Division of Drinking and Ground Waters
Response to Comments

Proposed Water Well Standards
[3745-9-01 – Well Standard Definitions]
[3745-9-02 – Scope and Exemptions]
[3745-9-03 – Monitoring Well]
[3745-9-04 –Well Siting]
[3745-9-05 – Well Construction]
[3745-9-06 – Well Construction, Specific Geologic Conditions]
[3745-9-07 – Well Grouting for Construction or Sealing]
[3745-9-08 – Well Disinfection]
[3745-9-09 – Well Development and Pumping Test]
[3745-9-10 – Abandoned Well Sealing]

Agency Contact for this Package
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Ohio EPA issued public notice and requested comments for the period of April 20th, 2022 to May 23th, 2022 on proposed rules in the Ohio Administrative Code (OAC). This document summarizes the comments and questions received during the comment period.

Ohio EPA reviewed and considered all comments received during the comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment in parentheses.

General Comments

Comment 1: It is unclear why the word "shall" is being largely removed from the rule language. Simply striking the word "shall" results in many awkward/incorrect sentences. In addition, the rule changes are inconsistent with regard to removal of "shall". **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 1: Several 'shalls' have been removed from the proposed Water Well Standards to comply with R.C.121.95, paragraph (F).

3745-9-01, [Well Standard Definitions]

Comment 2: ["D(6) – Suggest changing term to "Dug Well" – a "dug hole" does not necessarily imply a well in common terminology as used in the definition of a radial collector well in R(1) and consistent with definition of a well in W(1)".] (**Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 2: Ohio EPA agrees and has made the edit to the corresponding proposed Water Well Standard.

Comment 3: ["L(2) – We are not aware of "manufacturing waste landfill" being a landfill classification. Manufacturing waste landfill is not defined in 3745-27-01. Manufacturing waste is defined in 3745-30-01 as part of "Industrial or manufacturing waste", but not as a landfill type. The term residual waste landfill should be maintained in the rule, unless it is the intent to remove residual waste landfills from the definition for the purposes of the public water supply rules."] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 3: Ohio EPA agrees and has made the edit to the corresponding proposed Water Well Standard.

Comment 4: ["S(1)(e) – Recommend "…or permanently discontinuing (abandoning – correct typo in draft rule text) use of a well.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 4: Typo has been corrected.

Comment 5: ["AA(1)(e) – Change to "American Welding Society" instead of "Americal [sic] Welding Association"] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 5: Ohio EPA agrees and has made the edit to the corresponding proposed Water Well Standard.

3745-9-02, [Scope and Exemptions]

Comment 6: ["H(5) Suggest revising text to refer only to **new** public water system wells? Unless the expectation is that all wells will need to comply with this standard regardless of age?"] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 6: The expectation is for all public water system wells to comply with this Water Well standard by January 1, 2024.

3745-9-04, [Well Siting]

Comment 7: [As a general comment regarding sanitary isolation radius requirements – the requirement for a sanitary isolation radius based solely on pumping rate ignores the natural protectiveness that is provided by clay/glacial till materials that overly the

aquifers in many parts of Ohio. Credit should be given to that protective barrier where it exists in the determination of a sanitary isolation radius. A potential formulation would be to specify that for public water supply wells that are rated to produce more than 100,000 gallons per day the sanitary isolation radius shall be 300 feet minus the thickness of clay/low permeability materials overlying the aquifer,but shall not be less than 100 feet. For example, a bedrock well in northwest Ohio with 100 feet of clay/glacial till over bedrock would have a minimum, horizontal sanitary isolation radius of 200 feet. In Indiana the default sanitary isolation radius is 200 feet and a radius of 100 feet is allowable for wells that are subject to automatic disinfection. The use of a more flexible method for determination of the sanitary isolation radius that acknowledges that all hydrogeologic settings are not equally susceptible would allow for a substantial cost savings for communities locating wells in areas where the susceptibility to contamination from surface activities is low. Property owners may also be more willing to sell or lease parcels for well sites if the areal demands were not as great as is currently required.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 7: Sanitary isolation radii requirements will be re-examined for potential revisions during the next 5-year review cycle.

