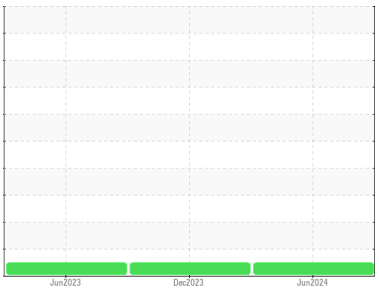
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
[69013]
Machine Id
VOLVO VNL660 4656
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Fluid Condition
The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0948234**	WC0869679	WC0831159
Sample Date		Client Info		**10 Jun 2024**	13 Dec 2023	23 Jun 2023
Machine Age	kms	Client Info		**287670**	194348	94346
Oil Age	kms	Client Info		**0**	100002	94346
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	**46**	47	76
Chromium	ppm	ASTM D5185(m)	>20	**1**	1	1
Nickel	ppm	ASTM D5185(m)	>2	**2**	3	6
Titanium	ppm	ASTM D5185(m)		**0**	0	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**8**	14	29
Lead	ppm	ASTM D5185(m)	>40	**<1**	2	5
Copper	ppm	ASTM D5185(m)	>330	**23**	56	152
Tin	ppm	ASTM D5185(m)	>15	**2**	2	6
Antimony	ppm	ASTM D5185(m)		**<1**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

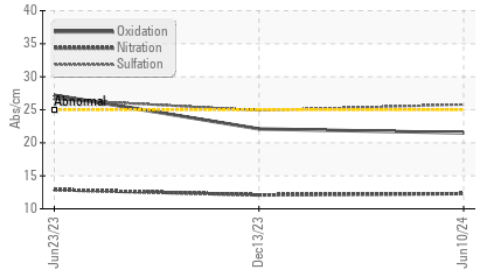
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	250	**2**	7	22
Barium	ppm	ASTM D5185(m)	10	**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	100	**63**	66	104
Manganese	ppm	ASTM D5185(m)		**1**	1	5
Magnesium	ppm	ASTM D5185(m)	450	**923**	857	616
Calcium	ppm	ASTM D5185(m)	3000	**1224**	1331	1670
Phosphorus	ppm	ASTM D5185(m)	1150	**894**	842	753
Zinc	ppm	ASTM D5185(m)	1350	**1204**	1136	851
Sulfur	ppm	ASTM D5185(m)	4250	**2151**	1998	2028
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**8**	11	33
Sodium	ppm	ASTM D5185(m)		**3**	4	8
Potassium	ppm	ASTM D5185(m)	>20	**14**	31	73

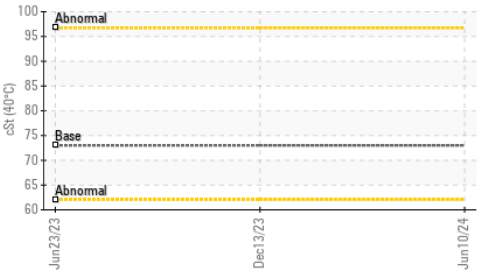
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	**1**	0.7	0.5
Nitration	Abs/cm	ASTM D7624*	>20	**12.3**	12.1	12.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**25.8**	24.9	26.6

OIL ANALYSIS REPORT

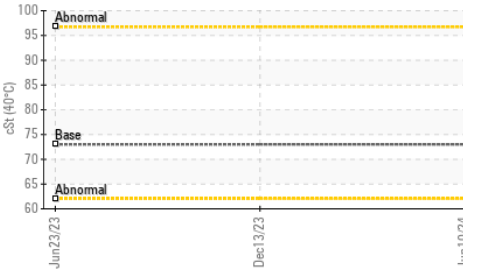
FT-IR (Direct Trend)



Viscosity @ 40°C



Viscosity @ 40°C



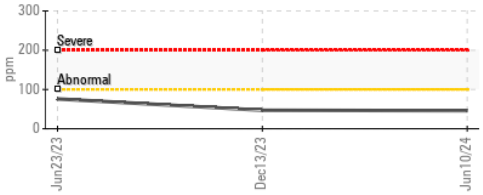
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**21.5**	22.1	27.2

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

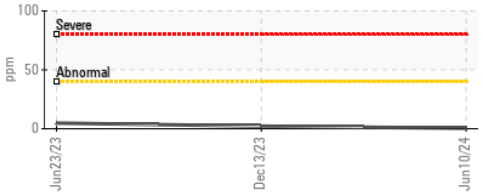
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	73	**75.9**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	**11.4**	11.4	10.2
Viscosity Index (VI)	Scale	ASTM D2270*	138	**142**	---	---

GRAPHS

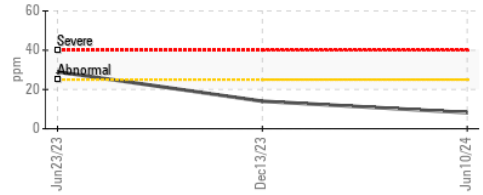
Iron (ppm)



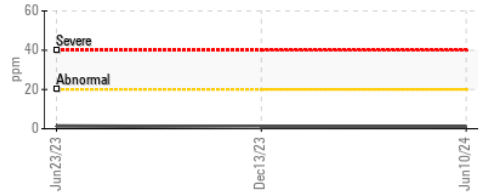
Lead (ppm)



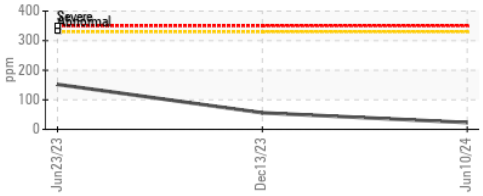
Aluminum (ppm)



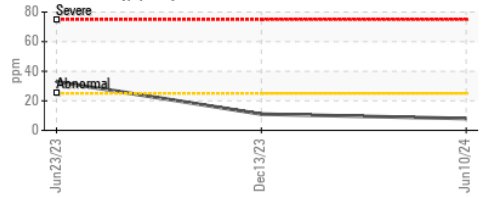
Chromium (ppm)



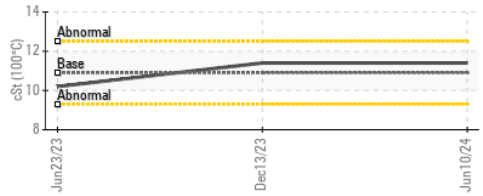
Copper (ppm)



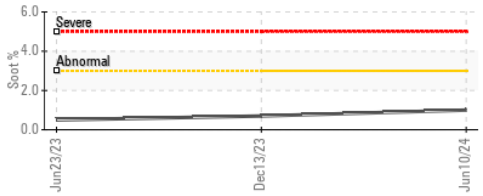
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0948234 **Received** : 17 Jun 2024
Lab Number : 02642299 **Tested** : 18 Jun 2024
Unique Number : 5799838 **Diagnosed** : 18 Jun 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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