



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 46009**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (42 QTS)**

## RECOMMENDATION

Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0866999</b>	WC0631084	WC0599109
Sample Date		Client Info		<b>03 May 2024</b>	26 Jan 2022	04 Oct 2021
Machine Age	mls	Client Info		<b>501992</b>	437713	418225
Oil Age	mls	Client Info		<b>19209</b>	17085	9566
Filter Age	mls	Client Info		<b>19209</b>	17085	9566
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ATTENTION</b>	ATTENTION	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	<b>49</b>	10	7
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>30	<b>11</b>	4	4
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>30	<b>6</b>	3	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

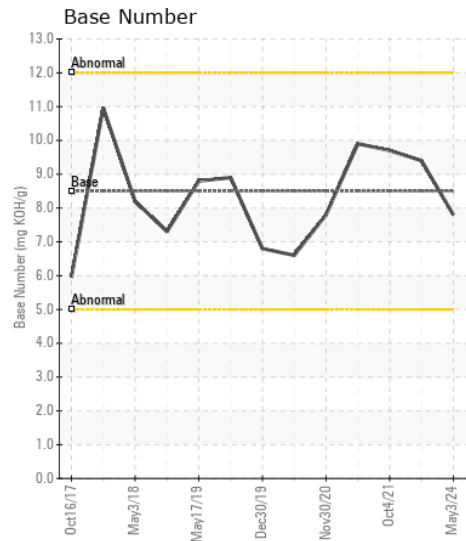
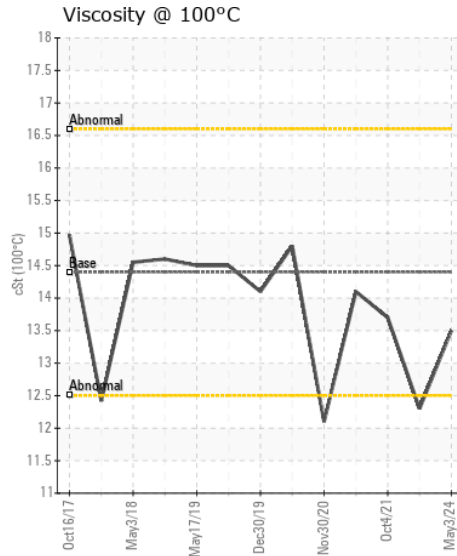
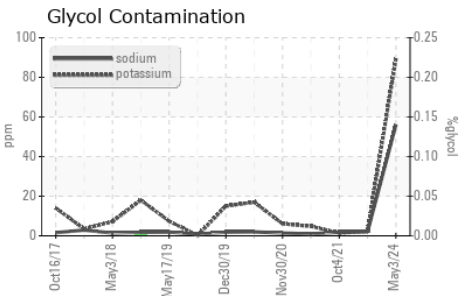
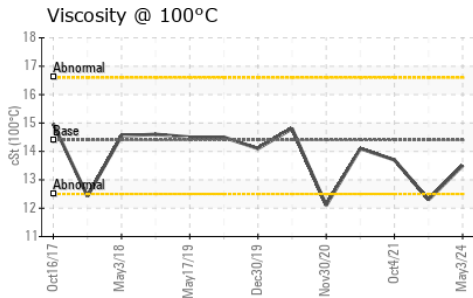
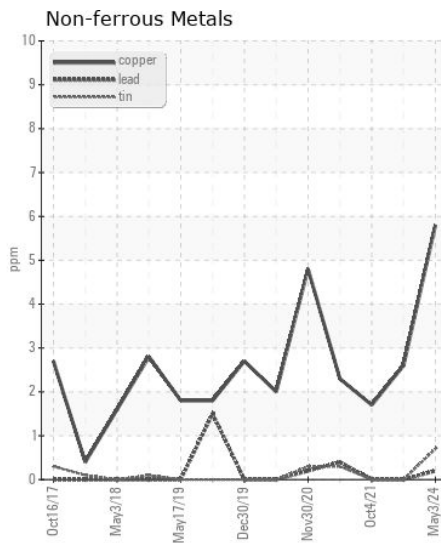
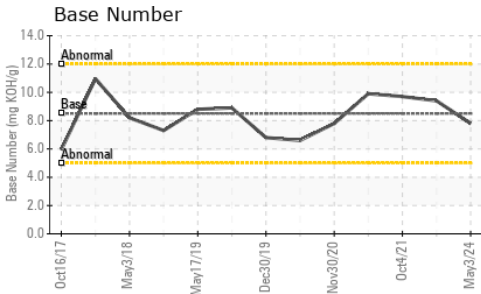
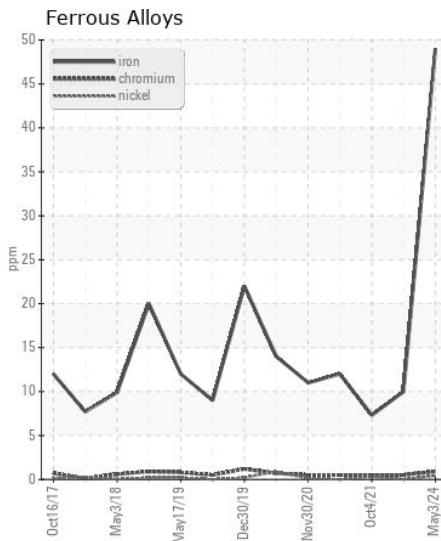
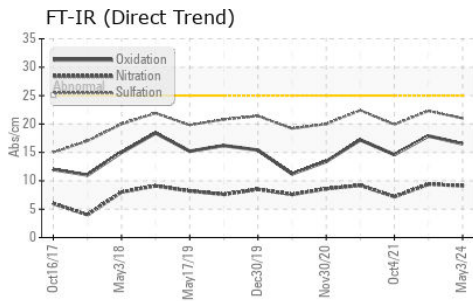
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>30	<b>6</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>89</b>	2	1
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	0.4	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.8</b>	0.6	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.1</b>	9.4	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.0</b>	22.3	19.9
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	>158	<b>56</b>	2	2
Boron	ppm	ASTM D5185m	250	<b>6</b>	12	8
Barium	ppm	ASTM D5185m	10	<b>2</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>83</b>	55	58
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>888</b>	844	996
Calcium	ppm	ASTM D5185m	3000	<b>1112</b>	1185	1257
Phosphorus	ppm	ASTM D5185m	1150	<b>1025</b>	989	1006
Zinc	ppm	ASTM D5185m	1350	<b>1170</b>	1234	1164
Sulfur	ppm	ASTM D5185m	4250	<b>3080</b>	3035	4921
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.5</b>	17.9	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>7.8</b>	9.4	9.7
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.5</b>	12.3	13.7



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0866999 **Received** : 10 May 2024  
**Lab Number** : 06176561 **Tested** : 15 May 2024  
**Unique Number** : 11022614 **Diagnosed** : 15 May 2024 - Sean Felton  
**Test Package** : FLEET ( Additional Tests: Glycol )

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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)