



CONSTRUCTION EQUIPMENT

567921 VOLVO L110H 631322 - DIESEL ENGINE



Sample No: VCP393753
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 567921



SAMPLE INFORMATION

Sample Number	VCP393753	VCP410340	VCP395716	VCP366311
Sample Date	01 Aug 2023	01 Apr 2023	22 Feb 2023	30 Sep 2022
Machine Hours	9947	9562	9341	8782
Oil Hours	500	210	500	500
Oil Changed	Changed	Not Chngd	Changed	Changed
Sample Status	ABNORMAL	ATTENTION	SEVERE	ABNORMAL

RIPA AND ASSOCIATES
 10149 FISHER AVENUE
 TAMPA, FL
 US 33619
 Contact: ROBERT TURNER
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 T:
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OIL CONDITION

Visc @ 100°C	cSt	█ 12.9	█ 12.8	█ 12.8	█ 13.2
Base Number (BN)	mg KOH/g	█ 9.4	█ 10.3	█ 10.2	█ 11.2
Oxidation (PA)	%	79	76	80	71

Diagnosis

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. The aluminum level is abnormal. Piston wear is indicated. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

CONTAMINATION

Soot %	%	█ 0.3	█ 0.2	█ 0.3	█ 0.4
Nitration (PA)	%	64	52	65	79
Sulfation (PA)	%	58	60	61	58
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	█ 7	█ 5	█ 8	█ 11
Sodium	ppm	█ 3	█ 2	█ 0	█ <1
Potassium	ppm	█ 2	█ 0	█ 2	█ 0

WEAR METALS

Iron	ppm	█ 23	█ 11	█ 34	█ 32
Copper	ppm	█ 1	█ <1	█ 4	█ 3
Lead	ppm	█ <1	█ 0	█ <1	█ <1
Tin	ppm	█ 1	█ 0	█ <1	█ 1
Aluminum	ppm	▲ 37	▲ 23	◆ 104	▲ 69
Chromium	ppm	█ 2	█ 1	█ 4	█ 4
Molybdenum	ppm	█ 47	█ 47	█ 47	█ 61
Nickel	ppm	█ <1	█ 0	█ 2	█ <1
Titanium	ppm	<1	0	<1	1
Silver	ppm	█ 0	█ 0	█ 0	█ 0
Manganese	ppm	█ <1	█ <1	█ <1	█ <1
Vanadium	ppm	0	0	<1	0

ADDITIVES

Calcium	ppm	█ 1747	█ 1690	█ 1585	█ 1387
Magnesium	ppm	█ 582	█ 552	█ 522	█ 823
Zinc	ppm	█ 1237	█ 1160	█ 1122	█ 1247
Phosphorus	ppm	█ 1009	█ 980	█ 936	█ 1067
Barium	ppm	█ 0	█ 0	█ 2	█ 0
Boron	ppm	█ 27	█ 50	█ 28	█ 7

Depot: RIPTAM
Unique No: 10601869
Signed: Don Baldrige
Report Date: 12 Aug 2023



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GRAPHS

