



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR 31226
 Component
Left Final Drive
 Fluid
GEAR OIL LS 80W90 (1 QTS)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0950705	WC0905130	WC0905361
Sample Date		Client Info		19 Jun 2024	04 Mar 2024	16 Feb 2024
Machine Age	hrs	Client Info		12913	12671	12652
Oil Age	hrs	Client Info		750	50	500
Filter Age	hrs	Client Info		750	0	500
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				SEVERE	SEVERE	SEVERE

WEAR

Gear wear is indicated.

Iron	ppm	ASTM D5185m	>500	▲ 1395	▲ 1021	▲ 2635
Chromium	ppm	ASTM D5185m	>10	▲ 20	▲ 13	▲ 35
Nickel	ppm	ASTM D5185m	>10	6	4	10
Titanium	ppm	ASTM D5185m		4	7	▲ 24
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	● 155	● 253	● 835
Lead	ppm	ASTM D5185m	>25	0	1	<1
Copper	ppm	ASTM D5185m	>50	2	2	9
Tin	ppm	ASTM D5185m	>10	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

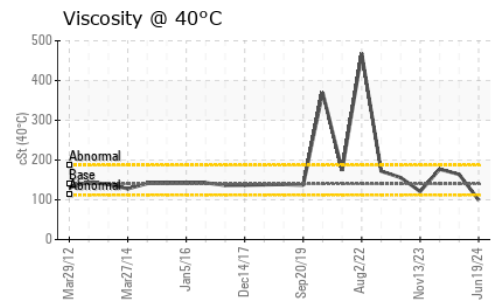
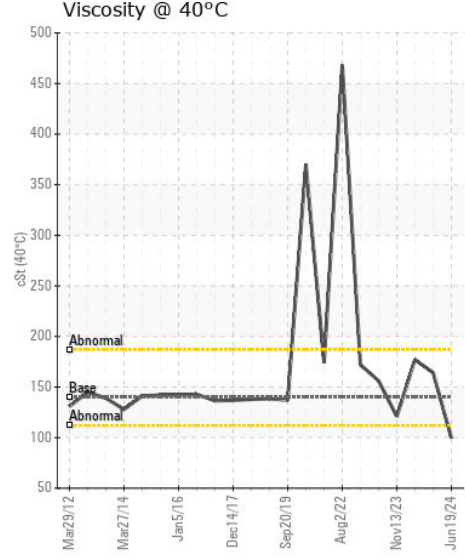
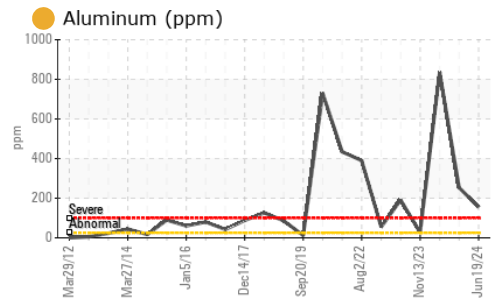
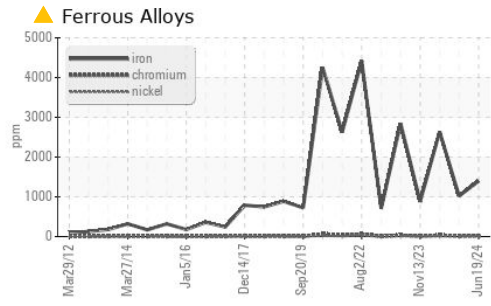
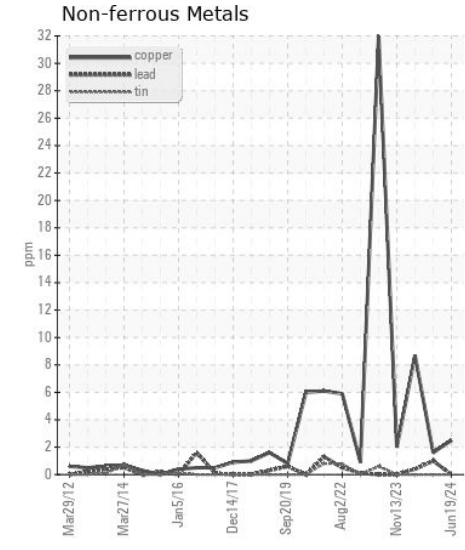
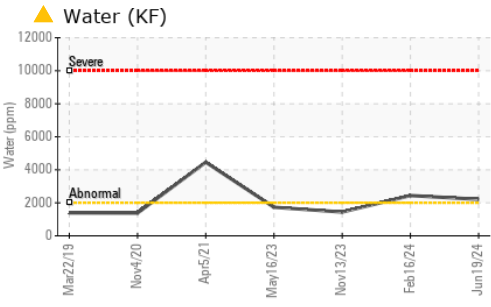
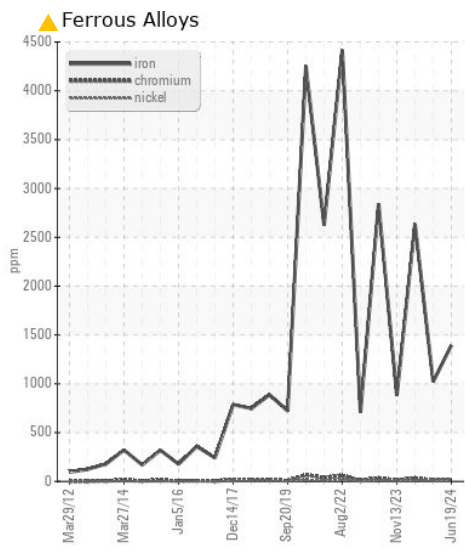
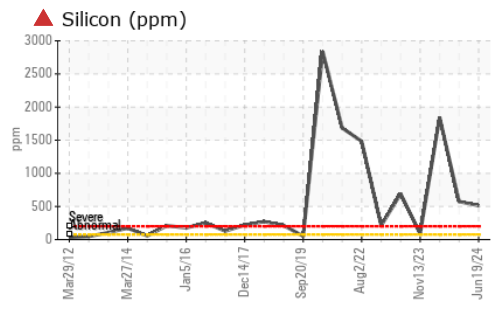
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is a light concentration of water present in the oil.

