

Machine Id
VOLVO VNL UNIT 13 (S/N 176765A)
Component
Diesel Engine
Fluid
VOLVO ULTRA DIESEL ENGINE OIL SAE 10W30 (38 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LF509802	LF1501565	LF1501567
Sample Date		Client Info		18 May 2022	13 Jul 2019	01 Apr 2019
Machine Age	mls	Client Info		863491	676561	652969
Oil Age	mls	Client Info		16224	18915	3270
Filter Age	mls	Client Info		16224	18915	3270
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	19	19	17
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	12	4	4
Lead	ppm	ASTM D5185m	>40	<1	8	0
Copper	ppm	ASTM D5185m	>330	2	7	24
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

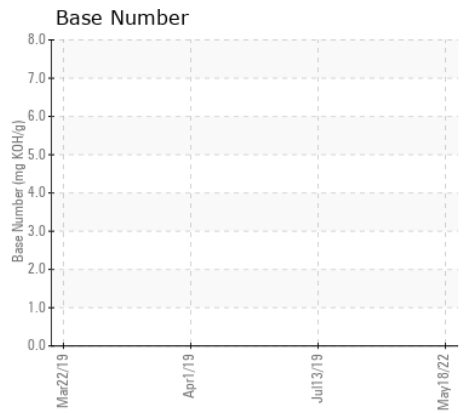
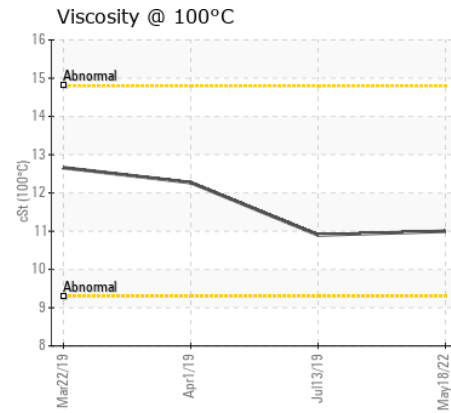
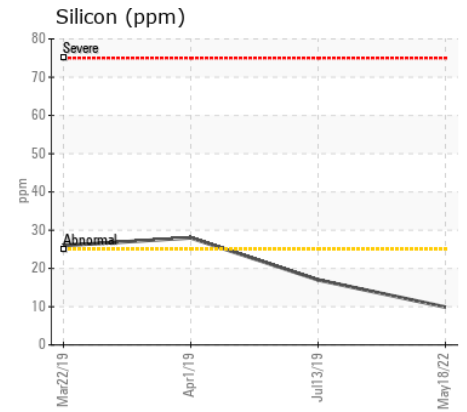
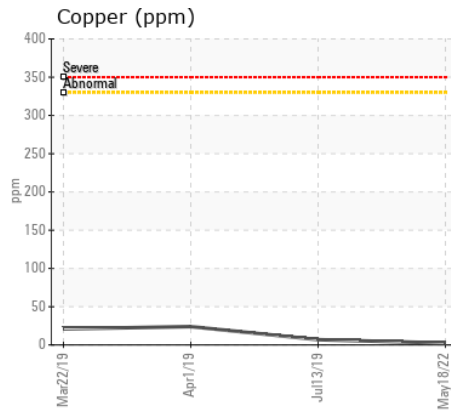
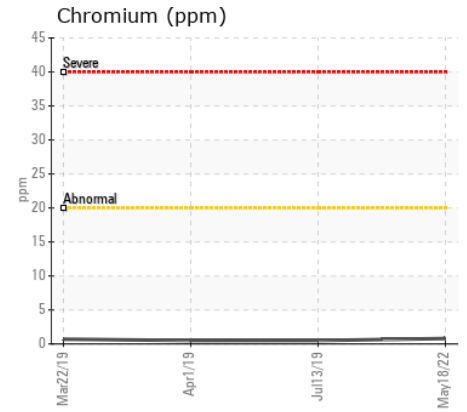
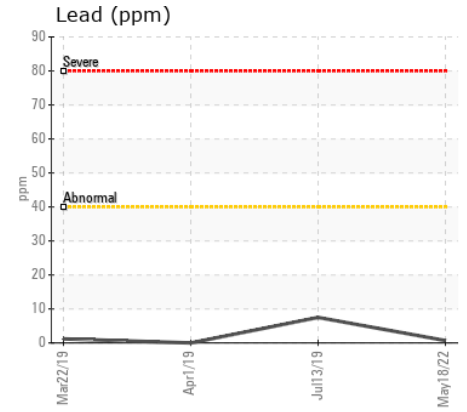
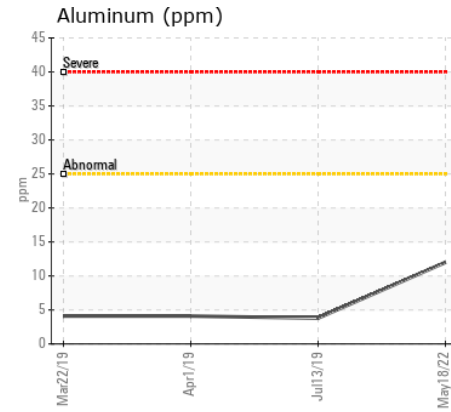
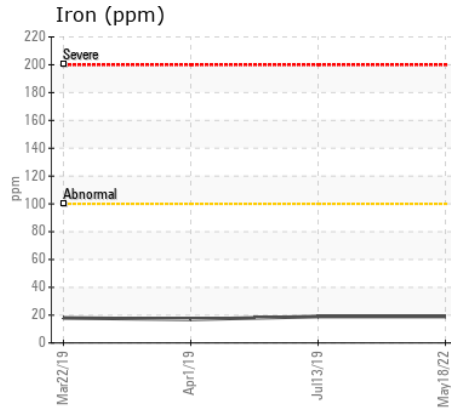
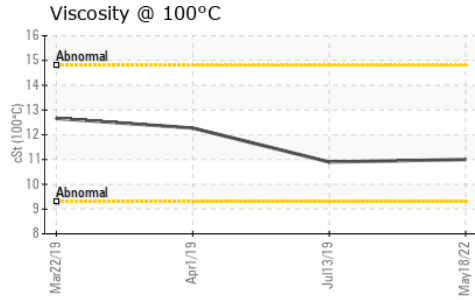
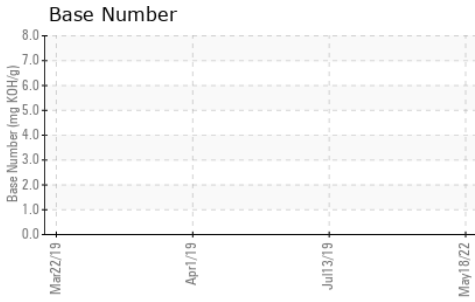
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	10	17	▲ 28
Potassium	ppm	ASTM D5185m	>20	2	3	0
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
Soot %	%	*ASTM D7844	>3	0.7	0.6	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.7	11.4	6.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.8	26.9	22.1
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	3	7
Boron	ppm	ASTM D5185m		226	12	87
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		121	34	52
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		565	426	532
Calcium	ppm	ASTM D5185m		1446	1435	1709
Phosphorus	ppm	ASTM D5185m		931	685	868
Zinc	ppm	ASTM D5185m		1168	830	1008
Sulfur	ppm	ASTM D5185m		2535	2833	2433
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.4	30.2	19.4
Base Number (BN)	mg KOH/g	ASTM D2896		7.6	---	---
Visc @ 100°C	cSt	ASTM D445		11.0	10.9	12.27



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LF509802 **Received** : 26 May 2022
Lab Number : 05554417 **Tested** : 26 May 2022
Unique Number : 9993805 **Diagnosed** : 27 May 2022 - Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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