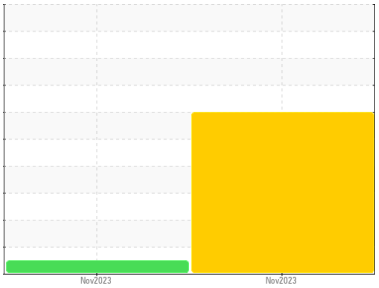
GREASE ANALYSIS

Sample Rating Trend



WEAR PARTICLES

Area
[7205201]
Machine Id
IAP FAN TYPE B E-SF54101 (S/N 34452)
Component
Drive End Grease
Fluid
MOBIL MOBILITH SHC SERIES 220 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for visible metal particles in the grease. We recommend that you re-grease the component if this has not already been done. We recommend an early resample to monitor this condition. Analytical Ferrography: Result suggest the volume of ferrous wear debris and contamination are normal, but the visual inspection and metals analysis suggest there is more wear present than there should be. Analytical ferrography also suggests there may not be frequent enough re-greasing (or a similar issue) because there are more than typical black oxides which commonly indicate under-lubrication and excessive heat as a result. The volume of this black oxide material is only mildly elevated, but if thermography is available it may be worth investigating for possible over-temp issues.

Wear

Chromium and iron, nickel and aluminum ppm levels are abnormal. Wear particle analysis indicates that the ferrous red oxides particles are noted. Moderate concentration of visible metal present. Abnormal wear is indicated.

Grease Condition

The grease is no longer serviceable as a result of the abnormal and/or severe contamination. The AN level is acceptable for this fluid. Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil.

Contaminants

Aluminum present along with an abnormal drop in oil bleed may be a result of grease contamination with another type of grease, likely an aluminum complex.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**RP0039395**	RP0039402	---
Sample Date		Client Info		**02 Nov 2023**	02 Nov 2023	---
Machine Age	mths	Client Info		**4**	4	---
Grease Age	mths	Client Info		**0**	0	---
Grease Serviced		Client Info		**N/A**	N/A	---
Sample Status				**ABNORMAL**	NORMAL	---

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>200	**12**	---	---
Iron	ppm	ASTM D5185m	>250	▲ **11896**	2	---
Chromium	ppm	ASTM D5185m	>10	▲ **68**	0	---
Nickel	ppm	ASTM D5185m	>5	▲ **5**	2	---
Cadmium	ppm	ASTM D5185m		**0**	0	---
Titanium	ppm	ASTM D5185m		**6**	0	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Lead	ppm	ASTM D5185m	>25	**3**	0	---
Copper	ppm	ASTM D5185m	>75	**3**	<1	---
Tin	ppm	ASTM D5185m	>5	**0**	0	---
Silver	ppm	ASTM D5185m	>5	**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**253**	208	---
Magnesium	ppm	ASTM D5185m		**5**	1	---
Manganese	ppm	ASTM D5185m		**36**	0	---
Molybdenum	ppm	ASTM D5185m		**1**	<1	---
Phosphorus	ppm	ASTM D5185m		**2116**	1781	---
Zinc	ppm	ASTM D5185m		**3105**	2654	---

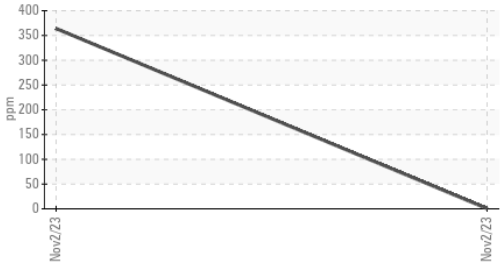
THICKENER/SOAP		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m		▲ **364**	<1	---
Barium	ppm	ASTM D5185m		**0**	2	---
Calcium	ppm	ASTM D5185m		**64**	8	---
Sodium	ppm	ASTM D5185m		**37**	25	---
Lithium	ppm	ASTM D5185m		**3601**	2904	---

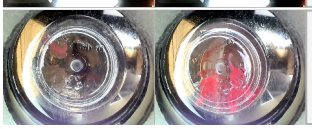
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>150	**41**	6	---
Potassium	ppm	ASTM D5185m		**14**	8	---
Water	%	ASTM D6304	>0.1	**0.064**	---	---
ppm Water	ppm	ASTM D6304	>1000	**644**	---	---

