

RV Sewage 101

One of the unpleasant necessities of RVing is the process of dumping holding tanks. You RVers (and big boater's, too) have made a conscious decision to carry your "crap" with you. Every once in awhile, you have to get rid of it and make room for more. Make your RV life better, easier, cleaner by following this "rule" ... *Make it easy for the sewage to get from the coach to the hole in the ground!*

In our seminars, we hear more wild stories about sewage than anything else. RVers confess to leaving both tank valves open while hooked up (a no-no), comments about dumping the tanks every second/third day regardless of how full they are, recipes for home-brewed toilet chemicals, and myths for cleaning tanks. Nearly all admit they learned how from a friend. The bottom line is that you do not want "poop in your pipe," so here's the correct procedure for dumping your tanks. Sorry, we don't care how your friends told you to do it.

Your RV sewage system is not like that home septic-tank system in operation—only in theory. Most RV toilets flush straight down—a direct drop into the black tank, i.e., like the old outhouse. If you have ever looked down that outhouse hole, you saw what was affectionately known as the "cone of crap." Without sufficient liquid in your holding tank, you end up with a cone of crap in your black tank—hard to get rid of and expensive to repair—not good. Plus, your home toilet flushes debris through a curving water channel. This creates an effective water seal to prevent odors. You must take other steps to prevent odors in your RV.



Square One

First, having a greater mass of sewage (solids and liquid) provides a greater "head pressure" (like storing water way up in the air in a water tower). So when your tank valve

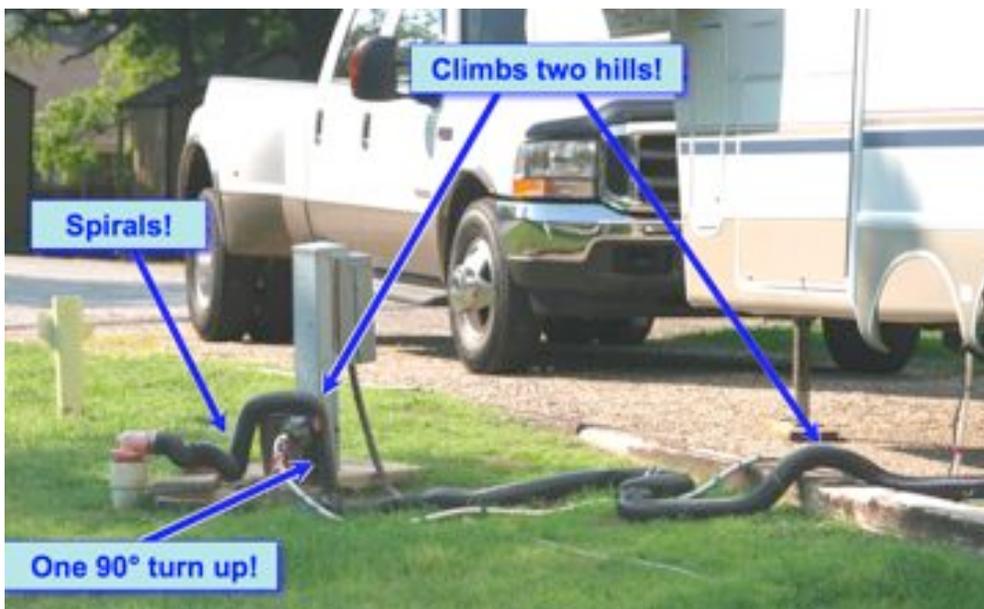


is opened, that head pressure helps force sewage out through the hose. The sewage sort of pushes itself out through the sewer hose and (with the help of some gravity) your tank is quickly emptied. That's what you want—all the sewage to gush out like water through a fire hose but not trickle out like sprinkling your flowers with a watering can.

Second, while we did not check with all RV manufacturers during our research, consistently, the recommendation was to have the black water tank **at least 1/2 full before dumping** it. Doing this naturally changes the ratio of liquid-to-solids. As the black tank fills through normal usage, you add more liquids than solids by flushing. Plus, the increased amount of liquid will help break down the solids (along with the mandatory chemicals and, hopefully, some driving around).

Parked for a Few Days

Make it easy for the sewage to get from the coach to the hole in the ground. Position that sewer hose as straight as possible and going slightly downhill. Use a sewer hose rack if possible. If your hose is too long because you are parked too close, position it in a long, gentle downhill curve—no tight turns, Figure-8s, or hills to climb. Look at this real hookup (below). With this setup, the sewage must traverse some difficult twists and turns and, at one point, actually go straight up. Maybe this person works for one of the big roller coaster parks like Six Flags!!!



