

**WELL FIRST PROTOCOL FOR INSTALLATION OF RESIDENTIAL DRINKING
WATER WELLS WITHIN AREAS SUBJECT TO CONTAMINATED GROUNDWATER,
NEAR MANCELONA, MICHIGAN**

Effective Date: April 3, 2012

Basis for Protocol

Trichloroethylene (TCE), a suspected carcinogen, has been detected in groundwater near and to the northwest of Mancelona, Michigan. Investigative efforts by the Michigan Department of Environmental Quality and Health Department of Northwest Michigan continue to discover affected groundwater and verify migration of contaminants within and toward the Schuss Village and Shanty Creek areas. Specific restrictions on well installations in this area were deemed necessary, in accordance with Part 127 of Act 369, P.A. 1978 and Act 399, P.A. 1976, to protect the public health and prevent the unintended consumption of contaminated drinking water.

Mandatory Procedures

For new or replacement residential drinking water wells installed within the areas encompassed by the Mancelona Water and Sewer Authority service district and special assessment district, where public water is available, areas of the Schuss Village development, and Section 4 of Custer Township (between DelMason Rd. and Shanty Creek Rd.), the following procedures apply and are considered conditions of your well permit.

Well First Policy

Proposed residential drinking water wells will not be approved for use and will restrict the issuance of other health department permits (ie. sewage disposal) until the following construction and sampling requirements have been met:

Well Depth: The proposed drinking water well must be completed and screened at a depth least likely to be impacted by TCE contaminated water. Water well contractors should contact the MDEQ or HDNW prior to drilling and completion of the proposed drinking water well. With assistance from MDEQ and Health Department personnel, a target depth for screen placement should be established based on regional geology and intervals of known groundwater impairment.

Well Drilling: The proposed drinking water well must be constructed using a mud rotary drilling techniques and methodologies.

Grouting Requirement:

The proposed drinking water well must be grouted with neat cement or bentonite grout for the entire casing length of the well.

Well Development: The proposed water well must be developed by surging or pumping and is restricted from development by air. After development, the well must sit a minimum of 24 hours prior to sampling.

Well Sampling: The proposed drinking water well must be sampled for Volatile Organic Compounds (VOC), including TCE, prior to putting the well into service and results must be reported to the Health Department of Northwest Michigan, Environmental Health Division.

If analysis results in the water supply exceeding any EPA Maximum Contaminant Level (MCL) of 5 ppb, the following apply:

- i. Water from an approved water source must be supplied for drinking water purposes.
- ii. The water well must be immediately abandoned (see Well Abandonment).

Final Inspection: The Health Department of Northwest Michigan must be contacted to conduct a final inspection of the proposed drinking water well after completion.

Connection to Public Water Supply: When a public water supply system becomes available, the existing water supply well will be required to be abandoned and the residence connected to the public system.

Well Abandonment: Water wells must be properly abandoned, in accordance with Part 127 of Act 368, P.A. 1978, when public water is made available.

Annual Sampling: In order to assure long-term safety of the drinking water supply, the Health Department of Northwest Michigan strongly recommends annual sampling for Volatile Organic Compounds (VOCs), including TCE.

A pamphlet describing the Mancelona TCE plume and the ongoing efforts of the Michigan Department of Environmental Quality to define the characteristics of local contaminated groundwater is included for your review.

I hereby acknowledge that the water supply well permitted by the Health Department of Northwest Michigan may be subject to contamination and that I agree to the above restrictions as written.

Signature _____ Date _____

Health Department of Northwest Michigan use only:

Supplement to special conditions for Permit # _____

Sanitarian's Signature _____ Date _____