OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
2419
Component
Diesel Engine
Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

CONTAMINATION

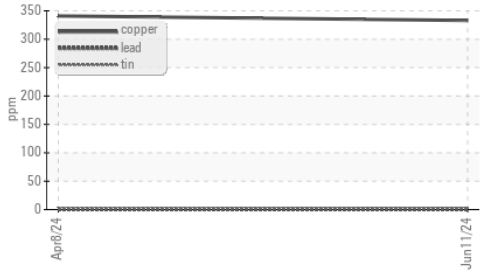
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

FLUID CONDITION

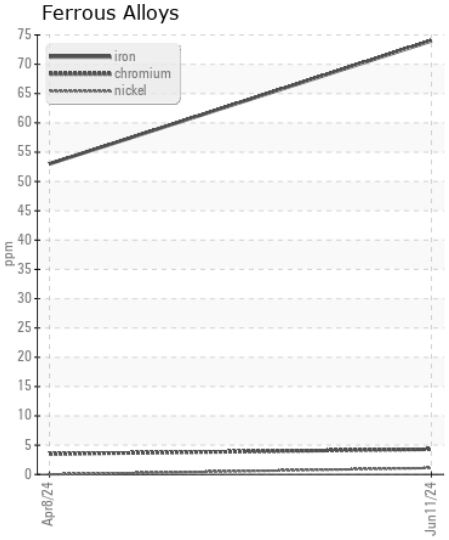
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0720122	WC0720169	---
Sample Date		Client Info		11 Jun 2024	08 Apr 2024	---
Machine Age	mls	Client Info		117532	80251	---
Oil Age	mls	Client Info		0	50000	---
Filter Age	mls	Client Info		0	50000	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	---
Iron	ppm	ASTM D5185m	>100	74	53	---
Chromium	ppm	ASTM D5185m	>20	4	4	---
Nickel	ppm	ASTM D5185m	>4	1	0	---
Titanium	ppm	ASTM D5185m		<1	0	---
Silver	ppm	ASTM D5185m	>3	<1	0	---
Aluminum	ppm	ASTM D5185m	>20	45	38	---
Lead	ppm	ASTM D5185m	>40	0	0	---
Copper	ppm	ASTM D5185m	>330	▲ 333	▲ 341	---
Tin	ppm	ASTM D5185m	>15	2	2	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---
Silicon	ppm	ASTM D5185m	>25	10	8	---
Potassium	ppm	ASTM D5185m	>20	99	77	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	1.1	0.7	---
Nitration	Abs/cm	*ASTM D7624	>20	14.0	10.3	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.4	23.2	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---
Sodium	ppm	ASTM D5185m		6	3	---
Boron	ppm	ASTM D5185m	0	2	1	---
Barium	ppm	ASTM D5185m	0	0	0	---
Molybdenum	ppm	ASTM D5185m	100	5	6	---
Manganese	ppm	ASTM D5185m		3	2	---
Magnesium	ppm	ASTM D5185m	60	81	89	---
Calcium	ppm	ASTM D5185m	3050	2578	2628	---
Phosphorus	ppm	ASTM D5185m	1050	980	1001	---
Zinc	ppm	ASTM D5185m	1200	1160	1206	---
Sulfur	ppm	ASTM D5185m	12500	3169	3389	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	25.6	19.3	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	4.6	5.3	---
Visc @ 100°C	cSt	ASTM D445	14.9	13.7	12.8	---

