



CONSTRUCTION EQUIPMENT

24774 VOLVO L220 3456 - DIESEL ENGINE



Sample No: VCP418469
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 24774



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SAMPLE INFORMATION

Sample Number	VCP418469	VCP420824	---	---
Sample Date	12 Jan 2024	15 Jun 2023	---	---
Machine Hours	2189	1018	---	---
Oil Hours	0	1000	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	ABNORMAL	ABNORMAL	---	---



OIL CONDITION

Visc @ 100°C	cSt	▲ 11.8	▲ 11.6	---	---
Base Number (BN)	mg KOH/g	■ 6.5	■ 5.6	---	---
Oxidation (PA)	%	88	76	---	---



CONTAMINATION

Water	%	NEG	NEG	---	---
Soot %	%	■ 0.3	■ 0.2	---	---
Nitration (PA)	%	85	71	---	---
Sulfation (PA)	%	65	62	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	■ 0.4	---	---
Silicon	ppm	■ 9	▲ 27	---	---
Sodium	ppm	■ 2	■ 3	---	---
Potassium	ppm	■ 2	■ 4	---	---



WEAR METALS

Iron	ppm	■ 12	■ 15	---	---
Copper	ppm	▲ 52	▲ 257	---	---
Lead	ppm	■ 0	■ 0	---	---
Tin	ppm	■ 2	■ 3	---	---
Aluminum	ppm	■ 2	■ 2	---	---
Chromium	ppm	■ <1	■ <1	---	---
Molybdenum	ppm	■ 43	■ 56	---	---
Nickel	ppm	■ <1	■ <1	---	---
Titanium	ppm	0	0	---	---
Silver	ppm	■ 0	■ 0	---	---
Manganese	ppm	■ 1	■ 3	---	---
Vanadium	ppm	<1	0	---	---



ADDITIVES

Calcium	ppm	■ 1687	■ 2043	---	---
Magnesium	ppm	■ 486	■ 277	---	---
Zinc	ppm	■ 1109	■ 1291	---	---
Phosphorus	ppm	■ 833	■ 1006	---	---
Barium	ppm	■ 0	■ 0	---	---
Boron	ppm	■ 11	■ 58	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. The copper level has decreased, but is still abnormal. All other component wear rates are normal. 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.

Depot: VOLVO3387
Unique No: 10836848
Signed: Don Baldrige
Report Date: 22 Jan 2024

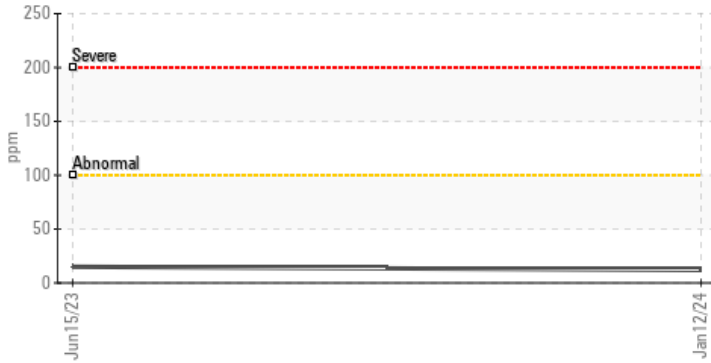


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GRAPHS

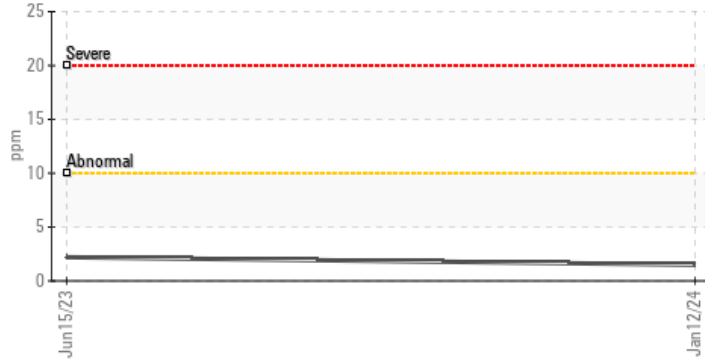
Iron (ppm)



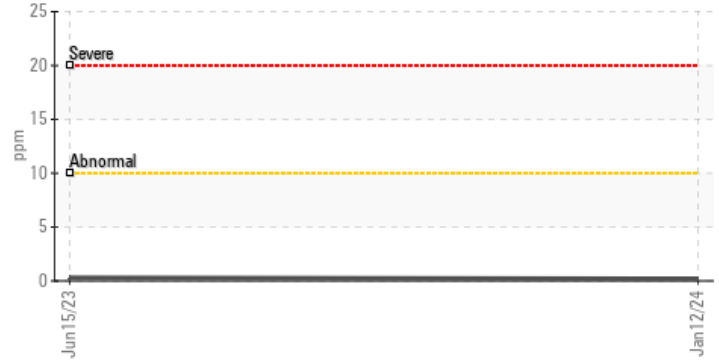
Lead (ppm)



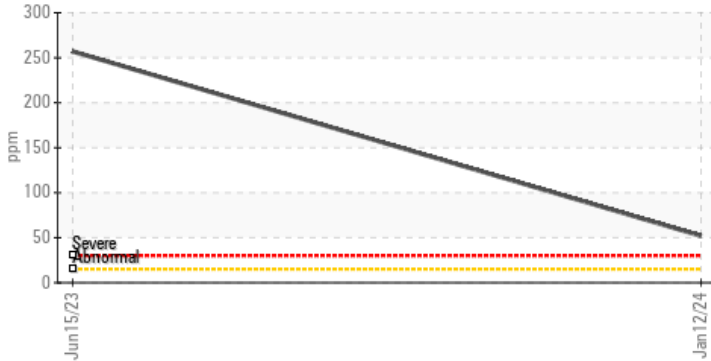
Aluminum (ppm)



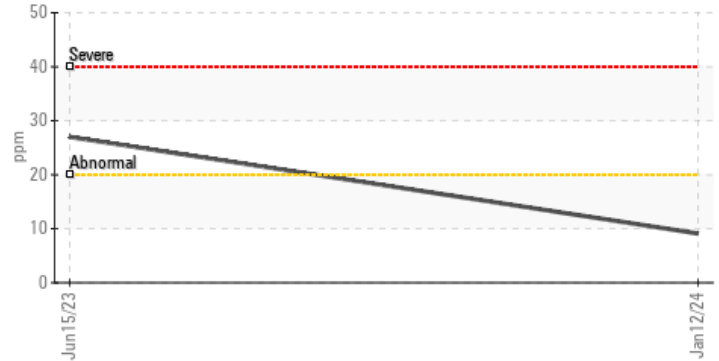
Chromium (ppm)



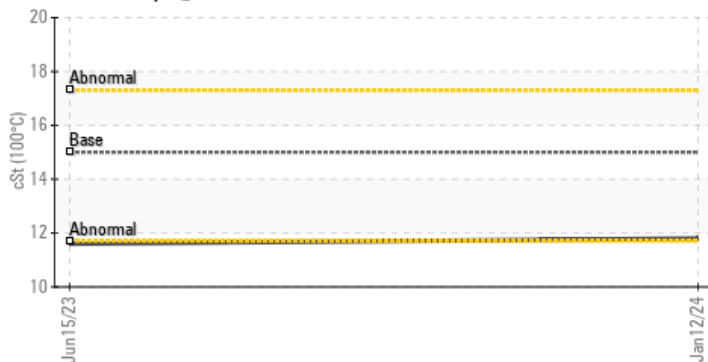
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number