GREASE CONDITION		method	limit/base	current	history1	history2
Grease Color		*Visual		**Burgundy**	---	---
Texture		*In-house		**Short fiber**	---	---
NLGI Consistency	NLGI Scale	*SKF Method		**2-3**	---	---
Anti-Oxidant 1	%	ASTM D6971	<25%	**60**	---	---
Anti-Oxidant 2	%	ASTM D6971	<25%	**60**	---	---
Anti-Oxidant 3	%	ASTM D6971	<25%	**43**	---	---

GREASE ANALYSIS

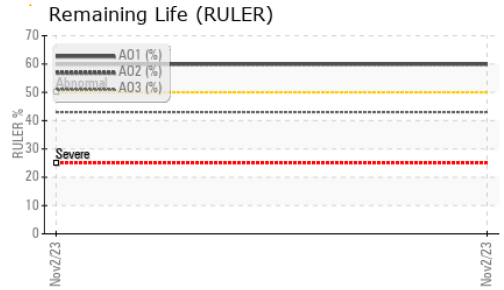
Aluminum (ppm)



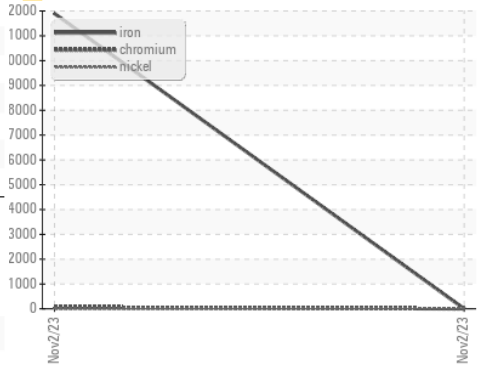
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					no image
Bottom					no image

GRAPHS

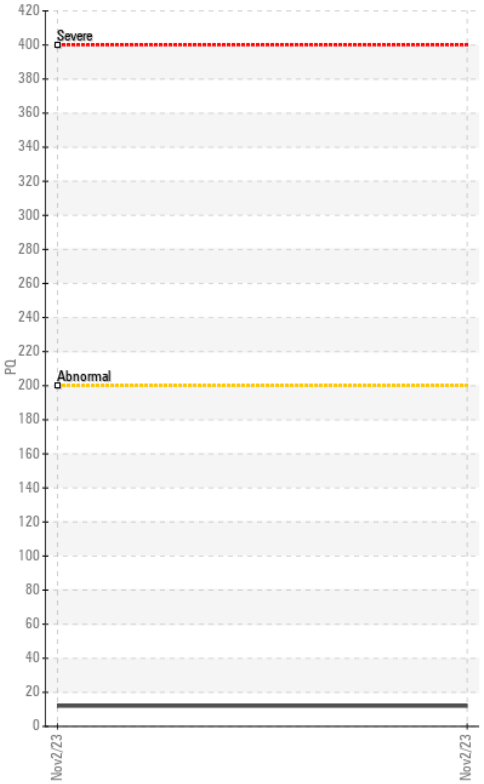
Remaining Life (RULER)



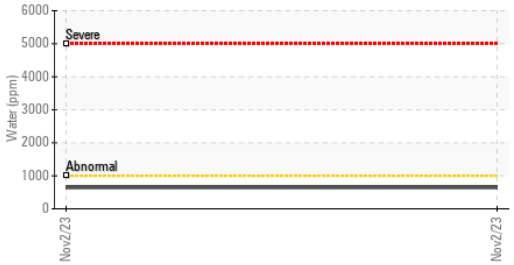
Ferrous Alloys



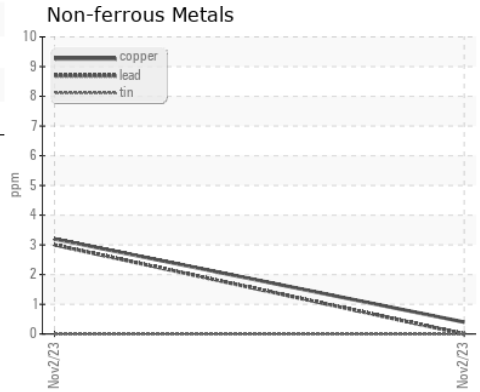
PQ



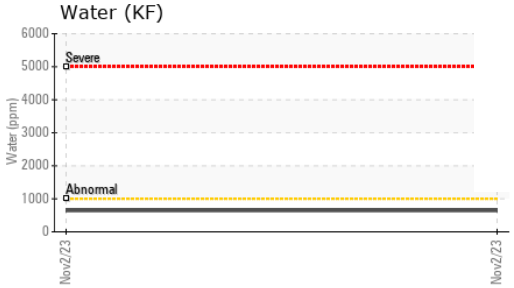
Water (KF)



