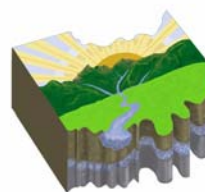


Drinking Water Source Assessment for the City of Conneaut Public Water System



Protecting
Ohio's Drinking
Water Sources

OhioEPA

SUMMARY

Source Water Assessment and

Protection. The following report for the City of Conneaut Public Water System was compiled as part of the Source Water Assessment and Protection Program for Ohio. This program is intended to identify drinking water protection areas and provide information on how to reduce the risk of contamination of the waters within those areas. The goal of the program is to ensure the long term availability of abundant and safe drinking water for the present and future citizens of Ohio.

The Safe Drinking Water Act Amendments of 1996 established the national Source Water Assessment and Protection Program, targeting drinking water sources for all public water systems in the United States. A public water system is a facility that provides drinking water to 15 or more service connections or that regularly serves at least 25 people a day for at least 60 days a year, whether from an underground well or spring, or from an above ground stream, lake, or reservoir. The requirement does not address residential wells or cisterns. In Ohio there are approximately 5,800 public water systems.

Background. The City of Conneaut operates a community public water system that serves a population of approximately 13,500 people through approximately 5,000 metered service connections. The water treatment system obtains its water from an intake structure located in Lake Erie. Plant design capacity is 3.0 million gallons per day, but current average production is about 1.68 million gallons per day.

Protection Areas. The drinking water source protection area for the City of Conneaut Water System is shown in the following figure. This report includes the

results of an inventory of all known or identified potential contaminant sources within the drinking water source protection area. The inventory was conducted by Ohio EPA with the assistance of City of Conneaut Water System staff. Possible threats to the surface water source include contamination from municipal wastewater treatment discharges, industrial waste water discharges, home sewage disposal system discharges, air contamination deposition, combined sewer overflows, runoff from residential, agricultural and urban areas, oil and gas production and transportation, and accidental releases and spills from vehicular traffic as well as from commercial shipping operations and recreational boating.

Protective Strategies. The ultimate goal of source water assessment is implementation of protective strategies that will better protect the drinking water source. Strategies for protecting Lake Erie should include the establishment (with routine updating) of an effective and efficient emergency response plan, as well as a plan to educate the responsible parties of potential contaminant sources. Routine monitoring of the intakes and consultation with U.S. Coast Guard officials regarding response to threats from spills and other sources are recommended. The City of Conneaut Water System contingency plan should be updated as necessary. According to the Ohio Lake Erie Commission (1998), Lake Erie is an exceptional source of high quality drinking water. In order to protect this source, an extensive and coordinated Lake Erie biological and water quality monitoring system should be implemented by local, state and federal agencies.

The City of Conneaut and other jurisdictions

comprising the protection area are encouraged to develop a local protection plan to protect the source of drinking water and to update current emergency management plans as applicable. Local watershed planning efforts may already be underway to guide stream restoration and protection activities. Some management measures are underway for Lake Erie through the Lake Erie Lakewide Management Plan (LaMP). These efforts can also serve to benefit the protection of drinking water sources. Guidance on how to form a Drinking Water Source Protection Team and protection plan is available from Ohio EPA by calling (614) 644-2752.

For More Information. Additional information on protective strategies and how this assessment was completed is included in the detailed Drinking Water

Source Assessment Report for the City of Conneaut Public Water System. For information on how to obtain a copy of this report, please visit Ohio EPA's Source Water Assessment and Protection Program Web page at <http://www.epa.state.oh.us/ddagw/pdu/swap.html> or contact the City of Conneaut Water System for a copy.

Current information on the quality of the treated water supplied by the City of Conneaut is available in the Consumer Confidence Report (CCR) for the City of Conneaut Public Water System. The CCR is distributed annually and it reports the most current detected contaminants and any associated health risks from data collected during the past five years. Consumer Confidence Reports are available from the City of Conneaut.

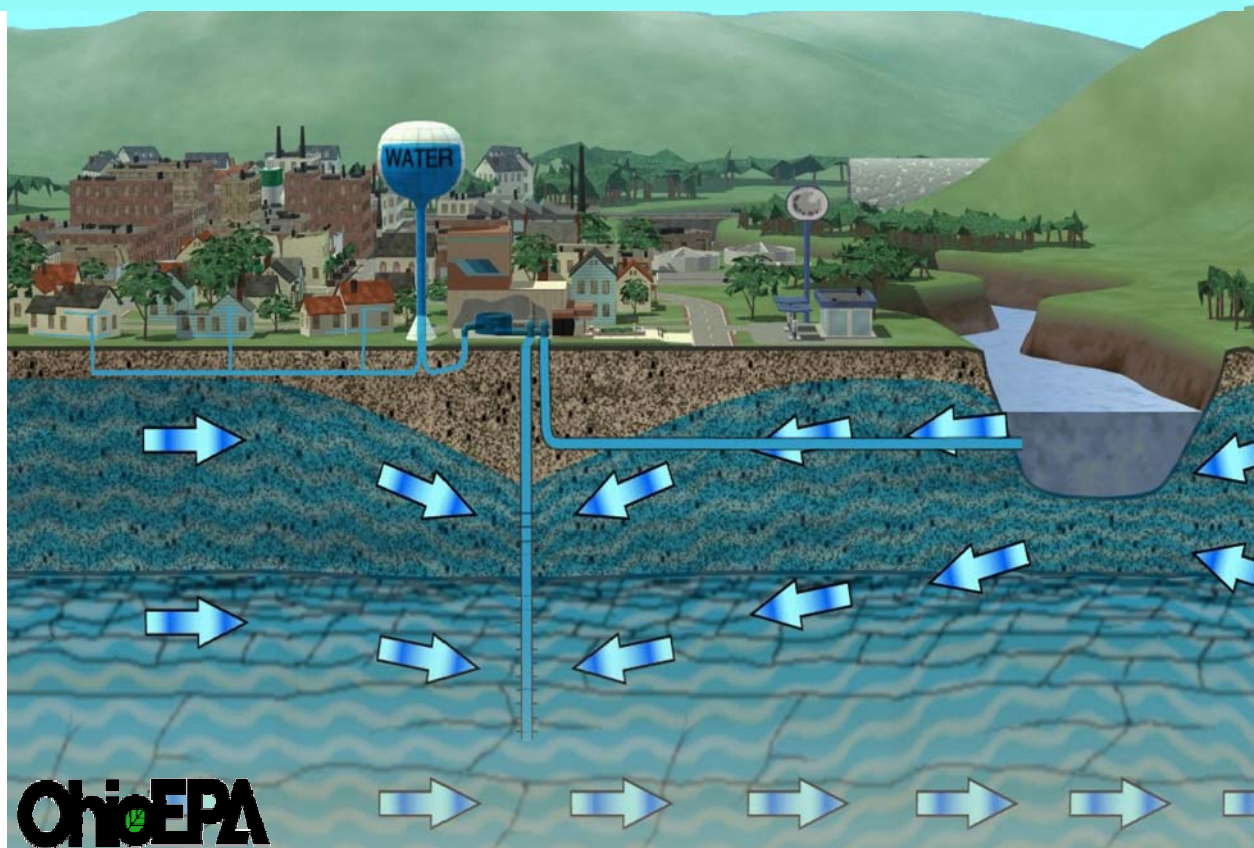
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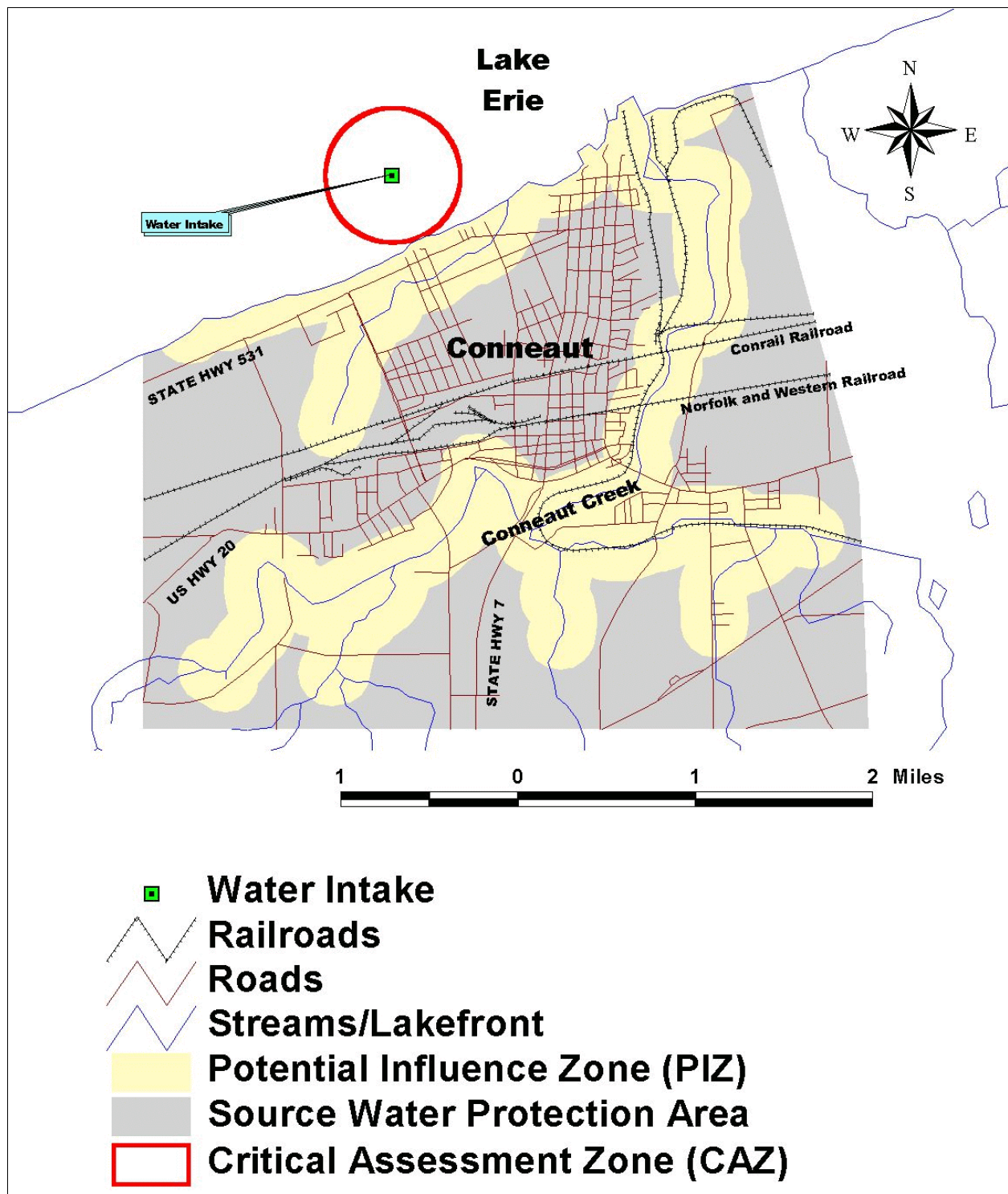
Public Water System #0400411

Ashtabula County

Prepared by:
Ohio Environmental Protection Agency
Division of Surface Water
Division of Drinking and Ground Waters

June, 2003





Summary Figure. Drinking Water Source Protection Area for the City of Conneaut.

