OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
RMR-Somerset
Machine Id
18892 LIEBHERR A934B 028807-935
Component
Diesel Engine
Fluid
SHELL RIMULA SUPER SAE 15W40 (6 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

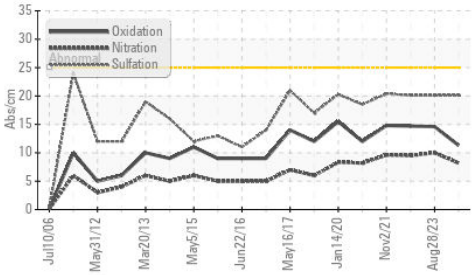
There is no indication of any contamination in the oil.

FLUID CONDITION

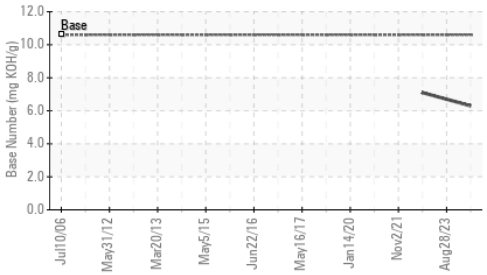
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0021707	DJJ0017782	DJJ0018089
Sample Date		Client Info		16 Apr 2024	28 Aug 2023	18 Jan 2023
Machine Age	hrs	Client Info		19831	19131	18580
Oil Age	hrs	Client Info		0	0	500
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>66	17	9	11
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>8	1	1	3
Lead	ppm	ASTM D5185m	>10	2	2	2
Copper	ppm	ASTM D5185m	>74	1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>15	6	7	10
Potassium	ppm	ASTM D5185m	>20	0	1	<1
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	1.1	1	0.7
Nitration	Abs/cm	*ASTM D7624	>20	8.2	10.0	9.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	20.1	20.1
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
Sodium	ppm	ASTM D5185m		<1	3	3
Boron	ppm	ASTM D5185m		10	73	84
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		17	98	100
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		26	43	47
Calcium	ppm	ASTM D5185m	2840	2501	2386	2472
Phosphorus	ppm	ASTM D5185m	1150	936	1108	1147
Zinc	ppm	ASTM D5185m	1270	1109	1363	1434
Sulfur	ppm	ASTM D5185m	2829	4262	4282	5665
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.3	14.6	14.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	6.3	6.7	7.1
Visc @ 100°C	cSt	ASTM D445	15.5	13.4	13.4	13.2

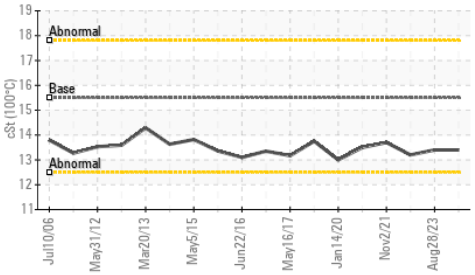
FT-IR (Direct Trend)



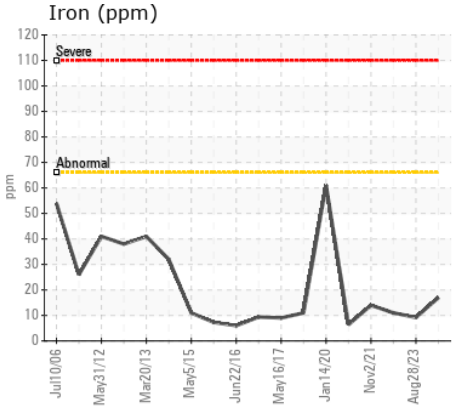
Base Number



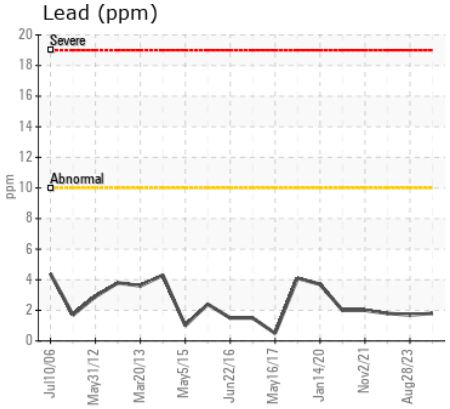
Viscosity @ 100°C



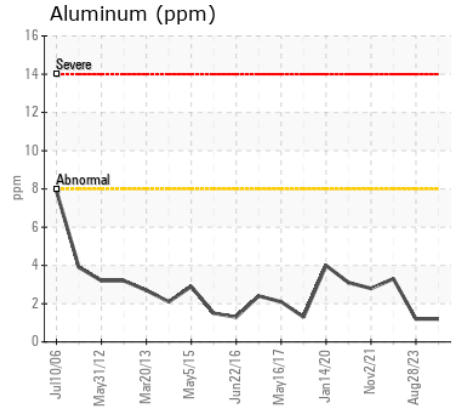
Iron (ppm)



