



MOWERS

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OIL LABORATORY ANALYSIS REPORT

Oil Report for: Bill Smedley

Somewhere, IL 60000-

Vehicle/Unit: Billmobile

Oil Brand: Valvoline

Oil Grade: 10W-30

Order No: 42

Client ID: 6

Sample Name: 5 Glab

Sample Number	Contaminants			Wear Metals								Additive Metals					
	Boron	Silicon	Sodium	Aluminum	Iron	Chromium	Copper	Lead	Nickel	Silver	Tin	Zinc	Phosphorus	Calcium	Barium	Magnesium	Molybdenum
1	10.13	13.6	63.4	3.98	8.87	3.07	3.23	4.33	3.3	3.14	1.89	1610	1600	5030	12.41	30.1	4.57

** Results are in Parts Per Million **

Contaminants: Some foreign elements found in oil:

- Boron:** Possible contamination from anti-freeze, but also used as an additive in some oils.
- Silicon:** Sand, dirt, dust. Silicone is present in some new oils and sealant compounds.
- Sodium:** Contained in some new oils, but could be from salt water or anti-freeze.

Wear Metals: Presence of these metals indicates wear from various components of the engine. These metals and their locations can include

- Aluminum:** Some engine blocks, pistons, blowers, some bearings and bushings.
- Iron:** Pistons, rings, valves and guides, crankshaft, rocker arms, bolts, nuts, washers, engine block, oil pump.
- Chromium:** Some bearings and shafts, compression rings, cooling system components.
- Copper:** Thrust washers, bearings and bushings, oil cooler core components, valve guides, injector shields, some clutches. Also present in some oils and gasket compound
- Lead:** Main and connecting rod bearings, plated components, leaded gasoline.
- Nickel:** Shafts, valves, anti-friction bearings.
- Silver:** Valves and guides, cylinder liners, some solder, some bearings.
- Tin:** Bushings, oil cooler core, plated components, thrust washers.

Additive Metals: Typical additive ingredients:

- Zinc:** Anti-wear additive and alloy component, and used in antioxidant products and corrosion inhibitors.
- Phosphorus:** Anti-wear element, also used in corrosion inhibitors and anti-oxidant products.
- Calcium:** Oil additive with detergent and dispersant qualities.
- Barium:** Corrosion and rust inhibitor and detergent additive.
- Magnesium:** Corrosion and rust inhibitor and detergent additive.
- Molybdenum:** Anti-wear additive.

**** The results of this test are intended as an aid to your normal engine maintenance. This analysis is not a stand alone maintenance device, it is merely a guide. ****

**** No guarantee, expressed or implied, is made against the failure of any components. ****