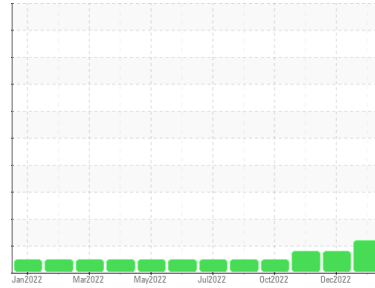




# PROBLEM SUMMARY

## Sample Rating Trend



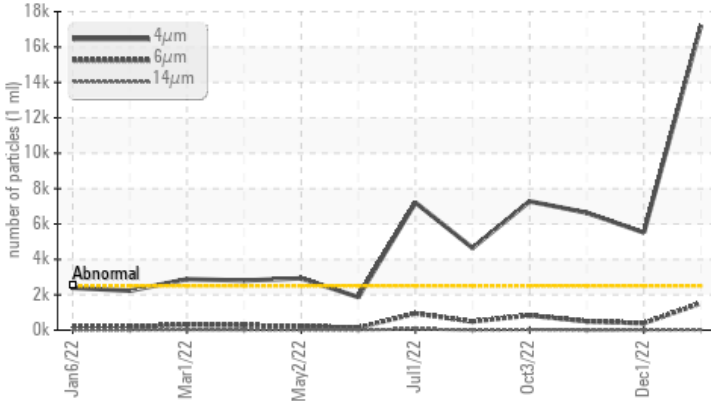
ISO



Machine Id  
**HSS - HIGH PRESS**  
 Component  
**Hydraulic System**  
 Fluid  
**TOTAL AZOLLA ZS 22 (5 GAL)**

## COMPONENT CONDITION SUMMARY

### ▲ Particle Trend



## RECOMMENDATION

No corrective action is recommended at this time.  
 Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Particles >4µm	ASTM D7647	>2500	▲ 17221	▲ 5511	▲ 6634
Particles >6µm	ASTM D7647	>640	▲ 1524	389	498
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ 21/18/12	▲ 20/16/10	▲ 20/16/10

Customer Id: HAWCHANC  
 Sample No.: WC0700561  
 Lab Number: 05757657  
 Test Package: PLANT



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Don Baldrige +1  
[don.b505@comcast.net](mailto:don.b505@comcast.net)

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

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

### 01 Dec 2022 Diag: Don Baldrige

ISO



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 01 Nov 2022 Diag: Doug Bogart

ISO



No corrective action is recommended at this time. Resample at the next service interval to monitor. Please note that this is a corrected copy for data entry updates for target ISO and system capacity. All component wear rates are normal. There is a high amount of silt (particulates < 6 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 03 Oct 2022 Diag: Don Baldrige

NORMAL



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

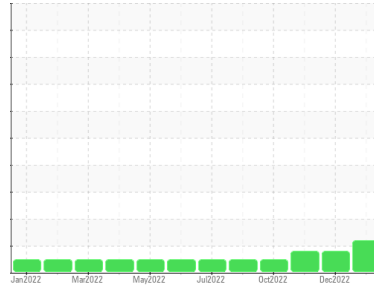
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**HSS - HIGH PRESS**  
 Component  
**Hydraulic System**  
 Fluid  
**TOTAL AZOLLA ZS 22 (5 GAL)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

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

### Fluid 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	<b>WC0700561</b>	WC0700554	WC0700549
Sample Date	Client Info	<b>01 Feb 2023</b>	01 Dec 2022	01 Nov 2022
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >20	<b>2</b>	6	4
Chromium	ppm	ASTM D5185m >20	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m >20	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>0</b>	0	0
Lead	ppm	ASTM D5185m >20	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >20	<b>&lt;1</b>	1	1
Tin	ppm	ASTM D5185m >20	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	<b>2</b>	2	2
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Calcium	ppm	ASTM D5185m	<b>48</b>	48	47
Phosphorus	ppm	ASTM D5185m	<b>308</b>	330	313
Zinc	ppm	ASTM D5185m	<b>404</b>	388	415
Sulfur	ppm	ASTM D5185m	<b>800</b>	742	1006

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >15	<b>1</b>	1	1
Sodium	ppm	ASTM D5185m	<b>0</b>	<1	0
Potassium	ppm	ASTM D5185m >20	<b>1</b>	0	0

## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >2500	<b>▲ 17221</b>	▲ 5511	▲ 6634
Particles >6µm	ASTM D7647 >640	<b>▲ 1524</b>	389	498
Particles >14µm	ASTM D7647 >80	<b>21</b>	10	8
Particles >21µm	ASTM D7647 >20	<b>4</b>	3	1
Particles >38µm	ASTM D7647 >4	<b>0</b>	1	0
Particles >71µm	ASTM D7647 >3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >18/16/13	<b>▲ 21/18/12</b>	▲ 20/16/10	▲ 20/16/10

