



CONSTRUCTION EQUIPMENT

646475 RUBY SIERRA KB6000 0936122 - DIESEL ENGINE



Sample No: VCP452294
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 646475 RUBY



SAMPLE INFORMATION

Sample Number	VCP452294	VCP412506	VCP407932	---
Sample Date	21 Dec 2023	02 Aug 2023	14 Jun 2023	---
Machine Hours	1633	897	478	---
Oil Hours	500	250	478	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	ATTENTION	NORMAL	NORMAL	---

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OIL CONDITION

Visc @ 100°C	cSt	▲ 11.8	■ 13.5	■ 12.3	---
Base Number (BN)	mg KOH/g	■ 6.8	■ 8.9	■ 5.7	---
Oxidation (PA)	%	67	59	88	---

Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



CONTAMINATION

Water	%	NEG	NEG	NEG	---
Soot %	%	■ 0.2	■ 0.1	■ 0.2	---
Nitration (PA)	%	78	51	78	---
Sulfation (PA)	%	53	52	59	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	■ 0.3	<1.0	■ 1.1	---
Silicon	ppm	■ 16	■ 6	■ 26	---
Sodium	ppm	■ 2	■ 2	■ 9	---
Potassium	ppm	■ 0	■ <1	■ 1	---



WEAR METALS

Iron	ppm	■ 20	■ 14	■ 33	---
Copper	ppm	■ 30	■ 23	■ 129	---
Lead	ppm	■ 0	■ <1	■ 0	---
Tin	ppm	■ <1	■ <1	■ 0	---
Aluminum	ppm	■ 1	■ 2	■ 10	---
Chromium	ppm	■ <1	■ <1	■ 0	---
Molybdenum	ppm	■ 60	■ 58	■ 48	---
Nickel	ppm	■ 0	■ 0	■ 0	---
Titanium	ppm	<1	0	1	---
Silver	ppm	■ 0	■ 0	■ 0	---
Manganese	ppm	■ <1	■ <1	■ 3	---
Vanadium	ppm	<1	<1	0	---



ADDITIVES

Calcium	ppm	■ 1037	■ 1191	■ 1719	---
Magnesium	ppm	■ 969	■ 954	■ 503	---
Zinc	ppm	■ 1254	■ 1260	■ 1008	---
Phosphorus	ppm	■ 1011	■ 1038	■ 792	---
Barium	ppm	■ 0	■ 0	■ 5	---
Boron	ppm	■ 0	■ <1	■ 27	---

Depot: VOLVO2990
Unique No: 10822399
Signed: Don Baldrige
Report Date: 14 Jan 2024



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GRAPHS

