



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
2018 FREIGHTLINER FTL-310
 Component
Diesel Engine
 Fluid
SHELL ROTELLA T 15W40 (12 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0011715	KL0007307	KL0007331
Sample Date		Client Info		28 Nov 2023	01 Jun 2023	21 Feb 2023
Machine Age	mls	Client Info		342501	324679	305657
Oil Age	mls	Client Info		17822	19022	67829
Filter Age	mls	Client Info		17822	19022	67829
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>165	72	27	20
Chromium	ppm	ASTM D5185m	>5	4	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	4	4
Lead	ppm	ASTM D5185m	>150	3	2	1
Copper	ppm	ASTM D5185m	>90	3	<1	<1
Tin	ppm	ASTM D5185m	>5	0	<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

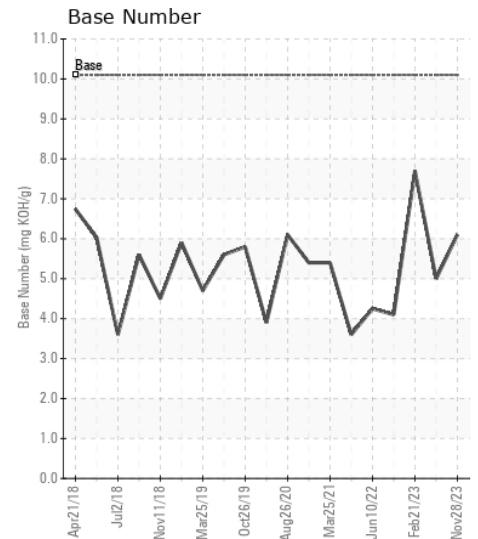
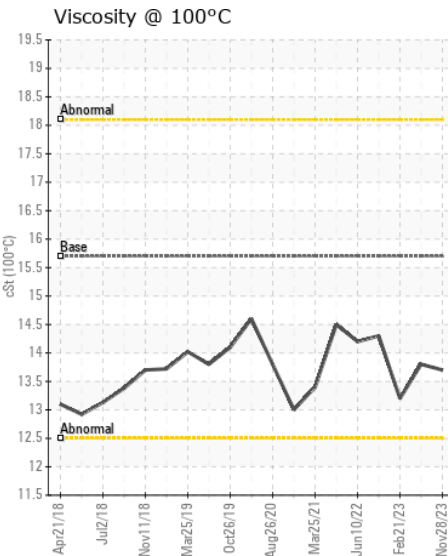
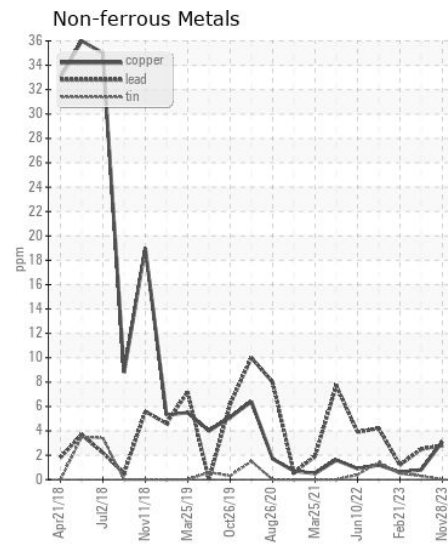
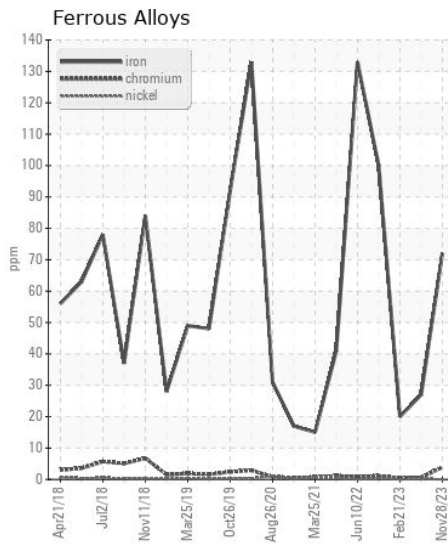
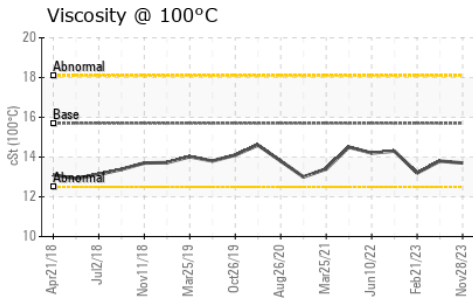
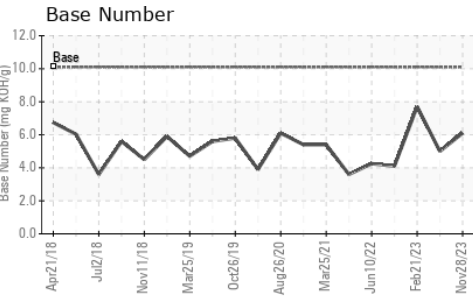
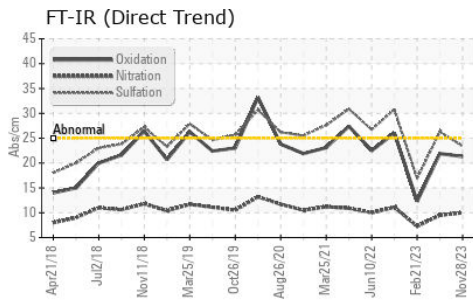
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>35	6	5	4
Potassium	ppm	ASTM D5185m	>20	3	2	1
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>7.5	0.4	0.4	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.0	9.5	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.4	26.3	16.9
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		4	5	4
Boron	ppm	ASTM D5185m	316	25	71	59
Barium	ppm	ASTM D5185m	0.0	2	2	0
Molybdenum	ppm	ASTM D5185m	1.2	45	114	77
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	24	472	301	144
Calcium	ppm	ASTM D5185m	2292	1430	1827	2070
Phosphorus	ppm	ASTM D5185m	1064	874	1033	966
Zinc	ppm	ASTM D5185m	1160	1126	1253	1227
Sulfur	ppm	ASTM D5185m	4996	2736	3653	3923
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.3	21.9	12.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	6.1	5	7.7
Visc @ 100°C	cSt	ASTM D445	15.7	13.7	13.8	13.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : KL0011715

Lab Number : 06026115

Unique Number : 10775906

Test Package : FLEET

Received : 06 Dec 2023

Tested : 07 Dec 2023

Diagnosed : 07 Dec 2023 - Wes Davis

FTL LTD

2302 E DUPONT AVE

BELLE, WV

US 25015

Contact: JOHN SMITH

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T:

F:

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)