OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 21002
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

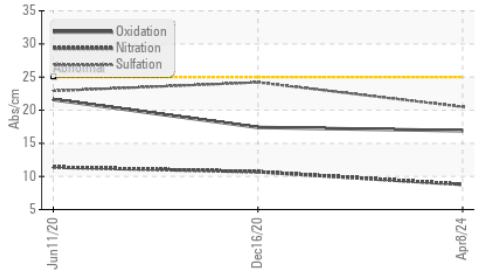
There is no indication of any contamination in the oil.

FLUID CONDITION

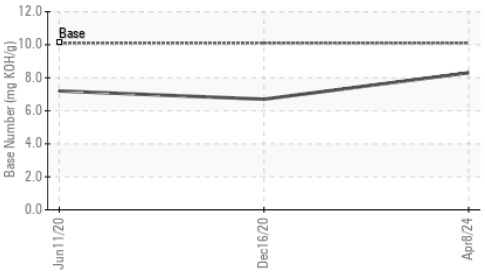
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**WC0926439**	WCM1308549	WCM1316967
Sample Date		Client Info		**08 Apr 2024**	16 Dec 2020	11 Jun 2020
Machine Age	mls	Client Info		**113656**	29429	17269
Oil Age	mls	Client Info		**0**	0	0
Filter Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Filter Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	**26**	22	41
Chromium	ppm	ASTM D5185m	>20	**5**	2	2
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	1
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	**14**	8	17
Lead	ppm	ASTM D5185m	>40	**0**	<1	0
Copper	ppm	ASTM D5185m	>330	**5**	117	656
Tin	ppm	ASTM D5185m	>15	**<1**	3	8
Vanadium	ppm	ASTM D5185m		**0**	0	0
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	**4**	3	8
Potassium	ppm	ASTM D5185m	>20	**4**	23	42
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	0.0
Soot %	%	*ASTM D7844	>3	**0.6**	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	**8.8**	10.7	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.5**	24.2	22.9
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Sodium	ppm	ASTM D5185m		**2**	2	5
Boron	ppm	ASTM D5185m	316	**9**	13	26
Barium	ppm	ASTM D5185m	0.0	**0**	0	<1
Molybdenum	ppm	ASTM D5185m	1.2	**59**	5	12
Manganese	ppm	ASTM D5185m		**1**	<1	3
Magnesium	ppm	ASTM D5185m	24	**893**	113	673
Calcium	ppm	ASTM D5185m	2292	**1334**	2051	1462
Phosphorus	ppm	ASTM D5185m	1064	**1031**	769	730
Zinc	ppm	ASTM D5185m	1160	**1284**	977	800
Sulfur	ppm	ASTM D5185m	4996	**4054**	2241	1796
Oxidation	Abs/.1mm	*ASTM D7414	>25	**16.9**	17.4	21.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	**8.3**	6.7	7.2
Visc @ 100°C	cSt	ASTM D445	15.7	**13.6**	14.4	10.6

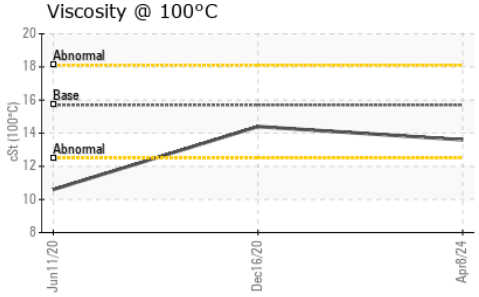
FT-IR (Direct Trend)



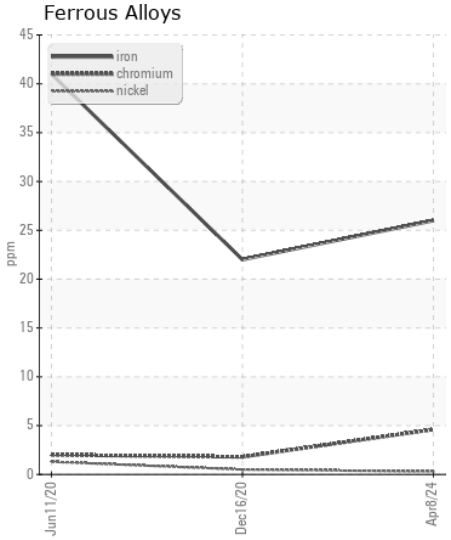
Base Number



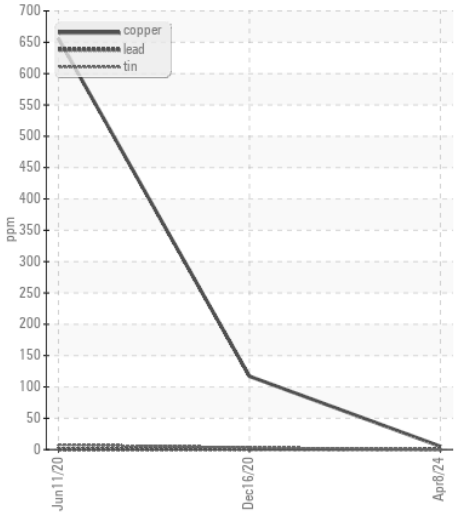
Viscosity @ 100°C



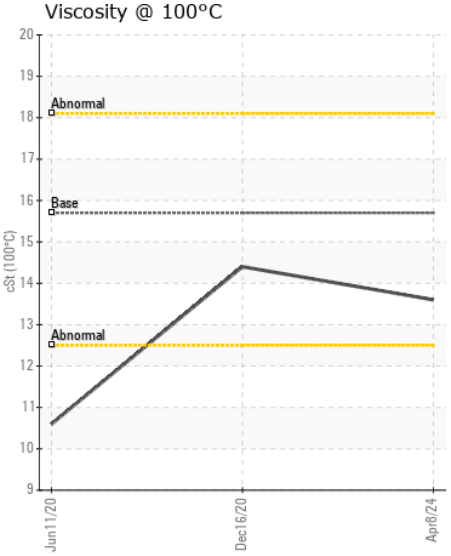
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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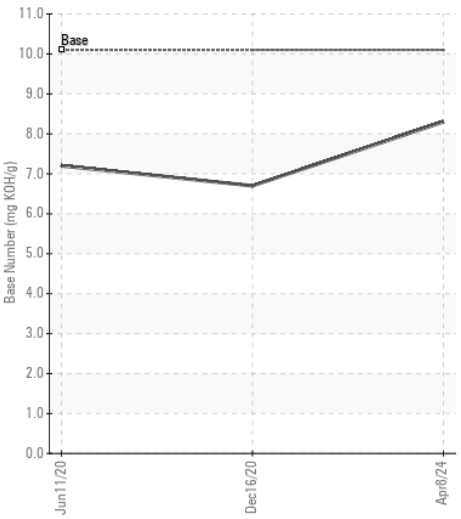

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0926439
Lab Number : 06147133
Unique Number : 10977211
Test Package : FLEET

Received : 12 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 15 Apr 2024 - Wes Davis

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)

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