



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL



Area
RMR-Newport
Machine Id
1203-88007 LIEBHERR LH50M 1203-88007
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W30 (--- GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0018095	DJJ0016428	DJJ0016414
Sample Date		Client Info		14 Jun 2024	05 Dec 2022	19 Jul 2022
Machine Age	hrs	Client Info		12052	10444	9816
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				SEVERE	ABNORMAL	NORMAL

WEAR

The aluminum level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	40	46	33
Chromium	ppm	ASTM D5185m	>5	2	1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	▲ 46	21	15
Lead	ppm	ASTM D5185m	>30	4	4	<1
Copper	ppm	ASTM D5185m	>125	4	9	3
Tin	ppm	ASTM D5185m	>5	<1	1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

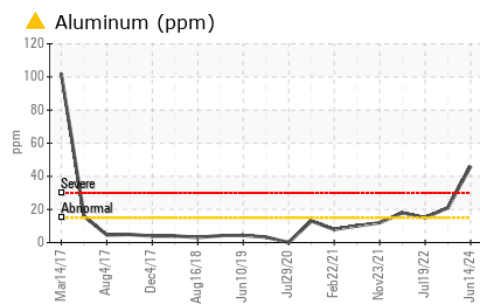
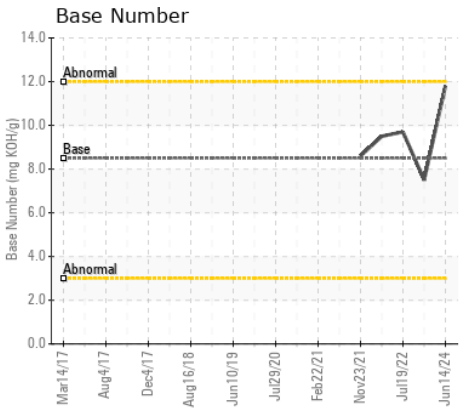
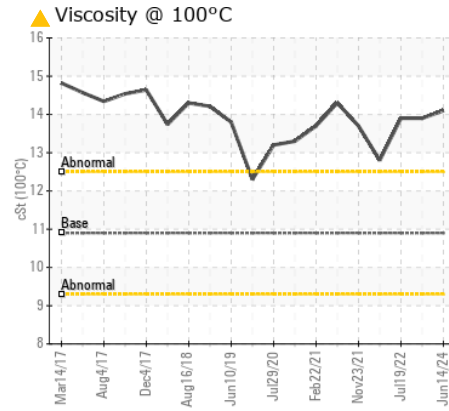
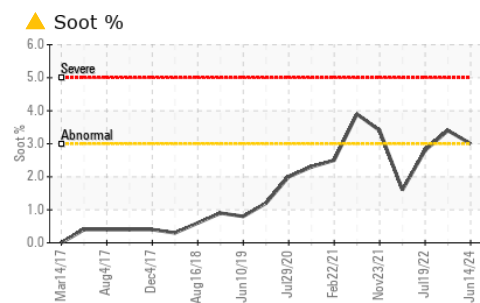
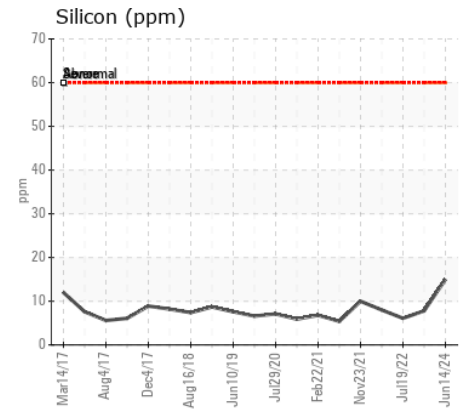
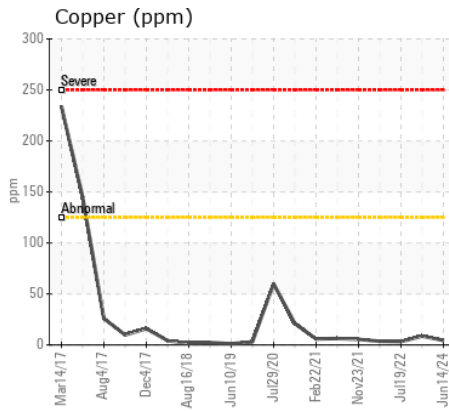
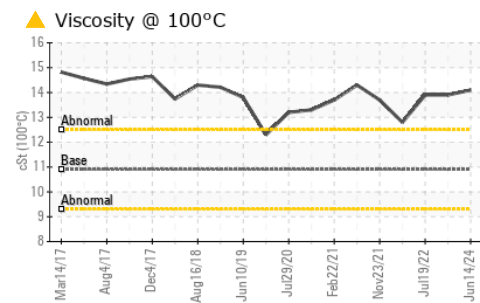
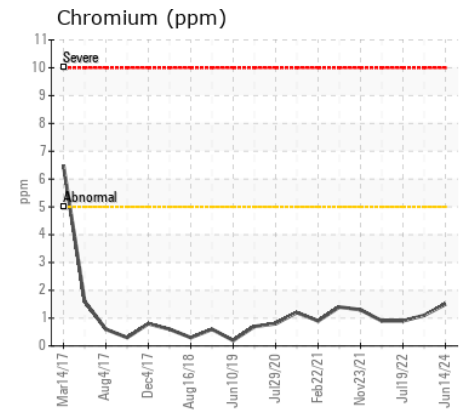
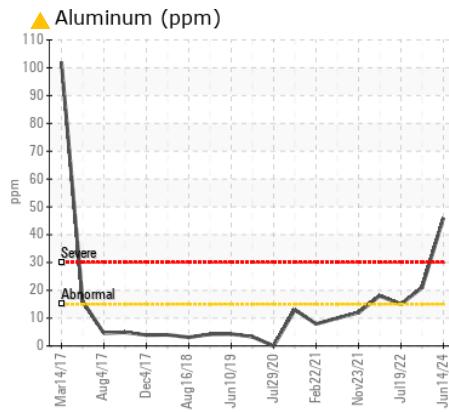
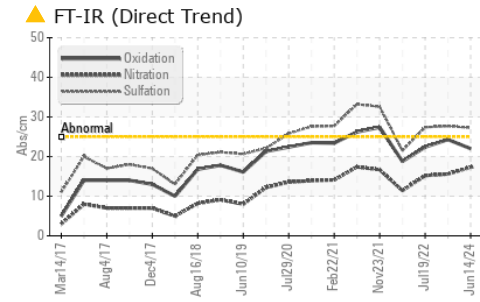
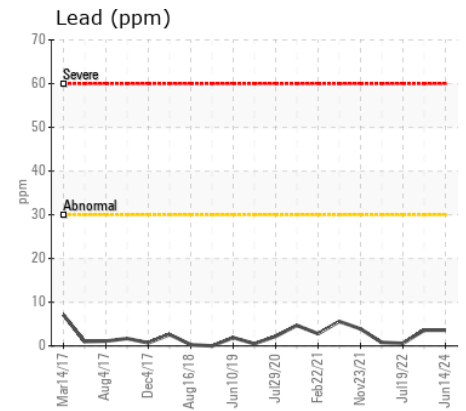
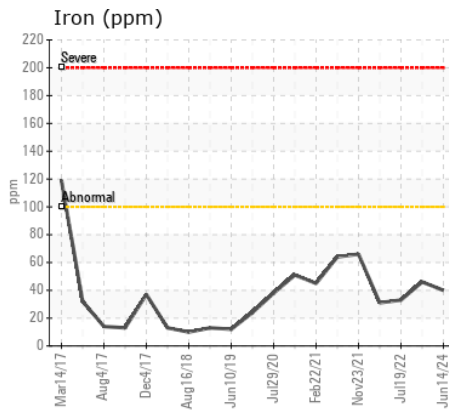
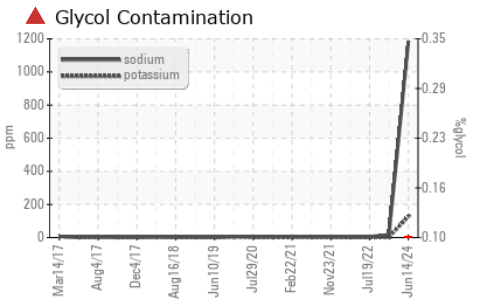
