LIEBHERR
CONSTRUCTION EQUIPMENT

[[20230430]] LIEBHERR R934C 020477-027 - Right Final Dri

Sample No: LH0265898

Oil Type: GEAR OIL SAE 80W90

SAMPLE INFORMATION

Sample Number		**LH0265898**	LH0095237	---	---
Sample Date		**16 Aug 2023**	06 Oct 2015	---	---
Machine Hours		**13977**	8200	---	---
Oil Hours		**0**	0	---	---
Oil Changed		**Changed**	N/A	---	---
Sample Status		**SEVERE**	NORMAL	---	---

OIL CONDITION

Visc @ 40°C	cSt	**92.8**	152	---	---

CONTAMINATION

Silicon	ppm	**585**	4	---	---
Sodium	ppm	**46**	<1	---	---
Potassium	ppm	**56**	2	---	---

WEAR METALS

PQ		**46**	---	---	---
Iron	ppm	**2024**	21	---	---
Copper	ppm	**89**	2	---	---
Lead	ppm	**40**	<1	---	---
Tin	ppm	**4**	<1	---	---
Aluminum	ppm	**201**	<1	---	---
Chromium	ppm	**33**	<1	---	---
Molybdenum	ppm	**1**	<1	---	---
Nickel	ppm	**7**	<1	---	---
Titanium	ppm	**9**	0	---	---
Silver	ppm	**<1**	0	---	---
Manganese	ppm	**23**	<1	---	---
Vanadium	ppm	**<1**	0	---	---

ADDITIVES

Calcium	ppm	**430**	123	---	---
Magnesium	ppm	**173**	1	---	---
Zinc	ppm	**143**	12	---	---
Phosphorus	ppm	**1269**	1466	---	---
Barium	ppm	**8**	<1	---	---
Boron	ppm	**133**	4	---	---

Orloff Enterprises
410 King Street
Winnipeg, MB
CA R2W 5H8
Contact: Service Manager

T:
F:

Diagnosis

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.Lead ppm levels are severe. Chromium and iron ppm levels are abnormal. Aluminum ppm levels are noted. Bearing and/or bushing wear is indicated. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component. Viscosity of sample indicates oil is within SAE 75W90 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Depot: ORLWIN
Unique No: 5630619
Signed: Kevin Marson
Report Date: 23 Aug 2023

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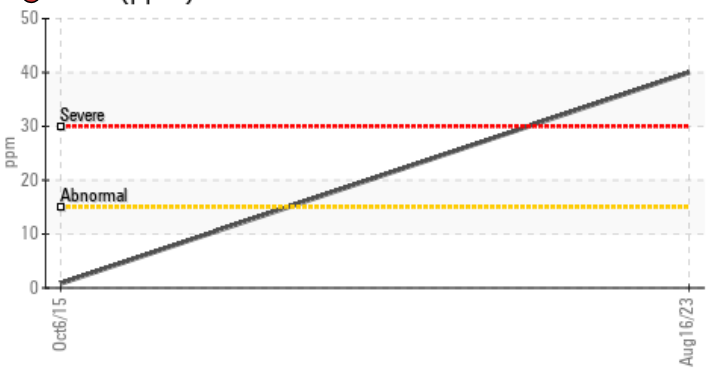
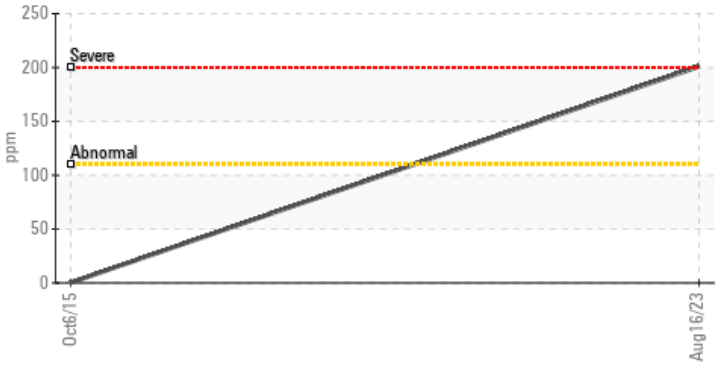
GRAPHS

Iron (ppm)

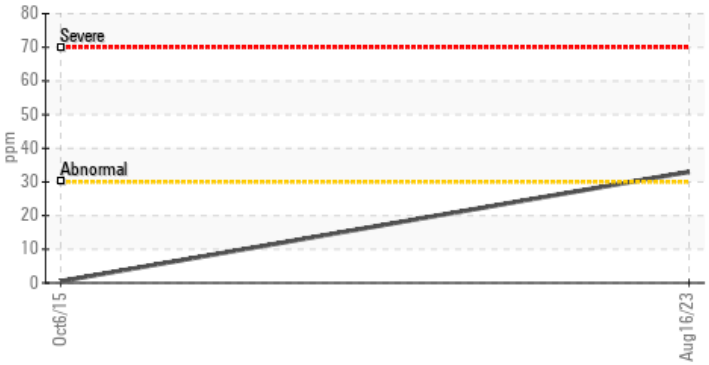
Lead (ppm)



Aluminum (ppm)

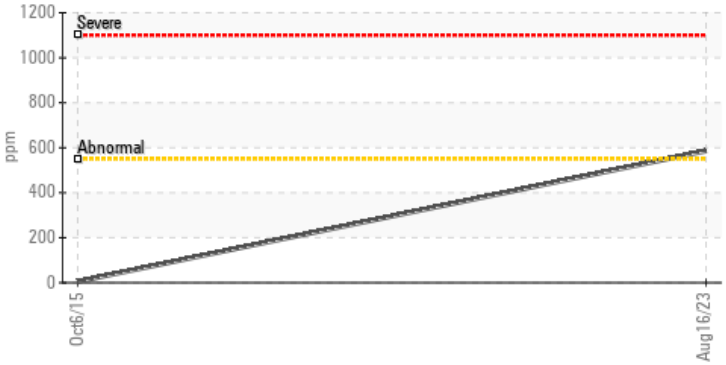


Chromium (ppm)

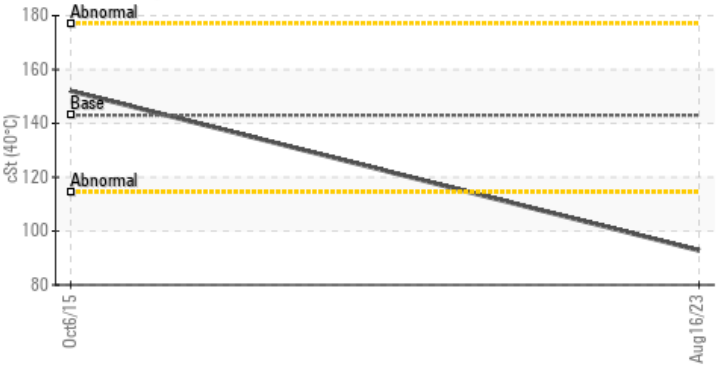


Copper (ppm)

Silicon (ppm)



Viscosity @ 40°C



PQ