CONST

LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR A934C 061188-1419
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W40 (29 LTR)

RECOMMENDATION

No corrective action is recommended at this time. 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

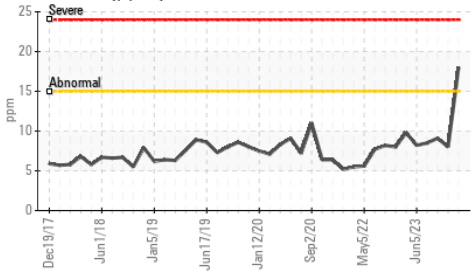
Elemental level of silicon (Si) above normal indicating ingress of seal material.

FLUID CONDITION

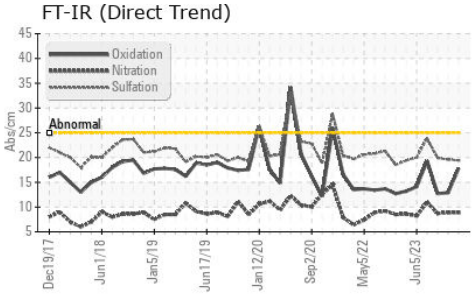
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0272399	LH0263923	LH0253888
Sample Date		Client Info		30 Jan 2024	10 Nov 2023	21 Sep 2023
Machine Age	hrs	Client Info		28174	27562	27222
Oil Age	hrs	Client Info		1000	500	0
Filter Age	hrs	Client Info		0	500	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>66	4	5	7
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		11	87	99
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>8	1	2	2
Lead	ppm	ASTM D5185m	>10	0	<1	0
Copper	ppm	ASTM D5185m	>74	<1	4	<1
Tin	ppm	ASTM D5185m	>4	0	0	0
Vanadium	ppm	ASTM D5185m		0	2	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>15	▲ 18	8	9
Potassium	ppm	ASTM D5185m	>20	1	3	5
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	1.2	1.3
Nitration	Abs/cm	*ASTM D7624	>20	8.9	8.9	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	19.6	19.9
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	>44	1	2	<1
Boron	ppm	ASTM D5185m	250	154	98	119
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	3	2	3
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m	450	883	708	706
Calcium	ppm	ASTM D5185m	3000	1448	1266	1326
Phosphorus	ppm	ASTM D5185m	1150	930	1000	925
Zinc	ppm	ASTM D5185m	1350	1073	1173	1205
Sulfur	ppm	ASTM D5185m	4250	4930	3534	3952
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.8	12.9	12.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.4	7.8	7.8
Visc @ 100°C	cSt	ASTM D445	14.4	14.1	14.7	14.9

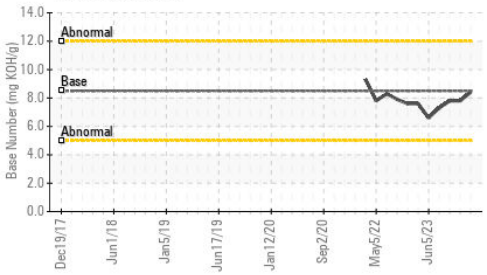
Silicon (ppm)



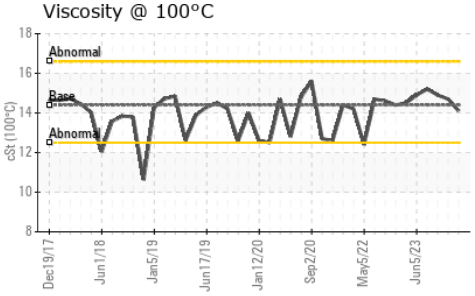
FT-IR (Direct Trend)



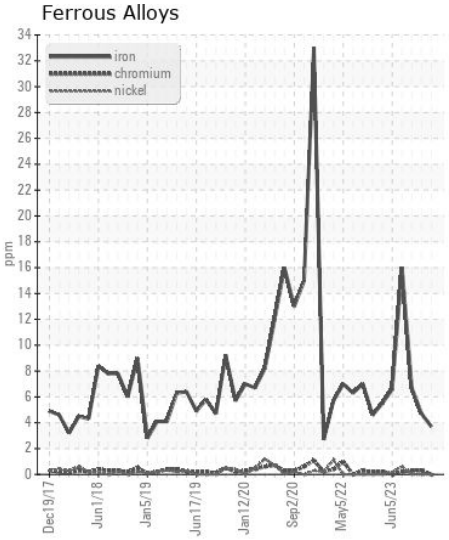
Base Number



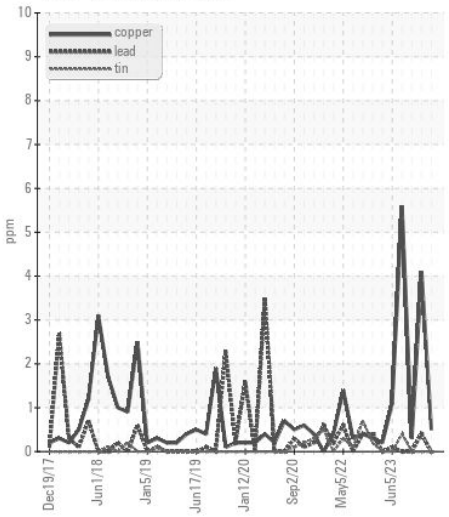
Viscosity @ 100°C



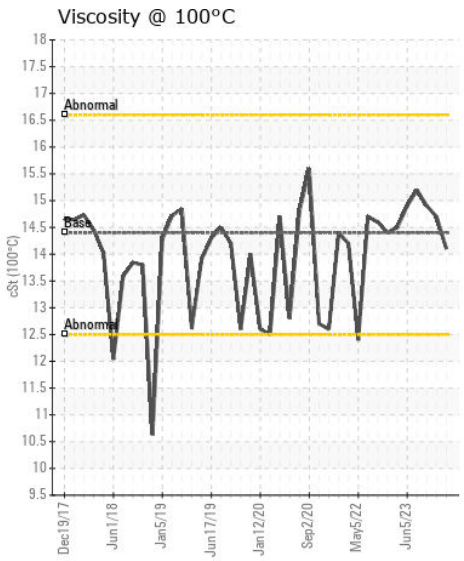
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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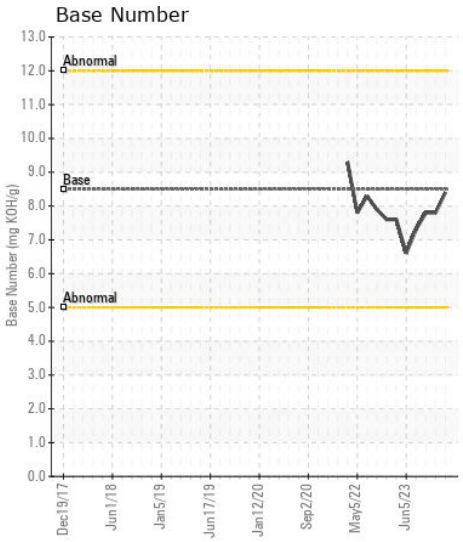

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0272399
Lab Number : 06159746
Unique Number : 10995169
Test Package : CONST (Additional Tests: TBN)

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 26 Apr 2024 - Sean Felton

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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