



CONSTRUCTION EQUIPMENT

0196 VOLVO L110H 632536 - DIESEL ENGINE



Sample No: VCP438938
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 0196



SAMPLE INFORMATION

Sample Number	VCP438938	VCP434697	VCP427044	---
Sample Date	19 Jan 2024	02 Sep 2023	22 Jun 2023	---
Machine Hours	2056	1051	539	---
Oil Hours	0	0	0	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	ABNORMAL	ABNORMAL	ABNORMAL	---

COVANTA LAKES
 3830 ROGERS INDUSTRIAL PARK ROAD
 OKAHUMPKA, FL
 US 32762
 Contact: SERVICE MANAGER

OIL CONDITION

Visc @ 100°C	cSt	13.1	12.7	12.6	---
Base Number (BN)	mg KOH/g	8.9	9.7	9.7	---
Oxidation (PA)	%	89	79	75	---

T:
F:

Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The BN result indicates that there is suitable alkalinity remaining in the oil.

CONTAMINATION

Water	%	NEG	NEG	NEG	---
Soot %	%	0.3	0.2	0.2	---
Nitration (PA)	%	75	56	59	---
Sulfation (PA)	%	62	60	62	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	▲ 61	▲ 35	27	---
Sodium	ppm	6	3	3	---
Potassium	ppm	0	0	3	---

WEAR METALS

Iron	ppm	20	12	21	---
Copper	ppm	6	4	10	---
Lead	ppm	<1	<1	1	---
Tin	ppm	1	1	3	---
Aluminum	ppm	▲ 15	▲ 17	▲ 59	---
Chromium	ppm	1	<1	3	---
Molybdenum	ppm	42	46	51	---
Nickel	ppm	<1	0	<1	---
Titanium	ppm	<1	<1	<1	---
Silver	ppm	0	0	<1	---
Manganese	ppm	<1	<1	2	---
Vanadium	ppm	0	<1	0	---

ADDITIVES

Calcium	ppm	1720	1816	1485	---
Magnesium	ppm	504	544	638	---
Zinc	ppm	1049	1136	1117	---
Phosphorus	ppm	871	961	916	---
Barium	ppm	0	0	25	---
Boron	ppm	24	40	75	---

Depot: COVOKA
Unique No: 10845947
Signed: Sean Felton
Report Date: 26 Jan 2024

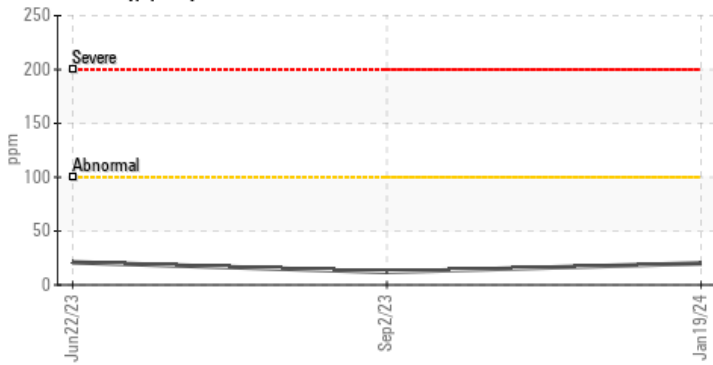


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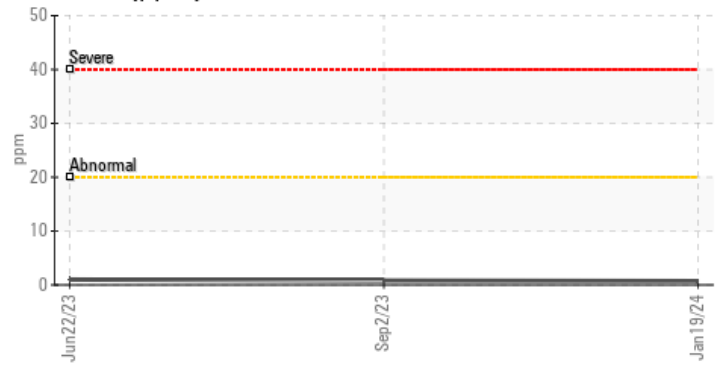


