

SOURCE WATER ASSESSMENT REPORT

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

APA 54

Aug-03

Connecticut Water Company Shoreline Region - Guilford System Guilford 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 Guilford Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Guilford 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 Guilford 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.

Guilford Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

POTENTIAL RISK FACTORS

**Potential contaminant sources in source water area
Aquifer only partially protected by local regulation**

Susceptibility Rating

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

Overall Susceptibility Rating: High

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 Guilford Wellfield source water area is also presented in Table 2.



Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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OVERVIEW - The Guilford 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 609.0 acres of land in Guilford. Vacant land and residential properties in the Guilford Wellfield source water area presently account for approximately 63.1 percent of the land cover. Commercial development at 12.8 percent and agricultural land use at 24.1 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 Connecticut Water Company'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 Guilford Wellfield source water area have not been included with this assessment report because of homeland security concerns

GUILFORD 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 High risk of contamination from identified potential sources of contamination. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code. The assessment findings for the Guilford 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
Shoreline Region - Guilford System Guilford Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Guilford 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.</p> <p>Nitrate >1mg/L</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources in source water area</p> <p>Ten percent or more of the source water area has been developed for commercial or industrial use</p>	<p>Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Monitor activities at commercial and industrial facilities to insure that best management practices are being followed</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system.</p> <p>Local aquifer protection regulations have not been adopted for the entire source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Complete Level A mapping</p> <p>Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield</p> <p>Extend coverage of local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Guilford 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 Guilford Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	4
	Solid Waste Facilities	1
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	6
	Tank Farms	1
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	3
	Miscellaneous	1
Commercial Trades and Services	Automotive and Related Services	9
	Chemical Use Services	1
	Miscellaneous	1
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		27

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

Table 4 Features of the Guilford Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
Source Water Area Delineation Method ^a	preliminary Level B
DEP Groundwater Classification	GA-impaired or GAA-impaired- Groundwater that may not be meeting all standards with a goal to restore to drinking water quality
Size of Source Water Area	609.0 acres
Location of Source Water Area	Guilford
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	12.8 %
-Urban - Residential	35.5 %
-Agricultural	24.1 %
-Undeveloped Land	27.6 %
Preserved Land In Source Water Area ^d	41.3 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	20
-Count of inventoried facilities per square mile	21.02 per sq mile
-Number of contaminant sources within inventoried facilities	27
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.

SOURCE WATER ASSESSMENT REPORT

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

APA 55

Connecticut Water Company Shoreline Region - Guilford System Clinton 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 Clinton Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Clinton 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 Clinton 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.

Clinton Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

POTENTIAL RISK FACTORS

Potential contaminant sources in source water area

No local aquifer protection regulations

1 contaminant release point in source water area

Susceptibility Rating

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

Overall Susceptibility Rating: Moderate

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 Clinton Wellfield source water area is also presented in Table 2.



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OVERVIEW - The Clinton 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 963.2 acres of land in Clinton. Vacant land and residential properties in the Clinton Wellfield source water area presently account for approximately 68.3 percent of the land cover. Commercial development at 14.6 percent and agricultural land use at 17.1 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 Connecticut Water Company'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 Clinton Wellfield source water area have not been included with this assessment report because of homeland security concerns

CLINTON 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 Moderate risk of contamination from identified potential sources of contamination. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code. The assessment findings for the Clinton 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
Shoreline Region - Guilford System Clinton Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Clinton 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.</p> <p>None</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources in source water area</p> <p>1 contaminant release point in source water area</p> <p>More than 30% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p> <p>Ten percent or more of the source water area has been developed for commercial or industrial use</p>	<p>Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Maintain an adequate level of surveillance around contaminant release point sites to insure that groundwater contamination is not occurring</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Monitor activities at commercial and industrial facilities to insure that best management practices are being followed</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>100 percent ownership or control of sanitary radius around wellheads in wellfield.</p> <p>Local aquifer protection regulations have not been adopted for this source water area</p> <p>Very little or no public/private preserved open space lands are present in the source water area</p>	<p>Complete Level A mapping</p> <p>Develop and adopt local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Clinton 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 Clinton Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	0
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	2
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	1
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	1
	Chemical Use Services	1
	Miscellaneous	1
Agriculture and Related	Pesticide Storage, Handling or Application	1
Total Number of Contaminant Types		7

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

Table 4 Features of the Clinton Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
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	963.2 acres
Location of Source Water Area	Clinton
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	14.6 %
-Urban - Residential	25.0 %
-Agricultural	17.1 %
-Undeveloped Land	43.3 %
Preserved Land In Source Water Area ^d	24.2 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	7
-Count of inventoried facilities per square mile	4.65 per sq mile
-Number of contaminant sources within inventoried facilities	7
Number of Contaminant Release Points Inventoried by CTDEP ^c	1

^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.