How to Use this Assessment

Clean and safe drinking water is essential to everyone. Protecting the source of drinking water is a wise and cost effective investment. The purpose of this drinking water source assessment is to provide information your community can use to develop a local Drinking Water Protection Program. The Drinking Water Source Assessment benefits your community by providing the following:

A basis for focusing limited resources within the community to protect the drinking water source(s).

The assessment provides your community with information regarding activities within the Drinking Water Source Protection Area that directly affect your water supply source area. It is within this area that a release of contaminants, from a spill or improper usage, may travel through the watershed and reach the surface water intake. By examining where the source waters are most sensitive to contaminants, and where potential contaminants are located, the assessment identifies the potential risks that should be addressed first.

A basis for informed decision-making regarding land use within the community.

The assessment provides your community with a significant amount of information regarding where your drinking water comes from (the source) and what the risks are to the quality of that source. This information allows your community planning authorities to make informed decisions regarding proposed land uses within the protection area that are compatible with both your drinking water resource and the vision of growth embraced by your community.

A start to a comprehensive plan for the watershed and source water area.

This assessment can be the beginning of a comprehensive plan for the water resource, one that addresses all of the uses the water resource provides. An ecologically healthy lake, stream and watershed will provide a stable, high quality resource for drinking water.

For information about developing a local Drinking Water Source Protection Program, please contact the Ohio EPA Division of Drinking and Ground Waters at (614) 644-2752 or visit the Division's web site at <http://www.epa.state.oh.us/ddagw/pdu/swap.html>.

1.0 INTRODUCTION

The 1996 Amendments to the Safe Drinking Water Act established a program for states to assess the drinking water source for all public water systems. The Source Water Assessment and Protection (SWAP) Program is designed to help Ohio's public water systems protect their sources of drinking water from becoming contaminated.

The purpose of this assessment is to identify where and how the City of Conneaut's source waters are at risk of contamination. The report:

- identifies the drinking water source protection area which is comprised of the Critical Assessment Zone (CAZ) and the Potential Influence Zone (PIZ),
- examines the characteristics and water quality of Lake Erie and the watershed,
- inventories the potential contaminant sources within the drinking water source protection area and evaluates impacts associated with shipping operations, and
- discusses the susceptibility of the source water to contamination.

Finally, the report suggests actions that the public water supplier and local community may take to reduce the risk of contaminating their source of drinking water and ensure the long term availability of abundant and safe drinking water resources.

Results and recommendations presented in this report are based on the information available at the time of publication. Ohio EPA recognizes that additional information may become available in the future that could be used to more accurately determine the drinking water source protection area. Also, changes in land use may occur after Ohio EPA completes the potential contaminant source inventory. This report should be used as a starting point to develop a plan to protect drinking water resources.

This report was written by Kelvin Rogers, Division of Surface Water, Ohio EPA, Northeast District Office. The City of Conneaut Water Plant superintendent and staff assisted in the development of this report.

2.0 PUBLIC WATER SYSTEM DESCRIPTION

The City of Conneaut operates the Conneaut community public water system, which serves a population of approximately 13,500 people through 5,000 metered service connections. A community public water system is a system that regularly supplies drinking water from its own sources to at least 15 service connections used by year-round residents of the area or regularly serves 25 or more people throughout the entire year.

The water treatment system obtains its water from Lake Erie. The City of Conneaut Water System maintains one intake structure with three cribs in the lake. The intake structure was installed in 1933 and is inspected and cleaned on an annual basis. Two of the three cribs have been recently repaired, with the third scheduled for maintenance this year. A potassium permanganate feed at the intake is used for zebra mussel control.

The Conneaut Water Treatment facility was constructed in 1933. Plant design capacity is 3.0 million gallons per day (MGD), with a current average production of 1.68 MGD. The treatment processes include screening, chemical addition, rapid mixing, flocculation, sedimentation, rapid sand filtration, fluoridation and chlorination prior to distribution. Four elevated water storage tanks and one standpipe provide approximately 1.97 million gallons of storage.

3.0 DELINEATION OF PROTECTION AREAS

The drinking water protection area is comprised of the Critical Assessment Zone (CAZ) and the Potential Influence Zone (PIZ). To provide some continuity for assessing the Great Lakes intakes, the concept of a Critical Assessment Zone around each intake was developed (Great Lakes States Protocol Workgroup, August 12, 2000). The two factors used to determine the sensitivity of Great Lakes intakes are the perpendicular distance from shore or length of the intake pipeline (L) in feet, and the water depth (D) of the structure in feet. The shallower, near-shore intakes are more sensitive to shoreline influences than the offshore, deep intakes. The factor for sensitivity (S) can be calculated by the formula: $L \times D = S$. Generally, S values less than 25,000 represent highly sensitive intakes while S values greater than 125,000 indicate lower sensitivities. See Figure 1 for the location and delineation of the CAZ and PIZ for the City of Conneaut Public Water System.

The intake structure is located approximately 1,900 feet from shore, at a depth of approximately 20 feet. The S value for the intake was calculated to be 38,000. In accordance with the Assessment Protocol, for S values more than 25,000 but less than 125,000, a 2000-foot radius around the intake should be used to delineate the Critical Assessment Zone (CAZ). Accordingly, a 2000-foot radius circle was delineated around the intake as the CAZ.

The protection area also includes the Potential Influence Zone (PIZ), which is broadly defined as the area along any contributing tributaries for a length that would encompass known potential contaminant sources or land uses that may impact the drinking water source. Any portion of shoreline that intercepts the CAZ is considered a Potential Influence Zone. In addition, an area 1,000 feet wide was delineated on the Lake Erie shoreline near the Critical Assessment Zone plus a 1,000 foot wide area extending up the lower sections of Conneaut Creek. See Figure 1 for the location and delineation of the CAZ and PIZ for the City of Conneaut Public Water System.

