

# PROBLEM SUMMARY

Sample Rating Trend

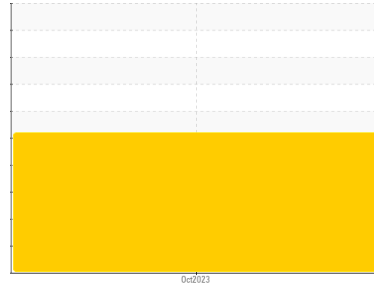
DIRT



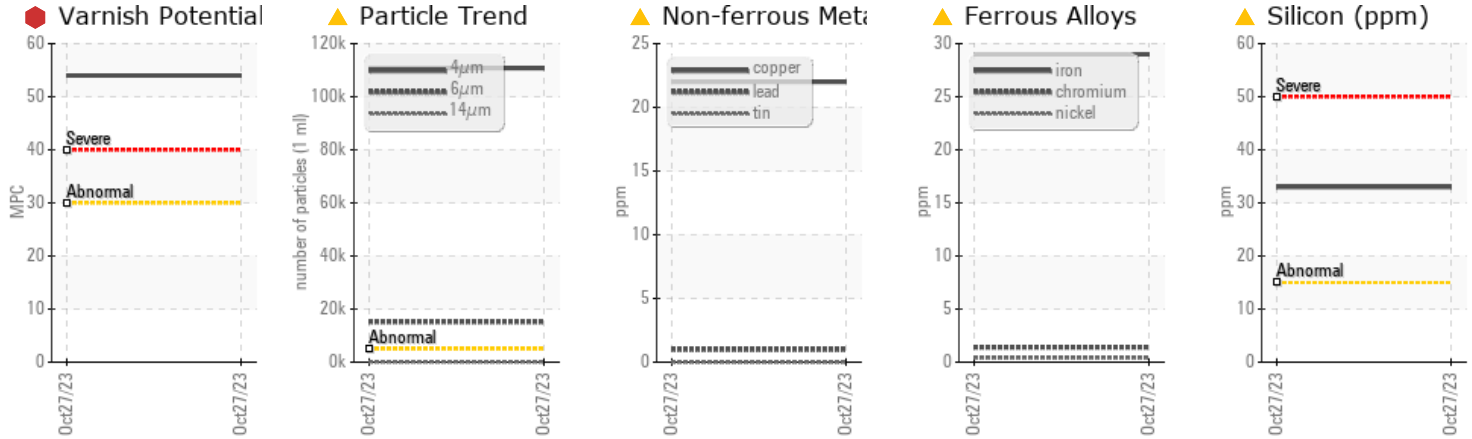
Machine Id  
**INJECTION MOLDING TOTE MOLDER 2 - GLOV/WARNER**

Component  
**Hydraulic System**

Fluid  
**AW HYDRAULIC OIL ISO 46 (275 GAL)**



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We recommend that you use depth filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Iron	ppm	ASTM D5185m	>20	▲ 29	---	---
Copper	ppm	ASTM D5185m	>20	▲ 22	---	---
Silicon	ppm	ASTM D5185m	>15	▲ 33	---	---
Particles >4µm		ASTM D7647	>5000	▲ 110771	---	---
Particles >6µm		ASTM D7647	>1300	▲ 15208	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 24/21/14	---	---
MPC Varnish Potential	Scale	ASTM D7843	>15	◆ 54	---	---

Customer Id: YVEWAU  
Sample No.: PCA0107521  
Lab Number: 05997348  
Test Package: PLANT



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Doug Bogart +1 (800)237-1369 x4016  
[dougb@wearcheckusa.com](mailto:dougb@wearcheckusa.com)

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

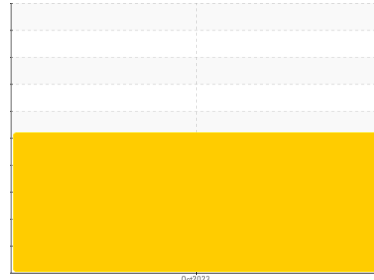
## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Filter Fluid	---	---	?	We recommend that you use electrostatic filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level.

## HISTORICAL DIAGNOSIS

# OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id  
**INJECTION MOLDING TOTE MOLDER 2 - GLOV/WARNER**  
 Component  
**Hydraulic System**  
 Fluid  
**AW HYDRAULIC OIL ISO 46 (275 GAL)**

## DIAGNOSIS

**Recommendation**  
 We recommend that you use depth filtration to remove insolubles from the oil and to reduce the levels of varnish in the system. Alternatively draining a percentage of the oil and topping up with fresh oil (sweetening the oil) may provide a reduction in the varnish potential level. We recommend an early resample to monitor this condition.

