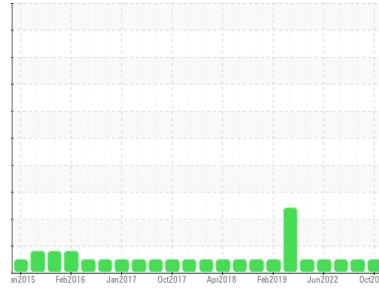




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**FREIGHTLINER 35136**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

The amount and size of particulates present in the system are acceptable. 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>KL0012084</b>	KL0012059	KLM2339401
Sample Date	Client Info		<b>31 Oct 2023</b>	27 Jul 2023	09 Apr 2023
Machine Age	mls	Client Info	<b>226457</b>	219685	214543
Oil Age	mls	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
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

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>65	<b>13</b>	11	9
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	1	<1
Aluminum	ppm	ASTM D5185m	>35	<b>5</b>	4	2
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>180	<b>9</b>	10	7
Tin	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	250	<b>33</b>	58	96
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>64</b>	66	65
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>1178</b>	1170	1189
Calcium	ppm	ASTM D5185m	3000	<b>1053</b>	1076	1045
Phosphorus	ppm	ASTM D5185m	1150	<b>1121</b>	1084	1104
Zinc	ppm	ASTM D5185m	1350	<b>1419</b>	1367	1383
Sulfur	ppm	ASTM D5185m	4250	<b>3344</b>	3993	4247

## CONTAMINANTS

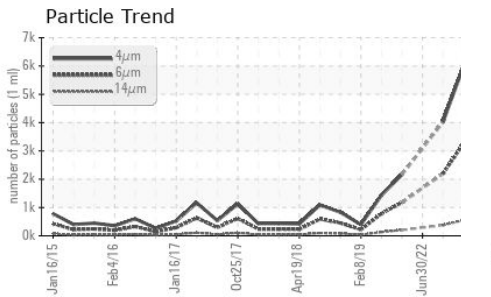
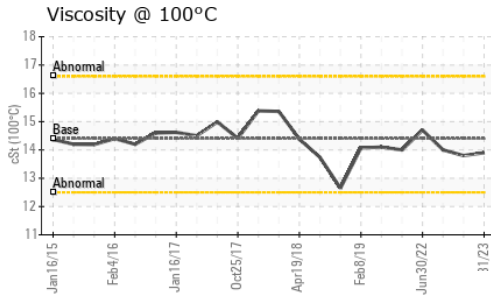
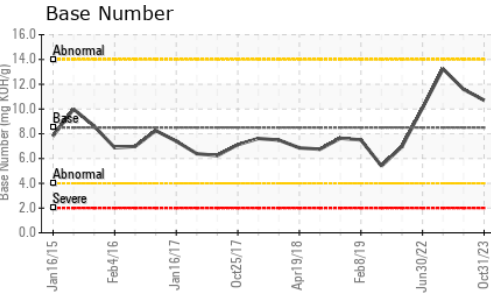
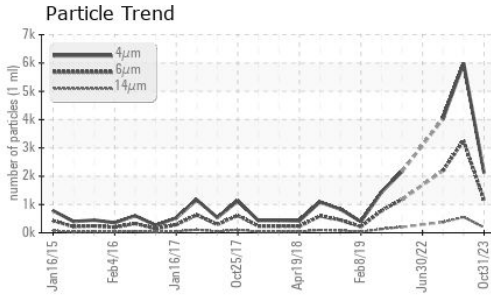
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>15	<b>8</b>	7	7
Sodium	ppm	ASTM D5185m	>158	<b>7</b>	6	3
Potassium	ppm	ASTM D5185m	>20	<b>7</b>	6	6

## INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.3</b>	8.0	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.0</b>	20.3	20.2



# OIL ANALYSIS REPORT



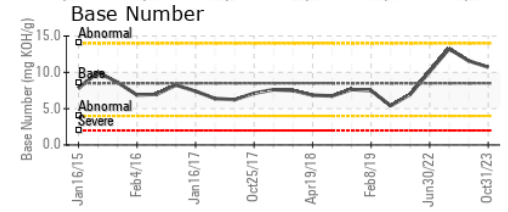
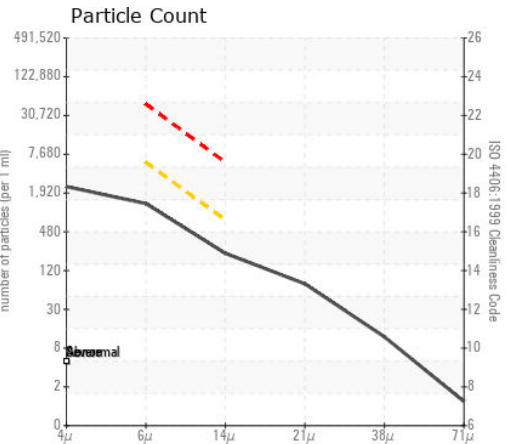
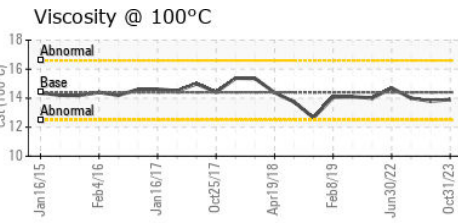
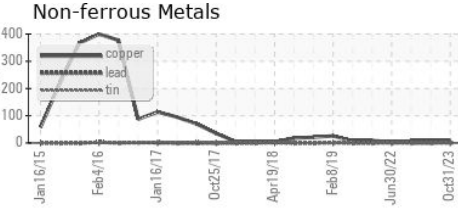
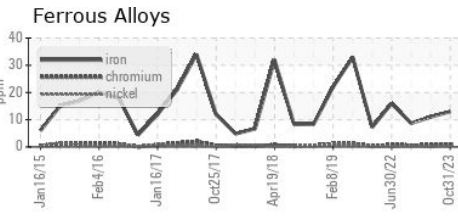
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>2114</b>	5994	4028
Particles >6µm	ASTM D7647	>5000	<b>1152</b>	3265	2194
Particles >14µm	ASTM D7647	>640	<b>196</b>	556	373
Particles >21µm	ASTM D7647	>160	<b>66</b>	187	126
Particles >38µm	ASTM D7647	>40	<b>10</b>	29	19
Particles >71µm	ASTM D7647	>10	<b>1</b>	3	2
Oil Cleanliness	ISO 4406 (c)	>19/16	<b>17/15</b>	19/16	18/16

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.0</b>	17.1	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>10.71</b>	11.59	13.24

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
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	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.9</b>	13.8	14.0

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0012084  
**Lab Number** : 06013462  
**Unique Number** : 10752606  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

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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)