



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 12
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (18 QTS)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0870862	WC0821404	WC0806599
Sample Date		Client Info		30 Jan 2024	20 Jun 2023	20 Apr 2023
Machine Age	mls	Client Info		259350	248972	244159
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				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	36	33	23
Chromium	ppm	ASTM D5185m	>20	3	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	4	<1
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	2	2
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Elemental level of silicon (Si) above normal indicating ingress of seal material.

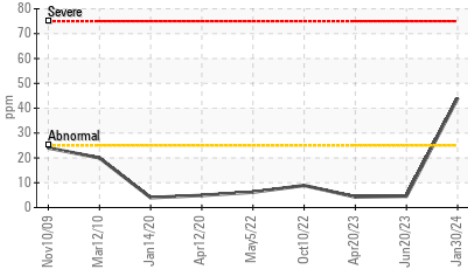
Silicon	ppm	ASTM D5185m	>25	▲ 44	5	4
Potassium	ppm	ASTM D5185m	>20	11	14	10
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.7	1.9	1.1
Nitration	Abs/cm	*ASTM D7624	>20	7.9	12.2	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	24.3	19.1
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

FLUID CONDITION

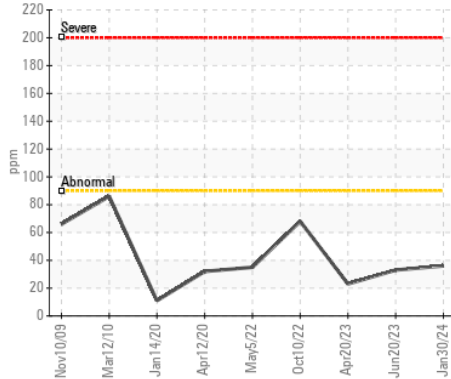
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	34	36	26
Boron	ppm	ASTM D5185m	250	10	24	35
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	95	84	83
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	1402	142	114
Calcium	ppm	ASTM D5185m	3000	1759	2246	2108
Phosphorus	ppm	ASTM D5185m	1150	1605	1073	992
Zinc	ppm	ASTM D5185m	1350	1984	1334	1198
Sulfur	ppm	ASTM D5185m	4250	5407	4399	3263
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	17.7	14.5
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.0	8.2	6.9
Visc @ 100°C	cSt	ASTM D445	14.4	14.0	14.3	14.1

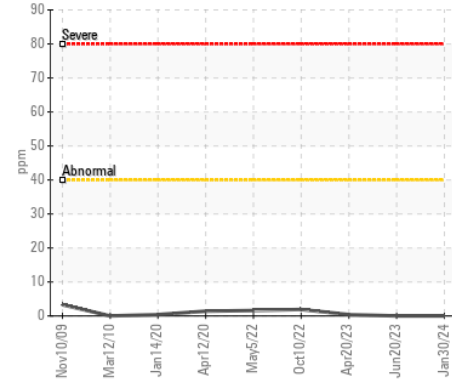
▲ Silicon (ppm)



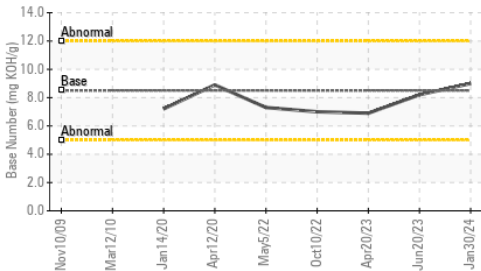
Iron (ppm)



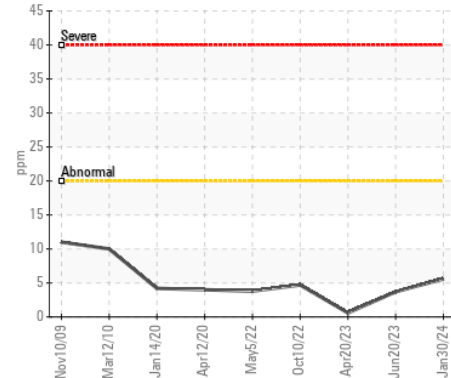
Lead (ppm)