4.0 HYDROLOGIC SETTING

Drinking Water Quality Summary

Available biological and chemical water quality data collected from the protection area and sampling results from finished water reported to Ohio EPA by the public water system were screened for possible water quality impacts. A review of the Conneaut Public Water System compliance monitoring data from 1991 through 2002 revealed no problems with any contaminants of concern that could be related to the Lake Erie source water. Table 1 provides a summary of water quality monitoring results of treated water for the Conneaut Public Water System.

Biological and Chemical Monitoring

Water plant personnel monitor the Lake Erie source water daily for turbidity, hardness, pH, and alkalinity. The facility also participates in monitoring common Synthetic Organic Compounds (SOCs) under Ohio EPA's annual program. Seasonal source water variations (lake turnover) and severe weather patterns affect plant operations that require changes in chemical dosing. Elevated turbidity levels indicate an increase in total suspended solids which may affect the level of treatment required by the treatment plant.

For the past decade or more, monitoring of water quality and biological characteristics of Lake Erie waters has not occurred on a regular basis. Although the 2000 Lake Erie Lakewide Management Plan has determined there are no use impairments to the drinking water, it does

state that Lake Erie is in a state of flux and there is a distinct need for biological and water quality monitoring of the waters. It is recommended that state or federal agencies institute a coordinated long-term biological and water quality monitoring program or strategy in order to recognize current and future changes in the Lake Erie ecosystem that may impact source water quality.

In 1995 the Ohio EPA conducted a Biological and Water Quality Survey of Conneaut Creek. Three sites were sampled, all upstream of the source water protection area. The survey sites were found to be in full attainment with the Exceptional Warmwater Habitat aquatic life use and Ohio Water Quality Criteria for chemical parameters. The survey noted the excellent habitat quality and outstanding natural resource value of Conneaut Creek in these areas.

It should also be recognized that sampling results presented in this report can only provide information on the quality of the water at the time the sample was collected. Water quality may change over time due to a number of reasons. Therefore, it is recommended the reader consults the most recent Consumer Confidence Report (CCR) for the Conneaut Public Water System. All community public water systems are required to annually prepare and distribute the CCR to their customers. This report is a good source of information of health effects associated with detected contaminants. The reports contain information on the community's drinking water, including the source of the water, contaminants detected, the likely sources of detected contaminants, and the potential health effects of contaminants at levels above the drinking water standards.

5.0 POTENTIAL CONTAMINANT SOURCES

A review of available regulated facility data bases and a field survey of the Potential Influence Zone (PIZ) indicates that 24 oil/gas production wells and 33 potential contaminant sources are present in the PIZ. Table 2 provides a list of the identified potential contaminant sources in the PIZ. The location of potential contaminant sources in the PIZ is shown in Figure 2. The location of oil/gas production wells in the PIZ is shown in Figure 3.

It is important to note that this inventory represents *potential* contaminant sources, and includes any source that has the *potential* to release a contaminant to surface waters in the protection area. It is beyond the scope of this study to determine whether any specific potential source is actually releasing a contaminant, or to what extent any potential source(s) may be contributing to the overall pollutant load. The sites noted as having the potential for contamination from Leaking Underground Storage Tanks (LUSTs) were identified by databases available at the time of this source water assessment. Although some of these sites may have been remediated, the potential exists for the soils around these sites to contain some petroleum contamination. For this reason, it was decided to retain these LUST sites in the Potential Contaminant Source Inventory.

The Lake Erie nearshore areas have multiple land uses, all of which have components that could become potential sources of contamination for the source water supply including urban, suburban and rural storm water runoff, new construction site activities, river bank and lake shoreline erosion. As development of the Lake Erie nearshore areas increases, more land will be put under impervious surfaces. This will increase both volume and force of runoff and increase the potential for contamination from land use activities.

Conneaut Harbor is a commercial shipping port for dry-bulk cargo, primarily coal. In the 2002 navigation season approximately 5.7 million tons of coal were shipped from Conneaut, down

from more than 7 million tons in 2001. Although these dry-bulk materials are relatively inert with little potential for contamination of lake or tributary waters, accidental spills or releases from commercial vessels may cause contamination in the immediate areas where such releases occur.

The transportation network in the Potential Influence Zone is a potential source of contamination through vehicular accidents that release hazardous materials. There are 26.6 miles of state and municipal roads (with 20 stream crossings) in the Conneaut Plant PIZ and 8.5 miles of rail lines (with 10 stream crossings) located within the PIZ.

The City of Conneaut Waste Water Treatment Plant discharges to Lake Erie near the mouth of Conneaut Creek, which is located just east of the water plant intake.

6.0 SUSCEPTIBILITY ANALYSIS

For the purposes of source water assessments, all surface waters are considered to be susceptible to contamination. By their nature surface waters are accessible and can be easily contaminated by chemicals and pathogens. Also, compared to ground water, they tend to move swiftly, so an upstream spill may rapidly arrive at the public drinking water intake with little warning or time to prepare. Based on information compiled for this assessment, the Conneaut drinking water protection area is susceptible to contamination from municipal wastewater treatment discharges, industrial waste water discharges, air contamination deposition, runoff from residential and urban areas, contaminated river sediments, oil and gas production and transportation, and accidental releases and spills from rail and vehicular traffic as well as from commercial shipping operations and recreational boating. The threat to water quality from activities in the Potential Influence Zone must be considered relatively low, because the drinking water intake is located at some distance from the shoreline. The threat posed by commercial shipping operations and recreational boating is likely more significant.