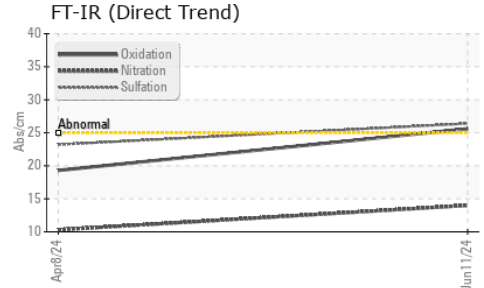
Non-ferrous Metals



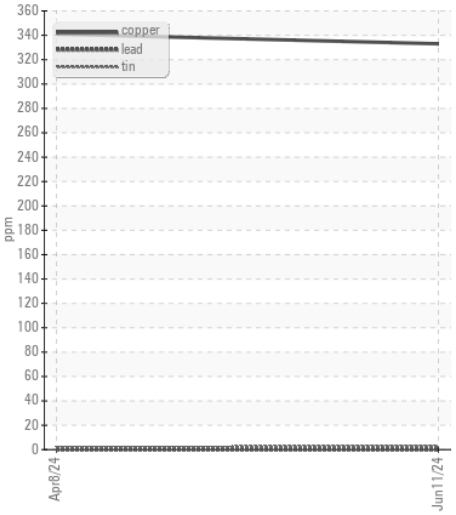
Ferrous Alloys



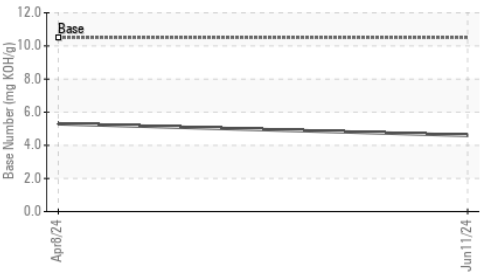
FT-IR (Direct Trend)



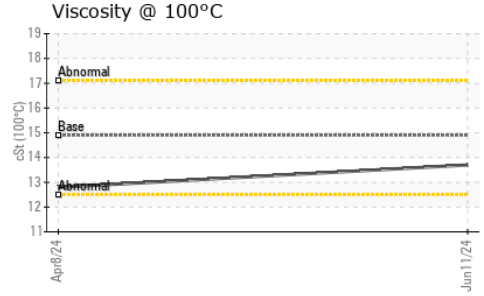
Non-ferrous Metals



Base Number



Viscosity @ 100°C



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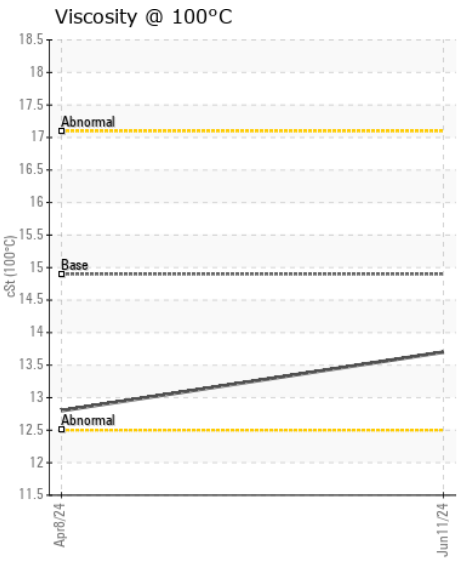

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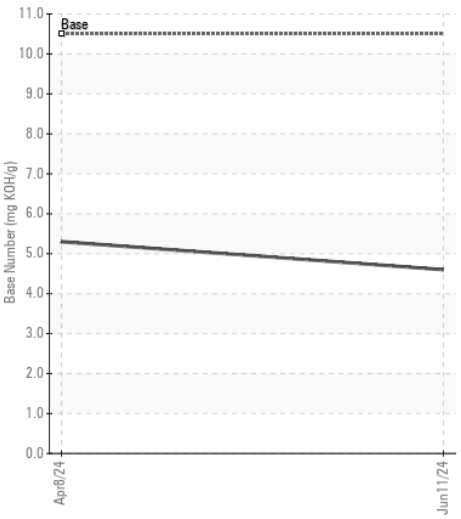
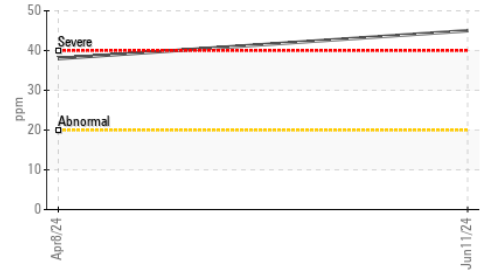


Aluminum (ppm)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0720122
Lab Number : 06213278
Unique Number : 11086142
Test Package : FLEET

Received : 18 Jun 2024
Tested : 19 Jun 2024
Diagnosed : 20 Jun 2024 - Sean Felton

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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