



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
THE ROYAL GROUP
Machine Id
FREIGHTLINER 3115901

Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		NL0001678	---	---
Sample Date		Client Info		18 Mar 2024	---	---
Machine Age	mls	Client Info		581199	---	---
Oil Age	mls	Client Info		30754	---	---
Filter Age	mls	Client Info		30754	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	33	---	---
Chromium	ppm	ASTM D5185m	>5	<1	---	---
Nickel	ppm	ASTM D5185m	>2	0	---	---
Titanium	ppm	ASTM D5185m		0	---	---
Silver	ppm	ASTM D5185m	>3	0	---	---
Aluminum	ppm	ASTM D5185m	>30	3	---	---
Lead	ppm	ASTM D5185m	>30	5	---	---
Copper	ppm	ASTM D5185m	>150	<1	---	---
Tin	ppm	ASTM D5185m	>5	<1	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

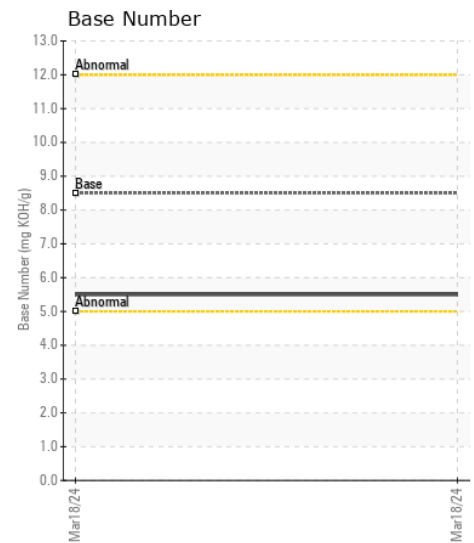
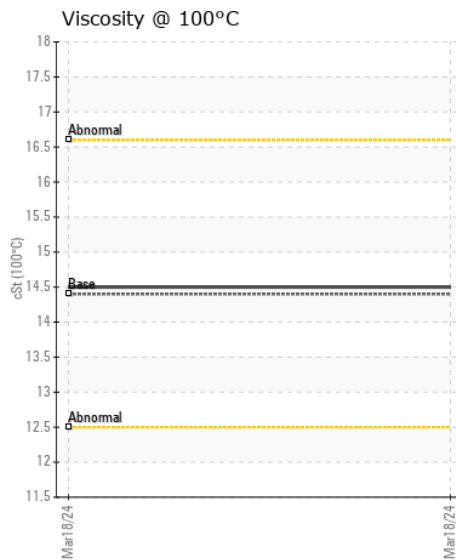
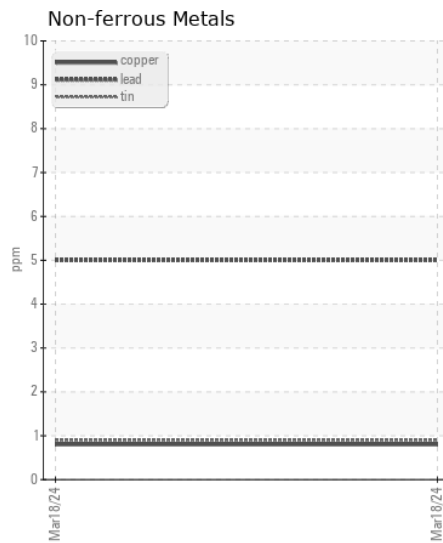
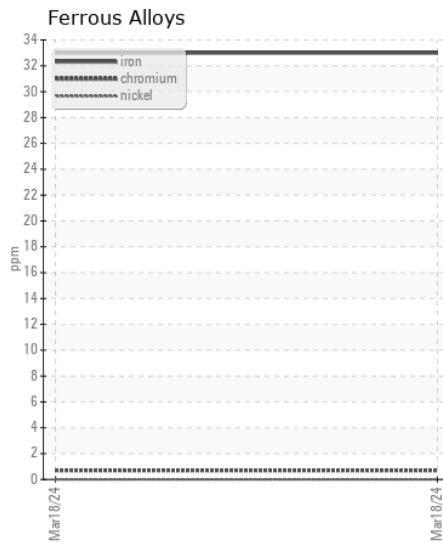
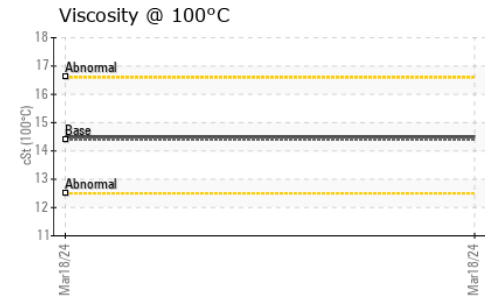
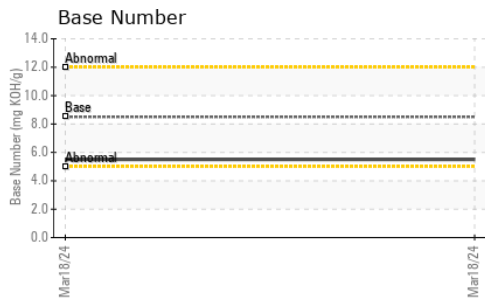
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	4	---	---
Potassium	ppm	ASTM D5185m	>20	2	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.9	---	---
Nitration	Abs/cm	*ASTM D7624	>20	12.6	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.2	---	---
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	---	---
Emulsified Water	scalar	*Visual	>0.2	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	>216	2	---	---
Boron	ppm	ASTM D5185m	250	14	---	---
Barium	ppm	ASTM D5185m	10	0	---	---
Molybdenum	ppm	ASTM D5185m	100	68	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m	450	1035	---	---
Calcium	ppm	ASTM D5185m	3000	1254	---	---
Phosphorus	ppm	ASTM D5185m	1150	1163	---	---
Zinc	ppm	ASTM D5185m	1350	1415	---	---
Sulfur	ppm	ASTM D5185m	4250	3546	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	25.1	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.5	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	14.5	---	---



Certificate L2367

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

Sample No. : NL0001678

Lab Number : 06124236

Unique Number : 10938387

Test Package : FLEET

Received : 20 Mar 2024

Tested : 21 Mar 2024

Diagnosed : 23 Mar 2024 - Don Baldrige

KIRK NATIONALEASE - SHOP 4

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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)