



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
VOLVO VNL UNIT 13 (S/N 176765A)

Component
Diesel Engine

Fluid
LUCAS CK-4 10W30 (38 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LF1501598	LF509802	LF1501565
Sample Date		Client Info		01 Feb 2023	18 May 2022	13 Jul 2019
Machine Age	mls	Client Info		905596	863491	676561
Oil Age	mls	Client Info		35470	16224	18915
Filter Age	mls	Client Info		35470	16224	18915
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	43	19	19
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	2	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	19	12	4
Lead	ppm	ASTM D5185m	>40	5	<1	8
Copper	ppm	ASTM D5185m	>330	4	2	7
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

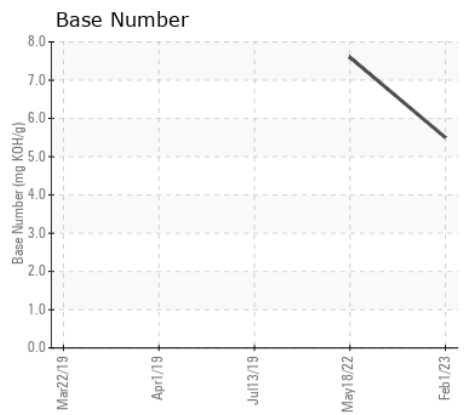
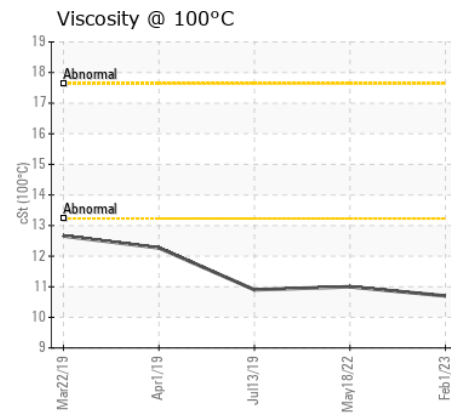
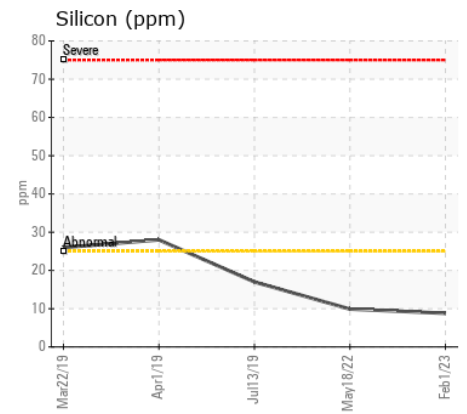
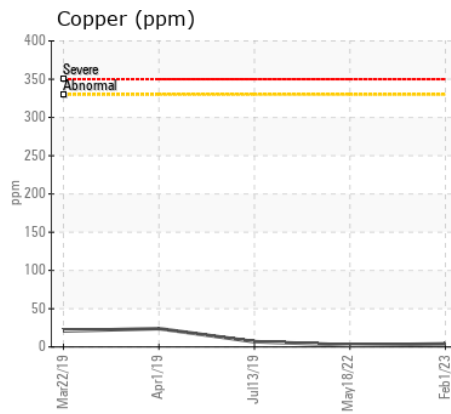
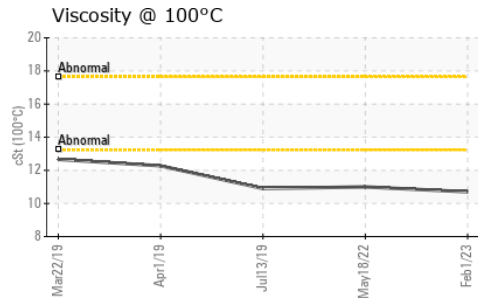
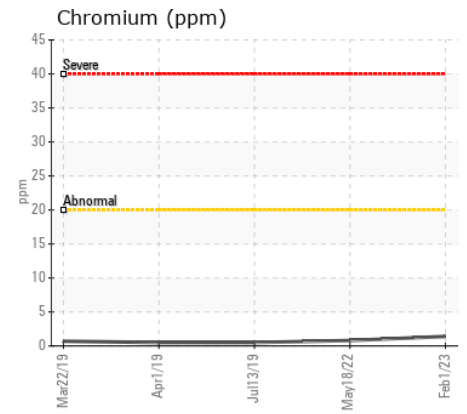
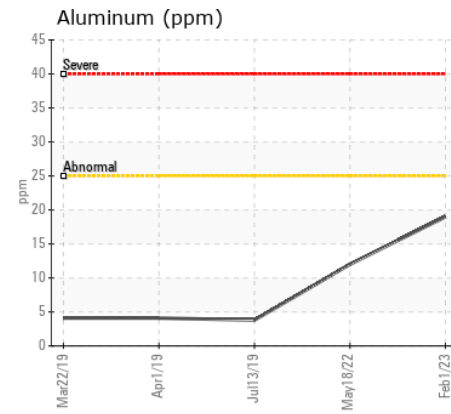
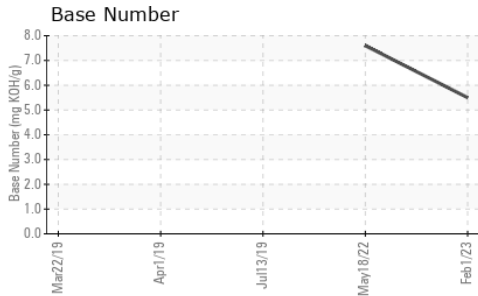
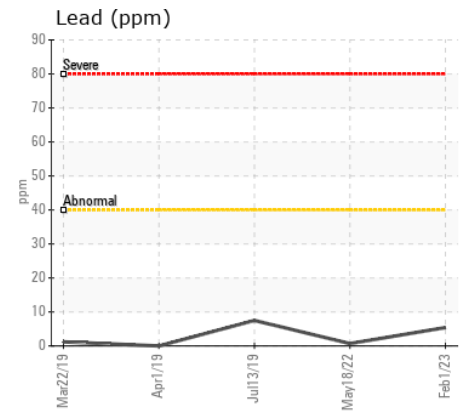
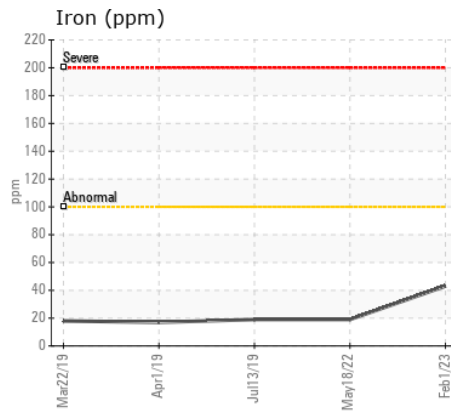
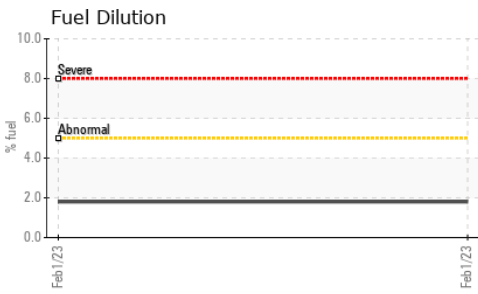
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	9	10	17
