

# Fuel Quality Issues

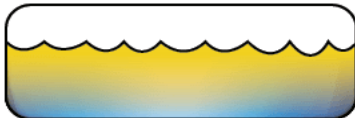
## PROTECT YOUR FUEL SYSTEM



A Clarience Technologies Company

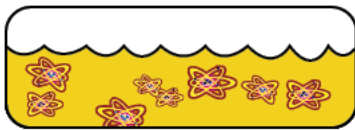
### Know What to Look For

Having issues with your fuel quality? Know what to look for so you are able to react accurately and protect your engine. Common issues in diesel engines relate to water, biodiesel blends, particles, and asphaltenes.



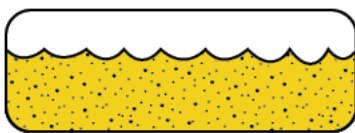
#### Water

- Water condenses in fuel tanks
- Water + sulfur create corrosive acidic environment
- Water reduces lubricity of fuel
- Water accelerates the growth of microbes; microbial waste adds to acidity of fuel
- Water decreases efficiency of fuel
- Water increases oxidation



#### Biodiesel Blends

- Biodiesel blends, because of their inherent solvent property can dissolve accumulated sediment
- Biodiesel blends contain surfactants that can emulsify water droplets
- Biodiesel blends can increase microbial growth



#### Particles

- Particles such as soot, dust, rust, and noncombustible metallic material (also called “ash”) cause component wear from abrasion and heat
- Particles contribute to formation of carbon deposits
- Particles clog injector nozzles, altering injector spray patterns and causing poor combustion



#### Asphaltenes

- Asphaltenes are a normal by-product of fuel oxidation, look like a black tar, and result in incomplete combustion
- Asphaltenes degrades fuel lubricity
- Asphaltenes create lacquer build up and deposits of hard materials that shorten pump and engine life