



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR 31244
Component
Left Final Drive
Fluid
GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

Gear wear is indicated.

CONTAMINATION

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

FLUID CONDITION

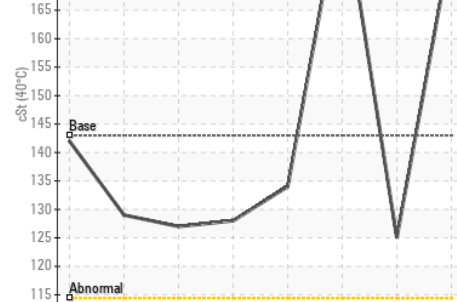
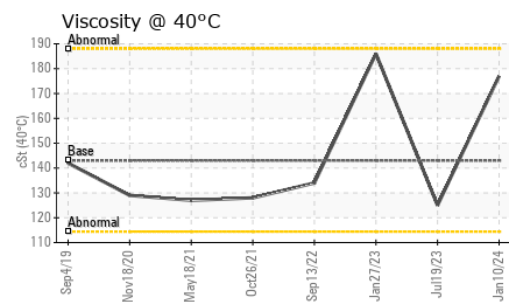
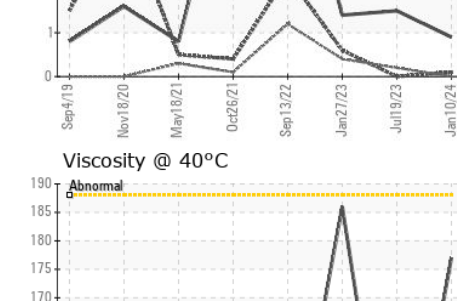
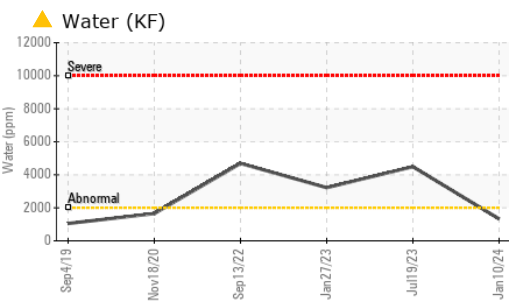
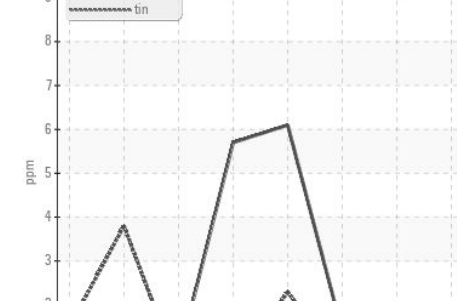
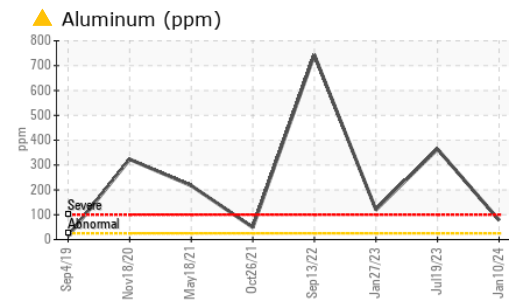
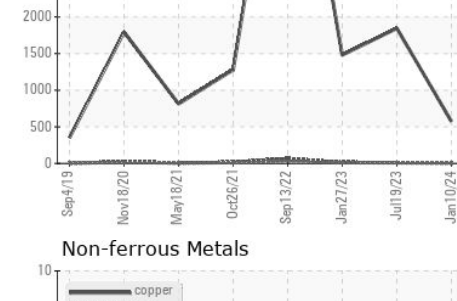
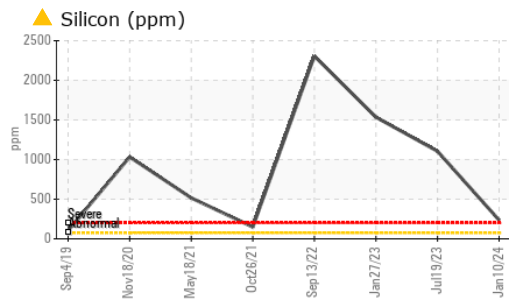
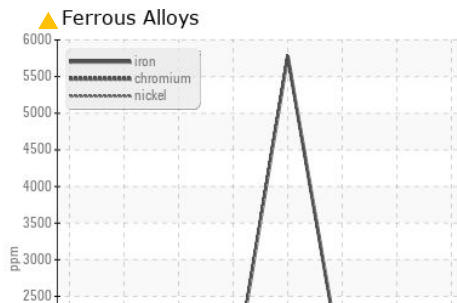
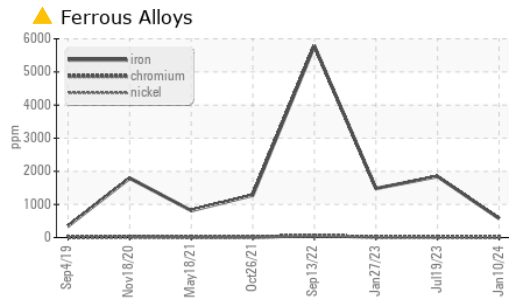
The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0846790	WC0810060	WC0756662
Sample Date		Client Info		10 Jan 2024	19 Jul 2023	27 Jan 2023
Machine Age	hrs	Client Info		9320	8839	8201
Oil Age	hrs	Client Info		500	0	1250
Filter Age	hrs	Client Info		500	0	1250
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ABNORMAL	SEVERE	SEVERE

Iron	ppm	ASTM D5185m	>500	▲ 574	● 1845	▲ 1480
Chromium	ppm	ASTM D5185m	>10	6	▲ 10	▲ 12
Nickel	ppm	ASTM D5185m	>10	4	9	8
Titanium	ppm	ASTM D5185m		5	8	26
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ 78	▲ 364	▲ 120
Lead	ppm	ASTM D5185m	>25	<1	0	<1
Copper	ppm	ASTM D5185m	>50	<1	2	1
Tin	ppm	ASTM D5185m	>10	0	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	1
White Metal	scalar	*Visual	NONE	NONE	NONE	MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

Silicon	ppm	ASTM D5185m	>75	▲ 236	● 1105	● 1535
Potassium	ppm	ASTM D5185m	>20	20	69	129
Water	%	ASTM D6304	>0.2	▲ 0.133	▲ 0.449	▲ 0.322
ppm Water	ppm	ASTM D6304	>2000	▲ 1330	▲ 4490	▲ 3220
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	▲ HAZY	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	0.2%	0.2%

Sodium	ppm	ASTM D5185m	>170	4	40	60
Boron	ppm	ASTM D5185m	400	7	55	20
Barium	ppm	ASTM D5185m	200	0	2	3
Molybdenum	ppm	ASTM D5185m	12	<1	4	2
Manganese	ppm	ASTM D5185m		6	15	15
Magnesium	ppm	ASTM D5185m	12	7	56	84
Calcium	ppm	ASTM D5185m	150	25	39	93
Phosphorus	ppm	ASTM D5185m	1650	2189	1585	2218
Zinc	ppm	ASTM D5185m	125	0	34	13
Sulfur	ppm	ASTM D5185m	22500	28344	23637	30289
Visc @ 40°C	cSt	ASTM D445	143	177	125	186



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0846790 **Received** : 16 Jan 2024
Lab Number : 06061538 **Diagnosed** : 18 Jan 2024
Unique Number : 10832920 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: KF)

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

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:
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