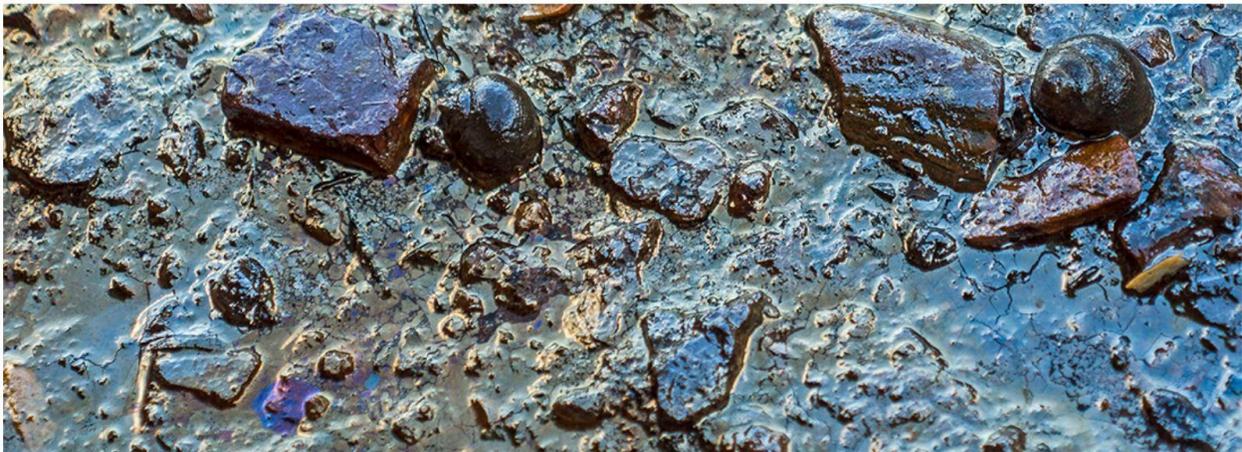




Why You Should Worry About Your Generator's Old Fuel And What to Do About It



Diesel Fuel Gets Old Fast – 3 Months

Not like your car, fuel sits in a generator tank for a long time, because it is stored for when you need it. Say you have a 300 KW generator and you want 8 hours of run time. At full load you need 20 gallons per hour so you need a 160 gallon tank. If you test your generator once a month for 15 minutes unloaded, you will use 7 gallons per hour 3 hours per year for a total of 21 gallons per year. That means, without a big power outage, you would use all your fuel in about 8 years.

That is old. Most diesel in the world is used in transportation usually within a few months after leaving the refinery.

GenApp can't do much about aging, but we can clean and treat your fuel at least every year to keep it fresh. Our anti-aging (cetane and lubricity) additives, cleaning agents, biocodes, and de-icing treatments keep your generators ready for reliable start and run.

Dirt in Diesel Forms as it Ages

It is not really dirt, but components of diesel fuel that come out of solution as it ages. And these components form particulates that can cause damage to your generator engine, and over the long term, accumulate in your tank bottom as sludge, requiring a costly cleanup.

The dirt problem is so important for engine protection, that there is an ISO standard to define dirt, and a required level of cleanliness for diesel. The standard requires ISO 18/11/16.

GenApp gives you 18/11/16 or better when we filter / polish your generator fuel. We re-circulate through a 4 stage process: Coarse Particulates, Water Absorption, High Efficient Particulate, and One Micron Finish.



Water Gets in Tanks from Daily Breathing

It is possible that some water leaks into your generator tank from rain. But more likely, the source is diurnal breathing. I am sorry to have to explain this. Every day the fuel in your generator tank heats up a bit, and every night it cools a bit. As this happens the fuel expands and contracts slightly, bringing outside air through the “breathing” vent. The air has moisture and as it cools in the fuel tank, water drops out as liquid. Since water has a higher specific gravity (1.0 vs. 0.85 for Fuel), it settles in a layer at the bottom of the tank. On the way to the bottom, some is entrained in the fuel, and it can really mess with your engine wear.

That water layer on your tank bottom has become a terrible problem recently, as it is an ideal environment for microbial growth – See Bugs below.

GenApp gets the water out in 2 important ways. First we start the cleaning process with a super-strong suction pump to pull water off the bottom of the tank. Next we include a water absorbing element in our cleaning re-circulation path to remove entrained water. This is solid thinking. We looked at coalescers, which can be fouled and ineffective, and at magnetic devices, which just don’t seem to work. Absorbing the water is a sure thing.

Microbes Love the Oil Water Mix

Yes really, and this has become critically important as diesel fuel changed to Ultra-Low Sulfur Diesel (ULSD) to meet Clean Air Rules. The sulfur in the old diesel used to prevent to some extent the microbial growth in the fuel. Now with the sulphur gone, the bugs are a real problem. The microbes find an ideal environment at the bottom of the fuel tank, where even a very thin water (Oxygen) layer meets the fuel (Organic) layer.

The bugs cause 2 main problems. First, they can cause biologic growth to the extent that it is sucked into the engine fuel source and rapidly clog filters and shut-down the generator. Second, and maybe most importantly, the bugs create an acidic environment that can rapidly corrode steel tank bottoms. Since most generator sit on base tanks with large bottom surface areas, this corrosion will eventually require a costly and disruptive replacement.

GenApp does a great job of removing water as noted above and this is the first defense against bio growth in your tank. Unlike many fixed polishing systems, GenApp FÜL has a high suction pump and specialized bottom contact suction tube to remove water film from the tank bottom. Then – very important – we dose a biocide, both fuel and water soluble, to disinfect the fuel and provide ongoing protection.



Cold Weather Causes Wax Plugging

Cold weather affects diesel fuel, in a way that you do not worry about with gasoline in your car. As the temperature of fuel drops, wax will start to come out of solution. The cloud point is when this process starts and wax is visible, and the pour point is where it ends and the diesel will not flow. This range varies from 15-30 F for Cloud and -5 to + 15F for pour. In between is the point to worry about CFFP – Cold Filter Plugging Point, where your engine filters will clog and prevent generator start.

GenApp treatment includes dosing a winterization agent into the generator fuel tank. The anti-gel agent prevents wax crystals from forming, and in effect lowers the CFFP. Note that it is important to dose the winterization before cold weather occurs – so consider an early fall service call.

Top Off Fuel Levels for Hygiene and Run Time

75% is time to Top off for most emergency generators. Compliance with Life Safety Codes and Building Design Standards are based on a fuel tank being 75% full and supplying all that is required to run the generator for the required time at full load.

The reason is that tanks can usually only be filled to 90-95% to prevent overfilling and fuel is consumed regularly in periodic run tests of the generator. So the range of 90-75% is allowed for routine operation, with 75% reserved for emergencies.

Here is an example: You have a 200 KW generator designed to run 4 hours at 14 gallon per hour, so you have a 100 gallon tank. When you are at 75% tank level, you need fuel to get to 90%. That is 15% of 100 gallons or 15 gallons.

Deliveries of 10-100 gallons of diesel fuel are in a tough zone – much more than the 1 gallon your lawnmower needs, and much less than the 7500 gallon fuel trucks delivering to the gas station.

GenApp has specialized gear to solve this problem. Our technicians can bring along 1-4 fuel pods of 25 gallons each, and transfer to your generator or fire pump tank using battery operated fuel pumps, meters, and nozzles. The pods move easily to access in-building, in-basement, and on-rooftop locations.