



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
LIEBHERR
Machine Id
LIEBHERR LH50M 102002-1216
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 5W30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0023732	DJJ0011143	LH0217190
Sample Date		Client Info		02 Jul 2024	30 Jan 2024	01 Sep 2022
Machine Age	hrs	Client Info		12993	12313	9562
Oil Age	hrs	Client Info		0	0	500
Filter Age	hrs	Client Info		0	0	500
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	11	29	18
Chromium	ppm	ASTM D5185m	>5	<1	2	1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>15	3	6	3
Lead	ppm	ASTM D5185m	>30	1	9	2
Copper	ppm	ASTM D5185m	>125	4	10	89
Tin	ppm	ASTM D5185m	>5	<1	2	2
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

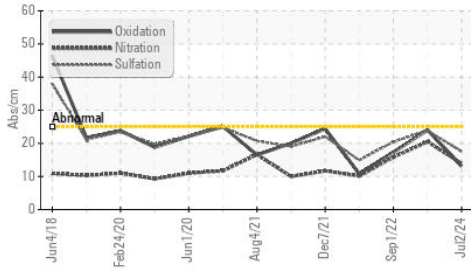
Silicon	ppm	ASTM D5185m	>60	8	9	10
Potassium	ppm	ASTM D5185m	>20	3	16	8
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	13.9	20.5	15.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.5	23.9	20.4
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

FLUID CONDITION

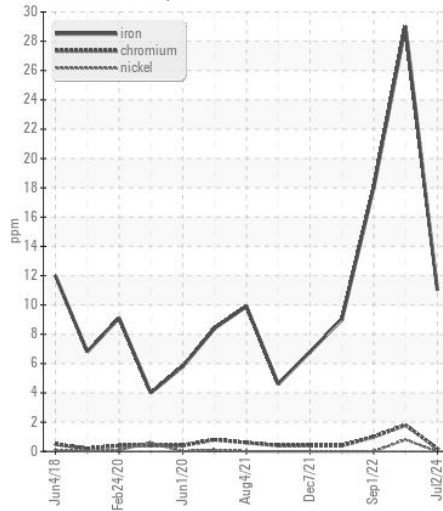
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	0	5
Boron	ppm	ASTM D5185m	236	196	178	180
Barium	ppm	ASTM D5185m	0	0	0	25
Molybdenum	ppm	ASTM D5185m	0	2	<1	<1
Manganese	ppm	ASTM D5185m	<1	<1	1	1
Magnesium	ppm	ASTM D5185m	25	57	22	138
Calcium	ppm	ASTM D5185m	4298	4199	4099	3629
Phosphorus	ppm	ASTM D5185m	1020	1049	943	932
Zinc	ppm	ASTM D5185m	1164	1189	1253	1104
Sulfur	ppm	ASTM D5185m	2460	3199	2169	2753
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.1	24.0	17.3
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	12.6	7.6	11.5
Visc @ 100°C	cSt	ASTM D445	12.1	11.0	10.7	11.4

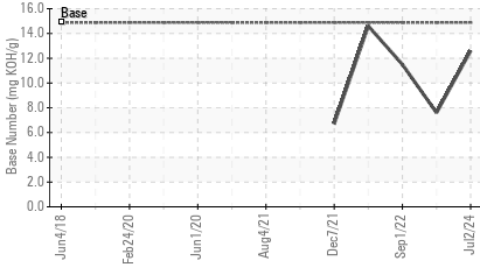
FT-IR (Direct Trend)



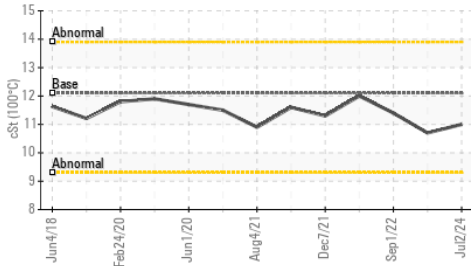
Ferrous Alloys



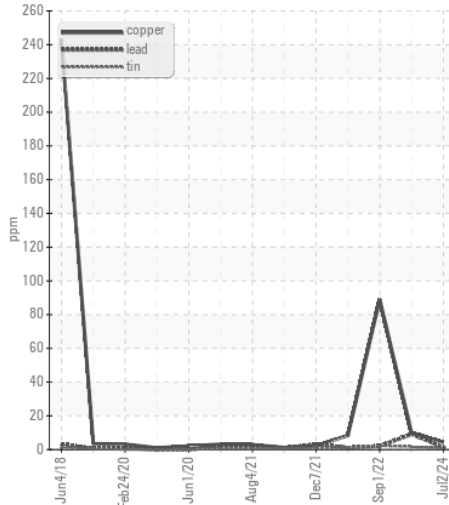
Base Number



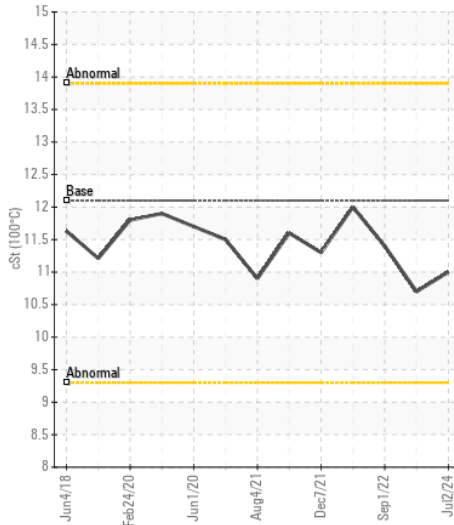
Viscosity @ 100°C



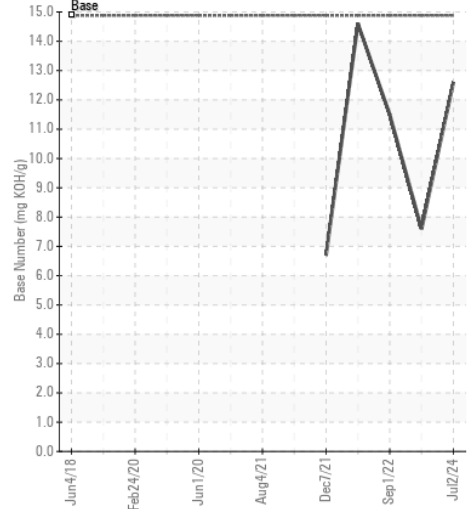
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : DJJ0023732 Received : 10 Jul 2024
 Lab Number : 06231923 Tested : 10 Jul 2024
 Unique Number : 11115416 Diagnosed : 10 Jul 2024 - Wes Davis
 Test Package : CONST (Additional Tests: TBN)

METAL RECYCLING SERVICES - MONROE
 150 S BIVENS RD
 MONROE, NC
 US 28112
 Contact: Service Manager

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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