



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id  
**FREIGHTLINER 35159**

Component  
**Diesel Engine**

Fluid  
**{not provided} (--- QTS)**

## RECOMMENDATION

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>KL0014030</b>	KL0012106	KL0012046
Sample Date		Client Info		<b>02 Feb 2024</b>	10 Nov 2023	25 Jul 2023
Machine Age	mls	Client Info		<b>159023</b>	159022	152002
Oil Age	mls	Client Info		<b>159022</b>	0	0
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ATTENTION</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>65	<b>22</b>	25	19
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	1	<1
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>35	<b>4</b>	4	3
Lead	ppm	ASTM D5185m	>10	<b>0</b>	1	0
Copper	ppm	ASTM D5185m	>180	<b>11</b>	11	10
Tin	ppm	ASTM D5185m	>8	<b>&lt;1</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

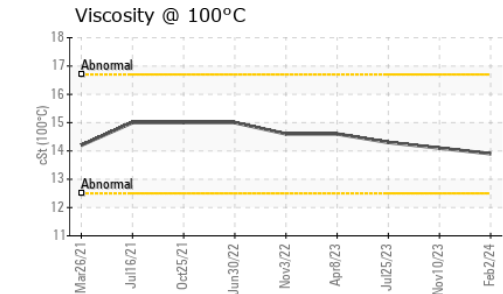
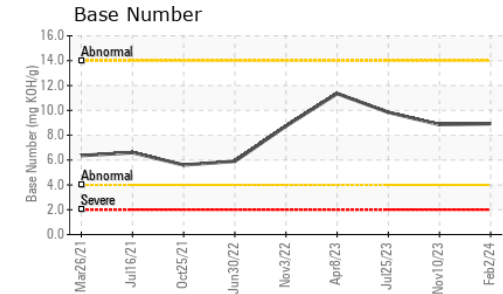
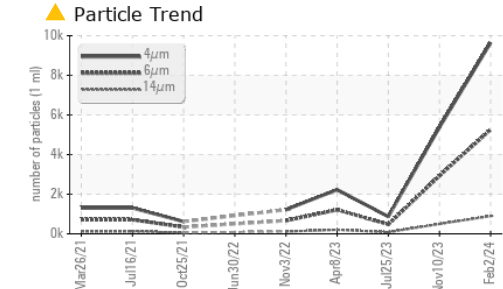
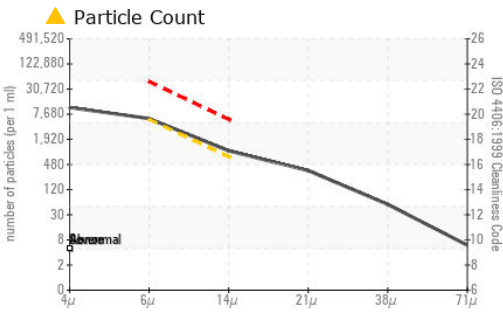
There is a moderate amount of particulates present in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>9</b>	11	7
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	7	3
Fuel		WC Method	>3.0	<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>0.8</b>	0.8	0.6
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.0</b>	9.0	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.9</b>	21.1	21.1
Particles >4µm		ASTM D7647		<b>9648</b>	5376	870
Particles >6µm		ASTM D7647	>5000	<b>▲ 5256</b>	2929	474
Particles >14µm		ASTM D7647	>640	<b>▲ 894</b>	498	81
Particles >21µm		ASTM D7647	>160	<b>▲ 301</b>	168	27
Particles >38µm		ASTM D7647	>40	<b>▲ 47</b>	26	4
Particles >71µm		ASTM D7647	>10	<b>5</b>	3	0
Oil Cleanliness		ISO 4406 (c)	>19/16	<b>▲ 20/17</b>	19/16	16/14
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 suitable for further service.

Sodium	ppm	ASTM D5185m		<b>7</b>	8	7
Boron	ppm	ASTM D5185m		<b>22</b>	31	63
Barium	ppm	ASTM D5185m		<b>5</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>42</b>	51	51
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>693</b>	974	881
Calcium	ppm	ASTM D5185m		<b>1017</b>	1416	1349
Phosphorus	ppm	ASTM D5185m		<b>785</b>	1121	1045
Zinc	ppm	ASTM D5185m		<b>1012</b>	1428	1270
Sulfur	ppm	ASTM D5185m		<b>2816</b>	3770	4097
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.4</b>	17.1	15.7
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.92</b>	8.85	9.84
Visc @ 100°C	cSt	ASTM D445		<b>13.9</b>	14.1	14.3



