



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH30M 1253-123497
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		LH0273454	LH0285589	LH0272811
Sample Date		Client Info		20 Jun 2024	23 Apr 2024	08 Mar 2024
Machine Age	hrs	Client Info		5603	5225	4915
Oil Age	hrs	Client Info		500	250	0
Filter Age	hrs	Client Info		500	250	0
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	>66	6	6	6
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>8	4	3	2
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>74	6	1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	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.

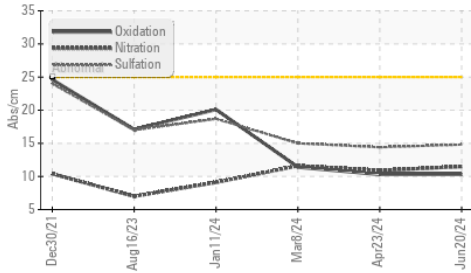
Silicon	ppm	ASTM D5185m	>15	8	8	7
Potassium	ppm	ASTM D5185m	>20	2	2	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	11.5	10.9	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	14.8	14.4	15.0
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

FLUID CONDITION

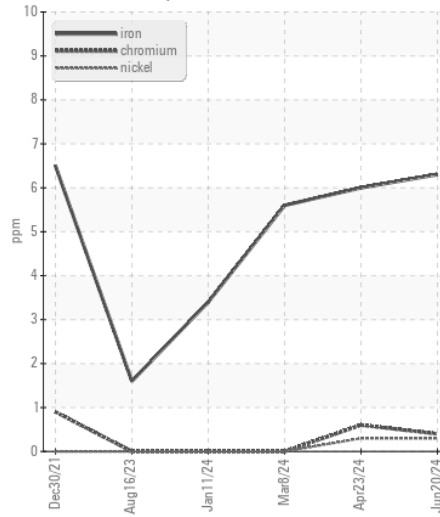
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		5	3	3
Boron	ppm	ASTM D5185m	236	247	269	230
Barium	ppm	ASTM D5185m	0	0	1	0
Molybdenum	ppm	ASTM D5185m	0	3	2	3
Manganese	ppm	ASTM D5185m	<1	<1	<1	0
Magnesium	ppm	ASTM D5185m	25	61	50	80
Calcium	ppm	ASTM D5185m	4298	4500	4048	4132
Phosphorus	ppm	ASTM D5185m	1020	1132	939	1024
Zinc	ppm	ASTM D5185m	1164	1311	1076	1098
Sulfur	ppm	ASTM D5185m	2460	3486	2773	3046
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.3	10.3	11.4
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	15.5	15.6	15.5
Visc @ 100°C	cSt	ASTM D445	12.1	11.5	11.4	11.6

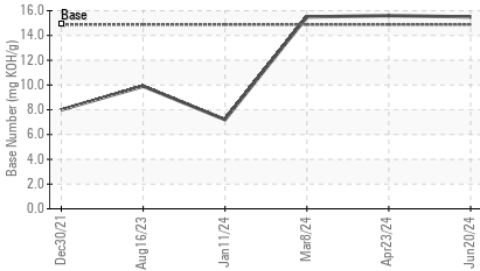
FT-IR (Direct Trend)



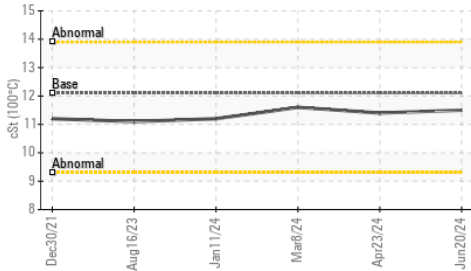
Ferrous Alloys



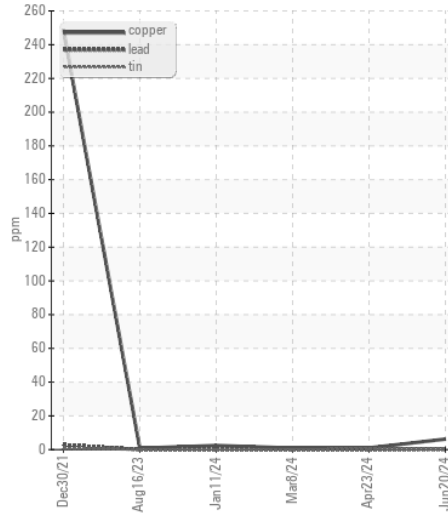
Base Number



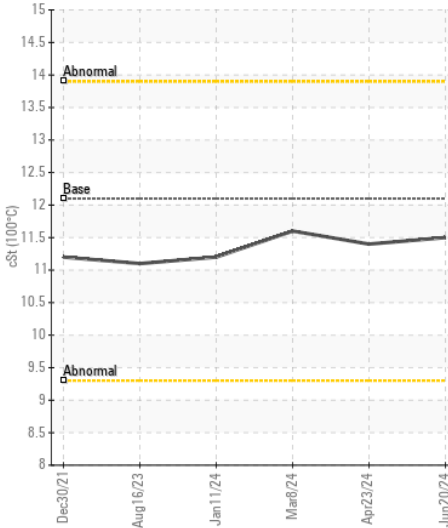
Viscosity @ 100°C



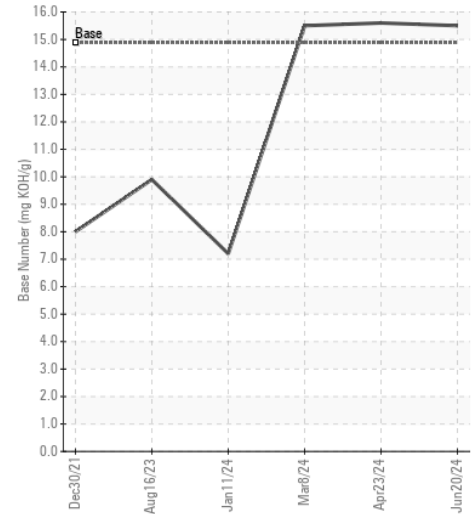
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0273454 **Received** : 27 Jun 2024
Lab Number : 06222020 **Tested** : 27 Jun 2024
Unique Number : 11100217 **Diagnosed** : 27 Jun 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

SPARTAN RECYCLING
 3071 HOWARD ST
 SPARTANBURG, SC
 US 29303
 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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