



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER 40384
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (36 QTS)

RECOMMENDATION

The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0913880	WC0838138	WCM1273344
Sample Date		Client Info		10 Apr 2024	02 Oct 2023	12 Oct 2021
Machine Age	mls	Client Info		263108	220510	0
Oil Age	mls	Client Info		25000	0	0
Filter Age	mls	Client Info		25000	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				ATTENTION	NORMAL	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>65	24	31	86
Chromium	ppm	ASTM D5185m	>5	<1	1	8
Nickel	ppm	ASTM D5185m	>3	0	<1	<1
Titanium	ppm	ASTM D5185m	>5	<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>35	4	8	▲ 102
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>180	7	10	▲ 60
Tin	ppm	ASTM D5185m	>8	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

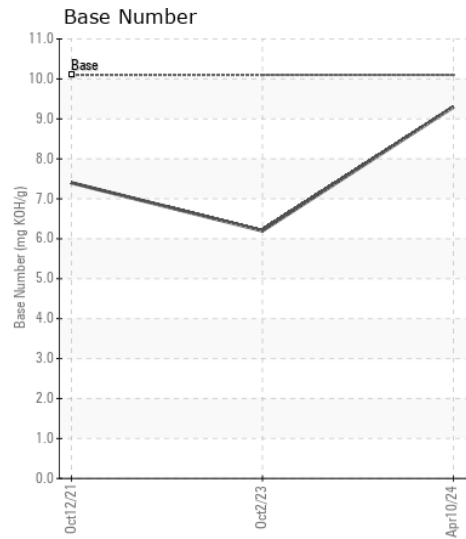
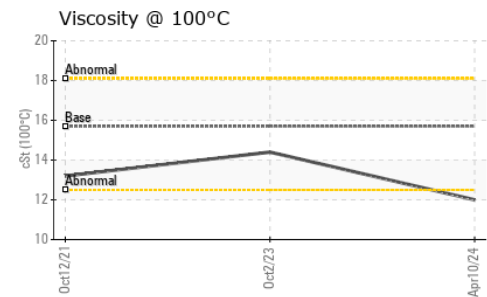
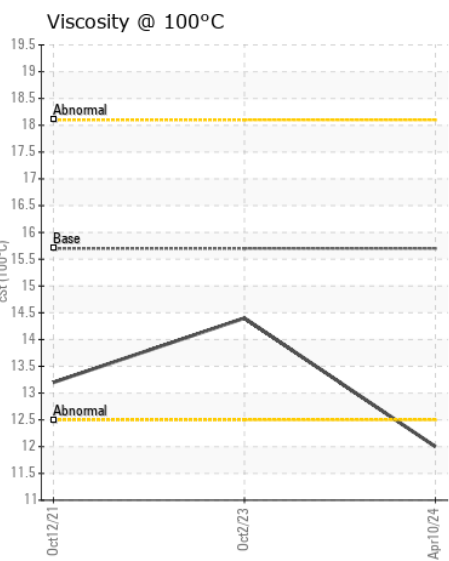
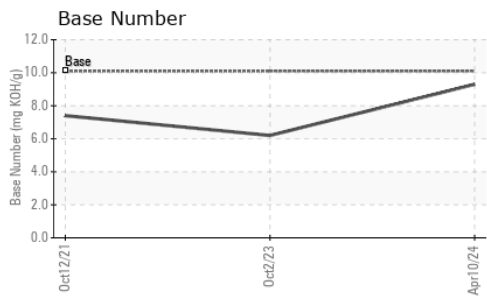
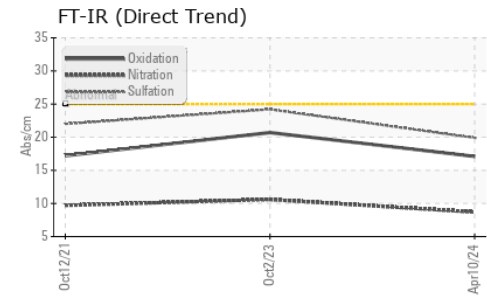
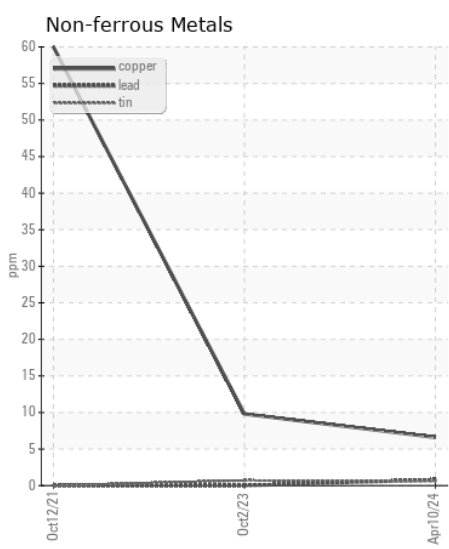
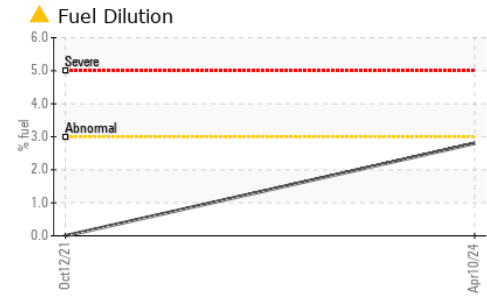
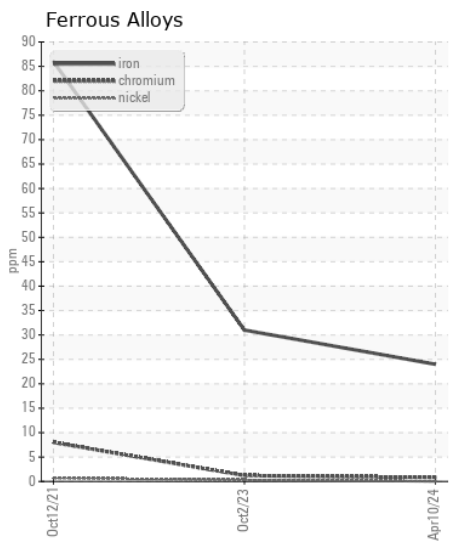
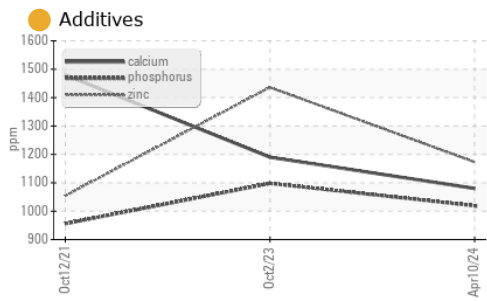
Light fuel dilution occurring. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185m	>15	8	6	7
Potassium	ppm	ASTM D5185m	>20	5	21	▲ 213
Fuel	%	ASTM D3524	>3.0	▲ 2.8	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.8	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.7	10.6	9.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	24.2	22
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

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 condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	0	4
Boron	ppm	ASTM D5185m	316	● 21	2	26
Barium	ppm	ASTM D5185m	0.0	0	2	0
Molybdenum	ppm	ASTM D5185m	1.2	62	69	66
Manganese	ppm	ASTM D5185m		<1	<1	2
Magnesium	ppm	ASTM D5185m	24	897	1004	1004
Calcium	ppm	ASTM D5185m	2292	● 1080	1190	1480
Phosphorus	ppm	ASTM D5185m	1064	1019	1098	956
Zinc	ppm	ASTM D5185m	1160	1173	1436	1054
Sulfur	ppm	ASTM D5185m	4996	3523	3415	3842
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	20.7	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	9.3	6.2	7.4
Visc @ 100°C	cSt	ASTM D445	15.7	12.0	14.4	13.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0913880 **Received** : 29 May 2024
Lab Number : 06194885 **Tested** : 03 Jun 2024
Unique Number : 11057008 **Diagnosed** : 03 Jun 2024 - Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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)