



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 38728**  
Component  
**Diesel Engine**  
Fluid  
**SHELL 15W40 (18 QTS)**

## RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0887090</b>	WC0872577	WC0854927
Sample Date		Client Info		<b>28 Dec 2023</b>	02 Nov 2023	19 Oct 2023
Machine Age	mls	Client Info		<b>0</b>	0	0
Oil Age	mls	Client Info		<b>0</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>ABNORMAL</b>	ATTENTION	MARGINAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>130	<b>14</b>	8	6
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>4	<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>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	3	2
Lead	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>125	<b>4</b>	2	2
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	0
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

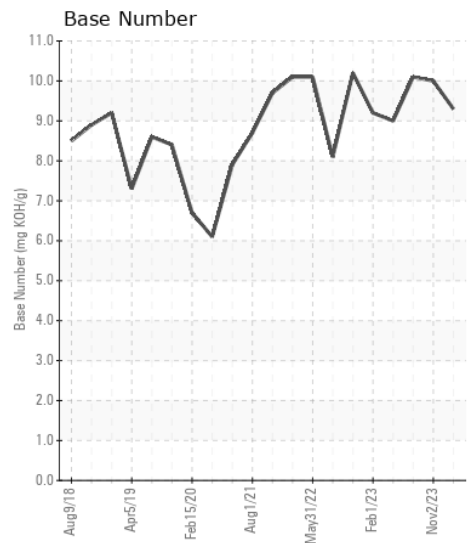
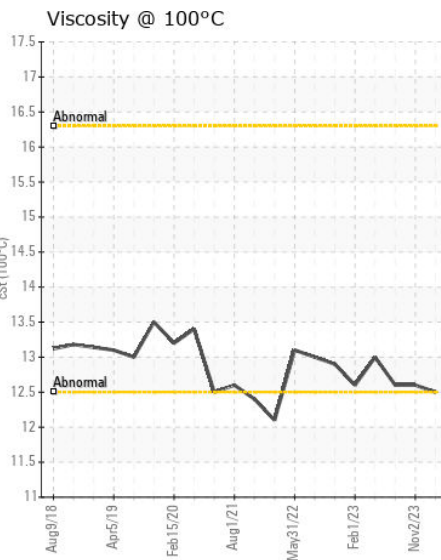
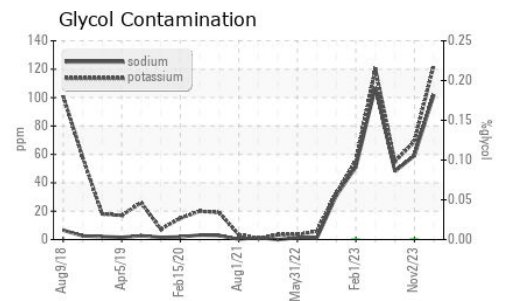
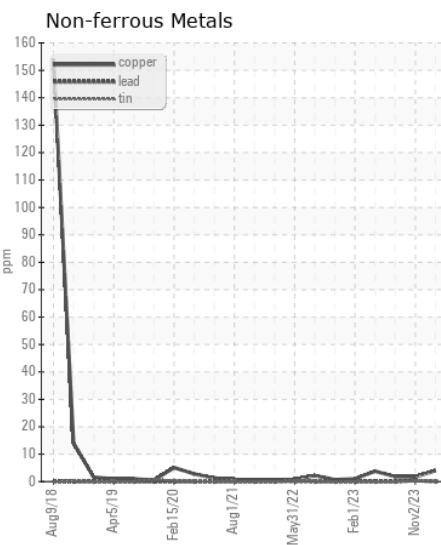
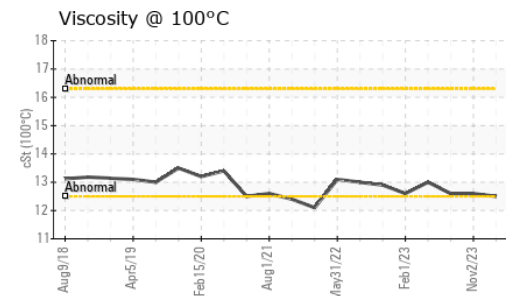
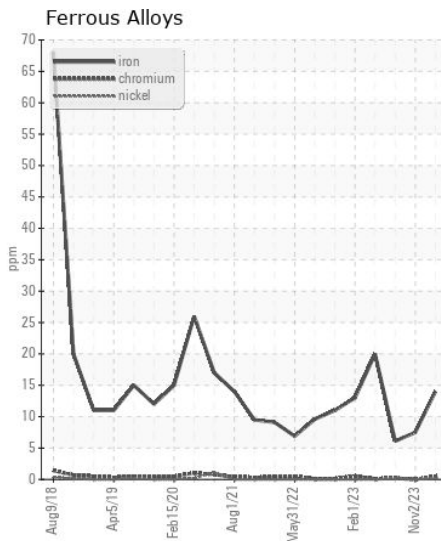
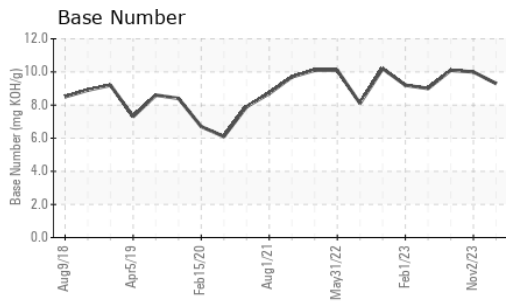
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>25	<b>4</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>▲ 123</b>	▲ 69	▲ 55
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	%	*ASTM D2982		<b>NEG</b>	0.0	NEG
Soot %	%	*ASTM D7844	>6	<b>0.3</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.5</b>	6.5	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.4</b>	18.9	18.4
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.

Sodium	ppm	ASTM D5185m	>150	<b>▲ 102</b>	▲ 59	▲ 48
Boron	ppm	ASTM D5185m		<b>3</b>	7	8
Barium	ppm	ASTM D5185m		<b>0</b>	0	3
Molybdenum	ppm	ASTM D5185m		<b>70</b>	67	70
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>891</b>	908	864
Calcium	ppm	ASTM D5185m		<b>1024</b>	1078	1071
Phosphorus	ppm	ASTM D5185m		<b>1000</b>	995	938
Zinc	ppm	ASTM D5185m		<b>1161</b>	1273	1174
Sulfur	ppm	ASTM D5185m		<b>3156</b>	3256	3421
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.2</b>	14.4	14.0
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.3</b>	10.0	10.1
Visc @ 100°C	cSt	ASTM D445		<b>12.5</b>	12.6	12.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0887090 **Received** : 11 Jan 2024  
**Lab Number** : 06058615 **Diagnosed** : 15 Jan 2024  
**Unique Number** : 10829997 **Diagnostician** : Jonathan Hester  
**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)