SOURCE WATER ASSESSMENT REPORT

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

APA 65

Aug-03

Connecticut Water Company Shoreline Region - Guilford System Saybrook 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 Saybrook Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Saybrook 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 Saybrook 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.

Saybrook Wellfield Source Water Assessment Summary

STRENGTHS

- Local aquifer protection regulations adopted**
- Public Water System Source Protection Program**

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 Saybrook Wellfield source water area is also presented in Table 2.



Keeping Connecticut Healthy

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OVERVIEW - The Saybrook 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 102.2 acres of land in Old Saybrook. Vacant land and residential properties in the Saybrook Wellfield source water area presently account for approximately 74.5 percent of the land cover. Commercial development at 18.1 percent and agricultural land use at 7.4 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 Connecticut Water Company'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 Saybrook Wellfield source water area have not been included with this assessment report because of homeland security concerns

SAYBROOK 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 Saybrook 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
Shoreline Region - Guilford System Saybrook Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Saybrook 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.</p> <p>Nitrate >1mg/L</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources in source water area</p> <p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p> <p>Ten percent or more of the source water area has been developed for commercial or industrial use</p>	<p>Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Monitor activities at commercial and industrial facilities to insure that best management practices are being followed</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>100 percent ownership or control of sanitary radius around wellheads in wellfield.</p> <p>Aquifer protection regulations adopted for the entire source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Complete Level A mapping</p> <p>Adhere to local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Saybrook 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 Saybrook Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	0
	Solid Waste Facilities	0
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	2
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	2
Commercial Trades and Services	Automotive and Related Services	5
	Chemical Use Services	1
	Miscellaneous	0
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		10

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

Table 4 Features of the Saybrook Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
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	102.2 acres
Location of Source Water Area	Old Saybrook
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	18.1 %
-Urban - Residential	9.3 %
-Agricultural	7.4 %
-Undeveloped Land	65.3 %
Preserved Land In Source Water Area ^d	19.3 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	5
-Count of inventoried facilities per square mile	31.30 per sq mile
-Number of contaminant sources within inventoried facilities	10
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.

SOURCE WATER ASSESSMENT REPORT

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APA 63

Aug-03

Connecticut Water Company Shoreline Region - Guilford System Pinewood 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 Pinewood Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Pinewood 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 Pinewood 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.

Pinewood Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

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

POTENTIAL RISK FACTORS

Aquifer only partially protected by local regulation

Susceptibility Rating

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

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 Pinewood Wellfield source water area is also presented in Table 2.



Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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OVERVIEW - The Pinewood 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 final Level A aquifer protection mapping area, which encompasses some 176.4 acres of land in Guilford. Vacant land and residential properties in the Pinewood Wellfield source water area presently account for approximately 90.5 percent of the land cover. Commercial development at 0.0 percent and agricultural land use at 9.5 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 Connecticut Water Company'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 Pinewood Wellfield source water area have not been included with this assessment report because of homeland security concerns

PINEWOOD 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 Pinewood 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
Shoreline Region - Guilford System Pinewood Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Pinewood 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.</p> <p>Nitrate >1mg/L</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p>	<p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level A aquifer mapping completed</p> <p>Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system.</p> <p>Local aquifer protection regulations have not been adopted for the entire source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield</p> <p>Extend coverage of local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Pinewood 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 Pinewood Wellfield Source Water Area

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

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

Table 4 Features of the Pinewood Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
Source Water Area Delineation Method ^a	final Level A
DEP Groundwater Classification	GAA - Groundwater used as a public drinking water supply, presumed to be drinkable without treatment
Size of Source Water Area	176.4 acres
Location of Source Water Area	Guilford
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	0.0 %
-Urban - Residential	33.2 %
-Agricultural	9.5 %
-Undeveloped Land	57.3 %
Preserved Land In Source Water Area ^d	8.4 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	0
-Count of inventoried facilities per square mile	0.00 per sq mile
-Number of contaminant sources within inventoried facilities	0
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.

