CONST

LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LH110 1227-155752
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

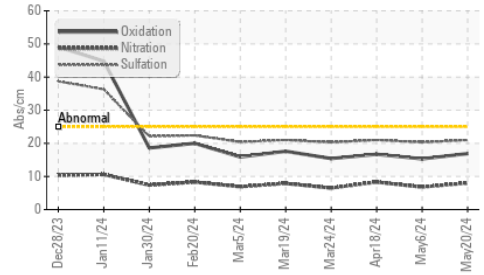
There is no indication of any contamination in the oil.

FLUID CONDITION

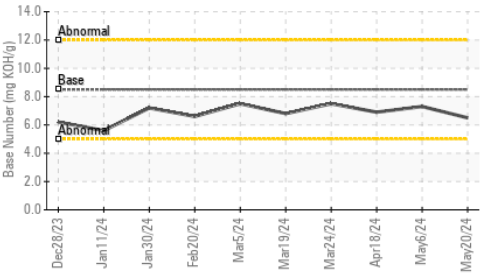
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0267540	LH0267550	LH0280583
Sample Date		Client Info		20 May 2024	06 May 2024	18 Apr 2024
Machine Age	hrs	Client Info		2578	2262	1980
Oil Age	hrs	Client Info		547	231	0
Filter Age	hrs	Client Info		547	231	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	5	5	5
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	1	1	0
Aluminum	ppm	ASTM D5185m	>15	4	4	2
Lead	ppm	ASTM D5185m	>30	1	<1	<1
Copper	ppm	ASTM D5185m	>125	2	1	2
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>60	10	10	10
Potassium	ppm	ASTM D5185m	>20	3	3	3
Fuel	%	ASTM D3524	>5	<1.0	<1.0	0.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.0	6.8	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.0	20.3	21.0
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	3	3	<1
Boron	ppm	ASTM D5185m	250	310	380	421
Barium	ppm	ASTM D5185m	10	1	1	<1
Molybdenum	ppm	ASTM D5185m	100	82	83	84
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	408	397	413
Calcium	ppm	ASTM D5185m	3000	1312	1279	1341
Phosphorus	ppm	ASTM D5185m	1150	976	921	1140
Zinc	ppm	ASTM D5185m	1350	1157	1097	1204
Sulfur	ppm	ASTM D5185m	4250	3337	3090	3802
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.9	15.3	16.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.5	7.3	6.9
Visc @ 100°C	cSt	ASTM D445	14.4	12.3	12.5	12.3

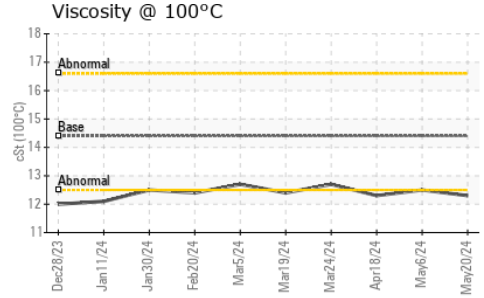
FT-IR (Direct Trend)



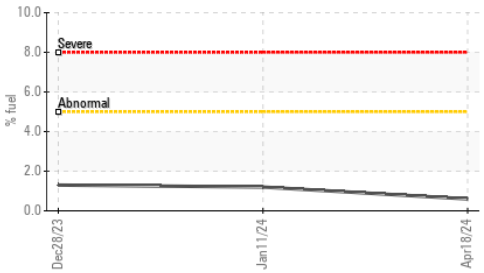
Base Number



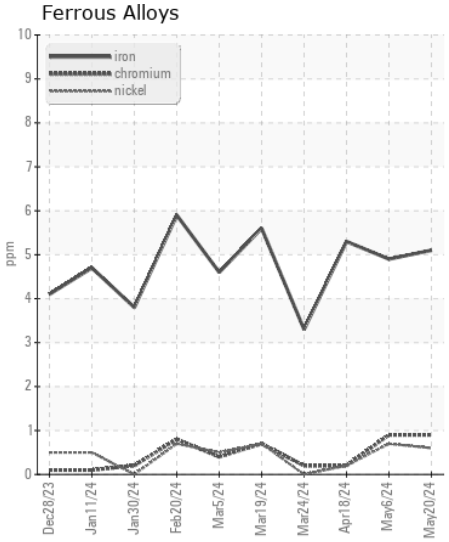
Viscosity @ 100°C



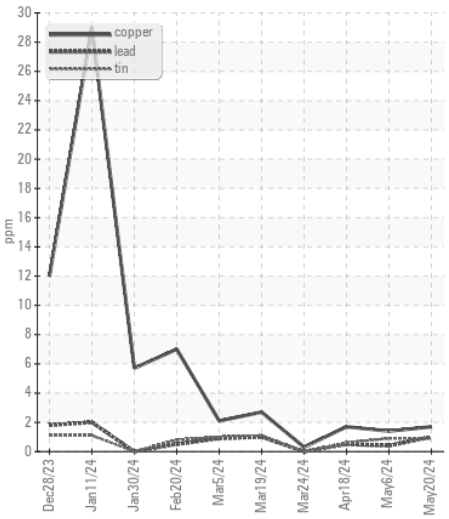
Fuel Dilution



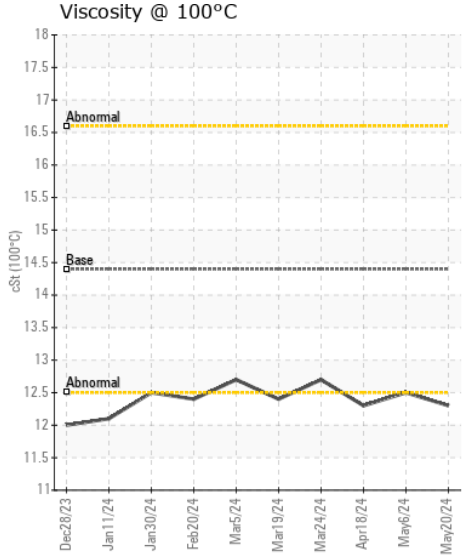
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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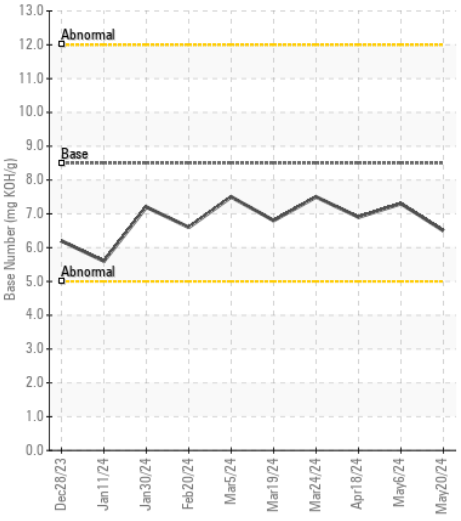

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0267540 **Received** : 28 May 2024
Lab Number : 06192006 **Tested** : 30 May 2024
Unique Number : 11048758 **Diagnosed** : 30 May 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: FUELDILUTION, TBN)

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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