SOURCE WATER ASSESSMENT REPORT

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

APA **146**

Avon Water Company
Meadow Ridge 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 Meadow Ridge Wellfield, which is a source of public drinking water that is maintained and operated by the Avon 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 Avon 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 Meadow Ridge 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 Meadow Ridge 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.

Meadow Ridge Wellfield Source Water Assessment Summary

STRENGTHS

Public Water System Source Protection Program

Approximately 30 percent of the source water area is preserved as open space

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

POTENTIAL RISK FACTORS

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 Meadow Ridge Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Meadow Ridge 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 314.9 acres of land in Avon. Vacant land and residential properties in the Meadow Ridge Wellfield source water area presently account for approximately 84.2 percent of the land cover. Commercial development at 1.7 percent and agricultural land use at 14.2 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 Avon 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 Meadow Ridge Wellfield source water area have not been included with this assessment report because of homeland security concerns

MEADOW RIDGE 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 Meadow Ridge 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**

Meadow Ridge Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Meadow Ridge Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level A aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Local aquifer protection regulations have not been adopted for this source water area	Develop and adopt local aquifer protection regulations Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Meadow Ridge 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 Meadow Ridge 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 Meadow Ridge Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Meadow Ridge 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	314.9 acres
Location of Source Water Area	Avon
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 1.7 % 14.8 % 14.2 % 69.4 %
Preserved Land In Source Water Area [d]	93.8 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 0 0.00 per sq mile 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 **156**

Avon Water Company
Farmington Woods 2 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 Farmington Woods 2 Wellfield, which is a source of public drinking water that is maintained and operated by the Avon 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 Avon 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 Farmington Woods 2 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 Farmington Woods 2 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.

Farmington Woods 2 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

No local aquifer protection regulations in more than 50% of 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 Farmington Woods 2 Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Farmington Woods 2 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 169.6 acres of land in Avon and Farmington. Vacant land and residential properties in the Farmington Woods 2 Wellfield source water area presently account for approximately 97.4 percent of the land cover. Commercial development at 0.2 percent and agricultural land use at 2.3 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 Avon 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 Farmington Woods 2 Wellfield source water area have not been included with this assessment report because of homeland security concerns

FARMINGTON WOODS 2 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 Farmington Woods 2 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**

Farmington Woods 2 Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Farmington Woods 2 Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	More than 30% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level B aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Less than 10% of this source water area is covered by local aquifer protection regulations Very little or no public/private preserved open space lands are present in the source water area	Complete Level A mapping Expand coverage of local aquifer protection regulations throughout entire source water area Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Farmington Woods 2 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 Farmington Woods 2 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 Farmington Woods 2 Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Farmington Woods 2 Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 Caisson 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	169.6 acres
Location of Source Water Area	Avon and Farmington
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 0.2 % 64.1 % 2.3 % 33.3 %
Preserved Land In Source Water Area [d]	0.0 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 0 0.00 per sq mile 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 **4**

Avon Water Company
Well # 3 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 Well # 3 Wellfield, which is a source of public drinking water that is maintained and operated by the Avon 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 Avon 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 Well # 3 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 Well # 3 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.

Well # 3 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: 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 Well # 3 Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Well # 3 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 933.5 acres of land in Avon. Vacant land and residential properties in the Well # 3 Wellfield source water area presently account for approximately 89.7 percent of the land cover. Commercial development at 2.6 percent and agricultural land use at 7.7 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 Avon 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 Well # 3 Wellfield source water area have not been included with this assessment report because of homeland security concerns

WELL # 3 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 Well # 3 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**

Well # 3 Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Well # 3 Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area More than 30% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level B aquifer mapping completed Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system. Local aquifer protection regulations have not been adopted for this source water area Less than 10% of the land in the source water area exists as preserved open space	Complete Level A mapping Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield Develop and adopt local aquifer protection regulations Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Well # 3 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 Well # 3 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	4
	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	0
	Chemical Use Services	2
	Miscellaneous	2
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		9

Prominent features of the Well # 3 Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Well # 3 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	933.5 acres
Location of Source Water Area	Avon
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 2.6 % 45.7 % 7.7 % 44.1 %
Preserved Land In Source Water Area [d]	40.1 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 6 4.11 per sq mile 9
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 **5**

Avon Water Company
Well # 5 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 Well # 5 Wellfield, which is a source of public drinking water that is maintained and operated by the Avon 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 Avon 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 Well # 5 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 Well # 5 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.