3745-9-05, [Well Construction]

Comment 8: [A(2) WE recommend that the rule language be changed to instead say that a well should be constructed using similar metallic parts in order to minimize the potential for galvanic corrosion. Also note that part B(6)(h) has not been modified and reads “Screens shall be installed that minimize corrosion caused by contact with dissimilar steel casing.”] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 8: Ohio EPA has incorporated the suggested language into the corresponding proposed Water Well Standard.

Comment 9: [A(3) Consider revising to read: "All drilling mud, additives and lubricants used in construction have either standard ANSI/NSF 60 or 61 certification and not contain guar gum, or other such biodegradable organic material.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 9: Ohio EPA has incorporated the suggested language into the corresponding proposed Water Well Standard.

Comment 10: [A(4) The proposed rule language should be changed to indicate that the water used in drilling a well may be treated for drilling purposes in accordance with the drilling mud manufacturers recommendations… The rule should also allow for use of groundwater in drilling a well as long as groundwater quality will not adversely affect the properties any grout or drilling mud used. It is a common practice to use groundwater from an adjacent test or observation well completed in the same aquifer as drilling water.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 10: Ohio EPA disagrees. The current Water Well Standard provides a safeguard for the quality of the water used during the well drilling process. The quality of ground water from an adjacent well completed in the same aquifer cannot be verified without analysis.

Comment 11: [A(5)(b)(vii)(a) Suggested changes "Well couplings with a design, taper, and type of thread that is consistent with the thread of the pipe will have no more than three threads exposed on fourteen thread pipe and no more than two threads exposed on eight thread pipe. Threaded pipe and couplings shall meet one of these standards: ASTM A53/A53M-01A53, ASTM A589-96A589, or "API RP 5B1, Gauging and Inspection of Casing, Tubing, and Line Pipe Threads," fifth edition, August 1999, Product Number G05B15, Document Number API RP 5B1.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 11: Ohio EPA agrees and has incorporated the suggested language into the corresponding proposed Water Well Standard.

Comment 12: [A(6) Reject change or reword. The sentence as altered does not make sense. Consider striking "Not be defective"] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 12: The 'shall' has been removed to comply with R.C.121.95, paragraph (F).

Comment 13: [A(13)(b) Suggested rewording - The well cap or seal shall fit securely to the top of the well casing, and be secured…] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 13: Ohio EPA agrees and has incorporated the suggested language into the corresponding proposed Water Well Standard.

Comment 14: [B(4) & (5)– Plumbness and alignment testing should not be mandatory. Exceedance of the plumbness and alignment criteria do necessarily make a well unusable. The need for plumbness and alignment testing should be decided by the well owner.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 14: Ohio EPA disagrees. AWWA A100 is referenced in this Water Well standard.

Comment 15: [B(11) Approval for a well cap should be made at the District level and should not require Director's approval.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 15: Ohio EPA disagrees. A component of the well approval process is to verify that construction requirements are met to ensure the quality of water for consumption by the public.

Comment 16: [C(3) "Lateral collectors shall be in areas and at depths accepted by the director." – Does this mean that the lateral depths, lengths and orientations require prior approval?] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 16: Yes, as part of the well site approval process.

Comment 17: [C(4) Edit to read as follows: "Provisions shall be made to assure that a collectors well's laterals are essentially approximately horizontal.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 17: Ohio EPA agrees and has incorporated the suggested language into the corresponding proposed Water Well Standard.

3745-9-06, [Well Construction, specific geologic conditions]

Comment 18: [A(4)(d)(ii) Suggested change - Installation of a vermin proof cap, well pitless adapter or wire spud, or to a discharge to a point that complies with paragraph (A)(4)(e) of this rule.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 18: Ohio EPA agrees and has incorporated the suggested language into the corresponding proposed Water Well Standard.

