



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
SENNEBOGEN 830E MS17
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LHMC79957	LHMC103187	LHMC103979
Sample Date		Client Info		23 Aug 2023	05 May 2023	20 Feb 2023
Machine Age	hrs	Client Info		6878	6853	5898
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	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	13	13	17
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		3	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	<1	1
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	2	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

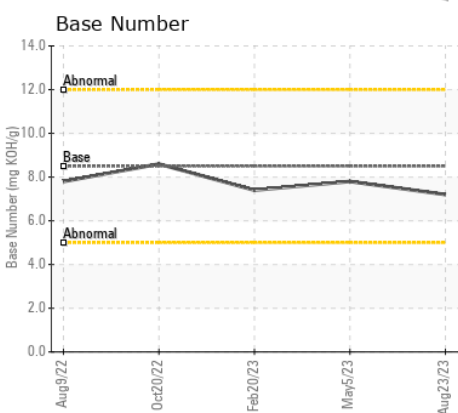
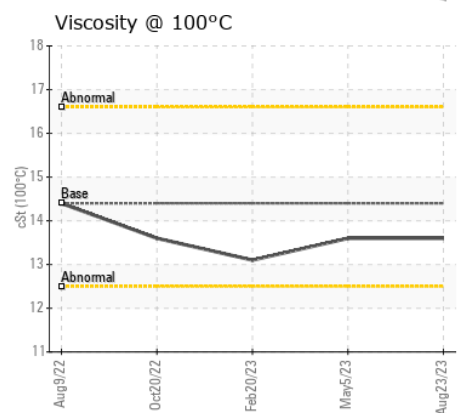
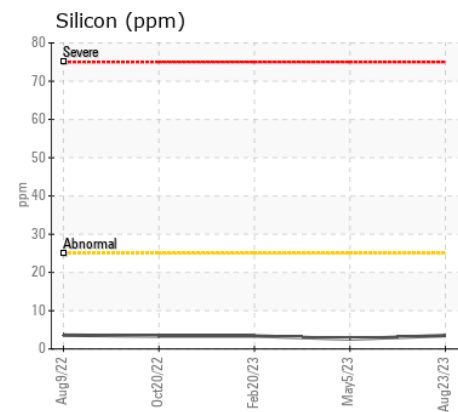
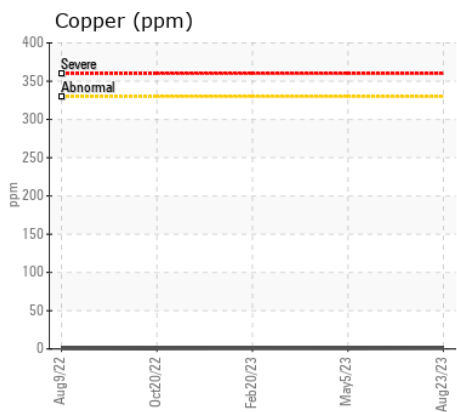
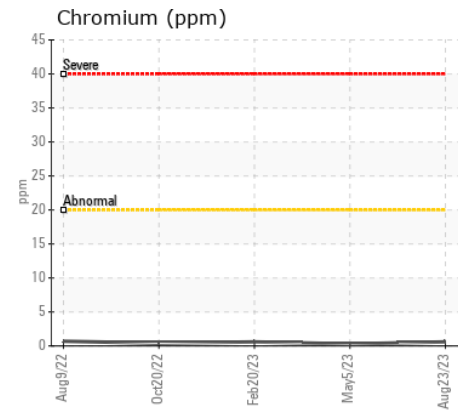
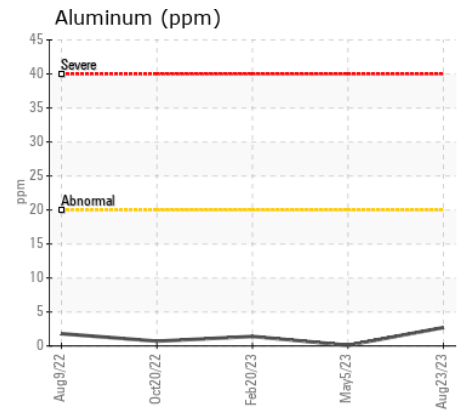
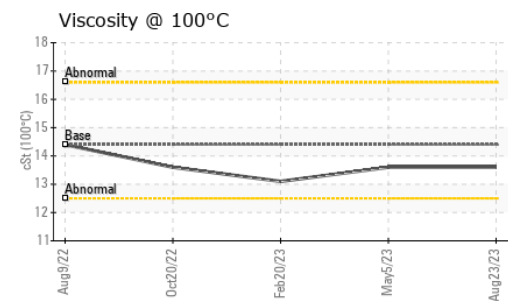
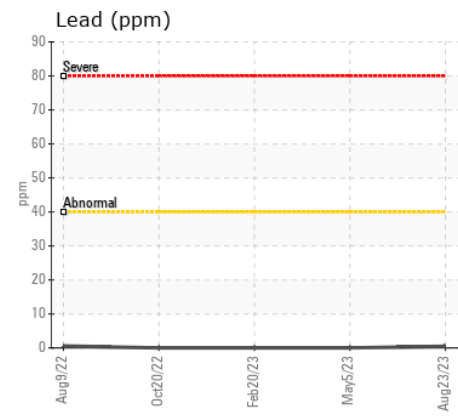
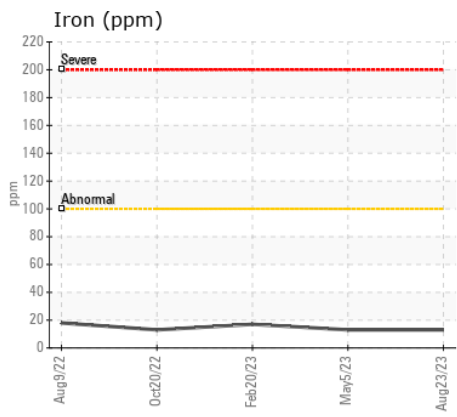
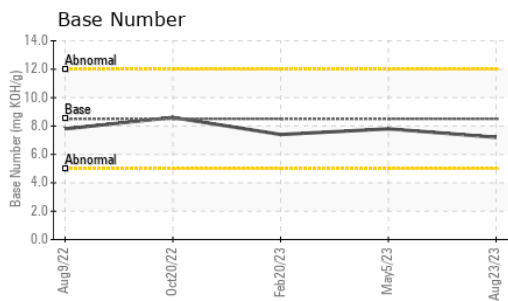
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	3	3
Potassium	ppm	ASTM D5185m	>20	5	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	0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.6	8.3	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.4	20.0	21.3
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	>158	3	2	2
Boron	ppm	ASTM D5185m	250	10	8	10
Barium	ppm	ASTM D5185m	10	<1	0	<1
Molybdenum	ppm	ASTM D5185m	100	58	58	61
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	943	948	958
Calcium	ppm	ASTM D5185m	3000	1154	1223	1208
Phosphorus	ppm	ASTM D5185m	1150	1012	1028	1011
Zinc	ppm	ASTM D5185m	1350	1313	1308	1310
Sulfur	ppm	ASTM D5185m	4250	2961	3391	3371
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	16.0	18.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.2	7.8	7.4
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.6	13.1



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LHMC79957 **Received** : 16 Jan 2024
Lab Number : 06061837 **Diagnosed** : 17 Jan 2024
Unique Number : 10833219 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

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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)