

Community Water Supply Source Water Assessment

NILES

WSSN 04740

BERRIEN County

What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Well: WL010 - WELL 11-AIRPORT

Date SWA Complete 1/27/2015

Well Log and Location

A well log is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well log and submit it to the owner, local health department, and State since 1967. The lack of information from a well log may increase the SWAS. Wellog is an electronic database for well log information.

Wellog ID Number: 11000002155

Geologic Sensitivity

This score represents the degree of natural protection afforded by the materials overlying the water-bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g. clay). CPCM stands for Continuous Partially Confining Material (e.g. mix of sand and clay). More points are deducted for a thick clay layer than a thick sand layer or a thinner clay layer. Point Range 0-30.

Geologic Sensitivity - SWAS(G)

CCM Points Deducted: 15

CPCM Points Deducted: 6

Total SWAS(G) Points: 9

Geologic Sensitivity Rating: Moderate

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and how much water the well pumps, since larger volumes can pull contaminants from greater distances. Point Range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Construction - SWAS(W)

Well Grouting Points: 10

Well Age Points: 10

Casing Depth Points: 5

Pumping Rate Points: 15

Total SWAS(W) Points: 40

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents, fuel components), synthetic organic chemicals (pesticides or herbicides), inorganics (metals), or radionuclides. Tritium monitoring is included as a voluntary means of age-dating water. Generally, the older the water, the more protected the source. Point Range 0-50. (50 points = MCL exceedance)

*Sample Type = Raw Water, Entry Point, or Unknown.

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL). MCL exceedance caused by naturally occurring chemicals (arsenic, barium, etc.) are indicated as such in this report.

Water Chemistry and Isotope Data - SWAS(C)

Sample Type: Raw Water Tap

Nitrates and Nitrites: 0 SOC: 0

VOCs: 0 Inorganics: 20

Tritium Results: 0 Radionuclides: 0

MCL from Natural Source? No

MCL Chemical (if naturally occurring):

Treatment Installed? No

Total SWAS(C) Points: 20

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the source water protection area (SWPA), which is the 10-year time of travel capture zone (delineated area). For wells with no detectable level of tritium, the SWPA is a 2,000 feet radial area around wells. Points are also added if the water supply does not own or control a 200 feet isolation area (or another DEQ approved area). Examples: standard sources are septic tanks, sewer lines, and storm drains; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination. Point range indefinite.

Isolation from Contamination - SWAS(S)

Major Sources >= 200 ft and in SWPA: 0 x 10 = 0

Major Sources within 200 ft: 0 x 20 = 0

Standard Sources within 200 ft: 2.5 x 10 = 25

Known Sources within SWPA: 0 x 25 = 0

Control of Isolation Area: 0

Delineated Area: Traditional

Total SWAS(S) Points: 25

Source Water Assessment Score (SWAS)

The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score - SWAS

9	+	40	+	20	+	25	=	94
SWAS(G)		SWAS(W)		SWAS(C)		SWAS(S)		SWAS

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Of the over 2,400 community groundwater sources evaluated in the early 2000s, the percent of sources in each susceptibility category was:

Very Low = 1.6%

Low = 16.2%

Moderately Low = 34.5%

Moderate = 26.9%

Moderately High = 15.3%

High = 4.8%

Very High = .7%

Susceptibility Determination

Based on the above compilation of source geology, well construction, water chemistry, and potential contaminant sources, this public drinking water supply is determined to have a Susceptibility Rating of:

Moderately Low

Community Water Supply Source Water Assessment

NILES

WSSN 04740

BERRIEN County

What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Well: WL011 - WELL 12-WESTERN

Date SWA Complete 1/27/2015

Well Log and Location

A well log is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well log and submit it to the owner, local health department, and State since 1967. The lack of information from a well log may increase the SWAS. Wellogix is an electronic database for well log information.

Wellogix ID Number: 11000002266

Geologic Sensitivity

This score represents the degree of natural protection afforded by the materials overlying the water-bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g. clay). CPCM stands for Continuous Partially Confining Material (e.g. mix of sand and clay). More points are deducted for a thick clay layer than a thick sand layer or a thinner clay layer. Point Range 0-30.