Comment 19: [A(4)(e)(ii) –What is the basis for this addition? It is hard to understand how control of flow could cause sand production or turbidity in a properly constructed and developed well.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 19: Proposed Water Well Standard language is derived from Ohio Department of Health private well rules. There could be situations where a well might not have a properly sized screen and the turbidity issues could arise.

3745-9-07, [Well grouting for construction or sealing]

Comment 20: [B(1) – Untreated groundwater should also be allowed for mixing of cement grout as long as groundwater chemistry is not expected to interfere with grout installation or effectiveness. Also see comment on 3745-9-05(A)(4).] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 20: Ohio EPA disagrees. The current Water Well Standard provides a safeguard for the quality of the water used during the well drilling process.

Comment 21: [C(6) – The requirement for Director's prior approval for use of the dry driven grout method should be removed from the rule. The dry driven grout method is not an exotic method, has been employed in cable tool drilling for many years and has proven to be effective in safely sealing wells.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 21: Ohio EPA agrees and has incorporated the suggested language into the corresponding proposed Water Well Standard.

3745-9-09, [Well development and pumping test]

Comment 22: [B(4)(b)(i)(b) – The rule requirement should be revised to read "range of steps shall be performed at meet or exceed the anticipated permanent design pumping rate." The design pumping rate for a well is not determined until the well has been fully tested and evaluated. The specification that a step be performed at the design pumping rate is unnecessary and unrealistically presumptive.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 22: Ohio EPA agrees with the Commenter that the actual design pumping rate is not determined until after the well is fully tested and evaluated. However, prior to initiating the pumping tests, the system typically has an idea of what the anticipated design pumping rate will be. The reason for the rule is to understand the specific capacity at the anticipated design pumping rate, not the actual design pumping rate. As such, no change to the proposed Water Well Standard will be made. One goal of the step test is to fine-tune a pumping rate in an efficient and timely manner.

Comment 23: [B(6)(a)(vii) – This rule should be removed. B(6)(a)(vi) already requires reporting the specific capacity determined at the pumping rates used for testing of the well. Stabilization of drawdown is not defined and should be removed from the rule. The specific capacity of a well is time-dependent, i.e., drawdown increases with duration of pumping. Only in situations where a well is pumped in close proximity to a significant source of recharge will drawdown stabilize in a relatively short period of time (less than 24-hours). Reporting of specific capacity should include both pumping rate and duration of pumping.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 23: Water Well Standard 3745-9-09(B)(6)(a)(vii) was revised as follows:

For high use wells only, The ~~the~~ specific capacity of the well at the anticipated permanent design pumping rate ~~when~~ after drawdown ~~is~~ has stabilized.

The only significant change in the proposed standard above is the calculation for the specific capacity at the anticipated permanent design pumping rate will be limited to high use wells only.

Comment 24: [B(6)(b)(iii) – Semi-logarithmic analysis of recovery data should not be a rule requirement. It certainly can be useful but is not always necessary or meaningful. For example, in the case where recovery is interrupted by pumping of another nearby well or other hydrologic event (e.g., a sudden increase in stream flow that affects aquifer water levels) that makes analysis of the recovery data meaningless.] **(Steve Champa, Mike Gibson and Chris Cobel, Eagon & Associates, Inc.)**

Response 24: Ohio EPA disagrees. The semi-logarithmmic data is meaningful to characterize the influence of those events identified by the commenter on the well to gauge its viability to produce raw water. Plotting recovery data on semi-logarithmic graph paper is a basic tool used in pumping test evaluations. The semi-log graph makes interference from recharge/other wells/boundary conditions more apparent than without the semi-log

axes. As with any tool, it may not be the best tool for every situation. However, at a minimum, this tool should be used first, and then other more appropriate tools can be applied. Water Well Standard 3745-9-09(B)(6)(b)(iii) is currently in effect and no change will be made.

End of Response to Comments