	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: November 24, 1993	Subject: Determination of Ground Water Under the Direct Influence of Surface Water		Category: <input type="checkbox"/> Internal/Administrative <input type="checkbox"/> External/Noninterpretive <input checked="" type="checkbox"/> External/Interpretive
Revised Date:	Division/Office and Program Names: ODWMA-Public Water System Supervision Program		
Reformatted Date: January 7, 2013	Number: ODWMA-399-008	Page: 1 of 3	

A Department of Environmental Quality (DEQ) Policy and Procedure cannot establish regulatory requirements for parties outside of the DEQ. This document provides direction to DEQ staff regarding the implementation of rules and laws administered by the DEQ. It is merely explanatory; does not affect the rights of, or procedures and practices available to, the public; and does not have the force and effect of law.

INTRODUCTION, PURPOSE, OR ISSUE

Part 8, Ground Water Sources, of the Administrative Rules (Part 8 Rules) promulgated pursuant to the Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), addresses requirements for public water systems that utilize groundwater as a source. It is the responsibility of Office of Drinking Water and Municipal Assistance (ODWMA) and local health department staff through approving construction plans, conducting routine surveillance, performing sanitary surveys, and reviewing vulnerability assessments to determine if a groundwater source does not meet these requirements and to make a determination if the source may be groundwater under the direct influence (GWUDI) of surface water. This policy is designed to provide procedures and guidance for staff to use when making such a determination.

AUTHORITY:

Rule 325.10611 of the Act 399, and Administrative Rules

STAKEHOLDER INVOLVEMENT:

This policy was developed by managers of the public water supply supervision program when the drinking water program was located in the Department of Public Health. The primary purpose was to satisfy United States Environmental Protection Agency (USEPA) primacy requirements under the original surface water treatment rules implemented in the early 1990s. At the time, this policy was intended for internal guidance and was formulated prior to any requirement to involve stakeholders in such documents.

DEFINITIONS:

GWUDI water means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH, that closely correlate to climatological or surface water conditions. The DEQ will determine direct influence for individual sources in accordance with this definition and Rule 325.10611(1) and will notify the supply of its determination.

OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
POLICY AND PROCEDURE

Number: ODWMA-399-008

Subject: Determination of Ground Water Under the Direct Influence
of Surface Water

Page 2 of 3

PROCEDURES:

The following factors will be considered by ODWMA staff when determining whether a groundwater source will need further study:

1. Unsafe microbiological or chemical history of samples collected from a groundwater source. Determine if there have been any disease outbreaks caused by Giardia, Cryptosporidium, or other pathogenic organisms associated with inadequately treated surface water. Determine whether chemical contaminants that are surface water in origin are present.
2. Standard isolation areas that include potential sources of contamination such as storm or sanitary sewers, septic tanks, tile fields and seepage pits, or those isolation areas that are less than the required distances as specified in the Administrative Rules.
3. Location or construction of the well that will allow the entry of surface water into the well (subject to flooding).
4. Hydrogeological conditions that could lead to direct surface influence on the quality of the groundwater such as fractured limestone.
5. Construction of the well that does not meet construction codes as defined by Rule 325.10611(1) and all other applicable well construction requirements in Act 399.
6. Wellhead protection programs where delineation of the capture zone has determined that immediate direct recharge is occurring from surface water.

Any further study will be the responsibility of the water supply with assistance from the ODWMA and may include:

1. A sanitary survey of the groundwater source.
2. Additional monitoring to determine whether the source is considered GWUDI. Parameters to be investigated by the water supplier include pH, conductivity, turbidity, and temperature at some specified frequency. Bacteriological quality and microparticulate analysis for organisms that are associated with surface water over a six-month period of time (or longer) will also be necessary at the source suspected for GWUDI. Such surface water indicators include as a minimum, diatoms, rotifers, algae, etc.
3. USEPA guidance may also be used when developing a monitoring protocol for the purpose of determining GWUDI.
4. Where surface water from a nearby lake, river, or stream is suspected to directly influence a groundwater source, as exhibited by rapid changes in water quality that closely correlate to surface water, additional raw water quality monitoring should be carried out from this surface water and compared to the water quality of the groundwater source.

The first six factors are steps the ODWMA will consider in evaluating the groundwater source. If further study shows the groundwater quality is directly impacted by surface water, the source is considered GWUDI. Source water determined to be GWUDI and wells that do not meet the Part 8 Rules require complete treatment as defined in the Administrative Rules to Act 399.

OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE
POLICY AND PROCEDURE

Number: ODWMA-399-008

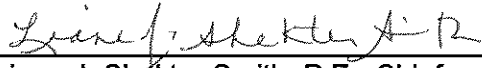
Subject: Determination of Ground Water Under the Direct Influence
of Surface Water

Page 3 of 3

REFERENCES:

USEPA's Consensus Method for Determining Groundwaters Under the Direct Influence of Surface Water Using Microscopic Particulate Analysis (MPA).

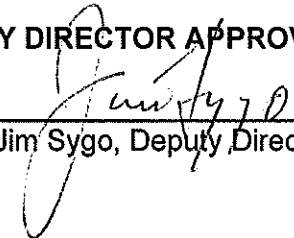
OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, P.E., Chief
Office of Drinking Water and Municipal Assistance

12-28-2012
Date

DEPUTY DIRECTOR APPROVAL:



Jim Sygo, Deputy Director

1/7/2013
Date