Geologic Sensitivity - SWAS(G)

CCM Points Deducted: 12

CPCM Points Deducted: 15

Total SWAS(G) Points: 3

Geologic Sensitivity Rating: Moderate

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and how much water the well pumps, since larger volumes can pull contaminants from greater distances. Point Range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Construction - SWAS(W)

Well Grouting Points: 10

Well Age Points: 5

Casing Depth Points: 5

Pumping Rate Points: 10

Total SWAS(W) Points: 30

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents, fuel components), synthetic organic chemicals (pesticides or herbicides), inorganics (metals), or radionuclides. Tritium monitoring is included as a voluntary means of age-dating water. Generally, the older the water, the more protected the source. Point Range 0-50. (50 points = MCL exceedance)

*Sample Type = Raw Water, Entry Point, or Unknown.

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL). MCL exceedance caused by naturally occurring chemicals (arsenic, barium, etc.) are indicated as such in this report.

Water Chemistry and Isotope Data - SWAS(C)

Sample Type: Raw Water Tap

Nitrates and Nitrites:	10	SOCs:	0
VOCs:	0	Inorganics:	10
Tritium Results:	0	Radionuclides:	10
MCL from Natural Source?	No		
MCL Chemical (if naturally occurring):			
Treatment Installed?	No		

Total SWAS(C) Points: 30

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the source water protection area (SWPA), which is the 10-year time of travel capture zone (delineated area). For wells with no detectable level of tritium, the SWPA is a 2,000 feet radial area around wells. Points are also added if the water supply does not own or control a 200 feet isolation area (or another DEQ approved area). Examples: standard sources are septic tanks, sewer lines, and storm drains; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination. Point range indefinite.

Isolation from Contamination - SWAS(S)

Major Sources >= 200 ft and in SWPA:	0 x 10 =	0
Major Sources within 200 ft:	0 x 20 =	0
Standard Sources within 200 ft:	0 x 10 =	0
Known Sources within SWPA:	0 x 25 =	0
Control of Isolation Area:	0	
Delineated Area:	Traditional	

Total SWAS(S) Points: 0

Source Water Assessment Score (SWAS)

The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score - SWAS

3	+	30	+	30	+	0	=	63
SWAS(G)		SWAS(W)		SWAS(C)		SWAS(S)		SWAS

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Of the over 2,400 community groundwater sources evaluated in the early 2000s, the percent of sources in each susceptibility category was:

Very Low = 1.6%

Low = 16.2%

Moderately Low = 34.5%

Moderate = 26.9%

Moderately High = 15.3%

High = 4.8%

Very High = .7%

Susceptibility Determination

Based on the above compilation of source geology, well construction, water chemistry, and potential contaminant sources, this public drinking water supply is determined to have a Susceptibility Rating of:

Moderate

Community Water Supply Source Water Assessment

NILES

WSSN 04740

BERRIEN County

What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Well: WL008 - WELL 7-DECKER ST

Date SWA Complete 1/27/2015

Well Log and Location

A well log is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well log and submit it to the owner, local health department, and State since 1967. The lack of information from a well log may increase the SWAS. Wellogic is an electronic database for well log information.

Wellogic ID Number: 11000002180

Geologic Sensitivity

This score represents the degree of natural protection afforded by the materials overlying the water-bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g. clay). CPCM stands for Continuous Partially Confining Material (e.g. mix of sand and clay). More points are deducted for a thick clay layer than a thick sand layer or a thinner clay layer. Point Range 0-30.

Geologic Sensitivity - SWAS(G)

CCM Points Deducted: 30

CPCM Points Deducted: 0

Total SWAS(G) Points: 0

Geologic Sensitivity Rating: Low

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and how much water the well pumps, since larger volumes can pull contaminants from greater distances. Point Range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Construction - SWAS(W)

Well Grouting Points: 15

Well Age Points: 15

Casing Depth Points: 5

Pumping Rate Points: 10

Total SWAS(W) Points: 45

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents, fuel components), synthetic organic chemicals (pesticides or herbicides), inorganics (metals), or radionuclides. Tritium monitoring is included as a voluntary means of age-dating water. Generally, the older the water, the more protected the source. Point Range 0-50. (50 points = MCL exceedance)

*Sample Type = Raw Water, Entry Point, or Unknown.

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL). MCL exceedance caused by naturally occurring chemicals (arsenic, barium, etc.) are indicated as such in this report.

Water Chemistry and Isotope Data - SWAS(C)

Sample Type: Raw Water Tap

Nitrates and Nitrites: 10 SOC's: 0

VOCs: 0 Inorganics: 10

Tritium Results: 0 Radionuclides: 0

MCL from Natural Source? No

MCL Chemical (if naturally occurring):

Treatment Installed? No

Total SWAS(C) Points: 20

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the source water protection area (SWPA), which is the 10-year time of travel capture zone (delineated area). For wells with no detectable level of tritium, the SWPA is a 2,000 feet radial area around wells. Points are also added if the water supply does not own or control a 200 feet isolation area (or another DEQ approved area). Examples: standard sources are septic tanks, sewer lines, and storm drains; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination. Point range indefinite.

