MOB I WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	SEVERE

Machine Id
FREIGHTLINER 14
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (17 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

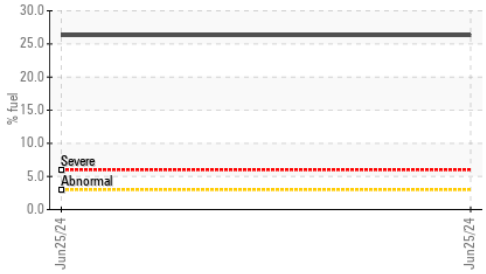
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

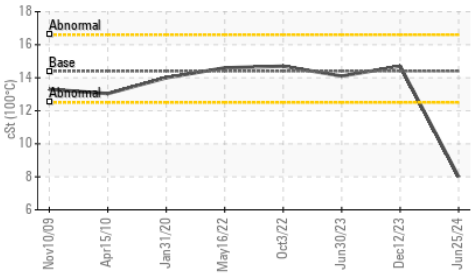
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**WC0948995**	WC0870754	WC0821349
Sample Date		Client Info		**25 Jun 2024**	12 Dec 2023	30 Jun 2023
Machine Age	mls	Client Info		**213907**	204169	198967
Oil Age	mls	Client Info		**0**	0	0
Filter Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Filter Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>90	**66**	40	20
Chromium	ppm	ASTM D5185m	>20	**6**	1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**0**	0	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**4**	5	4
Lead	ppm	ASTM D5185m	>40	**1**	1	<1
Copper	ppm	ASTM D5185m	>330	**54**	2	4
Tin	ppm	ASTM D5185m	>15	**0**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	0	<1
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	**14**	6	6
Potassium	ppm	ASTM D5185m	>20	**3**	5	6
Fuel	%	ASTM D3524	>3.0	▲ **26.3**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	*ASTM D7844	>6	**0.8**	1.6	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**11.2**	12.7	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.0**	25.4	20.3
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	>158	**2**	6	4
Boron	ppm	ASTM D5185m	250	**34**	18	36
Barium	ppm	ASTM D5185m	10	**0**	4	0
Molybdenum	ppm	ASTM D5185m	100	**65**	84	85
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**161**	123	168
Calcium	ppm	ASTM D5185m	3000	**1380**	2049	2233
Phosphorus	ppm	ASTM D5185m	1150	**637**	970	1047
Zinc	ppm	ASTM D5185m	1350	**860**	1207	1279
Sulfur	ppm	ASTM D5185m	4250	**2239**	3461	4208
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.4**	20.2	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**5.3**	6.4	7.7
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **8.0**	14.7	14.1

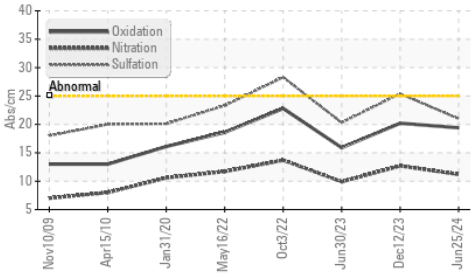
Fuel Dilution



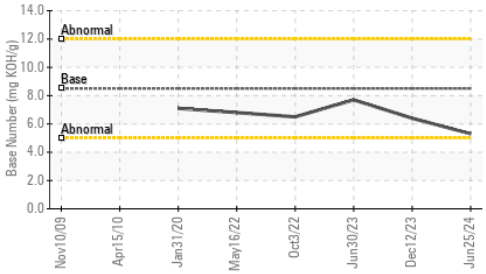
Viscosity @ 100°C



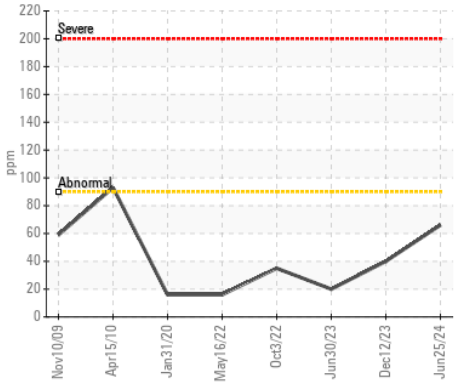
FT-IR (Direct Trend)



