



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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BAT CLASS IV: SHALLOW-PLACED LOW PRESSURE-DOSED DISPERSAL (LPD)

Shallow-placed pressure dosing allows for uniform distribution of effluent across the entire dispersal field. Dosing allows for the creation of fluctuating aerobic/anoxic environments, which sets up the conditions for nitrification and de-nitrification to occur.

➤ **Criteria for Shallow-placed pressure dosed BAT Class IV approval:**

- The system must be installed in a natural surface A or B soil horizon, no deeper than 12 inches below existing natural surface. No system that penetrates ground water may be credited as BAT.
- No BAT credit is given to LPD installed in soils with predominately sand or loamy sand texture within 12 inches of the ground surface. Approving Authorities must field verify with a soil description subject to MDE review that the proper soil textures are present.
- After installation, the site must have a stable vegetative cover.
- A minimum of 12 inches of quality topsoil is required to be placed over the original grade of the entire drainfield and graded so as to promote surface water away from the system.
- For sloping sites, the trenches and laterals must be placed on contour, and the linear loading rate across the slope must be minimized.
- Pipe diameters, perforation diameters, and perforation spacing are selected such that there is less than a 10% differential in flow rate between any two holes in a lateral and less than a 10% differential in flow rate between any two laterals of equal length on sites that encounter slopes.
- Landscape position is also a necessary consideration. Systems should not be sited within a closed depression, or where water tends to pond during heavy rainfall events. Refer to MDE's Site Evaluation Manual for additional details on proper landscape position
- Per COMAR requirements, sufficient unsaturated soil must exist below the LPD piping to allow for movement of the applied wastewater from the site. The unsaturated soil treatment zone, as detailed in COMAR 26.04.02 must be achieved.
- Observation pipes are properly installed within the trenches at designated locations, a minimum of 2 per trench is required One at beginning and one at end of trench.
- All LPD systems shall incorporate the following elements:
 - The working pressure head must be between 2 and 5 feet.
 - The dosing volume is 7-10 times the volume of the distribution piping.
 - The piping shall be properly bedded in accordance with state regulations.
 - Laterals shall be sleeved in perforated pipe or chambers to minimize orifice shielding by gravel if orifice size is less than 5/16 inch.
 - The system shall be equipped to allow system flushing as needed for maintenance.
 - An event counter and an elapsed time meter are required on the control panel.
- Co review and approval with MDE's Regional Consultant is required for Innovative LPD sites.

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Annual Inspection Checklist

- Inspect the pump chamber for proper function. Confirm that the dosing volume, and dosing frequency comply with the original design parameters. Confirm that the volume of effluent dosed per unit of time conforms to the system design and existing and the start up pressure head conditions.
- Check the pump chamber for solids carryover and remove the solids if needed.
- Verify the dosing volumes and flush the laterals if volume pumped per unit of time decreases or pressure head is substantially increased over start up conditions and reset the pressure head if needed.
- Examine all observation ports and check for ponding and leakage from the system.
- Conduct maintenance in accordance with the manufacturer's or designer's requirements of the treatment unit prior to dispersal field. More frequent visits might be necessary to maintain proper function.
- Conduct other generic operation and maintenance procedures
 - Measure sludge / scum levels in septic tank (trash tank?)
 - Pump septic tank as needed?
 - Clean effluent filter / screen
 - Walk dispersal fields and inspect for leakage or runoff.
 - Etc.

07/01/2015

