



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 3226**

Component  
**Front Diesel Engine**

Fluid  
**DIESEL ENGINE OIL SAE 10W30 (44 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0916485</b>	WC0878545	WC0878589
Sample Date		Client Info		<b>16 Apr 2024</b>	06 Jan 2024	06 Dec 2023
Machine Age	mls	Client Info		<b>525554</b>	367633	507986
Oil Age	mls	Client Info		<b>17568</b>	23095	16889
Filter Age	mls	Client Info		<b>17568</b>	23095	16889
Oil Changed		Client Info		<b>Changed</b>	N/A	N/A
Filter Changed		Client Info		<b>Changed</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>165	<b>7</b>	8	6
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>&lt;1</b>	4	1
Lead	ppm	ASTM D5185m	>150	<b>&lt;1</b>	2	0
Copper	ppm	ASTM D5185m	>90	<b>0</b>	2	<1
Tin	ppm	ASTM D5185m	>5	<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

There is no indication of any contamination in the oil.

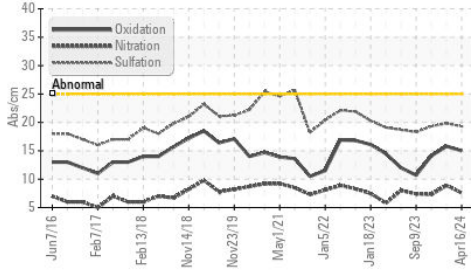
Silicon	ppm	ASTM D5185m	>35	<b>3</b>	3	3
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	5	1
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	▲ 1.1	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>7.5	<b>0.3</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.6</b>	8.9	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.3</b>	19.8	19.3
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

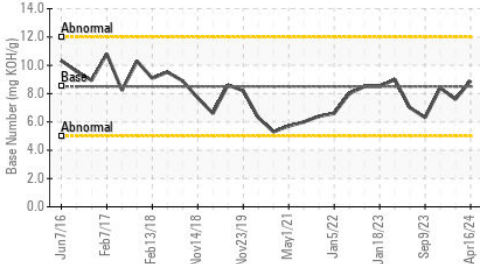
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>0</b>	0	3
Boron	ppm	ASTM D5185m	250	<b>2</b>	2	4
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m	100	<b>58</b>	56	51
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>917</b>	893	800
Calcium	ppm	ASTM D5185m	3000	<b>1091</b>	1138	1301
Phosphorus	ppm	ASTM D5185m	1150	<b>1047</b>	1107	1061
Zinc	ppm	ASTM D5185m	1350	<b>1221</b>	1284	1241
Sulfur	ppm	ASTM D5185m	4250	<b>3457</b>	3148	3120
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.0</b>	15.8	14.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.9</b>	7.6	8.4
Visc @ 100°C	cSt	ASTM D445	10.9	<b>10.7</b>	▲ 11.1	11.1

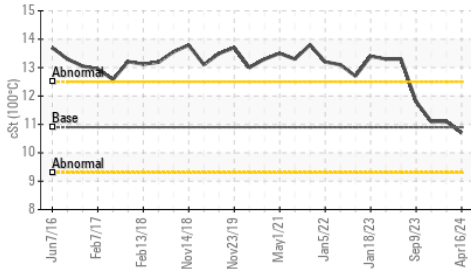
**FT-IR (Direct Trend)**



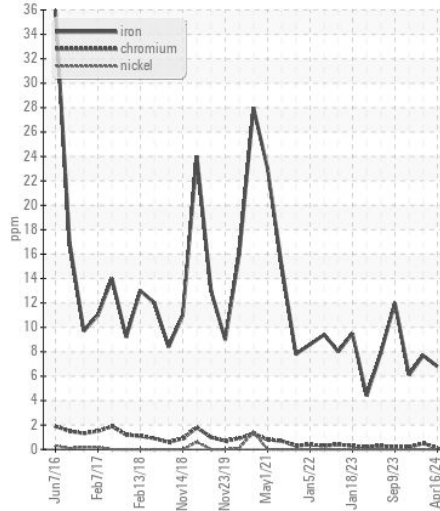
**Base Number**



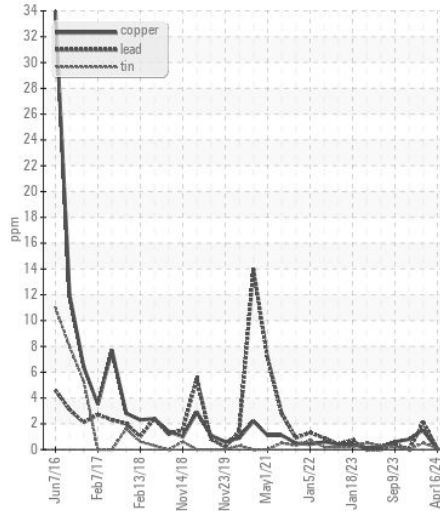
**Viscosity @ 100°C**



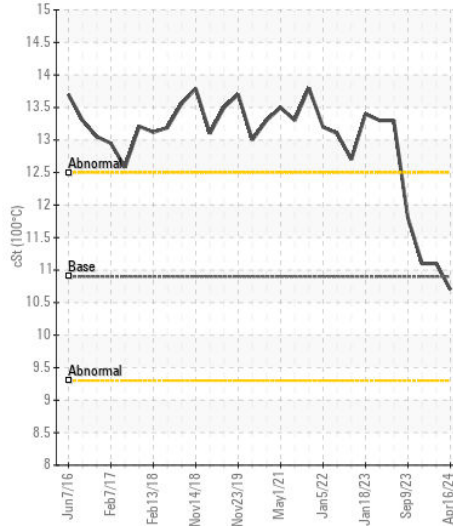
**Ferrous Alloys**



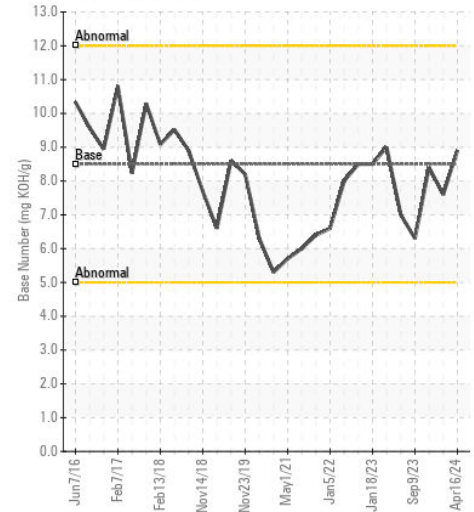
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : WC0916485

**Lab Number** : 06151505

**Unique Number** : 10981583

**Test Package** : FLEET

**Received** : 17 Apr 2024

**Tested** : 18 Apr 2024

**Diagnosed** : 18 Apr 2024 - Wes Davis

**CARCO TRANSPORTATION**

3403 EAST ROOSEVELT ROAD

LITTLE ROCK, AR

US 72206

Contact: DENNIS CATES

denniscates@carcotrans.com

T: (800)967-0777

F:

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)