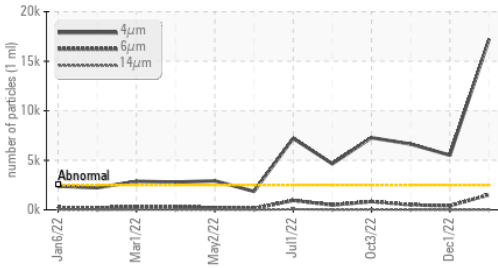
## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.45</b>	0.46	0.54

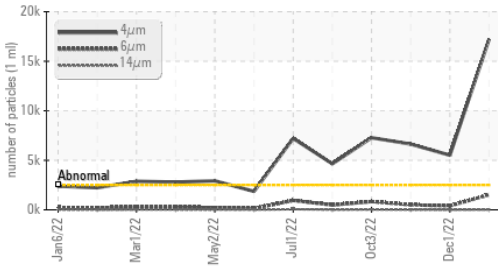


# OIL ANALYSIS REPORT

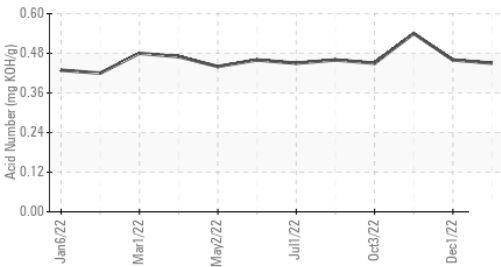
▲ Particle Trend



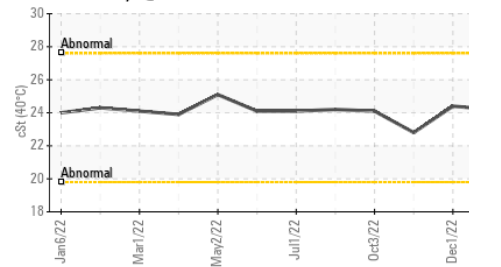
▲ Particle Trend



Acid Number



Viscosity @ 40°C



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	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	24.2	24.4	22.8

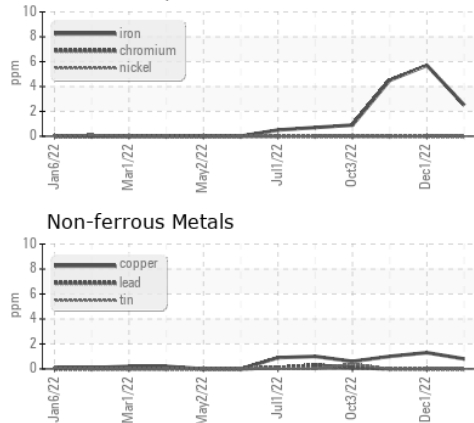
SAMPLE IMAGES

Color

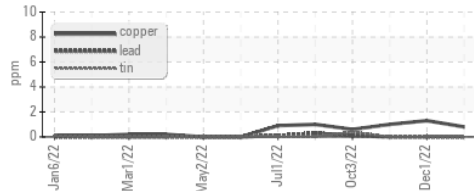
Bottom

GRAPHS

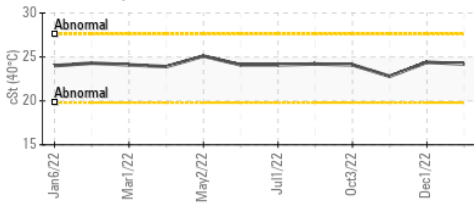
Ferrous Alloys



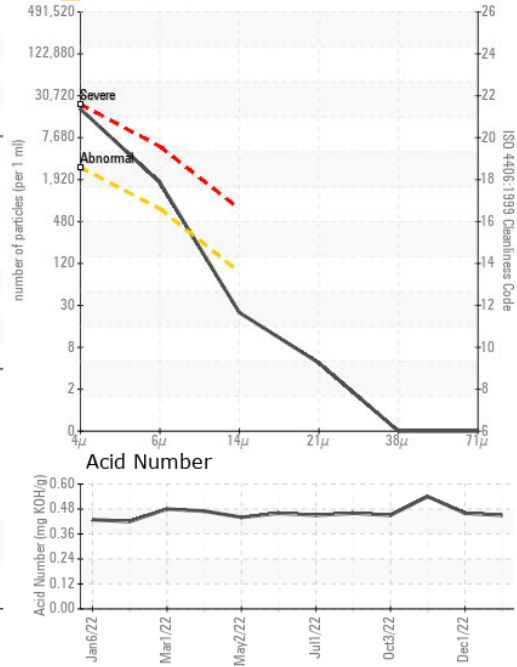
Non-ferrous Metals



Viscosity @ 40°C



▲ Particle Count



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0700561 **Received** : 02 Feb 2023  
**Lab Number** : 05757657 **Diagnosed** : 04 Feb 2023  
**Unique Number** : 10322264 **Diagnostician** : Don Baldrige  
**Test Package** : PLANT

**HAWE HYDRAULICS - HUNTERSVILLE**  
 13020 JAMESBURG DR SUITE A  
 HUNTERSVILLE, NC  
 US 28078  
 Contact: Kristina Smith  
 k.smith@hawe.com  
 T: (704)927-5610  
 F: (704)509-6302

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)