



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 13098

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (20 GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0883300	WC0439570	WC0413149
Sample Date		Client Info		26 Dec 2023	05 Jul 2020	18 Jan 2020
Machine Age	mls	Client Info		258849	249775	218862
Oil Age	mls	Client Info		25000	0	10000
Filter Age	mls	Client Info		0	0	10000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>130	19	27	35
Chromium	ppm	ASTM D5185m	>10	1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	8	6	13
Lead	ppm	ASTM D5185m	>20	<1	0	0
Copper	ppm	ASTM D5185m	>125	5	1	2
Tin	ppm	ASTM D5185m	>4	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

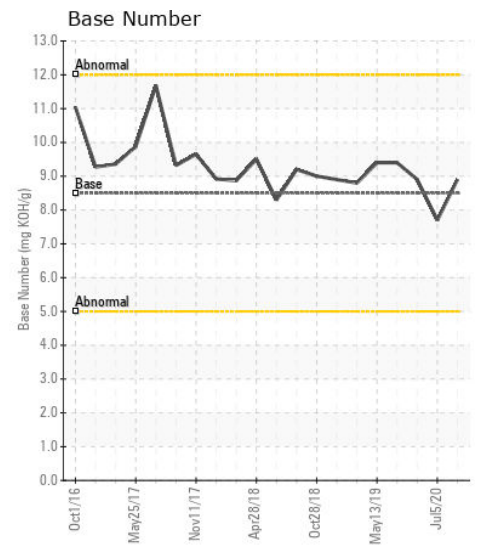
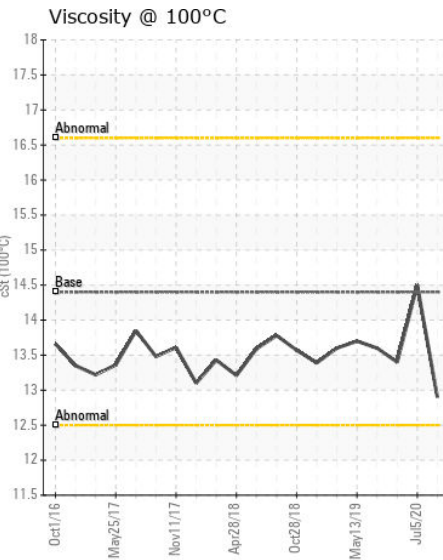
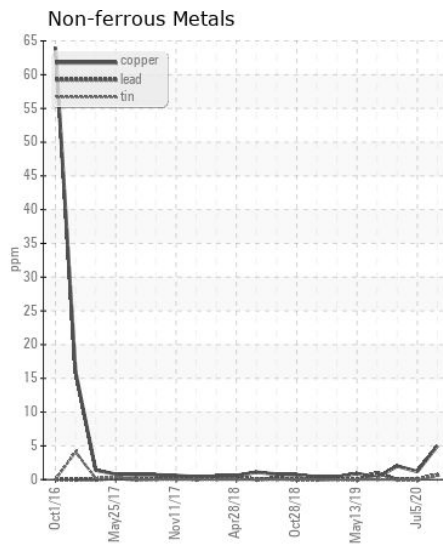
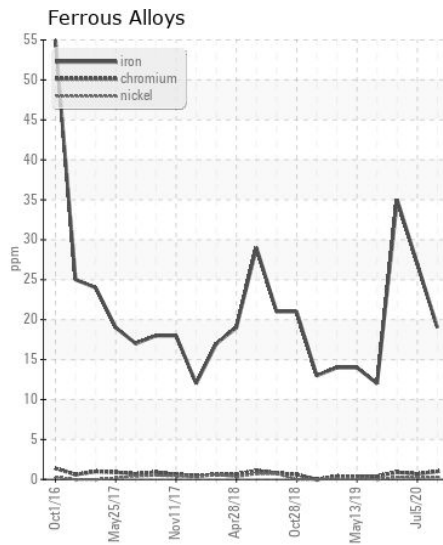
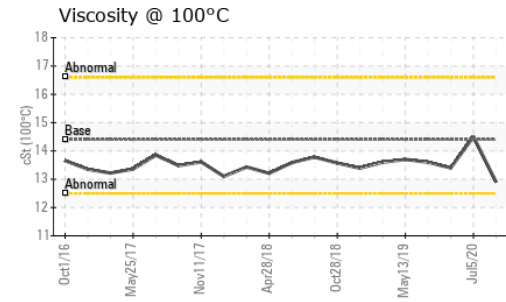
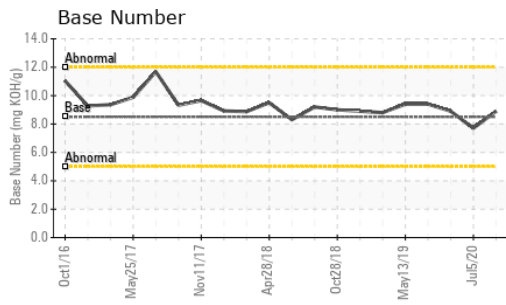
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	6	5
Potassium	ppm	ASTM D5185m	>20	2	10	17
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.4	0.8	0.7
Nitration	Abs/cm	*ASTM D7624	>20	7.7	11.4	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	24.5	20.7
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	2	3	2
Boron	ppm	ASTM D5185m	250	8	8	59
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	70	5	44
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	1010	42	390
Calcium	ppm	ASTM D5185m	3000	1149	2768	1994
Phosphorus	ppm	ASTM D5185m	1150	1167	973	1028
Zinc	ppm	ASTM D5185m	1350	1411	1182	1193
Sulfur	ppm	ASTM D5185m	4250	3491	3024	2793
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	15.9	16.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.9	7.7	8.9
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	14.5	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0883300 **Received** : 08 Jan 2024
Lab Number : 06054617 **Diagnosed** : 09 Jan 2024
Unique Number : 10820566 **Diagnostician** : Wes Davis
Test Package : FLEET

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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)