belowground, as defined in the Delaware *Regulations Governing Underground Storage Tank Systems*. The following USTs are **not** subject to the design, construction, operation, and maintenance requirements of the Delaware

UST Regulations: Residential Heating Fuel, Agricultural, and Residential Motor Fuel USTs less than 1,100 gallons and any UST less than 110 gallons.

**Wastewater:** Water-carried waste from septic tanks, water closets, residences, building, industrial establishments, or other places, together with such groundwater infiltration, subsurface water, and mixtures of industrial wastes or other wastes as may be present.

**Water Quality:** Those characteristics of stormwater runoff from an impervious surface or a land disturbing activity that relate to the chemical, physical, biological, or radiological integrity of water.

**Water Quantity:**

1) Those characteristics of stormwater runoff that relate to the volume of stormwater runoff to downstream-gradient areas resulting from land disturbing activities.

2) Those characteristics of stormwater that relate to the volume of stormwater that infiltrates the land surface and enters the underlying aquifer.

**Wellhead:** The upper terminal of a well, including adapters, ports, seals, valves, and other attachments

**Wellhead Protection Areas (WHPA):** Surface and subsurface areas surrounding public water supply wells or well fields where the quantity or quality of ground water moving toward the wells or well fields may be adversely affected by land use activity.

**Wellhead Protection Plan:** The March 1990 U.S. EPA approved plan for protecting the quality of drinking water derived from public water supply wells in Delaware.

**Wellhead Water Resource Protection Area (WRPA):** Surface and sub-surface areas surrounding public water supply wells or wellfields where the quantity or quality of groundwater moving toward such wells or wellfields may be adversely affected by land use activity. Such activity may result in a reduction of recharge or may lead to introduction of contaminants to groundwater used for public supply.

**Section 3. Source Water Protection Areas (CWRPA)**

Source Water Protection Areas encompass Class A and Class C Water Resource Protection areas. All such areas are as depicted on the three map series, specifically Sheet 1, “Water Resource Protection Areas for...New Castle County, Delaware”, prepared by the Water Resources Agency for New Castle County, dated 1993, or as amended. These maps are available in GIS overlays from the Delaware Department of Natural Resources and Environmental Control, Division of Water Resources, Source Water Assessment and Protection Program.

These areas shall be managed as required by the following sections to protect public drinking water resources from activities and substances that may harm water quality and subtract from overall water quantity.

**Section 4. Prohibited Uses**

***PROHIBITED USE TABLE or USE LIST***

**Table 1. Land Use Restrictions and Uses in Source Water Protections Areas.** Activities shall be subject to the land use restrictions contained within this ordinance that will protect the quality and quantity of ground water supplies.

Land Use	Well Head Protection Area	
	Class	Class
	A	C
Aboveground Storage Tanks	NO	***
Automobile body/repair shop	NO	NO
Chemical processing/storage facility	NO	NO
Dry cleaner	NO	NO
Electrical/electronic manufacturing facility	NO	NO
Equipment maintenance/fueling areas	NO	NO
Fleet/trucking/bus terminal	NO	NO
Gas station	NO	NO
Hazardous Waste	NO	NO
Dry wells/sumps*	NO	NO
Injection wells**	NO	NO
Irrigated nursery/greenhouse stock	NO	YES
Junk/scrap/salvage yard	NO	NO
Machine shop	NO	NO
Manure Storage	NO	NO
Metal plating/finishing/fabricating facility	NO	NO
Mines/gravel pit	NO	NO
On-Site Wastewater Treatment and Disposal Systems	NO	NO
Underground storage tanks	NO	NO
Vessel Storage	NO	NO
Wood preserving/treating facility	NO	NO

**Conditional:**

*\*Dry wells/sumps, except for single-family residences directing gutter downspouts to a drywell;*

*\*\*Injection wells other than those used in the remediation of ground water contamination that inject oxygen-releasing compounds.*

*\*\*\*See narrative section.*

## **Section 5. Wellhead Protection Areas (WHPA)**

The DNREC Source Water Assessment and Protection Program delineate wellhead protection areas to ensure the integrity of public drinking water. Deep wells drilled into confined aquifers and low volume wells in unconfined aquifers have at minimum, a 300-foot radius wellhead protection area. The wellhead protection area surrounding public supply wells in unconfined aquifers that pump more than 50,000 gallons per day are delineated using a mathematical model. This type of well draws large quantities of water and can have much larger wellhead protection areas. Classifications have been created to manage land use within the wellhead protection area. They are defined as:

**Class A Water Resource Protection area** is the surface area extending in a 300 foot radius around the wellhead. The protection area around the well may be reduced to a 150-foot radius, provided a hydrogeological report, prepared by a Delaware Registered Geologist and submitted to the satisfaction of the Delaware Geological Survey and the DNREC, is prepared. The report must certify that (1) the minimum 60-day time of travel from a point to the public water supply well is maintained; and (2) the well draws from a confined aquifer.

**Class C Water Resource Protection area** is the remaining surface area of the wellhead protection area outside the Class A Water Resource Protection area. Land use restrictions within the CWRP area are required to ensure adequate protection of the public drinking water supply.

### **A) AWRP Area Requirements:**

- 1) Parcels of land within the AWRP and wellhead protection area will be preserved in a natural condition with the exception of impervious surface limited to building and access associated with the well and distribution and treatment facilities and their maintenance.
- 2) Aboveground storage tanks for materials used in the treatment facility operation are permitted.
- 3) Underground storage tanks are prohibited.
- 4) Stormwater runoff will be diverted away from the wellhead.
- 5) Stormwater infiltration practices designed to handle runoff are prohibited.

### **B) CWRP Area Requirements :**

- 1) **Impervious Cover:** Impervious Cover shall not exceed 20% per parcel within the CWRP area.

