OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 2-215
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (52 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

CONTAMINATION

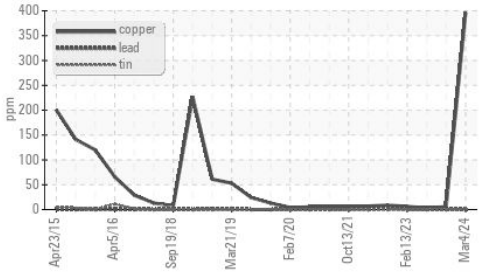
There is no indication of any contamination in the oil.

FLUID CONDITION

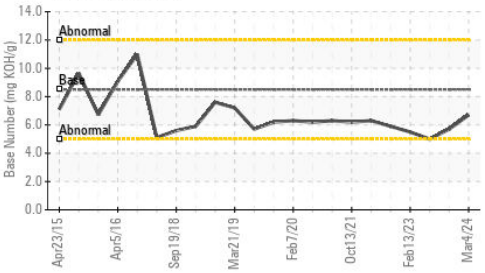
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0871763	WC0847618	WC0337139
Sample Date		Client Info		04 Mar 2024	23 Oct 2023	23 Apr 2023
Machine Age	hrs	Client Info		17412	16666	15924
Oil Age	hrs	Client Info		746	742	793
Filter Age	hrs	Client Info		746	742	793
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>200	36	50	35
Chromium	ppm	ASTM D5185m	>20	2	3	2
Nickel	ppm	ASTM D5185m	>2	0	2	<1
Titanium	ppm	ASTM D5185m	>2	<1	1	2
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	5	13	10
Lead	ppm	ASTM D5185m	>30	0	<1	0
Copper	ppm	ASTM D5185m	>30	▲ 396	6	3
Tin	ppm	ASTM D5185m	>15	1	<1	<1
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	>30	10	6	6
Potassium	ppm	ASTM D5185m	>20	24	11	5
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	>3	0.1	1.3	0.8
Nitration	Abs/cm	*ASTM D7624	>20	9.0	11.6	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	26.0	22.8
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	7	2	1
Boron	ppm	ASTM D5185m	250	74	22	30
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	50	4	5
Manganese	ppm	ASTM D5185m		3	<1	<1
Magnesium	ppm	ASTM D5185m	450	738	766	889
Calcium	ppm	ASTM D5185m	3000	1306	1376	1654
Phosphorus	ppm	ASTM D5185m	1150	681	762	801
Zinc	ppm	ASTM D5185m	1350	788	875	970
Sulfur	ppm	ASTM D5185m	4250	3044	3349	3580
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.7	21.4	20.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.7	5.7	5.0
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	14.8	14.5

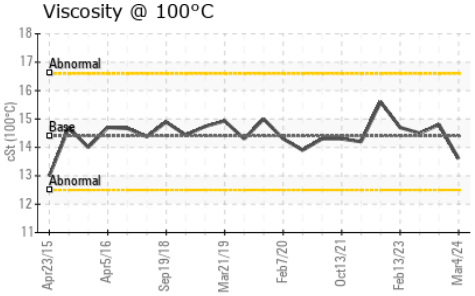
Non-ferrous Metals



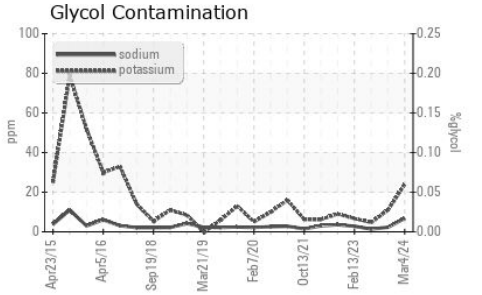
Base Number



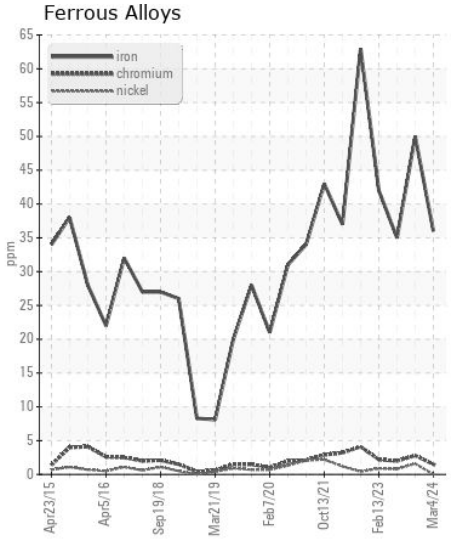
Viscosity @ 100°C



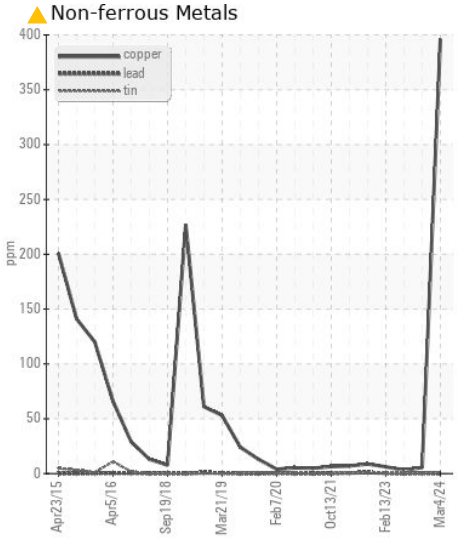
Glycol Contamination



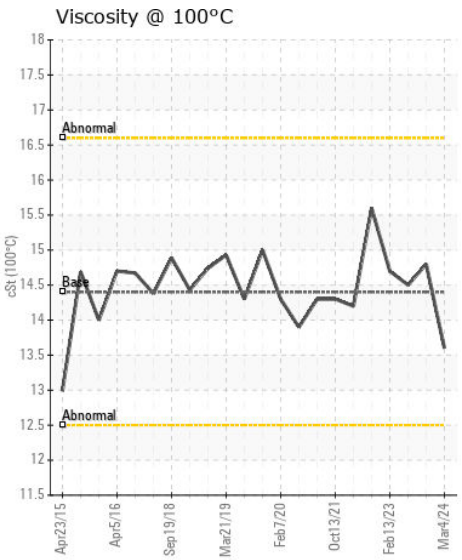
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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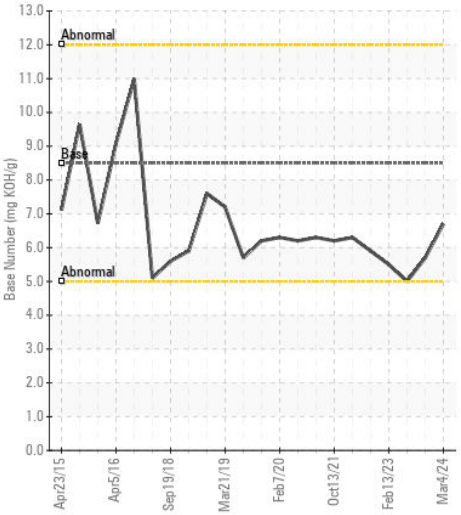

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0871763 **Received** : 20 Mar 2024
Lab Number : 06124228 **Tested** : 23 Mar 2024
Unique Number : 10938379 **Diagnosed** : 23 Mar 2024 - Don Baldridge
Test Package : FLEET (Additional Tests: Glycol)

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)

ALASKA WEST EXPRESS
1095 SANDURI STREET
FAIRBANKS, AK
US 99701
Contact: TOM DOUTHIT
tdouthit@lynden.com
T: (907)452-4355
F: (907)328-1956