



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
FREIGHTLINER 45698
Component
Diesel Engine
Fluid
EXXON 15W40 (--- QTS)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0852160	WC0717783	WC0696693
Sample Date		Client Info		03 Jan 2024	10 Nov 2022	27 Jun 2022
Machine Age	mls	Client Info		220921	212475	0
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				ABNORMAL	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>130	69	50	22
Chromium	ppm	ASTM D5185m	>10	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	12	8	4
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>125	6	2	3
Tin	ppm	ASTM D5185m	>4	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

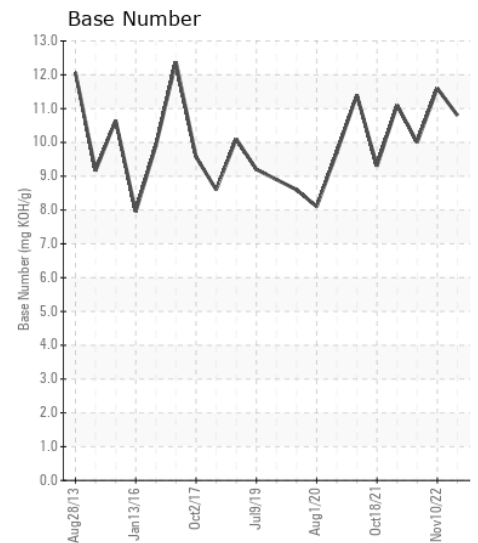
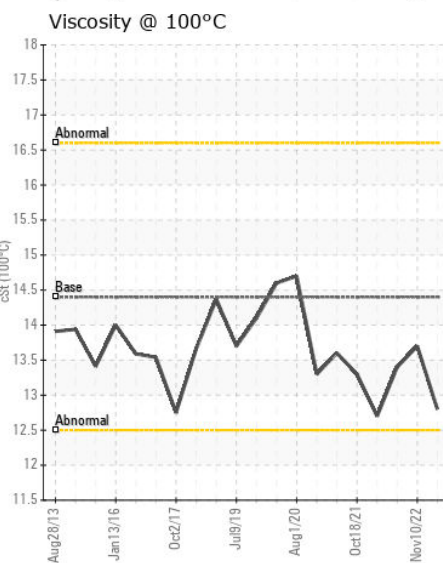
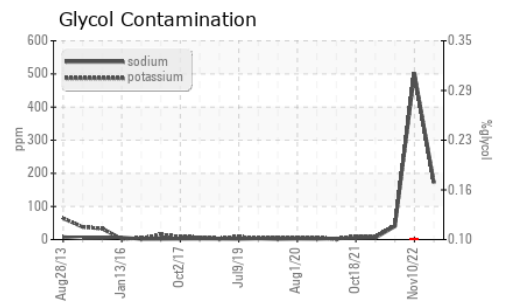
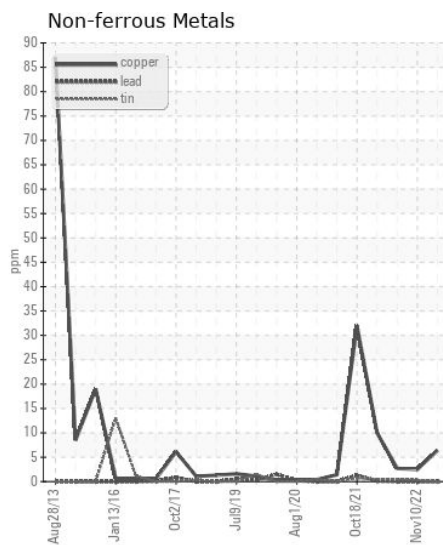
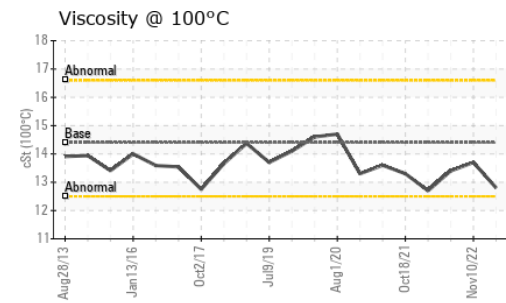
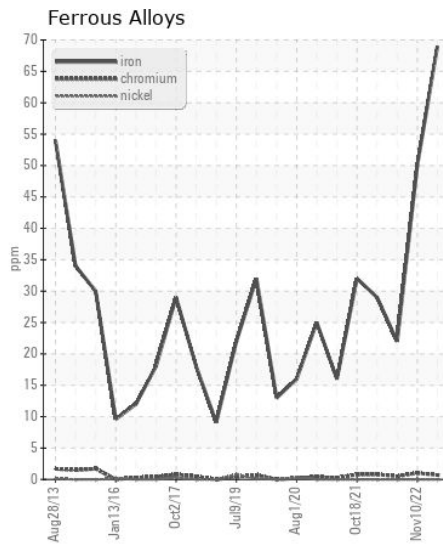
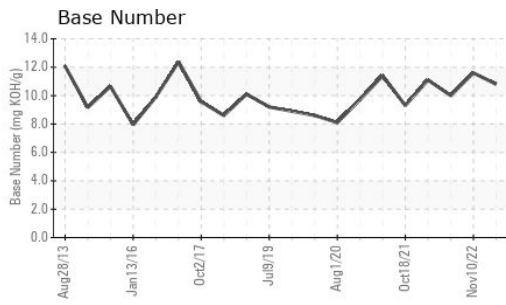
Sodium and/or potassium levels remain high.

Silicon	ppm	ASTM D5185m	>25	5	6	3
Potassium	ppm	ASTM D5185m	>20	▲ 170	▲ 502	41
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	0.10	NEG
Soot %	%	*ASTM D7844	>6	0.1	0.8	0.5
Nitration	Abs/cm	*ASTM D7624	>20	6.3	12.1	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.4	24.2	21.3
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

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		▲ 171	▲ 502	40
Boron	ppm	ASTM D5185m		10	4	6
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		77	92	64
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		959	962	892
Calcium	ppm	ASTM D5185m		1113	1159	1085
Phosphorus	ppm	ASTM D5185m		1065	1039	983
Zinc	ppm	ASTM D5185m		1266	1244	1188
Sulfur	ppm	ASTM D5185m		3448	3629	3615
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	18.3	17.4
Base Number (BN)	mg KOH/g	ASTM D2896		10.8	11.6	10.0
Visc @ 100°C	cSt	ASTM D445	14.4	12.8	13.7	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0852160 **Received** : 16 Jan 2024
Lab Number : 06061683 **Diagnosed** : 18 Jan 2024
Unique Number : 10833065 **Diagnostician** : Jonathan Hester
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)