OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
FREIGHTLINER 706
Component
Front Diesel Engine
Fluid
VALVOLINE PREMIUM BLUE 2000 15W40 (40 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

WEAR

Bearing and/or bushing wear is indicated.

CONTAMINATION

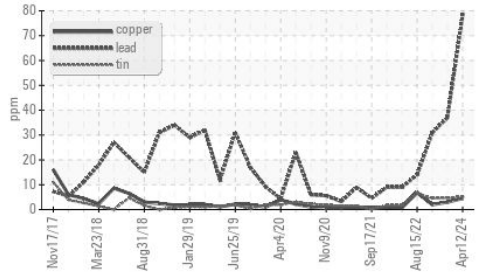
There is a moderate amount of fuel present in the oil.

FLUID CONDITION

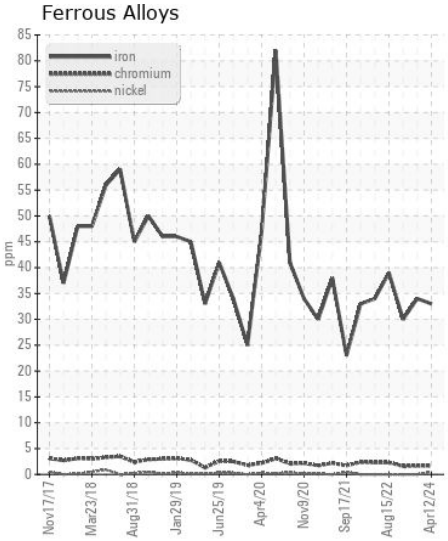
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0876878	WC0787434	WC0731985
Sample Date		Client Info		12 Apr 2024	14 Aug 2023	26 Jan 2023
Machine Age	mls	Client Info		560000	533000	507000
Oil Age	mls	Client Info		26000	25000	25000
Filter Age	mls	Client Info		26000	25000	25000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>200	33	34	30
Chromium	ppm	ASTM D5185m	>10	2	2	2
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>30	3	2	2
Lead	ppm	ASTM D5185m	>30	▲ 78	▲ 37	▲ 31
Copper	ppm	ASTM D5185m	>30	4	3	2
Tin	ppm	ASTM D5185m	>4	5	5	4
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>30	6	6	8
Potassium	ppm	ASTM D5185m	>20	6	3	6
Fuel	%	ASTM D3524	>3.0	▲ 6.2	▲ 6.5	▲ 5.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.8	0.9	0.6
Nitration	Abs/cm	*ASTM D7624	>20	13.0	11.8	12.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.2	24.5	24.5
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		3	4	3
Boron	ppm	ASTM D5185m		24	24	26
Barium	ppm	ASTM D5185m		2	0	<1
Molybdenum	ppm	ASTM D5185m		52	50	43
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m		734	784	711
Calcium	ppm	ASTM D5185m		1224	1262	1176
Phosphorus	ppm	ASTM D5185m		677	651	636
Zinc	ppm	ASTM D5185m		870	860	829
Sulfur	ppm	ASTM D5185m		2292	2562	2186
Oxidation	Abs/.1mm	*ASTM D7414	>25	25.7	23.3	24.9
Base Number (BN)	mg KOH/g	ASTM D2896	10.0	5.0	5.2	4.9
Visc @ 100°C	cSt	ASTM D445	15.2	▲ 12.1	▲ 12.4	▲ 11.9

