



CONSTRUCTION EQUIPMENT

VOLVO L110H 631223 - DIESEL ENGINE



Sample No: VCP441882

Oil Type: DIESEL ENGINE OIL SAE 15W40

Job No:



SAMPLE INFORMATION

Sample Number	VCP441882	VCP417012	VCP400239	VCP325345
Sample Date	18 Jan 2024	20 Jul 2023	20 Jan 2023	25 Jan 2022
Machine Hours	8612	8066	7447	6094
Oil Hours	0	0	500	500
Oil Changed	N/A	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL

RIPA AND ASSOCIATES

10149 FISHER AVENUE
TAMPA, FL
US 33619
Contact: PM Services
PMServices@ripaconstruction.com
T:
F:



OIL CONDITION

Visc @ 100°C	cSt	13.08	12.4	12.8	13.3
Base Number (BN)	mg KOH/g	9.9	9.8	8.3	11.9
Oxidation (PA)	%	80	75	57	86



CONTAMINATION

Water	%	0.147	NEG	NEG	NEG
Soot %	%	0.4	0.3	0.2	0.3
Nitration (PA)	%	71	71	69	68
Sulfation (PA)	%	59	57	50	65
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	20	4	4	5
Sodium	ppm	0	0	0	2
Potassium	ppm	2	1	1	0



WEAR METALS

Iron	ppm	51	11	9	12
Copper	ppm	8	3	2	18
Lead	ppm	3	3	3	4
Tin	ppm	<1	<1	1	1
Aluminum	ppm	11	6	7	6
Chromium	ppm	4	<1	<1	<1
Molybdenum	ppm	52	54	77	40
Nickel	ppm	0	0	<1	0
Titanium	ppm	<1	<1	0	<1
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	<1	0



ADDITIVES

Calcium	ppm	1545	1673	1814	1744
Magnesium	ppm	508	429	423	573
Zinc	ppm	1147	1111	1319	1071
Phosphorus	ppm	757	926	1048	980
Barium	ppm	5	2	<1	0
Boron	ppm	36	29	31	29

Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate possible alumina-silicate (coarse dirt) ingress. There is a trace of moisture present in the oil. The condition of the oil is acceptable for the time in service.

Depot: RIPTAM
Unique No: 10863734
Signed: Doug Bogart
Report Date: 14 Feb 2024

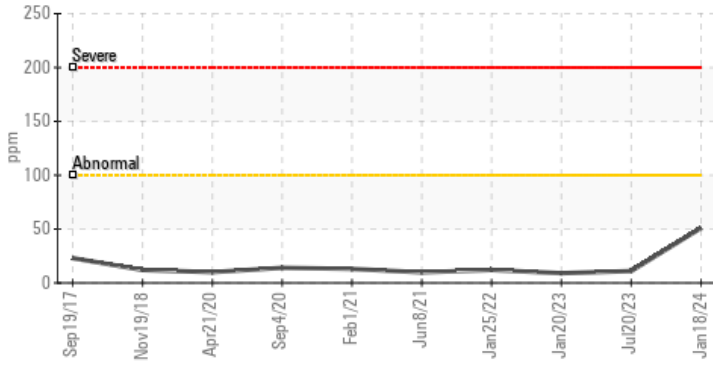


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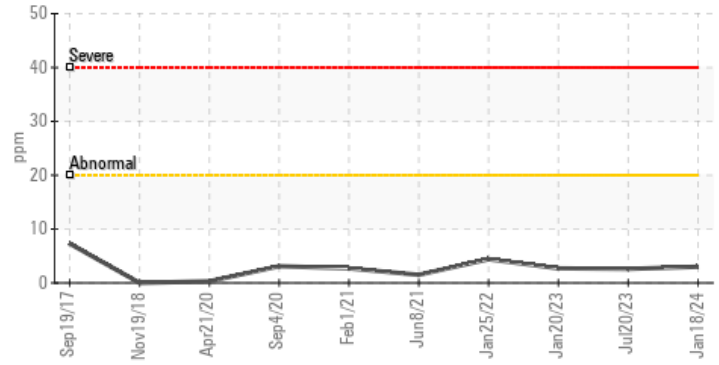


