CONSTRUCTION EQUIPMENT
COVANTA VOLVO L110H 631015 - DIESEL ENGINE

Sample No: VCP441469
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: COVANTA

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SAMPLE INFORMATION

Sample Number		**VCP441469**	VCP252229	VCP208232	VCP194933
Sample Date		**19 Dec 2023**	12 Jul 2019	24 Jul 2017	13 Mar 2017
Machine Hours		**9231**	5514	2456	1978
Oil Hours		**0**	5514	0	500
Oil Changed		**Not Changd**	Changed	Changed	Changed
Sample Status		**ABNORMAL**	NORMAL	NORMAL	NORMAL

OIL CONDITION

Visc @ 100°C	cSt	**13.4**	13.2	13.62	14.09
Base Number (BN)	mg KOH/g	**9.1**	---	---	---
Oxidation (PA)	%	**61**	84	60	68

CONTAMINATION

Water	%	**NEG**	NEG	NEG	NEG
Soot %	%	**0.1**	0.3	0.1	0.1
Nitration (PA)	%	**43**	68	50	58
Sulfation (PA)	%	**61**	59	50	55
Glycol	%	**NEG**	NEG	NEG	NEG
Fuel	%	**<1.0**	<1.0	<1.0	<1.0
Silicon	ppm	**8**	5	5	6
Sodium	ppm	**2**	5	3	4
Potassium	ppm	**2**	3	2	0

WEAR METALS

Iron	ppm	**16**	9	10	13
Copper	ppm	▲ **4**	1	2	2
Lead	ppm	▲ **6**	0	<1	0
Tin	ppm	▲ **7**	0	2	8
Aluminum	ppm	▲ **11**	5	5	5
Chromium	ppm	**<1**	<1	<1	<1
Molybdenum	ppm	▲ **115**	38	40	47
Nickel	ppm	**<1**	<1	0	<1
Titanium	ppm	**0**	0	0	<1
Silver	ppm	**0**	0	0	0
Manganese	ppm	**<1**	2	<1	<1
Vanadium	ppm	**<1**	0	0	0

ADDITIVES

Calcium	ppm	**1493**	1574	1549	1607
Magnesium	ppm	**600**	476	513	650
Zinc	ppm	**1006**	807	819	983
Phosphorus	ppm	**883**	639	696	776
Barium	ppm	**0**	0	0	0
Boron	ppm	▲ **410**	29	27	29

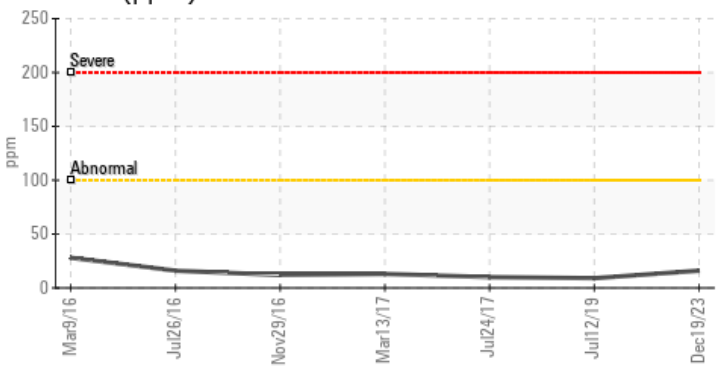
Diagnosis

We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.Aluminum ppm levels are abnormal. Tin, copper and lead ppm levels are noted. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

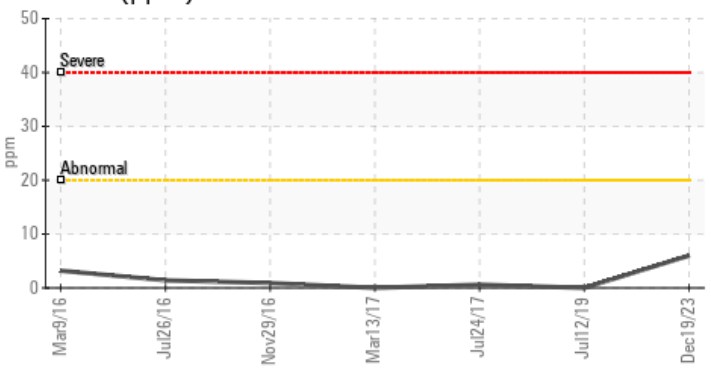
Depot: VOLVO0093
Unique No: 10796589
Signed: Angela Borella
Report Date: 22 Dec 2023

