	OFFICE OF DRINKING WATER AND MUNICIPAL ASSISTANCE POLICY AND PROCEDURE		DEPARTMENT OF ENVIRONMENTAL QUALITY
Original Effective Date: November 27, 2007	Subject: Grouting of Telescoped Permanent Casing		Category: <input type="checkbox"/> Internal/Administrative <input type="checkbox"/> External/Non-Interpretive <input checked="" type="checkbox"/> External/Interpretive
Revised Date:	Program Name: Well Construction Program		
Reformatted Date: April 1, 2015	Number: ODWMA-368-127-014	Page: 1 of 3	Type: <input type="checkbox"/> Policy <input type="checkbox"/> Procedure <input checked="" type="checkbox"/> Policy and Procedure

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.

ISSUE:

Some well drillers have been observed to install a telescoped casing pipe beneath an upper permanent casing during initial well construction. If the telescoped casing string is suspended by a packer or set of packers, an ungrouted annulus may exist on the outside of the telescoped casing pipe. If the telescoped casing pipe is installed during initial well completion, the telescoped casing pipe must be grouted. Failure to properly grout the telescoped section of casing is a violation of the grouting provisions of the Well Construction Code.

Completing a well with an ungrouted annular space on the outside of a permanent casing, between two casing pipe strings, or on the outside of a lower telescoped casing can cause future water quality problems. Bacteria and other organisms that may persist in an annular space can migrate downward through the unsealed channel into the well intake during pumping. Stagnant water between two casing strings can adversely impact drinking water quality. Wells with ungrouted casings can be plagued with chronic turbidity problems and deteriorated water quality.

In addition to the Well Construction Code issues identified above, where telescoped casing is installed as part of the initial well installation, there is a potential for violation of the initial drilling contract and the Michigan Consumer Protection Act. The question is whether the well owner received the contractually agreed upon product. If the well owner expected and was given an estimate based on a 5-inch-diameter, 200-foot-deep well, and received 50 feet of 5-inch casing and the remaining telescoped lower casing was a smaller diameter, violation of the Michigan Consumer Protection Act and the purchase contract may have occurred. Well owners should be told, up front, whenever a telescoped casing well design is anticipated.

This policy and procedure replaces a memorandum, dated November 27, 2007, prepared by the DEQ, Well Construction Unit.

AUTHORITY:

Rules 133a, 134a, and 135 (R 325.1633a, R 325.1634a, and R 325.1635, respectively) of the Groundwater Quality Control Rules, adopted under Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended (Well Construction Code), pertain to well grouting.

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STAKEHOLDER INVOLVEMENT:

This memorandum was developed in 2007 by the DEQ, Well Construction Unit. This topic will be included in the next statute/rule revision stakeholder process to gain technical and procedural input from well drilling contractors.

DEFINITIONS:

The definitions of permanent casing and liner pipe in the Groundwater Quality Control Rules are as follows:

Rule 103(9) "Liner pipe" means a permanent casing installed within another permanent casing or open borehole subsequent to initial construction of the well.

Rule 104(1) "Permanent casing" means durable, impervious pipe placed or driven into the borehole and left in place to maintain the well opening.

POLICY:

In addition to meeting grouting requirements, steel pipe used as permanent casing shall have an inside diameter of not less than two inches, and plastic pipe shall have an inside diameter of not less than five inches. Liner pipe that is PVC plastic must meet the dimensional and structural requirements of Rules 131a and 131b (R 325.1631a and R 325.1631b).

1. Wells installed by rotary-bored or augered drilling methods shall be grouted the entire length of casing or from a point not more than 10 feet above the top of the well screen up to the ground surface. Rule 133a(1) states that shale traps, cementing baskets, packers, or other devices shall not be used to suspend grout above an open annular space.
2. It is commonly recognized that occasionally, it is necessary to line portions of a borehole where friable formations begin to slough after the initial construction of a well, and grouting of the permanent casing has already taken place. In this situation, the friable formation may not have been identified during the initial installation of the well and the sloughing occurs after the well has been in service for a period of time. In this situation, it is not necessary to grout a liner pipe that is installed subsequent to the initial well casing installation in an attempt to control sloughing of the friable formation.
3. Where a permanent casing has been grouted in place during the initial installation of a bed rock well, then when drilling the production portion of the borehole a friable (sloughing) formation is encountered, it is not acceptable to install an ungrouted casing section in an attempt to case off the friable zone. Doing so is a violation of the grouting provisions of the Well Construction Code. The driller should immediately consult with the DEQ, Well Construction Program, and the local health department (LHD) sanitarian to propose the method and materials to be used to effectively grout the section of permanent casing that will be telescoped past the friable zone.

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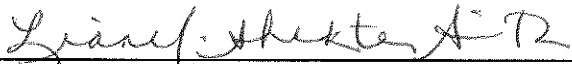
4. If a liner pipe must be installed in an existing well to seal off contaminants with public health implications (coliform bacteria, nitrates, arsenic, volatile organic contaminants, etc.), then grouting around the liner pipe is necessary to provide a positive seal.

PROCEDURES:

Step	Who	Does What
1	LHD Water Program Staff	The LHDs reviewing well logs showing ungrouted telescoped casing should contact the water well drilling contractor and ask when and why the telescoped section of pipe was installed.
2	LHD Water Program Staff	If the telescoped section of pipe was installed during the well's initial construction and was ungrouted, a well code violation has occurred. Appropriate corrective action by the well drilling contractor shall be required by the LHD and the violation reported to the DEQ, Well Construction Program.
3	DEQ, Well Construction Program Staff	Upon notification by an LHD that a violation has occurred, DEQ staff shall investigate to verify the chronology associated with the well's initial installation.
4	DEQ, Well Construction Program Staff	DEQ staff should coordinate a meeting between the well drilling contractor, the LHD, and the DEQ to determine the corrective action that will be conducted.
5	Registered Water Well Drilling Contractors	Install wells in accordance with Part 127.

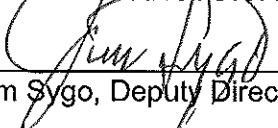
Compliance with Part 127 shall be based on the statute and rules promulgated under Part 127. Nothing in this policy and procedure shall be used in an enforcement action brought against a Registered Water Well Drilling Contractor or Pump Installer. This policy and procedure shall expire on December 31, 2016, unless superseded before that date.

OFFICE CHIEF APPROVAL:



Liane J. Shekter Smith, P.E., Chief
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DEPUTY DIRECTOR APPROVAL:



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