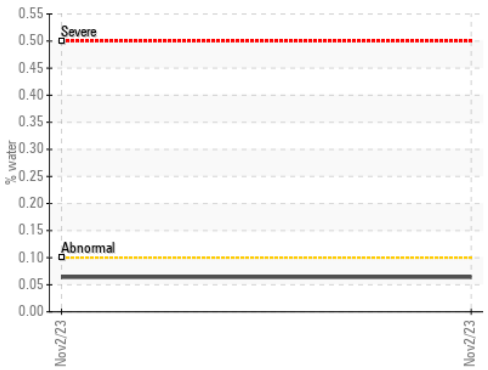
Non-ferrous Metals



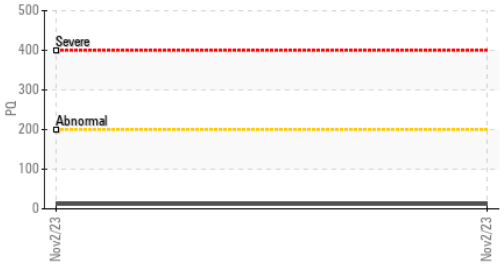
Water (KF)



Water



PQ



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0039395 **Recieved** : 24 Nov 2023
Lab Number : 06016962 **Diagnosed** : 22 Dec 2023
Unique Number : 10756106 **Diagnostician** : Aaron Black
Test Package : GRS 3 (Additional Tests: SCREEN)

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)

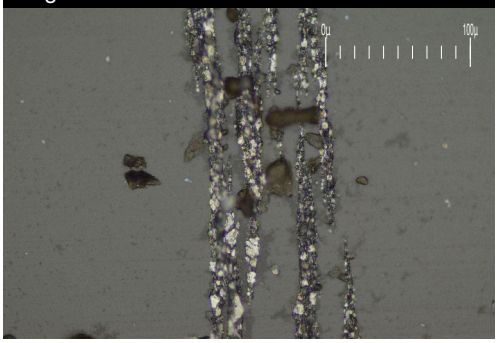
JCI
1110 S 14TH AVE
DODGE CITY, 46
US 67801
Contact: Service Manager

T:
F:

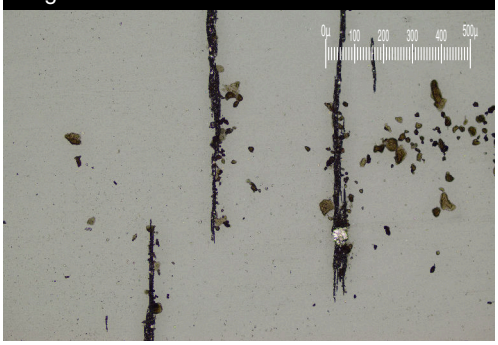
FERROGRAPHY REPORT

Area
[7205201]
Machine Id
IAP FAN TYPE B E-SF54101 (S/N 34452)
Component
Drive End Grease
Fluid
MOBIL MOBILITH SHC SERIES 220 (--- GAL)

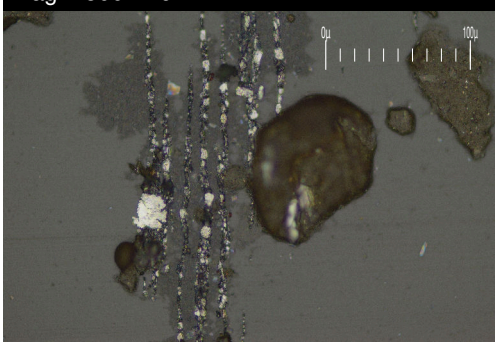
Magn: 500x Illum: RW



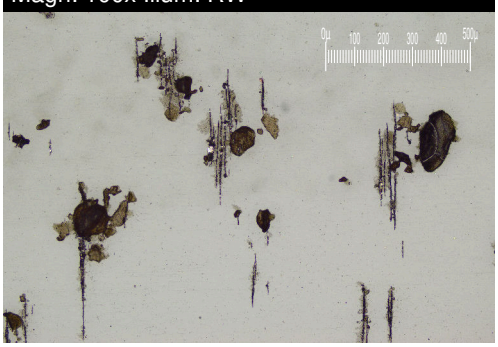
Magn: 100x Illum: RW



Magn: 500x Illum: RW



Magn: 100x Illum: RW



FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	*ASTM D7684		2		
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		2		
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		

WEAR

Chromium and iron, nickel and aluminum ppm levels are abnormal. Wear particle analysis indicates that the ferrous red oxides particles are noted. Moderate concentration of visible metal present. Abnormal wear is indicated.

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