



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 641**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (16 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0870796</b>	WC0729865	WC0681290
Sample Date		Client Info		<b>14 Feb 2024</b>	06 Sep 2022	29 Mar 2022
Machine Age	mls	Client Info		<b>214150</b>	203823	200154
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>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>19</b>	79	44
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	5	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	7	5
Lead	ppm	ASTM D5185m	>40	<b>1</b>	4	1
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	5	4
Tin	ppm	ASTM D5185m	>15	<b>0</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

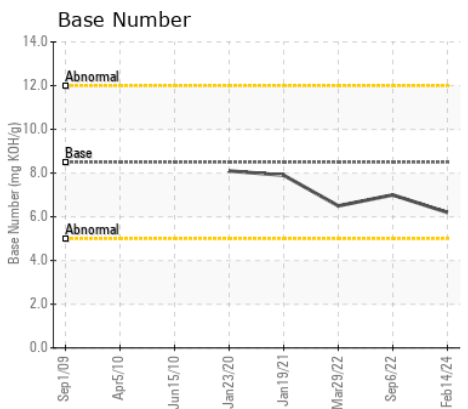
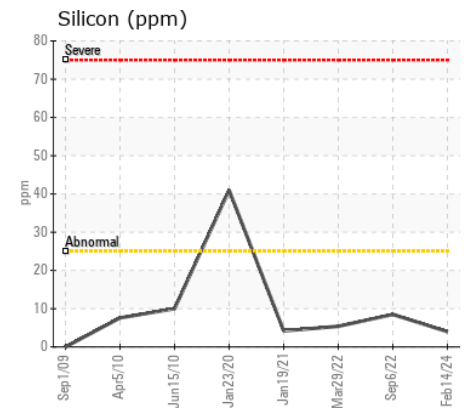
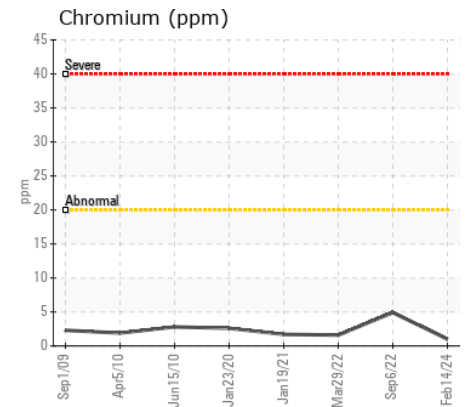
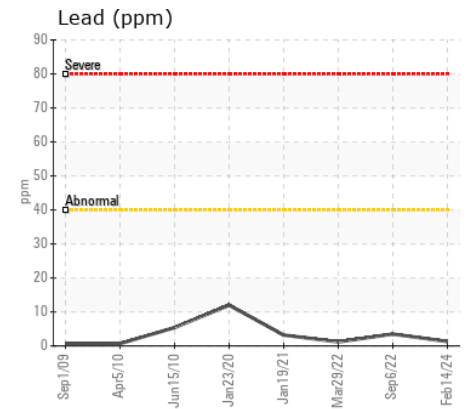
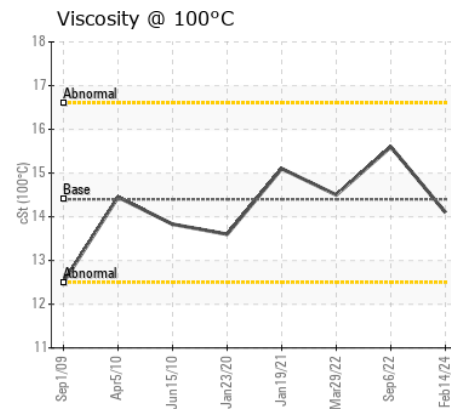
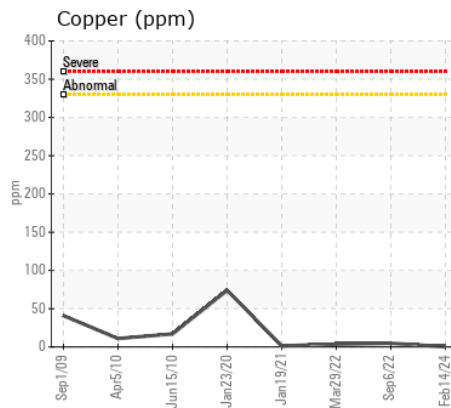
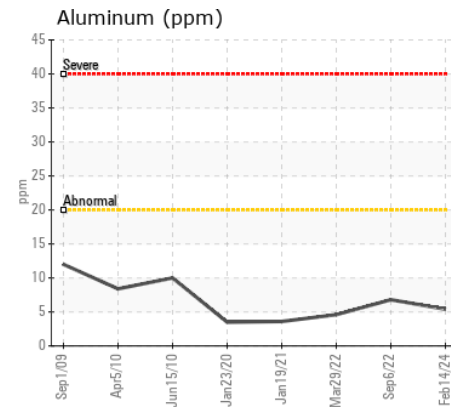
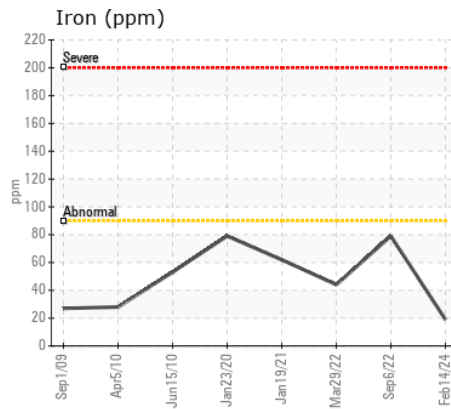
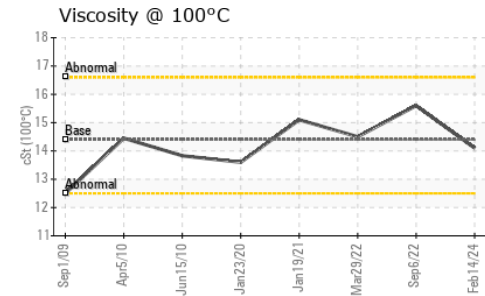
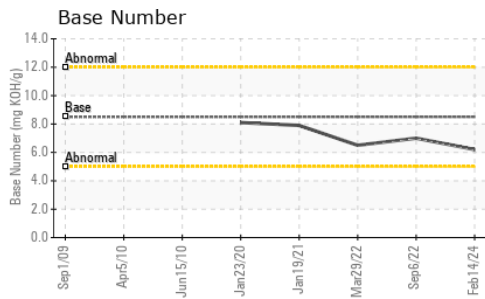
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>4</b>	8	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	4
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	>6	<b>1</b>	2.2	1.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.0</b>	15.2	12.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.3</b>	30.3	22.4
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. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	<b>3</b>	4	5
Boron	ppm	ASTM D5185m	250	<b>30</b>	27	34
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>88</b>	88	93
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>109</b>	32	18
Calcium	ppm	ASTM D5185m	3000	<b>2136</b>	2170	2294
Phosphorus	ppm	ASTM D5185m	1150	<b>1061</b>	948	1028
Zinc	ppm	ASTM D5185m	1350	<b>1259</b>	1191	1310
Sulfur	ppm	ASTM D5185m	4250	<b>3627</b>	3301	3786
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.3</b>	23.0	17.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.2</b>	7.0	6.5
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.1</b>	15.6	14.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0870796

Lab Number : 06100785

Unique Number : 10899015

Test Package : MOB 1 ( Additional Tests: TBN )

Received : 26 Feb 2024

Tested : 27 Feb 2024

Diagnosed : 27 Feb 2024 - Wes Davis

WAKE COUNTY PUBLIC SCHOOL SYSTEM

1551 ROCK QUARRY ROAD

RALEIGH, NC

US 27610

Contact: DEVIN WEBER

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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)