Potassium	ppm	ASTM D5185m	>20	2	2	3
Fuel	%	ASTM D3524	>5	1.8	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1.2	0.7	0.6
Nitration	Abs/cm	*ASTM D7624	>20	10.3	8.7	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.6	23.8	26.9
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		5	0	3
Boron	ppm	ASTM D5185m		35	226	12
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		115	121	34
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		515	565	426
Calcium	ppm	ASTM D5185m		1335	1446	1435
Phosphorus	ppm	ASTM D5185m		758	931	685
Zinc	ppm	ASTM D5185m		1002	1168	830
Sulfur	ppm	ASTM D5185m		2894	2535	2833
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.3	19.4	30.2
Base Number (BN)	mg KOH/g	ASTM D2896		5.5	7.6	---
Visc @ 100°C	cSt	ASTM D445		10.7	11.0	10.9



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LF1501598 **Received** : 22 Feb 2023
Lab Number : 05774377 **Tested** : 27 Feb 2023
Unique Number : 10348994 **Diagnosed** : 27 Feb 2023 - Angela Borella
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

WILLIS TRUCKING
 1793 COUNTY RD 25
 BROSELEY, MO
 US 63932
 Contact: SCOTT
 accounting@willistruckingllc.com
 T: (573)472-2650
 F: (573)472-2651

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)