SOURCE WATER ASSESSMENT REPORT

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

APA 61

Connecticut Water Company Shoreline Region - Guilford System Rettich 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 Rettich Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Rettich 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 Rettich 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.

Rettich Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

POTENTIAL RISK FACTORS

No local aquifer protection regulations

1 contaminant release point in source water area

Susceptibility Rating

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

Overall Susceptibility Rating: Moderate

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 Rettich Wellfield source water area is also presented in Table 2.



Keeping Connecticut Healthy

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Drinking Water Division

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OVERVIEW - The Rettich 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 1005.7 acres of land in Clinton and Madison. Vacant land and residential properties in the Rettich Wellfield source water area presently account for approximately 82.3 percent of the land cover. Commercial development at 11.1 percent and agricultural land use at 6.6 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 Connecticut Water Company'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 Rettich Wellfield source water area have not been included with this assessment report because of homeland security concerns

RETTICH 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 Moderate risk of contamination from identified potential sources of contamination. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code. The assessment findings for the Rettich 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
Shoreline Region - Guilford System Rettich Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Rettich 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.</p> <p>None</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>1 contaminant release point in source water area</p> <p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p> <p>Ten percent or more of the source water area has been developed for commercial or industrial use</p>	<p>Maintain an adequate level of surveillance around contaminant release point sites to insure that groundwater contamination is not occurring</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Monitor activities at commercial and industrial facilities to insure that best management practices are being followed</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system.</p> <p>Local aquifer protection regulations have not been adopted for this source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Complete Level A mapping</p> <p>Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield</p> <p>Develop and adopt local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Rettich 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 Rettich Wellfield Source Water Area

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

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

Table 4 Features of the Rettich Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	2 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	1005.7 acres
Location of Source Water Area	Clinton and Madison
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	11.1 %
-Urban - Residential	12.3 %
-Agricultural	6.6 %
-Undeveloped Land	70.0 %
Preserved Land In Source Water Area ^d	71.2 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	0
-Count of inventoried facilities per square mile	0.00 per sq mile
-Number of contaminant sources within inventoried facilities	0
Number of Contaminant Release Points Inventoried by CTDEP ^c	1

^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.

SOURCE WATER ASSESSMENT REPORT

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

APA 60

Connecticut Water Company Shoreline Region - Guilford System Five Fields 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 Five Fields Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Five Fields 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 Five Fields 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.

Five Fields Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

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

No local aquifer protection regulations

Susceptibility Rating

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

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 Five Fields Wellfield source water area is also presented in Table 2.



Keeping Connecticut Healthy

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OVERVIEW - The Five Fields 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 230.7 acres of land in Clinton and Madison. Vacant land and residential properties in the Five Fields Wellfield source water area presently account for approximately 95.7 percent of the land cover. Commercial development at 0.8 percent and agricultural land use at 3.5 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 Connecticut Water Company'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 Five Fields Wellfield source water area have not been included with this assessment report because of homeland security concerns

FIVE FIELDS 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 Five Fields 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
Shoreline Region - Guilford System Five Fields Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Five Fields 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.</p> <p>Nitrate >1mg/L</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources in source water area</p> <p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p>	<p>Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system.</p> <p>Local aquifer protection regulations have not been adopted for this source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Complete Level A mapping</p> <p>Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield</p> <p>Develop and adopt local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Five Fields 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 Five Fields Wellfield Source Water Area

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

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

Table 4 Features of the Five Fields Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	2 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	230.7 acres
Location of Source Water Area	Clinton and Madison
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	0.8 %
-Urban - Residential	21.6 %
-Agricultural	3.5 %
-Undeveloped Land	74.1 %
Preserved Land In Source Water Area ^d	9.6 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	1
-Count of inventoried facilities per square mile	2.77 per sq mile
-Number of contaminant sources within inventoried facilities	0
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.

SOURCE WATER ASSESSMENT REPORT

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

APA 59

Connecticut Water Company Shoreline Region - Guilford System Weiss 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 Weiss Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Weiss 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 Weiss 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.

Weiss Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program
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
No local aquifer protection regulations

Susceptibility Rating

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

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 Weiss Wellfield source water area is also presented in Table 2.



Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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OVERVIEW - The Weiss 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 789.1 acres of land in Clinton, Killingworth and Madison. Vacant land and residential properties in the Weiss Wellfield source water area presently account for approximately 77.2 percent of the land cover. Commercial development at 3.8 percent and agricultural land use at 19.0 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 Connecticut Water Company'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 Weiss Wellfield source water area have not been included with this assessment report because of homeland security concerns

WEISS 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 Weiss 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
Shoreline Region - Guilford System Weiss Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Weiss 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.</p> <p>Nitrate >1mg/L</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources in source water area</p> <p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p>	<p>Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>100 percent ownership or control of sanitary radius around wellheads in wellfield.</p> <p>Local aquifer protection regulations have not been adopted for this source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Complete Level A mapping</p> <p>Develop and adopt local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Weiss 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 Weiss Wellfield Source Water Area

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

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

Table 4 Features of the Weiss Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
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	789.1 acres
Location of Source Water Area	Clinton, Killingworth and Madison
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	3.8 %
-Urban - Residential	12.2 %
-Agricultural	19.0 %
-Undeveloped Land	65.0 %
Preserved Land In Source Water Area ^d	50.6 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	1
-Count of inventoried facilities per square mile	0.81 per sq mile
-Number of contaminant sources within inventoried facilities	1
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.

SOURCE WATER ASSESSMENT REPORT

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

APA 66

Aug-03

Connecticut Water Company Shoreline Region - Guilford System Westbrook 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 Westbrook Wellfield, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 Westbrook 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 Westbrook 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.

Westbrook Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

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

Aquifer only partially protected by local regulation

3 contaminant release points in source water area

Susceptibility Rating

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

Overall Susceptibility Rating: Moderate

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 Westbrook Wellfield source water area is also presented in Table 2.



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OVERVIEW - The Westbrook 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 483.8 acres of land in Westbrook. Vacant land and residential properties in the Westbrook Wellfield source water area presently account for approximately 67.3 percent of the land cover. Commercial development at 7.1 percent and agricultural land use at 25.6 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 Connecticut Water Company'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 Westbrook Wellfield source water area have not been included with this assessment report because of homeland security concerns

WESTBROOK 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 Moderate risk of contamination from identified potential sources of contamination. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code. The assessment findings for the Westbrook 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
Shoreline Region - Guilford System Westbrook Wellfield**

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>All wells in the Westbrook 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.</p> <p>None</p> <p>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.</p> <p>Click here to review EPA's current drinking water standardsT</p>	<p>Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources in source water area</p> <p>3 contaminant release points in source water area</p> <p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p>	<p>Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Maintain an adequate level of surveillance around contaminant release point sites to insure that groundwater contamination is not occurring</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area</p> <p>Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.</p>
<p>Source Protection Needs Factors</p>	<p>Level B aquifer mapping completed</p> <p>Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system.</p> <p>Local aquifer protection regulations have not been adopted for the entire source water area</p> <p>Less than 10% of the land in the source water area exists as preserved open space</p>	<p>Complete Level A mapping</p> <p>Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield</p> <p>Extend coverage of local aquifer protection regulations</p> <p>Support and encourage the acquisition of open space land within the source water area</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources in the Westbrook 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 Westbrook Wellfield Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	0
	Solid Waste Facilities	1
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	2
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	1
	Chemical Use Services	1
	Miscellaneous	1
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		6

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

Table 4 Features of the Westbrook Wellfield Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 stratified drift well
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	483.8 acres
Location of Source Water Area	Westbrook
Predominant Land Use and Land Cover in Source Water Area ^b	
-Urban - Commercial or Industrial	7.1 %
-Urban - Residential	11.3 %
-Agricultural	25.6 %
-Undeveloped Land	56.0 %
Preserved Land In Source Water Area ^d	17.6 acres
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area	5
-Count of inventoried facilities per square mile	6.61 per sq mile
-Number of contaminant sources within inventoried facilities	6
Number of Contaminant Release Points Inventoried by CTDEP ^c	3

^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.

SOURCE WATER ASSESSMENT REPORT

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

CT0608011

Connecticut Water Company Shoreline Region Guilford Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the Shoreline Region Guilford Reservoir System, which is a source of public drinking water that is maintained and operated by the Connecticut Water Company. 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 Connecticut Water Company 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 initial assessment complete 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 Shoreline Region Guilford Reservoir System 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 Shoreline Region Guilford Reservoir System 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.

Shoreline Region Guilford Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

More than 20% of the land in the watershed area exists as preserved open space

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed

Less than 20% of watershed area owned by public water system

Local regulations or zoning initiatives for the protection of public drinking water sources do not exist

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

Overall Susceptibility Rating: Moderate

This rating indicates susceptibility to potential sources of contamination that may be in the 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 2. Information about opportunities to improve protection in the Shoreline Region Guilford Reservoir System is also presented in Table 2.