Silicon	ppm	ASTM D5185m	>75	▲ 513	▲ 574	▲ 1843
Potassium	ppm	ASTM D5185m	>20	40	59	179
Water	%	ASTM D6304	>0.2	▲ 0.221	---	▲ 0.244
ppm Water	ppm	ASTM D6304	>2000	▲ 2210	---	▲ 2440
Silt	scalar	*Visual	NONE	MODER	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	▲ 0.2%	NEG	▲ 0.2%

FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		14	21	56
Boron	ppm	ASTM D5185m	150	105	30	94
Barium	ppm	ASTM D5185m		0	2	4
Molybdenum	ppm	ASTM D5185m		17	5	13
Manganese	ppm	ASTM D5185m		12	9	24
Magnesium	ppm	ASTM D5185m	10	71	18	55
Calcium	ppm	ASTM D5185m	70	181	48	125
Phosphorus	ppm	ASTM D5185m	2000	4486	3053	2980
Zinc	ppm	ASTM D5185m	50	188	27	74
Sulfur	ppm	ASTM D5185m	20000	16400	28353	18454
Visc @ 40°C	cSt	ASTM D445	140	99.7	164	177



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0950705
Lab Number : 06220096
Unique Number : 11098293
Test Package : CONST (Additional Tests: KF)
Received : 25 Jun 2024
Tested : 26 Jun 2024
Diagnosed : 27 Jun 2024 - Sean Felton

SULLIVAN EASTERN INC-LIEBHERR
 2860 C SLATER RD
 MORRISVILLE, NC
 US 27560
 Contact: CHRIS CALTON

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)