GRAPHS

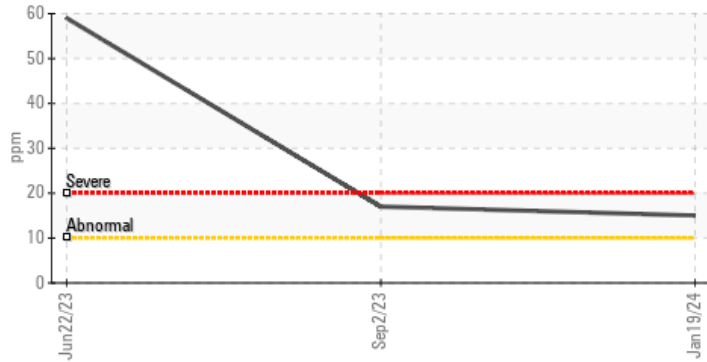
Iron (ppm)



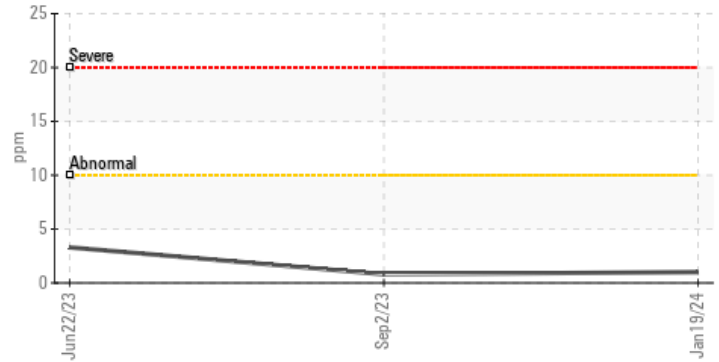
Lead (ppm)



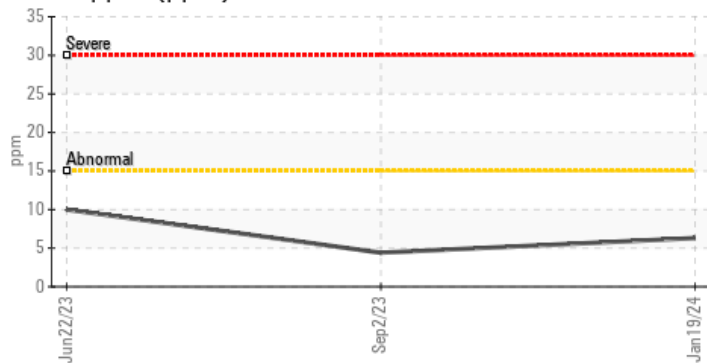
Aluminum (ppm)



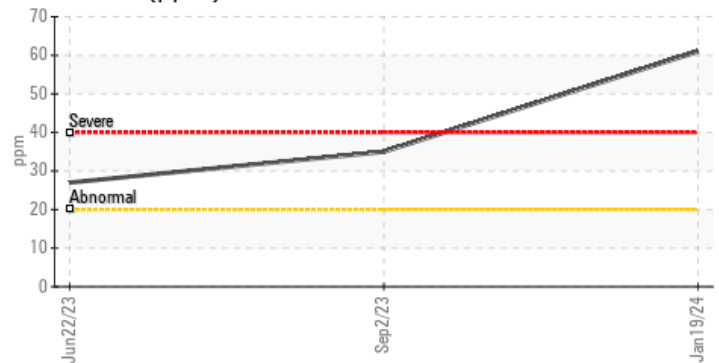
Chromium (ppm)



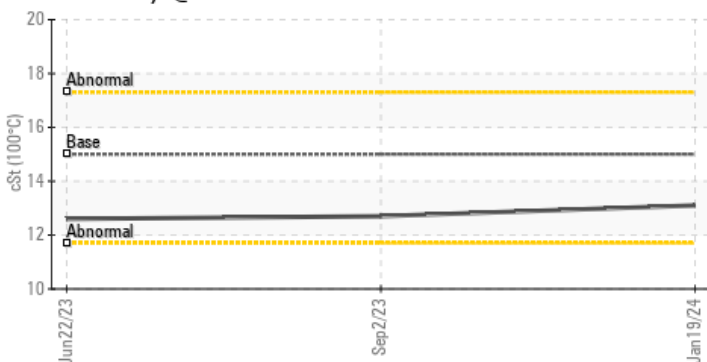
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number