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OVERVIEW - The Shoreline Region Guilford Reservoir System watershed encompasses some 6,269 acres of land in Chester, Clinton, Deep River, Haddam, Killingworth and Westbrook. Approximately 18.9% of this watershed is owned by the Connecticut Water Company. Public drinking water sources in this system include KelseyTown and Killingworth Reservoirs. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 94.0% percent of the land cover in the Shoreline Region Guilford Reservoir System. Commercial development at 0.6% and agricultural land use at 5.4% account for the remainder of the land coverage in the source water area. Approximately 29.1% of the land in the watershed area is preserved including all watershed land owned by the Connecticut Water Company, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Connecticut Water Company’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. Watersheds and reservoirs 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 Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	General Characteristics of the Watershed 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 watershed 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 Shoreline Region Guilford Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

SHORELINE REGION GUILFORD RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Moderate risk of contamination from any identified potential sources of contamination. The assessment findings for the Shoreline Region Guilford Reservoir System are summarized in Table 2, which lists current conditions in the 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, if present, 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 watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 Source Water Assessment Findings and Source Protection Opportunities For the Shoreline Region Guilford Reservoir System

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
<p>Environmental Sensitivity Factors</p> <p>Contaminants Detected in Untreated Source Water</p>	<p>Predominant watershed topography characterized by gentle slopes</p> <p>Reservoirs have moderate to high capacity to support excessive growths of algae and plankton</p> <p>None</p> <p>Click here to review EPA’s current drinking water standards</p>	<p>Monitor runoff during heavy precipitation events</p> <p>Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.</p> <p>Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.</p>
<p>Potential Risk Factors</p>	<p>Potential contaminant sources present in the watershed</p> <p>More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.</p> <p>Major state or interstate roadways present in the watershed</p> <p>Known contaminant release points present in the watershed</p>	<p>Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk</p> <p>Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area</p> <p>Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents</p> <p>Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring</p> <p>Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.</p>
<p>Source Protection Needs Factors</p>	<p>Less than 20% of watershed area owned by public water system</p> <p>Local regulations or zoning initiatives for the protection of public drinking water sources do not exist</p> <p>Comprehensive plans and policies for the protection of public drinking water sources do not exist at the local government level</p> <p>Point source pollution discharge points not present in this watershed area</p>	<p>Increase ownership or control of watershed area whenever land becomes available for purchase or support land acquisition by public or private conservation/preservation organizations</p> <p>Establish local watershed protection regulations to protect public drinking water sources</p> <p>Develop or enhance local governmental plans and policies that favor the protection of public drinking water sources</p> <p>Support environmental awareness and education within the community.</p>

Inventoried significant potential contaminant sources present in the Shoreline Region Guilford Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the Shoreline Region Guilford Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	0
	Solid Waste Facilities	1
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	8
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	0
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	1
	Chemical Use Services	0
	Miscellaneous	0
Miscellaneous	No Identifiable SPCS Type	1
Agricultural Operations	Animal or Livestock Waste Handling	0
	Pesticide Storage or Application	0
Total Number of Contaminant Types		11

Prominent features of the Shoreline Region Guilford Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the Shoreline Region Guilford Reservoir System

Location of Watershed Area	Chester, Clinton, Deep River, Haddam, Killingworth and Westbrook
Name of Reservoir(s) and Diversion(s)	KelseyTown and Killingworth Reservoirs
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	1 Distribution and 1 Storage
Trophic Status of Reservoir(s)	1 Eutrophic and 1 Mesotrophic
DEP Surface Water Classification	AA
Watershed Area (total acreage)	6,269 acres
Preserved Land in the Watershed ^a	1,825 acres
Predominant Watershed Topography	gentle slopes
General Land Use and Land Cover in the Watershed ^b	
-Urban - Commercial or Industrial	0.6%
-Urban - Residential	2.7%
-Agricultural	5.4%
-Undeveloped Land	91.3%
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area ^c	10
-Count of inventoried facilities per square mile	1.02 per sq mile
-Number of contaminant types within inventoried facilities	11
Number of Contaminant Release Points Inventoried by CTDEP ^d	1

^a Preserved land includes any combination of land owned by the public water supply, state forest and parklands, and municipally or privately held land designated as open space.

^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 averaged across the entire watershed.

^c Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

^d 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.