**Wear**  
 Copper and iron ppm levels are abnormal.

**Contamination**  
 There is a high amount of silt (particulates < 14 microns in size) present in the oil. MPC (Membrane Patch Colorimetry) test indicates a high concentration of varnish present. Elemental level of silicon (Si) above normal.

**Fluid Condition**  
 The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>PCA0107521</b>	---	---
Sample Date	Client Info	<b>27 Oct 2023</b>	---	---
Machine Age	hrs Client Info	<b>0</b>	---	---
Oil Age	hrs Client Info	<b>0</b>	---	---
Oil Changed	Client Info	<b>N/A</b>	---	---
Sample Status		<b>SEVERE</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>20	<b>▲ 29</b>	---	---
Chromium ppm ASTM D5185m	>20	<b>1</b>	---	---
Nickel ppm ASTM D5185m	>20	<b>&lt;1</b>	---	---
Titanium ppm ASTM D5185m		<b>&lt;1</b>	---	---
Silver ppm ASTM D5185m		<b>0</b>	---	---
Aluminum ppm ASTM D5185m	>20	<b>&lt;1</b>	---	---
Lead ppm ASTM D5185m	>20	<b>1</b>	---	---
Copper ppm ASTM D5185m	>20	<b>▲ 22</b>	---	---
Tin ppm ASTM D5185m	>20	<b>0</b>	---	---
Vanadium ppm ASTM D5185m		<b>0</b>	---	---
Cadmium ppm ASTM D5185m		<b>&lt;1</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185m	5	<b>&lt;1</b>	---	---
Barium ppm ASTM D5185m	5	<b>10</b>	---	---
Molybdenum ppm ASTM D5185m	5	<b>2</b>	---	---
Manganese ppm ASTM D5185m		<b>&lt;1</b>	---	---
Magnesium ppm ASTM D5185m	25	<b>13</b>	---	---
Calcium ppm ASTM D5185m	200	<b>119</b>	---	---
Phosphorus ppm ASTM D5185m	300	<b>313</b>	---	---
Zinc ppm ASTM D5185m	370	<b>293</b>	---	---
Sulfur ppm ASTM D5185m	2500	<b>2155</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m	>15	<b>▲ 33</b>	---	---
Sodium ppm ASTM D5185m		<b>29</b>	---	---
Potassium ppm ASTM D5185m	>20	<b>8</b>	---	---

## FLUID CLEANLINESS

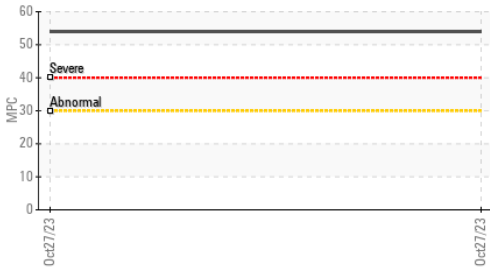
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>5000	<b>▲ 110771</b>	---	---
Particles >6µm ASTM D7647	>1300	<b>▲ 15208</b>	---	---
Particles >14µm ASTM D7647	>160	<b>84</b>	---	---
Particles >21µm ASTM D7647	>40	<b>12</b>	---	---
Particles >38µm ASTM D7647	>10	<b>0</b>	---	---
Particles >71µm ASTM D7647	>3	<b>0</b>	---	---
Oil Cleanliness ISO 4406 (c)	>19/17/14	<b>▲ 24/21/14</b>	---	---

## FLUID DEGRADATION

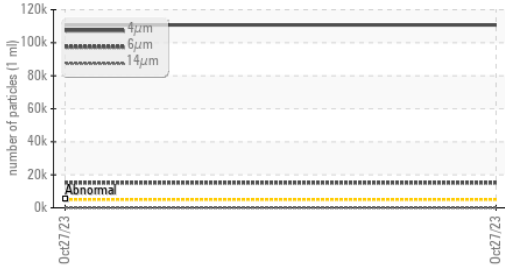
method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045	0.57	<b>0.34</b>	---	---
MPC Varnish Potential Scale ASTM D7843	>15	<b>● 54</b>	---	---