GRAPHS

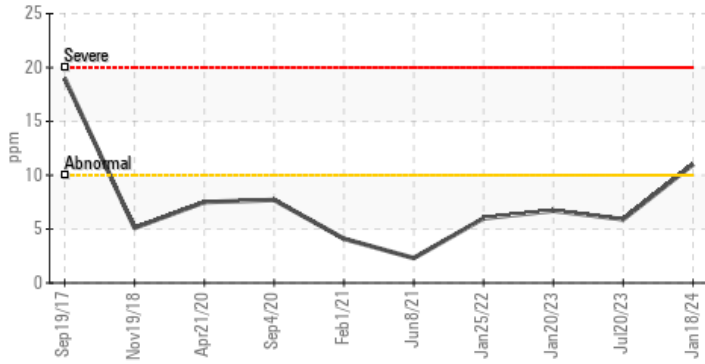
Iron (ppm)



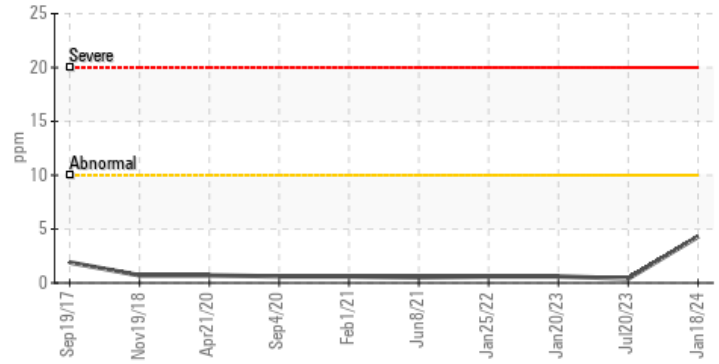
Lead (ppm)



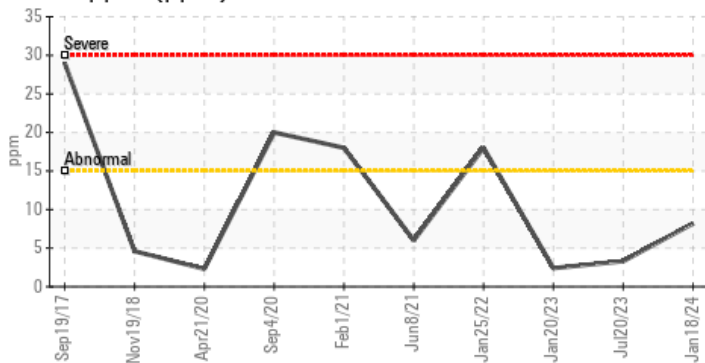
Aluminum (ppm)



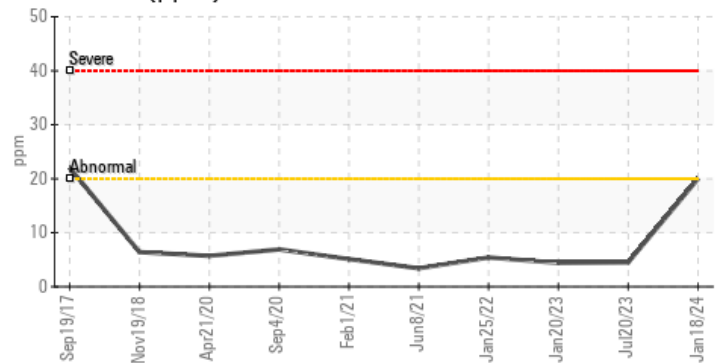
Chromium (ppm)



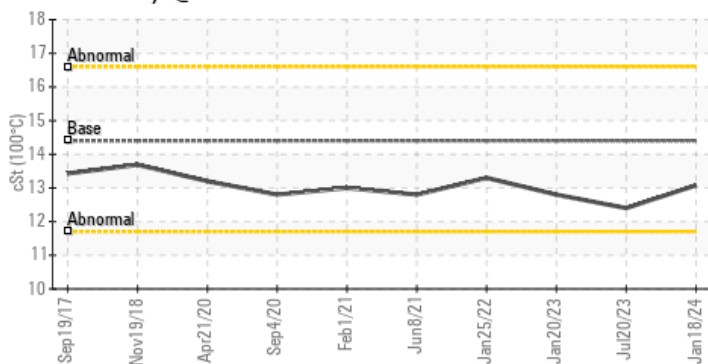
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number

