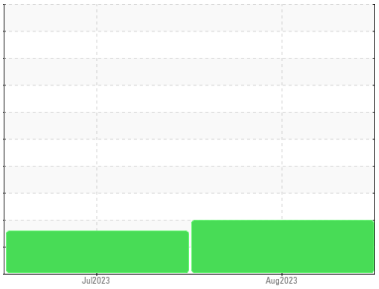
PROBLEM SUMMARY

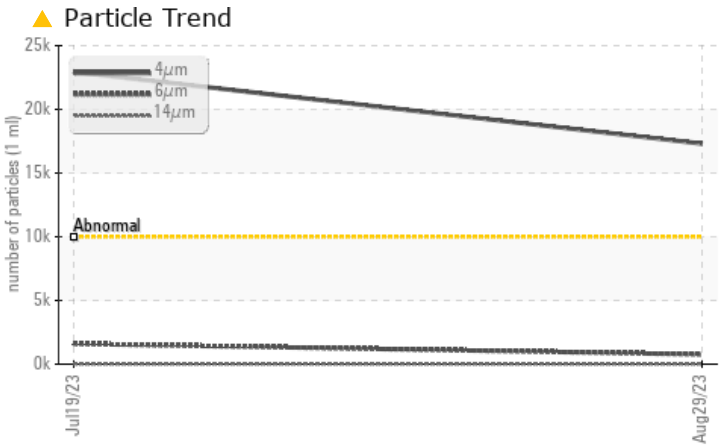
Sample Rating Trend



WEAR PARTICLES

Area
Evp Island
Machine Id
GOULDS B HSC Pump 0306
Component
Pump Roller Bearing
Fluid
MOBIL SHC 626 (1 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor. Analytical Ferrography: Results suggest there is a mild source of red oxide present in this system or in refill lubricant. In the first 3 associated images from the slide, the debris is under a polarized light and any of the orange or reddish debris should be considered to most likely be a red oxide. The volume of oxide debris is not exceptionally high but it is unusual and should be dealt with at the earliest opportunity to ensure this debris does not cause any additional wear. At the moment, all other debris appears to be at a typical size and volume. If the filters for this system are not designed to handle such small debris (the average oxide particle is ~2-3 microns) consider a lubricant polish with traditional low micron filters, depth media filtration, or something similar. Consider investigating the source of contamination and correct it if possible.

PROBLEMATIC TEST RESULTS

Sample Status				**ATTENTION**	ABNORMAL	---
Ferrous Red Oxides	Scale 0-10	*ASTM D7684		**3**		
Particles >4µm		ASTM D7647	>10000	**17307**	22939	---
Oil Cleanliness		ISO 4406 (c)	>20/18/14	**21/17/12**	22/18/12	---

Customer Id: GRAMAC
Sample No.: WC0824337
Lab Number: 05939093
Test Package: PLANT

To manage this report scan the QR code

To discuss the diagnosis or test data:
Aaron Black +1
aaron.black@wearcheck.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 Filter	---	---	?	We recommend you service the filters on this component.

HISTORICAL DIAGNOSIS

VISCOSITY

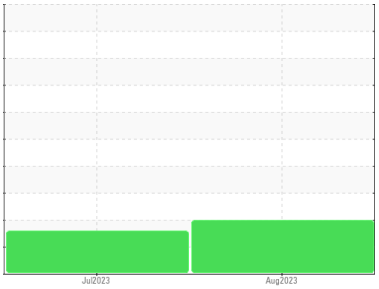
19 Jul 2023 Diag: Aaron Black

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Analytical Ferrography: Results confirm the uptick in contamination showing in the particle count analysis; most of the debris is contamination but there is a mild increase in ferrous rubbing wear as a result. Consider investigating the source of the debris, and repair it if possible.All component wear rates are normal. The analytical ferrographic results are normal indicating no abnormal wear in the system. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Viscosity of sample indicates oil is within ISO 220 range, advise investigate. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR PARTICLES

Area
Evp Island
Machine Id
GOULDS B HSC Pump 0306
Component
Pump Roller Bearing
Fluid
MOBIL SHC 626 (1 GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor. Analytical Ferrography: Results suggest there is a mild source of red oxide present in this system or in refill lubricant. In the first 3 associated images from the slide, the debris is under a polarized light and any of the orange or reddish debris should be considered to most likely be a red oxide. The volume of oxide debris is not exceptionally high but it is unusual and should be dealt with at the earliest opportunity to ensure this debris does not cause any additional wear. At the moment, all other debris appears to be at a typical size and volume. If the filters for this system are not designed to handle such small debris (the average oxide particle is ~2-3 microns) consider a lubricant polish with traditional low micron filters, depth media filtration, or something similar. Consider investigating the source of contamination and correct it if possible.

Wear

All component wear rates are normal. The analytical ferrographic results are normal indicating no abnormal wear in the system.

Contaminants

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

Oil Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0824337**	WC0824315	---
Sample Date		Client Info		**29 Aug 2023**	19 Jul 2023	---
Machine Age	mths	Client Info		**0**	0	---
Oil Age	mths	Client Info		**1**	0	---
Oil Changed		Client Info		**Changed**	Not Changd	---
Sample Status				**ATTENTION**	ABNORMAL	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**12**	13	---
Iron	ppm	ASTM D5185m	>20	**4**	<1	---
Chromium	ppm	ASTM D5185m	>20	**0**	0	---
Nickel	ppm	ASTM D5185m	>20	**0**	<1	---
Titanium	ppm	ASTM D5185m		**0**	0	---
Silver	ppm	ASTM D5185m		**0**	0	---
Aluminum	ppm	ASTM D5185m	>20	**<1**	0	---
Lead	ppm	ASTM D5185m	>20	**<1**	0	---
Copper	ppm	ASTM D5185m	>20	**<1**	0	---
Tin	ppm	ASTM D5185m	>20	**0**	0	---
Vanadium	ppm	ASTM D5185m		**0**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	---
Barium	ppm	ASTM D5185m		**0**	0	---
Molybdenum	ppm	ASTM D5185m		**0**	0	---
Manganese	ppm	ASTM D5185m		**0**	0	---
Magnesium	ppm	ASTM D5185m		**0**	0	---
Calcium	ppm	ASTM D5185m		**0**	0	---
Phosphorus	ppm	ASTM D5185m		**471**	410	---
Zinc	ppm	ASTM D5185m		**0**	0	---
Sulfur	ppm	ASTM D5185m		**0**	0	---

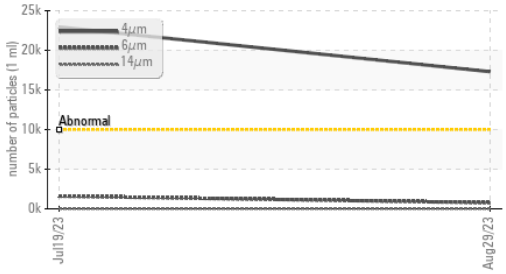
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**<1**	6	---
Sodium	ppm	ASTM D5185m		**0**	<1	---
Potassium	ppm	ASTM D5185m	>20	**<1**	0	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	▲ **17307**	▲ 22939	---
Particles >6µm		ASTM D7647	>2500	**761**	▲ 1600	---
Particles >14µm		ASTM D7647	>160	**22**	22	---
Particles >21µm		ASTM D7647	>40	**7**	5	---
Particles >38µm		ASTM D7647	>10	**1**	0	---
Particles >71µm		ASTM D7647	>3	**0**	0	---
Oil Cleanliness		ISO 4406 (c)	>20/18/14	▲ **21/17/12**	▲ 22/18/12	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.59**	0.44	---

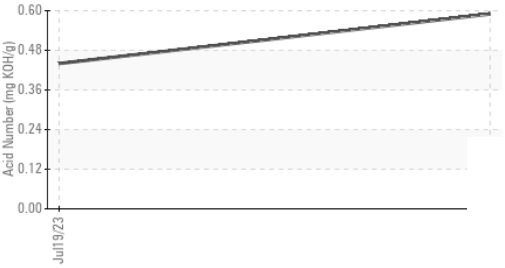
OIL ANALYSIS REPORT

Particle Trend

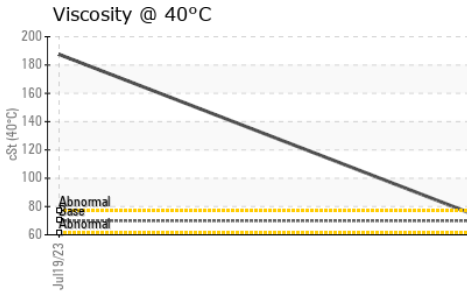


PQ

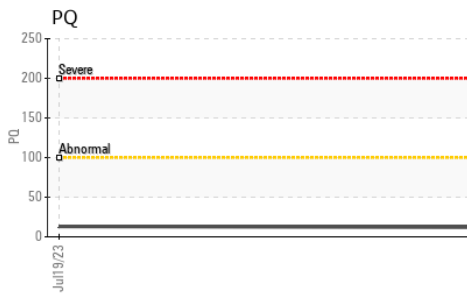
Acid Number



Viscosity @ 40°C

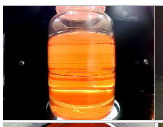
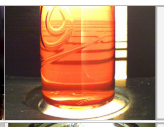
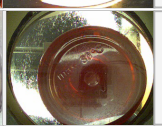


PQ



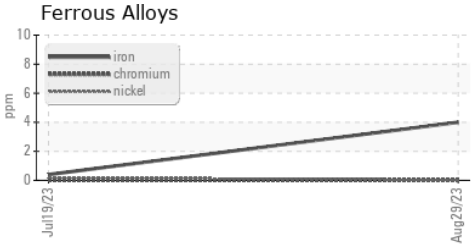
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>2	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	69.9	**69.9**	▲ 187.5	---

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

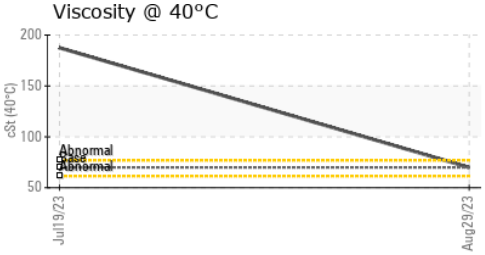
GRAPHS

Ferrous Alloys

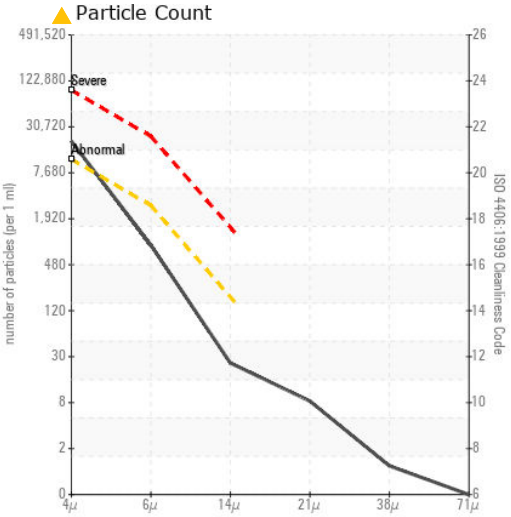


Non-ferrous Metals

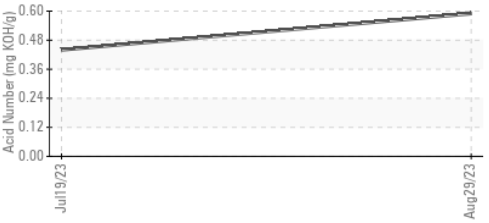
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0824337 **Received** : 30 Aug 2023
Lab Number : 05939093 **Diagnosed** : 08 Sep 2023
Unique Number : 10629705 **Diagnostician** : Aaron Black
Test Package : PLANT (Additional Tests: A-FERR)

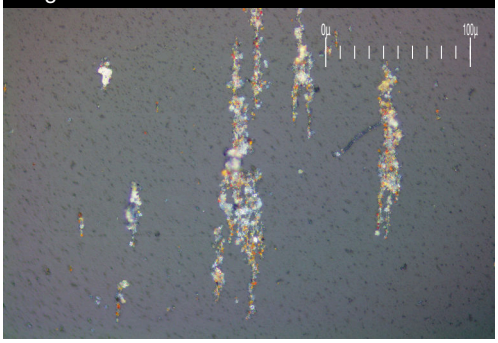
To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

GRAPHIC PACKAGING INTERNATIONAL
100 GRAPHIC PACKAGING INTERNATIONAL
MACON, GA
US 31206
Contact: DARYL SPRINGER
daryl.springer@graphicpkg.com
T: (478)784-3677
F:

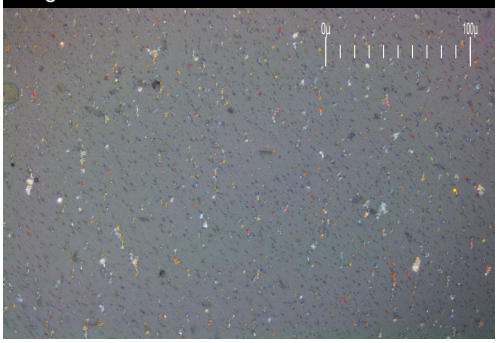
FERROGRAPHY REPORT

Area
Evp Island
Machine Id
GOULDS B HSC Pump 0306
Component
Pump Roller Bearing
Fluid
MOBIL SHC 626 (1 GAL)

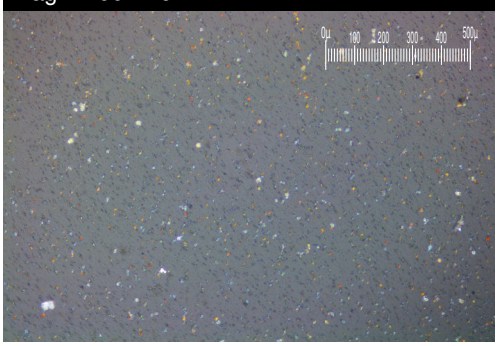
Magn: 500x Illum: RW



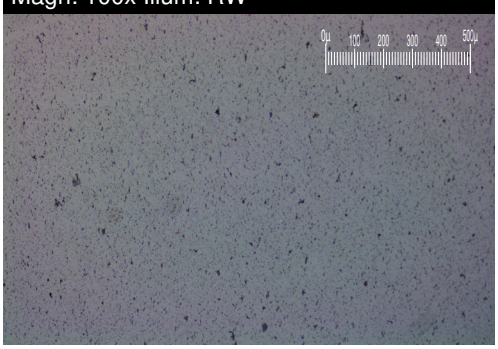
Magn: 500x Illum: RW



Magn: 100x Illum: RW



Magn: 100x Illum: RW



FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	*ASTM D7684		2	3	
Ferrous Sliding	Scale 0-10	*ASTM D7684				
Ferrous Cutting	Scale 0-10	*ASTM D7684				
Ferrous Rolling	Scale 0-10	*ASTM D7684				
Ferrous Break-in	Scale 0-10	*ASTM D7684				
Ferrous Spheres	Scale 0-10	*ASTM D7684				
Ferrous Black Oxides	Scale 0-10	*ASTM D7684				
Ferrous Red Oxides	Scale 0-10	*ASTM D7684		3		
Ferrous Corrosive	Scale 0-10	*ASTM D7684				
Ferrous Other	Scale 0-10	*ASTM D7684				
Nonferrous Rubbing	Scale 0-10	*ASTM D7684				
Nonferrous Sliding	Scale 0-10	*ASTM D7684				
Nonferrous Cutting	Scale 0-10	*ASTM D7684				
Nonferrous Rolling	Scale 0-10	*ASTM D7684				
Nonferrous Other	Scale 0-10	*ASTM D7684				
Carbonaceous Material	Scale 0-10	*ASTM D7684				
Lubricant Degradation	Scale 0-10	*ASTM D7684				
Sand/Dirt	Scale 0-10	ASTM D7684				
Fibres	Scale 0-10	*ASTM D7684				
Spheres	Scale 0-10	*ASTM D7684				
Other	Scale 0-10	*ASTM D7684		2	3	

WEAR

All component wear rates are normal. The analytical ferrographic results are normal indicating no abnormal wear in the system.

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