OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 2-217
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (52 QTS)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

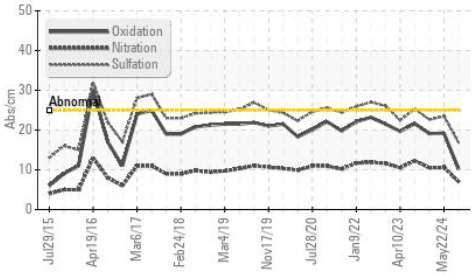
Sodium and/or potassium levels are high.

FLUID CONDITION

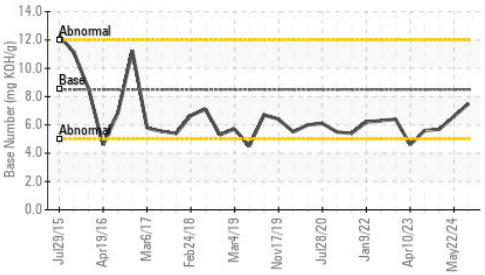
The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0895220	WC0926242	WC0899968
Sample Date		Client Info		12 Jun 2024	22 May 2024	05 Feb 2024
Machine Age	hrs	Client Info		24391	24292	23423
Oil Age	hrs	Client Info		199	869	744
Filter Age	hrs	Client Info		199	869	744
Oil Changed		Client Info		Not Changd	Changed	Changed
Filter Changed		Client Info		Not Changd	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	SEVERE
Iron	ppm	ASTM D5185m	>200	11	26	27
Chromium	ppm	ASTM D5185m	>20	<1	2	2
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>30	3	4	7
Lead	ppm	ASTM D5185m	>30	0	0	<1
Copper	ppm	ASTM D5185m	>30	2	3	6
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>30	5	3	8
Potassium	ppm	ASTM D5185m	>20	▲ 270	▲ 731	▲ 381
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	▲ 0.10
Soot %	%	*ASTM D7844	>3	0.2	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.0	10.6	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.8	23.5	22.6
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	40	▲ 120	● 53
Boron	ppm	ASTM D5185m	250	8	0	24
Barium	ppm	ASTM D5185m	10	0	0	14
Molybdenum	ppm	ASTM D5185m	100	39	72	59
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m	450	149	659	716
Calcium	ppm	ASTM D5185m	3000	2133	1477	1340
Phosphorus	ppm	ASTM D5185m	1150	863	692	735
Zinc	ppm	ASTM D5185m	1350	1010	823	832
Sulfur	ppm	ASTM D5185m	4250	4034	3357	3365
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.2	19.2	19.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.5	6.6	5.7
Visc @ 100°C	cSt	ASTM D445	14.4	14.0	14.3	14.1

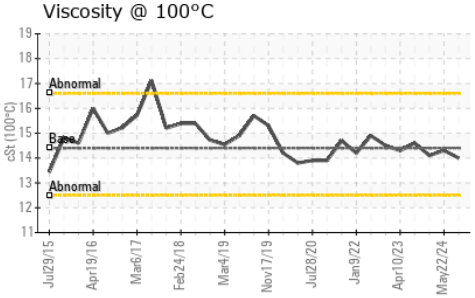
FT-IR (Direct Trend)



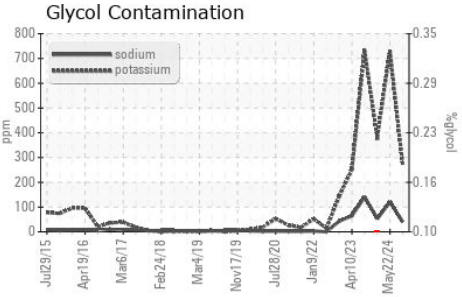
Base Number



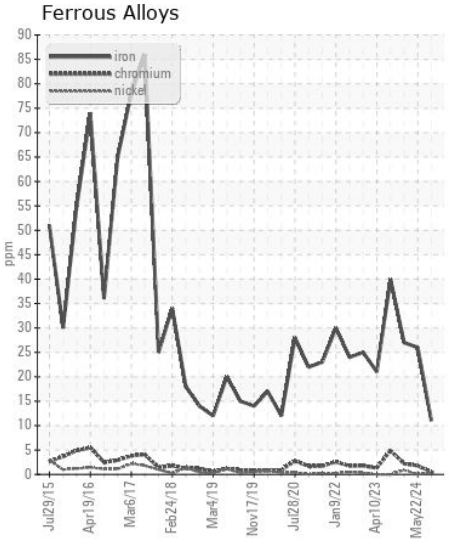
Viscosity @ 100°C



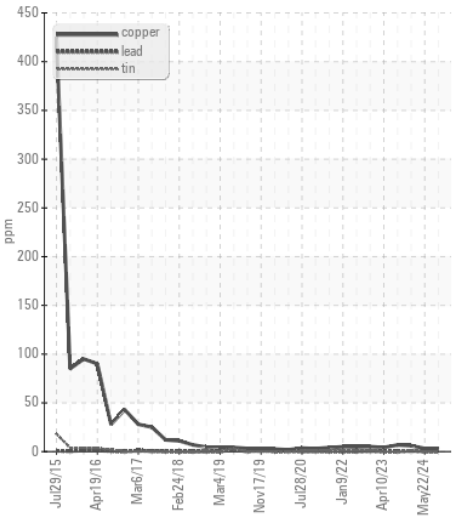
Glycol Contamination



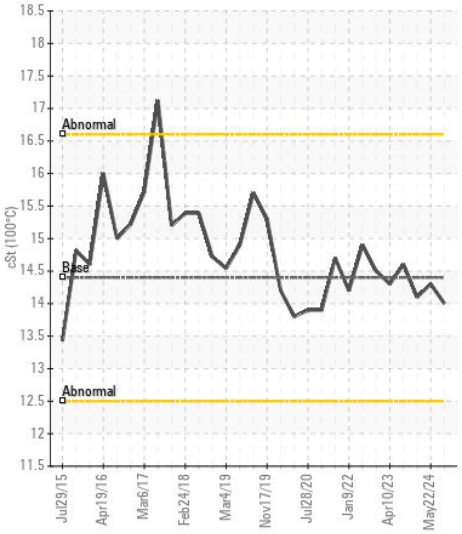
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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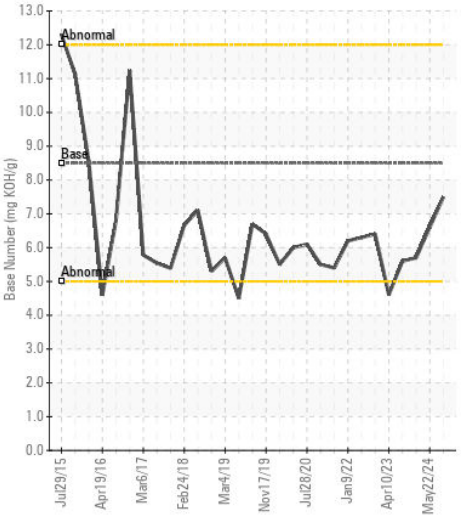

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0895220 **Received** : 17 Jun 2024
Lab Number : 06212787 **Tested** : 19 Jun 2024
Unique Number : 11085651 **Diagnosed** : 19 Jun 2024 - Angela Borella
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)

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