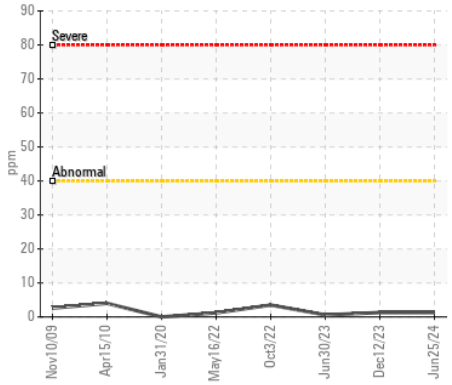
Base Number



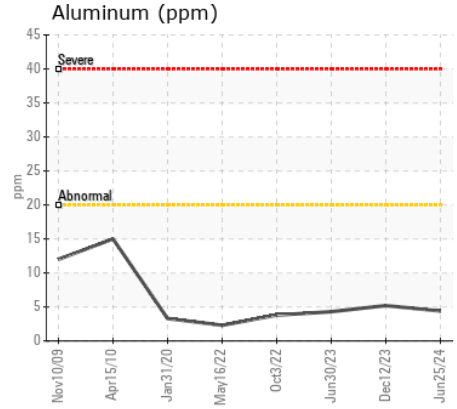
Iron (ppm)



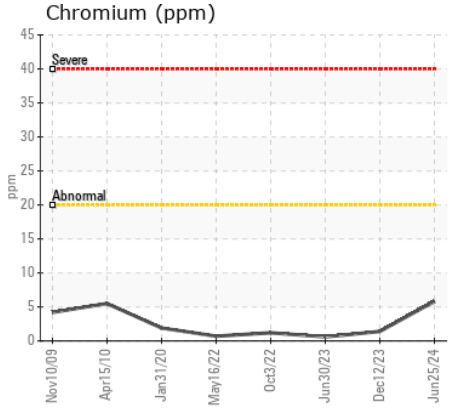
Lead (ppm)



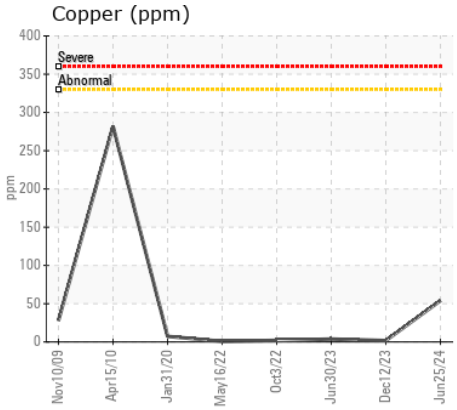
Aluminum (ppm)



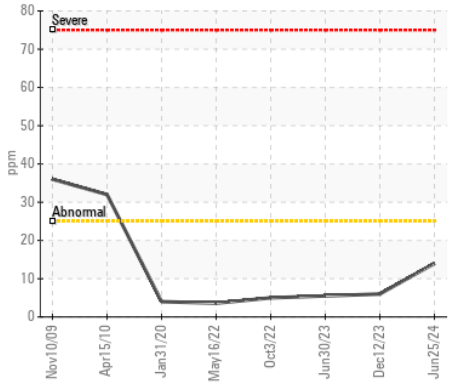
Chromium (ppm)



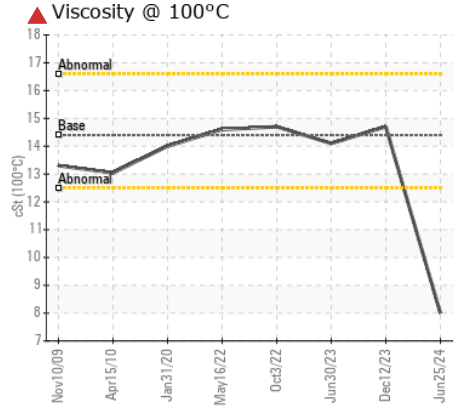
Copper (ppm)



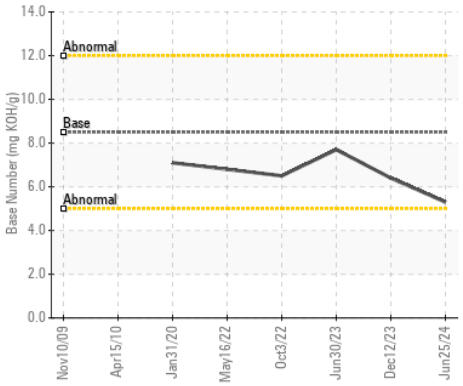
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0948995
Lab Number : 06220956
Unique Number : 11099153
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

Received : 26 Jun 2024
Tested : 01 Jul 2024
Diagnosed : 01 Jul 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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