Well # 5 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: 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 Well # 5 Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Well # 5 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 662.5 acres of land in Avon and Canton. Vacant land and residential properties in the Well # 5 Wellfield source water area presently account for approximately 98.5 percent of the land cover. Commercial development at 0.0 percent and agricultural land use at 1.5 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 Avon 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 Well # 5 Wellfield source water area have not been included with this assessment report because of homeland security concerns

WELL # 5 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 Well # 5 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**

Well # 5 Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Well # 5 Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	Potential contaminant sources in source water area More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Periodically inspect SPCS sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level B aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Local aquifer protection regulations have not been adopted for this source water area Less than 10% of the land in the source water area exists as preserved open space	Complete Level A mapping Develop and adopt local aquifer protection regulations Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Well # 5 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 Well # 5 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	1
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	1
	Chemical Use Services	0
	Miscellaneous	0
Agriculture and Related	Pesticide Storage, Handling or Application	0
Total Number of Contaminant Types		2

Prominent features of the Well # 5 Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Well # 5 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	662.5 acres
Location of Source Water Area	Avon and Canton
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 0.0 % 31.2 % 1.5 % 67.3 %
Preserved Land In Source Water Area [d]	14.0 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 1 0.97 per sq mile 2
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 **6**

Avon Water Company
Well # 6 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 Well # 6 Wellfield, which is a source of public drinking water that is maintained and operated by the Avon 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 Avon 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 Well # 6 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 Well # 6 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.

Well # 6 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

No local aquifer protection regulations

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 Well # 6 Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

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Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Well # 6 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 819.5 acres of land in Avon. Vacant land and residential properties in the Well # 6 Wellfield source water area presently account for approximately 98.6 percent of the land cover. Commercial development at 0.0 percent and agricultural land use at 1.4 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 Avon 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 Well # 6 Wellfield source water area have not been included with this assessment report because of homeland security concerns

WELL # 6 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 Well # 6 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**

Well # 6 Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Well # 6 Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	Nitrate Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level B aquifer mapping completed Portions of the 200 foot sanitary radius around wellheads for this wellfield are not owned or controlled by the public water system. Local aquifer protection regulations have not been adopted for this source water area Less than 10% of the land in the source water area exists as preserved open space	Complete Level A mapping Where feasible, increase ownership or control of 200 foot sanitary radius around all wellheads for this wellfield Develop and adopt local aquifer protection regulations Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Well # 6 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 Well # 6 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 Well # 6 Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Well # 6 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	819.5 acres
Location of Source Water Area	Avon
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 0.0 % 29.7 % 1.4 % 69.0 %
Preserved Land In Source Water Area [d]	10.3 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 0 0.00 per sq mile 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 **7**

Avon Water Company
Farmington Woods 1 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 Farmington Woods 1 Wellfield, which is a source of public drinking water that is maintained and operated by the Avon 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 Avon 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 Farmington Woods 1 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 Farmington Woods 1 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.

Farmington Woods 1 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

No local aquifer protection regulations in more than 50% of 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 Farmington Woods 1 Wellfield source water area is also presented in Table 2.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health

Drinking Water Division

410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Farmington Woods 1 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 373.9 acres of land in Avon and Farmington. Vacant land and residential properties in the Farmington Woods 1 Wellfield source water area presently account for approximately 95.9 percent of the land cover. Commercial development at 0.1 percent and agricultural land use at 3.9 percent, account for the remainder of the land coverage's in the source water area. Information about drinking water quality and treatment is available in the Avon 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 Farmington Woods 1 Wellfield source water area have not been included with this assessment report because of homeland security concerns

FARMINGTON WOODS 1 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 Farmington Woods 1 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**

Farmington Woods 1 Wellfield

Assessment Category	Conditions Through June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	All wells in the Farmington Woods 1 Wellfield are sited and constructed in accordance with DPH regulations and the most recent DPH sanitary survey of this wellfield indicates that it is free of deficiencies.	
Contaminants Detected in Untreated Source Water	None Except where noted above, any detected contaminants listed are below maximum contaminant levels (MCL) established by the federal government or guidance levels established by the Connecticut Department of Public Health. The presence of these contaminants, in general, indicates that this wellfield is sensitive to human activity. Click here to review EPA's current drinking water standardsT	Maintain monitoring levels specified in the Connecticut Public Health Code Section 19-13-B102 Encourage homeowners to adopt residential best management practices that minimize the use hazardous materials or generation of hazardous waste.
Potential Risk Factors	More than 30% of land for this source water area is undeveloped, which could present a risk if developed inappropriately.	Proactively work with local officials and developers to insure that only low-risk development occurs within the source water area Encourage residential property owners to conduct scheduled inspections and maintenance of underground fuel storage tanks and on-site septic systems.
Source Protection Needs Factors	Level B aquifer mapping completed 100 percent ownership or control of sanitary radius around wellheads in wellfield. Less than 10% of this source water area is covered by local aquifer protection regulations Very little or no public/private preserved open space lands are present in the source water area	Complete Level A mapping Expand coverage of local aquifer protection regulations throughout entire source water area Support and encourage the acquisition of open space land within the source water area Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources in the Farmington Woods 1 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 Farmington Woods 1 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 Farmington Woods 1 Wellfield source water area are summarized in Table 4.

Table 4 Features of the *Farmington Woods 1 Wellfield* Source Water Area

Number and Type of Public Drinking Water Supply Wells	1 caisson 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	373.9 acres
Location of Source Water Area	Avon and Farmington
Predominant Land Use and Land Cover in Source Water Area [b] -Urban - Commercial or Industrial -Urban - Residential -Agricultural -Undeveloped Land	 0.1 % 60.1 % 3.9 % 35.8 %
Preserved Land In Source Water Area [d]	0.0 acres
Significant Potential Contamination Sources -Number of inventoried facilities in source water area -Count of inventoried facilities per square mile -Number of contaminant sources within inventoried facilities	 0 0.00 per sq mile 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

CT0040011

Avon Water Co

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an assessment of sources of public drinking water maintained and operated by the Avon Water Co. 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 Avon Water Co 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 three wells 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 these wells 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.

