



# WEAR CHECK

## OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**2420**  
Component  
**Diesel Engine**  
Fluid  
**ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)**

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0719814</b>	WC0719880	---
Sample Date		Client Info		<b>26 May 2024</b>	19 Feb 2024	---
Machine Age	mls	Client Info		<b>123797</b>	22717	---
Oil Age	mls	Client Info		<b>100000</b>	22717	---
Filter Age	mls	Client Info		<b>50000</b>	22717	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>ABNORMAL</b>	NORMAL	---

### 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).

Iron	ppm	ASTM D5185m	>100	<b>98</b>	70	---
Chromium	ppm	ASTM D5185m	>20	<b>8</b>	2	---
Nickel	ppm	ASTM D5185m	>4	<b>2</b>	1	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	---
Aluminum	ppm	ASTM D5185m	>20	<b>53</b>	27	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	1	---
Copper	ppm	ASTM D5185m	>330	<b>452</b>	173	---
Tin	ppm	ASTM D5185m	>15	<b>3</b>	5	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

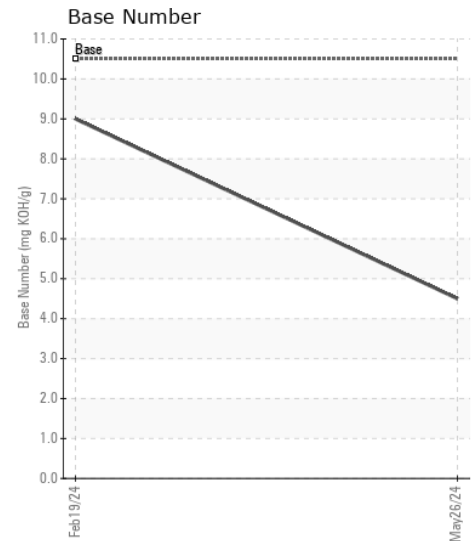
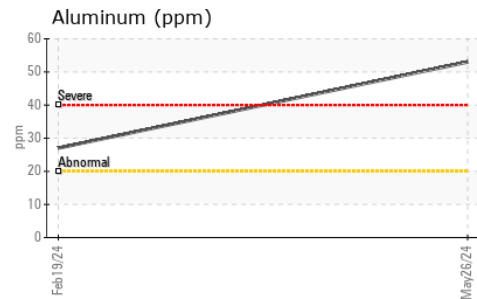
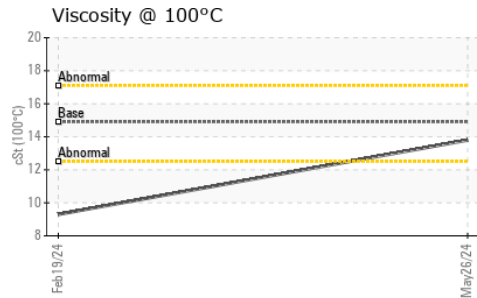
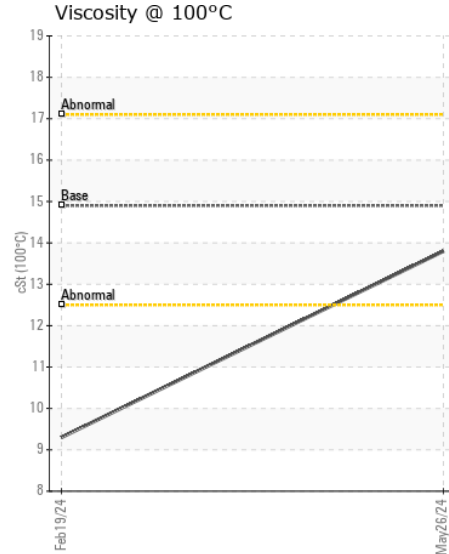
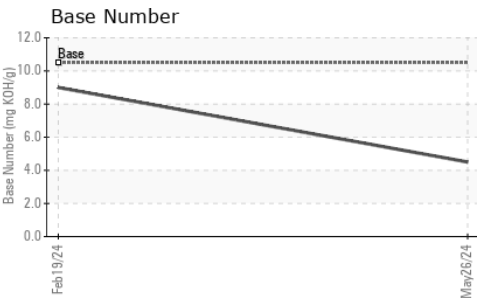
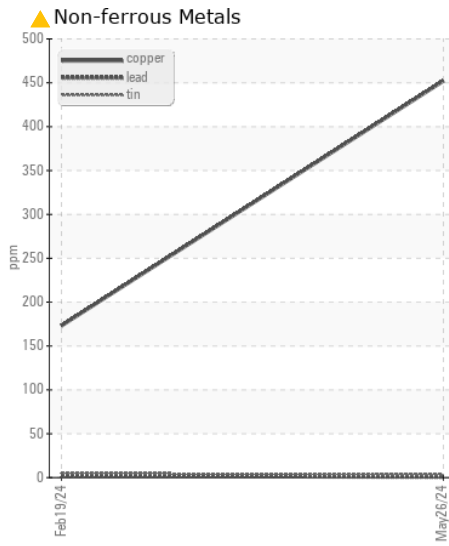
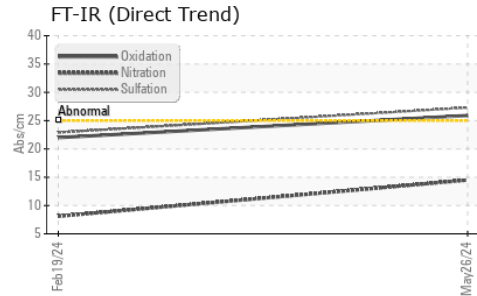
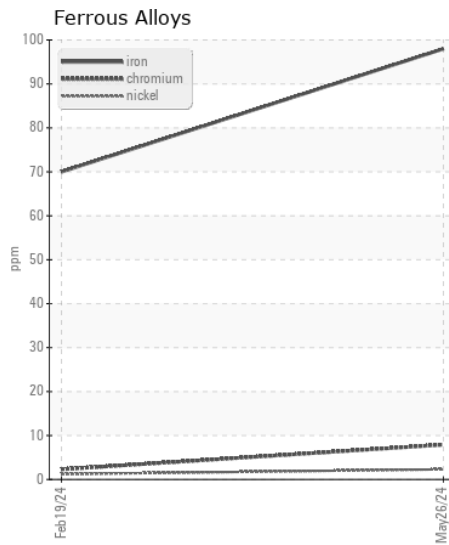
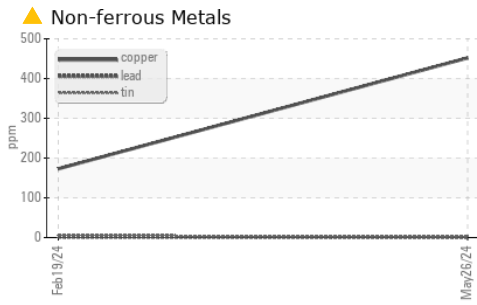
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>12</b>	6	---
Potassium	ppm	ASTM D5185m	>20	<b>121</b>	68	---
Fuel		WC Method	>5	<b>&lt;1.0</b>	0.2	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>1.5</b>	0.3	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.5</b>	8.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>27.3</b>	22.9	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

### FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		<b>4</b>	7	---
Boron	ppm	ASTM D5185m	0	<b>2</b>	42	---
Barium	ppm	ASTM D5185m	0	<b>1</b>	0	---
Molybdenum	ppm	ASTM D5185m	100	<b>9</b>	39	---
Manganese	ppm	ASTM D5185m		<b>4</b>	4	---
Magnesium	ppm	ASTM D5185m	60	<b>105</b>	544	---
Calcium	ppm	ASTM D5185m	3050	<b>3110</b>	1877	---
Phosphorus	ppm	ASTM D5185m	1050	<b>1205</b>	819	---
Zinc	ppm	ASTM D5185m	1200	<b>1381</b>	914	---
Sulfur	ppm	ASTM D5185m	12500	<b>3365</b>	2268	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>25.9</b>	22.0	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>4.5</b>	9.0	---
Visc @ 100°C	cSt	ASTM D445	14.9	<b>13.8</b>	9.3	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0719814 **Received** : 24 Jun 2024  
**Lab Number** : 06219208 **Tested** : 25 Jun 2024  
**Unique Number** : 11097405 **Diagnosed** : 26 Jun 2024 - Jonathan Hester  
**Test Package** : FLEET

**DILLON TRANSPORTATION**  
 4445 NORTH INTERSTATE WAY  
 KINGMAN, AZ  
 US 86401  
 Contact: T LAMOREAUX  
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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)

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F: