Number: ONST.07.GUI.840
Title: WET SEASON STUDY (WSS) WATER TABLE EVALUATIONS

Related: ONST.07.POL.840
ONST.07.PRO.840

Approved: _____
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Cancels: ONST.POL.GUI EH-WSS-001 **RCW/Code:** Article IV

1. Location and depth of monitoring ports.

a. In an area of a known or suspected high water table (and no "deep trench" system is proposed):

i) Place the monitoring ports in a manner that represent the proposed primary and reserve drainfield areas. Adequate representation is the key factor. Limiting the number of ports may increase the chance of an inadequate review or a determination that the site has failed. At the initial evaluation of a site for a WSS, it is critical that the department and the industry professional jointly review and agree to the number and location of the monitoring ports.

ii) The bottom of the pipe in the monitoring port shall be at a depth in the soil where a minimum required vertical separation can be achieved. For example, if a 12-inch trench depth is proposed and 24 inches of vertical separation is required, the bottom of the port must be placed at a minimum depth of 36 inches. It may be beneficial to increase the depth of the monitor port based on site conditions.

b. Where a "deep trench" system is proposed:

i) Place the monitoring ports in a manner that represent the proposed primary and reserve drainfield areas. Adequate representation is the key factor. Limiting the number of ports may increase the chance of an inadequate review or a determination that the site has failed. At the initial evaluation of a site for a WSS, it is critical that the department and the industry professional jointly review and agree to the number and location of the monitor ports.

ii) The bottom of the monitor port shall be placed at a depth in the soil where the minimum required vertical separation can be achieved. In deep sands the formula to use is six inches into the receiving soil plus twelve inches for dispersal. For example: If the receiving deep sand lens is found at 96" excavate the port to a minimum depth of 114". It may be beneficial to increase the depth of the monitor port based on site conditions.

2. Construction of the monitoring port for shallow soils above a restrictive lens.

a. A 12 to 24 inch diameter hole should be excavated to the designated depth with care given to not smear the sides of the hole. Rake the vertical surface to remove any smearing. This is especially needed in silty or clayey soils.
b. Six inches of **clean** gravel (1/2 to 2 1/2 inches in diameter) shall be placed in the bottom of the excavation.
c. A four-inch diameter PVC or ABS perforated plastic pipe, wrapped in filter fabric, should be placed in the excavation, with one end resting on top of the six-inch layer of gravel and the other extending a minimum of 6 inches above the ground surface. The bottom of the monitor port shall be placed at a depth in the soil where the minimum required vertical separation can be achieved.
d. Gravel should then be carefully placed **outside** the pipe to within one foot of the ground surface.
e. The last foot should be backfilled with native soil or soil type that represents the final cover over the system.
f. The area immediately around the top of the pipe should be sloped away from the monitoring port to assure that surface water drains away from the well.
g. The end of the pipe above the ground surface should be covered by an easily removable cap. A 4" PVC cap with slits sawed into the bottom of the cap allows for easy removal.
h. Backhoe pits **shall not** be substituted for monitoring ports. They may be viewed in conjunction with the monitor ports.
i. Unless properly posted and secured, backhoe pits should be filled to reduce safety risks

3. Construction of the monitoring port for deep sands. Alternate construction methods are not authorized.

a. Excavate the hole to the designated depth.
b. A four-inch perforated pipe wrapped with filter fabric the length of the perforations is placed in the excavation and must extend a minimum of six inches above grade.
c. Place a foot of ASTM C-33 sand (or 1/2 to 2 1/2 inches in diameter of **clean** gravel) around the bottom of the pipe.
d. Fill the excavation to within 18"-24" of the finished grade with the C-33 sand or clean rock. (Use the same material that is placed around the base of the port.)
e. The last 18"-24" should be backfilled with native soil or soil type that represents the final cover over the system.
f. The area immediately around the top of the pipe should be sloped away from the monitoring port to assure that surface water drains away from the port.
g. The end of the pipe above the ground surface should be covered by an easily removable cap. A 4" PVC cap with slits sawed into the bottom of the cap allows for easy removal.

h. Backhoe pits **shall not** be substituted for monitoring ports. They may be viewed in conjunction with the monitor ports.
i. Unless properly posted and secured, backhoe pits should be filled to reduce safety risks