

NPDES Quick-Tips Guide

I have an NPDES; what does that mean?

NPDES stands for National Pollutant Discharge Elimination System. It is a special type of Home Sewage Treatment System (HSTS) that is issued a permit through the Ohio EPA to discharge treated wastewater, or effluent, directly into a public waterway (a creek, ditch, storm drain etc.). It is therefore critical that your NPDES tank completely treats your wastewater before it is released. Due to the higher risk of water pollution, your system has been specially designed and lab tested to reach a state-wide treatment standard. In order to achieve this higher level of treatment, however, your system contains more mechanical components than a conventional system (eg. a septic tank to leach lines). Because of its complexity, your system requires annual sampling, more frequent maintenance, and cautious use by the homeowner. If, in any given year, your sample results do not conform to the state-set standard, it could be due to several factors including both mechanical issues and/or overloading of the system. See reverse for possible causes of non-compliant sample results and advice on maintenance and simple lifestyle changes that could improve the functioning of your system.

Grab Samples



The Ohio EPA requires that your system be sampled once a year to determine if it is compliant with the effluent discharge requirements. This sample is called a grab sample since it is simply “grabbed” from a free flowing sample port, instead of taken several times over a longer period of time (composite sample). While the grab sample can provide some limited information about how the system was functioning at the specific time and date that it was taken, it cannot provide a broader context for how the system is operating over time, nor can it diagnose what exactly is causing any potential issues. Your annual sample results do not necessarily represent typical functioning of your system, but they can be an indication that a component could be malfunctioning or that you might be overloading the system.



NPDES (National Pollutant Discharge Elimination System) Quick-Tips Chart

Test Performed:	Must be:	Tests for:	Common Causes of Failure:	Common Corrections:
Total Suspended Solids	≤ 18 mg/L	Solids suspended in the discharging effluent; the tank should be retaining the vast majority of solids.	<ul style="list-style-type: none"> Excessive accumulation of solids in tank is allowing overflow to discharge Surface water contaminants are entering system Hydraulic Overloading is pushing wastewater through system too quickly for proper solids settling 	<ul style="list-style-type: none"> Pump your tank Minimize use of garbage disposal/don't flush coffee grounds Install/Repair Risers/Lids to prevent water infiltration Disconnect gutters & storm crocks from system
Nitrogen as Ammonia	≤ 2 mg/L	A toxic water quality pollutant. High concentrations result when bacteria are not properly treating wastewater due to unfavorable conditions in the tank.	<ul style="list-style-type: none"> Insufficient oxygen supply Use of harsh chemicals Insufficient contact time—Hydraulic Overloading Too much/too little waste; possibly due to vacancy 	<ul style="list-style-type: none"> Clean/Repair Aeration components Minimize use of strong acids, bases, or toxic chemicals Spread out water usage
CBOD₅	≤ 15 mg/L	Amount of oxygen consumed by bacteria in a 5 day period—the best overall indicator of short term environmental impacts. Indicates poor aeration during treatment.	<ul style="list-style-type: none"> Aeration component is not working properly or is partially clogged causing insufficient air output into wastewater Mechanism for re-aeration prior to discharge is not working Heavy loading of system with fats, oils, greases, creams/sugars 	<ul style="list-style-type: none"> Fix/clean aeration and/or re-aeration component(s) Minimize use of laundry detergent or fabric softeners high in lanolin, which cause slime clogs in aeration tubes Disconnect water softener discharge from system
E. coli	≤ 410 Colony Forming Units (CFU) per 100 mL	Bacteria found in human waste; at high concentrations it can make people sick. ***Most important test for your direct health.	<ul style="list-style-type: none"> Disinfection Component (either UV bulb or chemical dispenser) is ineffective Hydraulic Overloading 	<ul style="list-style-type: none"> Clean, Repair, or Replace UV bulb Add Approved Disinfection Chemicals Spread out water usage
Dissolved Oxygen	≥ 6 mg/L	Amount of oxygen available for bacteria to treat wastewater.	<ul style="list-style-type: none"> See CBOD₅; same factors apply 	<ul style="list-style-type: none"> See CBOD₅; same factors apply



**Lake County
General Health District**

Public Health
Prevent. Promote. Protect.



REV1: 01/15/2020