



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 11036**  
Component  
**Diesel Engine**  
Fluid  
**SHELL 15W40 (44 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0829772</b>	WC0829540	WC0539192
Sample Date		Client Info		<b>05 May 2024</b>	15 Mar 2024	01 Mar 2021
Machine Age	mls	Client Info		<b>0</b>	373885	200551
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	Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>26</b>	14	5
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	6	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	9	<1
Lead	ppm	ASTM D5185m	>40	<b>23</b>	0	3
Copper	ppm	ASTM D5185m	>330	<b>3</b>	7	<1
Tin	ppm	ASTM D5185m	>15	<b>1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<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.

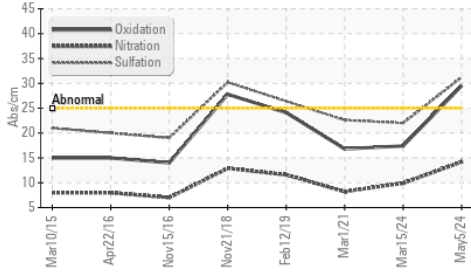
Silicon	ppm	ASTM D5185m	>25	<b>8</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	1	2
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>6	<b>0.7</b>	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.2</b>	9.9	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>31.2</b>	22.0	22.6
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

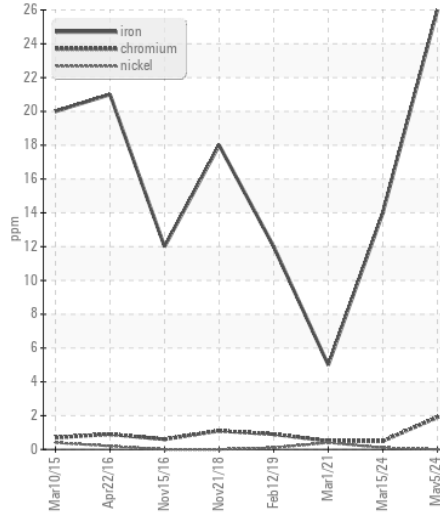
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>150	<b>3</b>	<1	2
Boron	ppm	ASTM D5185m		<b>66</b>	96	20
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>88</b>	72	63
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>1128</b>	817	916
Calcium	ppm	ASTM D5185m		<b>1558</b>	1606	1356
Phosphorus	ppm	ASTM D5185m		<b>1405</b>	786	1112
Zinc	ppm	ASTM D5185m		<b>1711</b>	941	1292
Sulfur	ppm	ASTM D5185m		<b>4076</b>	3463	3031
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>29.5</b>	17.4	16.8
Base Number (BN)	mg KOH/g	ASTM D2896		<b>6.6</b>	7.0	10.3
Visc @ 100°C	cSt	ASTM D445		<b>14.8</b>	14.5	13.5

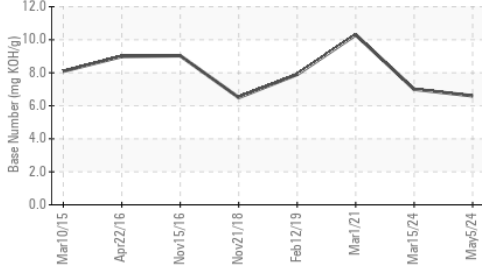
**FT-IR (Direct Trend)**



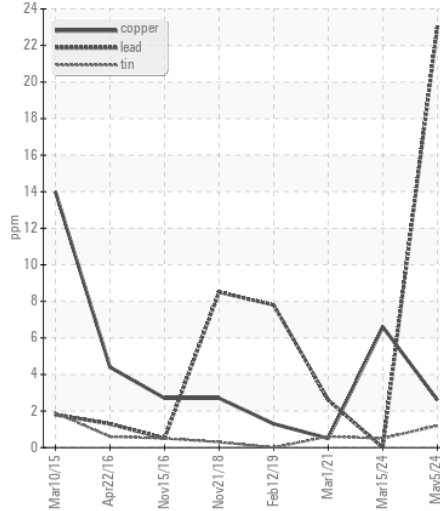
**Ferrous Alloys**



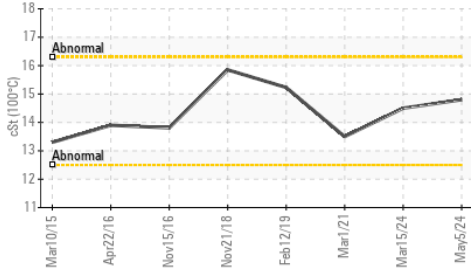
**Base Number**



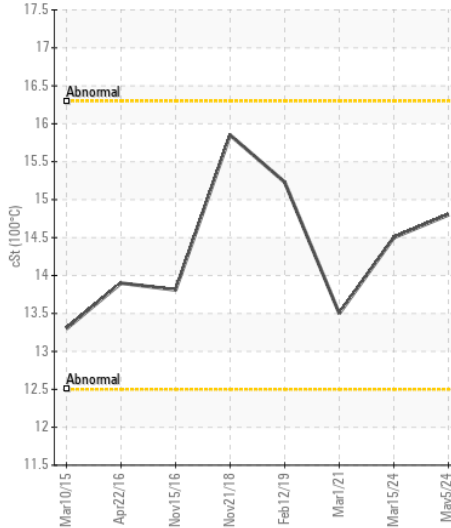
**Non-ferrous Metals**



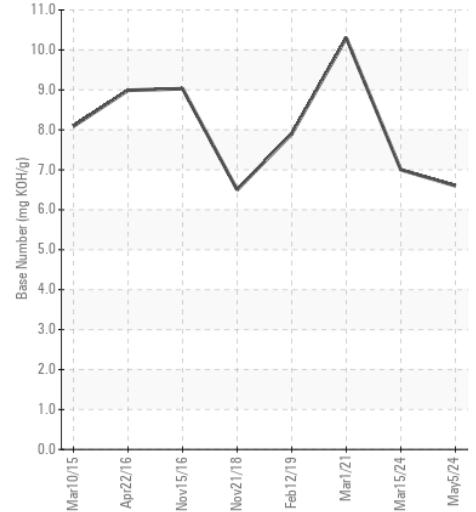
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : WC0829772

**Lab Number** : 06217602

**Unique Number** : 11090466

**Test Package** : FLEET

**Received** : 21 Jun 2024

**Tested** : 25 Jun 2024

**Diagnosed** : 25 Jun 2024 - Don Baldrige

**SALEM NATIONALEASE CORPORATION**

198 PARK PLAZA DRIVE

WINSTON SALEM, NC

US 27105

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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)