It is important to note that this assessment is based on available data, and therefore may not reflect current conditions in all cases. Water quality, land uses and other activities that are potential sources of contamination may change with time. Although the source water (Lake Erie) for the Conneaut Public Water System was determined to be susceptible to contamination, historically, the treatment plant has effectively treated this source water to meet drinking water quality standards.

7.0 PROTECTIVE STRATEGIES

Source water protection efforts in the City of Conneaut drinking water source protection area should be directed toward the establishment of an effective and efficient emergency response plan as well as a plan to educate the responsible parties of potential contaminant sources if one does not currently exist.

Lake Erie/Critical Assessment Zone (CAZ)

Source water protection efforts in the Critical Assessment Zone should focus on continued monitoring of Lake Erie water quality and coordination with U.S. Coast Guard officials regarding response to spill, releases or other threats to intakes. In addition, the water system should provide education to consumers, local municipal officials and businesses on strategies to reduce contaminated storm water runoff. **Extending the intake structures further into Lake Erie would decrease the system's susceptibility to increased turbidity levels from lakeshore washing and erosion.** The water system may consider supporting prohibitions or limitations on oil and

gas exploration in Lake Erie where it could directly impact the quality of the source water. Finally, Ohio EPA encourages a coordinated long-term Lake Erie biological and water quality monitoring program, including support of the Lake Erie Lakewide Management Plan (LaMP).

Future development and a change in land use practices and water activities may impact the ecological health of Lake Erie and degrade its water quality. This valuable water system should be protected to avoid further degradation of water quality by the excessive loadings of nutrients and suspended solids. Watershed management plans for this area should be drafted and utilized to guide future protection activities.

Potential Influence Zone (PIZ)

Some protective strategies that may be applicable to the PIZ include:

Commercial/Industrial Activities

- Provide education (material/meetings) to local businesses on topics such as testing and maintenance requirements.
- Use routine inspections as an educational opportunity.
- Monitor compliance with existing regulations through inspections and/or contact with regulatory agencies (such as the local fire department or the Ohio EPA).
- Encourage/arrange hazardous materials training for local businesses and their employees.
- Encourage/arrange waste and disposal assessments for local businesses.
- Request installation of engineering controls for existing facilities.
- Encourage facility spill/contingency planning (also consider working with fire departments).
- Encourage local businesses to implement pollution prevention strategies.

Oil & Gas Production Wells

- Provide education (material/meetings) to owners and land owners on maintenance.
- Ensure/monitor proper operation and maintenance.
- Develop an early warning system for accidental spills/releases.

Transportation and Spills

- Contact the Coast Guard, local fire department and local emergency planning agency about the location of the drinking water source protection area.
- Develop an early warning system for spills/releases.
- Municipally led emergency planning.
- Include drinking water source protection in response planning and response personnel training.
- Work with local transporters on protection area awareness.
- Create hazardous materials routes around the protection area and require/encourage transporters to use them.

Education and Outreach

Informing people who live, work, or own property within your protection area about the benefits of drinking water protection is very important. Although some communities develop their own educational outreach resources, assistance is available at no cost from various agencies. For

example, staff from Ohio EPA's Office of Pollution Prevention can visit businesses (free of charge) and provide recommendations on how they can modify their processes, materials and practices to generate less pollution in a cost-effective and technically feasible manner. An effort should be made to educate homeowners and businesses of the potential threat their activities can pose to the water supply.

Coordination with Existing Activities

Many local groups are engaged in programs that complement public water source protection efforts. Working with groups such as the Natural Resources Conservation Service, the local Soil and Water Conservation Service, the Farm Bureau, or a local watershed planning organization ensures coordination of their respective programs.

Zoning Ordinances

A water protection zoning ordinance is a regulatory control that typically places some restrictions or standards on activities conducted within a specified zone (such as the Potential Influence Zone). Such ordinances enable the municipality to require people who live or work in the area to avoid contaminating the source of the drinking water. Ordinances can help ensure best management practices are being employed at local businesses and can help reduce the volume of contaminants stored within the protection area. The City of Conneaut Public Water System may want to consider working with the townships and municipalities in the protection area to develop zoning overlays that require specific standards for chemical storage, handling of waste materials, and other source control strategies. Several communities in Ohio have enacted very successful drinking water source protection ordinances. Copies can be obtained by contacting Craig Smith at (614) 644-3144.

Future development and a change in land use practices and water activities may impact the ecological health of Lake Erie and affect the CAZ. This valuable water system should be protected to avoid further degradation of water quality by the excessive loading of nutrients and suspended solids. Watershed management plans for this area should be drafted and should be utilized to guide future protection activities.

8.0 REFERENCES

The Gazetteer of Ohio Streams, Ohio Department of Natural Resources, Division of Water, 1960

Biological and Water Quality Study of The Grand and Ashtabula River Basins including Arcola Creek, Cowles Creek and Conneaut Creek - Ashtabula, Geauga, Lake and Trumbull Counties. OEPA Technical Report Number MAS/1996-11-5. State of Ohio Environmental Protection Agency, Division of Surface Water, Ecological Assessment Unit. January 7, 1997.

Lake Erie LaMP 2000 and 2002 Update Reports, U.S. EPA and Ohio EPA.