GRAPHS

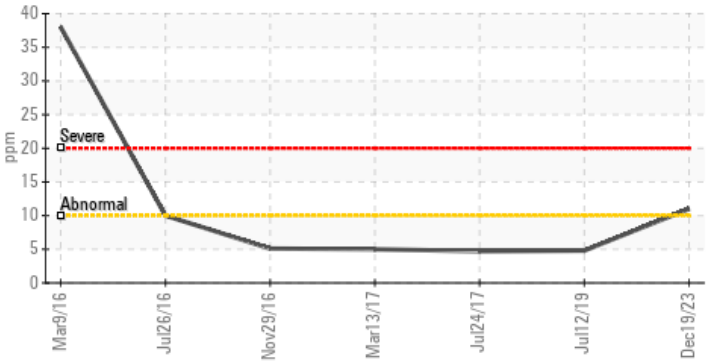
Iron (ppm)



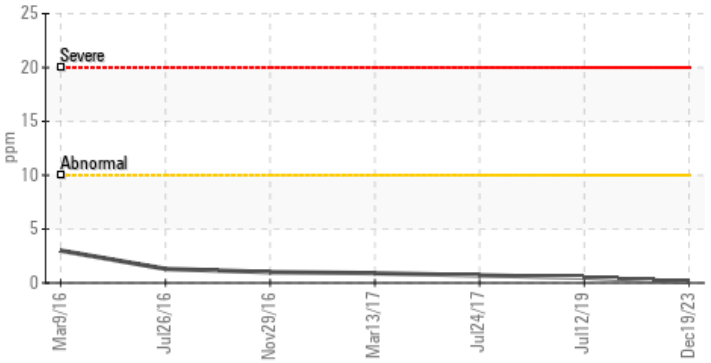
Lead (ppm)



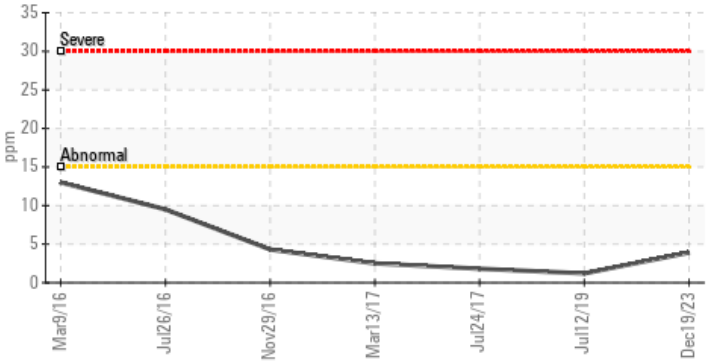
Aluminum (ppm)



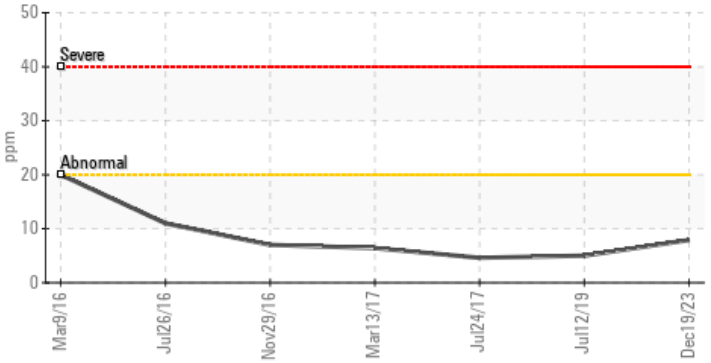
Chromium (ppm)



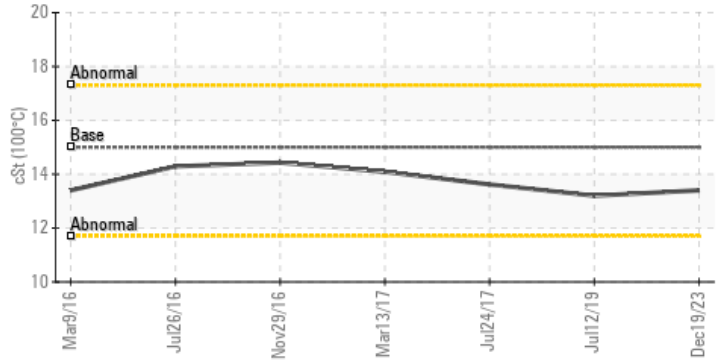
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number