Isolation from Contamination - SWAS(S)

Major Sources \geq 200 ft and in SWPA: 0 x 10 = 0

Major Sources within 200 ft: 0 x 20 = 0

Standard Sources within 200 ft: 2 x 10 = 20

Known Sources within SWPA: 0 x 25 = 0

Control of Isolation Area: 0

Delineated Area: Traditional

Total SWAS(S) Points: 20

Source Water Assessment Score (SWAS)

The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score - SWAS

0 + 45 + 20 + 20 = 85
 SWAS(G) SWAS(W) SWAS(C) SWAS(S) SWAS

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Of the over 2,400 community groundwater sources evaluated in the early 2000s, the percent of sources in each susceptibility category was:

Very Low = 1.6%

Low = 16.2%

Moderately Low = 34.5%

Moderate = 26.9%

Moderately High = 15.3%

High = 4.8%

Very High = .7%

Susceptibility Determination

Based on the above compilation of source geology, well construction, water chemistry, and potential contaminant sources, this public drinking water supply is determined to have a Susceptibility Rating of:

Low

Community Water Supply Source Water Assessment

NILES

WSSN 04740

BERRIEN County

What is SWAS?

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Well: WL007 - WELL 8-CLAY

Date SWA Complete: 1/27/2015

Well Log and Location

A well log is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well log and submit it to the owner, local health department, and State since 1967. The lack of information from a well log may increase the SWAS. Wellogics is an electronic database for well log information.

Wellogics ID Number: 11000002178

Geologic Sensitivity

This score represents the degree of natural protection afforded by the materials overlying the water-bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g. clay). CPCM stands for Continuous Partially Confining Material (e.g. mix of sand and clay). More points are deducted for a thick clay layer than a thick sand layer or a thinner clay layer. Point Range 0-30.

Geologic Sensitivity - SWAS(G)

CCM Points Deducted: 12

CPCM Points Deducted: 0

Total SWAS(G) Points: 18

Geologic Sensitivity Rating: Moderate

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and how much water the well pumps, since larger volumes can pull contaminants from greater distances. Point Range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Construction - SWAS(W)

Well Grouting Points: 15

Well Age Points: 15

Casing Depth Points: 5

Pumping Rate Points: 10

Total SWAS(W) Points: 45

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents, fuel components), synthetic organic chemicals (pesticides or herbicides), inorganics (metals), or radionuclides. Tritium monitoring is included as a voluntary means of age-dating water. Generally, the older the water, the more protected the source. Point Range 0-50. (50 points = MCL exceedance)

*Sample Type = Raw Water, Entry Point, or Unknown.

Susceptibility is **Very High** if contaminants exceed the **Maximum Contaminant Level (MCL)**. MCL exceedance caused by naturally occurring chemicals (arsenic, barium, etc.) are indicated as such in this report.

Water Chemistry and Isotope Data - SWAS(C)

Sample Type: Raw Water Tap

Nitrates and Nitrites: 10 SOC's: 0

VOC's: 0 Inorganics: 10

Tritium Results: 0 Radionuclides: 0

MCL from Natural Source? No

MCL Chemical (if naturally occurring):

Treatment Installed? No

Total SWAS(C) Points: 20

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the source water protection area (SWPA), which is the 10-year time of travel capture zone (delineated area). For wells with no detectable level of tritium, the SWPA is a 2,000 feet radial area around wells. Points are also added if the water supply does not own or control a 200 feet isolation area (or another DEQ approved area). Examples: standard sources are septic tanks, sewer lines, and storm drains; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination. Point range indefinite.

