Table 2-7. Criteria for reducing separation distances to permanent or intermittent surface water.

Separation Distance (feet)	Soil Design Subgroup	Soil Reduction (feet)	Vertical Soil Depth Above Water: >25 feet; and Depth to Limiting Layer: >10 feet	Maximum Separation Reduction (feet)	Minimum Separation Distance to Surface Water (feet)
300	A-1	0	25	25	275
300	A-2	25	25	50	250
200	B-1	0	25	25	175
200	B-2	25	25	50	150
100	C-1	0	0	0	100
100	C-2	0	0	0	100

The distance to permanent surface water may also be reduced to not less than 100 feet for all soil types when it can be demonstrated:

1. Either
   a. The surface water is sealed so there is no movement of ground water into the surface water body, or
   b. The surface water body is discharging into the ground water, and
2. There are no limiting layers between the drainfield elevation and the surface water elevation.

2.2.4.2 Reduction in Separation Distance to Surface Water with a Variance

Separation distances to surface water are in place to protect water quality, ecological health, and current and future beneficial uses of the resource. Septic tank effluent contains both nitrogen and phosphorous, which are nutrients that pose a eutrophication threat to surface water. If the separation distance from a drainfield to surface water is proposed to be decreased more than the limits outlined in section 2.2.4.1, an assessment must be done to evaluate the potential adverse effects that the nitrogen and phosphorous load may have on receiving surface waters. If the evaluation is favorable (i.e., no adverse impact is determined), supported by model outputs, and written recommendation for approval from DEQ is received, then a variance may be issued for a reduced separation distance.

2.2.4.2.1 Supporting Documentation for a Reduced Separation Distance to Surface Water Variance

Minimum documentation requirements to support a variance request are as follows:

1. The variance must follow all requirements specified in IDAPA 58.01.03.010 and be filed with the health district with a subsurface sewage disposal permit application.
2. The site evaluation process must be followed to obtain the minimum information necessary to support a subsurface sewage disposal permit, nutrient-pathogen (NP) evaluation, and phosphorous evaluation.
3. An NP evaluation must be performed to demonstrate site suitability based on minimum system design requirements, proposed system placement, and model outputs as outlined

in section 2.2.4.2.3 before performing a phosphorous evaluation as described in the on-site system surface water separation distance determination guidance and model.

4. The phosphorous evaluation must be performed to demonstrate site suitability based on minimum system design requirements, proposed system placement, and model outputs as outlined in section 2.2.4.2.3.

2.2.4.2.2 Drainfield Design Requirements for a Reduced Separation Distance to Surface Water

A drainfield proposed with a reduced separation distance to surface water as allowed under this variance procedure must meet the following minimum design requirements:

1. The drainfield shall be pressurized and designed based on section 4.19 of this manual.
2. The maximum installation depth of the drainfield in the native soil profile shall be 6 inches, and the proposed drainfield sites must meet the above-grade capping fill system criteria (section 4.3) or drip distribution system criteria (section 4.5).
3. Two full-size drainfields shall be installed under the initial permit, and alternating dosing between each drainfield shall be included in the system's operational design.
4. Replacement area for a third full-size drainfield must be reserved on the property.
5. No separation distance to surface water shall be reduced to less than 100 feet.
6. An alternative pretreatment system shall be installed after the septic tank that is capable of reducing total nitrogen to at least 27 mg/L. A greater total nitrogen reduction level may be required depending on the outcome of the NP evaluation.

Restrictions on Drainfield Designs Necessary to Obtain Successful Outputs in Nutrient Evaluation Models

IDAPA 58.01.03 specifies the minimum drainfield area required to adequately handle the specified volume of wastewater generated in the structure being permitted. It is acceptable for a system design to be in excess of the drainfield area required by IDAPA 58.01.03. To reduce the drainfields separation distance to permanent or intermittent surface water, it may require that the drainfield area is in excess of the minimum requirements stipulated in IDAPA 58.01.03. This may be due to the surface area and volume of soil below the drainfield necessary to sequester phosphorous constituents in the wastewater and reduce potential adverse impacts to surface water. If it is necessary to expand the drainfield to obtain successful outputs for the models described in section 2.2.4.2.3, the drainfield area in excess of the minimum requirements provided in IDAPA 58.01.03 is strictly limited to the original wastewater flows evaluated for the original permit application and cannot be used in the future for additional structures or existing structure expansion.

2.2.4.2.3 Nutrient Evaluation Model Outputs for a Reduced Separation Distance to Surface Water

To support a variance request for a reduced separation distance to surface water, two nutrient evaluations must be performed based on the following specific effluent nutrient values and minimum model outputs:

Nutrient-Pathogen Evaluation

1. The maximum total nitrogen concentration of the effluent discharged to the drainfield shall be 27 mg/L.
2. All other standard NP evaluation criteria and output requirements apply.

On-Site System Surface Water Separation Distance Determination Guidance and Model

1. The average phosphorous output from the septic tank shall be 8.6 mg/L.
2. The minimum phosphorous site life of receiving soils shall be 50 years for each drainfield.
3. If the minimum phosphorous site life can be met, then the surface water body must be evaluated to determine if it has a total maximum daily load (TMDL) limit for phosphorous based on the following:
    a. If the water body is not TMDL limited for phosphorous, the subsurface sewage disposal permit may be issued.
    b. If the water body is TMDL limited for phosphorous, its impact on the surface water body must be evaluated through an equivalency comparison between what may be permitted by rule (standard separation distances) and the reduced separation distance proposed.
        1) If the modeled impact of the system at the reduced separation distance is equivalent to, or less than, the impact of what could be permitted by rule then the subsurface sewage disposal permit may be issued.
        2) If the modeled impact of the proposed system at the reduced separation distance is greater than the impact of what could be permitted by rule, then the subsurface sewage disposal permit may not be issued.
4. All other standard On-Site System Surface Water Separation Distance Determination Model criteria and output requirements apply as described in DEQ's guidance *On-Site System Surface Water Separation Distance Determination Guidance.*

2.2.5 Method of 72 to Determine Effective Soil Depths

Often, effective soil depths, as required by IDAPA 58.01.03.008.02.c, are not achievable due to various site conditions. In response to this issue, section 2.2.2 provides guidance for reducing separation distances to limiting layers based upon soil design subgroups. In some situations, this guidance does not go far enough to address these site limitations, nor does it provide guidance on how to approach separation distances to limiting layers when the soil profile is variable and does not meet the minimum effective soil depths as described in IDAPA 58.01.03.008.02 or Table 2-5, or when the in-trench sand filter system design is used. To address these situations, use the method of 72.

The method of 72 assigns treatment units to soil design subgroups. Treatment units assigned to soil design subgroups are extrapolated from the effective soil depths required by IDAPA 58.01.03.008.02.c. Based on this rule, it can be determined that 72 treatment units are necessary from the drainfield-soil interface to the porous layer/ground water to ensure adequate