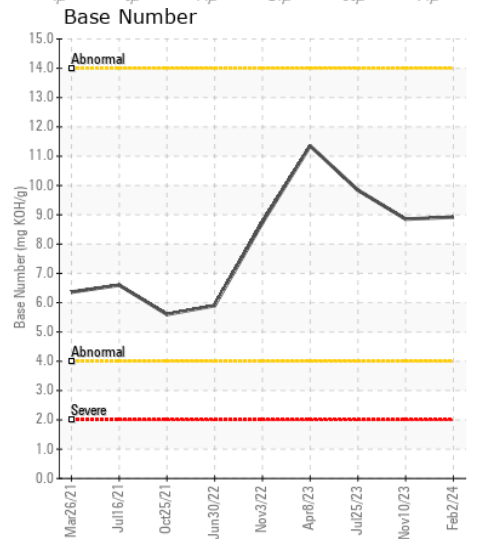
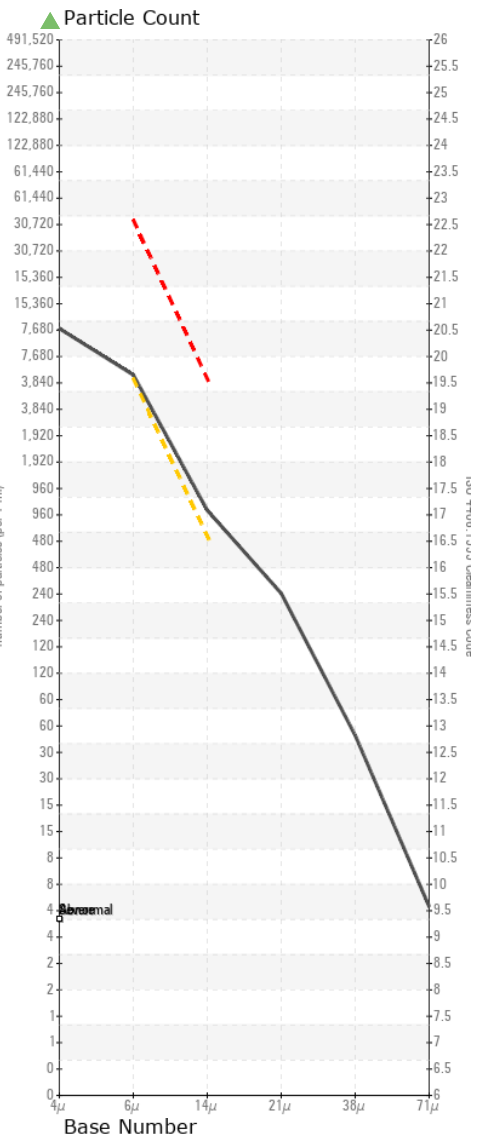
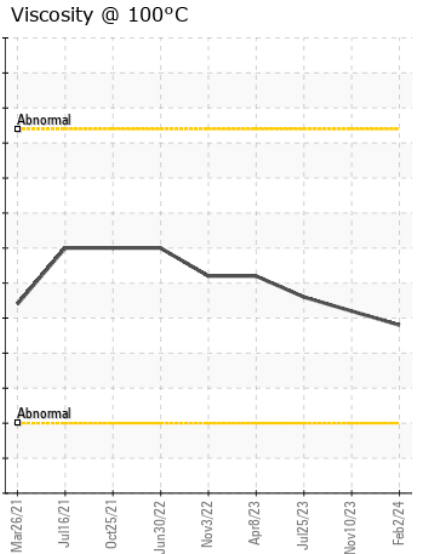
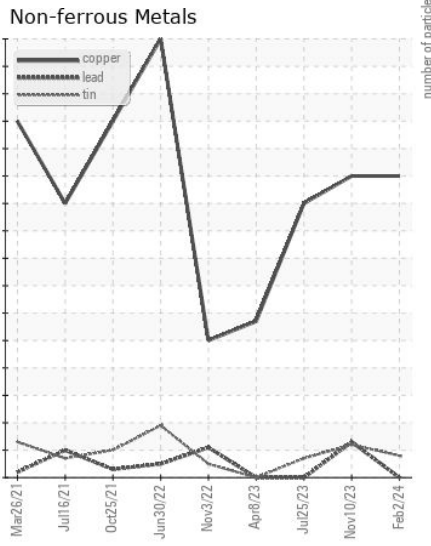
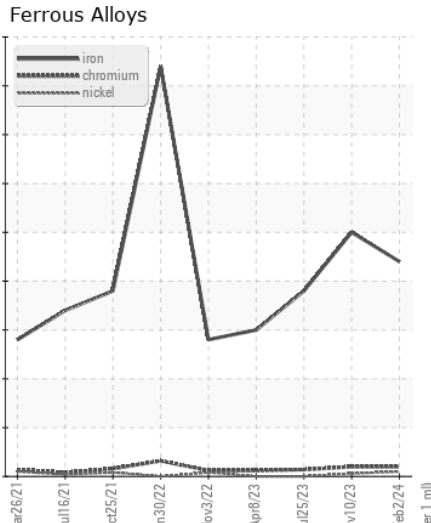
Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0014030 **Received** : 14 Feb 2024  
**Lab Number** : 06089620 **Tested** : 15 Feb 2024  
**Unique Number** : 10877065 **Diagnosed** : 16 Feb 2024 - Jonathan Hester  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

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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