**Table 1. Water Quality Monitoring Summary of Treated Water
City of Conneaut Public Water System**

Ohio EPA Public Water System Compliance Monitoring Database (1991- 2002)

Contaminant (units)	Levels Found	Primary MCL	Exceeds MCL ¹	Typical Source
Inorganic Contaminants				
Arsenic (µg/l)	0.21	50	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (mg/l)	0.021	2	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (µg/l)	1.28	100	No	Discharge from steel and pulp mills; Erosion of natural deposits
Copper (mg/l)	0.02 - 1.47	AL=1.3	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Fluoride (mg/l)	0.68 - 1.1	4	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead (µg/l)	2.0 - 6.0	AL=15	No	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrate (mg/l)	0.12 - 2.4	10	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Phosphorus (mg/l)	0.03 - 0.90	none	NA	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits; Discharge of industrial waste
Sulfate (mg/l)	26.0	none	NA ²	Erosion of natural deposits; decomposition product of organic matter; discharge from mining and industrial waters; detergents in sewage; component of precipitation in metropolitan areas
Radioactive Contaminants				
Beta/photon emitters (pCi/L)	4.5 - 5.7	AL=15	No	Decay of natural and man-made deposits
Volatile Organic Contaminants				
Dichloromethane (µg/l)	1.47	5	No	Discharge from pharmaceutical and chemical factories
TTHMs [Total Trihalomethanes] (µg/l)	12.4 - 74.1	80	No ³	By-product of drinking water chlorination
Bromodichloromethane (µg/l)	1.4 - 19.1	none	NA ³	By-product of drinking water chlorination
Chloroform (µg/l)	1.10 - 47.3	none	NA ³	By-product of drinking water chlorination
Bromoform (µg/l)	0.5 - 1.3	none	NA ³	By-product of drinking water chlorination
Dibromochloromethane (µg/l)	0.8 - 7.7	none	NA ³	By-product of drinking water chlorination
Dibromoacetic Acid (µg/l)	1.2 - 2.2	none	NA ³	By-product of drinking water chlorination
Dichloroacetic Acid (µg/l)	3.2 - 23.2	none	NA ³	By-product of drinking water chlorination
Trichloroacetic Acid (µg/l)	2.1 - 11.8	none	NA ³	By-product of drinking water chlorination
Monobromoacetic Acid (µg/l)	1.8	none	NA ³	By-product of drinking water chlorination
Monochloroacetic Acid (µg/l)	1.8	none	NA ³	By-product of drinking water chlorination

MCL = Maximum Contaminant Level (AL = Action Level).

¹ MCL set by federal or state drinking water standards. A sampling result that exceeds the MCL value does not necessarily indicate a violation by the public water system. MCL violations for many contaminants are based on a running annual average.

² Secondary Maximum Contaminant Level (SMCL) for this parameter. SMCLs are non-health-related limits.

³ Total Trihalomethanes (TTHMs): (MCL = 0.80 mg/l) calculated as the sum of the concentrations of Bromodichloromethane, Dibromochloromethane, Bromoform, and Chloroform.

Five Haloacetic Acids (HAA5): (MCL = 0.060 mg/l) calculated as the sum of the concentrations of Monochloroacetic acid, Dichloroacetic acid, Trichloroacetic acid, Monobromoacetic acid, and Dibromoacetic acid.

Table 2 - Potential Contaminant Source Inventory for the City of Conneaut Drinking Water Protection Area (Map ID number corresponds to Figure 2, page 12 of this report)			
Map ID	Unique ID	Source Description	Data Source
1	LUST004847500	Leaking Underground Tank	BUSTR: LUST database
2	LUST041303600	Leaking Underground Tank	BUSTR: LUST database
3	LUST042254600	Leaking Underground Tank	BUSTR: LUST database
4	LUST042315600	Leaking Underground Tank	BUSTR: LUST database
5	LUST042330600	Leaking Underground Tank	BUSTR: LUST database
6	LUST043091300	Leaking Underground Tank	BUSTR: LUST database
7	LUST044072500	Leaking Underground Tank	BUSTR: LUST database
8	LUST044100200	Leaking Underground Tank	BUSTR: LUST database
9	LUST045085400	Leaking Underground Tank	BUSTR: LUST database
10	LUST045126400	Leaking Underground Tank	BUSTR: LUST database
11	LUST048085600	Leaking Underground Tank	BUSTR: LUST database
12	LUST048087000	Leaking Underground Tank	BUSTR: LUST database
13	LUST430197300	Leaking Underground Tank	BUSTR: LUST database
14	000007370298	NPDES (wastewater discharge point)	US EPA Envirofacts
15	000008048202	NPDES (wastewater discharge point)	US EPA Envirofacts
16	OHD061723045	Hazardous waste generator or handler	US EPA Envirofacts
17	OHD980618284	NPDES (wastewater discharge point)	US EPA Envirofacts
18	OHD987022969	Hazardous waste generator or handler	US EPA Envirofacts

Map ID	Unique ID	Source Description	Data Source
19	OHD987052412	Hazardous waste generator or handler	US EPA Envirofacts
20	CEM0749	Cemetery	USGS Geonames
21	CEM1118	Cemetery	USGS Geonames
22	204-0867	Steel plant	Ohio EPA-DERR MSL GIS layer
23	SIM0041	Water plant	OEPA-DSW Surface Impoundment GIS Layer
24	SIM0062	Surface Impoundment	OEPA-DSW Surface Impoundment GIS Layer
25	SIM0068	Sewage treatment plant (sludge)	OEPA-DSW Surface Impoundment GIS Layer
26	TGA0005	Coal gas	OEPA Town Gas Sites GIS Layer
27	MIL0019	Military facility	USGS Geonames
28	D0400411	Golf course	Field survey
29	D0400411	Marina/boat docks	Field survey
30	D0400411	Marina/boat docks	Field survey
31	D0400411	Railroad yards/ maintenance area	Field survey
32	D0400411	Car/boat/camper dealership	Field survey
33	D0400411	Junk yards (scrap and auto)	Field survey

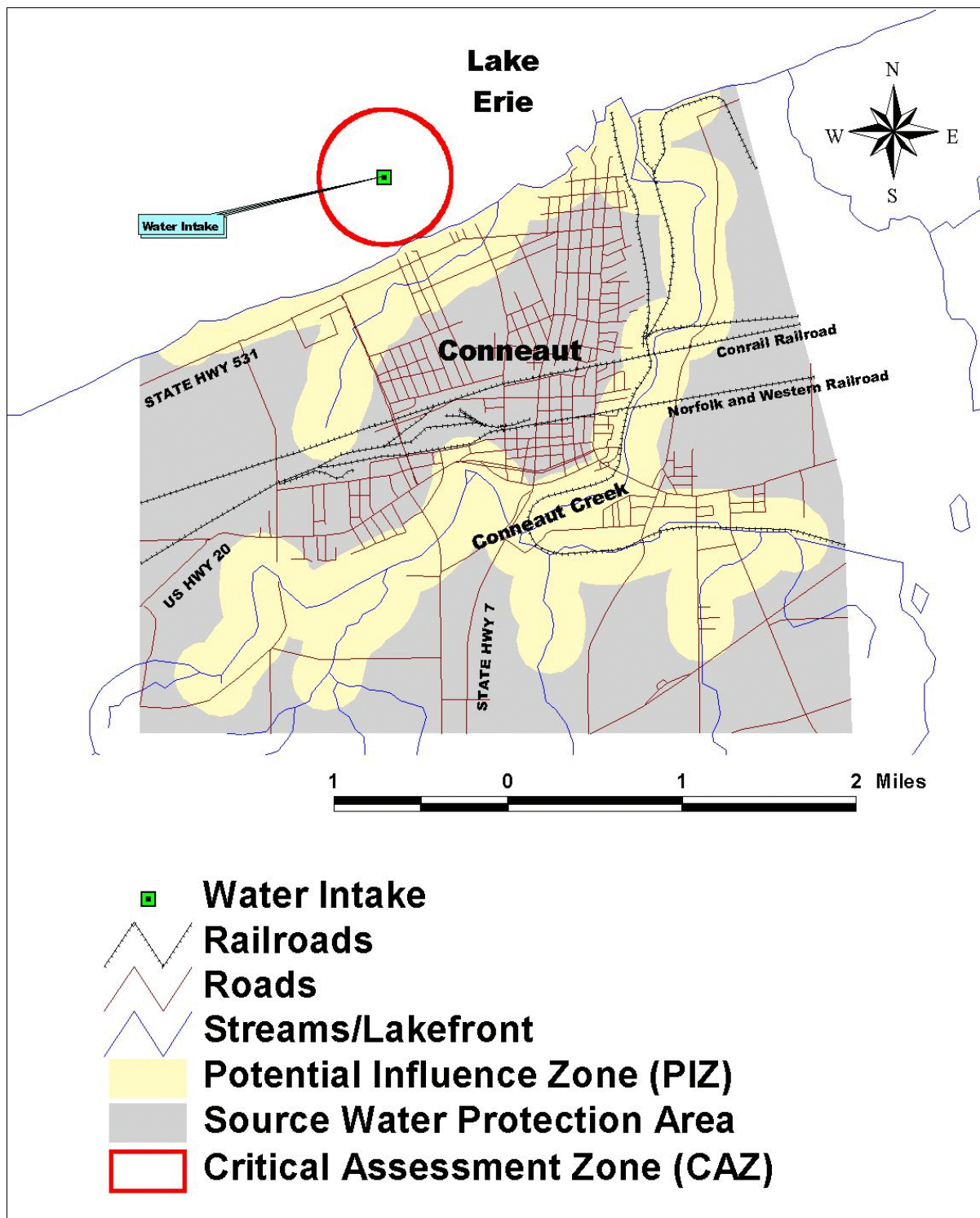


Figure 1. Drinking Water Source Protection Area (Critical Assessment Zone and Potential Influence Zone) for the City of Conneaut Public Water System.

