SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

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Crystal Water Company of Danielson
Plainfield Wellfield

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of the Plainfield Wellfield, which is a source of public drinking water that is maintained and operated by the Crystal Water Company of Danielson. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Crystal Water Company of Danielson consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This assessment will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Plainfield Wellfield may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Plainfield Wellfield include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Plainfield Wellfield Source Water Assessment Summary

STRENGTHS

Local aquifer protection regulations adopted

Public Water System Source Protection Program

Approximately 12 percent of the source water area is preserved as open space

Less than 10% of this source water area is currently developed for commercial or industrial use

POTENTIAL RISK FACTORS

Potential contaminant sources in source water area

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X	X	
Moderate			X
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 1. Information about opportunities to improve protection in the Plainfield Wellfield source water area is also presented in Table 2.

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OVERVIEW - The Plainfield Wellfield is located in an aquifer that is comprised largely of water-bearing sand and gravel deposits. The source water area is delineated by a preliminary Level B aquifer protection mapping area, which encompasses some 1392.7 acres of land in Killingly and Plainfield. Vacant land and residential properties in the Plainfield Wellfield source water area presently account for approximately 82.1 percent of the land cover. Commercial development at 9.0 percent and agricultural land use at 8.9 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Crystal Water Company of Danielson's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs.

Wellfields rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Source Water Area Characteristics and Susceptibility Ratings

Susceptibility Rating	**General Characteristics of the Source Water Area***
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local aquifer protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

**** Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Plainfield Wellfield source water area have not been included with this assessment report because of homeland security concerns

PLAINFIELD WELLFIELD ASSESSMENT RESULTS.

Based on a combination of current wellfield and source water area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this wellfield indicates that it has an overall Low risk of contamination from identified potential sources of contamination. The assessment findings for the Plainfield Wellfield are summarized in Table 2, which lists current conditions in the wellfield source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable wellfields throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most groundwater sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities**

Plainfield Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Plainfield Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level B aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Aquifer protection regulations adopted for the entire source water area	Complete Level A mapping Adhere to local aquifer protection regulations Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Plainfield Wellfield source water area are listed in Table 3. While these facilities have the potential to cause groundwater contamination, there is no indication that they are doing so at this time.

Table 3 Summary of Significant Potential Contaminant Types in the Plainfield Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	1
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	4
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	3
	Miscellaneous	1
Commercial Trades and Services	Automotive and Related Services	6
	Chemical Use Services	0
	Miscellaneous	0
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		15

Prominent features of the Plainfield Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Plainfield Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	3 stratified drift wells
Source Water Area Delineation Method [a]	preliminary Level B
DEP Groundwater Classification	GAA - Groundwater used as a public drinking water supply, presumed to be drinkable without treatment
Size of Source Water Area	1392.7 acres
Location of Source Water Area	Killingly and Plainfield
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 9.0 % 9.7 % 8.9 % 72.3 %
Preserved Land In Source Water Area [d]	171.3 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 8 3.68 per sq mile 15
Number of Contaminant Release Points Inventoried by CTDEP [c]	0

[a] Source water delineation method depends on data available for the wellfield

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery.

[c] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

[d] Any combination of state forest and parklands and municipally or privately held land designated as open space.