

GAS ENGINE EXPLANATIONS

OIL CONDITION

Water Contamination = Water in oil

As we all know, **Water** and **Oil** don't mix. Low levels of **Water** can come from condensation caused by short drives or a vehicle sitting for long periods of time. **Water** can mix with the oil when there is a bad intake or head gaskets, cracked heads or blocks. It is rare to see high amounts of **Water** alone. This usually occurs only when just **Water** is being used in the radiator without antifreeze or in an improper mix ratio. Changing your oil and doing further diagnostics are suggested to locate the source of the water contamination.

Coolant Content = Antifreeze (Glycol) in oil

Antifreeze is added to your radiator to help keep your engine from freezing in the winter and overheating in the summer. **Antifreeze** should never mix with oil. Catching this problem early can save the high cost of engine replacement. **Antifreeze** can mix with oil from a bad intake gasket or head gasket, cracked head or block. In rare instances, if **Antifreeze ONLY** is detected and there is NO Potassium or **Sodium**, then an oil additive may cause a false positive reading for **Glycol**. If you are unaware of any oil additive being used it is recommended you retest your oil at the next oil change interval.

Air Filter = Silicon in oil

Dirt is in the air all around us and it is really important to keep it out of your engine. Dirt that gets past your air filter acts like sand paper and causes engine parts to wear out very quickly. If dirt, **Silicon** is found in your engine oil at an elevated level, change your oil and check your air filter and any other sources where it may gain entrance, such as cracked ducts/boots, loose clamps, air filter seals and vacuum hoses.

Fuel Content = Fuel (Gasoline) in oil

In a perfect world, you put gasoline in your gas tank and it is then burned in your engine to make the power to drive your car. But when **Fuel** is found in your engine oil, there is a problem. Raw **Fuel** dilutes and breaks down your oil's ability to lubricate. **Fuel** found in engine oil can be caused by carbon build-up on internal engine parts, dirty fuel injectors, gummed or poorly adjusted carburetors or an engine that is out of tune.

Sludge Potential = Oxidation/Nitration

Sludge, a tar like substance, is formed when air is mixed with hot oil in your engine. Sludge can also form when hot oil comes in contact with burned fuel. You should change your oil on a regular schedule to avoid making sludge. High **Oxidation** and **Nitration** (Acid build up) are signs of going too long between oil changes or over heating the engine. **Sludge** can plug oil passages and cause serious engine damage. High nitration can be corrosive to engine parts.

Wear Metals = Wear contamination

The useful life of oil has reached its' end due to the presence of wear metal contamination. This may be caused by incoming dirt, overheating, poor lubrication or going too long between oil drain intervals, (causing carbon and sludge build up.) *On new or recently rebuilt engines, it is normal for break-in material to be found.*