



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
RMR-Newport
Machine Id
024533-791 LIEBHERR R944C 024533-791
Component
Diesel Engine
Fluid
SHELL RIMULA SUPER SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0017789	DJJ0017632	DJJ0016535
Sample Date		Client Info		14 Jun 2024	29 Mar 2023	20 Jul 2022
Machine Age	hrs	Client Info		9864	8896	8262
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				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	7	11	12
Chromium	ppm	ASTM D5185m	>5	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	1	<1
Lead	ppm	ASTM D5185m	>30	0	<1	<1
Copper	ppm	ASTM D5185m	>125	<1	3	3
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

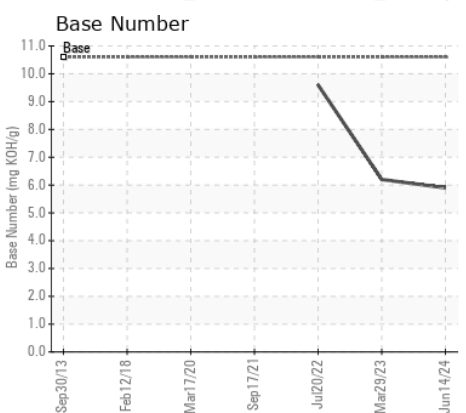
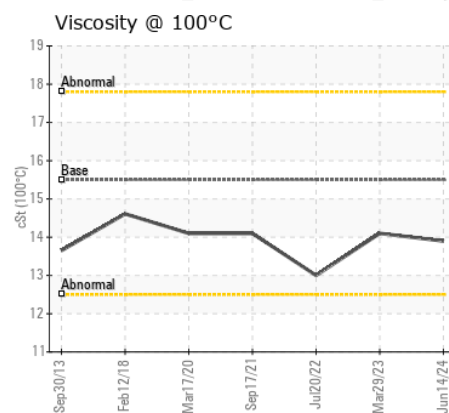
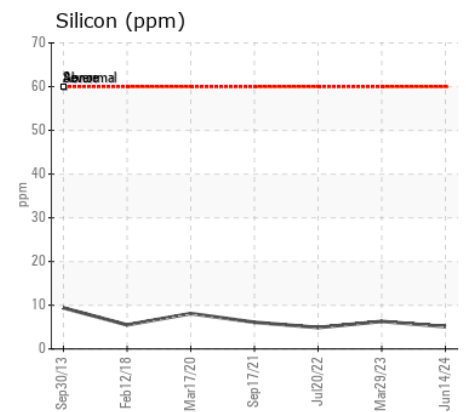
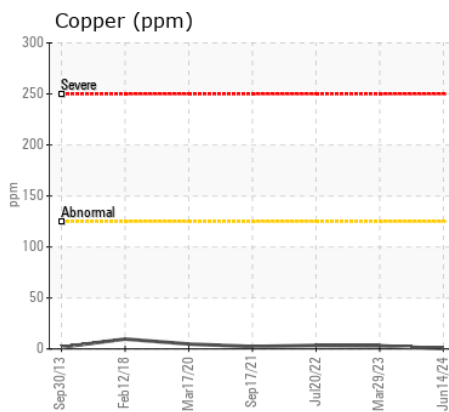
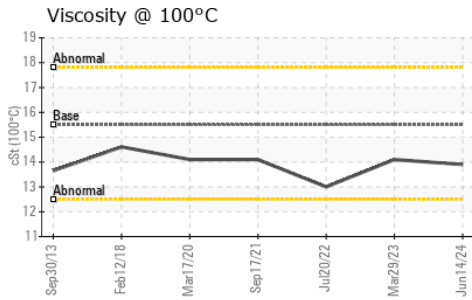
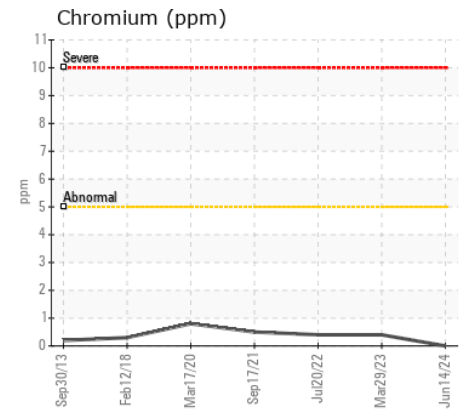
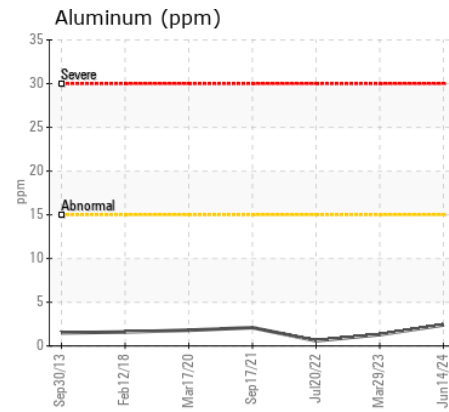
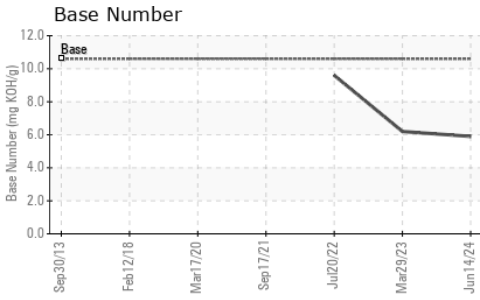
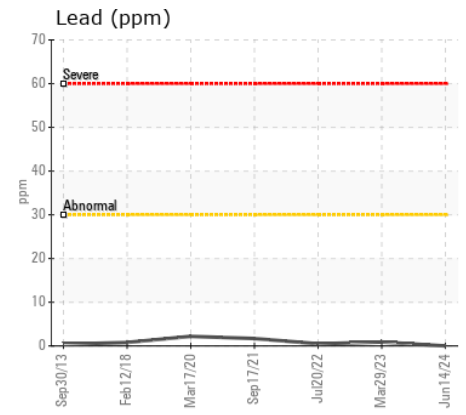
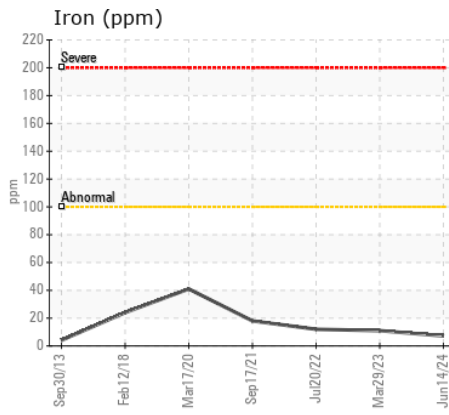
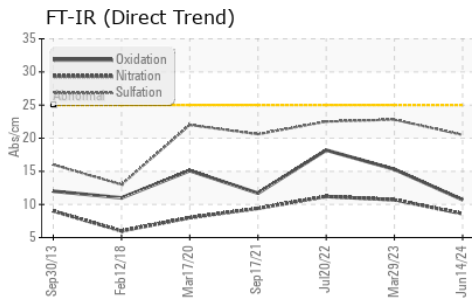
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	5	6	5
Potassium	ppm	ASTM D5185m	>20	5	1	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	2.2	2.1	2.1
Nitration	Abs/cm	*ASTM D7624	>20	8.6	10.7	11.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.5	22.8	22.5
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 acceptable for the time in service.

Sodium	ppm	ASTM D5185m		17	2	1
Boron	ppm	ASTM D5185m		13	48	52
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		23	88	52
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		77	62	665
Calcium	ppm	ASTM D5185m	2840	2220	2067	1422
Phosphorus	ppm	ASTM D5185m	1150	938	995	828
Zinc	ppm	ASTM D5185m	1270	1123	1177	974
Sulfur	ppm	ASTM D5185m	2829	4138	3665	3060
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.7	15.3	18.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	5.9	6.2	9.6
Visc @ 100°C	cSt	ASTM D445	15.5	13.9	14.1	13.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0017789 **Received** : 19 Jun 2024
Lab Number : 06214440 **Tested** : 20 Jun 2024
Unique Number : 11087304 **Diagnosed** : 21 Jun 2024 - Don Baldrige
Test Package : MOBCE (Additional Tests: 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)

T:
F: (859)291-0086