# OIL ANALYSIS REPORT

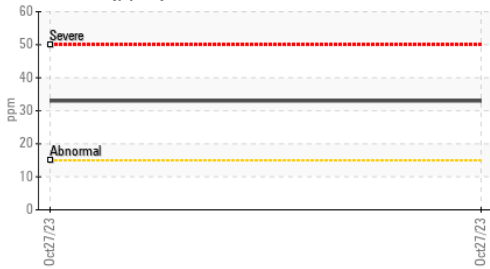
### Varnish Potential



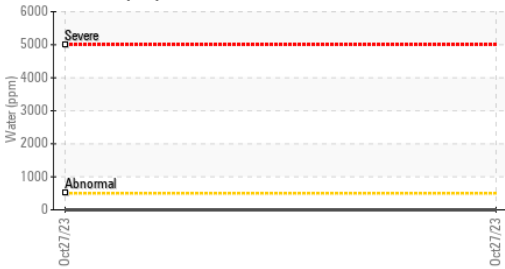
### Particle Trend



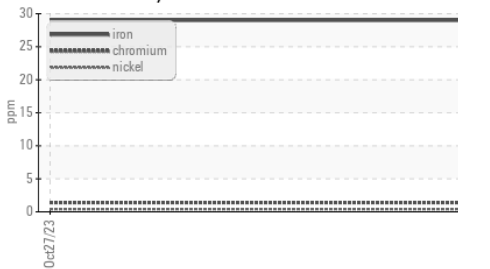
### Silicon (ppm)



### Water (KF)



### Ferrous Alloys



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	---
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	---
Emulsified Water	scalar	*Visual	>0.05	<b>NEG</b>	---
Free Water	scalar	*Visual		<b>NEG</b>	---

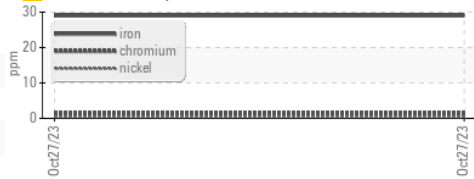
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	<b>43.2</b>	---

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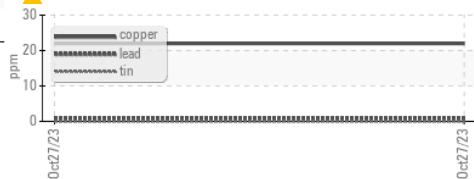
Color		no image	no image
Bottom		no image	no image
MPC		no image	no image

## GRAPHS

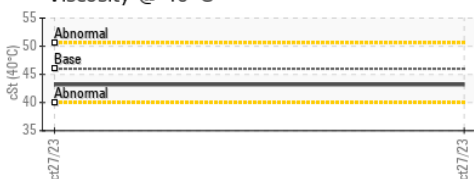
### Ferrous Alloys



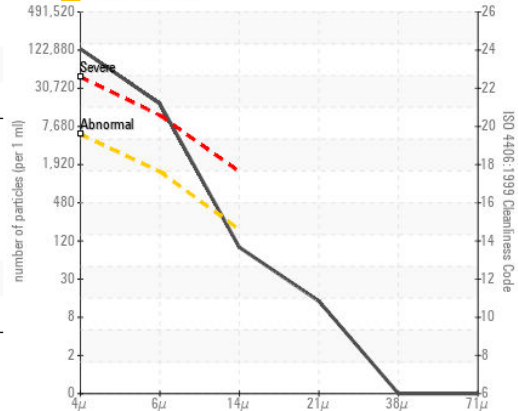
### Non-ferrous Metals



### Viscosity @ 40°C



### Particle Count



### Acid Number



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0107521 **Received** : 02 Nov 2023  
**Lab Number** : 05997348 **Diagnosed** : 13 Nov 2023  
**Unique Number** : 10725708 **Diagnostician** : Doug Bogart  
**Test Package** : PLANT ( Additional Tests: MPC )

**YVETTE TRZCINSKI**  
 850 WESTBROOKE PKWY  
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 yvette.trzcinski@hfsinclair.com

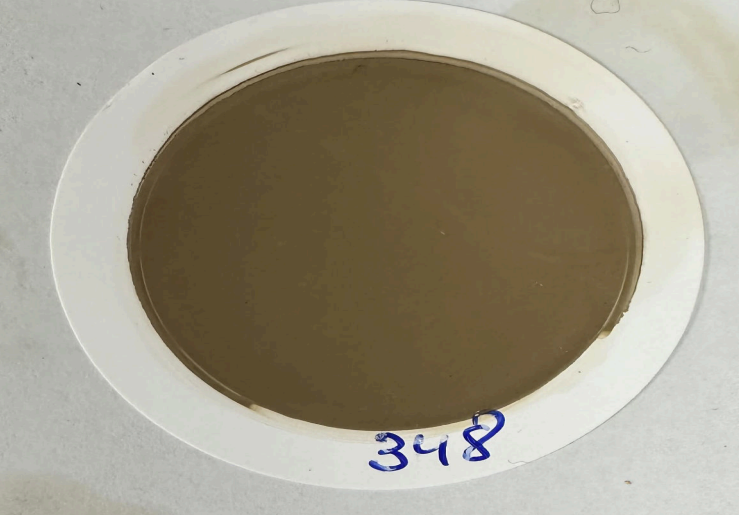
To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - 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:  
F:

MPC (Varnish Test)



Sample Color & Clarity



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