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. 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.

ASSESSMENT RESULTS. Individual assessment summaries and recommendations to enhance source protection for the public drinking water source(s) listed below are presented in the attachments.

Location	Name of Drinking water Source(s)	Susceptibility Summary
Avon	Well 4 (Oxbow Drive) Well 7 (Avonwood)	Low High

Additional information about drinking water quality and treatment for this source(s) is available in the Avon Water Co's annual Consumer Confidence Report.

The assessment of this source(s) and other comparable drinking water sources throughout Connecticut generally finds that adopting recommendations similar to those presented in the attachment(s) could reduce the susceptibility of most groundwater sources to potential sources of contamination.

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue – MS# 51WAT
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CT0040011 *SOURCE WATER ASSESSMENT SUMMARY*

Avon Water Co

Well Name	Well Location	Well Type	DEP Groundwater Classification	Source Water Area (acres)
Well 4 (Oxbow Drive)	Avon	Drilled	GAA-Well	171

Factor	Source Water Assessment Ratings For This Well	Rating
I	Environmental Sensitivity	Low
II	Potential Risk Factors	Low
III	Source Protection Needs	Low
Overall Susceptibility to Potential Sources of Contamination		Low
This rating is intended to indicate susceptibility to potential sources of contamination that may be in the wellfield source water area and does not necessarily imply poor water quality.		

Assessment Factor		Initial Assessment Findings	Recommendations for Enhanced Source Protection
I	Contaminants Detected in Source Water	None	
I	General condition of well and related equipment	Good	Maintain well and equipment according to best management practices
II	DEP-inventoried Contaminant Release Points	There are no DEP-inventoried contaminant release points in the well's source water area	
II	Potential Sources of Contamination	There are no potential sources of contamination present in this well's source water area	
II	Source Water Area Land Use In The Town Of: Avon *(Based on Satellite Imagery developed by University of Conn.)*	Commercial/Industrial 0.0% Residential 13.6% Agricultural 2.4% Open or Undeveloped 84.1%	Proactively work with local officials and developers to insure that only low risk development occurs within the source water area. Support and encourage the acquisition of open space land within the source water area.
III	Land Area Around Wellhead	Public water system owns or controls entire 200 foot sanitary radius around well	
III	Local Aquifer Protection Regulations	There are no local aquifer protection regulations for this source water area	Support the development of local aquifer protection regulations
III	Local Government Source Protection Initiatives	Comprehensive drinking water source protection policies do not exist at the local governmental level	Promote the development of drinking water source protection policies at the local governmental level
III	Water System Source Protection Initiatives	Public water system maintains an adequate source protection program	Continue to maintain and enhance source water protection program

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
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CT0040011 *SOURCE WATER ASSESSMENT SUMMARY*

Avon Water Co

Well Name	Well Location	Well Type	DEP Groundwater Classification	Source Water Area (acres)
Well 7 (Avonwood)	Avon	Bedrock	GAA-Well	90

Factor	Source Water Assessment Ratings For This Well	Rating
I	**Environmental Sensitivity**	Low
II	**Potential Risk Factors**	Moderate
III	**Source Protection Needs**	High
Overall Susceptibility to Potential Sources of Contamination		High

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

Assessment Factor		Initial Assessment Findings	Recommendations for Enhanced Source Protection
I	**Contaminants Detected in Source Water**	None	
I	**General condition of well and related equipment**	Good	Maintain well and equipment according to best management practices
II	**DEP-inventoried Contaminant Release Points**	There are no DEP-inventoried contaminant release points in the well's source water area	
II	**Potential Sources of Contamination**	There is one potential source of contamination present in this well's source water area	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk
II	**Source Water Area Land Use** **In The Town Of:** **Avon** *(Based on Satellite Imagery developed by University of Conn.)*	Commercial/Industrial 0.0% Residential 34.9% Agricultural 22.1% Open or Undeveloped 42.9%	Proactively work with local officials and developers to insure that only low risk development occurs within the source water area. Support and encourage the acquisition of open space land within the source water area.
III	**Land Area Around Wellhead**	Public water system does not own or control entire 200 foot sanitary radius around well	Where feasible, increase ownership or control of 200 foot sanitary radius around the wellhead
III	**Local Aquifer Protection Regulations**	There are no local aquifer protection regulations for this source water area	Support the development of local aquifer protection regulations
III	**Local Government Source Protection Initiatives**	Comprehensive drinking water source protection policies do not exist at the local governmental level	Promote the development of drinking water source protection policies at the local governmental level
III	**Water System Source Protection Initiatives**	Public water system maintains an adequate source protection program	Continue to maintain and enhance source water protection program

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