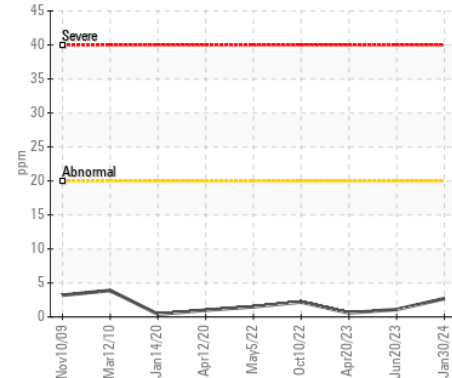
Base Number



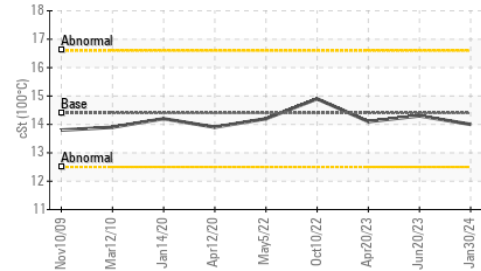
Aluminum (ppm)



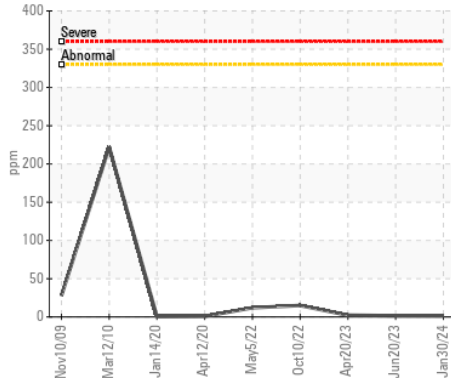
Chromium (ppm)



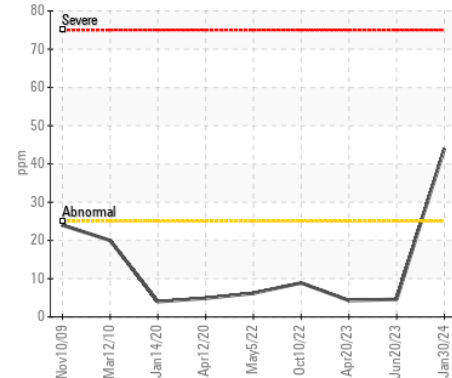
Viscosity @ 100°C



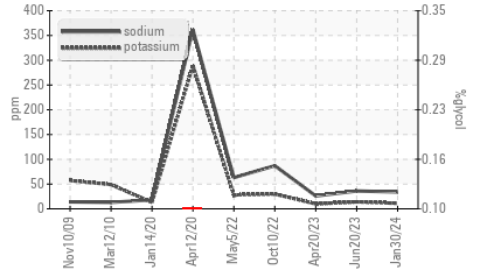
Copper (ppm)



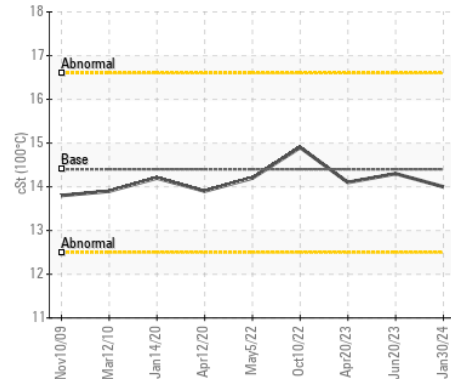
▲ Silicon (ppm)



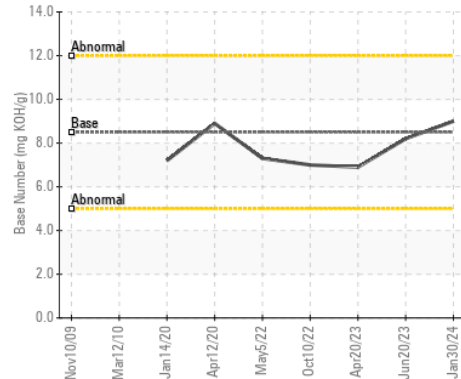
Glycol Contamination



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0870862

Lab Number : 06104850

Unique Number : 10903080

Test Package : MOB 1 (Additional Tests: Glycol, TBN)

Received : 29 Feb 2024

Tested : 05 Mar 2024

Diagnosed : 05 Mar 2024 - Jonathan Hester

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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