



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 16291**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0936328</b>	WC0903434	WC0869151
Sample Date		Client Info		<b>02 Jun 2024</b>	17 Mar 2024	14 Jan 2024
Machine Age	mls	Client Info		<b>412900</b>	404638	395583
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>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ATTENTION</b>	NORMAL	MARGINAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>20</b>	14	14
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	4	5
Lead	ppm	ASTM D5185m	>40	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	0	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	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.

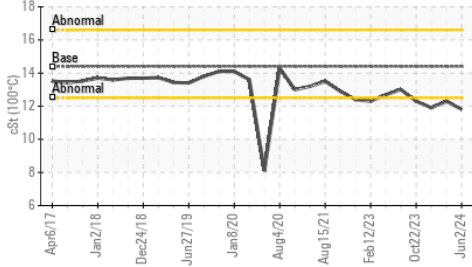
Silicon	ppm	ASTM D5185m	>25	<b>7</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	3	<1
Fuel	%	ASTM D3524	>3.0	<b>&lt;1.0</b>	<1.0	▲ 1.2
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>6	<b>0.3</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.7</b>	7.5	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.3</b>	22.2	21.4
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

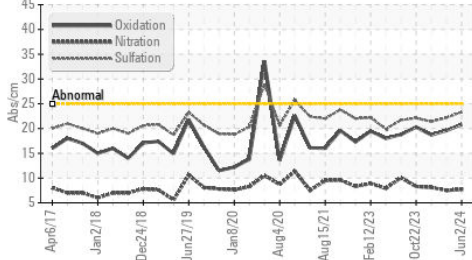
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m	>158	<b>0</b>	1	<1
Boron	ppm	ASTM D5185m	250	<b>278</b>	276	152
Barium	ppm	ASTM D5185m	10	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m	100	<b>91</b>	71	53
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>396</b>	434	630
Calcium	ppm	ASTM D5185m	3000	<b>1423</b>	1626	1184
Phosphorus	ppm	ASTM D5185m	1150	<b>993</b>	1072	811
Zinc	ppm	ASTM D5185m	1350	<b>1218</b>	1271	1050
Sulfur	ppm	ASTM D5185m	4250	<b>3087</b>	4074	2881
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.8</b>	19.6	18.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.4</b>	6.3	6.9
Visc @ 100°C	cSt	ASTM D445	14.4	● <b>11.8</b>	12.3	11.9

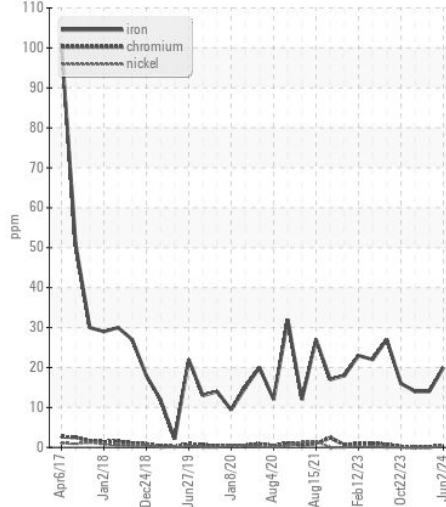
● Viscosity @ 100°C



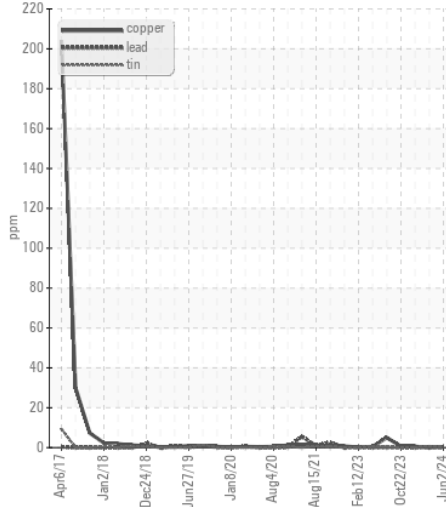
FT-IR (Direct Trend)



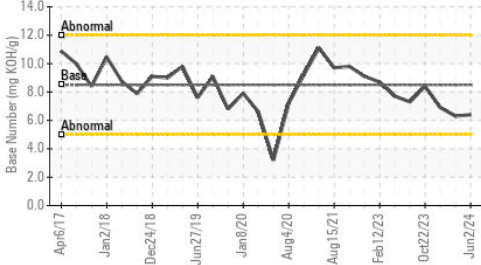
Ferrous Alloys



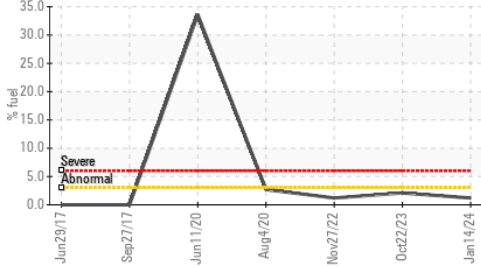
Non-ferrous Metals



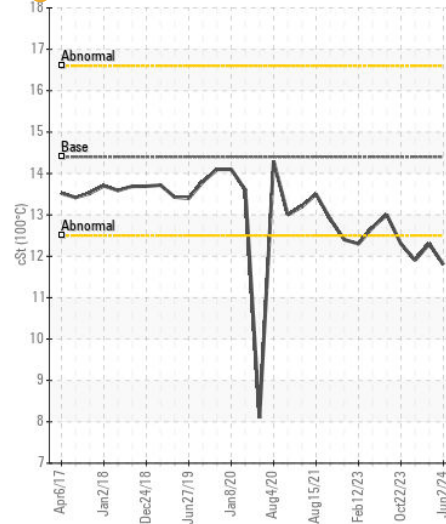
Base Number



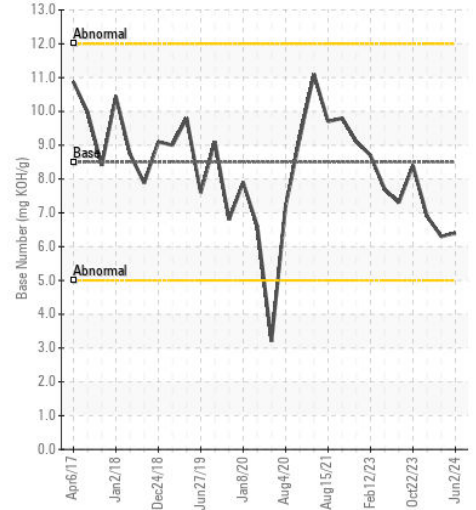
Fuel Dilution



● Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0936328

Lab Number : 06216456

Unique Number : 11089320

Test Package : FLEET ( Additional Tests: FuelDilution )

Received : 20 Jun 2024

Tested : 24 Jun 2024

Diagnosed : 24 Jun 2024 - Sean Felton

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)

SALEM NATIONALEASE CORPORATION

198 PARK PLAZA DRIVE

WINSTON SALEM, NC

US 27105

Contact: Audrey Hopkins

Audrey.Hopkins@salemcorp.com

T: (336)767-9642

F: x: