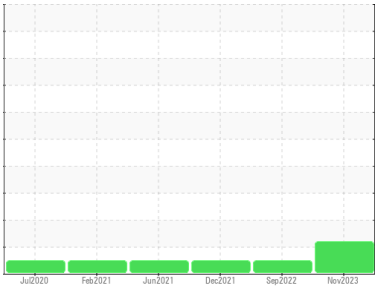
PROBLEM SUMMARY

Area
GM Seattle Off Raod Shop
Machine Id
[GM Seattle Off Raod Shop] 28-432
Component
Transmission (Auto)
Fluid
LIEBHERR GEAR MF 80W (--- GAL)

Sample Rating Trend



VISUAL METAL

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to metal particles present in this sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	NORMAL	NORMAL
White Metal	scalar	*Visual	NONE	▲ **MODER**	NONE	---

Customer Id: GARSEA
Sample No.: PE0002300
Lab Number: 06026297
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Alert	---	---	?	We were unable to perform a particle count due to metal particles present in this sample.

HISTORICAL DIAGNOSIS

13 Sep 2022 Diag: Don Baldridge

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the fluid. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report

09 Dec 2021 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the fluid. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report

07 Jun 2021 Diag: Wes Davis

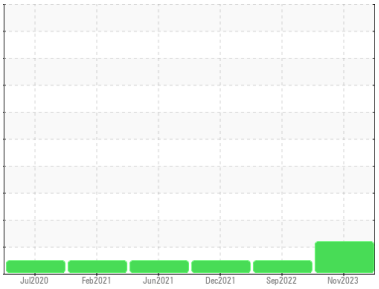
NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the fluid. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



VISUAL METAL

Area
GM Seattle Off Raod Shop
Machine Id
[GM Seattle Off Raod Shop] 28-432
Component
Transmission (Auto)
Fluid
LIEBHERR GEAR MF 80W (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to metal particles present in this sample.

Wear

Moderate concentration of visible metal present. All component wear rates are normal.

Contamination

There is no indication of any contamination in the fluid.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PE0002300**	PE0000182	PE12291023
Sample Date		Client Info		**27 Nov 2023**	13 Sep 2022	09 Dec 2021
Machine Age	hrs	Client Info		**7339**	4489	3187
Oil Age	hrs	Client Info		**2850**	2376	3187
Oil Changed		Client Info		**Changed**	Changed	Not Changd
Sample Status				**ABNORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

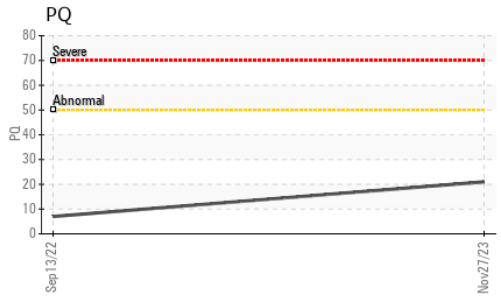
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>50	**21**	7	---
Iron	ppm	ASTM D5185m	>160	**15**	25	9
Chromium	ppm	ASTM D5185m	>5	**0**	<1	0
Nickel	ppm	ASTM D5185m	>5	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>5	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>50	**<1**	<1	3
Lead	ppm	ASTM D5185m	>50	**0**	<1	4
Copper	ppm	ASTM D5185m	>225	**2**	3	6
Tin	ppm	ASTM D5185m	>10	**0**	0	0
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	---

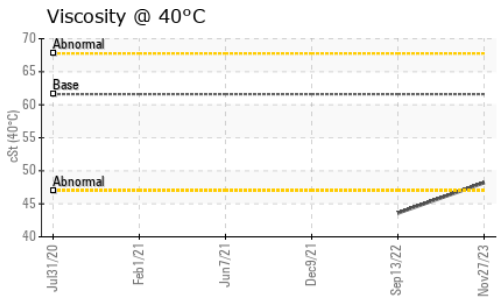
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**42**	75	4
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	2
Manganese	ppm	ASTM D5185m		**<1**	<1	---
Magnesium	ppm	ASTM D5185m		**11**	8	96
Calcium	ppm	ASTM D5185m		**2844**	3359	3583
Phosphorus	ppm	ASTM D5185m		**1061**	1125	1022
Zinc	ppm	ASTM D5185m		**1257**	1365	1312
Sulfur	ppm	ASTM D5185m		**6067**	6215	---

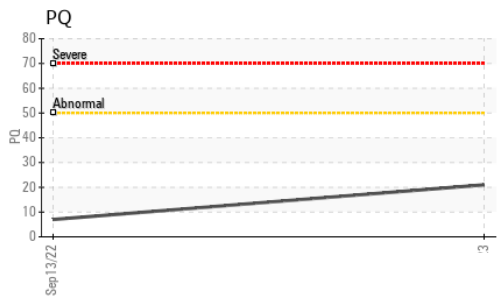
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**5**	6	8
Sodium	ppm	ASTM D5185m		**2**	2	6
Potassium	ppm	ASTM D5185m	>20	**0**	0	3

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	**---**	4215	---
Particles >6µm		ASTM D7647	>2500	**---**	265	---
Particles >14µm		ASTM D7647	>320	**---**	10	---
Particles >21µm		ASTM D7647	>80	**---**	3	---
Particles >38µm		ASTM D7647	>20	**---**	0	---
Particles >71µm		ASTM D7647	>4	**---**	0	---
Oil Cleanliness		ISO 4406 (c)	>20/18/15	**---**	19/15/10	21/17/11

OIL ANALYSIS REPORT



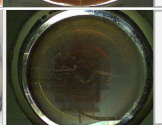




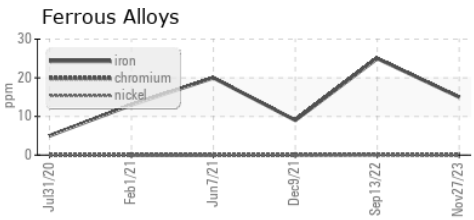
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.08**	0.66	1.80

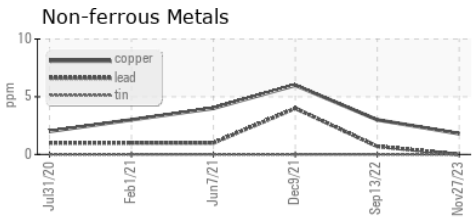
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ **MODER**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

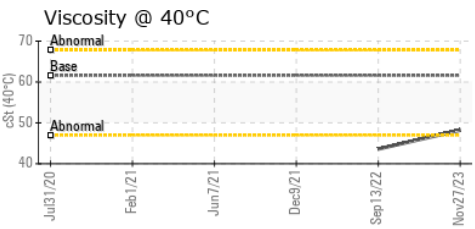
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	61.6	**48.2**	43.6	---

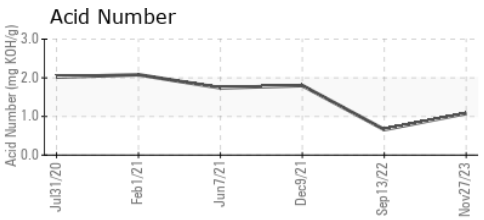
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					*no image*
Bottom					*no image*

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0002300
Lab Number : 06026297
Unique Number : 10776088
Test Package : CONST (Additional Tests: ICP, KV40, PQ, PrtCount, SCREEN)

Received : 06 Dec 2023
Diagnosed : 11 Dec 2023
Diagnostician : Jonathan Hester

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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US 98108
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Report Id: GARSEA [WUSCAR] 06026297 (Generated: 12/12/2023 01:10:43) Rev: 1

Submitted By: Stoneway Concrete - Seattle - Jesse Patterson