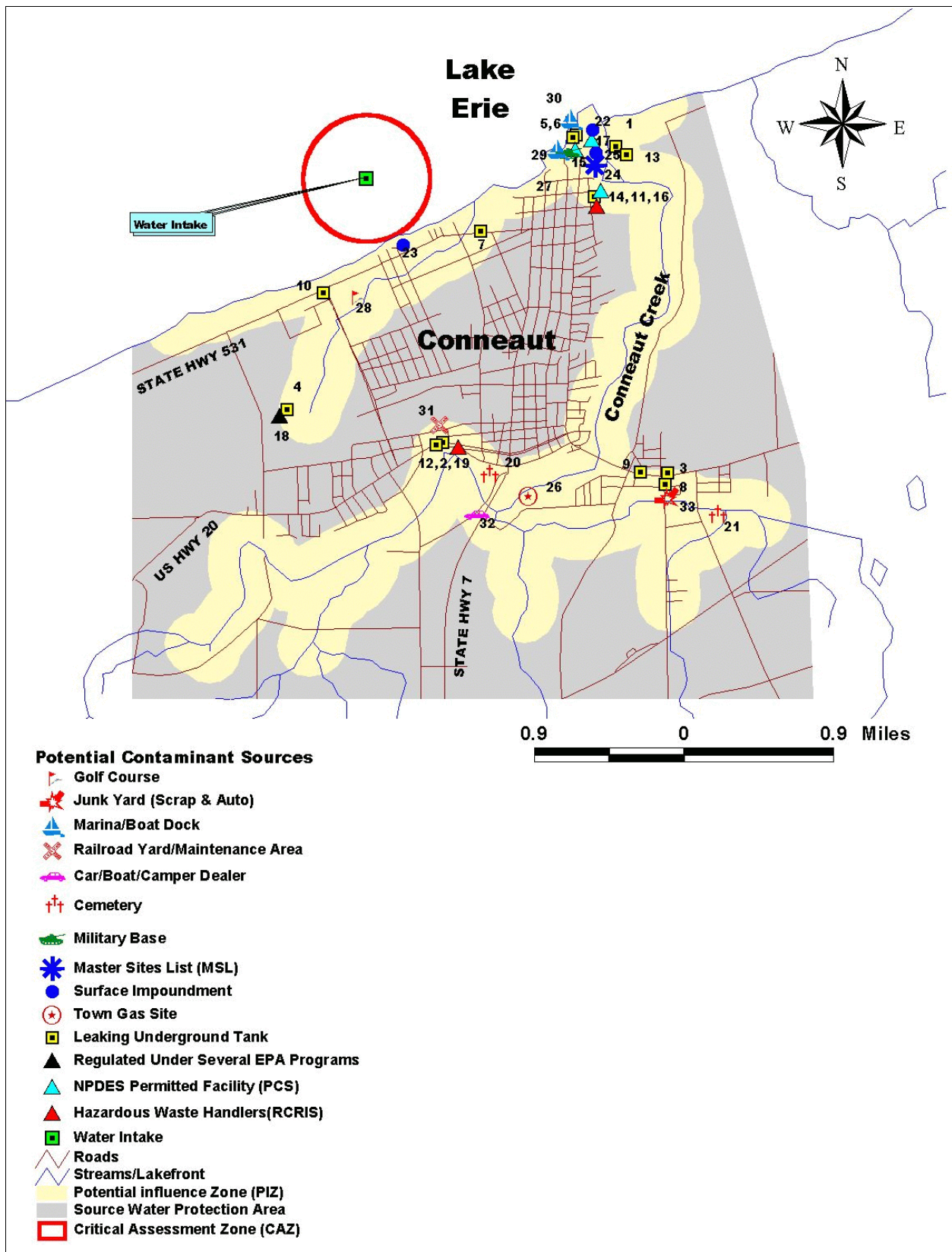


Figure 2. Potential Contaminant Sources in the Conneaut Potential Influence Zone.

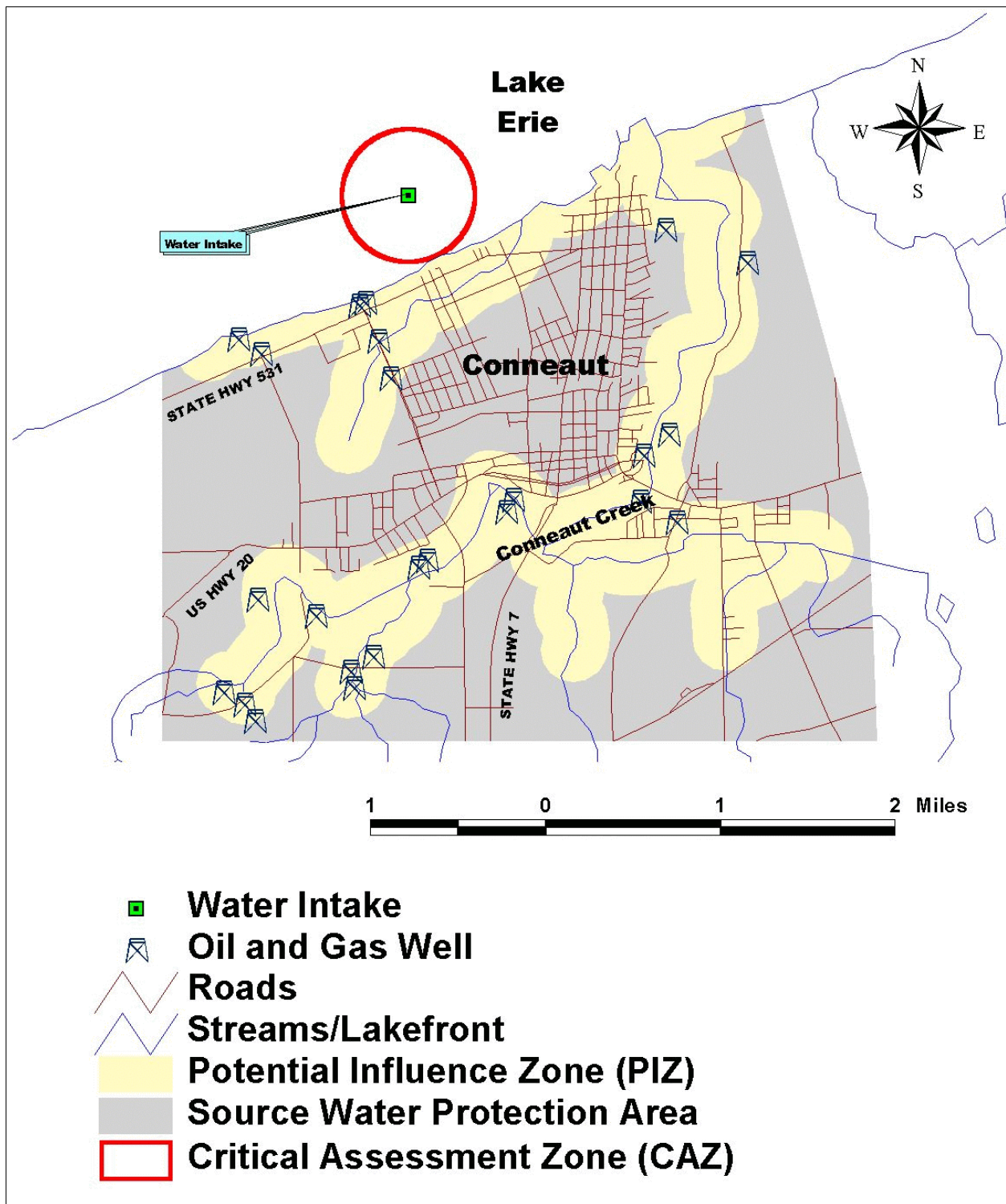


Figure 3. Oil and Gas Production in the Conneaut Potential Influence Zone