LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR L556 055637-1332
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 5W30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

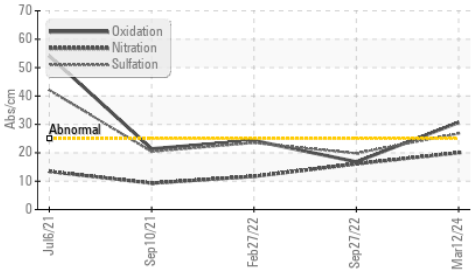
There is no indication of any contamination in the oil.

FLUID CONDITION

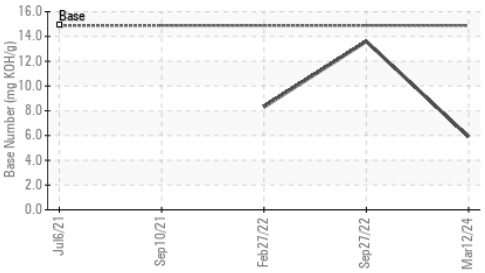
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0264451	LH0220846	LH0207963
Sample Date		Client Info		12 Mar 2024	27 Sep 2022	27 Feb 2022
Machine Age	hrs	Client Info		6581	3494	2433
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	ATTENTION	NORMAL
Iron	ppm	ASTM D5185m	>100	38	19	8
Chromium	ppm	ASTM D5185m	>5	2	1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>15	7	4	3
Lead	ppm	ASTM D5185m	>30	11	2	8
Copper	ppm	ASTM D5185m	>125	11	7	10
Tin	ppm	ASTM D5185m	>5	2	1	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	>60	22	18	7
Potassium	ppm	ASTM D5185m	>20	12	7	0
Fuel		WC Method	>5	<1.0	1.5	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	20.0	16.1	11.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.8	19.8	23.5
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	3	1
Boron	ppm	ASTM D5185m	236	127	186	86
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	0	26	2	2
Manganese	ppm	ASTM D5185m	<1	1	<1	<1
Magnesium	ppm	ASTM D5185m	25	83	74	399
Calcium	ppm	ASTM D5185m	4298	3597	4156	2160
Phosphorus	ppm	ASTM D5185m	1020	1131	990	745
Zinc	ppm	ASTM D5185m	1164	1315	1178	829
Sulfur	ppm	ASTM D5185m	2460	3407	3774	2331
Oxidation	Abs/.1mm	*ASTM D7414	>25	30.7	16.8	24.3
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	5.9	13.6	8.3
Visc @ 100°C	cSt	ASTM D445	12.1	13.9	11.6	13.8

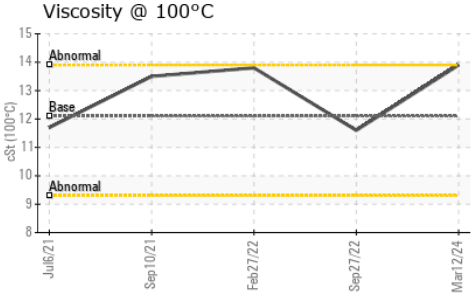
FT-IR (Direct Trend)



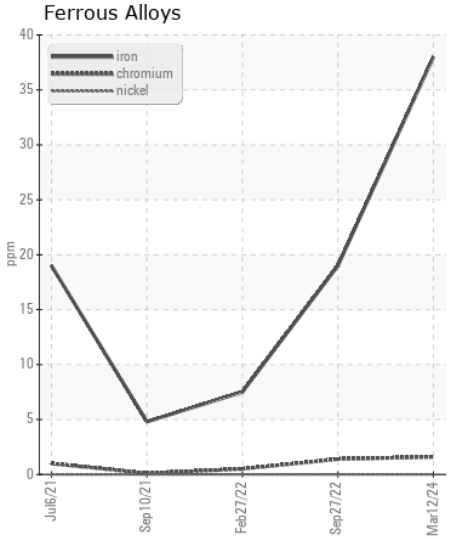
Base Number



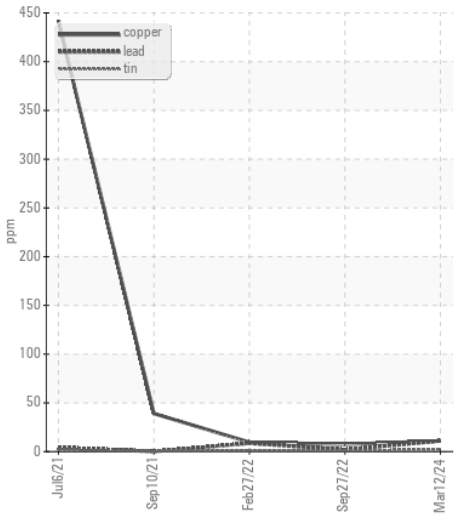
Viscosity @ 100°C



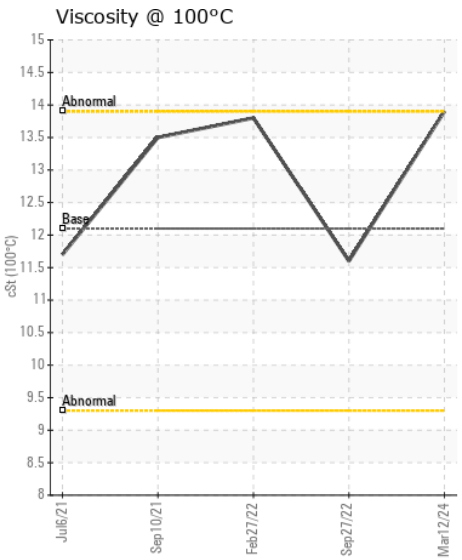
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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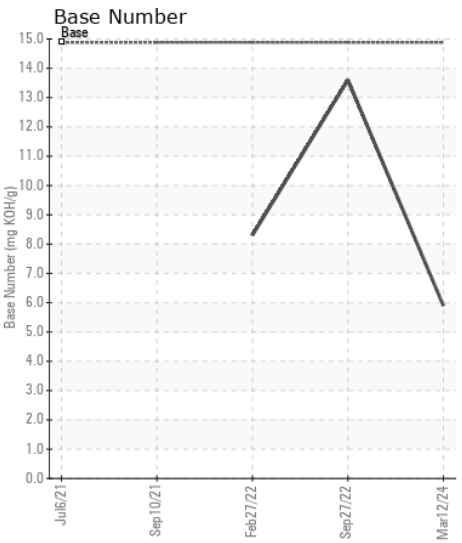

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0264451 **Received** : 15 Apr 2024
Lab Number : 06149439 **Tested** : 16 Apr 2024
Unique Number : 10979517 **Diagnosed** : 17 Apr 2024 - Don Baldridge
Test Package : CONST (Additional Tests: 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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