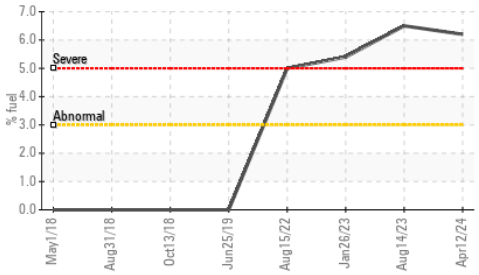
Non-ferrous Metals



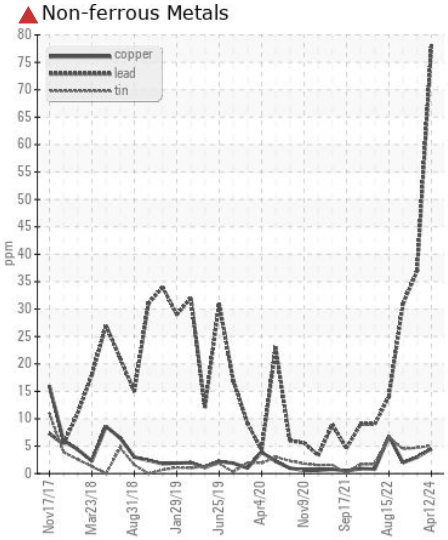
Ferrous Alloys



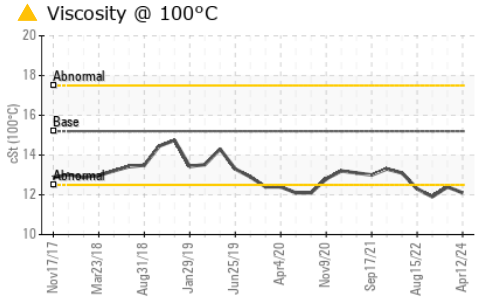
Fuel Dilution



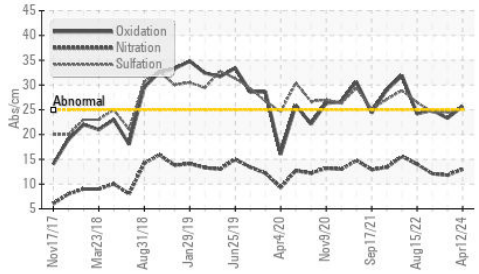
Non-ferrous Metals



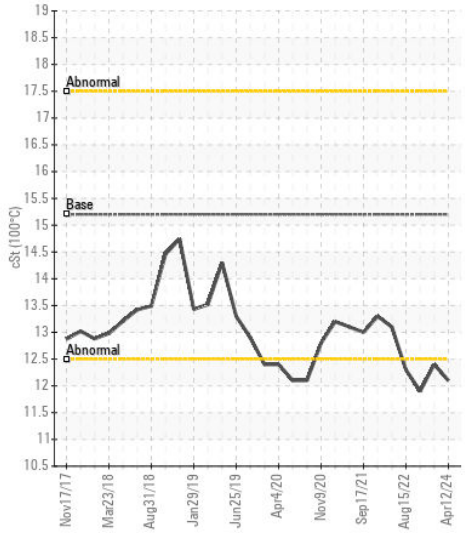
Viscosity @ 100°C



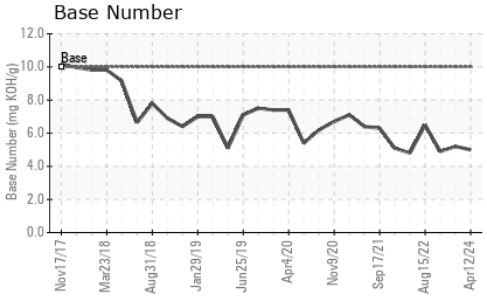
FT-IR (Direct Trend)



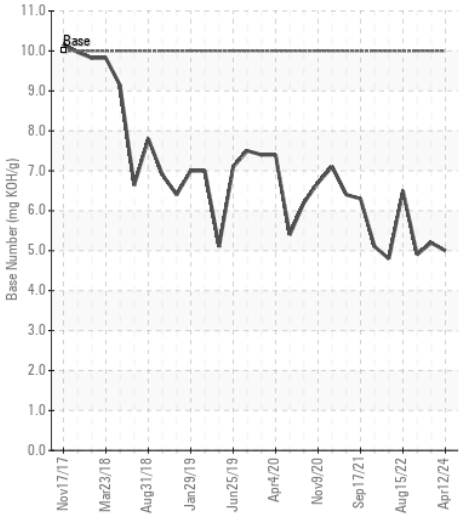
Viscosity @ 100°C



Base Number



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0876878 **Received** : 24 Jun 2024
Lab Number : 06217871 **Tested** : 27 Jun 2024
Unique Number : 11096068 **Diagnosed** : 27 Jun 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: PercentFuel)

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)

ROUTH TRANSPORTATION INC
2830 BENNY LINEBERRY RD
CLIMAX, NC
US 27233
Contact: BRAD ROUTH
routhtra@bellsouth.net
T: (336)685-0671
F: (336)685-9189