Isolation from Contamination - SWAS(S)

Major Sources \geq 200 ft and in SWPA: $0 \times 10 = 0$

Major Sources within 200 ft: $0 \times 20 = 0$

Standard Sources within 200 ft: $1 \times 10 = 10$

Known Sources within SWPA: $0 \times 25 = 0$

Control of Isolation Area: 10

Delineated Area: Traditional

Total SWAS(S) Points: 20

Source Water Assessment Score (SWAS)

The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score - SWAS

18	+	45	+	20	+	20	=	103
SWAS(G)		SWAS(W)		SWAS(C)		SWAS(S)		SWAS

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Of the over 2,400 community groundwater sources evaluated in the early 2000s, the percent of sources in each susceptibility category was:

Very Low = 1.6%

Low = 16.2%

Moderately Low = 34.5%

Moderate = 26.9%

Moderately High = 15.3%

High = 4.8%

Very High = .7%

Susceptibility Determination

Based on the above compilation of source geology, well construction, water chemistry, and potential contaminant sources, this public drinking water supply is determined to have a Susceptibility Rating of:

Moderately Low

Community Water Supply Source Water Assessment

NILES

WSSN 04740

BERRIEN County

What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Well: WL009 - WELL PARKER ST

Date SWA Complete 1/27/2015

Well Log and Location

A well log is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well log and submit it to the owner, local health department, and State since 1967. The lack of information from a well log may increase the SWAS. Wellog is an electronic database for well log information.

Wellog ID Number: 11000002171

Geologic Sensitivity

This score represents the degree of natural protection afforded by the materials overlying the water-bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g. clay). CPCM stands for Continuous Partially Confining Material (e.g. mix of sand and clay). More points are deducted for a thick clay layer than a thick sand layer or a thinner clay layer. Point Range 0-30.

Geologic Sensitivity - SWAS(G)

CCM Points Deducted: 18

CPCM Points Deducted: 3

Total SWAS(G) Points: 9

Geologic Sensitivity Rating: Moderate

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and how much water the well pumps, since larger volumes can pull contaminants from greater distances. Point Range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Construction - SWAS(W)

Well Grouting Points: 10

Well Age Points: 5

Casing Depth Points: 5

Pumping Rate Points: 10

Total SWAS(W) Points: 30

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents, fuel components), synthetic organic chemicals (pesticides or herbicides), inorganics (metals), or radionuclides. Tritium monitoring is included as a voluntary means of age-dating water. Generally, the older the water, the more protected the source. Point Range 0-50. (50 points = MCL exceedance)

*Sample Type = Raw Water, Entry Point, or Unknown.

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL). MCL exceedance caused by naturally occurring chemicals (arsenic, barium, etc.) are indicated as such in this report.

Water Chemistry and Isotope Data - SWAS(C)

Sample Type: Raw Water Tap

Nitrates and Nitrites: 0 SOC's: 0

VOC's: 0 Inorganics: 20

Tritium Results: 0 Radionuclides: 0

MCL from Natural Source? No

MCL Chemical (if naturally occurring):

Treatment Installed? No

Total SWAS(C) Points: 20

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the source water protection area (SWPA), which is the 10-year time of travel capture zone (delineated area). For wells with no detectable level of tritium, the SWPA is a 2,000 feet radial area around wells. Points are also added if the water supply does not own or control a 200 feet isolation area (or another DEQ approved area). Examples: standard sources are septic tanks, sewer lines, and storm drains; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination. Point range indefinite.

Isolation from Contamination - SWAS(S)

Major Sources >= 200 ft and in SWPA: 0 x 10 = 0

Major Sources within 200 ft: 0 x 20 = 0

Standard Sources within 200 ft: 0 x 10 = 0

Known Sources within SWPA: 0 x 25 = 0

Control of Isolation Area: 0

Delineated Area: Traditional

Total SWAS(S) Points: 0

Source Water Assessment Score (SWAS)

The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score - SWAS

9 + 30 + 20 + 0 = 59
SWAS(G) SWAS(W) SWAS(C) SWAS(S) SWAS

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Of the over 2,400 community groundwater sources evaluated in the early 2000s, the percent of sources in each susceptibility category was:

Very Low = 1.6%

Low = 16.2%

Moderately Low = 34.5%

Moderate = 26.9%

Moderately High = 15.3%

High = 4.8%

Very High = .7%

Susceptibility Determination

Based on the above compilation of source geology, well construction, water chemistry, and potential contaminant sources, this public drinking water supply is determined to have a Susceptibility Rating of:

Moderately Low

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What is SWAS?

The Source Water Assessment Score (SWAS) is a process that factors geologic and water well attributes, water chemistry, and the potential contaminant sources for each drinking water source into a ranking system to determine the relative potential for contamination. Generally, sources with lower scores are considered to be less susceptible to contamination than sources with higher scores. However, exceptions do exist. This assessment is required by the Michigan Source Water Assessment Program (SWAP) under the provisions of the 1996 amendments to the Federal Safe Drinking Water Act.

