



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 2205**  
Component  
**Diesel Engine**  
Fluid  
**ROYAL PURPLE MOTOR OIL 15W40 (--- QTS)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0720153</b>	WC0720128	WC0719793
Sample Date		Client Info		<b>11 Dec 2023</b>	15 Jul 2023	11 Mar 2023
Machine Age	mls	Client Info		<b>274098</b>	219600	174666
Oil Age	mls	Client Info		<b>100000</b>	50000	100000
Filter Age	mls	Client Info		<b>50000</b>	50000	50000
Oil Changed		Client Info		<b>Changed</b>	Not Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	ABNORMAL

## WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>100	<b>▲ 106</b>	68	<b>▲ 111</b>
Chromium	ppm	ASTM D5185m	>20	<b>3</b>	2	3
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>16</b>	12	23
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>22</b>	18	45
Tin	ppm	ASTM D5185m	>15	<b>2</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

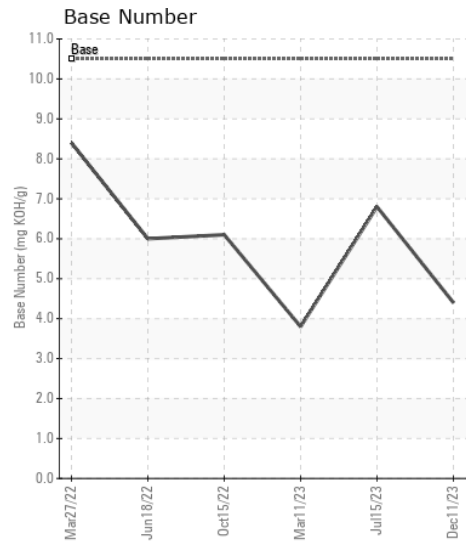
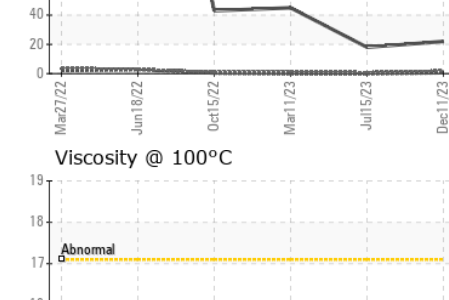
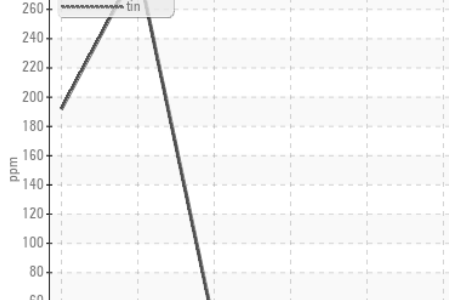
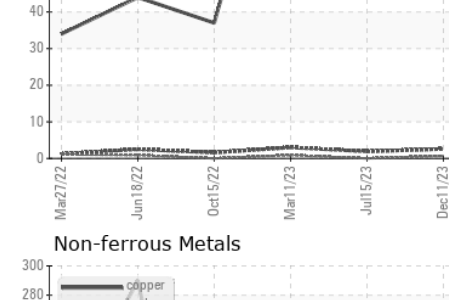
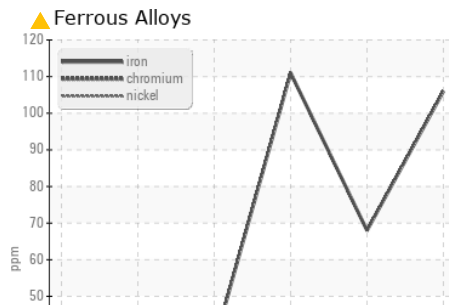
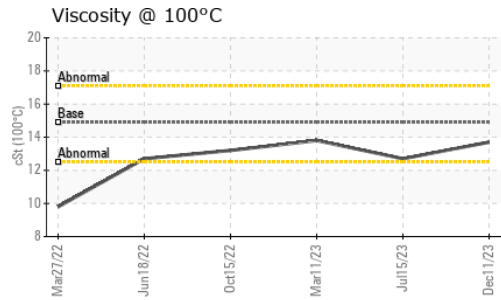
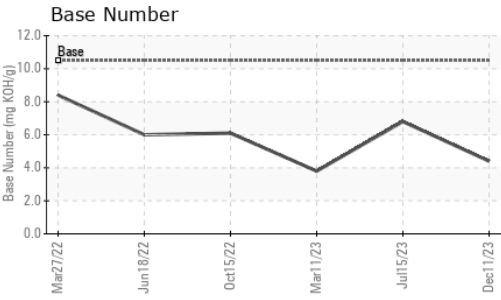
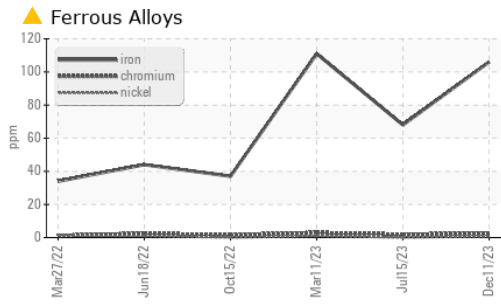
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>11</b>	7	10
Potassium	ppm	ASTM D5185m	>20	<b>34</b>	23	56
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2</b>	1.1	1.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.3</b>	10.8	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>30.4</b>	23.6	26.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	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>3</b>	2	1
Boron	ppm	ASTM D5185m	0	<b>&lt;1</b>	0	0
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>45</b>	44	2
Manganese	ppm	ASTM D5185m		<b>2</b>	1	2
Magnesium	ppm	ASTM D5185m	60	<b>737</b>	695	22
Calcium	ppm	ASTM D5185m	3050	<b>1794</b>	1795	2495
Phosphorus	ppm	ASTM D5185m	1050	<b>1131</b>	1064	932
Zinc	ppm	ASTM D5185m	1200	<b>1443</b>	1377	1153
Sulfur	ppm	ASTM D5185m	12500	<b>2968</b>	3573	2899
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>27.4</b>	19.5	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>4.4</b>	6.8	<b>▲ 3.8</b>
Visc @ 100°C	cSt	ASTM D445	14.9	<b>13.7</b>	12.7	13.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0720153 **Received** : 08 Jan 2024  
**Lab Number** : 06054716 **Diagnosed** : 10 Jan 2024  
**Unique Number** : 10820665 **Diagnostician** : Sean Felton  
**Test Package** : FLEET

**DILLON TRANSPORTATION**  
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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)