

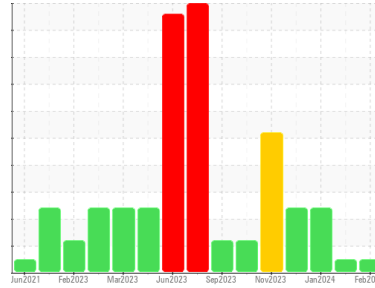


OIL ANALYSIS REPORT



Machine Id
120556-1216 LIEBHERR LH50M 120556-1216
 Component
Diesel Engine
 Fluid
LIEBHERR MOTOROIL 5W30 (--- GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		DJJ0022503	DJJ0022499	DJJ0022449
Sample Date	Client Info		21 Feb 2024	08 Feb 2024	19 Jan 2024
Machine Age	hrs	Client Info	9501	9388	9227
Oil Age	hrs	Client Info	150	38	131
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			NORMAL	NORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	1	2	2
Chromium	ppm	ASTM D5185m >5	0	<1	<1
Nickel	ppm	ASTM D5185m >5	0	<1	1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >15	<1	<1	9
Lead	ppm	ASTM D5185m >30	0	<1	<1
Copper	ppm	ASTM D5185m >125	<1	<1	2
Tin	ppm	ASTM D5185m >5	<1	<1	0
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 236	126	160	831
Barium	ppm	ASTM D5185m 0	0	0	6
Molybdenum	ppm	ASTM D5185m 0	70	76	1131
Manganese	ppm	ASTM D5185m <1	<1	<1	<1
Magnesium	ppm	ASTM D5185m 25	589	688	103
Calcium	ppm	ASTM D5185m 4298	1161	1262	445
Phosphorus	ppm	ASTM D5185m 1020	609	731	20
Zinc	ppm	ASTM D5185m 1164	614	792	10
Sulfur	ppm	ASTM D5185m 2460	2488	2964	2015

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >60	8	9	20
Sodium	ppm	ASTM D5185m	3	0	0
Potassium	ppm	ASTM D5185m >20	32	35	▲ 473

INFRA-RED

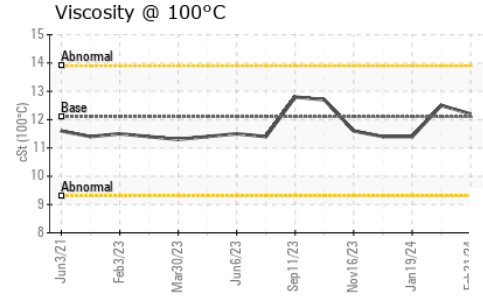
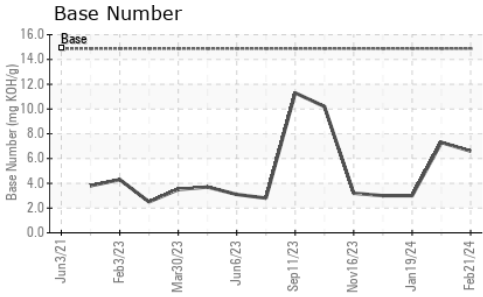
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.1	0	0.1
Nitration	Abs/cm	*ASTM D7624 >20	7.6	6.7	6.5
Sulfation	Abs/.1mm	*ASTM D7415 >30	17.9	18.0	23.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	13.1	12.8	23.1
Base Number (BN)	mg KOH/g	ASTM D2896 14.88	6.6	7.3	▲ 3.0



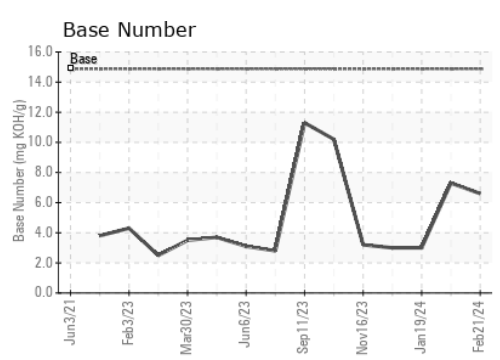
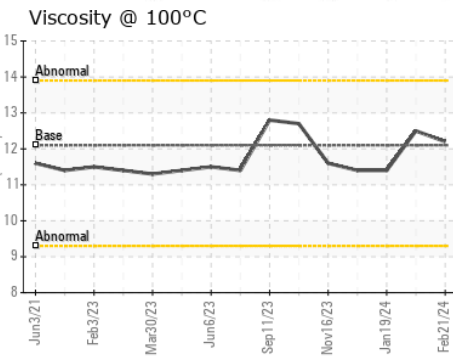
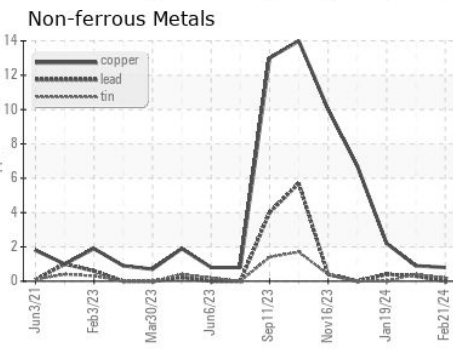
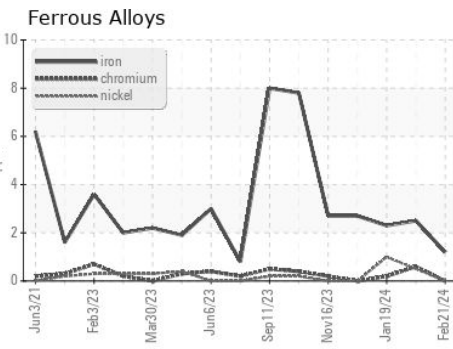
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	12.1	12.2	12.5	11.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0022503 **Received** : 23 Feb 2024
Lab Number : **06098248** **Tested** : 26 Feb 2024
Unique Number : 10896478 **Diagnosed** : 26 Feb 2024 - Don Baldrige
Test Package : CONST (Additional Tests: TBN)

RIVER METALS RECYCLING - DECATUR FACILITY
 4301 IVERSON BLVD
 TRINITY, AL
 US 35673
 Contact: LARRY BARBER
 larry.barber@rmrecycling.com

Certificate L2367
 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)