ARCHIVE: **Archived due to the 2009 rule revision. Refer to VA30007.09.016 for the updated document.**

TITLE: **Determining Ground Water Yield When Well Intakes Are Less Than 80% of the Thickness of a Saturated Zone**

DATE EFFECTIVE: January 2003

HISTORY: New addition to Technical Guidance Compendium

KEYWORDS: Screen length, yield, ground water, wells

RULE/ AUTHORITY: OAC 3745-300-07(D)(8)(b)(ii) and 3745-300-07(D)(8)(c)

QUESTION: How can a volunteer demonstrate that screen lengths shorter than eighty percent of the thickness of a saturated zone would not produce yield resulting in a different classification of the ground water?

ANSWER: OAC 3745-300-10(B) requires classification of ground water using data collection activities specified in OAC 3745-300-07(D)(8) and (9). OAC 3745-300-07(D)(8)(b)(ii), and (c)(i), (c)(ii) or (c)(iii) require specific screen lengths when conducting yield tests to classify ground water. The well screens must extend through at least eighty percent of the saturated zone or the volunteer must otherwise demonstrate that shorter intake lengths will not result in a different classification of the ground water. The following correction factors may be used to determine the yield of a well when shorter intakes (i.e., partially penetrating wells) are utilized. These correction factors are interpolated from a graph contained in the U.S. Department of Interior, Ground Water Manual (1985).

Correction Factors When Well Intakes are Partially Penetrating

Percent Intake Length	Correction Factor
80	1.00
70	1.10
60	1.15
50	1.30
40	1.35
30	1.50

20	1.55
10	1.70

EXAMPLE: If a well intake is sixty percent of the saturated zone and produces 2.4 gallons per minute at times of highest yield; the adjusted yield is 2.76 gal/min (i.e., 2.4 gal/min $\times$ 1.15).

SUMMARY: The above correction factors may be applied to demonstrate that intakes less than eighty percent of the thickness of the saturated zone will not result in the ground water being classified differently. It should be noted that this is only one option. The volunteer/certified professional may utilize other methods to account for the partial penetration of wells (i.e., intakes less then 80% of the saturated thickness) within a saturated zone.

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