Well: WL004 - WELL9-FRONT 2

Date SWA Complete 1/27/2015

Well Log and Location

A well log is a legal document describing the well location, construction, depth, soil formations penetrated, and capacity. Drilling contractors have been required to complete a well log and submit it to the owner, local health department, and State since 1967. The lack of information from a well log may increase the SWAS. Wellog is an electronic database for well log information.

Wellog ID Number: 11000002154

Geologic Sensitivity

This score represents the degree of natural protection afforded by the materials overlying the water-bearing formation. Lower scores indicate more protection. Points are deducted based on the thickness and type of geologic material that overlies the source of water. Surface contaminants migrate downward at varying rates dependent upon geological material and thickness. CCM stands for Continuous Confining Material (e.g. clay). CPCM stands for Continuous Partially Confining Material (e.g. mix of sand and clay). More points are deducted for a thick clay layer than a thick sand layer or a thinner clay layer. Point Range 0-30.

Geologic Sensitivity - SWAS(G)

CCM Points Deducted: 3

CPCM Points Deducted: 0

Total SWAS(G) Points: 27

Geologic Sensitivity Rating: Moderate

Well Construction

Points are added when a well lacks features that help protect the water supply from contamination. These include whether the well was grouted (sealing the space created between the casing and the soil formations during construction), the well age, how deep the casing extends into the ground, and how much water the well pumps, since larger volumes can pull contaminants from greater distances. Point Range 0-15.

Susceptibility increases one level if well construction reflects an adverse condition.

Well Construction - SWAS(W)

Well Grouting Points: 15

Well Age Points: 15

Casing Depth Points: 5

Pumping Rate Points: 10

Total SWAS(W) Points: 45

Water Chemistry and Isotope Data

Points are added if water sample results indicate detectable levels of nitrates or nitrites, volatile organic chemicals (solvents, fuel components), synthetic organic chemicals (pesticides or herbicides), inorganics (metals), or radionuclides. Tritium monitoring is included as a voluntary means of age-dating water. Generally, the older the water, the more protected the source. Point Range 0-50. (50 points = MCL exceedance)

*Sample Type = Raw Water, Entry Point, or Unknown.

Susceptibility is Very High if contaminants exceed the Maximum Contaminant Level (MCL). MCL exceedance caused by naturally occurring chemicals (arsenic, barium, etc.) are indicated as such in this report.

Water Chemistry and Isotope Data - SWAS(C)

Sample Type: Raw Water Tap

Nitrates and Nitrites: 0 SOCs: 0

VOCs: 0 Inorganics: 10

Tritium Results: 0 Radionuclides: 0

MCL from Natural Source? No

MCL Chemical (if naturally occurring):

Treatment Installed? No

Total SWAS(C) Points: 10

Isolation from Sources of Contamination

Points are added based on the number and type of potential contaminant sources within the source water protection area (SWPA), which is the 10-year time of travel capture zone (delineated area). For wells with no detectable level of tritium, the SWPA is a 2,000 feet radial area around wells. Points are also added if the water supply does not own or control a 200 feet isolation area (or another DEQ approved area). Examples: standard sources are septic tanks, sewer lines, and storm drains; major sources are chemical and fuel storage, landfills, lagoons, and known plumes of groundwater contamination. Point range indefinite.

Isolation from Contamination - SWAS(S)

Major Sources >= 200 ft and in SWPA: 5 x 10 = 50

Major Sources within 200 ft: 0 x 20 = 0

Standard Sources within 200 ft: 1 x 10 = 10

Known Sources within SWPA: 4 x 25 = 100

Control of Isolation Area: 10

Delineated Area: Traditional

Total SWAS(S) Points: 170

Source Water Assessment Score (SWAS)

The total SWAS is factored with the Geologic Sensitivity to determine the overall susceptibility to contamination.

Source Water Assessment Score - SWAS

<u>27</u>	+	<u>45</u>	+	<u>10</u>	+	<u>170</u>	=	<u>252</u>
SWAS(G)		SWAS(W)		SWAS(C)		SWAS(S)		SWAS

Susceptibility Determination

Susceptibility is a means to identify the relative potential of contamination for public water supply sources. Of the over 2,400 community groundwater sources evaluated in the early 2000s, the percent of sources in each susceptibility category was:

Very Low = 1.6%

Low = 16.2%

Moderately Low = 34.5%

Moderate = 26.9%

Moderately High = 15.3%

High = 4.8%

Very High = .7%

Susceptibility Determination

Based on the above compilation of source geology, well construction, water chemistry, and potential contaminant sources, this public drinking water supply is determined to have a Susceptibility Rating of:

Moderate