You can leave the **grey tank** valve open to trickle-drain as you use the coach. When you're about half full in the black tank, close the grey tank valve and accumulate grey water. When the grey tank is **at least** 1/2 full, then the dump sequence is as follows:

1. Open the black tank valve and dump. If you have a black-tank flushing system, use it—two or three times is best.
2. Close the black tank valve.
3. Open the grey tank valve and dump the grey water. By having your grey water tank mostly full of sudsy water (showers, dishwashing, etc.), this liquid-soapy mixture will rush through and actually wash out residue in the sewer hose.
4. Put in the toilet chemicals.

A Few Hints

- If you have to dump black early (less than 1/2 full), run extra water into the tank. Use your flush hose and run it through the bathroom window to rapidly fill the black tank through the toilet.
- Clear sewer connections allow you to view the sewage but you simply cannot know if any solids are left in the black tank. Liquids will flow around them—especially if these solids have not broken down. So it's best to drive before dumping. The sloshing action helps break down solids. Just a couple of times around the campground will help.



- **Do not** use your white water hose for anything other than potable water!
- The black tank flush will help keep your tank monitors from malfunctioning and help wash more debris out of the tank. It works by means of a high-pressure spray inside the black tank. This spray will hit the walls of the black tank. We typically do a black tank flush 2-3 times each time we dump.

Toilet Chemicals

A caution: Don't use any toilet chemicals containing formaldehyde, period. Just don't. On that note, in RVs, toilet chemicals do two things.

Breakdown solids... Toilet chemicals are bacteria and enzymes that literally digest—i.e., decompose—non-liquid stuff in the holding tank. Some toilet chemicals will start this process in 3–4 hours and continue working. This breakdown process works in your black tank exactly like the home septic tank with two exceptions...

- A. Your RV system is tiny in comparison (a home septic tank may hold 1,500 gallons)
- B. You do not "dump" a home septic system so the chemicals work for months.

Prevent odor... Toilet chemicals help control odors.

It is common in our seminars that people have told us (and the other attendees) they mix their own toilet chemicals! They use cleaning liquids, caustic soaps (dishwasher soap), pine oil, cooking yeast, bleach, water softener chemicals, and other home brew mixtures in an attempt to save money on toilet chemicals. There are other, much easier, ways to save money. Consider this... just one night of boondocking will save enough to buy toilet chemicals for a few months!

We use Rid-X®—designed for home septic-tank systems. It is bacteria and enzymes just like the "RV" toilet chemicals. We use **two capfuls of liquid** Rid-X in our

56-gallon black tank with 4–5 normal "toilet flushes" to add water. We also use **one capful in our grey tank** about every other time we dump since the grey tank will produce sewer-like odors, too. Then, run enough water to flush the Rid-X out of the drain's P-trap. **Use the liquid Rid-X, not the crystals!** The reason is that you need such a small amount, using the crystals makes it difficult to measure. The liquid is much easier to measure.

Like all the RV products we use and recommend, we rely on other RVers we trust to test it and let us know about any problems. With Rid-X, I have now used it consistently for four years and a friend has used it for seven years—all this with no problems and no apparent degradation to seals, valves, or any part of the sewer system in our respective coaches. Finally, I had a long talk with the engineering staff at the Rid-X manufacturing company. He verified what we were doing and provided lots of great information.

Rid-X is a commercial manufactured product and each bottle contains a date code to denote shelf life among other things. The date code is the date a particular bottle was manufactured. You can easily read the date your bottle was made if you know the "code."

The bottle we are using right now has this code: B9307-NJ2-1125. The first digit—a "9"—represents the year, 2009, and the next three digits—"307"—represents the day of the year. So our bottle was dated November 3, 2009. The maximum recommended shelf life is two years for Rid-X. Storage temperature is not critical.

[Author Note... Finding the exact date that "307" or any other day-number represents is easy. Do a Google search online for "*Day of Year Calendar*." This may be more than you want to know.]

You cannot buy Rid-X at a camping supply outlet. They simply don't market the product there. Purchase it in any hardware or other store that carries chemicals for the household. Many groceries will have it, too.

The Future of Dump

The 12-volt-powered macerator pump is one of the more recent innovations in RV sewage. Not a gravity process, the pump suction waste from the black tank, grinds all waste solids into 1/8-inch or less particles, and transfers (pumps) it through a small-diameter hose to the waste receptacle (hole in the ground). By attaching a 3/4-inch garden hose, you can pump up to 300+ feet away with a 20-foot rise. This means you can park a football-field away from your neighbor's house and dump into their second-story bathroom toilet!



What Did We Learn

Make it easy for the sewage to get from the coach to the hole in the ground. Yep, rain or shine, you have to dump. Your RV sewage system tops the list of things you do not want to tear into nor pay someone else to do that for you! Therefore, you must take care of it with regular maintenance, proper care, and use. So, we do not care what your friends do with their system. After all, they don't know what they don't know—and you don't either.