Sodium and/or potassium levels are high. Test for glycol is positive. There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>60	15	8	6
Potassium	ppm	ASTM D5185m	>20	▲ 127	2	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		▲ 0.10	NEG	NEG
Soot %	%	*ASTM D7844	>3	▲ 3	▲ 3.4	2.8
Nitration	Abs/cm	*ASTM D7624	>20	17.3	15.6	15.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.3	27.7	27.4
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 oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		▲ 1184	17	6
Boron	ppm	ASTM D5185m	250	16	36	24
Barium	ppm	ASTM D5185m	10	0	2	0
Molybdenum	ppm	ASTM D5185m	100	46	50	57
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	450	649	873	626
Calcium	ppm	ASTM D5185m	3000	1353	1381	1463
Phosphorus	ppm	ASTM D5185m	1150	638	689	761
Zinc	ppm	ASTM D5185m	1350	836	961	949
Sulfur	ppm	ASTM D5185m	4250	3136	2765	2977
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.0	24.3	22.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	11.8	7.5	9.7
Visc @ 100°C	cSt	ASTM D445	10.9	▲ 14.1	13.9	13.9



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0018095 **Received** : 19 Jun 2024
Lab Number : 06214439 **Tested** : 24 Jun 2024
Unique Number : 11087303 **Diagnosed** : 24 Jun 2024 - Jonathan Hester
Test Package : MOBCE (Additional Tests: Glycol, TBN)

RIVER METALS RECYCLING - NEWPORT
 P.O. BOX 72-220
 NEWPORT, KY
 US 41072
 Contact: RYAN BOWDEN

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)