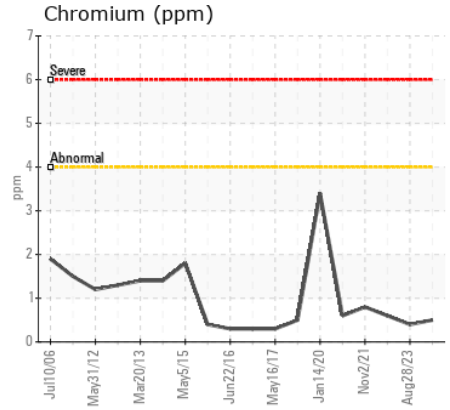
Lead (ppm)



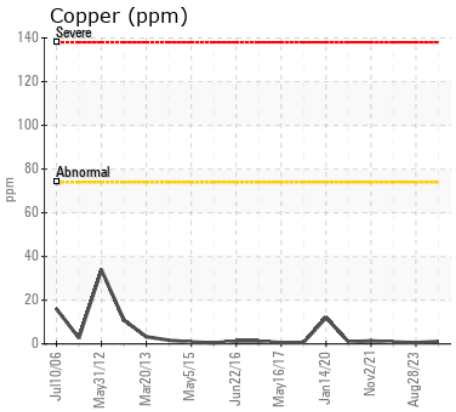
Aluminum (ppm)



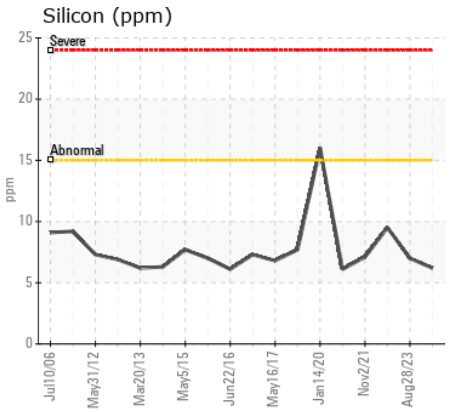
Chromium (ppm)



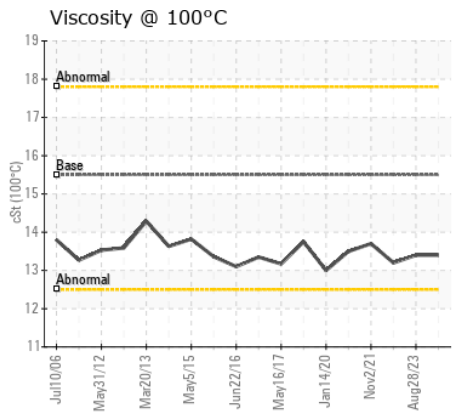
Copper (ppm)



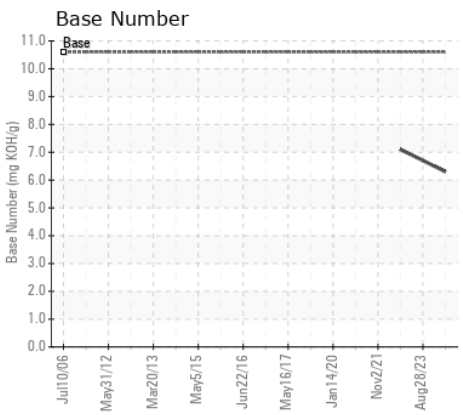
Silicon (ppm)



Viscosity @ 100°C



Base Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: DJJ0021707	**Received**	: 19 Apr 2024
Lab Number	: 06154063	**Tested**	: 23 Apr 2024
Unique Number	: 10989486	**Diagnosed**	: 23 Apr 2024 - Don Baldridge
Test Package	: MOBCE (Additional Tests: TBN)		

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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