OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER TDI1410
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (40 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

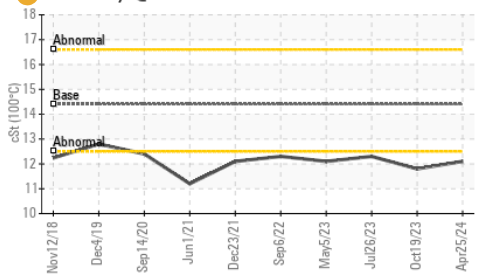
There is no indication of any contamination in the oil.

FLUID CONDITION

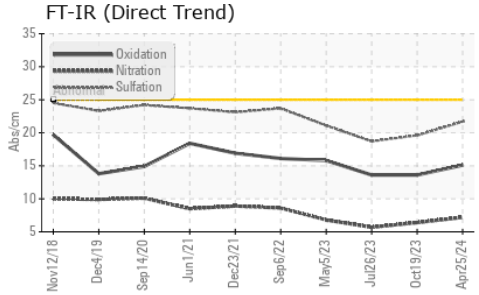
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0936283	WC0869217	WC0828017
Sample Date		Client Info		25 Apr 2024	19 Oct 2023	26 Jul 2023
Machine Age	mls	Client Info		223412	209407	204560
Oil Age	mls	Client Info		25000	25000	0
Filter Age	mls	Client Info		25000	25000	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Not Changd
Sample Status				ATTENTION	ATTENTION	ATTENTION
Iron	ppm	ASTM D5185m	>80	11	8	7
Chromium	ppm	ASTM D5185m	>5	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	2	1	4
Lead	ppm	ASTM D5185m	>30	1	2	2
Copper	ppm	ASTM D5185m	>150	1	<1	<1
Tin	ppm	ASTM D5185m	>5	1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	5	4	8
Potassium	ppm	ASTM D5185m	>20	4	4	5
Fuel	%	ASTM D3524	>5	<1.0	▲ 3.1	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.8	0.8	0.6
Nitration	Abs/cm	*ASTM D7624	>20	7.2	6.4	5.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.7	19.6	18.7
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
Sodium	ppm	ASTM D5185m	>158	<1	0	2
Boron	ppm	ASTM D5185m	250	385	9	6
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	91	65	60
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	450	361	864	999
Calcium	ppm	ASTM D5185m	3000	1517	1068	1272
Phosphorus	ppm	ASTM D5185m	1150	939	993	1072
Zinc	ppm	ASTM D5185m	1350	1224	1126	1333
Sulfur	ppm	ASTM D5185m	4250	3449	3033	4100
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.1	13.6	13.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.0	9.2	9.3
Visc @ 100°C	cSt	ASTM D445	14.4	12.1	11.8	12.3

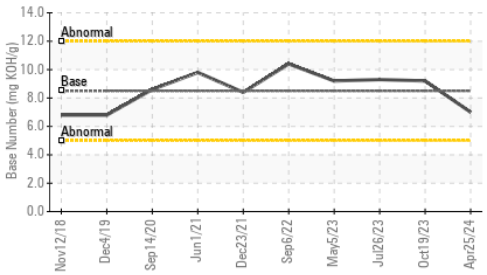
Viscosity @ 100°C



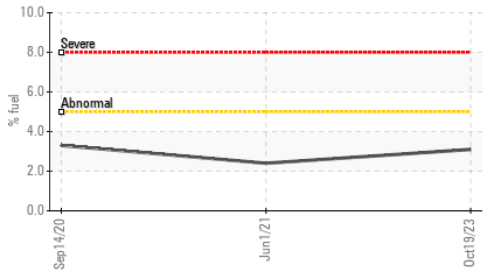
FT-IR (Direct Trend)



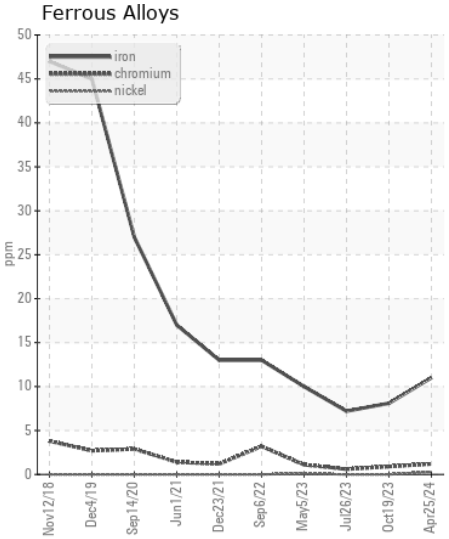
Base Number



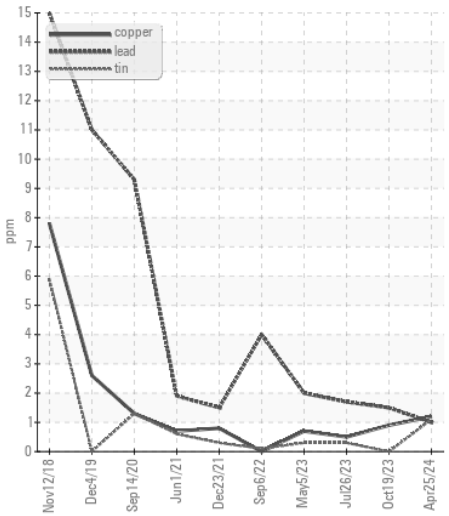
Fuel Dilution



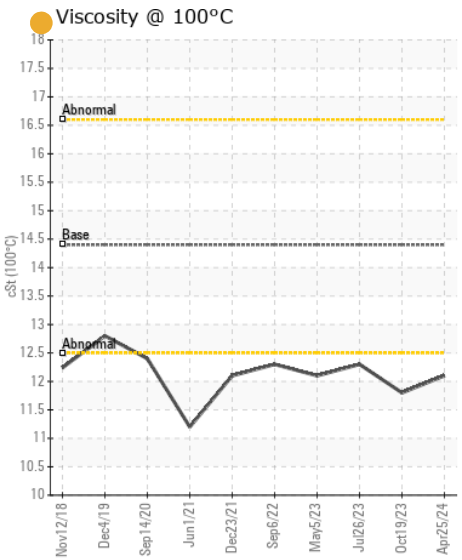
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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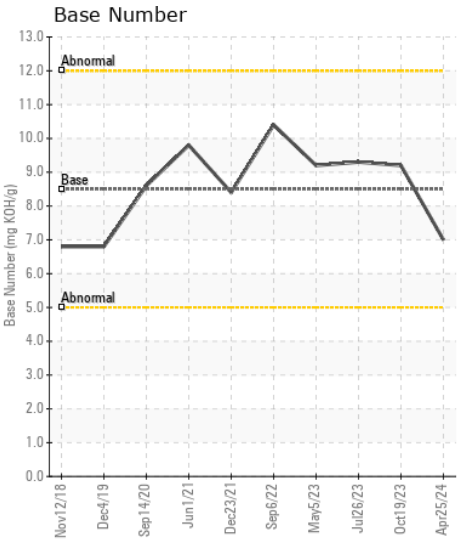

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0936283
Lab Number : 06190052
Unique Number : 11046804
Test Package : FLEET (Additional Tests: FuelDilution)

Received : 23 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - Don Baldridge

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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