



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER M31620**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (18 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DC0034165</b>	DC0032140	DC0026256
Sample Date		Client Info		<b>18 Jun 2024</b>	11 Jan 2024	04 Apr 2023
Machine Age	mls	Client Info		<b>205035</b>	194016	122891
Oil Age	mls	Client Info		<b>11681</b>	11116	178798
Filter Age	mls	Client Info		<b>11681</b>	11116	178798
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	<b>44</b>	71	58
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	1	1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>10</b>	10	11
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	1	0
Copper	ppm	ASTM D5185m	>150	<b>2</b>	2	2
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

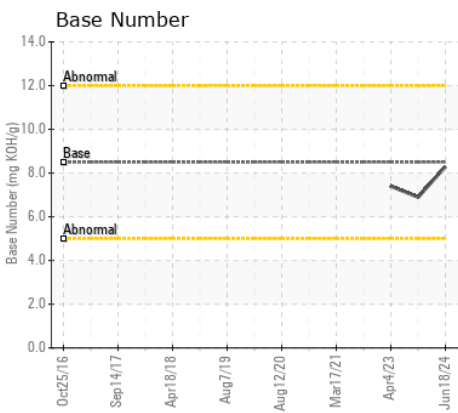
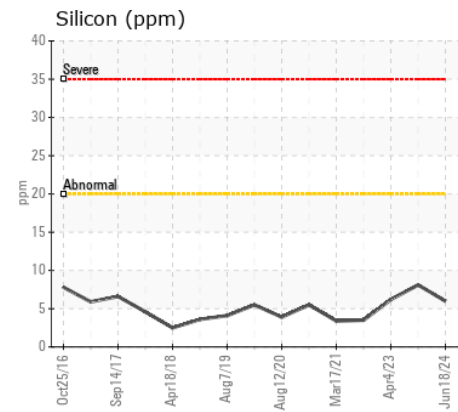
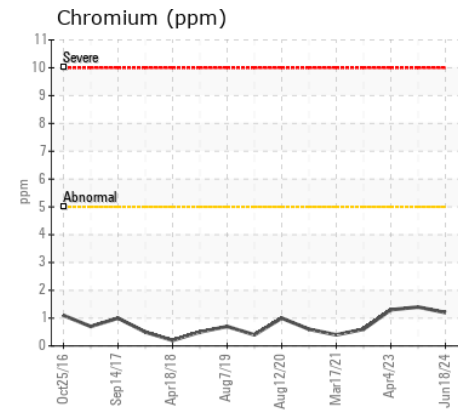
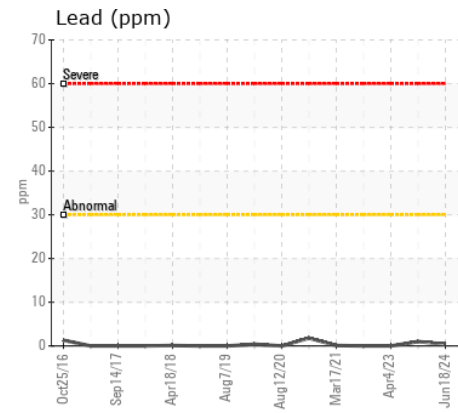
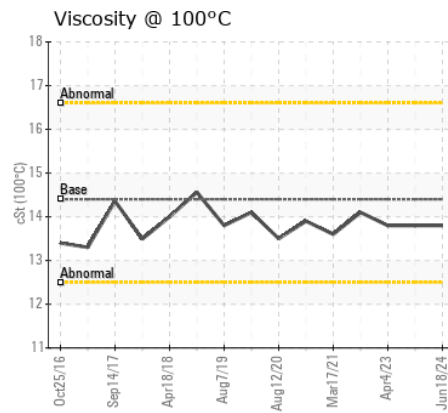
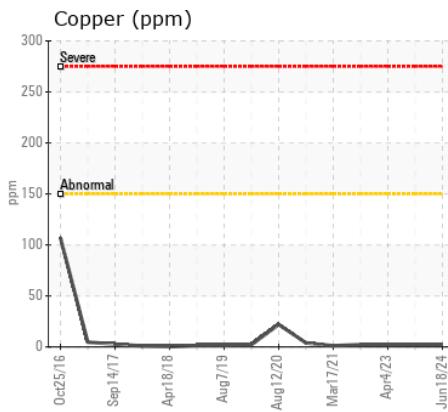
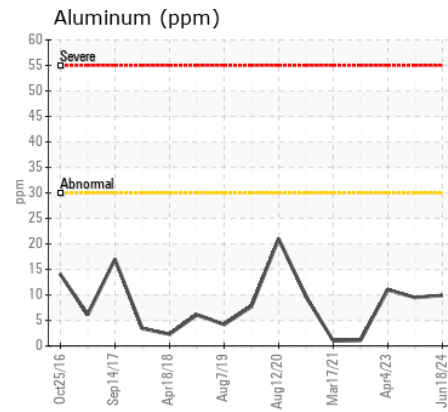
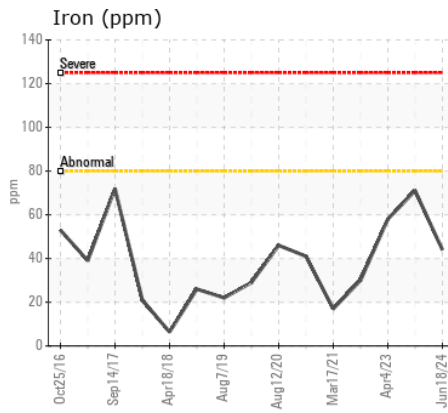
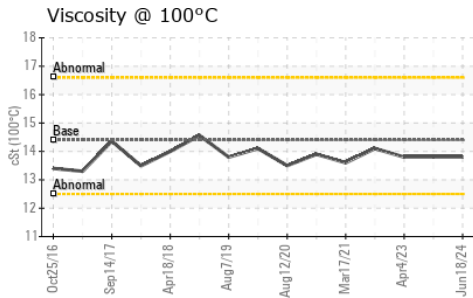
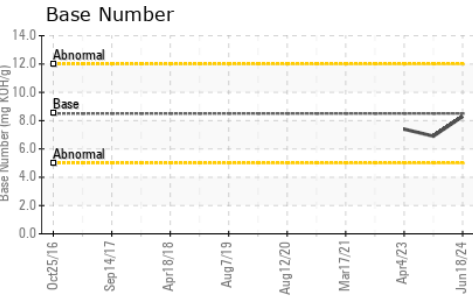
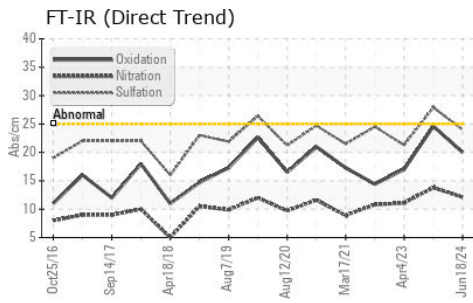
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>6</b>	8	6
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	12	2
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>1.3</b>	1.7	1.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.1</b>	13.8	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.0</b>	27.9	21.3
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	>158	<b>3</b>	7	3
Boron	ppm	ASTM D5185m	250	<b>2</b>	3	7
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>64</b>	61	61
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m	450	<b>993</b>	1064	900
Calcium	ppm	ASTM D5185m	3000	<b>1141</b>	1182	1253
Phosphorus	ppm	ASTM D5185m	1150	<b>1064</b>	1198	1008
Zinc	ppm	ASTM D5185m	1350	<b>1311</b>	1318	1256
Sulfur	ppm	ASTM D5185m	4250	<b>3083</b>	2687	3671
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.0</b>	24.6	17.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.3</b>	6.9	7.4
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.8</b>	13.8	13.8



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DC0034165 **Received** : 10 Jul 2024  
**Lab Number** : 06232117 **Tested** : 11 Jul 2024  
**Unique Number** : 11115610 **Diagnosed** : 11 Jul 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: TBN )

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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)