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3745-506-210

Ground water monitoring well purging techniques.

(A) Ground water monitoring well purging techniques shall be selected from the following:

(1) Purging to dryness. The ground water monitoring well shall be purged dry and then allowed to recover sufficiently to withdraw a representative ground water sample. Purging to dryness shall not be selected unless purging data indicates that the sustainable yield of a ground water monitoring well is less than one hundred milliliters per minute.

(2) Volumetric purging. The ground water monitoring well shall be purged a specified volume of ground water with a bailer or pump in accordance with the following:

(a) The amount of water purged from the ground water monitoring well shall not be less than three well volumes.

(b) The ground water monitoring well shall not be purged at a rate that exceeds the expected maximum yield of the ground water monitoring well based on previous purging or hydrogeologic testing data. If the formation is confined, the monitoring well shall be purged such that the water level remains above the top of the screen, if possible.

(c) Ground water quality stabilization parameters shall be monitored and documented as required by paragraph (B) of this rule. Sample withdrawal shall not commence until ground water quality stabilization is achieved as required by paragraph (B) of this rule.

(d) If a bailer or non-dedicated pump is used during purging, the bailer or pump shall be carefully inserted and removed in a manner that minimizes agitation and aeration of the water column in the well.

(3) Low-flow purging with a pump. If low-flow purging is selected, the ground water monitoring well shall be purged at a rate that is less than the expected maximum yield of the well in order to achieve a stable water level during purging. This technique shall be performed in accordance with the following:

(a) If the ground water monitoring well is screened in a confined formation, the monitoring well shall be purged such that the water level remains above the top of the screen, if possible.

(b) Ground water quality stabilization parameter measurements obtained to comply with paragraph (B) of this rule shall not commence until the water level in the ground water monitoring well has become stable during purging

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and at least one purging equipment volume plus the volume of the water level drawdown that has occurred in the well casing has been purged from the ground water monitoring well through the purging equipment.

(c) Ground water quality stabilization parameters shall be monitored and documented as required by paragraph (B) of this rule. Sample withdrawal shall not commence until ground water quality stabilization is achieved as required by paragraph (B) of this rule.

(d) If a non-dedicated pump is used during purging, the pump shall be carefully inserted and removed in a manner that minimizes agitation and aeration of the water column in the well.

(4) An alternative ground water monitoring well purging technique approved by the director.

(a) An owner or operator may submit to the director a written request for approval to use an alternative ground water monitoring well purging technique.

(b) The request shall include the following:

(i) A demonstration that the proposed alternative technique is capable of producing ground water sample results that are an accurate representation of ground water quality as required by rule 3745-506-50 of the Administrative Code.

(ii) A description of the site-specific conditions and circumstances when an alternative purging technique will be used.

(c) The director may decline to act on the request.

(d) The director may approve an alternative purging technique if the director determines the alternative purging technique is capable of producing ground water sample results that are an accurate representation of ground water quality as required by rule 3745-506-50 of the Administrative Code.

(B) Ground water quality stabilization within a ground water monitoring well shall be determined as follows:

(1) Ground water quality stabilization parameters and stabilization criteria shall be chosen for each ground water monitoring well. Stabilization is considered to be achieved when stabilization parameter values over three consecutive measurements are within the associated stabilization criteria.

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(a) Unless an alternative is approved by the director pursuant to paragraph (B)(1)(b) of this rule, stabilization parameters and stabilization criteria shall be chosen from those listed in the following table:

-Table 1-

<u>Parameter:</u>	<u>Stabilization criteria:</u>
<u>Temperature</u>	<u>+/- 0.5° Celsius</u>
<u>pH</u>	<u>+/- 0.2 standard units</u>
<u>Specific conductance</u>	<u>+/- 3%</u>
<u>Oxidation-reduction potential</u>	<u>+/- 20 millivolts</u>
<u>Dissolved oxygen</u>	<u>+/- 10% of reading value or +/- 0.2 mg/L, whichever is greater</u>

(b) Alternative ground water quality stabilization parameters or stabilization criteria.

(i) An owner or operator may submit a written request to the director for approval to use alternative ground water quality stabilization parameters or stabilization criteria at a specific ground water monitoring well.

(ii) The request shall include a demonstration that the alternative ground water quality stabilization parameters or stabilization criteria to be used at a specific ground water monitoring well in lieu of those provided in the table above will provide a better evaluation of the stabilization of ground water in that ground water monitoring well during purging.

(iii) The director may decline to act on the request.

(iv) The director may approve the request if the director determines that the alternative ground water quality stabilization parameters or stabilization criteria to be used at a specific ground water monitoring well in lieu of those provided in Table 1 of this rule will provide a better evaluation of the stabilization of ground water in that ground water monitoring well during purging.

(2) When conducting volumetric purging with a bailer or pump as described in paragraph (A)(2) of this rule, ground water quality stabilization parameters shall be measured in accordance with the following:

(a) At a minimum, the ground water quality stabilization parameters used shall include specific conductance and two additional parameters chosen from Table 1 of this rule.

(b) Ground water quality stabilization parameter measurements shall be taken at intervals of not less than every one-half well volume.