## *STORMWATER*

2) Stormwater shall be treated by an approved stormwater quality management practice in accordance with current requirements of the *Delaware Sediment and Stormwater Regulations* dated October 11, 2006 or as later revised.

3) For all new construction, all structures shall be required to discharge roof drains into recharge systems. Recharge systems shall be in accordance with Section 10.0 of the *Delaware Sediment and Stormwater Regulations* dated October 11, 2006 or as later revised.

## *UNDERGROUND STORAGE TANKS*

4) Underground storage tanks with a capacity greater than 110 gallons containing petroleum, and Residential and Agricultural USTs with a capacity greater than 1,100 gallons containing heating fuel or motor fuel shall not be permitted within a 1500 (fifteen hundred) foot radius of a delineated wellhead protection area.

5) Underground storage tanks with a capacity greater than **110** gallons containing a hazardous substance as defined in CERCLA §101(14) shall not be permitted in a designated wellhead area.

## *ABOVEGROUND STORAGE TANKS*

6) Aboveground storage tanks (ASTs) may not be permitted in delineated wellhead areas. Requests for siting of ASTs shall be subject to review by the Municipal Services Commission, who shall provide a recommendation for action by the City Council.

## *WASTEWATER TREATMENT AND DISPOSAL SYSTEMS*

7) On-site Wastewater Treatment and Disposal Systems shall not be permitted.

## **Section 6. Boundary Determination for CWRPA**

A) All subdivision and land development plans depicting development or land disturbance submitted for City review shall be evaluated for the existence of source water protection areas. Source Water Protection Areas encompass Class A and Class C Water Resource Protection areas. All such areas are as depicted on the three map series, specifically Sheet 1, "Water Resource Protection Areas for...New Castle County, Delaware", prepared by the Water Resources Agency for New Castle County, dated 1993, or as amended. These maps are available in GIS overlays from the Delaware Department of Natural Resources and Environmental Control, Division of Water Resources, Source Water Assessment and Protection Program. If a CWRPA exists within a proposed development site, the boundaries of these areas shall be delineated on the plan by the applicant's State of Delaware Professional Engineer or Professional Geologist.

B) DNREC SWAPP may, when based on sound science and information, revise and update the overlay maps of wellhead protection areas.

C) When there appears to be a conflict between the mapped boundary and actual site conditions, the applicant may engage the services of Professional Geologist to prepare a report intended to determine more accurately the precise boundary of the Source water Protection Area. The Report shall include:

1) A detailed topographic layout of the subdivision and/or area to be developed and prepared by a State-registered professional land surveyor or Professional Geologist;

2) Evidence derived from a site-specific investigation that may include aquifer testing, test borings, test pits, observation wells, groundwater elevations, and topography surveys as appropriate for the type of source water protection area that clearly demonstrate that the area in question does not meet the definition of a source water protection area as defined.

3) Notwithstanding any other section of this Chapter, if an owner initiates a precise boundary delineation pursuant to this section, any and all time review limitations shall be stayed pending the submission of the complete report contemplated by this section. Following submission of the report and all supporting documents, the Department shall have ninety (90) days to finally approve or disapprove the exploratory sketch plan submission or such further time as deemed necessary by the Department, but not to exceed an additional ninety (90) days.

## **Section 7. Redevelopment**

### **Impervious Cover Restrictions**

A) Site Modifications that require Site Plan Approval must create a 15% reduction in the amount of impervious cover on the site when compared to pre-redevelopment conditions.

B) If the 15% reduction would require a site to go below the 20% maximum impervious cover provisions of Source Water Protection Areas, then the maximum impervious surface cover for the site is 20%.

### ***STORMWATER***

C) Sites that do not meet the 20% impervious cover threshold must employ rooftop infiltration practices. Stormwater shall be treated by an approved stormwater quality management practice in accordance with current requirements of the *Delaware Sediment and Stormwater Regulations* dated October 11, 2006 or as later revised.

### **Vacant Property**

A) Redevelopment Section 7 — Impervious Cover Restriction A and B does not apply to vacant property. These properties must comply with the source water protection area regulations.

**Section 8. Nonconforming uses**

- A)** Nonconforming uses may continue in wellhead protection areas, in the form in which they existed at the time of the adoption of this ordinance, unless they pose a direct hazard to the City’s water supply, as determined by the Municipal Services Commission Water Department upon advice from the Delaware Division of Public Health, or are causing some foreign substances (oil, salts, chemicals, or other substances) to be introduced into the City’s water supply, as determined by the water department upon advice from DNREC's Division of Air and Waste Management and/or Division of Water Resources. In the latter case, the building department shall issue a mandatory cease and desist to stop the offending activity within the area. Nonconforming existing underground or above-ground storage of oil, petroleum, and petroleum products shall require secondary containment pursuant to the State of Delaware regulations governing underground storage tanks or for above-ground storage of petroleum products secondary containment facilities capable of capturing the material stored on the site, for existing facilities that are proposed either to be upgraded or replaced.
  
- B)** Any well in existence prior to the adoption of this Ordinance (non-conforming use) may be replaced or modified, and the replacement or modified well(s) is exempt from the conditions of this Ordinance.

This Amendment shall take effect immediately.

First Reading:           April 8, 2008  
Second Reading:       April 8, 2008  
Third Reading:         May 13, 2008

Signed: \_\_\_\_\_  
William G. Blest, President of Council

I hereby certify that the foregoing Ordinance was duly approved by the Council of the Mayor and Council of New Castle upon the dates above set forth and signed by the President of Council.

\_\_\_\_\_  
Jill DiAngelo, City Clerk

Approved this \_\_\_\_\_ day of \_\_\_\_\_, 2007

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John F. Klingmeyer, Mayor